New York Supreme Court

APPELLATE DIVISION-SECOND DEPARTMENT

In the Matter of a Proceeding under Article 70 of the CPLR for a Writ of Habeas Corpus,

App. Div. No.
2014-?????

THE NONHUMAN RIGHTS PROJECT, INC., on behalf of HERCULES and LEO,

Petitioner-Appellant,

-against-

SAMUEL L. STANLEY JR., M.D., as President of State University of New York at Stony Brook a/k/a Stony Brook University and STATE UNIVERSITY OF NEW YORK AT STONY BROOK a/k/a STONY BROOK UNIVERSITY,

Respondents-Respondents.

RECORD ON APPEAL

SAMUEL L. STANLEY JR., M.D.,
PRESIDENT
STATE UNIVERSITY OF NEW YORK AT STONY BROOK
Pro Se Respondents-Respondents
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The Nonhuman Rights Project, Inc.,
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5 Dunhill Road
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-and-

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Suffolk County Clerk's Index No. **32098/13**

Echo Appellate Press, Inc. Å30 West Park Avenue ÅLong Beach, New York 11561 Å(516) 432-3601

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<u>STATEMENT PURSUANT TO CPLR §5531</u>

SUPREME COURT OF THE STATE OF NEW YORK
APPELLATE DIVISION SECOND DEPARTMENT

---x

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App Div No. 2014-?????

The Nonhuman Rights Project, Inc.,
on behalf of Hercules and Leo,

Petitioner-Appellant,

-against-

Samuel L. Stanley Jr., M.D., as President of
State University of New York at Stony Brook a/k/a
Stony Brook University and State University of
New York at Stony Brook a/k/a Stony Brook University,

Respondents-Respondents.

---x

1] The index number in the Court below is 32098/13.

2] The full names of the original parties are as above. There has been no change.

3] This proceeding was commenced in the Supreme Court, Suffolk County.

4] The proceeding was commenced by the filing of an Order to Show Cause and Writ of Habeas Corpus on or about December 2, 2013. The Respondents have not appeared.

5] The nature and object of the proceeding is to grant immediate release of chimpanzees from illegal detention.

6] The appeal is from an Order entered in the office of the County Clerk of Suffolk County, on December 6, 2013 (W. Gerard Asher, J.).

7] This appeal is on a full reproduced record.

SUPREME COURT OF THE STATE OF NEW YORK
APPELLATE DIVISION SECOND DEPARTMENT

---x

In the Matter of a Proceeding under Article 70 of the CPLR for a Writ of Habeas Corpus,

The Nonhuman Rights Project, Inc.,
on behalf of Hercules and Leo,

Petitioner-Appellant,

-against-

Samuel L. Stanley Jr., M.D., as President of State University of New York at Stony Brook a/k/a Stony Brook University and State University of New York at Stony Brook a/k/a Stony Brook University,

Respondents-Respondents.

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STATE OF NEW YORK
SUPREME COURT COUNTY OF SUFFOLK

In the Matter of a Proceeding under Article 70 of the CPLR for a Writ of Habeas Corpus,

THE NONHUMAN RIGHTS PROJECT, INC., on behalf of HERCULES and LEO,

Petitioners,

v.

SAMUEL L. STANLEY JR., M.D., as President of State University of New York at Stony Brook a/k/a Stony Brook University and STATE UNIVERSITY OF NEW YORK AT STONY BROOK a/k/a/STONY BROOK UNIVERSITY,

Respondents.

NOTICE OF APPEAL

Index No.: 13-32098

Honorable W. Gerard Asher
Justice of the Supreme Court

PLEASE TAKE NOTICE that the Petitioners, THE NONHUMAN RIGHTS PROJECT, INC., on behalf of HERCULES and LEO, hereby appeal to the Appellate Division of the Supreme Court of the State of New York, Second Judicial Department, from a Judgment entered in the above entitled action in the office of the Clerk of the County of Suffolk on December 6, 2013, denying an application for an Order to Show Cause and Writ of Habeas Corpus, and this appeal is taken from each and every part of that Judgment as well as from the whole Judgment.

Dated: January 9, 2014

Elizabeth Stein

Elizabeth Stein, Esq.
Attorney for Petitioners

5 Dunhill Road
New Hyde Park, New York 11040
516-747-4726

TO: Clerk of the County of Suffolk
310 Center Drive
Riverhead, New York 11901
631-852-2000 Ext. 850

Samuel L. Stanley Jr., M.D., President
State University of New York at Stony Brook
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State University of New York at Stony Brook
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Office of the Attorney General
Eric T. Schneiderman
Litigation Bureau
Justice Building
2nd Floor
Albany, New York 12224
518-474-4441

At the Supreme Court of the State of New York, Supreme Court Complex, 235 Griffing Avenue, Riverhead, NY on the 5th day of December 2013

Present:
Honorable ____________________

STATE OF NEW YORK
SUPREME COURT COUNTY OF SUFFOLK

In the Matter of a Proceeding under Article 70 of the CPLR for a Writ of Habeas Corpus,

THE NONHUMAN RIGHTS PROJECT, INC., on behalf of HERCULES and LEO,

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v.

SAMUEL L. STANLEY JR., M.D., as President of State University of New York at Stony Brook a/k/a Stony Brook University and STATE UNIVERSITY OF NEW YORK AT STONY BROOK a/k/a STONY BROOK UNIVERSITY,

Respondents.

MOTION/CROSS/OSC
FEE PAID
Judith A. Pascale
Suffolk County Clerk

ORDER TO SHOW CAUSE & WRIT OF HABEAS CORPUS

Index No.: 13-32098

TO THE ABOVE NAMED RESPONDENTS:

PLEASE TAKE NOTICE, That upon the annexed Verified Petition of Elizabeth Stein, Esq. and Steven M. Wise, Esq. (subject to *pro hac vice* admission), with Exhibits and Memorandum of Law, dated December 2, 2013, and upon all pleadings and proceedings herein, the Respondents SAMUEL L. STANLEY JR., M.D., as President of State University of New York at Stony Brook a/k/a Stony Brook University., and STATE UNIVERSITY OF NEW YORK AT STONY BROOK a/k/a STONY BROOK UNIVERSITY, or their attorneys, are hereby ORDERED to SHOW CAUSE before this Court located at ~~235 Griffing Avenue~~ ONE COURT STREET, Riverhead, NY

12/19 11901, on the ____ day of December, 2013 at ____ o'clock in the _____noon of that day, or as soon thereafter as counsel can be heard, why an Order should not be entered granting Petitioners The Nonhuman Rights Project, Inc. ("NhRP") and Hercules and Leo the following relief:

A. An Order that Petitioners Hercules and Leo are being illegally detained and ordering their release and transfer forthwith to the primate sanctuary selected by the North American Primate Sanctuary Alliance.

It is THEREFORE:

ORDERED THAT, Sufficient cause appearing therefor, let service of a copy of this Order and the papers upon which it is based upon SAMUEL L. STANLEY JR., M.D., as President of State University of New York at Stony Brook a/k/a Stony Brook University., and STATE UNIVERSITY OF NEW YORK AT STONY BROOK a/k/a STONY BROOK UNIVERSITY, and upon ERIC T. SCHNEIDERMAN, Attorney General of the State of New York, by personal

2/12 delivery, on or before ____ on December ____, 2013, be deemed good and sufficient.

IT IS FURTHER ORDERED, that answering affidavits, if any, must be received by Elizabeth Stein, Esq., 5 Dunhill Road, New Hyde Park, New York 11040, no later than ___on the ___ day of December, 2013. Reply papers, if any, must be served on or before the ___ day of December, 2013.

Dated: December 5, 2013
Riverhead, New York

NOT SIGNED.

Hon.

ENTER:

The Court finds that pursuant to §2214(d) of the CPLR there is no reason for this matter to be brought by means of an OTC. No TRO or stay is requested. Petitioners have adequate remedy at law. Further, ART 70 of the CPLR (7002) applies to persons, therefore Habeas Corpus relief does not lie.

W. Gerard Asher
JSC
12/5/13

At the Supreme Court of the State of New York, Supreme Court Complex, 235 Griffing Avenue, Riverhead, NY on the ___ day of December 2013

Present:
Honorable ___________________

STATE OF NEW YORK
SUPREME COURT COUNTY OF SUFFOLK

MOTION/CROSS/OSC
FEE PAID
Judith A. Pascale
Suffolk County Clerk

In the Matter of a Proceeding under Article 70 of the CPLR for a Writ of Habeas Corpus,

THE NONHUMAN RIGHTS PROJECT, INC., on behalf of HERCULES and LEO,

Petitioners,

v.

SAMUEL L. STANLEY JR., M.D., as President of State University of New York at Stony Brook a/k/a Stony Brook University and STATE UNIVERSITY OF NEW YORK AT STONY BROOK a/k/a STONY BROOK UNIVERSITY,

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ORDER TO SHOW CAUSE & WRIT OF HABEAS CORPUS

Index No.: 13-32098

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It is THEREFORE:

ORDERED THAT, Sufficient cause appearing therefor, let service of a copy of this Order and the papers upon which it is based upon SAMUEL L. STANLEY JR., M.D., as President of State University of New York at Stony Brook a/k/a Stony Brook University., and STATE UNIVERSITY OF NEW YORK AT STONY BROOK a/k/a STONY BROOK UNIVERSITY, and upon ERIC T. SCHNEIDERMAN, Attorney General of the State of New York, by personal delivery, on or before ____ on December ____, 2013, be deemed good and sufficient.

IT IS FURTHER ORDERED, that answering affidavits, if any, must be received by Elizabeth Stein, Esq., 5 Dunhill Road, New Hyde Park, New York 11040, no later than ___on the ___ day of December, 2013. Reply papers, if any, must be served on or before the ___ day of December, 2013.

Dated: December ___, 2013
Riverhead, New York

____
Hon.

ENTER:

STATE OF NEW YORK
SUPREME COURT COUNTY OF SUFFOLK

In the Matter of a Proceeding under Article 70 of the CPLR for a Writ of Habeas Corpus,

THE NONHUMAN RIGHTS PROJECT, INC., on behalf of HERCULES and LEO,

Petitioners,

v.

SAMUEL L. STANLEY JR., M.D., as President of State University of New York at Stony Brook a/k/a Stony Brook University and STATE UNIVERSITY OF NEW YORK AT STONY BROOK a/k/a STONY BROOK UNIVERSITY,

Respondents.

VERIFIED PETITION

Index No.: 13-32098

FILED
DEC 05 2013
COUNTY CLERK
JUDITH A. PASCALE

PETITIONERS, by their attorneys ELIZABETH STEIN, ESQ. and STEVEN M. WISE, ESQ. (subject to *pro hoc vice* admission) allege as follows:

PRELIMINARY STATEMENT

1. This petition is for a common law writ of habeas corpus pursuant to CPLR Article 70. It is an attempt to extend existing New York common law for the purpose of establishing the legal personhood of Petitioners, chimpanzees known as Hercules and Leo, and granting them immediate release from illegal detention. Common law courts, whose decisions are a part of New York law, have issued writs of habeas corpus for slaves who were not legal persons at the time so that the issue of personhood and the legality of confinement could be resolved. New York statutory and common law do not limit legal personhood to homo sapiens and have already conferred legal

personhood status on non-human domestic animals who are the beneficiaries of trusts. Courts also have routinely extended rights to non-human entities such as corporations. The affidavits submitted in support of this Petition establish that chimpanzees possess such complex cognitive abilities as autonomy, self-determination, self-consciousness, awareness of the past, anticipation of the future and the ability to make choices; display complex emotions such as empathy; and construct diverse cultures. The possession of these characteristics is sufficient to establish common law personhood and the consequential fundamental right to bodily liberty. The accompanying affidavits and memorandum of law establish that extending legal personhood to Petitioners is strongly supported by law, science and history.

2. New York law permits any person unlawfully detained or any person acting on his behalf to seek a writ of habeas corpus and require the detainees to demonstrate the basis for the detention and denial of liberty.

3. This Petition asks this Court to issue a writ recognizing that Hercules and Leo are not legal things to be possessed by Respondents, but rather are cognitively complex autonomous legal persons with the fundamental legal right not to be imprisoned.

4. Within the past eight months, Reba, Charlie and Merlin, three of the seven chimpanzees believed by Petitioner The Nonhuman Rights Project, Inc. ("NhRP") to be imprisoned in New York, have died.

5. While there are grave concerns about the health and well-being of Hercules and Leo, this Petition does not seek their immediate production to the Court or their placement in a temporary home as there are no adequate facilities in close proximity to the Court. However, this Petition seeks a determination forthwith that Hercules and Leo's detention is unlawful and demands their immediate release to a primate sanctuary that is a member of the North American

Primate Sanctuary Alliance ("NAPSA") and that has been selected by NAPSA for the purpose of providing them with the specialized care necessary to satisfy their complex social and physical needs for the duration of their life. As provided in ¶20 below, attached hereto as an Exhibit is an Affidavit from Sarah Baeckler Davis, Executive Director of NAPSA ("Baeckler Davis Affidavit").

Parties

6. Petitioner NhRP is a tax exempt Sec. 501(c)(3) not-for-profit corporation organized under the laws of the State of Massachusetts, with its primary place of business located in Coral Springs, Florida.

7. Petitioners Hercules and Leo are young adult male chimpanzees, who, upon information and belief, are currently being held captive by Respondents at the State University of New York at Stony Brook ("Stony Brook University") in Stony Brook, New York.

8. Upon information and belief, Petitioners Hercules and Leo are being used in locomotive research experiments by the Department of Anatomical Sciences at Stony Brook University.

Venue

9. Petitioners Hercules and Leo are being detained in Suffolk County which is the proper venue for this Petition pursuant to CPLR §7002(b).

Standing

10. Pursuant to CPLR §7002(a) a petition for a writ of habeas corpus may be brought by "one acting on…behalf" of "[a] person illegally imprisoned or otherwise restrained in his liberty within the state."

11. For the past 17 years, Petitioner NhRP has worked to change the status of such nonhuman animals as chimpanzees from legal things to legal persons.

12. NhRP has established a trust pursuant to Section 7-8.1 of the Estates, Powers, and Trusts Law ("EPTL") for the care of Petitioners Hercules and Leo as named beneficiaries. A copy of the trust document is annexed hereto as **"Exhibit A – Trust"**.

13. As named beneficiaries of the trust, Hercules and Leo are legal persons.

Jurisdictional Statement Pursuant to CPLR §7002(c)

14. Upon Petitioner NhRP's best knowledge and belief, the cause or pretense of Hercules and Leo's detention is that they are being used by Respondents in locomotive research.

15. No court or judge of the United States has exclusive jurisdiction to order Hercules and/or Leo's release.

16. Petitioner NhRP asserts that Hercules and Leo are legal persons under the common law of the State of New York and pursuant to EPTL § 7-8.1. Petitioner NhRP will demonstrate that under New York law, Hercules and Leo, as legal persons, are entitled to the common law right to bodily liberty. Petitioner NhRP asserts that Hercules and Leo's detention by Respondents constitutes an unlawful deprivation of their right to bodily liberty and that they are entitled to test the legality of this detention through the issuance of a common law writ of habeas corpus by this Court.

17. No appeal has been taken from any order by virtue of which Petitioner Hercules and Leo are detained.

18. No previous application for the writ asked for herein has been made.

Related Cases

19. In conjunction with the filing of this Petition, NhRP will file similar petitions for writs of habeas corpus in Niagara and Fulton Counties seeking identical relief on behalf of chimpanzees unlawfully detained in those counties.

Hercules and Leo Possesses Attributes Sufficient to Establish Legal Personhood

20. Attached hereto are affidavits setting out necessary facts for the Court to consider and opinions from some of the most renowned primatologists in the world. These affidavits include:

(a) Affidavit of Steven M. Wise, dated December 2, 2013; Attached as Exhibit **"Wise Affidavit"**.

(b) Affidavit of Sarah Baeckler Davis, dated November 26, 2013; Attached as Exhibit **"Baeckler Davis Affidavit"**.

(c) Affidavit of James R. Anderson, dated November 20, 2013; Attached as Exhibit **"Anderson Affidavit"**.

(d) Affidavit of Christophe Boesch, dated November 19, 2013; Attached as Exhibit **"Boesch Affidavit"**.

(e) Affidavit of Jennifer M.B. Fugate, dated November 22, 2013; Attached as Exhibit **"Fugate Affidavit"**.

(f) Affidavit of Mary Lee Jensvold, dated November 21, 2013; Attached as Exhibit **"Jensvold Affidavit"**.

(g) Affidavit of James King, dated November 21, 2013; Attached as Exhibit **"King Affidavit"**.

(h) Affidavit of Tetsuro Matsuzawa, dated November 23, 2013; Attached as Exhibit **"Matsuzawa Affidavit"**.

(i) Affidavit of William C. McGrew, dated November 21, 2013; Attached as Exhibit **"McGrew Affidavit"**.

(j) Affidavit of Mathias Osvath, dated November 19, 2013; Attached as Exhibit **"Osvath Affidavit"**.

(k) Affidavit of Emily Sue Savage-Rumbaugh, dated November 22, 2013; Attached as Exhibit **"Savage-Rumbaugh Affidavit"**.

The Affidavits of Anderson, Boesch, Fugate, Jensvold, King, Matsuzawa, McGrew, Osvath and Savage-Rumbaugh submitted in support of this Petition, as summarized below, demonstrate that chimpanzees possess the complex cognitive abilities that are sufficient for common law personhood and the common law right to bodily liberty, as a matter of liberty, as a matter of equality, or both, as argued in the attached *Memorandum in Support of Petition for Writ of Habeas Corpus*. The most important cognitive ability is "autonomy," which the other cognitive abilities support. These include, but are not limited to, the possession of an autobiographical self, episodic memory, self-determination, self-consciousness, self-knowing, self-agency, referential and intentional communication, language planning, mental time-travel, numerosity, sequential learning, meditational learning, mental state modeling, visual perspective-taking, understanding the experiences of others, intentional action, planning, imagination, empathy, metacognition, working memory, decision-making, imitation, deferred imitation, emulation, innovation, material, social, and symbolic culture, cross-modal perception, tool-use, tool-making, cause-and-effect.

21. Like humans, chimpanzees have a concept of their personal past and future and suffer the pain of not being able to fulfill their needs or move around as they wish; like humans they experience the pain of anticipating never-ending confinement (Affidavit of Mathias Osvath ("Osvath Aff."), at ¶7). Similarly, because chimpanzees have a self-concept, are aware of their past and see a future before them, they can re-experience past pains and pleasures, as well as

anticipate them. This implies that, like humans, they can experience pain over an event that has yet to occur (Osvath Aff. at ¶7; Affidavit of Mary Lee Jensvold ("Jensvold Aff."), at ¶10).

22. Humans and chimpanzees share those brain circuits involved in such complex cognitive abilities related to autonomy such as communication, language, insight, fore-planning, decision-making, the processing of complex social information, emotional learning, and awareness, as well as highly specific cell types involved in such higher-order thinking and brain functions (Affidavit of Tetsuro Matsuzawa ("Matsuzawa Aff."), at ¶¶10-11, ¶14; Affidavit of Jennifer M.B. Fugate ("Fugate Aff."), at ¶14).

23. Both human and chimpanzee brains are similar in terms of how their brains develop and mature, indicating that chimpanzees and humans pass through similar cognitive developmental stages, including the development of communication; both possess the brain asymmetry related to language capacities (Matsuzawa Aff. at ¶10, ¶12).

24. Both humans and chimpanzees exhibit developmental delay, a protracted period of brain development that plays a role in the emergence of such complex cognitive abilities as self-awareness, creativity, fore-planning, working memory, and decision making (Matsuzawa Aff. at ¶11).

25. The autonomous behavior of chimpanzees reflects their ability to choose, and is not based on reflexes, innate behaviors or on any conventional categories of learning such as conditioning, discrimination learning, or concept formation (Affidavit of James King ("King Aff.), at ¶¶11-12).

26. Chimpanzees possess a sense of self that developmentally emerges in a manner similar to humans and is highly stable over time. They recognize themselves in mirrors and on television and can use a flashlight to examine the interiors of their own throats in a mirror. Adult

chimpanzees recognize photographs of themselves as youngsters. The concept of self is an integral part of having goals and desires, intentionally acting to achieve those goals, and knowing whether they have succeeded. This sense of self is an integral part of self-determination and autonomous behavior (Matsuzawa Aff. at ¶15; Affidavit of James Anderson ("Anderson Aff."), at ¶12; Affidavit of Emily Sue Savage-Rumbaugh ("Savage-Rumbaugh Aff."), at ¶15).

27. A critical demonstration of autonomy is that chimpanzees, like humans, not only understand they exist through time, they engage in "mental time travel," which is the ability to recollect the past and plan for the future. "Mental time travel" is enabled through the "episodic system," by remembering events and anticipating the future. So-called "autonoetic consciousness," or "self-knowing consciousness," is a necessary correlate of their possessing an episodic system. It is autonoetic consciousness that gives us our autobiographical sense of self (Osvath Aff. at ¶12).

28. "Numerosity," which is the ability to understand numbers as a sequence of quantities, requires not only sophisticated working memory (in order to keep numbers in mind), but a conceptual understanding of a sequence, which is closely related to "mental time travel" and planning out the right sequence of steps towards a goal, two critical components of autonomy. Chimpanzees excel at understanding sequences of numbers and understand that Arabic symbols ("2", "5", etc.) represent discrete quantities (Matsuzawa Aff. at ¶19).

29. Chimpanzees demonstrate "episodic memory". They remember the "what, where and when" of events that occurred years ago, and can plan to act when they are in a different psychological state from the one in which they are when they plan (Osvath Aff. at ¶¶12-16; Anderson Aff. at ¶16).

30. Chimpanzees can delay a strong desire for a better future reward, generalize a novel tool for future use, select objects for a much-delayed future task, and do all of this while keeping in mind several elements of a situation. Part of being an autonomous individual is self-control. Chimpanzees, like humans, can delay gratification for a future reward; they possess a high level of self-control under many circumstances. Chimpanzees can select a tool they have never seen, guess its function, and use it later. This would be impossible without mentally representing the details of the future event. Chimpanzees plan for future exchanges with humans (Osvath Aff. at ¶14).

31. Chimpanzees demonstrate "self-agency," the ability to distinguish actions and effects caused by oneself from events occurring in the external environment. Self-agency is a fundamental component of autonomy and purposeful behavior. These and many similar findings demonstrate that chimpanzees and humans share the fundamental cognitive processes underlying the sense of being an independent agent (Matsuzawa Aff. at ¶¶16-17).

32. Chimpanzees, like humans, possess material, social, and symbolic culture. Culture is behavior learned by watching others, represents something most individuals do, and is characteristic of a group or community. Culture is based on several high-level cognitive capacities, including imitation (the direct mimicking of bodily actions), emulation (learning about the results of someone else's actions, then achieving those results in another way) and innovation (producing novel ways to do things and combining known elements in new ways) all of which chimpanzees share with humans. All three types of culture presuppose a common set of mental abilities, the most important of which are imitation (which is an important hallmark of self-awareness) and emulation, both of which require the ability to learn by observation. Symbolic culture involves the use of arbitrary abstract symbolic gestures in the wild and language in some captive chimpanzees.

At least 40 unique chimpanzee cultures are spread across Africa (Affidavit of William McGrew ("McGrew Aff."), at ¶¶18-20, ¶¶22-24).

33. When imitated, both chimpanzees and young children tend to "test out" the behavior of the imitator by making repetitive actions and looking to see if the imitator does the same. This "contingency-checking" is similar to how a chimpanzee and toddler test whether an image in a mirror is herself, and is another hallmark of self-awareness. Chimpanzees are capable of "deferred imitation," copying actions they have seen in the extended past, which relies upon even more sophisticated capacities than direct imitation because the chimpanzees must remember the past action of another while replicating those actions in real time (McGrew Aff. at ¶24; Anderson Aff. at ¶¶17-18).

34. Not only do chimpanzees understand they have minds and reflect upon their own thoughts and states of knowledge, they may understand that others have minds, and those other minds know things they don't. That is, they demonstrate "theory of mind." They imitate the actions of others and anticipate others' intentions when watching a human or another chimpanzee try to complete a task. They know what others can and cannot see, and understand the visual perspective of another chimpanzee. They know when another's behavior is accidental or intentional. They use their knowledge of others' perceptions to deceive other chimpanzees and obtain hidden food or to hide themselves from other chimpanzees and humans. In situations where two chimpanzees compete for hidden food they use strategies and counter-strategies to throw each other "off the trail" and obtain the food for themselves. Both language-trained and wild chimpanzees adjust their gestures and gestural sequences to the attention state of the individual they are trying to communicate with, using visual gestures towards an attentive partner and tactile and auditory gestures more often toward inattentive partners. If the partner does not respond, they repeat the

gesture. This complexity in understanding others' minds is evidence that they are aware of their own mind and the minds of others. They have a capacity for empathy in that they can identify with and understand another's situation, feelings, and motives (Matsuzawa Aff. at ¶17; Anderson Aff. at ¶¶13-15; Jensvold Aff. at ¶11; Savage-Rumbaugh Aff. at ¶22, ¶31; Fugate Aff. at ¶14, ¶¶16-17).

35. Chimpanzees use their imaginations to engage in pretend play (Savage-Rumbaugh Aff. at ¶30).

36. Language in humans and chimpanzees is a volitional process that involves creating intentional sounds for the purpose of communication; it is a reflection of autonomous thinking and behavior. Chimpanzees exhibit referential and intentional communication. Their development of their use and understanding of sign language, along with their natural communicative gestures and vocalizations, parallels the development of language in children. This points to deep similarities in the cognitive processes that underlie communication in chimpanzees and humans. Both children and chimpanzees trained in the use of American Sign Language (ASL) and other symbolic methods of communication use their symbols to comment on other individuals and about past and future events. They can purposefully create declarative sentences. They discuss social situations with humans, such as where they want to go, who they want to be with, what they intend to do, what they want to eat, and how they feel; chimpanzees communicate what other chimpanzees want. They can state what they intend to do, in advance of acting, then carry out their stated actions, sometimes coordinating their actions, which requires them to form a thought and hold it in mind at least until agreement is reached. They point and vocalize when they want humans and other chimpanzees to notice something and will adjust their gesturing to insure they are noticed. In tasks requiring cooperation, chimpanzees recruit partners they know to be the most skilled and take

appropriate turns when requesting and giving help to a partner. They communicate intentionally and purposefully when they want to inform naïve chimpanzees about something, such as a predator. Chimpanzee communication is also based on conversational interaction in which each participant exchanges turns communicating in a give-and-take manner and participants respond appropriately to the communicative actions of each other. Chimpanzees understand that conversation involves turn-taking and mutual attention. If they wish to communicate with a human whose back is turned they will make attention-getting sounds. If the human is turned to them, they switch to conversational sign language with few sounds (Jensvold Aff. at ¶¶9-11; Anderson Aff. at ¶15; Savage-Rumbaugh Aff. at ¶¶16 -21, ¶22, ¶24).

37. Chimpanzees demonstrate that they can learn abstract symbols for hundreds of items, events, and locations, without being taught, solely through observation, which they intentionally use in practical situations, remember for decades, and master a syntax (Savage-Rumbaugh Aff. at ¶¶19-21).

38. When humans feel a conversation has broken down, they repeat their utterance and add information to the original utterance. Signing chimpanzees conversing with humans respond the same way, reiterating, adjusting, and shifting the signs they make to create conversationally appropriate rejoinders; their reactions to and interactions with a conversational partner resemble patterns of contingency in conversation, which is a key demonstration of volitional and purposeful communication and thought. ASL-using chimpanzees demonstrate contingent communication with humans at the same level as young children (Jensvold Aff. at ¶11). Similarly, chimpanzees who have learned other forms of symbolic communication monitor the listener and make judgments about what he is understanding in order to proceed with the conversation (Savage-Rumbaugh Aff. at ¶22).

39. Both chimpanzees trained and untrained to engage in signed conversation string together multiple gestures to create gesture sequences. They may combine gestures into long series, within which gestures overlap, be interspersed with bouts of response waiting, or be exchanged back and forth between individuals. Both ASL-trained and wild chimpanzees adjust their gestures and gestural sequences to the attention state of the individual they are trying to communicate with, using visual gestures towards an attentive partner and tactile and auditory gestures more often toward inattentive partners. If the partner does not respond, they repeat the gesture (Jensvold Aff. at ¶11).

40. In a manner similar to children ages two through seven, sign language-trained chimpanzees exhibit a volitional use of language by engaging in "private speech," that is, signing to themselves. Private speech is part of the normal development of communication, self-guidance, self-regulation of behavior, planning, pacing, and monitoring skills and helps control and regulate their emotions and thoughts by focusing them on their own concerns and providing a buffer from external distractions. It is also related to more creative and imaginative play (Jensvold Aff. at ¶¶12-15).

41. "Sequential learning" is the ability to encode and represent the order of discrete items occurring in a sequence. It is critical for speech and language processing, the learning of action sequences, or any task that requires putting items into an ordered sequence. Chimpanzees can count or sum up arrays of real objects or Arabic numerals and display the concepts of ordinality and transitivity (the logic that if A = B and B = C, then A = C) when engaged in numerical tasks, which demonstrates a real understanding of the ordinal nature of numbers. They understand proportions (e.g., 1/2, 3/4, etc). They can learn to name (using a symbol-based computer keyboard) the number, color and type of an object shown on the screen. They can use a computer touch screen

to count from 0 to 9 in sequence. They have counted to 21. They have an understanding of the concept of zero and use it appropriately in ordinal context. They display "indicating acts" (pointing, touching, rearranging) similar to what human children display when counting up a sum. Just as human children touch each item when counting an array of items, chimpanzees do the same thing, demonstrating similarity in the way numbers and sequences are conceptualized in chimpanzees and humans (Matsuzawa Aff. at ¶¶19-20; Savage-Rumbaugh Aff. at ¶¶27-28).

42. Not only do chimpanzees understand numbers and sequences, but their working memory of numbers, that is, their short-term memory and ability to keep several items in mind at the same time, and temporarily store, manipulate and recall numbers, objects, names, etc. compares to that of adult humans. The chimpanzees' extraordinary working memory capability underlies such mental skills as mental representation, attention, and sequencing (Matsuzawa Aff. at ¶20).

43. Chimpanzee social life is cooperative and collaborative. Chimpanzees ostracize chimpanzees who violate social norms. They appear to have moral inclinations, and a level of moral agency that reflects moral imperatives and self-consciousness which represents a purposeful and well-coordinated social system (McGrew Aff. at ¶¶26-27).

44. Chimpanzees demonstrate an awareness of death, which is one of the consequences of self-awareness, as well as compassion, bereavement-induced depression, and an understanding of the distinction between living and non-living, in a manner similar to humans. Chimpanzees, like humans, feel grief and compassion when dealing with mortality (Anderson Aff. at ¶19).

45. Chimpanzees exhibit other capacities that stem from self-awareness. These include "metacognition." This is the ability to reflect upon one's own thoughts and to understand what one does and does not know (Matsuzawa Aff. at ¶15). Chimpanzees possess a capacity for tool-making. This implies complex problem-solving skills and an understanding of means-ends relations and

causation. It requires making choices, often in a specific sequence towards a predefined goal, which is a key aspect of intentional action (chimpanzees generally demonstrate an ability to infer causation). Chimpanzees make and use compound tools that require them to utilize two or more objects towards a single goal, use "tool sets," which requires them to use two or more tools in an obligate sequence to achieve a single goal, and "tool kits," which is a unique set of about 20 different tools chimpanzees use for various functions in their daily lives. This sequencing and mental representation demonstrates intentionality and self-regulation (McGrew Aff. at ¶¶15-21; Anderson Aff. at ¶16; Fugate Aff. at ¶17).

46. Chimpanzees are quite competent at "cross-modal perception." They can take in information in one modality such as vision or hearing, then internally translate that information into another modality. They can also take in symbolically encoded information and translate it into any non-symbolic mode. When shown a picture of an object, they can retrieve that object by touch alone. They can retrieve the correct object by touch when shown only the symbol representing that object. They can match faces, even photographs of faces, to voices, even recordings of voices (Savage-Rumbaugh Aff. at ¶25; Fugate Aff. at ¶¶15-16).

47. Chimpanzees engage in "mediational learning." They are able to "figure out" rules that allow them to solve new problems based on past information which they collate over multiple trials and reflect upon. This requires an ability to compute relationships among a variety of things and events. They understand they are positing predictive or cause-and-effect relationships about tasks they work on and that they have control over what they do and what will happen (Savage-Rumbaugh Aff. at ¶29).

48. As demonstrated in the accompanying expert affidavits, Hercules and Leo are autonomous beings who are entitled to the protections afforded by New York law for legal persons and are entitled to petition this Court for their liberty.

WHEREFORE, Petitioners respectfully demand the following relief:

A. Issuance of the attached writ demanding Respondents demonstrate forthwith the basis for the detention and denial of liberty of Petitioners Hercules and Leo;

B. Upon a determination that Petitioners Hercules and Leo are being illegally detained, ordering their release and transfer forthwith to the primate sanctuary selected by the North American Primate Sanctuary Alliance;

C. Awarding Petitioner NhRP the costs and disbursements of this action; and

D. Granting such other and further relief as this Court deems just and proper.

Dated: December 2, 2013
New Hyde Park, New York

Elizabeth Stein, Esq.

By: ______________________
Attorney for Petitioners
5 Dunhill Road
New Hyde Park, New York 11040
(516) 747-4726

____
Steven M. Wise, Esq.
Subject to *pro hac vice* admission
Attorney for Petitioners
5195 NW 112th Terrace
Coral Springs, FL 33076
(954) 648-9864

VERIFICATION

The undersigned, is an attorney admitted to practice in the courts of New York State, is the attorney of record for the Petitioners The Nonhuman Rights Project, Inc. and Hercules and Leo, in the within action; deponent has read the foregoing Verified Petition and is familiar with the contents thereof; the same is true to the deponent's own knowledge, except as to the matters therein stated to be alleged on information and belief, and as to those matters deponent believes it to be true. This verification is made by deponent and not by the Petitioner The Nonhuman Rights Project, Inc. because the Petitioner does not reside nor maintain its office in the county where your deponent maintains her office. The grounds of deponent's belief as to all matters not stated upon deponent's knowledge are based upon a review of the facts, pleadings and proceedings in this matter, as well as conversations with the Petitioner.

The undersigned affirms that the foregoing statements are true, under the penalties of perjury.

Elizabeth Stein

ELIZABETH STEIN

Sworn to before me this
2nd day of December, 2013

Jodi L Barnes

Notary Public

JODI L. BARNES
Notary Public, State of New York
Qualified in Schoharie County
No. 01BA5006685
Commission Expires Jan. 4, 2015

Exhibit: A. to Verified Petition dated December 2, 2013
The Nonhuman Rights Project, Inc. Trust
dated November 15, 2013 (24-33)

The Nonhuman Rights Project, Inc. Trust for Tommy, Kiko, Hercules and Leo

AGREEMENT made and entered into as of the 15th day of November , 2013, by The Nonhuman Rights Project, Inc. (hereinafter referred to as the "grantor"), at 5195 NW 112th Terrace, Coral Springs, Florida 33076, as grantor, by Bradley Goldberg (hereinafter referred to as the "trustee"), residing at 502 Orienta Avenue, Mamaroneck, New York 10543, as trustee, and by Elizabeth Stein (hereinafter referred to as the "enforcer"), residing at 5 Dunhill Road, New Hyde Park, New York 11040, as enforcer.

WITNESSETH:

The grantor has granted, assigned and transferred, and does hereby grant, assign and transfer to the trustee hereunder, the property set forth in Schedule A attached hereto, to have and to hold the same, and any moneys, securities and other properties which the trustee may, pursuant to any of the provisions hereof, at any time hereafter hold or acquire (all of which is hereinafter collectively referred to as the "Trust Estate"), **In Trust**, to hold, invest and reinvest the Trust Estate, and to collect and receive the income therefrom and, after deducting the expenses of administering the trust hereby created, to hold and dispose of the income and principal of the Trust Estate as hereinafter provided. This trust shall be known as the **The Nonhuman Rights Project, Inc. Trust for Tommy, Kiko, Hercules and Leo**.

ARTICLE ONE: **Beneficiaries**. The trustee is hereby authorized to expend the income and principal of the Trust Estate for the benefit of any or all of the following domestic animals (hereinafter referred to as the "Beneficiaries"): Tommy, an adult male chimpanzee held captive at 3032 State Highway 30, Gloversville, New York; Kiko, an adult male chimpanzee held captive at 2764 Livingston Avenue, Niagara Falls, New York; and Hercules and Leo, two male chimpanzees used in locomotive research experiments being conducted at the State University of New York at Stony Brook. This trust is being created pursuant to New York Estates, Powers and Trusts Law Section 7-8.1, as amended.

ARTICLE TWO: **Disposition of Income and Principal**.

A. The trustee, in the trustee's discretion, may pay for the care, in whole or in part, of any or all of the Beneficiaries during their life from the income and principal of the Trust Estate, as the trustee determines is necessary and/or beneficial to any or all of the Beneficiaries.

B. Any income accrued but not distributed for the benefit of any or all of the Beneficiaries shall be added to the principal of the trust.

C. The grantor is creating this trust to pay for the care, in whole or in part, of any or all of the Beneficiaries and the trustee does not need to consider the interests of the remainderman. The trustee, in the trustee's discretion, may use all of the Trust Estate for the benefit of any or all of the Beneficiaries so that nothing remains when the trust terminates.

D. This trust shall terminate upon the death of the last remaining beneficiary or upon the revocation of the trust by the grantor in accordance with Article Seven of the trust, whichever comes first. In the event the trust terminates upon the death of the last remaining beneficiary, the property remaining in the Trust Estate, if any, shall be paid to the sanctuary in whose care the beneficiary has been entrusted, provided such sanctuary is a member of the North American Primate Sanctuary Alliance. If the last remaining beneficiary is not in the care of such a member sanctuary at the time of his death, the property remaining in the Trust Estate, if any, shall be paid to the grantor. In the event the trust terminates due to revocation by the grantor, the property remaining in the Trust Estate, if any, shall be paid to the grantor.

ARTICLE THREE: Additions to the Trust Estate. The trustee may, but need not, receive, hold, manage and dispose of as part of the Trust Estate and subject to all of the provisions of this Agreement, any additional cash, securities and other properties which the grantor, or any other person, may hereafter validly transfer or set over to the trustee, as trustee of the trust, with written instructions to hold the same under the terms of this Agreement.

ARTICLE FOUR: Successor Trustees.

A. In the event that Bradley Goldberg shall die, resign, fail, or be unable to act as trustee, the Board of Directors of The Nonhuman Rights Project, Inc. shall designate a successor trustee (hereinafter referred to as the "successor trustee"). The successor trustee shall accept such appointment by acknowledged instrument filed with the records of the trust.

B. In the event that the successor trustee shall die, resign, fail, or be unable to act in that capacity, the Board of Directors of The Nonhuman Rights Project, Inc. shall appoint a suitable person to act as the successor trustee. Such person shall accept such appointment by acknowledged instrument filed with the records of the trust.

C. Any and all rights, powers, discretions and duties conferred and imposed under this Agreement upon the trustee are hereby likewise conferred and imposed upon any and all successor trustees.

D. No bond, surety or undertaking of any kind shall be required of the trustee (or successor trustees) in this or any other jurisdiction for the faithful performance of the trustee's duties as such.

ARTICLE FIVE: <u>Trustee Powers</u>. In the administration of the Trust Estate, and the trust hereby created, the trustee shall have the full power and authority, not in limitation but in addition to the ordinary powers of trustees:

A. To hold and retain all or any part of the Trust Estate for so long as the trustee may deem advisable;

B. To keep all or any portion of the Trust Estate in cash uninvested for such period or periods of time as the trustee may deem advisable;

C. To invest, reinvest and change the form of investment in the trustee's uncontrolled discretion. In making or retaining investments, the trustee shall be under no obligation to diversify them;

D. To engage attorneys, accountants, agents, custodians, clerks, investment counsel, and such other persons as the trustee may deem advisable in the administration of the Trust Estate, and to make such payments therefore from the Trust Estate as the trustee may deem reasonable, and to delegate any discretion which the trustee may deem advisable;

E. To exercise all of the trustee's powers and authority, including any discretion conferred in this Agreement, after termination of any trust created herein and until the same is fully distributed.

It is the intention of the grantor that the enumeration of specific powers herein shall not be construed in any way to limit or affect the general powers granted herein.

ARTICLE SIX: Enforcer. Grantor designates Elizabeth Stein to be the enforcer of the trust (hereinafter referred to as the "enforcer") who shall have the full power and authority, not in limitation but in addition to the ordinary powers of the enforcer, to enforce the terms of the trust, if necessary. In the event that Elizabeth Stein shall die, resign, fail, or be unable to act in that capacity, the Board of Directors of The Nonhuman Rights Project, Inc. shall appoint a suitable person to act as the successor enforcer. Such person shall accept such appointment by acknowledged instrument filed with the records of the trust. Any and all rights, powers, discretions and duties conferred and imposed under this Agreement upon the enforcer are hereby likewise conferred and imposed upon any and all successor enforcers.

ARTICLE SEVEN: Trust is Revocable. The grantor reserves the right, at any time and without the consent or approval or any person, (a) by an instrument signed by the grantor and delivered to the trustee, to revoke the trust hereby created in whole or in part, without the consent of any other person, or (b) by a like instrument signed and acknowledged by the grantor and delivered to the trustee, to amend this agreement, provided that the duties, responsibilities and rate of compensation of the trustee shall not be altered without the trustee's written consent. The trustee shall be under no duty to inquire into the circumstances surrounding any revocation or amendment (including whether the revocation or amendment was procured by undue influence), except to be satisfied that the grantor is competent to execute the instrument delivered to the trustee.

ARTICLE EIGHT: **New York Law Governs**. The trust hereby established shall be a New York trust and shall be administered in accordance with the laws of said State. This Agreement shall be construed and the validity and effect of the provision hereof shall be determined in accordance with said laws.

ARTICLE NINE: **Language**. As used in this Agreement, words in the masculine, feminine or neuter gender shall be considered to be the appropriate gender as the context and circumstances require and words in the singular or plural shall be considered to be the appropriate number as the context and circumstances require.

ARTICLE TEN: **Acceptance by Trustee and Enforcer**. The trustee and enforcer accept the trust established by this Agreement and agree to execute the same in accordance with its true intent and meaning.

ARTICLE ELEVEN: **Signatures.** The trust may be signed in counterparts. The signatures, and notarization thereof, of the grantor, trustee and enforcer together constitute a valid acknowledgment of the trust.

Schedule A

Assets in Trust

$5,000 Cash

IN WITNESS WHEREOF, Bradley Goldberg, as trustee, hereunto subscribes his name as of November 15 , 2013.

Bradley Goldberg, Trustee

STATE OF New York
: ss.:
COUNTY OF Westchester

On the 15 day of November , in the year 2013, before me, the undersigned, a Notary Public in and for said state, personally appeared **Bradley Goldberg**, personally known to me or proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity as trustee and that by his signature on the instrument, the person or the entity upon behalf of which the person acted, executed the instrument.

Notary Public
JOHN A. DIONISIO
Notary Public, State of New York
Qualified in Westchester County
No. 01DI4804045
Commission Expires Sept. 30, 2014

IN WITNESS WHEREOF, Elizabeth Stein, as enforcer, hereunto subscribes her name as of November , 2013.

Elizabeth Stein

Elizabeth Stein, Enforcer

STATE OF New York)
: ss.:
COUNTY OF Nassau)

On the 15th day of November , in the year 2013, before me, the undersigned, a Notary Public in and for said state, personally appeared **Elizabeth Stein**, personally known to me or proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that she executed the same in her capacity as enforcer and that by her signature on the instrument, the person or the entity upon behalf of which the person acted, executed the instrument.

Judi Schultz

Notary Public

JUDI SCHULTZ
Notary Public - State of New York
NO. 01SC6189055
Qualified in Nassau County
My Commission Expires 06/23/2016

IN WITNESS WHEREOF, Steven M. Wise, President of The Nonhuman Rights Project, Inc., as grantor, hereunto subscribes his name as of November 15, 2013.

Steven M. Wise, President
The Nonhuman Rights Project, Inc., Grantor

STATE OF Florida)
: ss.:
COUNTY OF Broward)

On the 15 day of November, in the year 2013, before me, the undersigned, a Notary Public in and for said state, personally appeared **Steven M. Wise, President of The Nonhuman Rights Project, Inc.,** personally known to me or proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity as grantor and that by his signature on the instrument, the person or the entity upon behalf of which the person acted, executed the instrument.

Notary Public

NOTARY PUBLIC-STATE OF FLORIDA
Ivy Cantella
Commission # EE026837
Expires: SEP. 19, 2014
BONDED THRU ATLANTIC BONDING CO., INC.
9/19/14

Exhibit: B. to Verified Petition dated December 2, 2013
Affidavit of Steven M. Wise sworn to December 2, 2013 (34-36)

STATE OF NEW YORK
SUPREME COURT COUNTY OF SUFFOLK

In the Matter of a Proceeding under Article 70 of the CPLR for a Writ of Habeas Corpus,

THE NONHUMAN RIGHTS PROJECT, INC., on behalf of HERCULES and LEO,

Petitioners,

v.

SAMUEL L. STANLEY JR., M.D., as President of State University of New York at Stony Brook a/k/a Stony Brook University and STATE UNIVERSITY OF NEW YORK AT STONY BROOK a/k/a STONY BROOK UNIVERSITY,

Respondents.

AFFIDAVIT OF STEVEN M. WISE

Index No.:

STATE OF NEW YORK)
) ss:
COUNTY OF Albany)

Steven M. Wise, being duly sworn, deposes and says:

1. My name is Steven M. Wise. I am the President of the Petitioner, The Nonhuman Rights Project, Inc. ("NhRP").

2. I submit this affidavit in support of Petitioners NhRP, on behalf of Hercules and Leo, for a writ of habeas corpus.

3. On June 26, 2013, The National Institutes of Health accepted Recommendations EA1, 2, 4, 5, 6, 7, and 8 of "The Working Group on the Use of Chimpanzees in NIH-Supported Research within the Council of Councils' Recommendation," *Announcement of Agency Decision: Recommendations on the Use of Chimpanzees in NIH-Supported Research*, dated June

26,2013,http://dpcpsi.nih.gov/council/pdf/NIH_response_to_Council_of_Councils_recommendations_62513.pdf, annexed hereto as **"Exhibit A"**.

4. On September 28, 2005, Salvador, Brazil Judge Edmundo Lucio da Cruz issued his decision in the case of *In favor of Suica, a Chimpanzee*, No. 833085-3/2005. A copy of the decision in Portuguese is annexed hereto as **"Exhibit B"**. An English translation performed by Legal Translation Systems of New York is annexed hereto as **"Exhibit C"**.

Steven M. Wise

Steven M. Wise

Sworn to before me
This 2nd day of December, 2013

Jodi L Barnes

Notary Public

JODI L. BARNES
Notary Public, State of New York
Qualified in Schoharie County
No. 01BA5006685
Commission Expires Jan. 4, 2015

STATE OF NEW YORK)
) ss:
COUNTY OF Albany)

On the 2nd day of December, in the year 2013 before me, the undersigned, a notary public in and for said state, personally appeared Steven M. Wise, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her capacity, and that by his/her signature on the instrument, the individual, or the person upon behalf of which the individual(s) acted, executed the instrument, and that such individual made such appearance before me the undersigned in the County of Albany and the State of New York.

Jodi L Barnes
Notary Public

My Commission Expires: 1/4/15

JODI L. BARNES
Notary Public, State of New York
Qualified in Schoharie County
No. 01BA5006685
Commission Expires Jan. 4, 2015

Exhibit: A. to Affidavit of Steven M. Wise sworn to December 2, 2013 Printout of "Announcement of Agency Decision: Recommendations on the Use of Chimpanzees in NIH-Supports Research" dated June 26, 2013 (37-73)

Announcement of Agency Decision:

Recommendations on the Use of Chimpanzees in NIH-Supported Research

Summary

This notice announces the responses to public comments and decisions of the National Institutes of Health (NIH) regarding the use of chimpanzees in research. In February 2012, the NIH charged a working group of the Council of Councils, a federal advisory committee, to provide advice on implementing recommendations made by the Institute of Medicine (IOM) Committee on the Use of Chimpanzees in Biomedical and Behavioral Research in its 2011 report, *Chimpanzees in Biomedical and Behavioral Research: Assessing the Necessity*. On January 22, 2013, the NIH Council of Councils (Council) accepted recommendations presented by the Working Group on the Use of Chimpanzees in NIH-Supported Research and provided these recommendations to the NIH. The NIH subsequently issued a request for comments to obtain broad public input on the 28 Council recommendations that the NIH is considering as it determines how to implement the IOM Committee's recommendations. This notice summarizes the comments received in response to the request for comments and announces the agency's decisions with respect to the Council recommendations. The NIH plans to prepare subsequent procedural guidance and technical assistance, as appropriate, to implement some of these decisions. Investigators should continue to follow existing guidance (see NOT-OD-12-025 at http://grants.nih.gov/grants/guide/notice-files/NOT-OD-12-025.html) regarding the submission of applications, proposals, or protocols for research involving chimpanzees until the NIH announces the procedural guidance.

For further information, contact the Division of Program Coordination, Planning, and Strategic Initiatives, Office of the Director, National Institutes of Health at dpcpsi@od.nih.gov.

I. Background

The use of animals in biomedical and behavioral research has enabled scientists to identify new ways to treat illness, extend life, and improve health and well-being. Chimpanzees are our closest relatives in the animal kingdom, providing exceptional insights into human biology and requiring special consideration and respect. Although used very selectively and in limited numbers for biomedical research, chimpanzees have served an important role in advancing human health. However, new methods and technologies developed by the biomedical research community have provided alternatives to the use of chimpanzees in several areas of research.

In December 2010, the National Institutes of Health (NIH) commissioned a study by the Institute of Medicine (IOM) to assess whether chimpanzees are or will be necessary for NIH-funded biomedical and behavioral research. On December 15, 2011, the IOM Committee on the Use of Chimpanzees in Biomedical and Behavioral Research (IOM Committee) issued its findings along with a primary recommendation that a set of principles and criteria guide the use of chimpanzees in biomedical and behavioral research in its report, *Chimpanzees in Biomedical and Behavioral Research: Assessing the Necessity* (http://iom.edu/Reports/2011/Chimpanzees-in-Biomedical-and-Behavioral-Research-Assessing-the-Necessity.aspx). The three principles that the IOM Committee proposed to assess the use of chimpanzees in current and potential future biomedical and behavioral research supported by the NIH were:

1. The knowledge gained must be necessary to advance the public's health;

2. There must be no other research model by which the knowledge could be obtained, and the research cannot be ethically performed on human subjects; and

3. The animals used in the proposed research must be maintained either in ethologically appropriate physical and social environments or in natural habitats.

The IOM Committee also developed two separate sets of criteria for assessing the necessity of using chimpanzees for biomedical research and for comparative genomics and behavioral research. Based on its deliberations, the IOM Committee concluded that, "While the chimpanzee has been a valuable animal model in past research, most current use of chimpanzees for biomedical research is unnecessary... ."

The IOM Committee considered case studies of current chimpanzee use in research to provide examples of its vision for applying its criteria. Based on these case studies, the IOM Committee concluded that the use of chimpanzees might continue to be required for some ongoing research on monoclonal antibody therapies; comparative genomics; and social and behavioral factors that affect the development, prevention, or treatment of disease. The IOM Committee was unable to reach consensus on the necessity of using chimpanzees to develop a prophylactic hepatitis C virus vaccine. It also acknowledged that new, emerging, or reemerging diseases could present challenges that might require the use of chimpanzees.

In December 2011, the NIH accepted the recommendations in the IOM Committee's report (http://www.nih.gov/news/health/dec2011/od-15.htm) and issued an interim agency policy in notice NOT-OD-12-025 (http://grants.nih.gov/grants/guide/notice-files/NOT-OD-12-025.html). This notice indicated that the NIH would not fund any new or other competing projects (renewal and revisions) for research involving chimpanzees and would not allow any new projects to go forward with NIH-owned (i.e., chimpanzees directly owned by the agency) or -supported research chimpanzees (i.e., chimpanzees not owned by the NIH but supported through NIH awards, such as grants and contracts). However, the NIH permitted currently funded research involving chimpanzees to continue. The policy remains in effect until the NIH issues a future notice in the NIH Guide for Grants and Contracts regarding research applications, proposals, and protocols requesting to use chimpanzees in accordance with the IOM Committee's recommendations.

The NIH established the Working Group on the Use of Chimpanzees in NIH-Supported Research (Council Working Group) within the Council of Councils, a federal advisory committee, on February 1, 2012, to provide advice on implementing the IOM Committee's recommendations and to consider the size and placement of the active and inactive populations of NIH-owned or -supported research chimpanzees. Research-active chimpanzees are currently used for research, whereas research-inactive chimpanzees are not currently used in research protocols but might be used for new projects that meet the IOM principles and criteria. The NIH charged the Council Working Group with: (1) developing a plan for implementation of the IOM's guiding principles and criteria, (2) analyzing currently active NIH-supported research using chimpanzees to advise on which studies currently meet the principles and criteria defined by the IOM report and advising on the process for closing studies if any do not comply with the IOM recommendations, (3) advising on the size and placement of active and inactive populations of NIH-owned or -supported chimpanzees that may need to be considered as a result of implementing the IOM recommendations, and (4) developing a review process for considering whether potential future use of the chimpanzee in NIH-supported research is scientifically necessary and consistent with the IOM principles.

In developing its recommendations, the Council Working Group considered the scientific use of chimpanzees in research currently supported by the NIH and public comments received in response to a previous request for information (see summary at http://dpcpsi.nih.gov/council/working_group.aspx#Summary) in NOT-OD-12-052 (http://grants.nih.gov/grants/guide/notice-files/not-od-12-052.html) dated February 10, 2012, and a Federal Register notice dated February 23, 2012 (http://www.gpo.gov/fdsys/pkg/FR-2012-02-23/pdf/2012-4269.pdf); obtained advice from external experts; and visited several facilities that house and care for chimpanzees. The Council Working Group's efforts culminated in a report containing 28 recommendations, available at http://dpcpsi.nih.gov/council/pdf/FNL_Report_WG_Chimpanzees.pdf, which the group submitted to the NIH Council of Councils on January 22, 2013. The NIH Council of Councils accepted these recommendations and provided them as advice to the NIH on January 22, 2013. The NIH subsequently issued a request for comments in the Federal Register, available at http://www.gpo.gov/fdsys/pkg/FR-2013-02-05/html/2013-02507.html, and the NIH Guide for Grants and Contracts, available at http://grants.nih.gov/grants/guide/notice-files/NOT-OD-13-026.html, to obtain broad public input on the 28 Council recommendations.

II. Public Comments, NIH Responses to these Comments, and NIH Decisions Regarding the Council Recommendations

This section lists the recommendations made by the Council of Councils, summarizes the public comments that the NIH received, and provides the agency's responses and decisions with respect to the recommendations. More than 12,500 individuals submitted comments in response to the request for comments issued in the NIH Guide for Grants and Contracts and the Federal Register. The discussion of comments below provides an overview of responses received during the public comment period and is not intended to capture the details of every comment. Responses received during the public comment period are available for public inspection at the NIH On-site FOIA Library, Building 31, Room 5B35, 9000 Rockville Pike, Bethesda, MD 20892, which is open 10:00 a.m. to 4:00 p.m. Monday through Friday and is closed on federal holidays. Those who plan to view the records must contact the NIH Freedom of Information Office at nihfoia@mail.nih.gov in advance.

A. Ethologically Appropriate Physical and Social Environments

Throughout its report, the IOM Committee used the term "ethologically appropriate physical and social environments" as a central principle for housing research-active and research-inactive chimpanzees. Because the IOM did not define this term, the Council defined "ethologically appropriate physical and social environments" as "captive environments that do not simply allow but also, importantly, promote a full range of behaviors that are natural for chimpanzees." The Council offered 10 recommendations on ethologically appropriate physical and social environments. This section provides these 10 recommendations, a summary of public comments on these recommendations, and the NIH responses to the comments and decisions regarding the Council recommendations.

The NIH believes that it is important to describe the guidance currently used for the housing and care of NIH-owned or -supported research chimpanzees. Facilities housing chimpanzees owned by the NIH or used in NIH-supported research must comply with the recommendations in the *Guide for the Care and Use of Laboratory Animals, Eighth Edition* (http://grants.nih.gov/grants/olaw/Guide-for-the-Care-and-Use-of-Laboratory-Animals.pdf), an internationally accepted primary reference on animal care and use whose contents form the foundation for the development of comprehensive animal care and use programs. The *Guide* provides: (1) a framework for institutional policies, management, and oversight of institutional animal care and use programs; (2) recommendations for housing, environmental enrichment, and animal well-being; (3) recommendations on space and social housing for nonhuman primates and the physical characteristics of animal facilities, including special facilities for behavioral studies and imaging; and (4) guidance on veterinary care and maintaining the health and well-being of laboratory animals. The *Guide* also addresses the regulatory requirements that govern animal research activities in the United States, including the federal Animal Welfare Act and regulations and the Public Health Service Policy on Humane Care and Use of Laboratory Animals.

Any Council recommendations accepted by the NIH will not replace the body of laws, regulations, and policies that already govern the care and housing of the NIH research chimpanzees but, instead, will supplement existing policies.

1. Size of Social Groupings (Recommendation EA1)

Recommendation EA1 states: "Chimpanzees must have the opportunity to live in sufficiently large, complex, multi-male, multi-female social groupings, ideally consisting of at least 7 individuals. Unless dictated by clearly documented medical or social circumstances, no chimpanzee should be required to live alone for extended periods of time. Pairs, trios, and even small groups of 4 to 6 individuals do not provide the social complexity required to meet the social needs of this cognitively advanced species. When chimpanzees need to be housed in groupings that are smaller than ideal for longer than necessary, for example, during routine veterinary examinations or when they are introduced to a new social group, this need should be regularly reviewed and documented by a veterinarian* and a primate behaviorist.

"*In this context, the Working Group defines a "veterinarian" as a licensed, graduate veterinarian with demonstrated expertise in the clinical care and welfare of nonhuman primates (preferably chimpanzees) and who is directly responsible for the routine clinical care of the animal(s) in question."

Comments: A large number of commenters supported Recommendation EA1. Many believed that implementing this recommendation would enable facilities to replicate the social environments of chimpanzees in the wild or in sanctuaries. Others noted that ethologically appropriate housing conditions could make chimpanzees a more valuable research model and enhance the validity of results derived from research using them by enabling chimpanzees to express more fully species-appropriate behaviors.

Other commenters expressed concern that the Council recommended arbitrary standards instead of recommending housing conditions that target such outcomes as chimpanzee physical and mental well-being. For example, a number of commenters noted that elderly or infirm chimpanzees might benefit from long-term housing in smaller groups to accommodate their individual medical or social needs.

A large number of commenters favored social groups of at least 7 chimpanzees, with rare exceptions for single or pair housing. Some stated that 7 chimpanzees might be too few for a social group and recommended that group sizes be similar to those in the wild, which, according to commenters, include more than 7 chimpanzees. Other commenters supported the recommendation to house chimpanzees in groups of at least 7 members in theory but indicated that captive chimpanzees might not have the complete set of social skills needed to function safely in larger groups.

A few commenters questioned the scientific basis for the recommended group size of at least 7 animals. Some stated that the average party size of wild chimpanzee groups is more than 7 members. Others pointed to studies that document group sizes as small as 3 or 4 members and recommended that the NIH determine group size based on individual chimpanzee behavioral characteristics, existing social group composition and compatibility, and the professional judgment of chimpanzee behaviorists or veterinarians familiar with the animals. These commenters agreed on the importance of achieving a balance between the needs of social groupings and individual chimpanzees. Some commenters did not support the recommendation to house chimpanzees in social groups that have fewer than 7 animals under certain circumstances, even with proper documentation of the need for such conditions by a veterinarian and primate behaviorist. These commenters wanted more details concerning the "clearly documented medical or social circumstances" and "extended periods of time" that would warrant smaller group sizes. Others stated that research chimpanzees should never be housed singly or in pairs or should never be housed in such conditions for more than a week. It was also suggested that veterinarians are not sufficiently sensitive to chimpanzees' psychological needs to assess their suitability for group versus individual housing. A few commenters recommended requiring consultation with a behavioral primatologist to determine whether a plan to house chimpanzees singly or in pairs is appropriate. Others wondered why the Council defined "veterinarian" but not "primate behaviorist" and suggested that the NIH define this term.

Response: The NIH accepts Recommendation EA1. We agree that chimpanzees should have the opportunity to live in sufficiently large and complex groups of 7 chimpanzees or more. Unless compelling factors prevent social housing, the chimpanzees owned or supported by the NIH already live in compatible social groups of varying sizes depending on the individual chimpanzee characteristics, the facility, and the nature of the research conducted, if any. We also believe that housing chimpanzees in larger groups has the potential to offer greater social complexity and more environmental stimuli than housing them in smaller groups. At the same time, the agency believes that chimpanzee facilities should evaluate individual chimpanzees to determine their suitability for successful integration into larger social groups. We agree with the Council recommendation that facility staff knowledgeable about chimpanzee well-being (i.e., veterinarians and primate behaviorists) are well-positioned to determine a chimpanzee's suitability for group versus single housing based on that chimpanzee's best interests. The agency disagrees with the comment that veterinarians are not sufficiently sensitive to chimpanzees' psychological needs to make such determinations.

The NIH believes that the recommendation is sufficiently flexible and permits facilities to adjust the sizes of research chimpanzee social groups as necessary, as long as these facilities support any downward adjustments with proper documentation and regular reviews by a veterinarian and a primate behaviorist. Experts in chimpanzee well-being, such as primate behaviorists and veterinarians, currently use their professional judgment to balance the needs of individual chimpanzees with those of chimpanzee social groups. The agency expects that facilities will continue to do so.

In the context of this recommendation, the NIH defines a "primate behaviorist" to include a behavioral scientist knowledgeable in primate behavior and socialization requirements.

2. Primary Living Space and Climbing Height (Recommendations EA2 and EA4)

Recommendation EA2 states: "The density of the primary living space of chimpanzees should be at least 1,000 ft^2 (93 m^2) per individual. Therefore, the minimum outdoor enclosure size for a group of 7 animals should be 7,000 ft^2 (651 m^2)."

Comments: A large number of commenters who discussed Recommendation EA2 supported this recommendation. Some commenters emphasized that the amount of space recommended is the minimum area needed, and larger enclosures that more closely replicate the amount of space available to chimpanzees in the wild (suggestions ranged from 2,000 ft^2 to several acres) are preferable. Other commenters encouraged the NIH to identify data in the scientific literature on the appropriate area for chimpanzee housing.

In contrast, several commenters argued that the recommended 1,000 ft^2 area is arbitrary and unnecessary, is not based on or is contrary to the published literature, and does not accurately reflect the opinions of some of the experts consulted by the Council Working Group. Several commenters pointed out that certain publications cited by the Council Working Group pertain to gorillas or to spaces smaller than 1,000 ft^2. In the absence of sufficient supporting scientific evidence, these commenters did not believe that larger housing environments would improve chimpanzee well-being. Others suggested that rather than establishing minimum space requirements, the NIH should consider the complexity and quality of the environment, including the opportunity for chimpanzees to take temporary refuge from other members of their group.

Commenters also expressed concerns about whether any facility could meet the proposed space recommendation; some asserted that the federal sanctuary system does not provide this amount of space to all of its chimpanzees. In general, these commenters were concerned that the recommendation would set a bar that is too high for research facilities to meet as a way to ban the use of chimpanzees in NIH-supported research. A suggestion was that research facilities might satisfy this recommendation by rotating chimpanzees between smaller and larger enclosures every few weeks.

Several commenters, including some who supported the recommendations on ethologically appropriate environments and some who did not, were concerned about the construction costs for facilities to comply with the recommendation and the recommendation's inflexible specifications. A few commenters suggested tactics to minimize the costs of upgrading primate research facilities, including adapting current facilities so that they could be used as sanctuaries at a later time. Others suggested expanding the existing federal sanctuary system, arranging with other existing sanctuaries to house NIH-owned chimpanzees, or moving all NIH-owned chimpanzees to privately owned locations rather than NIH-supported institutions.

Response: The NIH does not accept Recommendation EA2. Although the NIH agrees that sufficient square footage is needed for chimpanzees to travel, patrol, coexist in social groups of 7 or more members, and sometimes separate from others, the agency is concerned about the lack of scientific consensus on the recommended square footage and is especially concerned about whether the published literature supports 1,000 ft^2 per chimpanzee. We agree that the scientific literature on ethologically appropriate physical and social environments for captive chimpanzees appears to be scant. However, determining the appropriate housing space density is important because, according to this recommendation, the amount of space should increase linearly with the number of chimpanzees housed in the area (see Recommendation EA2) and because spaces of this size might be costly to construct. We also note that the Association of Zoos and Aquariums (AZA) and the Global Federation of Animal Sanctuaries recommend space densities that differ from each other and from the one in Recommendation EA2. In addition, the area recommended by these other groups does not scale linearly with the number of chimpanzees.

We agree with commenters that constructing spaces offering 1,000 ft^2 per chimpanzee might be difficult and costly and would likely require substantial government funding. We appreciate the examples given of alternative ways to provide the recommended square footage, such as rotating chimpanzees into larger enclosures on a regular basis, and other suggestions to conserve costs.

We recognize the diligence of the Council Working Group in defining and recommending parameters for the new concept of "ethologically appropriate." However, because of concerns about the scientific basis for this recommendation and the expected costs of implementing it, the agency will review the space density requirements with respect to the promotion of species-appropriate behavior.

Recommendation EA4 states: "Chimpanzees should have the opportunity to climb at least 20 ft (6.1 m) vertically. Moreover, their environment must provide enough climbing opportunities and space to allow all members of larger groups to travel, feed, and rest in elevated spaces."

Comments: A large number of commenters who responded to this topic agreed with Recommendation EA4. A few commenters indicated that the NIH should provide natural climbing structures (e.g., trees) that allow more than 1 chimpanzee to climb or descend at the same time and to rest on multiple tiers of the structures. Others suggested that the NIH specify the types of climbing structures that facilities must provide (e.g., trees, playground equipment, ropes, and vines) and require facilities to place climbing structures far enough from walls to prevent chimpanzees from jumping out of open-air housing areas.

Other commenters expressed concern that this recommendation was too specific, research supporting the 20 ft climbing height is lacking, and the published literature cited by the Council Working Group supports structures that are closer to 10 ft than 20 ft high. Others noted that the ideal climbing height should depend on the habitat, which varies among chimpanzees in the wild (i.e., forest-dwelling chimpanzees spend more time off the ground than those living in savanna or woodland environments). These commenters and others encouraged the NIH to require facilities to provide climbing opportunities that promote species-specific behavior and accommodate the needs of individual chimpanzees, including physically challenged chimpanzees that require lower structures, rather than attempting to replicate specific aspects of forested environments.

Response: The NIH accepts Recommendation EA4. The recommended structures offer environmental complexity and encourage species-appropriate behaviors, including foraging, nesting, ranging, interacting, exercising, and separating from social groups. The NIH disagrees with commenters' suggestion to reduce or remove the recommended climbing height or not to require facilities to provide climbing opportunities. Although some chimpanzees in savanna or woodland environments might not have access to natural structures that are 20 ft high, implementing this recommendation will provide opportunities for species-appropriate behavior, environmental complexity, and interacting with or separating from group members. The agency notes that some facilities already offer apparatus that is at least 20 ft high for certain populations of captive chimpanzees.

3. Environmental Complexity, Nutrition, and Enrichment (Recommendations EA3, EA5–7)

Recommendation EA3 states: "Chimpanzees must be housed in environments that provide outdoor access year round. They should have access to natural substrates, such as grass, dirt, and mulch, to enhance environmental complexity."

Comments: A large number of commenters on Recommendation EA3 agreed with it or stated that its provisions serve as minimum requirements. Many indicated that natural substrates mimic wild conditions. A suggestion was to conduct research on the optimal composition of the natural substrates. Others indicated that using more durable synthetic materials instead of natural substrates could enhance environmental complexity.

Some commenters believed that the recommendation does not adequately address key elements of chimpanzees' natural environment, including trees, rocks, fresh water, and structures for exercise. Others argued that the NIH should also require facilities to provide shelter from the outdoors, access to sleeping dens, and the freedom to move to and from an indoor enclosure. Some noted that chimpanzees accustomed to artificial substrates, such as concrete floors, might not be comfortable with natural substrates and might need an acclimation period to become accustomed to the new environment. A few commenters wondered why the Council Working Group did not recommend dome-type structures, noting that the IOM Committee had described these structures as ethologically appropriate. Others expressed concern that this recommendation prohibits the use of synthetic structures and material.

Response: The NIH accepts Recommendation EA3 and believes that research chimpanzees need year-round access to natural substrates and the outdoors to enhance their environmental complexity. We believe that the recommendation does not need to list all possible natural substrates because such a list could not be exhaustive and would be unnecessarily prescriptive. We do not interpret the recommendation as precluding the use of synthetic materials (e.g., non-natural flooring) and structures (e.g., geodesic domes) but, instead, as ensuring that chimpanzees have access to various natural substrates intended to enhance their environment. The agency believes that Recommendation EA3 does not prevent facilities from accommodating the needs of chimpanzees that are accustomed to concrete flooring and have had limited prior exposure to natural substrates.

The NIH interprets this recommendation as calling for outdoor access without excluding the provision of indoor space. The NIH already requires facilities housing NIH research chimpanzees to comply with the *Guide for the Care and Use of Laboratory Animals, Eighth Edition* (http://grants.nih.gov/grants/olaw/Guide-for-the-Care-and-Use-of-Laboratory-Animals.pdf) and the federal Animal Welfare Act and regulations. These standards require that facilities provide appropriate sheltered housing facilities necessary to protect the animals from extreme weather and to provide for their health and well-being.

Recommendation EA5 states: "Progressive and ethologically appropriate management of chimpanzees must include provision of foraging opportunities and of diets that are varied, nutritious, and challenging to obtain and process."

Comments: Commenters generally supported Recommendation EA5. However, some commenters believed that the NIH should specify the frequency of feeding and types of food that facilities must provide, require facilities to feed chimpanzees a diet that is natural or tailored to their health needs, and make all necessary nutrients available. Others recommended specific strategies for ensuring that chimpanzees are challenged when they collect food.

Response: The NIH accepts Recommendation EA5 and disagrees with the requested changes to this recommendation. We believe that dictating types of food, nutrients, feeding modalities, and feeding frequency for research chimpanzees would be overly prescriptive. Facilities that house research chimpanzees are in the best position to understand the specific health and dietary needs and preferences of the chimpanzees they house.

Recommendation EA6 states: "Chimpanzees must be provided with materials to construct new nests on a daily basis."

Comments: A large number of commenters who responded to this topic agreed with this recommendation. Some believed that the NIH should specify the types of materials that facilities should make available and the need to refresh these materials daily. Some identified the types of nesting materials, both natural and synthetic (e.g., blankets, newspaper, and other nondurable, nontoxic substances), that facilities should provide. A suggestion was that the NIH implement this recommendation only for chimpanzees that live primarily indoors because providing new, daily nesting materials would be unnecessary for chimpanzees with unlimited outdoor access. Others were concerned that the costs of materials and staff time required to provide new nesting materials daily would be prohibitive for facilities. Some commenters argued that some of the references cited to support this recommendation focused on other nonhuman primates (not chimpanzees) or did not mention nesting and that one reference was to a study in which a facility provided nesting materials daily for only a few days and not on a long-term basis. Others recommended that the types of nesting materials that are appropriate for captive chimpanzees be determined by research.

Response: The NIH accepts Recommendation EA6. We disagree with commenters' suggestion to specify the types of materials that facilities must provide for nest construction or to require the daily provision of fresh materials. Research chimpanzee facilities are in the best position to gauge the kinds of nesting materials preferred by their chimpanzees and when these materials need to be refreshed or supplemented. Facilities that offer unlimited access to an outdoor environment that makes nest-building materials (e.g., trees, foliage, and grasses) readily available might already satisfy this recommendation. The NIH does not believe that research to determine the appropriate types of nesting materials for captive chimpanzees needs to be conducted and published before the NIH accepts this recommendation; doing so would unnecessarily delay the recommendation's implementation.

Recommendation EA7 states: "The environmental enrichment program developed for chimpanzees must provide relevant opportunities for choice and self-determination."

Comments: A large number of commenters who responded to this topic strongly supported this recommendation as a way to ensure both the complexity of the captive environment and chimpanzees' ability to exercise volition with respect to activity, social groupings, and other opportunities. A suggestion was to revise the wording of Recommendation EA7 to remove "self-determination" and provide more specifics on the choices that chimpanzees should be able to exercise, such as to select their social groups. It was noted that chimpanzee experts could help refine this recommendation to include, for example, a list of possible enrichment activities, such as puzzles, games, devices for retrieving foods, and perhaps touch-screen technologies, which might also be useful for certain types of noninvasive behavioral research. Another suggestion was for the NIH to implement this recommendation to the fullest extent possible without compromising human safety.

Response: The NIH accepts Recommendation EA7. We do not believe that the recommendation requires additional specificity because this could have the unintended consequence of omitting important activities or opportunities that would otherwise satisfy this recommendation.

4. Management (Recommendations EA8–EA10)

Recommendation EA8 states: "Chimpanzee management staff must include experienced and trained behaviorists, animal trainers, and enrichment specialists to foster positive human–animal relationships and provide cognitive stimulation. Given the importance of trainer/animal ratios in maintaining trained behaviors, a chimpanzee population of 50 should have at least 2 dedicated staff members with this type of expertise. Positive reinforcement training is the only acceptable method of modifying behaviors to facilitate animal care and fulfillment of management needs. Training plans should be developed for each animal, and progress toward achieving established benchmarks should be documented."

Comments: A large number of commenters agreed with Recommendation EA8. Agreement was almost uniform concerning the use of positive reinforcement for the stated purposes. However, a few commenters disagreed that positive reinforcement training alone would be sufficient for the stated purposes and suggested permitting the use of operant conditioning training and the use of timeouts, for example, to help modify behaviors that cannot be modified through positive reinforcement.

Others raised several additional concerns. Some suggested that the NIH specify the qualifications of the behaviorists mentioned in the recommendation, including an advanced degree (e.g., a Ph.D.) with several years of experience and/or experience with chimpanzees in both the wild and captivity. Suggestions for staff recruitment and retention included creating a chimpanzee husbandry internship, developing retention incentives for trained staff to minimize turnover, and having senior staff members mentor new employees. Another recommendation was that facilities conduct background checks to ensure that applicants for jobs at chimpanzee facilities have not violated laws, such as the federal Animal Welfare Act and regulations or NIH policies. Other commenters believed that 2 staff members would not be sufficient to care for 50 research chimpanzees and that the ratio should be increased (e.g., to 4 or 5 trained staff members for 50 research chimpanzees) to prevent excessive staff workloads. Another suggestion, based on the commenters' experience or opinion that the published literature does not support a specific staff-to-chimpanzee ratio, was that the NIH determine its staffing requirements for research chimpanzee facilities based on a performance outcome. Others expressed concern about the availability of funding to implement this recommendation.

Response: The NIH accepts Recommendation EA8. We believe that personnel working with NIH-owned and -supported research chimpanzees must include experienced and trained behaviorists and enrichment specialists to foster positive human–animal relationships and provide cognitive stimulation. Facilities that house and care for NIH-owned and -supported chimpanzees currently offer a level of staffing and expertise that is similar to the recommended level. Likewise, research facilities commonly use positive reinforcement training to habituate chimpanzees to husbandry and experimental procedures. The *Guide for the Care and Use of Laboratory Animals, Eighth Edition* (http://grants.nih.gov/grants/olaw/Guide-for-the-Care-and-Use-of-Laboratory-Animals.pdf) and the federal Animal Welfare Act and regulations allow facilities to set performance standards to address the psychological well-being of chimpanzees.

Recommendation EA9 states: "All personnel working with chimpanzees must receive training in core institutional values promoting psychological and behavioral well-being of chimpanzees in their care. These institutional core values should be publicly accessible."

Comments: A large number of commenters agreed that all personnel working with chimpanzees must be trained in values promoting chimpanzee well-being. Some suggested that individuals working with chimpanzees have both training and experience in working with chimpanzees. Others expressed the concern that the recommendation does not address the need to monitor compliance with these values, such as through the use of cameras and NIH audits. Some commenters suggested credentials that trainers should have and noted the importance of ensuring that all staff members have received all required human vaccinations.

Response: The NIH accepts Recommendation EA9. We believe that personnel working with NIH-owned and -supported research chimpanzees must receive training in institutional values that promote the psychological and behavioral well-being of chimpanzees. Facilities that house and care for NIH-owned and -supported research chimpanzees provide such training, and the agency expects this practice to continue. We disagree with those who suggested that the recommendation specify the credentials that trainers must have. Individual institutions are sufficiently knowledgeable about and capable of designing staff training programs that promote their core values. The NIH also notes that the *Guide for the Care and Use of Laboratory Animals, Eighth Edition* has established training and vaccination requirements for personnel working with chimpanzees (http://grants.nih.gov/grants/olaw/Guide-for-the-Care-and-Use-of-Laboratory-Animals.pdf). The agency believes that each facility should have the discretion to decide whether to use cameras or other compliance-monitoring methods. We discuss the NIH's role in enforcing the accepted recommendations in the "Other Comments" section at the end of this document.

Recommendation EA10 states: "Chimpanzee records must document detailed individual animal social, physical, behavioral, and psychological requirements and these requirements should be used to design appropriate individualized chimpanzee management in the captive research environment."

Comments: A large number of commenters strongly agreed with Recommendation EA10. Several gave examples of the types of information that facilities should collect or suggested expanding the recommendation to specify the frequency of documentation and record reviews, the types of observations to be recorded, and the qualifications of individuals who conduct these reviews. Public access to these records was also requested. In addition, a few argued that because humans cannot know the psychological requirements of individual chimpanzees, the recommendation should not mention these requirements.

Response: The NIH accepts Recommendation EA10. Facilities that house and care for NIH-owned or -supported research chimpanzees keep and use documentation on the chimpanzees' needs and welfare to satisfy accreditation and existing federal requirements. The NIH expects these facilities to continue this practice. We disagree with the suggestion to remove the mention of chimpanzees' psychological requirements from this recommendation. As discussed in the agency's response to Recommendation EA9, the training for personnel working with research chimpanzees should include an emphasis on chimpanzees' psychological well-being to prepare staff to keep proper records. Similarly, the agency disagrees with the suggestion to specify the types of documentation that facilities must retain, the information they must capture, and the qualifications of staff who review the records. Facilities that house and care for NIH-owned and -supported research chimpanzees are required to keep records on the chimpanzee colonies pursuant to existing laws, regulations, and policies. The *Guide for the Care and Use of Laboratory Animals, Eighth Edition* (http://grants.nih.gov/grants/olaw/Guide-for-the-Care-and-Use-of-Laboratory-Animals.pdf) and the federal Animal Welfare Act and regulations require facilities to keep records on the behavioral management of their chimpanzees. Restating these existing requirements in this recommendation would be unnecessarily duplicative.

5. Other Issues Related to Ethologically Appropriate Physical and Social Environments

Comments: Several commenters expressed concern that the recommendations apply only to research-active and research-inactive chimpanzees and not to other categories of NIH-owned chimpanzees (e.g., retired chimpanzees). Several recommended that the NIH require facilities housing NIH-supported chimpanzees to comply with the housing condition, enrichment, and training practices described in the AZA *Chimpanzee Care Manual* (http://www.aza.org/uploadedFiles/Animal_Care_and_Management/Husbandry,_Health,_and_Welfare/Husbandry_and_Animal_Care/ChimpanzeeCareManual2010.pdf) or in scientific or other journals. Some commenters believed that the NIH should specify minimum veterinary care requirements to maximize chimpanzee welfare.

Response: The NIH clarifies that any implemented Council recommendations will apply to research-active and -inactive populations of chimpanzees owned or supported by the NIH and any research using them, irrespective of who funds it. The implemented recommendations will also apply to NIH-supported research using chimpanzees, regardless of whether the agency owns or supports these animals. The Council recommendations do not apply to chimpanzees that are retired or permanently ineligible for biomedical research.

The NIH appreciates the suggested references to aid in the care and behavioral management of NIH-owned or -supported chimpanzees. We believe that facilities that house research chimpanzees are sufficiently knowledgeable about the current literature, including the AZA *Chimpanzee Care Manual* used by zoos that house chimpanzees. The NIH also notes that the *Guide for the Care and Use of Laboratory Animals, Eighth Edition* (http://grants.nih.gov/grants/olaw/Guide-for-the-Care-and-Use-of-Laboratory-Animals.pdf) and the federal Animal Welfare Act and regulations have requirements regarding veterinary care for nonhuman primates, including chimpanzees.

B. Size and Placement of Research-Active and Research-Inactive Populations of NIH-Owned and NIH-Supported Chimpanzees

The Council provided 9 recommendations on the size and placement of research-active and research-inactive populations of NIH-owned and -supported research chimpanzees in the context of the IOM Committee's recommendations. The Council based these recommendations, in part, on the number of chimpanzees used in NIH-supported projects. Below are the recommendations on this topic, a summary of public comments on these recommendations, and the agency's response to these comments and decisions regarding the Council recommendations.

1. Chimpanzee Retirement (Recommendation SP1)

Recommendation SP1 states: "The majority of NIH-owned chimpanzees should be designated for retirement and transferred to the federal sanctuary system. Planning should start immediately to expand current facilities to accommodate these chimpanzees. The federal sanctuary system is the most species-appropriate environment currently available and thus is the preferred environment for long-term housing of chimpanzees no longer required for research."

Comments: Many commenters agreed with this recommendation, although most endorsed the retirement of all chimpanzees and not just a majority. Furthermore, a large number of commenters agreed that the federal sanctuary system is the most species-appropriate environment and should be expanded to accommodate the chimpanzees currently used in research. Another suggestion was that the federal sanctuary be subject to regulations to ensure the well-being of the research chimpanzees.

Others questioned the quality of care provided by sanctuaries or found the recommendation vague. In addition, a concern was that sanctuaries do not provide an appropriate level of care for research chimpanzees that have health conditions. Other commenters suggested that the NIH consider moving chimpanzees to sanctuaries, including sanctuaries that are not part of the federal sanctuary system, as long as they satisfy applicable standard of care requirements, such as those followed by members of the North American Primate Sanctuary Alliance or required for accreditation by the Global Federation of Animal Sanctuaries.

A few commenters did not agree with the recommendation, partly because the Council Working Group presented no evidence that the federal sanctuary system is the "most species-appropriate environment" for research chimpanzees.

The need to fund chimpanzee retirement was a common theme in many comments on Recommendation SP1. Several commenters suggested asking Congress and other entities to allocate the funds necessary to construct additional sanctuary space for research chimpanzees. Others stated that cost should not be a factor in deciding whether to retire additional chimpanzees. It was also noted that the funding limits of the Chimpanzee Health Improvement Maintenance and Protection (CHIMP) Act of 2000—the law that authorizes the NIH to establish and maintain a system of sanctuaries for the lifetime care of chimpanzees no longer needed for research—could affect the agency's decisions about retiring chimpanzees no longer needed for research.

Response: The NIH partially accepts SP1 and intends to implement the following: "Subject to the availability of additional sanctuary space and the elimination of funding restrictions on the federal sanctuary system imposed by the CHIMP Act, the majority of NIH-owned chimpanzees will be designated for retirement and transferred to the federal sanctuary system. Planning to expand current facilities to accommodate the additional chimpanzees will continue once the funding restrictions have been eliminated."

We agree that the majority of chimpanzees that the NIH owns could be eligible for retirement, but the federal sanctuary system needs additional capacity. Although the federal sanctuary system plans to use private funding to construct additional space to house chimpanzees from the New Iberia Research Center, these new areas will not be sufficient to accommodate the majority of NIH-owned chimpanzees that the Council recommended retiring. The NIH is currently unable to fund expansion of the sanctuary due to funding limitations in the CHIMP Act.

The NIH believes that adding standards to Recommendation SP1 or specifying the nature of the veterinary care that sanctuaries provide would be unnecessarily duplicative. The standards of care for chimpanzees held in the federally supported sanctuary system (42 CFR Part 9), which have been in effect since October 2008, govern the facilities that have contracts or subcontracts with the federal government to operate the federally supported chimpanzee sanctuary system. In addition, these regulations and the standards in the *Guide for the Care and Use of Laboratory Animals, Eighth Edition* (http://grants.nih.gov/grants/olaw/Guide-for-the-Care-and-Use-of-Laboratory-Animals.pdf) govern the veterinary care of chimpanzees in the federal sanctuary system.

Because of funding limitations and the lack of available space in the federal sanctuary system to house additional chimpanzees, the NIH is not in a position to implement Recommendation SP1. Instead, the agency agrees with the recommendation subject to the availability of additional sanctuary space and the elimination of funding restrictions so that the agency can provide additional funding to the federal sanctuary system.

2. Maintaining 50 Chimpanzees for Research (Recommendations SP2 and SP3)

Recommendation SP2 states: "A small population of chimpanzees should be maintained for future potential research that meets the IOM principles and criteria. Based on an assessment of current research protocols and interviews with content experts and current research facility administrators, this colony is estimated to require approximately 50 chimpanzees. The size and placement of this colony should be reassessed on a frequent basis (approximately every 5 years) to ensure that such a colony is still actually needed and that the animals are not overused."

Comments: A large number of commenters strongly disagreed with Recommendation SP2, asserting that no chimpanzees should be retained for future research that meets the IOM principles and criteria and/or that chimpanzees might be needed for noninvasive research only.

Among other things, they argued that the genetic and physiologic differences between humans and chimpanzees render the chimpanzee a poor scientific model for studying human diseases. Several commenters cited HIV studies that ultimately showed that the chimpanzee model had limited utility for studying this virus. Those who disagreed with this recommendation believed that no scientific basis or public health need exists for keeping a reserve population for research and/or that using chimpanzees in research is unethical. Some noted that discontinuing chimpanzee research would align U.S. policies with those of other nations that prohibit chimpanzee use in research. Others added that stopping chimpanzee use in research would conserve funds. In general, these and other commenters asserted that all research involving chimpanzees should end and that the NIH should not keep 50 chimpanzees for research.

In contrast, several commenters strongly supported keeping 50 chimpanzees available for research, although a suggestion was that 25 chimpanzees would suffice because 50 is too many. Those supporting Recommendation SP2 argued that due to the similarities between chimpanzees and humans, the chimpanzee model has been key to scientific advancements, including the development of interventions to treat or prevent certain diseases. These commenters noted that this model could continue to serve as a useful, and in some cases the only, animal model for studying certain human diseases, such as emerging diseases or other public health threats, the hepatitis C virus, and human behavior.

Some commenters were concerned about the potential loss of the chimpanzee model for studying hepatitis C. They indicated that neither cell culture systems nor other animal models can replace chimpanzees in studies of the hepatitis C virus. Commenters noted that although cell cultures are useful for studying the hepatitis C virus life cycle and evaluating therapeutic drug candidates, they cannot be used for vaccine development. Commenters also noted that two mouse models for hepatitis C virus infection are currently in use but have limitations. The commenters noted that vaccine safety and efficacy must be tested in models with a working immune system, but the existing mouse models lack an intact immune system or are immune deficient and, therefore, cannot be used to test hepatitis C virus vaccines. A few commenters recommended that the NIH establish a new committee to consider the need for chimpanzees in hepatitis C research.

Several commenters expressed concern that 50 chimpanzees would be insufficient to meet possible demands resulting from the need to address known and emerging biomedical and other public health threats. These commenters urged the NIH to reconsider the population size needed for future research on the hepatitis C virus and other conditions because chimpanzees used in research will age, will develop age-related illnesses, or could be exposed to viruses that would make them unsuitable for biomedical research. It was, instead, recommended that the NIH maintain a population of 200 chimpanzees that are available for research, in part due to concerns that the NIH would be prohibited from replacing chimpanzees in the group of 50 reserved for research.

Several commenters believed that 5-year reassessments are too infrequent and, instead, recommended conducting assessments more frequently. In addition, several commenters wondered how the NIH would select the research animals, how many projects these animals would be involved in, and/or whether the healthiest chimpanzees would be prevented from retiring. Others expressed concern that the 50 chimpanzees selected would experience negative emotional and/or social effects if they were separated from their social groups.

Response: The NIH accepts Recommendation SP2. In accepting the IOM Committee's recommendations, the NIH agreed that although most current uses of chimpanzees for biomedical research are unnecessary, some ongoing research might be necessary but any such research must be consistent with the IOM principles and criteria. The NIH recognizes that one matter left unsettled by the IOM Committee was the use of chimpanzees to develop a prophylactic vaccine for the hepatitis C virus. The agency believes that the hepatitis C virus is an example of research that warrants the further use of chimpanzees as long as this research is consistent with the IOM Committee's principles and criteria.

The agency disagrees that the number of chimpanzees for future research needs to be reconsidered at this time. Those who suggested fewer chimpanzees (e.g., 25) did not provide a rationale for this number other than to say that 50 chimpanzees seemed to be too many. Although the NIH appreciates the argument to keep up to 200 chimpanzees available for research and understands the concern that the NIH might not be able to replenish the proposed population of approximately 50 chimpanzees, the NIH finds the Council Working Group's rationale for this recommendation to be compelling.

The NIH would like to clarify its strategy for selecting the approximately 50 chimpanzees to maintain for research. Our intent is to consult with scientists, veterinarians, and primate facility directors who oversee the research-active and -inactive chimpanzees owned or supported by the NIH. These individuals are familiar with these particular chimpanzees, their social groupings, their health status, and other characteristics that could determine their suitability for research. We understand and share concerns about separating chimpanzees from their social groups. Social groups will be among the many important factors that the NIH will consider to select NIH-owned or -supported chimpanzees that will be maintained for future research. The NIH intends to review its decision to retain approximately 50 chimpanzees for research at least every 5 years.

In addition, the Council advised continuing several comparative genomics or behavioral research projects involving 290 chimpanzees, many of which are not owned or supported by the NIH; meaning that a currently active project may continue until the end of the current project period but is not eligible for a no-cost extension or other means to extend the original project term (see Council Working Group report, at http://dpcpsi.nih.gov/council/working_group_message.aspx, for further clarification of this concept). However, the Council Working Group concluded that the NIH should not maintain a large reserve colony of chimpanzees for minimally invasive research because many of these research needs could be met in nontraditional research settings, such as accredited sanctuaries or zoos. The NIH would like to clarify that researchers may request NIH funding for minimally invasive research using chimpanzees that are not part of the research colony of approximately 50 NIH-owned or –supported chimpanzees, but the NIH will review these applications, proposals, and protocols for consistency with the IOM principles and criteria. See the discussion of the Council recommendations regarding this review process below under "Review Process for Future Requests to Use Chimpanzees in NIH-Supported Research." In addition, the environments in which NIH-supported research involving chimpanzees is conducted must be consistent with the NIH accepted recommendations for ethologically appropriate environments.

Recommendation SP3 states: "This small chimpanzee colony should be maintained at a facility that has the characteristics of ethologically appropriate physical and social environments described in this report. Thus, plans should be made now to ensure that ethologically appropriate physical and social housing conditions will be available within 3 to 5 years. Maintaining the chimpanzee colony at a single facility could be advantageous to minimize costs and maximize management flexibility."

Comments: Although a few commenters believed that creating a separate colony of chimpanzees for research would be fiscally irresponsible, many commenters on Recommendation SP3 agreed with this recommendation. In addition, several suggested that the NIH require changes to chimpanzee housing conditions immediately and not within 3 to 5 years as recommended. In contrast, others stated that 3 to 5 years might not be enough time to construct or renovate chimpanzee facilities.

Several commenters voiced concern that housing all 50 chimpanzees in a single facility could put the animals at risk of contracting contagious diseases, such as tuberculosis. Others strongly opposed the use of any chimpanzees in research and suggested retiring all NIH-owned and -supported chimpanzees to a sanctuary. Another suggestion was to house any colony of chimpanzees retained for research in accredited sanctuaries or sanctuary-like settings in which only noninvasive or minimally invasive behavioral research is permitted.

Response: The NIH partially accepts Recommendation SP3, subject to further consideration of the data supporting the recommended space density (see previous discussion on Recommendation EA2). We believe that the 3-to-5-year timeframe recommended by the Council should be sufficient for planning, designing, obtaining permits for, and constructing facilities that are consistent with the recommendation.

In determining whether to keep the research chimpanzee colony in one facility or several facilities, the NIH will carefully consider such factors as the cost and management benefits of both options and safeguards to protect the chimpanzees from colony-wide infections. The agency acknowledges the suggestion that the NIH house the chimpanzees available for research in sanctuary settings that permit limited types of behavioral research. Although the agency agrees that observational research can occur in the federal sanctuary system, this type of research will not satisfy all of the needs noted in the reports of the IOM Committee or Council. Thus, we do not believe that the approximately 50 research chimpanzees could be housed in the federal sanctuary system.

3. Demographic Constitution of Colony and Breeding (Recommendations SP4 and SP7)

Recommendation SP4 states: "The demographic constitution of this small chimpanzee colony is important to maximize its utility for research. Ideally, the colony should be age and sex stratified, have an approximately 50:50 sex ratio, and be composed primarily of animals that are healthy and younger than 30 years. At least half of this population should be physiologically naïve to infection (e.g., hepatitis or HIV). When this colony is formed, best practices should be used for maintaining current social groupings, whenever possible, to minimize adverse stress."

Comments: Many of the commenters who addressed this recommendation agreed with the proposed colony composition. Others supported the recommendation as long as the recommended demographic constitution is best for the animals and the colony or stated that the group cannot be age stratified if all of the animals are under age 30. In addition, some commenters were concerned that if some of the chimpanzees are naïve to infection and others become or are infected, the colony would be further subdivided and might therefore not comply with the other Council recommendations, including the recommendation pertaining to group size (see Recommendation EA1). Some expressed concern that housing equal numbers of animals of both sexes in groups could lead to injuries and deaths. It was also suggested that chimpanzees younger than 3 years or those with compromised health be retired and not be available for research. The remaining commenters generally disagreed with the recommendation, stating that no colony of chimpanzees should be kept for research.

Response: The NIH accepts Recommendation SP4. The NIH intends to use the Council recommendation and the best available data to guide its selection of the most appropriate animals to maintain for current and anticipated future research. Consideration of social group requirements, stratification concerns, and possible unintended consequences (e.g., aggression or compromised health of naïve chimpanzees) will be among the many important factors that the agency will use to select the chimpanzees to maintain for future research. The agency also intends to select only healthy chimpanzees for this colony, as the Council suggests. The NIH does not own or support any research-active or research-inactive chimpanzees younger than 3 years.

Recommendation SP7 states: "The NIH should not, on its own, revitalize breeding strategies to derive a population of chimpanzees for any research, including for new, emerging, or reemerging disease research."

Comments: Nearly all commenters on Recommendation SP7 agreed that the NIH should not revitalize breeding strategies. Several commenters suggested the use of contraception to prevent accidental breeding within the research chimpanzee colony, and others suggested that no new chimpanzees be added to the NIH-owned population and be used for research. A few added that revitalizing breeding would incur additional costs and exacerbate existing space concerns.

In contrast, a few commenters who supported the availability of chimpanzees for research believed that a limited breeding program should be reestablished to repopulate the colony after research chimpanzees currently owned or supported by the NIH age, expire, or become otherwise unsuitable for research.

Response: The NIH accepts Recommendation SP7. We do not agree with some commenters that a chimpanzee-breeding program needs to be reestablished at this time. The cost of caring for a chimpanzee over its lifetime can range from $300,000 to $500,000. This cost alone is a considerable deterrent to revitalizing the breeding of NIH-owned or -supported research chimpanzees. Furthermore, as the IOM Committee observed, alternatives to the use of chimpanzees in some areas of research are now available, and the NIH expects that additional alternative research models will continue to be developed.

4. Funding Priorities for Behavioral and Comparative Genomics Research (Recommendation SP5)

Recommendation SP5 states: "The NIH should review its funding priorities for comparative behavioral, cognitive, and genomics studies using chimpanzees. The NIH should consider targeting funding for low-burden projects that can be conducted in nontraditional research settings that can maintain ethologically appropriate environments or projects that use materials collected during routine veterinary examinations."

Comments: Many commenters stated that chimpanzees should not be used in any research (even noninvasive or minimally invasive research) and, as a result, disagreed with this recommendation. However, some of these commenters agreed that materials collected from chimpanzees during routine veterinary exams could be used for research. Others stated that the recommendation was unclear but disagreed with it in general because they believe that all chimpanzee and/or other animal research should stop. For the most part, however, commenters on this recommendation favored a review by the NIH of its funding priorities for comparative genomics and behavioral research using chimpanzees.

Several commenters wondered why this recommendation addresses behavioral research partly because the tasks associated with behavioral research can be enriching for captive chimpanzees. These commenters emphasized the scientific value of chimpanzees for behavioral and neuroscience research due to their cognitive skills, including basic language, self-recognition, and empathy, as well as similarities between chimpanzee and human brain structure and function.

Commenters familiar with behavioral research stated that nontraditional settings, such as sanctuaries, might allow only noninvasive behavioral research and would not be conducive to or would not allow some other types of cognitive and behavioral research. It was also suggested that sanctuaries would not make behavioral research a priority. Another suggestion was that if the NIH relocates most of its chimpanzees to a sanctuary where some behavioral research could occur, a research advocate should be appointed to the sanctuary's board of directors to promote the creative use of chimpanzees in ways that do not disturb the animals' retirement.

Response: The NIH accepts Recommendation SP5. We acknowledge that many commenters disagreed with this recommendation because of their belief that the use of chimpanzees in research is unnecessary. However, the agency does not share this view.

In response to questions about why the Council addressed behavioral research in its recommendations, the NIH has funded behavioral research using chimpanzees, so this type of research was within the group's purview. During its review, the Council Working Group found that most of the chimpanzees used in NIH-supported research are enrolled in behavioral research protocols. In its report, the Council Working Group concluded that the need for chimpanzees in behavioral research is not negligible but that the NIH should reexamine its programmatic priorities in this area. We appreciate the detailed information that some commenters supplied about behavioral, neuroscience, and related research for the agency's consideration.

The NIH agrees with those commenters who noted that the regulations governing the federal sanctuary system permit only noninvasive behavioral studies in these facilities, so some invasive types of behavioral research would not be permitted in the federal sanctuary system. Non-observational, NIH-funded behavioral research might be permissible in other settings, such as zoos; however, the extent to which these entities could satisfy the ethologically appropriate conditions that the NIH plans to implement is unknown. As the agency considers its priorities in behavioral and comparative genomics research, it will take into account both the types of behavioral, neuroscience, and related research that might be conducted using chimpanzees and the relevant regulations that could limit this kind of research in nontraditional settings.

5. New, Emerging, and/or Reemerging Diseases and the Use of Alternative Animal Models (Recommendations SP6, SP8, and SP9)

Recommendation SP6 states: "The NIH should not support any long-term maintenance of chimpanzees intended for research on new, emerging, or reemerging diseases in animal biosafety level 2 or greater biocontainment-level facilities."

Comments: A large number of commenters agreed that the NIH should not support any long-term maintenance of chimpanzees intended for research on new, emerging, or reemerging diseases. Many did not support any research on chimpanzees. Others agreed that biomedical research using chimpanzees should stop but found the wording of this recommendation confusing, especially the reference to "level 2 or greater biocontainment-level facilities." Some commenters believed that implementing Recommendation SP6 would threaten national security in the event of an outbreak, while others wondered what would constitute a "national security risk." A few commenters stated that future research on the hepatitis C virus would necessitate biosafety level 2 (BSL-2) facilities and disagreed with Recommendation SP6 because it would prevent hepatitis C virus research. Another concern was that chimpanzees, which are typically held in BSL-2 facilities because they are very susceptible to human respiratory viruses and bacterial infections, could no longer be held at this biosafety level if the NIH accepted this recommendation.

Response: The NIH accepts Recommendation SP6 and will not support the long-term maintenance of chimpanzees for the stated research purposes. Information about biosafety and BSLs is available at http://www.cdc.gov/training/QuickLearns/biosafety/.

The NIH strongly disagrees with the view that this recommendation would prohibit facilities from continuing to practice BSL-2 precautions and possibly other safeguards that are already in place to protect the health of the chimpanzees and facility personnel. The agency reiterates that the Council recommendations do not alter existing safety regulations, requirements, and policies that dictate the precautions that must be taken for the safe handling of, care of, interaction with, and other exposures of NIH-owned and -supported research chimpanzees to protect the health and safety of both the chimpanzees and the individuals in charge of their care. The agency expects facilities housing NIH-owned and -supported research chimpanzees to continue taking the applicable safety and health precautions.

The NIH also does not interpret this recommendation as prohibiting research on the hepatitis C virus using chimpanzees, which is conducted in BSL-2 facilities due to the nature of the virus and because facilities use BSL-2 precautions as a best practice in chimpanzee colonies. Furthermore, the chimpanzee is a longstanding and informative model for this research. The agency interprets Recommendation SP6 as discouraging long-term plans to use chimpanzees for research in higher containment conditions on new, emerging, or reemerging diseases.

The NIH does not agree with commenters who stated that implementing this recommendation would threaten national security. Chimpanzees are not used for research conducted in high-biocontainment conditions (BSL-3 or BSL-4). Only other nonhuman primates, other animal models, or non-animal-based technologies have been used for research to address public health threats requiring high-biocontainment conditions.

Recommendation SP8 states: "The NIH should collaborate with other federal agencies (i.e., Centers for Disease Control and Prevention and Food and Drug Administration) and departments (i.e., Department of Defense and Department of Homeland Security) when considering any future plan for placement, maintenance, and use of chimpanzees in research in response to a new, emerging, or reemerging disease that could represent a national security risk to the United States."

Comments: Of the commenters who responded to Recommendation SP8, many disagreed with the recommendation, mainly due to the opinion that all chimpanzee and/or other animal research should end. However, other commenters agreed with Recommendation SP8. Some of these commenters desired more restrictions on such future use. Others desired fewer restrictions.

Response: The NIH accepts Recommendation SP8. We do not believe that adding restrictions on the use of chimpanzees for new, emerging, or reemerging diseases would be helpful in achieving our public health mission.

Recommendation SP9 states: "In light of evidence suggesting that research involving chimpanzees has rarely accelerated new discoveries or the advancement of human health for infectious diseases, with a few notable exceptions such as the hepatitis viruses, the NIH should emphasize the development and refinement of other approaches, especially alternative animal models (e.g., genetically altered mice), for research on new, emerging, and reemerging diseases."

Comments: Many commenters supported Recommendation SP9, agreeing that the development of alternative animal models is a step toward eliminating the use of chimpanzees in research. These commenters, however, emphasized that the NIH should only select an alternate animal model after considering whether the human health benefits of the research justify this model's use. In contrast, many commenters disagreed with Recommendation SP9 because they believed that no animals should be used in research. Others stated that the recommendation marginalizes the contributions of chimpanzees to scientific research.

Response: The NIH accepts Recommendation SP9 and plans to continue to support research to develop and validate non-animal-based models to help further reduce the use of other animal models in research. Research using chimpanzees has prevented hundreds of thousands of human deaths and illnesses due to hepatitis A and B and has resulted in advances in the development of the hepatitis C and polio vaccines and treatments for leukemia, other cancers, and other devastating diseases. Our position is that the chimpanzee has been a valuable research model for improving human health.

C. Review Process for Future Requests to Use Chimpanzees in NIH-Supported Research

The final element of the Council Working Group's charge was to develop a process for considering whether the potential future use of chimpanzees in NIH-supported research is scientifically necessary and consistent with the IOM principles and criteria. The Council offered 9 recommendations in this area. Below are these recommendations, summaries of comments on these recommendations, the agency's response to these comments, and its decisions regarding this set of recommendations.

In some of these recommendations, the Council called for the NIH to create an "independent Oversight Committee for Proposals Using Chimpanzees in NIH-supported Research (Oversight Committee)" to advise the NIH on whether the proposed use of chimpanzees in research is consistent with the IOM principles and criteria. In its January 22, 2013, deliberations, the Council of Councils encouraged the agency to consider various options for placing the Panel's consideration of research involving chimpanzees. The NIH notes that the recommended Oversight Committee must abide by applicable federal laws, regulations, and policies and, thus, must play an advisory role only and cannot have decision-making authority. Decisions about funding for NIH-supported research are made solely by the NIH and not its advisory bodies. For these reasons, the NIH is not able to accept portions of some recommendations on the review process for future requests to use chimpanzees in NIH-supported research. Instead, the NIH partially accepts some of these recommendations and provides language for implementing the portions of the recommendations that satisfy applicable laws, regulations, and policies. For example, to be consistent with certain laws and regulations, the NIH refers to the "Oversight Committee" as the "Chimpanzee Research Use Panel" (the Panel). In addition, the NIH has decided to use a single process to assess the consistency with the IOM principles and criteria of grant applications, contract proposals, intramural research protocols, and third-party research requests involving chimpanzees.

The NIH proposes to establish the Panel as a working group of the Council of Councils, a federal advisory committee. The Panel will consider whether requests to the NIH to use chimpanzees in research are consistent with the IOM principles and criteria. Panel members will convene before the NIH makes funding decisions but after the NIH peer review or technical evaluation processes are completed for grant applications, contract proposals, and intramural research protocols. In accordance with laws governing the federal advisory committee process, the Panel will present its recommendations to the Council of Councils, which, in turn, will make recommendations to the appropriate NIH Institute or Center director(s).

1. Oversight Committee Composition (Recommendations RP1 and RP3)

Recommendation RP1 states: "The NIH should replace the Interagency Animal Models Committee with an independent Oversight Committee for Proposals Using Chimpanzees in NIH-supported Research (Oversight Committee) to advise on the proposed use of chimpanzees in research. The current Interagency Animal Models Committee is not considered independent from other individuals and bodies that review and approve grant applications to the NIH, contains no members of the public, and thus does not fully meet the spirit of the IOM principles and criteria."

Comments: Many of those who commented on this topic agreed with the recommendation. Among those who disagreed with this recommendation, some were concerned that the proposed Oversight Committee could stifle behavioral research. One suggestion was that the NIH not charge this new committee with reviewing behavioral research but, instead, consider the institutional animal care and use committee's approval to be sufficient. In addition, a few asked why research with chimpanzees would be subject to more scrutiny than research with other animals and noted that this type of oversight committee duplicates the activities of the existing NIH peer review system used to evaluate grant applications. Some commenters raised the concern that animal rights advocacy groups would seek a separate type of review for proposed research using other species if the NIH implements Recommendation RP1. Others stated that all chimpanzees used in research should be moved to the federal sanctuary system or were not sufficiently familiar with the Interagency Animal Models Committee to provide an opinion on this recommendation.

Response: The NIH partially accepts Recommendation RP1 and intends to implement the following: "The NIH will replace the Interagency Animal Models Committee with the independent Chimpanzee Research Use Panel to advise on the proposed use of chimpanzees in research."

The Interagency Animal Models Committee was a federal group chartered to oversee all federally supported biomedical research involving chimpanzees. The agency plans to replace this committee with the Panel, which will function independently of review processes currently used to assess grant applications, contract proposals, and intramural research protocols. The Panel will include members of the public and will consider whether requests to the NIH to use chimpanzees in research are consistent with the IOM principles and criteria.

The NIH disagrees with some commenters' suggestions to exclude behavioral research involving chimpanzees from the Panel's consideration of whether proposed research is consistent with the IOM Committee's principles and criteria. Verifying whether proposed research meets the IOM Committee's criteria for behavioral research will help the NIH determine whether that research is consistent with the IOM Committee's recommendations. The agency disagrees with commenters that using the Panel to consider whether proposed behavioral research meets the IOM principles and criteria will stifle research in this field.

Recommendation RP3 states: "The Oversight Committee should be comprised of individuals with the specific scientific, biomedical, and behavioral expertise needed to properly evaluate whether a grant, intramural program, contract, or other award mechanism supporting research using chimpanzees complies with the IOM principles and criteria."

Comments: Many commenters who responded to this recommendation strongly agreed with it. Among those who agreed, several suggested that the NIH not compensate Oversight Committee members for their reviews and that this committee include at least one animal welfare representative, members of animal protection groups (such as Jane Goodall), experts in chimpanzee conservation, and/or scientists with disease-specific expertise. Some also wanted the NIH to expand the number of public representatives on the committee. Several voiced concern that including only scientific members on the committee would not be in the best interests of the chimpanzees. For those who disagreed with the recommendation, the main concerns were the composition of this committee and the belief that all research chimpanzees should be retired.

Response: The NIH partially accepts Recommendation RP3 and intends to implement the following: "The Chimpanzee Research Use Panel will be comprised of individuals with the specific scientific, biomedical, and behavioral expertise needed to properly evaluate whether requests to use chimpanzees in research that is supported by a grant, intramural program, contract, or other award mechanism are consistent with the IOM principles and criteria."

In addition, the NIH agrees with the Council recommendation regarding the Panel membership, namely, that it should consist of 1 or more scientists, veterinarians, primatologists, bioethicists, and statisticians; and 2 or more public representatives. NIH officials will advise on process issues and provide information but will not be members of the Panel.

2. Review Process (Recommendations RP4–RP6)

Recommendation RP4 states: "Investigators seeking NIH funding to conduct research using chimpanzees must explain in their application how their proposed research complies with the IOM principles and criteria. This supplemental information must address all of the questions posed in the decision-making algorithm in this report and provide sufficient detail for consideration by the Oversight Committee. This information is in addition to the vertebrate animal section and/or applicable animal study protocol. The NIH might wish to develop a form or other suggested template for investigators to use for this purpose."

Comments: Many commenters on this topic supported Recommendation RP4 and requested that the template have, and that researchers adhere to, strict guidelines. Commenters suggested that investigators be required to justify the need to use chimpanzees by explaining how the proposed research would contribute substantially to human health and by specifying which other animal models or alternatives have been tested or considered.

Several commenters stated that the proposed decision-making process is ambiguous and needs clear-cut criteria. Some of the wording in the Council Working Group's decision-making algorithm was also of concern because it could be interpreted to mean that research cannot be conducted in chimpanzees if it can be conducted in humans. More specifically, a concern was that research to compare the chimpanzee's genome to a human's genome would not be permitted.

In general, those who disagreed with Recommendation RP4 did so because they believed that all chimpanzees should be retired from research. Others argued that because of the IOM Committee's finding that using chimpanzees in research is largely unnecessary, the process described in Recommendation RP4 is not needed.

Response: The NIH partially accepts Recommendation RP4 and intends to implement the following: "Investigators proposing to the NIH to conduct research using chimpanzees must demonstrate that their proposed research is consistent with the IOM principles and criteria. The supplemental information that these investigators provide must address all of the questions posed in the decision-making algorithm in the Council Working Group report and provide sufficient details for consideration by the Chimpanzee Research Use Panel. This information is in addition to the vertebrate animal section and/or applicable animal study protocol."

The NIH plans to develop a form or other suggested template for investigators to use for this purpose. In addition, the agency will determine the timing and most appropriate format for collecting the supplemental information that investigators proposing to use chimpanzees in research will need to submit. The existing technical and/or peer review processes applicable to grant applications, contract proposals, or intramural research protocols will continue without modification. The Panel will function separately from these existing processes.

The NIH does not interpret the recommendations of the IOM Committee or the Council or the Council Working Group's decision-making algorithm as prohibiting comparative genomics research or other research that compares biology or behavior in humans and chimpanzees to answer a scientifically meritorious question. The IOM Committee provided explicit criteria to guide comparative genomics and behavioral research that proposes to use chimpanzees for those purposes.

Recommendation RP5 states: "To ensure that the scientific use of chimpanzees is justified, the animal numbers and group sizes must be statistically justified before the NIH approves any proposed research project involving the use of chimpanzees."

Comments: Many commenters on this topic agreed that researchers must statistically justify the requested sample size of chimpanzees for the proposed research. However, some commenters wondered what the term "statistically justified" means. Others were concerned about who would decide when the use of chimpanzees is or is not statistically justified.

Those who disagreed with Recommendation RP5 generally believed that the NIH should not fund any chimpanzee research and that the scientific use of chimpanzees is never justified. Others stated that not all experimental designs involving chimpanzees require statistical analyses of animal numbers and group sizes. A suggestion was that a chimpanzee might concurrently serve as its own control in, for example, studies to determine the dose of a drug that maximally binds to a target or the half-life of a test compound.

Response: The NIH partially accepts Recommendation RP5 and intends to implement the following: "To ensure that the scientific use of chimpanzees is justified, the proposed animal numbers and group sizes must be statistically or scientifically justified before the NIH approves any proposed research project involving the use of chimpanzees."

We believe that the intent of this recommendation is to ensure that the number of chimpanzees proposed for a study is sufficient to yield meaningful results. Mathematical calculations, often described as statistical power analyses, are commonly used to ensure that studies include enough test subjects to provide confidence that the observed results would not have occurred by chance.

The NIH appreciates the view that researchers must statistically justify the numbers of chimpanzees that they propose to study. At the same time, the NIH wishes to prevent the use of more chimpanzees than are needed for a study. The NIH is willing to consider applications, proposals, and protocols for research that request to use fewer chimpanzees than the statistically justified number if doing so can appropriately meet the scientific need.

Recommendation RP6 states: "Investigators need not include supplemental information on chimpanzee use for proposals involving the following, and these proposals will be exempt from Oversight Committee review:

- The use of any biomaterials, including pathological specimens, collected and/or stored prior to submission of the research proposal, or as part of a research grant or contract that has undergone Oversight Committee review and approval, or as part of regular veterinary (health) examinations;
- Other observational or non-interventional studies, such as behavioral observations in the wild that do not result in contact or otherwise interfere with the chimpanzees being observed; or
- Noninvasive collection of samples from the wild in a manner that does not result in contact or otherwise interfere with the chimpanzees during the collection."

Comments: Many commenters agreed with Recommendation RP6. Several also supported the use of chimpanzee specimens collected and stored post mortem as well as development of a chimpanzee tissue-sharing network among researchers to facilitate comparative genomics and other research. A few commenters found the wording of this recommendation unclear. As with the other review process recommendations, those who disagreed generally did so because they did not believe that chimpanzees should be used in any research.

Response: The NIH partially accepts Recommendation RP6 but will use the Chimpanzee Research Use Panel described above instead of an Oversight Committee. In addition, NIH understands "proposals" to include research applications, proposals, or protocols. Thus, NIH intends to implement the following: "Investigators need not include supplemental information on chimpanzee use for research applications, proposals, or protocols involving the following because they will be exempt from Chimpanzee Research Use Panel consideration:

- The use of any biomaterials, including pathological specimens, collected and/or stored prior to submission of the research application, proposal, or protocol, as part of a research project that has undergone Chimpanzee Research Use Panel consideration and subsequent NIH approval, or as part of regular veterinary (health) examinations;
- Other observational or non-interventional studies, such as behavioral observations in the wild that do not result in contact or otherwise interfere with the chimpanzees being observed; or

- Noninvasive collection of samples from the wild in a manner that does not result in contact or otherwise interfere with the chimpanzees during the collection."

The agency plans to issue a future notice in the NIH Guide for Grants and Contracts with procedural guidance for implementing these decisions.

3. Placement of the "Oversight Committee" Review (Recommendations RP2 and RP7–RP9)

Recommendation RP2 states: "The Oversight Committee should be separate from extramural initial review groups, intramural scientific program personnel, and Institute or Center directors. In addition, the Oversight Committee's reviews should take place after the standard reviews and approvals by these entities. The Oversight Committee's reviews will focus on whether the proposed research is consistent with the IOM principles and criteria for the use of chimpanzees in research."

Comments: Many commenters on this topic agreed with Recommendation RP2. A prevailing sentiment was that the Oversight Committee members should have no vested interest in or potential financial gain from using chimpanzees for research. Several repeated that public members with no ties to research should be part of this committee. Others held the opinion that this separate committee would be better positioned than an existing NIH committee to give priority to the animals' well-being during these reviews.

Those who disagreed that the NIH should establish an additional committee for this purpose were concerned that members would oppose research for nonscientific reasons. These commenters raised concerns about the potential that the Oversight Committee would duplicate scientific reviews at the NIH and delay approvals of grants, contracts, and intramural projects. Several disagreed with the recommendation because they believed that chimpanzees should not be used in research and, therefore, that the NIH does not need a committee of this sort. Some commenters wondered how members of this committee would be selected.

Response: The NIH partially accepts Recommendation RP2 and intends to implement the following: "The Chimpanzee Research Use Panel will be separate from extramural peer review groups, contract evaluation panels, and intramural scientific review procedures. In addition, the Chimpanzee Research Use Panel's considerations will take place after the standard reviews (e.g., after the reviews by peer review panels, technical evaluation panels, and NIH Institute and Center advisory councils) and will focus on whether the proposed research is consistent with the IOM principles and criteria for the use of chimpanzees in research."

Recommendation RP7 states: "The Oversight Committee review should take place after the Center or Institute director approves a proposal so that the key elements of the review are publicly accessible to the extent allowable by federal regulations. The Oversight Committee should review all requests for grants, contracts, intramural projects, and third-party projects rather than establishing a separate review process for each mechanism. Funding of an award for research involving the use of chimpanzees that has received an Institute or Center director's approval will be conditional and subject to the subsequent evaluation by the Oversight Committee."

Comments: Many commenters agreed with Recommendation RP7 and emphasized the need for full disclosure and transparency of the Oversight Committee's activities. Some commenters suggested that the Oversight Committee proceedings be open to the public. Another suggestion was that the Oversight Committee's reviews occur before the NIH peer review or after the peer review but before the NIH approves the project for funding. Those who disagreed with Recommendation RP7 believed that all research chimpanzees should be sent to a sanctuary and that the NIH should not fund any chimpanzee and/or other animal research.

Response: The NIH partially accepts Recommendation RP7 and intends to implement the following: "The NIH will convene the Chimpanzee Research Use Panel after completing the standard review processes for grant applications, contract proposals, and intramural research protocols. The NIH will charge the Chimpanzee Research Use Panel with considering grant applications, contract proposals, intramural research protocols, and third-party research requests rather than establishing a separate review process for each mechanism."

The agency acknowledges commenters' requests that the Panel's activities be open to the public or otherwise transparent. However, to protect the confidentiality of research applications and proposals, proprietary interests, and researcher privacy, discussions and recommendations about specific applications or proposals are not available to the public. Standard information about funded research will continue to be available at http://projectreporter.nih.gov/reporter.cfm. The NIH intends to provide the public with details about general processes that the Panel will follow, the criteria for selecting its members, and the decision-making algorithm that the Panel will use in applying the IOM principles and criteria.

Recommendation RP8 states: "The Oversight Committee will base its reviews on the supplemental information provided by investigators on how the proposed research complies with the IOM principles and criteria and all relevant documents (including animal study protocols and grant applications) required to make informed determinations for all funding requests (grants, contracts, and intramural projects) and other requests to use chimpanzees (e.g., third-party projects)."

Comments: Many commenters strongly agreed with Recommendation RP8. A suggestion was to allow the Oversight Committee to hold onsite inspections although, ideally, the use of chimpanzees in research would be banned entirely. Those who disagreed with Recommendation RP8 disapproved of using chimpanzees for research and believed that the animals should be sent to a sanctuary.

Response: The NIH partially accepts Recommendation RP8 and intends to implement the following: "The Chimpanzee Research Use Panel will base its assessments on the supplemental information provided by investigators that explains how the proposed research is consistent with the IOM principles and criteria and all relevant documents (including animal study protocols and grant applications) necessary to provide informed recommendations about requests to NIH to use chimpanzees in research (i.e., NIH-sponsored grants, contracts, intramural projects, and third-party projects)."

Recommendation RP9 states: "The Oversight Committee will determine whether each application meets or does not meet the IOM principles and criteria based on the votes of a majority of all voting members. At its members' discretion, the Oversight Committee may vote on whether different components or parts of an application meet or do not meet the IOM principles and criteria."

Comments: Many commenters who responded agreed with Recommendation RP9. One suggestion was to require a favorable three-fourths majority vote before the Oversight Committee determines that the research meets the IOM principles and criteria. Others disagreed with the recommendation because they believed that chimpanzees should not be used for research or because the composition of the Oversight Committee is unknown.

Response: The NIH partially accepts Recommendation RP9. The agency intends to implement the following: "The Chimpanzee Research Use Panel will advise on whether each application, proposal, and protocol meets or does not meet the IOM principles and criteria based on the votes of a majority of all voting members. At its members' discretion, the Chimpanzee Research Use Panel may vote on whether different components or parts of an application, proposal, or protocol meet or do not meet the IOM principles and criteria."

D. Review of NIH-Supported Research Projects Using Chimpanzees

The NIH requested public comments on a summary in the Council Working Group's report of the group's reviews of 30 research projects involving the use of NIH-owned or -supported chimpanzees. The Council recommended ending 6 of 9 biomedical research projects, 5 of 13 comparative genomic and behavioral research projects, 1 colony housing and care project, and the research components of 3 of the remaining 7 colony housing and care projects. The report did not identify the 30 projects. The NIH asked for input on the outcomes of the project reviews summarized in the report.

Comments: Of the commenters who addressed this topic, a small subset favored the Council recommendations regarding research projects using chimpanzees. Most commenters opposed the continuation of any research involving chimpanzees, stating that all experimentation on chimpanzees should end and all research chimpanzees should be relocated to a sanctuary. Others opposed only the recommendations to continue biomedical research and believed that the behavioral research studies should continue. Several commenters noted their difficulty providing input on the Council Working Group's reviews of research projects because the report did not include project details; these respondents requested that the NIH make the details on these projects public.

In an effort to preserve the scientific integrity of chimpanzee-based research projects that the Council's recommended ending, a suggestion was to encourage the researchers to use another research model to achieve the scientific objectives of their original projects. A concern was that it would be unfair to change the rules and interrupt current research; it was argued that ongoing projects should be allowed to continue and to maintain their original level of funding and timeframe. A few commenters questioned whether the Council Working Group had the requisite expertise to review some of the research.

Response: The NIH accepts the recommendations on the research projects reviewed by the Council Working Group. The NIH intends to phase out the projects that the Council recommended ending in such a way as to avoid causing unacceptable losses to research programs or an impact on the animals, as the IOM Committee suggested. The agency appreciates the comments received on the summary-level information provided and those suggesting that certain projects not end as a result of the Council recommendations. The NIH's acceptance of the IOM Committee's report and any Council recommendations reflects a shift in the agency's scientific priorities away from chimpanzee research that does not critically need this model. This announcement does not prohibit researchers affected by the Council recommendation from disclosing the details of their research.

The NIH does not agree with those who suggested that the Council Working Group lacked the expertise required to review research involving chimpanzees. The Council Working Group members and consultants included experts in behavioral sciences; infectious diseases, including hepatitis; use of alternative models; neuroscience and cognition; colony management; and veterinary medicine.

E. Other Comments

This section summarizes comments that were not directed at a specific Council recommendation or address topics not discussed previously. Commenters discussed ending animal-based research, the recommendations' applicability to other animal models, funding for alternatives to chimpanzees, funding for and enforcement of any implemented recommendations, and the composition of the Council Working Group. A number of commenters commended the NIH for accepting public input and convening the Council Working Group. Many applauded the Council recommendations and the group members for their work and careful consideration of the issues.

1. Ending All Animal-Based Research and Testing

Comments: Many commenters asked the NIH to end all chimpanzee and/or animal-based research and to use alternative approaches instead. Some commenters based this opinion on the perceived inefficiencies of animal-based research for solving human health problems, but, in most cases, these commenters argued that the use of animals in research is inhumane, unfair, and unethical. For example, some stated that the laboratory environment cannot meet the complex intellectual, social, psychological, and emotional needs of chimpanzees. Others believed that chimpanzees, because of their genetic similarity to humans, experience the world in a similar manner to humans and, therefore, should be treated more like humans (e.g., should provide consent before participating in research and have the opportunity to pursue happiness). Many argued that currently available non-animal alternatives, such as computer simulations, should facilitate the phasing out of animal-based research. Other commenters suggested that rather than fund animal-based studies, the NIH should allocate more funds toward developing and expanding these non-animal alternatives, which, in their opinion, might be more cost effective than animal-based experiments. Many commenters did not want their tax dollars used for chimpanzee and/or other animal-based experiments.

Response: The NIH emphasizes that the use of animals in research continues to be central to understanding, treating, and preventing many diseases and conditions that cause human suffering and death. Although we believe that ceasing all animal research at this time would be imprudent, the NIH maintains high standards for the use of animals in research. In addition, the agency is a major proponent of the U.S. Government Principles for the Utilization and Care of Vertebrate Animals Used in Testing, Research, and Training (Principles), which provide an ethical framework for the use of live animals in research. Scientists must adhere to the Principles in their conduct of research, testing, and training that is funded by the NIH. The Principles require that procedures involving animals be designed and performed with due consideration of their relevance to human or animal health, the advancement of knowledge, or the good of society. Researchers must select animal models for procedures that are of an appropriate species and quality and must use the minimum number of animals required to obtain valid results. Furthermore, researchers must consider the use of alternative methods to animal models, such as mathematical models, computer simulations, and in vitro biological systems.

The agency also funds efforts to develop alternative ways to conduct research without using animal models. These technologies include improved molecular analysis techniques to study various diseases and three-dimensional chips with living cells and tissues that might accurately model the structure and function of human organs.

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2. Applying the Recommendations beyond the NIH and to Other Animal Models

Comments: Several commenters suggested that the recommendations apply beyond the NIH to other agencies of the federal government, private industry, and private laboratories. A concern was that the use of privately owned chimpanzees might increase if the NIH-owned chimpanzees were no longer available for research; expanding the reach of the recommendations would help mitigate some of these concerns. Others wished the NIH to apply the recommendations to other animal models.

Response: Any Council recommendations implemented by the NIH will apply to research-active and -inactive populations of chimpanzees owned or supported by the NIH and any research using them, irrespective of who funds it. The implemented recommendations will also apply to NIH-supported research using chimpanzees, regardless of whether the agency owns or supports these animals. However, the NIH lacks authority to apply the Council recommendations to other agencies of the federal government, private industry, or private laboratories.

3. Enforcing the Accepted Recommendations

Comments: One suggestion was for the NIH to create a new entity, separate from the Oversight Committee that the Council Working Group recommended, to enforce the other recommendations, especially those regarding ethologically appropriate housing, that the NIH accepts. Some believed that this entity should conduct frequent inspections (i.e., more than once yearly) of facilities that house research chimpanzees and have the legal authority to terminate unacceptable practices.

Response: The NIH believes that the Council recommendations provide the NIH with sufficient guidance without the need for additional external oversight. NIH-funded institutions must comply with the federal Animal Welfare Act and regulations, the Public Health Service Policy, and the *Guide for the Care and Use of Laboratory Animals, Eighth Edition* (http://grants.nih.gov/grants/olaw/Guide-for-the-Care-and-Use-of-Laboratory-Animals.pdf). Any recommendations regarding the use of chimpanzees in research that the NIH implements will supplement these existing statutes and policies. The NIH Office of Laboratory Animal Welfare (OLAW) oversees all NIH-supported research activities that involve animals. OLAW monitors NIH-funded institutions to ensure their compliance with animal welfare laws and policies. OLAW also investigates allegations of animal welfare abuses and inappropriate animal care in NIH-funded studies.

4. Funding for Chimpanzee Retirement and Facility Construction

Comments: Several commenters expressed concern about funding to implement the Council recommendations. They stated that the current national fiscal climate will probably limit the amount of money made available to fund new construction or other facets of the Council recommendations.

Several commenters suggested ways that the NIH could financially support the implementation of the recommendations. One suggestion from numerous commenters was for the NIH to transfer the funds currently used to support chimpanzees in laboratories to sanctuaries. Others recommended fundraising to pay for construction and other costs. Some asserted that caring for chimpanzees in sanctuaries rather than research facilities might save money or suggested supporting chimpanzees through for-profit entities or by retiring the chimpanzees in place.

Another concern was that funding would be diverted from important research to pay for the recommendations' implementation and for additional chimpanzee housing when the size of the population is decreasing. Some stated that existing facilities offer high-quality conditions and care and have trained staff to provide enrichment and health care, and keeping chimpanzees in these facilities would save transportation costs.

Response: The agency understands commenters' concerns about the prospect of future expenditures to implement the Council recommendations. As the NIH gains a better understanding of the resources needed to implement the recommendations, it will explore options for funding their implementation.

5. Composition and Impartiality of the Council Working Group

Comments: Certain commenters expressed concern about the composition of the Council Working Group. A few stated that the Council Working Group seemed to be biased in favor of scientific research. However, many commenters on this topic stated that certain Council Working Group members were biased against research and the group lacked the necessary scientific diversity to reach the stated conclusions about behavioral and neuroscience research. Several commenters were also concerned that 1 or more Council Working Group members had conflicts of interest that prevented them from being impartial and that these members might have swayed the group to recommend the retirement of most chimpanzees. Others who expressed knowledge of the Council Working Group's activities commented that the members failed to seek diverse input on a range of matters, including certain scientific issues and U.S. laboratory facilities. These commenters stated that the group should have included NIH-funded experts in chimpanzee behavior and chimpanzee research in general. Some commenters believed that the NIH should appoint a new committee to consider the use of chimpanzees in research.

Response: The agency believes that the composition of the Council Working Group and consultants was appropriately balanced to provide advice to the Council on NIH-supported research involving chimpanzees and implementing the IOM Committee's recommendations. Members and consultants included experts in behavioral sciences; infectious diseases, including hepatitis; use of alternative models; neuroscience; cognition; colony management; and veterinary medicine. The Council Working Group was charged with providing recommendations on how to implement the IOM Committee's recommendations. The NIH had already accepted the IOM recommendation that most current use of chimpanzees in research is unnecessary.

6. Other Comments

Comments: A few commenters expressed confusion about the number of chimpanzees currently used in NIH-supported and other research. Some had difficulty aligning the number of chimpanzees in NIH-supported research with the census data on NIH-owned or -supported research chimpanzees. Others commented on captive chimpanzee conservation and captive chimpanzees' status as a threatened species. A number of commenters disliked the length of the request for comments form and would have preferred a different format, such as checkboxes to indicate agreement or disagreement with the Council recommendations.

Response: The census of chimpanzees on page 32 of the Council Working Group report includes only the chimpanzees that the NIH owns or supports. This table is not a census of all chimpanzees available for research in the United States. According to the IOM Committee's report (http://iom.edu/Reports/2011/Chimpanzees-in-Biomedical-and-Behavioral-Research-Assessing-the-Necessity.aspx), approximately 300 additional chimpanzees available for research are privately owned and housed in research facilities not supported by the NIH. The research projects that the Council Working Group reviewed involved chimpanzees owned or supported by the NIH and chimpanzees that are privately owned and not supported by the agency.

The NIH recognizes that on June 12, 2013 the U.S. Fish and Wildlife Service proposed a rule that would list captive chimpanzees as endangered rather than threatened (http://www.fws.gov/policy/library/2013/2013-14007.pdf). The NIH will prepare for a potential final rule that lists captive chimpanzees as endangered and intends to adapt its policies on research projects using chimpanzees to comply with the guidelines that the U.S. Fish & Wildlife Service will establish in its final rule. In addition, we acknowledge concerns about the length of the request for comments form and appreciate the suggestions for easing comment entry in the future.

III. Conclusion

The NIH expresses its appreciation for the comments it received on the Council recommendations on the use of chimpanzees in NIH-supported research. The agency used these comments to inform its decisions about these recommendations and explained its rationale in its responses to the comments in this notice. The NIH recognizes the Council Working Group for its diligence in responding to its charge to advise the NIH on implementing the IOM Committee's recommendations. The NIH intends to prepare procedural guidance and technical assistance for researchers, facility staff, and agency staff to ensure proper implementation of these decisions. Investigators should continue to follow existing guidance (see NOT-OD-12-025 at http://grants.nih.gov/grants/guide/notice-files/NOT-OD-12-025.html) regarding the submission of applications, proposals, or protocols for research involving chimpanzees until the NIH announces the procedural guidance.

Exhibit: B. to Affidavit of Steven M. Wise sworn to December 2, 2013
Portuguese Decision dated September 28, 2005 in
***In favor of Suica, a Chimpanzee* (74-78)**

Sentença do Habeas Corpus impetrado em favor da chimpanzé Suíça

Juiz Edmundo Cruz

HABEAS CORPUS N° 833085-3/2005.

IMPETRANTES: DRS. HERON JOSÉ DE SANTANA E LUCIANO ROCHA SANTANA - PROMOTORES DE JUSTIÇA DO MEIO AMBIENTE E OUTROS.

PACIENTE: CHIMPANZÉ "SUÍÇA".

Vistos etc.

Os Drs. HERON JOSÉ DE SANTANA e LUCIANO ROCHA SANTANA, Promotores de Justiça do Meio Ambiente e demais entidades e pessoas físicas indicadas na petição de fls. 2, impetraram este HABEAS CORPUS REPRESSIVO, em favor da chimpanzé "Suíça" (nome científico anthropopithecus troglodytes), macaca que se encontra enjaulada no Parque Zoobotânico Getúlio Vargas (Jardim Zoológico de Salvador), situado na Av. Ademar de Barros, nesta Capital, sendo indicado como autoridade coatora, do ato ora atacado como ilegal, o Sr. Thelmo Gavazza, Diretor de Biodiversidade da Secretaria de Meio Ambiente e Recursos Hídricos – SEMARH.

Para sustentar a impetração, alegaram os requerentes que "Suíça" está aprisionada em jaula que apresenta sérios problemas de infiltrações na estrutura física, o que estaria impossibilitando o acesso do animal à área de cambiamento direto, que possui tamanho maior e ainda ao corredor destinado ao manejo do animal, jaula esta com área total de 77,56 m^2 e altura de 4,0 metros no solário, e área de confinamento de 2,75 metros de altura, sendo privada, portanto, a chimpanzé, de seu direito de locomoção.

Pretendendo demonstrar da admissibilidade do *Writ*, os impetrantes, em suma, sustentam que "numa sociedade livre e comprometida da garantia da liberdade e com a igualdade, as leis evoluem de acordo com as maneiras que as pessoas pensam e se comportam e, quando as atitudes públicas mudam, a lei também muda, acreditando muitos autores que o Judiciário pode ser um poderoso agente no processo de mudança social".

Afirmam, também, em síntese, que a partir de 1993, um grupo de cientistas começou a defender abertamente a extensão dos direitos humanos para os grandes primatas, dando início ao movimento denominado "Projeto Grandes Primatas", que conta com apoio de primatólogos, etólogos e intelectuais, que parte do ponto de vista que humanos e primatas se dividiram em espécies diferentes há mais ou menos 5 ou 6 milhões de anos, com uma parte evoluindo para os atuais chimpanzés e bonobos e outra para os primatas bípedes eretos, dos quais descendem o *Homo Australopithecus*, o *Homo Ardipithecus* e o *Homo Paranthropus*, resumindo, a pretensão é de equiparar os primatas aos seres humanos para fins de concessão de Habeas Corpus .

Ultimando, dizem os impetrantes, que o presente *Writ* se constitui em o único instrumento possível para, ultrapassando o sentido literal de pessoa natural, alcançar também os hominídeos, e, com base no conceito de segurança jurídica (ambiental), conceder ordem de *Habeas Corpus* em favor da chimpanzé "Suíça", determinando a sua transferência para o Santuário dos Grandes Primatas do GAP, na cidade de Sorocaba, Estado de São Paulo, que, inclusive, já disponibilizou o transporte para a execução da devida transferência.

Poder-se-ia extrair, dos próprios tópicos da longa petição inicial, subsídios suficientes para – "ab initio litis" – decretar-se a extinção do processo e mandar arquivá-lo, ao argumento de impossibilidade jurídica do pedido, ou por ineficácia jurídica absoluta do instrumento escolhido pelos impetrantes, ou seja, um H.C. para transferir um animal do ambiente em que vive, para outro local. Mas, visando provocar a discussão, em torno do evento, com pessoas e entidades ligadas à área do Direito Processual Penal, achei mais viável admitir o debate.

Efetivamente, se trata de caso inédito nos anais da Justiça da Bahia, embora tenha eu conhecimento de que houve um caso, há alguns anos atrás, julgado pelo STF, em que um advogado do Rio de Janeiro, juntamente com a Sociedade Protetora dos Animais, impetrou um Habeas Corpus, para libertar um pássaro aprisionado em gaiola, todavia, o pleito não foi acolhido, tendo o relator, eminente ministro Djaci Falcão se inclinado pelo indeferimento, como o foi, entendendo ele que "Animal não pode integrar uma relação jurídica, na qualidade de sujeito de direito, podendo ser apenas objeto de direito, atuando como coisa ou bem" (STF RHC – 63/399).

Com 24 anos de magistratura, atuando sempre em Varas Criminais, é este o primeiro caso que me veio às mãos, em que paciente de Habeas Corpus é um animal, precisamente uma chimpanzé. Entretanto, o tema merecia uma ampla discussão, eis que a matéria é muito complexa, exigindo alta indagação, que importaria em aprofundado exame dos argumentos "prós e contras", por isso indeferi a concessão liminar "inaudita altera pars" do Habeas Corpus, preferindo colher informações para instruir o pedido à autoridade coatora, no caso o Sr. Thelmo Gavazza, Diretor de Biodiversidade da Secretaria de Meio Ambiente, concedendo a esta o prazo de 72 horas para fazê-lo. É certo que, com tal decisão inicial, admitindo o debate em relação ao assunto aqui tratado, contrariei alguns "juristas de plantão", que se esqueceram de uma máxima de Direito Romano que assim preceitua: **"Interpretatio in quacumque dispositione sic facienda ut verba non sint supérflua et sine virtute operandi" (em qualquer disposição deve-se fazer a interpretação de modo que as palavras não sejam supérfluas e sem virtude de operar), e também das sábias palavras do saudoso Prof. Vicente Ráo, ao escrever sua monumental obra – O Direito e a Vida dos Direitos:**

> "Os juristas não devem visar aplausos demagógicos, de que não precisam. Devem, ao contrário, firmar, corajosamente, os verdadeiros princípios científicos e filosóficos do Direito, proclamá-los alto e bom som, fazê-los vingar dentro do tumulto legislativo das fases de transformações ditadas pelas contingências sociais, deles extraindo as regras disciplinadoras das novas necessidades, sem sacrifício da liberdade, da dignidade, da personalidade do ser humano".

Influiu a que fosse admitida a discussão sobre esse tema inédito, as condições intelectuais dos impetrantes, a quem se credita amplos conhecimentos jurídicos, notadamente em se tratando de Promotores de Justiça e Professores de Direito, que ora destaco, dentre aqueles que se apresentam como requerentes, para obtenção deste remédio heróico.

No dia final do prazo de 72 horas para as informações, a ilustre autoridade impetrada coatora – o Sr. Diretor de Biodiversidade da SEMARH – ingressou neste Juízo com o requerimento de fls. 166, requerendo a dilação do prazo que lhe fora concedido, em mais 72 horas, pois devido à tramitação interna do expediente encaminhado por esta Vara Criminal, houve demora na colheita dos elementos necessários para que informações precisas fossem prestadas.

Acolhi o pedido de dilatação do prazo, o estendendo em mais 72 horas, e o fiz por entender que sendo a Diretoria de Biodiversidade da Secretaria de Meio Ambiente e Recursos Hídricos órgão público da Administração Direta, repartição que não pode ser equiparada a uma Delegacia de Polícia (é comum em habeas corpus que a autoridade apontada coatora seja sempre um Delegado de Polícia), não estando, portanto, a autoridade coatora acostumada a se deparar com esse tipo de processo, como já o tem uma autoridade policial, que lida com presos humanos, não seria justo o indeferimento do pedido de prorrogação, até porque teve os impetrantes, por suposição, tempo suficiente para pesquisar e reforçar suas teses, com opiniões de diversas pessoas e entidades ligadas ao assunto ora em discussão.

Entretanto, com grande surpresa, tomei conhecimento, através de uma segunda petição enviada a esta Vara Criminal e assinada pelo Senhor Diretor de Biodiversidade da SEMARH, juntada nas fls. 168 dos autos, recebida na data de hoje, neste Juízo (dia 27/09/2005), que a chimpanzé "Suíça", paciente neste Habeas Corpus, veio a óbito no interior do Jardim Zoológico de Salvador, esclarecendo o comunicante, que o fato lamentável se deu "apesar de todos os esforços olvidados e mesmo diante dos cuidados sempre existentes com a chimpanzé". A notícia me pegou de surpresa, causando tristeza, sem dúvida, pois fiz uma visita incógnita ao Jardim Zoológico de Ondina, na tarde do dia 21/10/2005, sábado passado, e não percebi nenhuma anormalidade aparente com a chimpanzé "Suíça", embora queira deixar claro que não sou "expert" na matéria.

Tenho a certeza que, com a aceitação do debate, consegui despertar a atenção de juristas de todo o país, tornando o tema motivo de amplas discussões, mesmo porque é sabido que o Direito Processual Penal não é estático, e sim sujeito a constantes mutações, onde novas decisões têm que se adaptar aos tempos hodiernos. Acredito que mesmo com a morte de "Suíça", o assunto ainda irá perdurar em debates contínuos, principalmente nas salas de aula dos cursos de Direito, eis que houve diversas manifestações de colegas, advogados, estudantes e entidades outras, cada um deles dando opiniões e querendo fazer prevalecer seu ponto de vista. É certo que o tema não se esgota neste "Writ", continuará, induvidosamente, provocando polêmica. Enfim. Pode, ou não pode, um primata ser equiparado a um ser humano? Será possível um animal ser liberado de uma jaula através de uma ordem de Habeas Corpus?

Quanto à decisão final em si, cabe lembrar que, diz o art. 659, do C.P.P.B.: "Se o Juiz ou Tribunal verificar que já cessou a violência ou coação ilegal, julgará prejudicado o pedido". Assim, equivale dizer que, com a morte da chimpanzé, paciente no caso, o Habeas Corpus perdeu o seu objeto, a sua razão de ser, cessando-se, por conseqüência, o interesse de agir. Eis a doutrina:

> "Em se tratando de ação, é preciso que exista interesse do impetrante em conseguir o provimento jurisdicional para fazer cessar o constrangimento ilegal, já consumado ou em vias de ocorrer. Por isso, caso não mais subsista a violência ou coação, é natural que uma das condições da ação tenha desaparecido, dando ensejo ao não conhecimento do *habeas corpus*" (Guilherme de Souza Nucci, Código de Processo Penal Comentado, 2ª Edição 2003, página 878).

"O julgamento do pedido de *habeas corpus*, quer pelo juiz singular, quer pelo tribunal competente, pode ser julgado prejudicado, quando se apurar ser irreal o constrangimento alegado: Se o juiz ou tribunal verificar que cessou a violência ou coação ilegal, julgará prejudicado o pedido" (art. 659, CPP) – Habeas Corpus – Heráclito Antônio Mossin, 4ª Edição 1998, página 192.

Por outro lado, o art. 267, do Código de Processo Civil em vigor, estatui que extingue-se o processo, sem julgamento do mérito, no seu inciso IV, quando se verificar a ausência de pressupostos de constituição e de desenvolvimento válido e regular do processo.

O Código de Processo Civil também se aplica subsidiariamente, por analogia, à área processual penal, na parte em que for cabível.

De tudo quanto foi exposto, sem examinar o mérito, julgo o *writ* prejudicado e decreto a extinção do processo, determinando o seu arquivamento.

Publique-se. Intimem-se e arquive-se cópia autenticada em Cartório.

Salvador, 28 de setembro de 2005.

EDMUNDO LÚCIO DA CRUZ.
Juiz de Direito.

HABEAS CORPUS - 833085-3/2005

In favor of: Suica
Requested by: Heron Jose de Santana, Luciano Rocha Santana, Antonio Ferreira Leal Filho and others

Co-plaintiff authority: Thelmo Gavazza, Director of Biodiversity, Environmental and Hydrological Resource Department

Sentence: Pages 170 to 173: Hons. HERON JOSE DE SANTANA and LUCIANO ROCHA SANTANA, Prosecutors from the Environmental Department and other entities and individuals indicated in the petition (page 2), have requested a REPRESSIVE HABEAS CORPUS in favor of "Suica," a chimpanzee (scientific name Anthropopithecus troglodytes), a monkey who is caged at Parque Zoobotanico Getulio Vargas (Salvador's zoo), located at Av. Ademar de Barros, in this capital, and the co-plaintiff authority in this case is Mr. Thelmo Gavazza, Director of Biodiversity of the Environmental and Hydrological Resource Department, SEMARH. To support the request, the petitioners alleged that "Suica" is caged in a cage that has severe infiltration problems in its physical structure, which would hinder the animal's access to the direct transit area, which is larger, and also to the hall used to handle the animal; the cage's total area is 77.56 square meters and 4.0 meters high in the solarium, with a confinement area 2.75 meters high, thus preventing the chimpanzee to move around. With the purpose of showing the grounds of this writ, the petitioners allege, in short, that "in a free society, committed to ensuring freedom and equality, laws evolve according to people's thinking and behavior, and when public attitudes change, so does the law, and several authors believe that the Judiciary can be a powerful social change agent." They also state, in short, that as of 1993 a group of scientists began to openly defend the extension of human rights to large primates, giving rise to the Great Ape Project, which is supported by primatologists, ethologists and intellectuals, which is based on the premise that human beings and primates became different species about 5 to 6 million years ago, and some evolved into the current chimpanzees and bonobos, and another into 2-footed erect primates, wherefrom Homo Australopithecus, Homo aridipithecus and Homo paranthopus descend, in short, the intent is to equate primates to human beings for the purposes of granting habeas corpus. Lastly, the petitioners say that this instrument alone, can extend the definition of personality (or humanity) to hominids. They base it on the concept of environmental safety, and seek a grant of Habeas Corpus in favor of "Suica" the chimpanzee, determining its transfer to GAP's Great Ape Sanctuary in the city of Sorocaba, State of Sao Paulo, having already made available the transportation for this transfer. One could, from the very topic of the petition, have enough grounds to dismiss it, from the very outset, arguing the legal impossibility of the request, or absolute inapplicability of the legal instrument sought by the petitioners, that is, a Habeas Corpus to transfer an animal from the environment in which it lives, to another. However, in order to incite debate of this issue, with persons and entities connected to Criminal Procedural Law, I decided to admit the argument. In fact this is an unprecedented case in Bahia's law, although I am aware of a case heard by the Federal Supreme Court, wherein a Rio de Janeiro attorney, in conjunction with an animal protection agency, requested an Habeas Corpus to release a bird, which was caged, however, the Court dismissed the case, according to the opinion writer justice, Hon. Justice Djalci Falcao, who voted for dismissal, with the understanding that "an animal cannot be involved in a legal relationship as subject of law, it can only be object of law, acting as a thing or asset." (STF RHC - 63/399). I have been on the bench for 24 years, always working in criminal courts, and this the first case I have been assigned where the subject of the Habeas Corpus is an animal, to wit, a chimpanzee. However, the theme is deserving of discussion as this is a highly complex issue, requiring an in-depth examination of "pros and cons", therefore, I did not grant the Habeas Corpus writ, preferring rather to obtain information from the co-plaintiff authority, in this case, Mr. Thelmo Gavazza, Director of Biodiversity of the Environmental Department, requesting he did so within 72 hours. It is true that, in this initial ruling, admitting the debate of this matter, I have displeased some overzealous jurists who might have forgotten a Roman Law maxim, which says that "in any provision, the petition must be submitted so that words are not superfluous, and rendered worthless". Additionally, I would like to recall the wise words of the late Prof. Vicente Rao, who wrote in his monumental work - The Law and Life of Rights: "jurists should not seek demagogic applause, which they are not in need of. Quite the contrary, they have to courageously set forth the true scientific and philosophical principles of Law, proclaiming them loud and clear. They have to make these prevail in a tumultuous legislative scene, where changes are dictated by social contingencies, extracting therefrom rules which govern new needs, without sacrificing freedom, dignity and human personality." Among the factors that influenced my accepting this matter for discussion is the fact that among the petitioners are persons with presumed broad legal knowledge, such as Prosecutors and Law professors. On the last day of the 72-hour deadline for submission of information, the illustrious co-plaintiff, SEMARH's Biodiversity Director, filed a petition in this Court (page 166), requesting the extension of the deadline, by another 72 hours, as due to internal issues at the Court, there was a delay collecting information. I accepted the extension of deadline, by another 72 hours, and did so because I understood that the Biodiversity Division of the Environmental and Hydrological Resource Department, a direct administration agency, cannot be compared to a Police Precinct (normally, in habeas corpus the co-plaintiff is a police authority) therefore there was no police authority involved, which deals with human detainees, and the petitioners supposedly had enough time to research and back-up their claims, gathering opinions of several persons and entities connected to the matter. However, surprisingly, I became aware, through a second petition sent to this Criminal Court, signed by the SEMARH's Biodiversity Director (page 168) received today at this Court (on 09/27/2005), that "Suica" the chimpanzee, the subject of this Habeas Corpus, was deceased inside the Salvador Zoo. The petitioner indicated that this sad fact took place "in spite of all efforts made and all care provided to the chimpanzee". The news took me by surprise, no doubt causing sadness, as I visited the Ondina Zoo, covertly, on the afternoon of 10/21/2005, last Saturday, and did not perceive any apparent abnormality concerning "Suica" the chimpanzee, although I would like the record to show that I am not an expert on the matter. I am sure that with the acceptance of the debate, I caught the attention of jurists from all over the country, bringing the matter to discussion. Criminal Procedural Law is not static, rather subject to constant changes, and new decisions have to adapt to new times. I believe that even with "Suica's" death the matter will continue to be discussed, especially in Law school classes, as many colleagues, attorneys, students and entities have voiced their opinions, wishing to make those prevail. The topic will not die with this writ, it will certainly continue to remain controversial. Thus, can a primate be compared to a human being? Can an animal be released from its cage, by means of a Habeas Corpus? As for the final decision, I recall article 659 of the CPPB: "If a Judge or Court finds that violence or illegal coercion has ended, the request will be dismissed." Thus, with the death of the chimpanzee, subject hereof, the Habeas Corpus has lost its purpose, its reason of being, thus ending the action. The doctrine says: "In a legal action, there must be a petitioner interest in seeking the end of the illegal constraint, which has either been consummated or about to be so. Therefore, if the violence or coercion no longer exists, one of the conditions for the action has disappeared, ending the admissibility of the habeas corpus." (Guilherme de Souza Nucci, Codigo de Processo Penal Comentado (Annotated Criminal Procedure Code), 2nd edition 2003, page 878). "The judgment of a habeas corpus request, whether by a single judge or by a competent Court, can be dismissed if the alleged constraint is found to be unreal." (Article 659, CPP) - Habeas Corpus - Heraclito Antonio Mossin, 4th edition, 1998, page 192. On the other hand, article 267, of the current Civil Procedure Code establishes on section IV that a case should be dismissed, without judging the merits, when missing the elements for valid and regular constitution and development of the proceeding. The Civil Procedure Code also applies, by analogy, to the criminal area, where applicable. Therefore, I dismiss the case. Enter. Notify and file a certified copy with the Court of record. Salvador, September 28, 2005. Edmundo Lucio da Cruz, Judge.

LEGAL TRANSLATION SYSTEMS
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Translation Prepared by Carlos de Paula
According to the translator, this could mean either "overzealous jurists" or, if meant sarcastically, "jurist wannabees," people who claim to have an understanding of the law, but really don't.

STATE OF NEW YORK
SUPREME COURT COUNTY OF SUFFOLK

In the Matter of a Proceeding under Article 70 of the CPLR for a Writ of Habeas Corpus, THE NONHUMAN RIGHTS PROJECT, INC., on behalf of HERCULES and LEO, Petitioners, v. SAMUEL L. STANLEY JR., M.D., as President of State University of New York at Stony Brook a/k/a Stony Brook University and STATE UNIVERSITY OF NEW YORK AT STONY BROOK a/k/a STONY BROOK UNIVERSITY, Respondents.	**AFFIDAVIT OF SARAH BAECKLER DAVIS** Index No.:

STATE OF OREGON)
) ss:
COUNTY OF Multnomah)

Sarah Baeckler Davis being duly sworn, deposes and says:

<u>Introduction and Qualifications</u>

1. My name is Sarah Baeckler Davis. I reside and work in Portland, Oregon. I received my law degree (J.D.) from Lewis & Clark Law School in 2008, with a focus on animal law. I received a Master's of Science in Primate Behavior from Central Washington University in Ellensburg, WA, in 2002. I am currently the Executive Director of the North American Primate Sanctuary Alliance (NAPSA). I previously served as the founding Executive Director of Chimpanzee Sanctuary Northwest (February 2008 – April 2013).

2. I submit this affidavit in support of Petitioners The Nonhuman Rights Project, Inc. ("NhRP"), on behalf of Hercules and Leo, for a writ of habeas corpus. I am a non-party to this proceeding.

3. I have worked with and for chimpanzees since 1997. I have engaged in research focused on chimpanzee communication and captive management. After several years of working with captive chimpanzees in zoos and sanctuaries, I witnessed and reported on institutionalized abuse of chimpanzees by the trainers. I spent five years as the administrator of the Chimpanzee Collaboratory, a joint effort of several nonprofits, including the Animal Legal Defense Fund, The Jane Goodall Institute, and Save the Chimps. At the Collaboratory, I worked on a campaign to end the use of great apes in entertainment, which included both public education and legal initiatives. As Executive Director of Chimpanzee Sanctuary Northwest, I helped grow the organization from its early roots to a team of over 50 volunteers and staff and a large annual budget.

Introduction and Background on North American Primate Sanctuary Alliance

4. The North American Primate Sanctuary Alliance (NAPSA) was founded in 2010 by the directors of the seven leading chimpanzee sanctuaries in North America: Center for Great Apes (Wauchula, FL), Chimpanzee Sanctuary Northwest (Cle Elum, WA), Chimp Haven (Keithville, LA), Chimps, Inc. (Bend, OR), Fauna Foundation (Carignan, Quebec, Canada), Primate Rescue Center (Nicholasville, KY) and Save the Chimps (Fort Pierce, FL).

5. The mission of NAPSA is to advance the welfare of captive primates through exceptional sanctuary care, collaboration and outreach. NAPSA member sanctuaries provide

lifelong homes to primates who have been used in biomedical research, the entertainment industry or the exotic pet trade.

6. NAPSA member sanctuaries provide homes for 85% of the 550+ chimpanzees cared for by North American sanctuaries. Collectively NAPSA directors and their staff have provided sanctuary for over 700 primate residents and have over 900 years of experience caring for primates. NAPSA represents the experts in this field and the gold standard in primate care.

7. NAPSA member sanctuaries abide by the highest standards encompassing all major aspects of organizational ethics, professionalism and fiscal responsibility. NAPSA sanctuaries also set the highest standards for animal protection and welfare, including provision of professional veterinary care, chimpanzee socialization, and care for chimpanzees with infectious diseases.

8. Organizations caring for captive primates (defined as non-human apes, monkeys, lemurs, and other prosimian species) qualify for membership in NAPSA based on their ability to demonstrate an existing adherence to the following criteria:

a. Must rescue and provide care and a lifelong home to primates who have been abused, injured, abandoned or are otherwise in need.

b. Must espouse NAPSA Core Values and Code of Conduct.

c. Must have implemented birth control protocols to prevent propagation of the primate residents.

d. Must be a federal non-profit organization under Section 501(c)(3) of the Internal Revenue Code (or equivalent in countries other than the United States).

e. Must be accredited by the Global Federation of Animal Sanctuaries (GFAS).

f. Must obtain a USDA license (or Canadian/Mexican equivalent) and maintain required state/provincial and municipal permits and licenses.

g. Must have a "whistleblower" or ethics complaint policy in effect.

h. Must not engage in the commercial trade of primates.

i. Must not allow primate residents to be used in entertainment.

j. Must not allow unescorted public visitation.

k. Must not allow direct physical contact between the public and the non-human primate residents.

l. Must not accept more primates than can be responsibly cared for without exceeding the available financial resources.

m. Must not participate in research unless the studies directly benefit non-human primates, are observational only, and do not require anesthetic events other than for health checks, and do not interfere with the normal daily activities of individual primates.

n. Must not allow primates to be removed from the property for purposes of fundraising, exhibition, education, or research.

9. Institutions that meet the above criteria will be eligible for full membership in NAPSA.

NAPSA Core Values and Conduct Requirements

10. NAPSA's Core values include: (1) Respect; (2) Integrity; (3) Transparency; (4) Accountability; (5) Professionalism; (6) Promoting excellence; and (7) Cooperation.

11. NAPSA's Code of Conduct is as follows: (1) Abide by, uphold and promote NAPSA membership requirements; (2) Act within and uphold applicable laws; (3) Be vigilant and aware of potential for misconduct; (4) Maintain high standards; (5) Operate within an ethic of continuous improvement; (6) Interact with other members in a respectful and professional way; (7) Abide by NAPSA Conflict of Interest Policy; (8) Act with fairness in relations with staff, volunteers, vendors and partners; (9) Place a strong emphasis on safety and security for the well-being of primate residents, staff and visitors; (10) Demonstrate a commitment to the welfare of captive primates; (11) Maintain the integrity and reputation of NAPSA; (12) Provide procedures for receiving, investigating and addressing complaints, grievances, or other feedback; (13) Transfer primate residents only if in their best interest and only to another NAPSA sanctuary.

NAPSA Member Sanctuaries

12. Though varied in approach and size, each of NAPSA's eight members provides exceptionally high levels of care for its residents.

13. The following are shared features of the current NAPSA member sanctuaries:

a. Each sanctuary is a non-profit organization. In the U.S. they are recognized as 501(c)(3) charitable organizations by the Internal Revenue Service.

b. Each U.S. sanctuary is licensed and inspected by the U.S. Department of Agriculture. The Canadian sanctuary is permitted and inspected by the Minister of Agriculture and the Department of Parks and Fisheries.

c. Each sanctuary is governed by a Board of Directors, and abides by all applicable federal, state/provincial and local regulations and ordinances.

d. Each member sanctuary provides emergency and preventive veterinary care to their primates either through experienced consulting veterinarian agreements or staff veterinarians.

e. Each member sanctuary has succeeded in causing measurable improvements in the physical and psychological health of their primates retired from research or the pet and entertainment industries.

f. The NAPSA member sanctuaries are not open to the public like zoos, but engage in public awareness of their mission and provide educational opportunities to the public, including online resources and internships.

g. In order to increase their effectiveness, the member sanctuaries cooperate with a wide range of professionals to augment their programs in veterinary care, financial management, human resources, public affairs, behavioral management and fundraising.

14. NAPSA member sanctuaries provide sustainability for their residents. The member sanctuaries have a history of successfully supporting and carefully managing their organizations. Member sanctuaries have invested over $38 million in the construction of housing for primates. Annual operating costs are often challenging to obtain, given the long lifespan of captive primates. NAPSA member sanctuaries raise over $8.7 million for annual costs to care for primates, mainly from charitable donations.

15. The NAPSA member sanctuaries provide a level of care exceeding the minimum requirements of the federal Animal Welfare Act. The goal for each sanctuary is to surpass those standards in order to provide the care necessary for optimal chimpanzee welfare. The primates live in large enclosures with both indoor and outdoor spaces, in appropriate social groups and

with extensive environmental enrichment programs. Although not required by law, NAPSA sanctuaries almost universally meet or exceed the recently adopted requirements for housing conditions of federally funded chimpanzee research projects – including maintaining ethologically appropriate social groups, providing enough space and opportunity to exhibit species-typical behaviors like climbing, running, nesting, and grooming. Photographs from various member sanctuaries that depict the naturalistic environments provided to resident primates are annexed hereto as **"Exhibit A"**.

16. NAPSA member Center for Great Apes (CGA) is located in Wauchula, Florida. Founded in 1993, it is home to 45 great apes. Thirty residents are chimpanzees, and the remaining apes are orangutans. The Center for Great is the only orangutan sanctuary in the United States. Its daily operations require 22 staff members and it sits on 120 acres. The Center for Great Apes has 10 heated and cooled nighthouse buildings (48 individual bedrooms), 13 outdoor domed enclosures, 5 smaller enclosures (for quarantine, clinic recovery, and special needs individuals), and over a mile (5400+ feet) of elevated chutes and tunnels that run throughout the wooded habitat. It also hosts a full veterinary clinic, a food prep and storage building, a maintenance workshop, staff residences and administration building. Most of CGA's residents are retired from the entertainment industry or from private pet situations.

17. Chimpanzee Sanctuary Northwest (CSNW), located in Cle Elum, Washington, was founded in 2003 and provides sanctuary for seven chimpanzees in one social group. CSNW sits on 26 acres and has a staff of seven. The main chimpanzee facility includes a large multi-floor playroom with catwalks, loft area, and lots of windows, plus a series of four interconnected rooms for meals. A "greenhouse" outdoor area includes a removable cover for heat and protection from the weather, with climbing platforms and structures. The greenhouse connects to

a two-acre open-air enclosure (surrounded by two layers of electric fencing), which includes several stands of bamboo, climbing structures and platforms, and shelters. The property also includes a staff residence and office building, a fully equipped mobile veterinary clinic, and several outbuildings. CSNW's residents came from biomedical research, and some of them have pet and entertainment backgrounds as well.

18. Chimp Haven is located in Keithville, Louisiana, and was founded in 1995. It serves as the only contractor with the federal government eligible to take chimpanzees retired from federal research programs. It sits on 200 acres of land. It has 40 staff members who provide care to 163 chimpanzee residents. The facility includes more than 60 heated indoor bedrooms with bedding for each group, two 4-5 acre forested habitats, two open air play yards (surrounded by concrete walls), ten outdoor playgrounds, and seven outdoor runs. Support areas include an administration building, two veterinary clinics, two kitchens, several storage buildings, and a maintenance building. While a majority of Chimp Haven's residents are retired from federal research, it also provides sanctuary to 14 former pets and other privately owned chimpanzees.

19. Chimps, Inc. was founded in 1995 in Bend, Oregon. Its 7 chimpanzee residents were former pets or used in the entertainment industry. It has four staff members and the facilities span five acres. On the property is a bi-level heated indoor building totalling 2,200 square feet, which is connected to a second 1,100 square foot indoor area that is divided into 6 different rooms. Three covered outdoor enclosures total 2,100 square feet, plus an open-air habitat of nearly one acre. All indoor/outdoor areas are connected by aerial tunnels which meander around the property for nearly 200 square feet. Also onsite is a staff residence building, 2 kitchens, laundry and enrichment storage room, two offices, and several storage buildings.

20. The Fauna Foundation was founded in 1992 outside of Montreal, Canada. Thirteen chimpanzees live at the sanctuary, which totals 200 acres. Ten staff provide daily care to the chimpanzees and other residents at the sanctuary. The facilities include a heated indoor building designed for diversity of group formation and enclosure styles. The interior design allows movement throughout the building – the chimpanzees can choose to watch staff activities or move to a group or private space at will. The indoor building includes several multi-level areas, ten privacy areas, including a two-level "apartment" for chimpanzees with social difficulties, two large gymnasium style play areas, two large multi-level rooms, an interconnecting tunnel system that allows protected contact for introductions as well as "cross overs" for changing group formations, a kitchen, an observation area, and a clinic and surgery room. The outdoor space includes three open-air islands (enclosed by water and electric fencing) with climbing structures, landscaped stone formations, ponds, vegetable garden, and trees. Also outdoors is an overhead "skywalk" tunnel system that goes over a pond, fields, indigenous wildlife and extensive natural and planted gardens and trees. Most of the Fauna Foundation residents were retired from research, but some are former pets, zoo residents, or entertainers.

21. The Primate Rescue Center (PRC) was founded in 1997 in Nicholasville, Kentucky. It provides sanctuary for 11 chimpanzee residents in one social group, all retired from either research or private ownership. PRC also provides sanctuary to over 40 other nonhuman primates and employs six staff members. Sitting on 30 acres, PRC's chimpanzee facilities include eight heated indoor bedrooms, an outdoor playground with extensive climbing structures and platforms, and an indoor playroom. Support areas include an administration and storage building, a kitchen, maintenance and equipment storage.

22. Save the Chimps (STC) is the largest chimpanzee sanctuary in the world, sitting on 195 acres in Fort Pierce, Florida and providing a home to 261 chimpanzee residents. STC has many former research chimpanzees, and also provides sanctuary to many former pets and cast-offs from the entertainment industry. Founded in 1997, STC has 59 employees. STC has twelve 3-5 acre open-air islands, each with its own hurricane-resistant, climate-controlled indoor housing. Each island and housing combination is designed to house a social group of up to 25 chimpanzees.

<u>Accreditation Requirements by the GFAS</u>

23. As indicated above, NAPSA only accepts members that are accredited by the GFAS.

24. All GFAS organizations must adhere to certain policies set out in their standards, including but not limited to: (1) no commercial trade in animals or animal parts; (2) no animals removed from enclosures for exhibition; (3) no direct contact between the public and animals (with some allowable exceptions, such as for some equines, and under carefully supervised circumstances); (4) measures in place to prevent breeding, either through segregation of sex or through a program of contraception, unless the animals are part of a bona fide release program; (5) open to the public only by way of a structured visitor program in which tours are guided and where there is a bona fide educational component to the visiting program.

25. GFAS defines a "sanctuary" as "an establishment that provides lifetime care for animals that have been abused, injured, abandoned, or are otherwise in need. The animals may come from sources including, but not limited to, private owners, research laboratories, government authorities, the entertainment industry, and zoos."

26. GFAS's set of standards for great apes, which are listed in a 70-page document, details standards pertaining to: housing; physical facilities and administration; nutritional requirements; veterinary care; well-being and handling; general staffing; safety policies, protocols and training; governing authority; financial records and stability; education and outreach; policies: acquisition and disposition; policies: public contact and restriction on use and handling release into the wild (where applicable). A copy of GFAS's set of standards for great apes is annexed here to as **"Exhibit B"**.

Chimpanzee Placement in NAPSA Sanctuaries

27. One important aspect of NAPSA's work is its placement of chimpanzees in NAPSA sanctuaries. Chimpanzees living in captive settings such as those found in the United States and Canada can not successfully be returned to the wild, because they lack the knowledge and experience to survive. Chimpanzees have complex social and physical needs, and specialized, professional care is required to meet those needs. When chimpanzees such as Petitioners are in situations in which their needs are not being met, NAPSA works to find sanctuary placement. In the several years NAPSA has existed, NAPSA has placed many chimpanzees in member sanctuaries.

28. Petitioners Hercules and Leo in this case would be evaluated for and be able to receive placement in a NAPSA sanctuary. The specific sanctuary would be determined after weighing available space at member sanctuaries and evaluating the social and medical status, history and needs of Petitioners Hercules and Leo. Each chimpanzee's needs and history are different, making individualized analysis and timely evaluation required in each case.

29. NAPSA's most recent primate placement (in September 2013) involved a chimpanzee named Terry, plus four Barbary macaques (a species of monkey). Terry and the macaques were housed at a substandard facility that faced closure on very short notice. NAPSA, two of its member sanctuaries, and the USDA collaborated to complete social and medical evaluations of the primates. The results of these evaluations, plus a survey of available space in NAPSA sanctuaries, helped to determine the best location for the primates. Within two weeks of the announcement of the closure, NAPSA members moved the primates to sanctuaries.

Sarah Baeckler Davis

Sworn to before me
this 26 day of November, 2013

Susan E. Page
Notary Public

STATE OF Oregon)
) ss:
COUNTY OF Multnomah)

On the 26 day of November in the year 2013 before me, the undersigned, a notary public in and for said state, personally appeared Sarah Baeckler Davis, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her capacity, and that by his/her signature on the instrument, the individual, or the person upon behalf of which the individual(s) acted, executed the instrument, and that such individual made such appearance before me the undersigned in the County of Multnomah and the State of Oregon.

OFFICIAL SEAL
SUSAN E PAGE
NOTARY PUBLIC - OREGON
COMMISSION NO. 464027
MY COMMISSION EXPIRES DECEMBER 09, 2015

Susan E. Page
Notary Public

My Commission Expires: 12/9/2015

STATE OF NEW YORK
SUPREME COURT COUNTY OF SUFFOLK

In the Matter of a Proceeding under Article 70 of the CPLR for a Writ of Habeas Corpus, THE NONHUMAN RIGHTS PROJECT, INC., on behalf of HERCULES and LEO, Petitioners, v. SAMUEL L. STANLEY JR., M.D., as President of State University of New York at Stony Brook a/k/a Stony Brook University and STATE UNIVERSITY OF NEW YORK AT STONY BROOK a/k/a STONY BROOK UNIVERSITY, Respondents.	Index No.:

STATE OF OREGON)
) ss:
COUNTY OF MULTNOMAH)

1. This Certificate of Conformity is submitted pursuant to New York CPLR 2309(c) and New York Real Property Law § 299-a.

2. I am an attorney duly licensed to practice law in the State of Oregon.

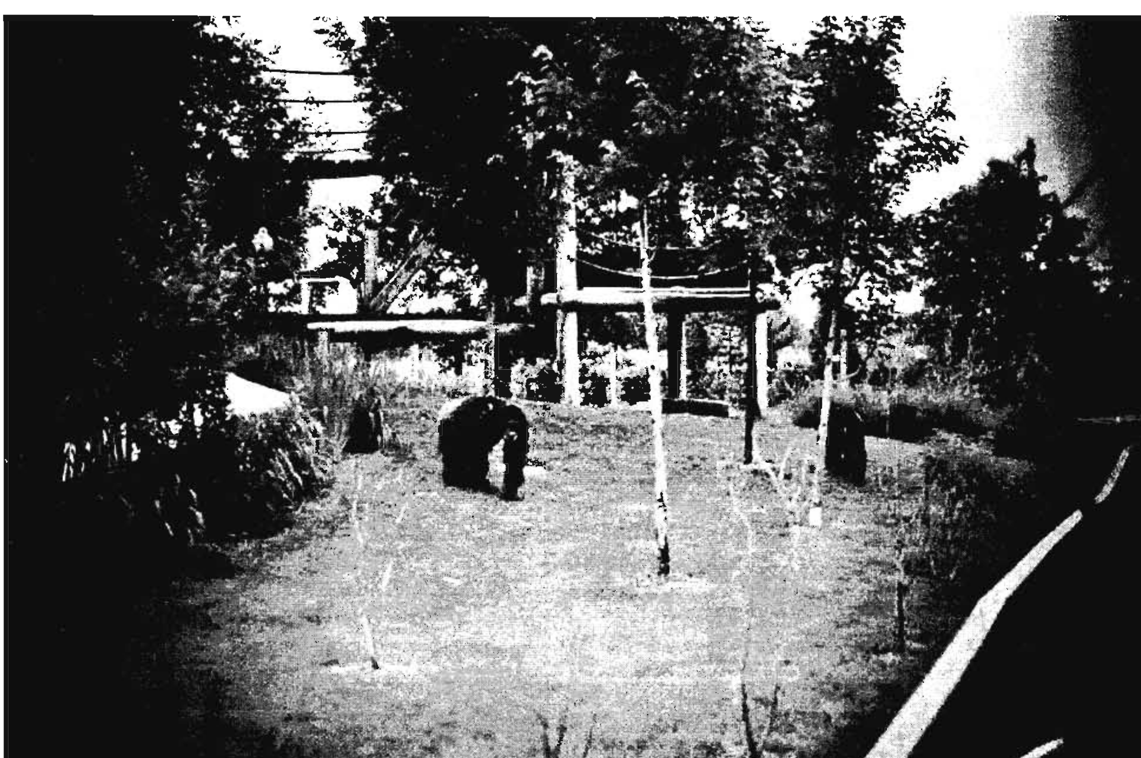
3. I certify that the Affidavit of Sarah Baeckler Davis, signed and dated on November 26, 2013 was taken in the manner prescribed by the laws of the State of Oregon.

Dated: November 26, 2013
Portland, Oregon

Kathy Hessler

Kathy Hessler, Esq., Director
Animal Law Clinic
Lewis & Clark Law School
10015 S.W. Terwilliger Blvd.
Portland, OR 97219-7799

Exhibit: A. to Affidavit of Sarah Baeckler Davis sworn to November 26, 2013
Photographs of Sanctuaries (94-97)

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Global Federation of Animal Sanctuaries

Standards For Great Ape Sanctuaries

Version:
January, 2013

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INTRODUCTION

GFAS PRINCIPLES

The Global Federation of Animal Sanctuaries (GFAS) will designate an organization as "verified" or "accredited" based upon its substantial compliance with the standards listed below. GFAS recognizes that some organizations under consideration will operate valid rescue and rehabilitation programs with a goal of releasing wildlife to the wild pursuant to IUCN and/or other international or national standards. For those animals, lifetime sanctuary care may not be part of the organization's mission. While the care for these animals may be provided on an interim basis only, the organization is still expected to meet the standards below with regard to all animals in its care and for purposes of these standards it will be identified as a "sanctuary."

Consistent with GFAS' philosophy and the standards below, it is expected that a sanctuary does not adopt policy positions that are in opposition to the welfare of the species of animals in the care of the sanctuary (for example, while it is not required that a primate sanctuary affirmatively promote a policy against laboratory research using primates, it should not promote a policy in favor of such research).

Note: Several standards make reference to a sanctuary's "Director." GFAS recognizes that a sanctuary may use a different title, and the term "Director" is intended to reference the sanctuary's Sanctuary Director, who may be called an Executive Director or Chief Executive Officer, etc.

GFAS also recognizes that sanctuaries may rely on volunteers for certain functions, including some aspects of animal care (such as food preparation). Standards referencing "staff" may take into account appropriately qualified and trained volunteers as well as employees.

ANIMALS COVERED BY THESE STANDARDS

Family / Genus

Family: Hominidae
Genus: Gorilla, Pan, Pongo

Genus	Species	Common Names
Gorilla	*Beringei*	Eastern gorilla, Mountain gorilla
Gorilla	*Gorilla*	Western gorilla, Lowland gorilla
Pan	*troglodytes*	Chimpanzee

Pan	*Paniscus*	Bonobo, Pygmy Chimpanzee, Dwarf Chimpanzee, Gracile Chimpanzee
Pongo	*Abelli*	Sumatran orangutan
Pongo	*pygmaeus*	Bornean orangutan

GREAT APE STANDARDS

GFAS notes that there may be other acceptable ways of meeting the intent of each standard, aside from those detailed below, and that in some instances there may be legal, cultural or other significant barriers to meeting GFAS requirements. The standards are considered mandatory, but GFAS will consider specific exceptions to some of the listed requirements (e.g., exact enclosure size, manner of record keeping, legal requirements that impact a sanctuary's acquisition policy, etc.). GFAS encourages sanctuaries to offer feedback on the standards and to explain any reasons why it believes it cannot meet a particular standard, or why the standard is not applicable and/or appropriate to its situation. Sanctuaries are also welcome to indicate a timeline for meeting a standard if the standard is not yet met at the time of application for accreditation or for verification.

The exceeding of the standards is encouraged. In addition to meeting these standards, an organization is expected to comply with all applicable international, national, state/province, and local laws and regulations.

GREAT APE HOUSING

H-1 Types of Space and Size

Unless otherwise directed by a veterinarian, great apes are provided sufficient opportunity and space to move about freely and rapidly, and to exercise choice in location so as to reduce stress and maintain good physical condition.

General

a. The habitat and living conditions are species appropriate and replicate, in as much as possible, the great apes' wild habitat with a balance between hygiene and the species' physiological and psychological needs. This includes adequate space, both vertical and horizontal, and appropriate space, in terms of diversity and complexity.

b. The physical space provides varied opportunities for the apes to interact with the environment and key elements are changed often, resulting in a dynamic living space.

c. Facility design takes into account caregiver-great ape safety and ease of maintaining a positive relationship.

d. Apes are provided access to as many areas of the enclosures as possible, except during staff maintenance activities, unless security concerns dictate otherwise. All enclosures interconnect without creating 'dead ends' to allow for freedom of movement of subordinate individuals.

e. In areas where solid barriers are not used, equipment, *e.g.* machinery and heaters placed outside the enclosure, is positioned far enough away from the enclosure that the apes cannot use sticks or other objects to manipulate them through the barrier.

f. The habitat ideally provides appropriate visual, olfactory, and acoustic barriers.

g. The habitat provides security from predators and unauthorized human access.

h. Sanctuaries that routinely accept infant great apes have a nursery unit with separate or easy access to kitchen and bathroom facilities for caregivers.

- Nursery units include an outdoor play area separate from older animals.
- Nursery units include sleeping areas for caregivers and infant apes in close proximity.
- Both indoor and outdoor areas of the nursery unit are designed to allow infant great apes to climb, explore and play.

Open Space Settings

i. Open space settings have enough acreage per animal to accommodate natural individual and group activities. Particular attention is paid to vertical aspects of their environment, allowing for more natural behaviors.

j. Where open space settings are the primary enclosure, two other areas may also be provided:

- Indoor day/night rooms or other means of providing night housing and secure shelter during inclement and extreme weather. This space also provides alternate housing for sick or injured individuals while in close proximity to the social group.
- Shift yards for use while the primary enclosure is serviced and/or for animal management needs including introduction of new individuals to a group, or temporary separation for health or social reasons. Shift yards should include a small cage area accessible from indoor housing, and a minimum of one door to the primary enclosure.

Controlled Access Settings

k. While not as extensive as an open space setting, in controlled access areas ideally three enclosures are also provided: outdoor enclosures as the primary living space; indoor day/night rooms; and a shift yard or lock out.

Indoor Housing

l. Indoor housing provides year-round protection from the elements. For sanctuaries located in northern climates (where freezing temperatures occur regularly during any part of the year), indoor space is large enough to allow for all forms of species-specific behavior (running, climbing, etc.).

Mixed Species Enclosures

m. When an additional species is housed with great apes, the enclosure dimensions are adjusted accordingly. Additional space reflects that required for both species if housed separately.

- For new construction, separate transfer doors are included for each species to be housed.
- For existing facilities, efforts are made to retrofit the facility with a separate transfer door to indoor areas and outdoor enclosures from the shift yard.

Dimensions

n. Many factors influence the minimum space required for a group of great apes, including, but not limited to: group size, group composition, and enclosure complexity. The following are minimum requirements. Facilities should provide as much space as is possible and/or practical.

o. Sanctuaries meeting only the minimum requirements for enclosure space employ additional environmental enrichment, focusing on physical and mental exercise rather than food, to compensate for reduced space and complexity.

p. Outdoor enclosures for great apes are a minimum of 5,000 sq. ft. (464.5 sq. m) per 5 great apes, with an additional 250 sq. ft. (23.22 sq. m) for each additional individual. Enclosure shape may be variable to take in natural features in the landscape such as rock formations, hills and trees, and for roofed enclosures there should be a minimum vertical dimension of 20 ft. (6 m). Space includes a minimum of one (1) animal transfer door leading to the indoor enclosure.

q. Indoor day/night rooms for great apes have a minimum of two 'rooms' or one indoor room and one shift yard per group of compatible apes. Room dimension is dependent on intended purpose and/or duration of confinement. One room with a minimum dimension of 200 sq. ft. (18.6 sq. m) per compatible pair, with an additional 50 sq. ft. (4.6 sq. m) per additional animal.

- A minimum vertical height of 15 ft. (4.6 m) is recommended, with furniture and/or catwalks that allow use of vertical space.
- Rooms interconnect without creating 'dead ends' to allow for freedom of movement for subordinate individuals.
- Rooms Include a minimum of one transfer door to an outdoor enclosure.
- Whenever possible, separated great apes have visual and tactile access to group members to facilitate reintroduction.

r. Shift yards for great apes should have a minimum of 200 sq. ft. (18.6m) per compatible pair, with an additional 50 sq. ft. (4.6 sq. m) per additional animal. The minimum vertical dimension of 15 ft. (4.6 m).

- It is recommended that this include a minimum of two (2) doors to indoor enclosures to prevent dominant individuals from blocking access to shade, sun, food, other desired space, social partners or enrichment items.
- Shift yards are roofed or have a mesh top due to the small size of the enclosure and jump distance of the great apes.
- Facilities include multiple sub-enclosures so that the apes can be shifted to allow temporary segregation of individuals or subgroups and for secure staff access to enclosures for cleaning, maintenance, etc.

H-2 Containment

Great apes are safely contained.

General

a. Other than when being transported or for medical reasons, great apes are kept at all times in secure enclosures or other appropriate areas.

b. Enclosures are designed to allow for great apes' normal defense reactions and appropriate 'flight' or escape distances.

c. All enclosures are designed, constructed and maintained to securely contain great apes and to present no likelihood of harm to them.

d. Distance or barriers between great apes and between enclosures and personnel is sufficient to minimize stress to the animals as well as reduce the risk of disease transmission.

e. Enclosures are designed to allow for proper, safe cleaning and drainage.

f. Materials are appropriate for their particular application and are maintained in good repair.

Outdoor Enclosures

g. Perimeter containment of outdoor areas is constructed so as to prevent digging under the barrier by native wildlife, domestic species and the enclosure residents.

h. Fences and enclosures are inspected daily for signs of digging. Where fencing meets hard surfaces such as rock or concrete, the fencing is securely anchored in place.

Fencing

i. Barbed or razor wire are not used to contain great apes.

j. High tensile electric fencing may be used in conjunction with standard fencing products but is discouraged for use as a primary barrier.

k. The supporting posts for fences are firmly fixed into the ground.

l. Fence material is sufficiently secured to supporting posts in such a way that the weight of the great apes could not detach it from the support nor dislodge the supporting posts.

m. Gates and doors are at least as strong, and as effective, in containing the great apes as the rest of the enclosure barriers. In particular, gates and doors are designed and maintained so as to prevent animals from lifting them from their hinges or unfastening the securing device.

n. For open enclosures, a minimum fence height of 17 ft. (5.18 m) is recommended, with the upper 30% of the barrier made of a smooth, non-climbable material. The upper portion of the containment fence is cantilevered.

o. Rigid, woven wire steel mesh is recommended with a minimum 4 gauge (5.19 mm) thickness. Two inch (50.8 mm) square openings are recommended throughout the enclosure, particularly where staff and/or critical components are nearby, if a solid barrier is not possible in these areas. (Note: 4 in. (101.6 mm) square openings may be acceptable for ceilings and other areas not frequently accessed by staff. When staff is working in such areas, great apes are shifted from the enclosure).

p. Welded wire mesh is considered less reliable for containment and is not recommended as primary containment.

Electric Fencing

q. Electric fence energizers emit at least 9,000 V with a joule rating appropriate for the length and condition of the fence (25 joules is recommended).

r. 20-gauge high-tensile wire is required. A stronger gauge (*e.g.*, 12-gauge), may be more appropriate for some species.

s. Fences are a minimum of 12 ft. (3.66 m) tall, with a maximum wire spacing of 4 in. (101.6 mm) for the first 4 ft. (1.22 m) and 6 in (152.40 mm) thereafter.

t. Fence is alternating hot/ground to prevent apes from leaping onto the fence and avoiding shock.

u. Energizers are connected to battery or generator backup for continuous power supply during outages.

v. In dry climates, the earth rod area is watered to ensure adequate grounding.

w. If using electric fence as a primary barrier, two separate complete systems are used to increase effectiveness and reduce the chance of system failure.

x. Safety signs on hot wire are visible to staff and bystanders.

y. A non-electrified barrier is used to keep bystanders and wildlife from coming in contact with the electric fence.

Solid Barriers

z. Solid barriers such as concrete block, poured concrete and artificial rock can be used as the sole method of containment or in conjunction with other types of barrier.

aa. Walls are secured in appropriate footings to ensure wall stability.

bb. Care is taken, especially with artificial rock, to ensure that contours in the rock do not provide escape routes from the enclosure.

cc. Design of areas using solid walls allows for sufficient air flow throughout an enclosure.

Moats

dd. Water moats present a significant risk of accidental drowning because most great apes cannot float or swim and as such are not recommended.

ee. Dry moats, if used, are a minimum of 14 ft. (4.3 m) and have a smooth, non-climbable surface for at least the top 9 ft. (4.7 m). Moats are of a sufficient size and depth to adequately confine the great ape species housed. An escape route is built in to allow great apes who fall into the moat back into their enclosure.

ff. Moats are surrounded by fences, walls, hedges or shrubbery to prevent others from approaching too close to the edge.

gg. Dry moats are accessible by skid steer or similar small tractor to repair erosion or grade issues to meet other service or repair needs in the enclosure.

hh. Animal caregivers have safe and easy access to dry moats.

Open-Top Enclosures

ii. Smooth, solid barriers, such as poured concrete or no climb fences, are a minimum of 17 ft. (5.18 m) tall.

jj. Solid barriers are properly maintained so that finger holds do not develop.

kk. If using poured concrete or plate steel, cage or safety glass windows are provided to allow the great apes to see outside of their enclosure.

ll. For added security, one or two strands of hot wire may be added at the top of the wall/fence.

mm. Enclosures are adequately secured to allow the animals to have 24-hour access without supervision.

Safety Glass

nn. Unless covered with another appropriate barrier, glass is laminated (glass-clad polycarbonate) with a minimum thickness of 1in. (2.54cm). Glass is set into a steel or aluminum frame for security.

Indoor Enclosures and Shift Yards

oo. A maximum dimension of 2 in. x 2 in. (50.8 mm X 50.8 mm) for mesh is recommended for great apes. A maximum mesh size of 1 in. x 1 in. (25.4 mm X 25.4 mm) is recommended where mesh separates adjacent cages. Woven wire mesh is recommended.

pp. Walls between enclosures can be constructed of concrete block or poured concrete. When concrete block is used, the voids are filled with sand or soil to strengthen the walls and reduce potential harborage for unwanted species.

qq. Walls are of sufficient strength to anchor caging and furniture.

rr. Design of areas using solid walls allows for sufficient air flow throughout the enclosure.

ss. Solid concrete or concrete block walls are sealed to make them impervious to contaminants and pathogens.

H-3 Ground and Plantings

Ground cover indoors and out is healthy for apes. Plantings are appropriate and safe.

Vegetation

a. All outdoor enclosures for great apes include living or fresh vegetation, which can provide visual barriers, shade and resting sites.

b. All plant materials in an enclosure are evaluated for potential toxicity to the species held before use, including leaves, buds, seeds, fruit, bark and flowers.

c. Enclosures may also be planted with grasses, shrubs etc. that the great apes do not tend eat, provisioning the animals with preferred plant material as part of the daily diet.

d. Any vegetation capable of harming great apes is kept out of reach.

Outdoor Enclosures

e. All outdoor enclosures have a natural substrate consistent with the site.

- The substrate can be amended with organic materials, including but not limited to soils, sand, leaf litter, bark mulch, grasses, straw, hay, and wood shavings.
- Substrate is provided in sufficient amount/depth to cushion falls from perches or climbing structures.
- The substrate drains well.

f. Great apes are provided with appropriate three-dimensional environments to accommodate an array of locomotory and foraging behaviors, as well as appropriate sleeping and resting areas, including nesting and bedding materials.

g. Varied topography provides visual barriers, increased enclosure complexity and varied elevations, and can be achieved using naturally occurring topography at a selected construction site or through addition of soils, culverts, rocks, logs etc.

h. Horizontal and vertical jump distance is considered when developing enclosure topography.

i. Where natural topography of an enclosure is not varied, it is created through the addition of natural and placed elements.

j. Trees - Key shade trees within an outdoor enclosure are identified and protected from damage.

- Trees that may be used as an escape route are identified, pruned or removed; or means to prevent great apes from accessing them have been identified.
- Health of trees close to fence lines is checked regularly and any removed if there is fear of it coming down on fence line.
- Trees, vines and shrubs are checked daily and trimmed as necessary to ensure that growth does not allow escape from open-top enclosures.
- Access to very tall trees is limited by electric wires, barriers etc.

Indoor Enclosures

k. All indoor enclosures have a concrete floor and, provided adequate septic service is present, are sloped to a drain.

l. Existing construction ensures that all floors are sealed. For new construction, the indoor area is designed to accommodate a deep litter substrate.

- Deep litter enclosures are designed to allow appropriate litter depth and drainage for proper functioning.
- Litter is properly spot-cleaned and maintained.

m. Bedding materials are provided in sufficient amount/depth to cushion falls from perches or climbing structures.

- Bedding material suitable for use includes, but is not limited to, bark mulch, leaf litter, wood wool, straw hay, shredded paper and wood shavings.

n. All great apes are observed regularly for signs of illness that may be related to ingestion of foreign objects, including wood shavings, bark mulch or other materials that may pose a hazard.

Shift Yards

o. All outdoor shift yards have a minimum of 50% of the surface area in natural substrate. The remaining 50% may be concrete as appropriate for drainage, sanitation and structural needs.

p. The substrate can be amended with organic materials including, but not limited to, soils, sand, leaf litter, bark mulch, grasses, straw and hay. The substrate drains well.

q. Bedding materials are provided in sufficient amount/depth to cushion falls from perches or climbing structures.

H-4 Transfer Doors

Ape enclosure transfer doors are appropriately designed to ensure both animal and human health and safety.

General

a. Animal transfer doors are a key element of facility design. Doors are designed to allow transport crates to safely attach to them.

- Transport crates should be able to be moved in and out of the enclosure through the transfer doors.

b. Transfer doors are designed to remain functional under all circumstances and are maintained in good working order and free from any encumbrances that may prevent opening and closing.

c. Doors are designed to allow caregiver view of enclosures while operating the doors.

d. Doors are designed to allow for normal posture while travelling though doorway. A minimum dimension of 3 ft. x 3 ft. (0.9 m x 0.9 m) is recommended.

e. Doors are designed such that people are out of view when great apes are being shifted. If not, no eye contact is made with the apes going through the doors.

f. Doors and door hardware are properly maintained to ensure proper functioning.

Security

g. Transfer doors and their frames are constructed of materials similar in strength to those used in the primary enclosure.

h. Doors are lockable in both the open and closed positions.

i. For pneumatic or hydraulic doors, pneumatic or hydraulic pressure is sufficient for keeping doors in the open position. A mechanical lock is, however, in place to lock the door in the closed position.

j. Particular attention is given to preventing hay/shavings from affecting door mechanisms.

Animal Safety

k. Doors operated via remote control are visible from the control area.

l. Guillotine doors are not recommended due to risk of animal injury. If used, a backup system should be in place to prevent doors from free falling due to mechanical failure or operator error.

m. Hydraulic systems use peanut or other food-grade oils to prevent risks to the apes in the event of leakage.

n. Hydraulic and pneumatic door systems include backup systems to allow for door usage in the event of equipment failure.

User Safety

o. If door handles or locking mechanisms are in close proximity to the enclosure, a solid barrier is present to protect the user.

H-5 Shelter

Great apes have access to man-made shelter that provides each individual with protection from extreme weather (including, but not limited to, prevailing wind, snow, sleet, rain, sun, and temperature extremes).

a. Great apes have space to seek refuge from sun, wind, inclement weather and enclosure mates.

b. Shelter does not create or result in 'dead ends' in which individuals can be trapped by other group members.

c. Shade and shelter are provided in multiple locations within enclosures to ensure that all great apes have access to shade throughout the day.

d. Shade and shelter can be created through natural and artificial means including shade trees and shade fabric.

e. Shelter areas provide dry space during wet weather, as well as protection from wind.

H-6 Enclosure Furnishings

Great apes are provided with an appropriately complex and rich habitat to explore, to ensure the animals' physical, nutritional and stimulation needs are met.

General

a. Enclosures are equipped in accordance with the needs of the apes with bedding material, branch work, nesting/hide boxes, appropriate substrate, vegetation and other enrichment materials designed to aid and encourage normal behavior patterns and minimize any abnormal behavior.

b. Appropriate complexity is provided through the use of various natural and artificial materials in the enclosure, using a combination of items including, but not limited to, those listed above.

c. The date that items are placed in an enclosure is noted, and items are removed when they become soiled, damaged or novelty has diminished.

d. Great apes are provided access to the vertical space available within the enclosures.

Outdoor Enclosures

e. Visual barriers can be used to avoid confrontation or aggression, and include climbing structures, fallen logs, walls, shade structures, topography and large enrichment items.

f. Climbing structures accommodate natural locomotion patterns for the species housed. When multiple species are housed together, climbing structures created specifically for each species' unique needs are provided. Metal pipe is not used to construct climbers as it becomes dangerously hot in summer sun and can damage skin during cold weather. Climbing structures should be accessible by staff for routine sanitation, repairs and updates and should include:

- horizontal and vertical elements and ensure that sufficient pathways exist throughout the enclosure so subordinate individuals do not reach 'dead ends' in the enclosure;
- locations and/or mechanisms to provide enrichment above ground level;
- resting platforms or perches and handholds of varying size that large and small animals can securely grasp for support;
- a minimum of 50% of total climber space designed to allow access by individuals of all ages and physical capabilities;
- soft substrate such as soil, bedding material, mulch or leaf litter is installed below climbers to minimize risk of injuries from falls, especially to youngsters and older individuals.

g. Perching

- Horizontal perching areas and platforms are provided to allow resting, sleep, social behavior and feeding above ground.
- Placement of perches or platforms includes consideration for access to animals for close observation, medication or training sessions.
- Perches and benches are accessible to staff for cleaning.

h. Other Materials

- Canvas fire hoses used for climbing elements, runways and hammocks are secured in a manner that prevents animals from becoming entangled in long lengths or trapped in openings.
- Cargo nets are selected with a diameter that ensures youngsters may not become trapped in the net.
- Ropes are secured at both ends with sufficient tension to prevent an animal from becoming entangled. Frayed portions of rope are removed immediately.
- Logs are placed and secured in a manner that prevents them from rolling or falling onto animals.

Indoor Enclosures

i. To the greatest extent possible, all visual barriers, climbing structures and perching surfaces meet outdoor enclosure criteria.

j. Indoor furniture is constructed of materials that can be sanitized or easily replaced when they become overly soiled. Furniture is accessible to staff for routine cleaning and repair.

k. Benches, perches, and other structures allow for climbing and for sleeping above ground level.

Shift yards

l. To the greatest extent possible shift yards meet outdoor enclosure criteria for plantings, trees, topography, visual barriers, climbing structures, perching surfaces and materials used.

H-7 Sanitation

Proper sanitation is practiced to reduce pathogen transmission.

General

a. State/province and local laws regarding proper waste removal are observed.

b. Great apes are transferred from enclosures prior to cleaning, disinfection and/or sanitizing.

c. As fomites (shoes, clothing, etc. which carry infectious materials) may be a source of zoonotic disease, all who may come in contact with such materials are made aware of these risks and trained accordingly. (*See also* Standard V-8, "Zoonotic Disease Program").

d. Uneaten perishable food is removed within a timeframe appropriate for the type of foodstuff and size of enclosure, prior to molding or contamination.

Removal of Animal Waste

e. Animal waste is removed from the habitat as often as necessary to prevent contamination of the great apes contained therein, to minimize disease hazards and to reduce odors. This also enables caregivers to collect fecal samples in a timely manner.

f. Soiled bedding material and substrate are removed and replaced with fresh materials daily, or as needed to prevent buildup. If odorous, bedding is changed regardless of how long in place.

g. Great ape waste is handled with precautions appropriate to bio-hazardous waste, and is not composted.

h. Damaged and soiled enrichment items are removed daily, or as soon as the apes allow access to the area.

i. Efforts are made to prevent native wildlife getting access to waste.

Tools

j. Each enclosure has dedicated tools to prevent cross contamination between enclosures. When resources restrict the ability to have dedicated tools, tools are disinfected between enclosures to prevent the spread of parasites and disease.

k. Tools are labeled when use is restricted to specific areas.

l. Tools used for New World primates are not used for great apes.

m. Sanitation tools or equipment, including wheelbarrows, are not used for transport or storage of foodstuffs or bedding.

Cleaning and Disinfection

n. Feeding areas, automatic water devices, water and food containers are cleaned and disinfected daily.

o. Care is taken to minimize overspray of waste, directly or via aerosolizing, into adjacent cages during cleaning.

p. Animals are not present in enclosures being cleaned using power hoses. Care is taken to prevent accidental spraying of animals in adjacent enclosures when power hoses are used for cleaning.

q. Concrete floored enclosures are dried with a squeegee, and as needed fans, to ensure floors are dry before bedding material is replaced.

r. All hard surfaces including walls, floors, ceilings, benches, climbing structures, cage mesh and caregiver work areas are sanitized regularly to the extent possible. Note that in large outside enclosures with plenty of exposure to sunshine and rain, there may not be a need for scrubbing and cleaning but areas are monitored for potential sanitation problems.

s. Cleaning and Disinfection Standard Operating Procedures are developed and followed to address:

- safe disinfectant use to prevent hazards to the apes, caregivers and the environment;
- cleaning and disinfecting protocols for food preparation and veterinary care areas using more powerful disinfectants on hard surfaces;

- daily, weekly, monthly and quarterly cleaning schedules for all hard surfaces including walls, floors, ceiling, benches, cage mesh and staff work areas designed to minimize the risk of disease transmission;
- disinfectants and other cleaning products stored separately from foodstuffs.

t. A Material Safety Data Sheet (MSDS) or equivalent is readily available for all cleaning products in use and all containers are properly labeled as to contents.

Laundry

u. Laundry for great apes is done in a washer/dryer used to wash items soiled by animals only (*e.g.*, towels, blankets, enrichment items).

v. Specific disease exposure of species from research settings is taken into account when handling great ape laundry.

H-8 Temperature, Humidity, Ventilation, Lighting

Temperature, humidity, ventilation, and lighting are appropriately addressed.

Temperature

a. The temperature is within an acceptable range for the species housed.

- Weather is considered in addition to temperature.
- Allowance is made to accommodate individual animals not able to tolerate temperatures above or below the usual range of comfort for the species.

b. For outdoor enclosures and shift yards, great apes have access to heated or cooled areas when ambient temperature falls below 55°F (12.78°C), adjusted for wind chill, or rises above 95° F (35°C). Great caution is taken with elderly, infant and disabled apes.

- Windbreaks are sufficient in number to accommodate all apes simultaneously with consideration for social structure and relationships in a group.
- Shade is available throughout the day in a number of areas, which provides an adequately sized space to accommodate all ape simultaneously with consideration for social structure and relationships within a group.
- Care is taken to prevent direct ape contact with heat sources. Note: Infrared bulbs or 'heat lamps' are not recommended as heat sources due to risks associated with bulb breakage and tissue damage in the apes.

c. For indoor enclosures, an average ambient temperature range of 70°F (21°C) and 80°F (26.6°C) is recommended. However, most apes can tolerate temperatures between 50°F (10°C) and 70°F (21°C) for short periods of time when supplemental bedding and heat is provided.

- Heat can be provided by forced air or hydronic heating systems. Note: Infrared bulbs or heat lamps are not recommended due to risks associated with bulb breakage and tissue damage to the animals.
- Cool air can be provided by refrigerant air conditioning, "swamp coolers", fans, or misters.

- Providing apes with opportunities to choose temperature ranges within an enclosure is preferred. This can be achieved by access to areas near heat vents, skylights, or hog warmers for example.
- Even when ambient temperatures are 'warm', bare concrete floors, especially damp floors, are too cold for many individuals and are not considered suitable substrate or housing for apes.
- Any climate control systems include redundancy and back-up power in case of equipment or power failure.

Humidity

d. Optimal indoor humidity is between 30% and 70%. Humidity should not be kept above 80% in controlled environments to prevent fungal and mold growth. High humidity can be mitigated through proper ventilation or dehumidifier systems.

Ventilation

e. Proper ventilation of indoor enclosures is critical.
   - In these areas, Heat Recovery Ventilators and Energy Recovery Ventilators can provide fresh outdoor air with minimal heat loss.

f. Indoor enclosures ideally have a negative air pressure, with regular exchange of non-re-circulated air.
   - A minimum of one complete air exchange per hour is recommended.

g. To the extent possible, separate air handling systems are maintained between animal areas to prevent disease transmission.

h. Proper window and door placement can ensure sufficient cross-ventilation in warm climates.

Lighting

i. Light, natural and artificial, is appropriate for the species housed in terms of intensity, spectrum and duration.

j. Indoor enclosures - Natural lighting is optimal and can be obtained using skylights, windows, roll-up doors and other means. Glass bricks may be used, taking into account the fact that light intensity will be less than with clear glass.
   - Supplemental lighting is provided to ensure adequate light for caregivers to observe animals, clean enclosures and perform related animal care tasks.
   - When animals are confined indoors overnight, sufficient lighting is used to extend the daylight period to a day/night cycle of 12/12 hours to allow animals time to eat and select sleeping sites.
   - In northern climates, where natural light is less intense and of shorter duration during the winter months, full-spectrum bulbs are used to ensure ape health.
   - Consideration is given to providing nightlights to prevent aggression between social groups that may result from surprise encounters in darkened areas.

k. Outdoor enclosures and shift yards - While not necessarily required, consideration is given to supplemental lighting or power sources for use in outdoor areas in event of an emergency. Tamper-proof lighting is used in ape enclosures.

PHYSICAL FACILITIES AND ADMINISTRATION

PF-1 Overall Safety of Facilities

The premises, tools, equipment, animal care records, and hazardous materials are appropriately kept clean and safe.

a. The sanctuary is committed to maintaining a safe and healthy environment for all employees, volunteers, visitors and apes, and conforms to health and safety practices as outlined under applicable national and state/province laws and regulations (*e.g.*, the Occupational Health and Safety Administration ["OSHA"] in the United States or an equivalent international/national occupational safety organization/agency).

b. Premises (buildings and grounds) are kept clean and in good repair in order to protect employees, volunteers, visitors and apes from injury and to facilitate appropriate ape care.

c. Materials and equipment are safely stored when not in use, and there is an effective system in place for regular inspection and maintenance of tools and equipment.

PF-2 Water Drainage and Testing

Water drainage is rapid and complies with all regulations, and soil and water are tested annually.

a. A suitable method is provided to rapidly eliminate excess water.

b. The sanctuary's method of drainage complies with applicable national, state/province, and local laws and regulations relating to pollution control or the protection of the environment.

c. Enclosures are checked annually for potential water contamination and soil contaminants.

PF-3 Life Support and Lighting

There are adequate and reliable utilities, with back up.

a. Adequate and reliable electric power, potable water, water supplies and plumbing are available on the premises.

b. An emergency power system, such as a generator, is in place in the event of a power outage.

c. There is adequate light for employees and volunteers to perform their duties, both day and night as needed.

PF-4 Hazardous Materials Handling

Hazardous materials are appropriately handled according to applicable regulations and laws, protective clothing and other equipment in isolation units are not used elsewhere, and waste is taken care of appropriately.

a. The method for disposal of sewage, toxic/hazardous materials, garbage, and ape wastes follows all guidelines for hazardous materials. All national, state/province and local legal and regulatory requirements are met.

b. All hazardous materials are labeled with the name of the contents, appropriate hazard warnings, and the name and address of the manufacturer as provided on the Material Safety Data Sheets (MSDS Sheets) or equivalent, if used in the country in which the sanctuary is based.

c. If applicable, Material Safety Data Sheets for each hazardous material to which employees may be exposed, are kept in the area where the materials are stored. Employees are made aware of, have access to and understand how to interpret the MSDS Sheets.

d. All employees, and volunteers where appropriate, utilizing hazardous materials are appropriately trained in the use of, and made aware of the potential hazards of using these materials.

e. Appropriate protective equipment and clothing is utilized when working with hazardous chemicals.

f. Accumulations of trash is placed in designated areas and cleared as necessary to protect the health of the apes, staff, volunteers, visitors and the surrounding environment.

g. The sanctuary considers the potential risks of releasing parasites, diseases or non-native plants through effluent water and other routes.

h. Provision is made for the safe and legal removal and disposal of ape and food wastes, bedding, dead animals, trash and debris.

i. Disposal facilities are so provided and operated to minimize rodent and insect infestation, odors, and disease hazards while complying with applicable international, national, state/province, and local laws and regulations relating to pollution control or the protection of the environment.

PF-5 Security: Ape Enclosures

Proper security measures are in place to safely contain apes at all times, and there is a 24-hour security system in place.

a. For very large enclosures into which vehicles enter, there are double gates and/or doors located far enough apart to allow the vehicle to be completely enclosed into the area with both gates secured before entering the enclosure.

b. See also Standard S-6, "General Staff Safety."

c. The sanctuary has 24-hour systems in place to minimize the risks of theft, malicious damage or release of apes by intruders entering the grounds.

d. The sanctuary has a key control system designed to ensure that only qualified staff are allowed into certain areas of the sanctuary, such as ape enclosures. Gates and doors to enclosures are securely locked so as to prevent unauthorized openings.

e. An adequate number of clearly visible safety signs, providing warning by means of a symbol, words or a combination of symbol and words, are displayed at each enclosure as needed.

PF-6 Perimeter Boundary and Inspections, and Maintenance

The perimeter boundary is designed to discourage unauthorized entry, with suitable exits, and any enclosures in need of repairs is immediately repaired or replaced, or apes are relocated.

a. The perimeter boundary, including access points, is designed, constructed, and maintained to discourage unauthorized entry and as an aid to the safe confinement of all the apes within the sanctuary.

b. Exits through any perimeter fence are suitably located and adequately designated and secured.

c. Each exit from the sanctuary is kept clear and is capable of being easily opened from the inside to allow the release of staff.

d. All such gates are capable of being closed and secured to prevent the escape of apes and entry of unauthorized animals and visitors.

e. Safety signs on any electrified section of the perimeter fence or enclosures are easily visible.

f. A regular program of sanctuary maintenance is in place.

g. Any enclosure in need of repair, or any defect likely to cause harm to apes, is immediately repaired or replaced, or the ape(s) are relocated to a secure enclosure.

PF-7 Security: General Safety Monitoring

Appropriate fire extinguishers and alarms are in place and in working order, weather is monitored, and all physical features of the sanctuary are designed and maintained to ensure the safety of the apes.

a. Adequate fire extinguishers and alarms are installed, regularly tested, maintained in good working order and the staff is trained in their use. Fire alarms can automatically be heard from the permanent residence.

b. The sanctuary has a system in place to provide early warning of severe temperature extremes and weather patterns. This is communicated directly to the sanctuary director in case of emergency.

c. Steps have been taken to protect apes as much as possible from fire, flood, and other natural hazards. This includes not storing more than the daily ration of bedding or hay in the same building in which apes are housed.

d. All plant and fixed equipment, including electrical and heating apparati, are installed and maintained in such a way that they do not present a hazard to apes, and their safe operation cannot be disrupted by the apes.

e. Tools and other portable equipment are not left unattended in places where they could cause apes harm, provide a means of escape, or serve as projectiles.

PF-8 Insect and Rodent Control

An appropriate, effective, humane and safe rodent control program is in place as needed. Insects are safely controlled as needed.

a. An insect and humane rodent control program is in place, supervised by a veterinarian who determines the degree of toxicity that products in use may pose to apes, native wildlife and staff.

b. Insect and rodent control is implemented in all appropriate areas of the sanctuary, including storage areas for food items.

c. Any pesticides are used in accordance with government regulations. Whenever possible, less toxic or non-toxic agents such as silica gel, diatomaceous earth, or insect growth regulator products are given preference.

PF-9 Record Keeping

Records are maintained appropriately as required by local, state and national regulations and as necessary for good husbandry, management and veterinary care.

a. Detailed individual and group records are necessary for good husbandry, management and veterinary care. All nationally required records are kept, as well as records required by GFAS to meet other standards in this document (*e.g.*, Standard P-2, "Acquisition Recordkeeping and Monetary Exchange").

b. Records that, if not required by law, are recommended by GFAS include but are not limited to:

- Individual animal records showing origin, age, species, gender, microchip number, tattoo, photo, bio, etc.;
- Individual veterinary record;
- Reproductive history, if known;
- Contraception records;
- Weight, current diet and record of diet changes;
- Food consumption and preferred food items;
- Enrichment dates, items used and ape's response.;
- Where applicable and appropriate, any positive behavioral management records showing completed objectives and those in development;
- Current and historic cage mates, social groups and partners, including response to various phases of introduction and response to other individuals;
- Acquisition documents (*see* Standard P-2, "Acquisition Recordkeeping and Monetary Exchange");
- Welfare assessment for the great apes as a whole including measures of: disease prevalence, morbidity and mortality rates, and activity levels;
- Inspection reports, as applicable, from international. national, state/province and local agencies, as well as accrediting organizations;
- Other animal documentation as applicable, such as complaints or police reports pertaining to specific animal and animal escape reports.

PF-10 Animal Transport

Great apes are appropriately transported to maximize safety and minimize stress and in accordance with all local, state/province, national, international requirements and laws.

a. Apes are transported only when necessary, such as when being transported to the sanctuary, to a medical facility for care or to another accredited Sanctuary for reasons as described in acquisition standards.

b. Pre-transport health examinations ideally include a complete physical exam with attention to parasite checks, necessary vaccinations, and completion of any tests required by regulations of the receiving state/province or country.

c. Health certificates and any required transport permits accompany the ape when being transported interstate or internationally. All transport abides by local, state/province, national and international law. A veterinarian is responsible for preparing and signing the health certificate.

d. Prior to transport, the sanctuary ensures that adequate facilities are available at the receiving end and food items that are familiar to the animal are available.

e. Where possible and appropriate, apes are acclimated to shipping container/crate prior to transport. Capture, restraint, and transportation methods consider the great ape's temperament and behavior in order to minimize injury, and distress.

f. At a minimum, transport enclosures meet appropriate animal welfare standards (*e.g.*, IATA, US Animal Welfare Act Transportation Standards or similar).

g. Transport crates and vehicles are in good condition and meet national and/or international standards. Equipment suitable for lifting, crating and transportation of animals kept within the sanctuary is readily available.

h. Transport containers:

- have impervious surfaces, which are cleaned and disinfected after use.
- are designed to permit safe transfer into a secondary enclosure.
- are designed to minimize the risk of the great ape reaching through to make contact with personnel.
- are designed to minimize loss of bedding and waste, reducing the risk of disease transmission.
- are placed within a secondary container or closed compartment on the transport vehicle.

i. Any great ape taken outside the sanctuary, for an approved reason such as medical treatment or transfer to a more appropriate sanctuary, is in the personal possession of the sanctuary director, or of competent persons acting on his/her behalf and adequate provision is made for the safety and well-being of the animal and public safety.

j. All apes taken outside the sanctuary are kept securely at all times. Great apes are managed outside the sanctuary in such a way that the animal is under control and not likely to suffer distress, cause injury or transmit or contract disease.

k. Complete medical records, diet and husbandry information, and identifying papers (*e.g.*, describing tattoos, or other identification methods) accompany all transported great apes.

NUTRITION REQUIREMENTS

N-1. Water

Fresh clean water is available in sufficient quantity.

Quantity

a. Fresh clean water is available at all times to all individuals.
b. Multiple water sources are available for group-housed great apes to ensure high-ranking individuals do not dominate water sources.

Quality

c. Water quality parameters are maintained at a generally acceptable level for apes in terms of turbidity, salts, etc.
d. Potable water sources are tested for contaminants annually.
e. All water sources (including water bowls) are cleaned at least daily, and more often if needed.
f. If automatic water devices are not used in hot climates, water sources are shaded or changed multiple times to avoid overly hot water.

Automatic Water Devices

g. Devices are tested daily to ensure water is available.
h. Devices are easily disabled when animals must be fasted for medical purposes.
i. When monitoring of water consumption is required, an alternative means of providing water is devised.
j. In colder climates, steps are taken (such as installation of heat sources) to ensure water consumption does not decrease with lower ambient air temperatures.

N-2. Diet

A properly balanced and healthy diet is provided appropriately based on the needs of each great ape, following veterinary instructions for special needs.

General

a. A veterinarian or qualified nutritionist periodically reviews all aspects of the apes diet at the sanctuary.

b. Diets of individual great apes (including vitamin supplementation) are of a quality, quantity and variety to match the physiological and psychological state of the individual as it changes over time, with consideration for the age, life stage, species, condition, and size of the individual.

c. Food is wholesome, palatable, free from contamination and of sufficient quantity and nutritive value to maintain all apes in good health.

d. The sanctuary utilizes a feeding regimen that ensures each individual receives adequate nutrition regardless of status in social group.

e. Where possible and appropriate, each ape's daily dietary needs are documented and made available to animal care staff.

f. In open space enclosures, routine observation of feeding activity ensures all animals are able to access sufficient food.

g. Commercially prepared primate diets are not the sole diet for apes, but are a supplement to a diet of fresh fruits and vegetables, greens, and other whole foods.

h. Great apes are not fed New World Primate diets, as they are not balanced for apes.

i. Fresh fruit is fed complete, including peels, cores and seeds. Fruits make up no more than 1/3 of a captive ape's diet. Where excess weight gain or diabetes is a concern, consideration is given to replacing all fruit with high fiber vegetables.

j. Nuts and seeds are fed sparingly, ideally by scattering throughout the enclosure to encourage foraging, because of their high fat content.

k. Commercially available insects including crickets, mealworms and waxworms can be offered occasionally with the diet.

Browse

l. Fresh browse is offered daily to animals housed indoors. If not naturally present in the outdoor enclosure, browse items (*e.g.*, grasses, cattails, vines, etc.) are provided on a regular basis.

m. All browse items are nontoxic and grown without chemical pesticides. Caregivers are trained to identify safe, non-toxic plant species appropriate for great apes.

Vitamins/Supplements

o. Prior to offering supplemental vitamins, the health and condition of the individual great ape, as well as the diet, is reviewed by a nutritionist experienced in great ape care and/or the attending veterinarian.

p. If vitamins are given, they do not contain excess iron.

q. Essential Fatty Acid (EFAs) may be supplemented, as recommended by the veterinarian or nutritionist, to ensure a balanced diet.

Treats/Enrichment items

r. Preferred food items from the basic diet can be reserved for enrichment through the use of puzzle feeders and other food enrichment devices/techniques.

s. The calories in foods used as enrichment are considered when planning the overall diet.

N-3. Food Presentation and Feeding Techniques

Food is prepared and presented in a safe and appropriate manner to meet apes' health and social needs.

General

a. Feeding and drinking receptacles are placed in positions that minimize the risks of contamination from soiling by the apes themselves, wild birds, rodents and other potentially invasive species.

b. Food receptacles, where used, are appropriate for the species housed in terms of number, size and placement, and are cleaned daily.

c. Receptacles for animal food and water are designed to minimize spillage and are not used for any other purpose.

d. Feeding chutes or feeding boxes may be used as a means to safely distribute feed. If used, a solid barrier extending several feet in each direction from the opening is used to reduce the risk of great apes grabbing staff through mesh wiring.

e. Food items are placed above floors to minimize contamination from urine and feces.

f. Great apes are offered their diet a minimum of once daily and preferably twice daily, with sufficient daylight hours remaining to allow necessary forage time.

g. Single feeding regimens are carefully monitored and reviewed frequently to ensure they meet the nutritional and psychological requirements of the great apes.

Feeding Techniques

h. Caregivers are encouraged to reduce tensions during feeding times by conducting their tasks in a quiet manner; not playing favorites with the food; not making direct or prolonged eye contact with the apes; not accidently teasing an ape by trying to retrieve or relocate a dropped food item until after all feeding has been completed. Additionally, caregivers refrain from unwittingly rewarding stereotypic or aggressive behavior by simply refusing to acknowledge or react to the behavior.

i. Variations in food presentation are considered part of the enrichment program for great apes. Distributing food throughout an enclosure allows natural foraging behavior and may limit food hoarding and aggression.

j. Feeding in multiple locations helps to ensure that low-ranking individuals have adequate access to food and water.

k. To ensure that subordinate individuals receive enough food without overfeeding dominant individuals, cooperative feeding techniques (in which dominant individuals are rewarded for allowing subordinate individuals to obtain food) may be used.

Diet Related Health Issues

l. Food selections and quantities are managed as much as possible to maintain healthy weight with attention paid to fat, sodium and sugar content.

m. Food selections are managed to reduce the risk of nutritionally induced diabetes.

Diet Changes, Increases or Decreases

n. Adjustments made to an already formulated and nutritionally balanced diet are made to the entire diet to ensure continued nutritional balance.

o. Considerations for diet increase include weight and condition of all animals in the group, overall food consumption, activity level of the group, feeding competition and other medical or behavioral considerations.

p. Diet increases or decreases are made in modest increments with animal response to the change assessed for a minimum period before additional changes are made.

q. Underweight individuals experiencing health or behavioral problems may be separated for supplemental feeding as needed to avoid undesirable weight gain in conspecifics.

N-4. Food Storage

Food is stored appropriately.

a. Separate and secure facilities are provided for proper and hygienic storage of food.

b. Dry goods (*e.g.*, grains and biscuits) are stored in clean, dry storage areas in sealed containers or on pallets. Products are dated and rotated to use oldest stock first, and expired food as well as bags damaged by pests is discarded.

c. Produce is stored in a clean, dry refrigerator, and is ordered at regular intervals in amounts that can be used prior to spoilage.

d. Items frozen for use are dated and labeled, and no frozen items are thawed and refrozen. Items that are not fed frozen are thawed in a refrigerator to minimize risk of spoilage.

e. Browse, grass hay, alfalfa and other baled products are stored in a sheltered area on pallets, and oldest stock is used first.

f. Insects are housed per instructions from the provider or in appropriate insect colony housing. Insects intended for use as food are housed in appropriate containers to prevent contamination by insect pests.

N-5. Food Handling

Food is handled and prepared in an appropriate manner to retain nutritional value, freshness, and freedom from spoilage, invasive species or other forms of contamination.

a. Food is protected against dampness, deterioration, mold, and/or contamination by insects, birds, rodents or other animals.

b. No food that is spoiled or otherwise contaminated is served.

c. Foods not fed frozen are thawed in a refrigerator to minimize risk of spoilage. Frozen foods are not thawed and refrozen.

d. Fruits and vegetables fed to insect colonies are changed often to prevent consumption of spoiled food items.

e. Diets are prepared in a safe and hygienic manner to reduce the possibility of contamination or spoilage.

f. Food preparations meet all local, state/province, and national regulations.

g. Separate cutting boards, utensils and food preparation surfaces are used when meats, fish and produce diets are prepared in a common kitchen area.

h. Food preparation surfaces are thoroughly cleaned after use.

i. Staff and volunteers wash hands thoroughly prior to handling food, and wearing gloves during food preparation is recommended.

Veterinary Care

V-1. General Medical Program and Staffing

There is a written veterinary medical program, overseen by a veterinarian, with adequate support staff at the sanctuary, with 24/7 veterinary care available on call.

a. The sanctuary has a written veterinary medical program, including long term preventative medical protocols and disease surveillance and containment procedures, that is developed and carried out under the supervision of a licensed veterinarian – the attending veterinarian - who has training or experience in providing medical care for the ape and other species housed at the sanctuary, and who is aware of any specific issues with the health of the apes at the sanctuary.

b. One or more full-time veterinarians specifically concerned with the veterinary medical program is highly recommended for sanctuaries whose budget will support the salaries of such trained personnel. Sanctuaries unable to employ a full-time veterinarian have access to a part-time veterinarian, under a contractual or other similar arrangement, with training and appropriate experience with the apes housed at the sanctuary.

c. Veterinary care is available 7 days per week and 24 hours per day for the sanctuary on an on-call basis when a veterinarian is not physically on grounds. When the primary veterinarian is unavailable, there are other suitably experienced veterinarians on call.

d. There are support staff to carry out the following roles: (1) Husbandry (ape caregivers), (2) Technical (medical technologists, or individuals trained at the sanctuary), and (3) Clerical. The sanctuary has available properly trained and qualified professional and supporting personnel as necessary to implement these roles.

e. A staff member is trained to serve as a medical program director, dealing with emergencies until a veterinarian arrives or is reached. He or she is able to direct any restraint of the apes, perform basic first aid, be responsible for administration of post-surgical care, and be skilled in maintaining appropriate medical records.

f. Medications are stored appropriately on site, according to label directions. Medications requiring refrigeration are stored separately from food items.

V-2. On-Site and Off-Site Veterinary Facilities

Veterinary facilities are appropriately located, designed and equipped.

a. Any on-site veterinary facility at the sanctuary meets all local and state/province building regulations

b. Surfaces in the on-site veterinary facility with which apes can come in contact are non-toxic and can be readily disinfected.

c. The on-site facility is located away from areas of heavy public use to minimize noise levels for hospitalized apes.

d. The on-site facility has separate areas for examination and treatment for any of the following functions performed on-site: sterile surgery, necropsy, quarantine, laboratory, radiology, pharmaceuticals storage including, when necessary, a safe for narcotics that meets the standards set by applicable regulations (*e.g.*, the Drug Enforcement Administration [DEA] in the United States), radiology equipment (if done on-site), ape holding areas, capture and restraint equipment, non-absorbent and non-impact resistant surfaces, floors sloping toward drains, air handling systems, ceilings, doors, outside ape enclosures as appropriate, hospitalized ape enclosures, furniture, and storage areas.

e. If the sanctuary does not have an on-site veterinary facility, or only a partially outfitted veterinary facility it has a contract or similar arrangement with a nearby veterinary hospital for off-site treatment as needed. The hospital should have a sterile surgical facility with anesthetic equipment to include radiology equipment, a laboratory, and pharmaceutical storage. If necropsies are performed at the hospital, there is a separate area for necropsies and a separate storage refrigerator for storage of carcasses.

f. See also Standard V-4, "Clinical Pathology, Surgical, Treatment and Necropsy Facilities."

V-3. Preventative Medicine Program

The sanctuary has a complete preventative medicine program.

a. Appropriate preventative medicine programs are in place to manage all apes, with special attention paid to geriatric animals.

b. The preventative medicine program includes quarantine procedures, parasite surveillance and control, immunization, contraception, infectious disease screening, dental prophylaxis, and periodic reviews of diets, husbandry techniques and invasive species control.

c. When circumstances permit, and as appropriate for the individual animal, an overall examination is performed annually, blood is collected, serum banked as a baseline control and the results are recorded. The attending veterinarian, in consultation with the sanctuary director, determines any schedule for routine physical examinations, including ocular, dental and musculoskeletal assessment, and implements any necessary treatment.

d. A veterinarian, veterinary technician, or other trained personnel performs regular fecal examinations to look for pathogens (random enclosure sampling is adequate for group-housed apes). Results are recorded. Fecal examinations are repeated following treatment to evaluate efficacy.

e. All apes are immunized as recommended by the attending veterinarian, using currently recommended procedures and products as appropriate for the country, species and individual. Where possible, killed vaccines are utilized to minimize the potential for adverse reactions. Schedules and products are dictated by the disease status of domestic and wild animals in the area surrounding the sanctuary and relevant local and national laws.

f. When apes are immunized, the type, serial number, and source of product are recorded in the individual animal's medical record.

V-4. Clinical Pathology, Surgical, Treatment and Necropsy Facilities

Clinical pathology, surgical facilities and services, medical treatment for sanctuary apes and necropsy are all high quality, humane, professional, legal, and safe.

Clinical Pathology

a. Diagnostic laboratory services are available on- or off-site to assist with the examination of apes and the diagnosis of disease.

b. Diagnostic capabilities include cytology, microbiology, parasitology, complete blood count, blood chemistry, urinalysis, serology and other appropriate laboratory procedures.

Surgical

c. The sanctuary has access to surgical facilities (either on-site or at a nearby veterinary hospital) that are clean, free from excessive noise and unnecessary pedestrian traffic, have adequate lighting, ventilation, and temperature controls, and can be easily cleaned and disinfected. For off-site aseptic surgical facilities, an on-site area that can be adapted for occasional or emergency aseptic surgical use is available.)

d. Surgical facilities have access to appropriate anesthetic equipment including injectable anesthetics, reversal agents, oxygen, sterilized surgical packs, surgical preparation solutions, intravenous fluids, fluid administration equipment, pulse oximetry, heart monitoring equipment (*e.g.* electrocardiogram, stethoscope), and emergency drugs.. Where gas anesthetic equipment including scavenger units, are used, they are cleaned and calibrated at least annually. Gas cylinders are safely stored and replaced regularly.

e. If on-site, the sanctuary ensures that surgical equipment is maintained in good working order and is on a program of routine preventive maintenance.

f. Only a licensed veterinarian performs surgery, using standard operating procedures. (Note: A veterinary technician appropriately trained by a veterinarian in states or provinces where such action is permitted by veterinary practice acts can perform surgical first aid.)

g. The veterinarian uses aseptic surgical procedures whenever applicable.

h. Veterinarians and support personnel are compassionate and knowledgeable about the humane aspects of ape treatment, including the proper use of anesthetics, analgesics, and tranquilizers.

i. Surgical incisions are observed daily, or as frequently as possible while minimizing stress to the apes, for signs of dehiscence or infection. Analgesics are administered post-operatively when appropriate.

Treatment

j. Medications are maintained and used in accordance with local, state/province, and national laws and regulations and are administered in accordance with the state veterinary practice act, or equivalent outside the US.

k. The sanctuary has a pharmacy on-site where routinely used drugs, such as emergency resuscitative medications, antibiotics, anthelmintics, fluids, anesthetics, analgesics, tranquilizers, etc. are maintained.

l. All medications are purchased, prescribed and administered under the guidance of the veterinarian.

m. When distributed to ape caregivers, medications are properly labeled and packaged, with the contents identified and instructions for the amount, frequency and duration of administration as well as the name and identification of the ape to receive the medication, the expiration date of the medication, prescribing doctor and number of refills if any.

n. All medical treatments and drug prescriptions are documented in the ape's medical record.

o. Basic physical capture and restraint equipment to facilitate medical treatment is available at the sanctuary.

Necropsy

p. Whenever possible, there is an isolated area on the grounds for performing necropsies, or appropriate storage facilities until the deceased ape can be transported to a facility for a postmortem examination as soon as possible, understanding that necropsies performed longer than 24 hours after death may be of limited value due to autolysis of the body. (Note: Any refrigerated area for holding dead apes is physically separate from live ape holding, treatment, and surgery areas and from food supply storage or preparation areas.)

q. Disposition of dead apes and their parts meet all legal restrictions.

r. Dead specimens not used are incinerated or disposed of as deemed suitable by the veterinarian in accordance with local, state/province and national regulations.

V-5. Quarantine and Isolation of Great Apes

Appropriate quarantine and isolation policies and accommodations are in place and utilized.

a. Upon arrival, all great apes undergo quarantine for a minimum of 30-60 days, according to the protocol established by the attending veterinarian, or for a greater period if required by applicable law. The quarantine period is longer (at least 60-90 days) for those apes that have received minimal screening prior to arrival, such as apes from the wild. Great apes previously housed together may be quarantined together.

b. If the sanctuary does not have an adequate quarantine facility, steps should be taken to have apes undergo quarantine under these guidelines prior to their arrival.

c. Local, state/province, or national regulations regarding quarantine of newly arrived apes are followed.

d. All utensils and outer clothing used in quarantine are restricted to that area.

e. Protective clothing, boots and footbaths are used by all staff entering the quarantine area or areas containing quarantined animals. Quarantine clothing is not removed from the quarantine area, except in a sealed container for cleaning.

f. Caregivers wear protective gloves and masks when cleaning or handling anything with which the quarantine apes come into contact.

g. Where possible, staff working in quarantine areas does not work with other sanctuary animals. If this is not possible, work is done in the quarantine areas last.

h. Quarantine staff cares for newly admitted apes in their quarantine area before caring for sick animals, which are housed in separate isolation enclosures.

i. The quarantine area allows for daily cleaning and sanitation, either with removable catch trays or a drainage system that allows fecal matter to flush into a septic system; waste is otherwise removed and disposed of properly.

j. In enclosures housing animals carrying infectious or transmissible diseases, to the extent possible, all surfaces of the enclosure are properly sanitized.

k. Quarantine areas have adequate ventilation, heat and air conditioning, which are used to ensure optimum conditions, particularly in the case of young, elderly or sick apes who may be more sensitive to environmental changes.

l. Quarantine animal waste is handled separately from all other manure or compost at the facility. Because of the risk of disease transmission, quarantine waste is not spread on pastures or composted.

V-6. Medical Records and Controlled Substances

Complete medical records and appropriate statistics are maintained, apes have permanent identification, and controlled substances are prescribed and stored legally.

Medical Records

a. Complete medical records are maintained on all apes.

b. Medical records are dated, legible and indicate examination findings, treatments (types of medication, dosage, duration), surgical procedures, anesthetic procedures (type of agent, dosage, effect), results of all laboratory tests (parasitologic, hematologic, bacteriologic, etc.) pathology reports, plus immunization records with all relevant dates, ape identification and nutrition/diet information, and, where applicable, necropsy reports.

c. Copies of medical records accompany any ape who is transferred to another sanctuary.

d. Medical records are maintained under the direction of the veterinarian or trained ape caregiver. Where possible, duplicate record sets are stored at another site, or in a fire proof or theft proof safe on site or an online storage system.

e. Statistics are tabulated regularly on the rates and nature of illness and mortality in the sanctuary.

Controlled Substances

f. Only a licensed veterinarian prescribes controlled substances used at the sanctuary, and all such substances are secured in accordance with any applicable laws.

g. The sanctuary maintains appropriate records and logs for all controlled drugs used. All drug logs are kept up to date and comply with any national or other legal requirements (such as the Drug Enforcement Agency in the U.S.).

h. Expired controlled drugs are marked as such and stored separately.

i. Controlled drugs are discarded in accordance with applicable national, state, and local law and regulations (such as the USDA and DEA in the United States).

V-7. Contraception

The sanctuary has a contraception program in place, overseen by a licensed veterinarian, so that apes do not reproduce.

a. The sanctuary has a protocol in place to ensure that all mixed-sex groups are contracepted. Single-sex groups do not require contraception. In most situations where apes are to remain captive, however, males are vasectomized to allow for flexibility in future social groupings.

b. Vasectomies are performed by a veterinarian experienced in the procedure.

c. Castration is not an acceptable form of contraception and is only performed in cases of testicular pathology.

d. Acceptable forms of contraception in females include oral contraceptives, synthetic progestins, surgical sterilization through tubal ligation, and intrauterine devices (IUDs), with choice of method based on present best practice and attending veterinarian recommendations. While ovariohysterectomy is an effective form of contraception, it is only performed in cases of reproductive tract pathology as the procedure may have significant behavioral implications.

e. In range state sanctuaries where the possibility of release back to the wild exists, reversible forms of contraception are preferred.

f. For an exception to this policy for rehabilitation and release centers engaged in a bona fide breeding-for-release program, see Standard P-6, "Breeding."

V-8. Zoonotic Disease Program

The staff and sanctuary veterinarian are knowledgeable about zoonotic diseases that may affect apes at the sanctuary, and implement appropriate policies and procedures as needed to mitigate risk and deal with any exposures that occur.

a. The sanctuary's veterinarian is knowledgeable about zoonotic diseases that may affect apes at the sanctuary. The sanctuary has emergency procedures and a defined process to avoid transmission of all potential or emerging diseases through bites, scratches, body fluids, direct contact with apes and other means. (Note: Additional precautions may be necessary for staff classified as increased risk of disease, including those who are immune-compromised.)

b. Staff has tuberculin tests and necessary immunizations prior to employment and annually thereafter, as appropriate for the country, ape species and individual. All attendants, handlers, and/or trainees who have direct contact with apes are tested for tuberculosis or have a chest x-ray taken on at least an annual basis and are continually made aware of the potential threat.

c. A physician with expertise in infectious diseases is consulted whenever an employee contracts an unusual illness or is exposed to an ape diagnosed with a zoonotic disease.

d. When a reportable disease is identified, all appropriate local, state/province, and national regulatory officials are contacted.

e. All areas in which the staff has direct contact with apes have hand-washing facilities available in the immediate vicinity (or an equivalent; *e.g.*, bactericidal hand-wipes)

f. Human food consumption by the staff does not occur in the immediate area of ape contact.

g. Wild-caught apes are quarantined for 90 to 180 days to reduce the risk that they carry latent rabies virus. Rabies testing and vaccination protocols are carried out in accordance with national, state/province and local rabies prevention protocols.

h. Unless extensive testing has been performed for those pathogens likely to be a concern for the region, all staff–ape contact is avoided, reducing risk of cross-transmission of disease.

i. See also Standard S-14," First Aid and Zoonotic Disease Training, and Staff First Aid."

Well-Being and Handling of Great Apes

W-1. Physical Well-Being

All great apes are routinely monitored to ensure their physical well-being. All aspects of husbandry, including veterinary care, environmental enrichment and diet are designed to optimize the apes' physical well-being.

a. The welfare of each individual ape is the overriding consideration in all sanctuary actions.

b. Great apes are able to enjoy lives that are as close as possible to that of their wild counterparts as regards stimulation and interest through adopting husbandry and management procedures, including appropriate housing and enclosure design, environmental enrichment programs, positive reinforcement programs and a balanced diet to meet nutritional requirements.

c. Apes are provided with opportunities to climb, nest, forage for food and play by providing species-appropriate climbing structures, places to hide and rest in comfort, and a variety of plants and substrates and other enclosure enhancements where food/enrichment items can be hidden.

d. Regular assessments are performed in an effort to quantify and measure the welfare of individual animals through monitoring of nutritional, physical and social conditions. Qualified personnel conduct daily observations of each great ape to monitor for signs of physical abnormalities. Any unusual activities are recorded in a log at each inspection. Sudden changes in food consumption and other behaviors are immediately brought to the attention of supervisory staff. Note: Where it is not possible to observe each animal on a daily basis, time is spent observing all apes on at least a weekly basis, an accurate population count is maintained, and health issues monitored.

e. Where possible and appropriate, records of individual great apes are kept to provide both behavioral and veterinary history.

f. Veterinarians and staff carefully evaluate the need for physical intervention in cases of health problems, as unnecessary removal of individuals from a stable group may have long-term negative consequences for both the individual and the group.

g. Where possible, each ape is weighed annually, either during a routine physical or through the use of a built-in scale, to monitor for signs of illness and to determine dosages for chemical anesthetics.

h. The use of positive reinforcement may be appropriate for some great apes who enjoy interacting with people to provide additional enrichment and reduce the need for chemical immobilization and to reduce stress during medical intervention.

W-2. Social Housing

Great apes are grouped appropriately with the safety of animals and staff in mind.

General

a. Great apes housed in the same primary enclosure are compatible.

b. Great apes are not housed near animals that interfere with their health or cause them physical or psychological discomfort.

c. Habitats are of sufficient size to allow appropriate space between individuals within and between social groupings and to allow for temporary isolation from conspecifics.

d. Great apes are housed so that no individual endures constant harassment or suffers physical injury, nor do social behaviors prevent any individual from maintaining proper nutrition and hydration.

e. Solitary housing is generally temporary and reserved for situations including, but not limited to: quarantine; medical assessment and/or care; lack of appropriate social partners or social tension resulting in disruption to the main troop or physical aggression leading to injuries.

f. The sanctuary has the ability to separate and isolate animals to address behavioral concerns. If apes are isolated for social reasons, all efforts are made to find a suitable social group within the facility or at another accredited institution.

Social Housing

g. The individual developmental and social history of each ape is taken into consideration when determining social groups.

h. Chimpanzee and bonobo enclosures should where possible allow for natural 'fission-fusion' behavior, with space for smaller subgroups to temporarily separate from the main group.

i. Groups with young males are monitored for aggression, and young males forced out of the group are housed with a social companion.

Mixed Species Housing

j. Great apes are not housed with New World primates.

k. Mixed species housing is approached carefully with awareness of the potential for injury and death from territorial and predatory activities.

W-3. Introduction of Unfamiliar Individuals

Introduction of any new great ape to a social group is done according to techniques appropriate for each species, with staff safety ensured.

a. Introduction of unfamiliar apes is carefully considered. Professionals with experience in social introductions, if not on staff, are consulted whenever possible during these considerations.

b. As needed and possible, information listed below is gathered for the introduction planning process:

- A list of individual animals to be introduced, including all that the sanctuary ultimately hopes to integrate into a group.
- Background of each individual, including but not limited to: age and gender; social experience with other great apes; rearing history (hand-reared, parent reared, time spent with mother and siblings); dominance rank in previous groups and rank relative to other great apes who are also being integrated into the new group; affiliations with other individuals who are also being integrated into the new group; considerations for species-specific behavior and biology including potential for infanticide, cycle status of females, male-male relationships.

c. As appropriate or needed, benchmarks or desired outcomes are identified for each step in the process. Examples include:

- physical location of animals during visual contact period;
- behavioral goals of visual contact period;
- physical location of animals during tactile contact period (in naturalistic settings, an enclosure within the acreage/hectares allows for exploration without hotwires, etc.);
- behavioral goals of tactile contact period;
- benchmarks for proceeding to physical introduction;
- space and cages to be used for physical introduction;
- reasons location selected: neutral space, ample run around, visual barriers, doors that can be closed to protect animals in trouble etc.;
- cage set-up for physical introduction, enrichment etc.;
- emergency equipment that might be needed;
- time frame necessary to acclimate animals to presence of equipment;
- criteria for separating animals if physical introduction does not proceed safely;
- post introduction management and husbandry protocols.

d. The plan is developed with involvement of all staff involved with care of the species and details a series of steps that will be taken to integrate the individual animals involved. Necessary modifications to enclosures are identified and completed prior to beginning the process.

e. The plan establishes behavioral goals for introductions and is not driven by schedules, and is open to modification as introduction/integration develops and evolves.

f. Only normally scheduled caregivers and animal managers are present to directly observe. Individuals who are not routinely present in the animal area, including veterinary and management staff, observe via remote video or receive reports from staff.

g. All caregivers have a clear understanding of the plan including contingencies for problems that might occur, and are empowered to take appropriate action in the event of perceived emergency.

W-4. Behavioral/Psychological Well-Being

The behavioral/psychological well-being of each ape is evaluated and addressed, appropriate enrichment is provided, and where appropriate a welfare plan and report is part of each ape's file.

a. There is a formal, written enrichment program that promotes species-appropriate behavioral opportunities and ensures the captive great apes' psychological well-being. A complete environmental enrichment program includes the following:

- Structural enrichment - Enclosure design and furniture that add complexity to the environment and promote species-specific behavior (*e.g.*, climbing, perching). Examples include benches, climbing structures, ropes and fire hoses, and hammocks.
- Object enrichment – Objects that encourage inspection and manipulation and promote species-specific behavior (*e.g.*, nesting, tool-use). Examples include straw, hay, blankets, branches, acrylic mirrors, dolls, and toys.
- Food enrichment - Varying food choices and food presentation, including the use of puzzles that increase food procurement time. Examples include treat dipping, raisin logs, and smearing peanut butter in hard-to-reach areas.
- Social enrichment - Affiliative interactions between caregivers and apes (*e.g.*, grooming and playing chase) may be appropriate in some instances. The decision to include social enrichment with caregivers should be made on an individual basis, considering only the social needs of the animal such as great apes in poorly bonded or small groups; dependent young; apes in small enclosures; solitary animals, particularly those hand reared by humans with no conspecific contact; neonatal and juvenile animals in situations where appropriate.

b. All ape care staff are trained to recognize abnormal behavior and clinical signs of illness. Measures of well-being that are assessed include:

- species appropriate behavior and interaction with other animals;
- the animal's ability to respond appropriately to variable environmental conditions, physiological states, developmental stages, and social situations as well as adverse stimuli.

c. Stereotypic behavior, self-injurious behavior, and inappropriate responses to various stimuli not previously documented or witnessed may be evidence of compromised well-being and are investigated. A plan to address the concerns is developed.

d. Where possible and appropriate, a behavioral/psychological profile is maintained for each individual ape and updated annually. A copy of the welfare report is kept in the ape's permanent file.

W-5. Great Ape-Caregiver Relationships

Positive relationships between apes and caregivers are maintained. Apes are not fearful or aggressive in response to human presence or routine care procedures.

a. Great apes arrive at sanctuaries with a variety of previous experience with caregivers, which caregivers take into account in their interactions with these species.

b. A protocol for introducing great apes to new caregiver staff has been developed. Where possible, new caregivers accompany a trusted caregiver until the apes become comfortable with the new individual.

c. A positive relationship between the apes and regular caregivers, animal managers and veterinary staff is one in which the apes are given the freedom to integrate with their conspecific social group with minimal human interference or to interact regularly with caregivers if they choose.

d. Where possible and appropriate, animals become familiar with the veterinary staff, allowing close observation. Individual ape preference for interaction with caregivers, animal managers and veterinary staff is taken into account.

e. The animals do not become fearful or overly aggressive in response to human presence or routine care procedures.

f. Interactions with great apes do not cause overheating, excessive cooling, physical harm, or unnecessary discomfort, and minimizes physical and psychological stress or trauma as much as possible.

g. Negative interactions are avoided. However, when they occur, efforts are made to recover trust and a positive relationship if the ape enjoys regular interaction with people

h. Physical abuse, deprivation of food or water, aversive spraying with a hose, and other forms of negative reinforcement or punishment-based training are never used to train, shift or otherwise handle great apes. Note: This does not preclude the use of hoses or other watering devices in caring for the apes who enjoy this form of enrichment.

W-6. Handling and Restraint

Any necessary handling and restraint is done safely and appropriately, with minimal distress to apes, and staff are trained in ape-specific safe handling techniques/practices.

a. With the exception of infants being hand-reared and animals with certain severe disabilities, humans do not enter enclosures with great apes. Direct physical interaction is limited to protected forms of contact, by experienced personnel, to minimize the risk of injury.

b. Handling for veterinary care is done as expeditiously and carefully as possible in a manner that does not cause trauma, overheating, excessive cooling, physical harm, or unnecessary discomfort, and minimizes physical and psychological stress as much as possible.

c. In general, manual restraint is not recommended for great apes, and is not attempted when multiple animals are present in an enclosure.

d. Other than exceptions for dependent young, great apes are chemically immobilized by qualified personnel when direct handling is necessary (*i.e.*, physical exams). Chemical immobilization is performed only by a licensed veterinarian or by trained staff under the guidance of a licensed veterinarian, or other qualified individuals authorized by the sanctuary director or veterinarian, following the laws and regulations of country where the animals are housed. Specific anesthetic protocols, including record-keeping, are followed.

e. Chemical restraint is not used when multiple animals are in an enclosure except in an emergency situation. In such cases, all possible precautions are taken to prevent threats to the handlers and the animal being sedated.

f. Multiple staff members are trained to use a dart gun and other restraint equipment, and to employ safe capture techniques. The staff, and volunteers where appropriate, are aware of who is trained and authorized to use restraint equipment.

g. Where possible and appropriate, Positive Reinforcement Training is used to minimize the need for chemical immobilization and to reduce stress during procedures.

- With appropriate training, many procedures can be performed cooperatively and without anesthesia, such as examination of body parts, treatment of superficial injury, heart rate monitoring – even EKGs and blood draws.
- Some apes may be trained to accept a manual injection for chemical immobilization, thus avoiding the stress of darting.
- Some apes may be conditioned to enter a squeeze cage. Where this method of restraint is used, attachments for crates and squeeze cages are included in facility design or modifications.

STAFFING

GENERAL STAFFING

S-1. General Staffing Considerations

The sanctuary has a sufficient number of staff and volunteers, adequately supervised, to provide humane care, with clear job duties and equitable compensation.

a. The sanctuary employs or enlists a sufficient number of qualified employees or volunteers to provide the appropriate level of care for the apes and to ensure adequate supervision of all employees and volunteers. (Note: Staff-to-animal ratio will vary greatly given the nature of the facility and the type of ape and other animals at the sanctuary.)

b. As described in Standard G-3, "Succession Planning," there is a written job description for the sanctuary director and other senior management positions at the sanctuary, providing a clear description of their duties and responsibilities.

c. A list is maintained of all staff/volunteers authorized to work with the apes, indicating lines of responsibility. Staff receives fair compensation commensurate with their skills. At a minimum, each salary complies with generally accepted standards of compensation for employees of the sanctuary.

d. There is a clear management structure within the sanctuary, which is communicated to all employees, and to volunteers as appropriate.

S-2. Security and Emergency Coverage

Staff is available at all times to respond to emergencies.

a. A qualified senior staff member or the sanctuary director should live on the sanctuary grounds. If no one lives on sanctuary grounds, then at least one trained and qualified staff member or trained volunteer is on the sanctuary grounds at all times, and a staff member is immediately reachable via telephone, radio or pager, 24 hours a day, 7 days a week.

b. The director is generally available to the sanctuary on a full-time basis (40 hours per week); when the director is not available due to vacation or another reason, there is a designated back-up from among the senior staff. Staff has various means to contact the director at all times in case of emergency.

c. A qualified veterinarian trained in the care of the apes housed is available in person or via phone at all times in case of emergency.

S-3. Volunteer and Internship Programs

Volunteers and Interns are appropriately supervised, and those playing an integral role in the sanctuary receive the manuals, training and safety protocols.

a. Any volunteers/interns and community workers have a specific employee/staff member assigned with directing their recruitment, training and supervision.

b. Any volunteers/interns and community service workers allowed to work with or around apes do so only under the appropriate level of supervision of a fully trained ape caregiver.

c. Volunteers/interns who play an integral role in the sanctuary are treated as an employee would be treated, regarding the provision of manuals, training, and safety.

S-4. Manuals

The sanctuary has a current employee manual, standard operating procedure manual, and, if applicable, manuals for volunteer and internship programs. Manuals are reviewed and updated regularly.

a. The sanctuary has a written employee manual that includes information pertaining to topics including: personnel practices, employee benefits, leave of absence, sick leave, personal appearance and conduct, environmental concerns, filing complaints, and performance evaluation. The employee manual is given to all new employees.

b. A standard operating procedure (SOP) manual is available on the premises and in a location accessible to the staff at all times. The manual contains a detailed outline of all daily procedures, as well as emergency protocols and other policies relating to the care and safety of the apes.

c. Care procedures for each ape species at the sanctuary, as well as other animals at the sanctuary, are written down (either in the SOP manual or elsewhere) and include detailed information specific to that species or individual.

d. If the sanctuary has a volunteer and/or intern program, it has prepared manuals outlining volunteer and/or intern responsibilities. Copies of the manuals are given to all new volunteers and/or interns.

e. All manuals are reviewed at least annually and updated as necessary, and employees, volunteers and interns are advised of any changes.

S-5. Employee Training and Continuing Education

Training and supervision are carried out in a manner to ensure the highest and safest level of care for the apes, including during unforeseen changes in personnel.

a. New employees participate in a probationary training period suitable to the species in question and under the strict supervision of a fully trained senior staff member before working directly with apes at the sanctuary.

b. At least one staff member and backup are trained in all aspects of ape care for all species housed at the sanctuary to ensure that an experienced caregiver is always available to care for all apes in case of personnel changes; and that staff member and backup are noted in writing.

c. The sanctuary director ensures that plans for continuing education to improve ape care and management techniques are in place.

d. Continuous in-house staff training and development (including availability of relevant literature) is offered to employees, and volunteers as appropriate, including such topics as: ape husbandry, ape welfare, health and safety, first aid, action in emergencies or escapes or illness, safety procedures, emergency euthanasia, basic sampling for health monitoring and diagnosis, food hygiene, disease prevention.

SAFETY POLICIES, PROTOCOLS AND TRAINING

S-6. General Staff Safety

Great ape caregivers have a thorough understanding of the potential risks of working with apes and are appropriately trained in safety procedures.

a. All sanctuaries housing great apes have a thorough understanding of the potential risks of working with these primates.

b. Protocols involving potential risk (*e.g.*, unlocking enclosures, shifting apes to previously unlocked areas) include redundancies to reduce the risk of equipment failure and human error.

c. Personnel are ALWAYS accompanied by at least one other trained individual when working with or near great apes.

- At least two people are required for any work in an enclosure with great apes.
- All staff working with or near the apes maintain verbal contact.

d. All slides, doors and gates in ape areas are kept closed and securely fastened at all times unless needed for ape access.

- Ideally a double-gated system is in place with an escape route for staff in the event of an ape escape into human areas.

e. Designated senior members of staff are responsible for holding keys to ape areas and supervising staff in those areas.

f. Locks and the security of slides, gates and doors are double-checked after each use and inspected regularly to ensure proper functioning.

g. Electrified enclosure fences are checked daily for proper functioning.

h. Any areas where staff and apes are in close proximity have clear safe zones such as clearly delineated lines over which staff does not cross, or a protective barrier, such as lexan, plexiglas or fine mesh fencing.

i. All personnel working with great apes are trained to recognize and respond appropriately to threat displays and other behaviors that could signal an impending attack, scratch or bite.

j. Appropriate protective equipment is used by all personnel working with great apes, including but not limited to, exam gloves, heavy-duty gloves, goggles, etc.

k. Caregivers have established a predictable protocol for servicing enclosures to minimize stress for the enclosure occupants. In as much as possible the cages are serviced from outside.

- Personnel do not enter any enclosure occupied by a great ape except in emergencies AND other individuals have been shifted to a safe area.

l. Staff are encouraged to maintain their work clothes separate from their everyday clothing.

S-7. Communication System

The sanctuary has a reliable communication system in place.

a. A reliable communication system with back ups, which may utilize pagers, 2-way radios, cell phones, intercoms, or other electronic devices, is in place.

S-8. Emergency Response Plans and Protocols

The sanctuary has appropriate written disaster preparedness plans in place, needed information is posted, and appropriate coordination takes place with community emergency services.

a. The sanctuary has a written disaster preparedness plan in place to cover emergency procedures in the event of a natural disaster, fire, injury, etc. The plan has taken into account all necessary ape handling under situations of extreme stress.

b. The written plan is provided to staff and, where appropriate, volunteers.

c. Emergency information is posted throughout the sanctuary indicating emergency contacts and phone numbers including the local police department, fire department, attending veterinarian, sanctuary director, supervising staff members, location of nearest hospital and other important information.

d. A detailed outline of communication lines, procedures and locations of all exits and entrances to the sanctuary are clearly defined and known by the entire staff. This information is reviewed for needed updates periodically. Maps are posted throughout the sanctuary indicating the best evacuation route..

e. All emergency plans are coordinated with local community emergency services as appropriate including fire, police, hospitals, and ambulance services. Appropriate community personnel and agencies are aware that apes are housed at the sanctuary.

f. The location of the sanctuary does not pose any undue hazards and minimizes risk from natural disasters (*e.g.* flood zone, riverbed). If such risks are present, the sanctuary has addressed this in the written disaster plan.

g. The sanctuary is located in an area that is removed from heavily developed areas to the extent possible. If the sanctuary is near heavily developed areas, it has taken steps to address problems this may cause for the surrounding community or the apes.

h. A secure location is identified where ape records (*i.e.*, acquisition, transport, medical, welfare assessment reports) are protected from fire, flood, and other hazards. (Note: Backed up offsite storage and web-based storage of electronic records is one method.) Governance documents, financial records, and permits and licenses are also stored securely.

i. Provisions are made for long-term archiving in a secure format. A regularly backed-up copy should be stored in a separate location or online.

S-9. Escaped Ape Protocol

A detailed and appropriate written escaped ape protocol is in place and understood by staff and local emergency services; and any escapes are detailed in reports.

a. A detailed written escaped ape protocol is in place addressing situations in which apes escape from their enclosures, regardless of whether the apes have escaped sanctuary property, and is reviewed and understood by all staff, and volunteers as appropriate.

b. The protocol is shared with local emergency services such as the fire and police departments.

c. The protocol includes the following:

- A clearly defined chain of command in an emergency situation;
- A notification hierarchy, indicating who to contact first, second, third and so on in case of an escape;
- Possible ape escapes occurring during off-hours, when staff may not be immediately available;
- A communication system allowing for clear communication with sanctuary staff of all pertinent ape information including the type of ape escaped by species, age, sex and location.

d. Clear plans and routes for personnel safety are plotted and displayed throughout the sanctuary.

e. All escapes are recorded and detailed reports made.

S-10. Emergency Training

Staff participates in ongoing training for emergency response, and drills are conducted regularly.

a. All staff, and volunteers where appropriate, participates in ongoing training on all emergency, escape, and disaster preparedness procedures consistent with the sanctuary's written protocols, with drills held at a minimum of every 6 months.

b. Records of training are maintained, including a list of those staff and volunteers who participated in training. Drills are evaluated to ensure that procedures are being followed, that the sanctuary's communication system is effective, that staff training is effective, and that improvements to protocols are made where appropriate.

S-11. Firearm Policy

(*Note: Not applicable for sanctuaries that do not need or use firearms*)

The sanctuary has a written firearm policy, including identified personnel, and covering proper care and storage of firearms.

a. A written firearm policy exists in compliance with all applicable laws; and personnel qualified to use firearms are identified and made known to sanctuary staff.

b. Firearms, ammunition, where provided, are available for immediate use, used by licensed and trained operators only, cleaned and maintained and tested as recommended by the manufacturer, and kept securely under lock and key when not in use or under maintenance.

S-12. Firearm Training

(*Note: This standard may be waived when firearms are not needed or used at the sanctuary.)*

If the sanctuary has firearms, appropriate staff are identified for weapons training, and receive documented and up-to-date training.

a. All staff qualified and licensed to use firearms undergo training and periodic refresher training and practice, including a review of current sanctuary protocols and policies. Such training is recorded.

S-13. Chemical Restraint

The sanctuary has a written chemical restraint policy, which covers appropriate use, maintenance and storage of chemical restraint equipment and attendant drugs.

a. A written policy for the humane chemical restraint and safe capture of apes housed at the sanctuary is in place and in compliance with the Drug Enforcement Agency (or comparable agency outside the United States), to include:

- Training and certification in the equipment, humane chemical restraint, immobilization process, and the use of drugs for veterinarian purposes or emergencies;

- Procedures listing at a minimum those persons authorized to administer animal drugs, situations in which they are to be utilized, location of animal drugs in a safe and secure place, and those persons with access to them, and an emergency procedure in the event of accidental human exposure.

b. The sanctuary's policy provides for qualified personnel to partake in appropriate training programs on the safe and humane use of chemical restraint and immobilization equipment.

c. All chemical restraint equipment is cleaned after each use, maintained in good working order and tested on a regular basis.

S-14. First Aid and Zoonotic Disease Training, and Staff First Aid

An appropriate written first-aid plan is in place, staff (and volunteers where appropriate) is informed when a zoonotic disease occurs at the sanctuary, and training is provided to staff and, as appropriate, volunteers.

a. The sanctuary has a written first-aid plan that is accessible to all staff on the premises, and to volunteers as appropriate.

b. Staff, and volunteers as appropriate, are trained in basic first aid.

c. Written instructions are provided for staff (and volunteers as appropriate) on the provision of emergency health care and the procedures to be followed in the event of an incident involving any ape and a visitor, volunteer or staff member, including (when appropriate) handouts with any special information that any attendant health care professional, on site or off, should know to help the victim and/or keep health care attendants safe from potential zoonotic diseases. First-aid stations that are readily and easily accessible and are located throughout the sanctuary.

d. Employees, and volunteers where appropriate, have adequate training to understand the potential risk of disease transmission, including potential sources of disease, modes of disease transmission, and clinical signs associated with disease. Each signs a form that clearly states that he/she has been fully trained in these procedures. Training and attendance are logged.

e. All staff and active volunteers are informed when a zoonotic disease occurs at the sanctuary.

f. See also Standard V-8, "Zoonotic Disease Program."

GOVERNANCE AND FINANCE

GOVERNING AUTHORITY

Note: The term "Board of Directors" is used in this section to reference the governing authority for the sanctuary. In some instances, another term may be used (e.g., "Trustees").

G-1. Nonprofit Status

The sanctuary and/or its governing organization has a national legal nonprofit status.

a. A sanctuary, or its governing organization (for example, if the sanctuary is a program of another organization), has obtained national nonprofit status in the country of governance or operation. For example, sanctuaries located in the United States or its territories have 501(c) 3 status, and sanctuaries located in or operated by organizations in the United Kingdom have registered charity status.

b. An exception to this standard will be made if non-profit registration is not available in the country of governance or operation.

G-2. Ownership of Sanctuary Property and Contingency Planning

Sustainability of the sanctuary is promoted by ownership of the sanctuary property or a proper written lease agreement.

a. All property on which the sanctuary sits is held in the name of the sanctuary (or its governing organization) as either owner or lessee.

b. The sanctuary's governing body has confirmed that the sanctuary is located on property for which it is allowable (by law or regulation, such as zoning laws) to operate the facility and the activities conducted by the organization.

c. If the sanctuary is on another person's property [*e.g.*, housed in someone's home or on their land, including government land], there needs to be a written lease agreement between the property owner and the sanctuary (or its governing organization).

d. If property is leased, a long-term (ten years or longer) contractual lease is in place, with a termination clause requiring sufficient notice (a minimum of a year) to allow the sanctuary to relocate or transfer its animals to another appropriate facility that has committed to providing their lifetime care.

e. If property is leased, the sanctuary should have a written contingency plan describing the steps to take to relocate or transfer its animals to another appropriate facility at the end of the lease, or upon an unexpected termination of the lease.

G-3. Succession Planning

The sanctuary has a written succession plan for its continuance should the director or other key management be unable to continue in their positions.

a. The sanctuary has a written plan outlining succession scenarios for key positions within the sanctuary, covering at a minimum the sanctuary director. Depending on the structure of the sanctuary management, this may also cover the assistant director, director of operations, director of finance, etc.

b. For the director position as well as other key management, written job descriptions should exist outlining the primary functions and responsibilities of each position.

c. The succession plan should include an emergency plan outlining who will carry out the key responsibilities in the event of a sudden and unexpected absence by the director or other key management in both short- and long-term scenarios.

d. A succession plan should also define the role of the Board of Directors/Trustees in overseeing transition in the event of a planned departure of the sanctuary's director, including functions such as hiring and oversight of an interim director, determining salary ranges, re-assignment of responsibilities, and the appointment of a transition committee.

G-4. Board of Directors/Trustees

The Board of Directors/Trustees organizes itself and carries out its duties in an appropriate, legal and responsible manner, and has appropriate relationships with staff and volunteers.

a. A Board of Directors/Trustees is in place with a minimum of three (3) members, or a greater number if required by law, where at least one board member is not a family member.

b. The Board of Directors/Trustees has organized itself in a manner that allows its duties to be carried out in a timely and responsible manner and in accordance with all relevant non-profit regulations.

c. Bylaws, in accordance with applicable law, have been developed and adopted as the general policies and rules that govern the sanctuary and define the Board's composition and structure.

d. The Board of Directors/Trustees has regularly scheduled meetings, and minutes are kept. The Board has a written position description describing the responsibilities of its members, and members are knowledgeable of their legal obligations and accept responsibility for self-regulation, accountability, ethical practice of the sanctuary, and sound financial management and oversight.

e. The Board is supportive of the sanctuary abiding by GFAS standards.

G-5. Ethics and Grievance Procedures

The sanctuary's policies and actions of the Board and staff reflect adherence to a high code of professionalism and ethics.

a. Business and related activities, including outreach and interactions with other sanctuaries, are conducted in a professional manner, with honesty, integrity, compassion and commitment, realizing that an individual's behavior reflects on the sanctuary and greater humane communities as a whole. A code of ethics/conduct for the sanctuary has been adopted by the Board of Directors/Trustees.

- The code of ethics/conduct addresses the core values of: integrity, openness, accountability, service and charity, and reinforces standards of professional behavior. (Note: In recognition that some animals are used for food, and sanctuaries are in the business of protecting animals, all sanctuaries should ensure that their sanctuary events are conducted in a manner that is consistent with their mission.)
- All personnel associated with the sanctuary, including volunteers, have been provided with access to the code of ethics/conduct and have agreed to adhere to it.

b. The sanctuary has a written Conflict of Interest policy prohibiting any Board member, director, or key employee from approving or voting on a transaction in which he or she has a monetary or other interest. Members of the Board of Directors and the director, as well as key employees as appropriate, are asked to sign written acknowledgements of receipt of the policy and have disclosed potential conflicts of interest.

c. The sanctuary has a written anti-discrimination policy, specifically referring to any protected class under law.

d. There is a written grievance process that is clearly communicated to the staff and volunteers to communicate the procedure for reporting a concern regarding workplace-related issues, including ethics complaints; includes an alternate pathway if the normal person to whom one should take concerns is non-responsive or the focus of the concern; and allows for fair, prompt and meaningful resolution.

G-6. Required Licenses and Permits

The Sanctuary has all legally required licenses and permits (or other necessary government approval) to operate as a sanctuary and to house each animal.

a. The sanctuary obtains and maintains all permits and licenses required under city, county, state/province, country and international laws and statutes for each animal housed at the sanctuary.

G-7. Strategic Planning

The sanctuary has at least a three-year strategic plan in writing, to provide a structure upon which to base the fundamental actions that guide and shape operations.

a. The sanctuary has a written strategic plan in place, developed by the Board of Directors and director, with input from other sanctuary management and staff where appropriate, that provides a structure within which fundamental actions of the sanctuary are based to shape and guide sanctuary operation. The strategic plan addresses at a minimum three years.

FINANCIAL RECORDS AND STABILITY

F-1 Budget and Financial Plan

The sanctuary maintains an annual operating budget and a long-term financial plan.

a. An annual operating budget exists and reflects estimated future expenditures. The budget includes expenses related to staffing salaries and benefits, overhead expenses, supplies, capital improvements, ongoing maintenance, etc. The budget is approved by the Board of Directors/Trustees.

b. Periodically during the year, the estimated budget is compared to the actual expenses of the sanctuary and where necessary, appropriate adjustments are reflected in future estimated expenditures.

c. The sanctuary has a long-term (minimum of three years) financial plan that projects future revenue and expenses, consistent with priorities set out in the strategic plan. The plan builds in protection for the care of the animals (*such as* creating a "bare bones" budget; seeking endowments for lifetime care of animals; building up increased operating reserves; entering into written agreements with other facilities to take animals in the event of closure of the sanctuary; or other such "safety nets") in the event that significant decreases in operating income occur.

F-2 Financial Reports

The sanctuary keeps accurate and complete financial records.

a. Detailed, accurate periodic financial reports are kept on file. The sanctuary produces on a regular basis (at least annually) the following financial statements:

- A Statement of Financial Position (also known as the Balance Sheet);
- A Statement of Activities (also known as the Statement of Revenues and Expenses, or Operating Statement, or Income Statement, or Profit and Loss Statement); and
- A Statement of Cash Flows.

b. Other pertinent information, such as loan amortization schedules and lease commitments, are also maintained and updated at least annually.

c. Copies of IRS Forms 990 (or comparable documents required to be filed to maintain non-profit status outside of the United States) and other tax documents, such as exempt status determination letters, are kept on file with other sanctuary documents and are available for public review, as required by law.

F-3 Financial Stability

The sanctuary has a strategy in place for securing and maintaining at least minimal financial reserves.

a. The sanctuary has a strategy in place, as reflected in strategic and financial plans, to maintain reserves equal to at least three months (or one month to achieve GFAS verification) of those operating costs essential to the proper care and welfare of the sanctuary animals.

b. Consideration may also be given to cash equivalents as well as advance purchases of food, supplies, etc.

c. See also Standard F-1(c), "Budget and Financial Plan."

F-4 Banking Responsibilities and Financial Transactions

The sanctuary maintains a bank account, keeps personal and sanctuary business separate, and properly records all contributions, petty cash transactions, and loans to the sanctuary.

a. There is a checking account registered in the sanctuary's name that is used only for sanctuary financial transactions.

b. Personal business is kept completely separate from the sanctuary's business (*e.g.*, staff and Board members cannot use sanctuary funds to pay for personal expenses or take loans from sanctuary funds).

c. If the sanctuary is being funded through personal loans, loan documents are signed and maintained in the accounting record. Repayment schedules are developed and followed.

d. All contributions from donors are properly documented and promptly deposited. Donors are provided with receipts as required in accordance with applicable laws or regulations.

e. If petty cash is kept on hand, transactions are documented and receipts are kept on file substantiating the related expenditures.

F-5 Fundraising Activities and Disclosures

Fundraising is conducted in a legal, ethical and transparent manner.

a. Fundraising techniques conform to applicable tax regulations for maintaining non-profit status (*e.g.*, sec. 501(c)(3) status in the United States) and conform to the spirit as well as the letter of all applicable laws and regulations.

b. Fundraising activities are conducted with honesty and integrity, and put the charitable mission of the sanctuary above personal gain.

c. All fundraising and soliciting materials are accurate, do not exaggerate financial needs or incorrectly claim sole credit for joint efforts, correctly reflect the sanctuary's mission and use of solicited funds, and do not threaten to betray the mission by making misleading and unprofessional statements (*e.g.*, claiming animals will have to be euthanized if donations are not received immediately).

d. The sanctuary ensures proper stewardship of charitable contributions, including timely reports (*e.g.*, tax filings, annual reports, reports required by funders) on the use and management of funds. Restricted funds are expended in accordance with donor's intentions. Explicit consent by the donor is obtained before altering restrictions or conditions of a gift.

e. Fundraising expenses are reasonable, and total fundraising expense is disclosed on financial reports and any required tax filings.

f. Fundraisers for the sanctuary ensure that all information provided to donors is accurate and complete. Any statements about the taxable nature of donations indicate that all or part of the donation may be tax deductible as a charitable contribution under applicable law.

F-6 Insurance and Waivers

The sanctuary has adequate insurance coverage and secures signed waivers from all who enter the sanctuary property.

a. Insurance policies, where available, are in place that protect the financial resources of the sanctuary and staff, as well as protect the community from harm that the sanctuary might cause. The amount of coverage is commensurate with the size of the sanctuary and the implied risk associated with the animals housed at the sanctuary. Where available, this includes General Liability insurance and a management liability policy (often called Directors & Officers or "D & O").

b. Visitors, volunteers, and employees sign waivers that acknowledge the potential risks of being on sanctuary property.

EDUCATION AND OUTREACH

E-1. Education Programs

(Note: Not applicable for sanctuaries that do not have an education program)

Education programs are thoughtfully designed and overseen to promote a humane ethic, with careful respect and protection of all aspects of the individual welfare of the apes involved, and ensuring public safety.

a. Any education program is designed to promote awareness, empathy, and respect for all life through education and advocacy insofar as resources permit, and portray the issues surrounding why individual apes reside at the sanctuary, the apes' natural history and conservation status, and how the highest welfare of each individual ape is ensured.

b. An education program is conducted in accordance with a written Education and Outreach Policy that articulates and evaluates program benefits, under the direction of qualified staff and/or volunteers.

c. The education program is evaluated by the director periodically for effectiveness and content, ideally on an annual basis.

d. Apes are not taken out of enclosures/habitats or off the grounds of the sanctuary for incorporation into the education program. Apes may be incorporated into education programs utilizing non-invasive educational methods/tools, such as audio-visual presentations, webcasts, or other forms of multi-media. In such cases, they are treated in a respectful, safe manner that does not misrepresent or degrade them, does not cause them distress, and does not put apes or humans at risk.

e. See also Standards P-8, "Removal from Sanctuary or Enclosures/Habitats for Non-Medical Reasons," and P-9, "Public Viewing of Human/Ape Interaction."

E-2. Tours

Any tours are monitored and conducted in a careful manner that minimizes the impact on the apes and their environment, does not cause them stress, and gives them the ability to seek undisturbed privacy and quiet.

a. Non-guided tours are prohibited, and tour groups are of a size that allows for close monitoring and vary based on the size and staff of the sanctuary.

b. Tours, if allowed, are for an educational purpose consistent with the sanctuary's education policy and not used for entertainment (*see* Standard E-1, "Education Programs").

c. All tours are conducted to minimize the impact on the apes and their environment.

d. Apes are confined within a secure environment and provided the opportunity to escape from public view. Apes are not in enclosures or habitats specifically designed to minimize their privacy and all wild apes have the ability to seek undisturbed privacy and quiet.

e. Apes that are easily stressed are excluded from tours.

f. All tours prohibit the public from any physical contact with the apes residing at the sanctuary.

g. Members of the public cannot feed sanctuary apes during tours.

E-3. Outreach

Sanctuary staff are appropriate advocates for ape protection and welfare, and work cooperatively with other sanctuaries and the community.

a. The sanctuary works cooperatively with other sanctuaries as applicable, keeping the apes' welfare as the first priority. (For instance, best practices are shared, sanctuaries collaborate to arrange best placements for apes, etc.).

b. Any community outreach is conducted in an ethical and professional manner.

c. The sanctuary does not adopt policies in opposition to the welfare of great apes (*e.g.*, endorsing the use of great apes for entertainment).

POLICIES

POLICIES: ACQUISITION AND DISPOSITION OF APES

P-1. Acquisition Ethics and Commercial Trade/Breeding Prohibition

Acquisition of apes by the sanctuary is legal and ethical.

a. The sanctuary has relevant legal documentation (including any required permits and licenses) for, and is in legal possession of, all animals in its care.

b. The sanctuary has a written policy governing its acquisition of apes, including the following provisions:

- Apes are only accepted if the sanctuary has the financial resources to provide appropriate professional care.
- Apes are only accepted if they will not jeopardize the health, quality of care or maintenance of apes currently housed at the sanctuary.
- All acquisitions of animals by the sanctuary are consistent with its mission and in the best interest of the individual animals (for example, it may be in the best interest of a rescued infant ape to be placed at another accredited sanctuary if no appropriate surrogates are available).
- Acquisition of apes occurs through donation or rescue. No commercial trade in sanctuary animals occurs (included, but not limited to, the sale of animals, animal parts, by-products, or offspring), and the sanctuary does not knowingly engage a third party to purchase an ape on its behalf. (*Note: if animals have been purchased, or if the sanctuary has a policy in place that allows purchase under certain circumstances, the sanctuary must provide GFAS with this information, indicating why such purchases are consistent with the sanctuary's mission and why they do not sustain or promote the commercial exploitation of the species.*)
- No acquisition results from the intentional breeding of animals for or at the sanctuary. An exception may be made for rehabilitation and release centers engaged in a bona fide breeding-for-release-program of endangered species with available release sites within the state/province, conducted with specific conservation goals, in accordance with local, state/province, national, and international law and regulations.

c. Safe and humane transport is used for all acquisitions.

P-2. Acquisition Recordkeeping and Monetary Exchange

Acquisition contracts are clear, with ultimate responsibility for acquisitions clearly defined.

a. An acquisition contract is in place that clearly identifies the sanctuary as the "responsible party" for the apes and when such responsibility takes effect; whenever possible, the contract includes information on the "surrendering party" as well as any intermediary parties (rescue groups, zoos, etc.). This written contract is kept as part of the permanent record for each ape entering and housed at the sanctuary.

b. Other acquisition records to be kept as part of the permanent record for each ape may include:

- Permits as required to satisfy local, state, federal and international law.
- Importation papers or other declaration forms where applicable.
- Titles and other appropriate documents establishing a paper trail of legal acquisition are maintained whenever possible. When such information does not exist (the sanctuary maintains confiscated wildlife), an explanation is provided regarding such animals.

- Health certificates as required by the appropriate national and local government agencies (such as the USDA Interstate and International Certificate of Health Examination in the United States).

c. Financial expenses associated with acquisition of an ape may be received in order to enable the sanctuary to be able to responsibly take in the ape, and may include medical testing, behavioral assessment, crate construction costs, quarantine costs, shipping and transport costs. Lifetime care costs may be factored in as appropriate.

P-3. Disposition Ethics and Responsibility

The sanctuary assumes lifelong responsibility for the sanctuary apes, with some noted exceptions, with ultimate responsibility for dispositions clearly defined.

a. The sanctuary assumes lifelong responsibility for the apes acquired and only in very rare circumstances does an ape permanently or semi-permanently leave the sanctuary, with the exception of releasable wildlife reintroduction.

b. Acceptable reasons for disposition, when movement of apes to another sanctuary does not compromise the welfare of that individual or the other ape(s) with which s/he will be housed, include:

- health concerns that cannot be adequately addressed by the sanctuary, where another accredited sanctuary or comparable facility is better equipped to provide care for the ape.
- another accredited sanctuary or comparable sanctuary can provide a better long-term environment (such as creating a suitable social group of conspecifics).

c. Other reasons for disposition include financial insolvency or closure of the sanctuary or death of the ape.

d. Detailed records of ape disposition are logged and maintained, including the details of all body parts.

P-4. Disposition of Live Apes

Responsible steps are taken to ensure that any disposition of a live ape is in the life-long best interests of that ape.

a. The sanctuary has a written disposition policy that adopts substantially the language of this standard.

b. Apes are not transferred to individuals, nor are they transferred to sanctuaries that lack the appropriate expertise and/or resources and/or facilities to care for them appropriately. Before transfers, the sanctuary is convinced that the recipient has the expertise, records management capabilities, financial stability and facilities required to properly care for the apes. Apes are not "loaned" to other facilities.

c. Apes are not disposed of at auctions or to breeders, dealers, brokers, "kill buyers", slaughterhouses or private pet owners.

d. For sanctuaries engaged in rescue, rehabilitation and release of apes, subject to all pertinent regulations and laws, apes are released within native ranges, in accordance with local, state, national and international regulations.

e. If an ape, especially one housed individually (to be avoided whenever possible), shows signs of self-mutilation and/or apathy, is uncontrollable, has a highly aggressive disposition, and/or is suffering physically or psychologically, and if the sanctuary cannot remedy the situation, then, if possible, the ape is transferred to another accredited sanctuary or other appropriate facility, if it appears that environment will better suit the ape.

f. See also Standard P-5, "Euthanasia."

P-5. Euthanasia

Euthanasia is governed by an ethical humane euthanasia policy, and deceased apes are handled appropriately.

a. The sanctuary has and maintains a written humane euthanasia policy (as part of the disposition policy) for apes and other animals at the sanctuary, administered under the strict supervision of a licensed veterinarian.

b. Euthanasia is only be used as a final option. Euthanasia is not used as management tool (such as a means to create space for more animals).

c. Examples of cases where euthanasia may be accepted are:

- Incurable disease/injury that is likely to cause unmanageable pain or suffering;
- Disease/injury where treatment is likely to cause unreasonable pain or suffering;
- Disease/injury where treatment will not be effective in restoring the ape to an acceptable quality of life;
- Disease/injury where treatment is beyond the normal community standards of monetary expenditure and would cause an excessive burden on the sanctuary resources, and no other sanctuary can step in, after reasonable efforts to locate such a sanctuary;
- The process of aging has resulted in an unacceptable quality of life;
- In the event of presenting an infectious disease risk to some or all of the residents.

d. A licensed veterinarian or his/her authorized representative, who is knowledgeable and skilled in performing euthanasia in a compassionate and professional manner and ideally with an established relationship with the sanctuary and the ape, recommends and performs humane euthanasia. However, in extreme circumstances of ape suffering when a veterinarian is unable to reach the sanctuary in a timely manner, a method such as the use of a firearm to euthanize an ape may be required and is performed by a trained and qualified staff member when no other humane option is available.

e. Euthanasia is performed so that it avoids distress to the ape, and unless impossible, is performed out of view of other apes.

f. With regard to deceased apes:

- Personnel conduct themselves in such a manner that is respectful during disposition activities;
- Body parts are never to be sold, traded or donated (*see* exception at Standard P-11, "Ethics in Research");
- Disposition of deceased apes meets the requirements of all acceptable practices along with applicable local, state, national, and international regulations and laws.

g. The species and ecosystems are carefully considered during disposition activities.

P-6. Breeding

No intentional propagation of animals occurs, and sound practices are in place and implemented to prevent propagation and to properly care for infants born at the sanctuary.

a. No intentional ape breeding occurs, and sound practices are in place to prevent propagation. An exception may be made for rehabilitation and release centers engaged in a bona fide breeding-for-release-program with available release sites within the state/province, conducted with specific conservation goals, in accordance with local, state/province, national, and international law and regulations.

b. The sanctuary has ape-appropriate contraceptive programs in place. If females arrive at the facility pregnant, the sanctuary provides necessary care and the female is allowed to deliver unless there are valid health reasons for terminating the pregnancy, or unless the attending veterinarian feels the pregnancy is in such an early stage that aborting the fetus is an option, if so desired by the sanctuary. After delivery, reproductive control methods are applied after allowing adequate time for weaning as appropriate for that ape, provided there is no further opportunity for breeding during this period of time.

c. Infants born at the sanctuary remain with the mother and social group as appropriate for natural rearing, provided there is no further opportunity for breeding during this period of time.

d. Infants are only removed from parents for hand-rearing if there is a threat to the life of the infant or the mother.

POLICIES: PUBLIC CONTACT AND RESTRICTIONS ON USE AND HANDLING OF APES

P-7. Public Contact

Contact between apes and the public is not allowed or is restricted appropriately.

a. No unescorted public visitation occurs. This is not to exclude discrete, nonintrusive observation by a carefully evaluated person, such as a wildlife student, as allowed by the appropriate decision-making body of the sanctuary.

b. No direct contact between the public and apes occurs. In certain rehabilitation/ reintroduction programs, with young orphaned apes, volunteers who are suitably trained and part of the sanctuary's structured volunteer program may assist staff in carefully structured programs that ensure the safety and well-being of both the apes and the volunteers.

c. See also Standard E-3, "Tours."

P-8. Removal from Sanctuary or Enclosures/Habitats for Non-Medical Reasons

Apes at the sanctuary are not removed from the sanctuary or enclosures/habitats for non-medical reasons.

a. Apes are not taken from the sanctuary or enclosures/habitats for exhibition, education, or research purposes.

P-9. Public Viewing of Human/Ape Interaction

The sanctuary does not allow unprotected human/ape contact to occur within public view.

a. Any unprotected contact with apes (*e.g.*, for purposes of providing medical care) is performed out of public view, except in cases of emergency.

P-10. Non-Portrayal of Apes as Tractable

With few exceptions, the sanctuary rarely portrays apes as tractable in text, photos, video, or other media.

a. The sanctuary rarely publishes material that portrays apes as tractable. This includes but is not limited to: photos in which staff or others are shown holding or petting apes; and apes on leashes or dressed in human clothing. In situations where text, photos, video or other media are published portraying the above, steps should be taken to add text to the publication (website, brochure, etc.) that explains the reason for the contact and discouraging the idea that the animals would make suitable pets.

P-11. Non-Harmful, Non-Exploitive Fundraising

Fundraising activities are not distressing or negatively disruptive to apes, nor do the activities involve improper use of apes.

a. Fundraising activities approved by an appropriate decision-making body of the sanctuary are allowed provided the following:
   - The activities do not violate any of the other GFAS Standards, including those regarding contact with the public, handling of apes, and removal from the sanctuary or enclosures/habitats;
   - The activities are deemed to not be distressing or in any way negatively disruptive to the apes and their normal routine, nor are normal routines designed specifically for fundraising needs;
   - Apes are not in enclosures or habitats specifically designed to minimize their privacy, and all apes have the ability to seek undisturbed privacy and quiet;
   - Apes are not being used as entertainment, which includes the performance of "tricks" for public display;
   - Apes are not raffled or sold.

P-12. Ethics in Research

Any research conducted is devoted to benefiting the health and welfare of the individual ape involved, and does not cause pain or distress.

a. No resident apes are made available for participation in research studies unless the studies are strictly observational and do not interfere with the normal daily activities of individual apes. Interventions that cause pain or distress are not acceptable.

b. An exception may be made, with approval of an appropriate decision-making body of the sanctuary, if:
   - It is determined that the health and welfare interests of the individual ape are best served by participating in a new treatment study;
   - There is reason to believe that outcome of the study will be a tangible benefit for the individual ape involved;
   - The study does not prevent normal activities of daily living.

c. An exception may also be made for research involving biological sampling if it will have a demonstrable health, conservation, or genetic benefit to captive animal management and/or wild ape population conservation. In such cases, samples are only to be taken during routine examinations of the ape (which are otherwise needed for the welfare of the individual ape) or routine cleanings of enclosures, or during a necropsy that does not violate any other GFAS standards. Sanctuaries should ensure that any biological samples are used ethically by the receiving institution or laboratory, and that any applicable CITES regulations are followed.

GREAT APES BEING RELEASED TO THE WILD

GFAS strongly supports the efforts of wildlife rehabilitators and sanctuary managers to return wildlife to its natural environment, provided appropriate steps are taken to ensure that the animals released are likely to survive in the wild.

Facilities releasing great apes to the wild must also make every effort to reduce the risk of their having a damaging impact on ecological resources, including other animal species, found naturally in the release area. Examples of risk factors include but are not limited to:

- Displacement of indigenous animals;
- Transmission of novel pathogens - As humans and great apes are evolutionarily so close, the risk of transmission of pathogens between great apes and their caregivers is particularly high, as is the risk of transmission of human pathogens back to wild individuals or populations via releases;
- Disruption of local human communities, including crop raiding, damage to dwellings and injury or death of local inhabitants;
- Alterations to the environment that disrupt the ecological niche of other species.

For a more detailed discussion of the potential risks, as well as time and financial commitment involved in creating a quality re-introduction project, *see* the International Union for the Conservation of Nature's (IUCN) "Best Practice Guidelines for the Re-Introduction of Great Apes" (www.primate-sg.org/storage/pdf/BP.reintro.pdf).

R-1. General Considerations

The sanctuary has policies, agreements and plans in place to optimize the chances for successful re-introduction of great apes into the natural environment.

a. The facility has a written policy regarding the handling of any potential problems involving released animals. The policy should include but is not limited to:
   - a plan to minimize the risk to human life and property in the area of release;
   - a plan for compensation for or mitigation of damages incurred by the released animals;

- a deterrent plan to discourage inappropriate activities, *i.e.*, spending time around human habitation or crop raiding.
- a plan for management or removal of animals who fail to integrate appropriately or who become habitual 'problem animals.'

b. In as much as possible, using the latest available information on potential health concerns regarding other species found in the area of release, animals are tested and treated for pathogens that might pose a threat to other wildlife.

c. The facility has agreements in place with any and all appropriate authorities to allow the release process to proceed as smoothly as possible.

d. Ideally, permissions, any necessary documentation, site determination, etc. begin as soon as it is determined that there are animals in care that are likely to be suitable for release.

- In particular, facilities obtain any permits or other forms of authorization needed to proceed with the release.
- Potential release sites are identified and evaluated as early in this process as possible.

e. Cooperative agreements are in place prior to animals being released which may include, but are not limited to:

- veterinary and scientific involvement in post-release monitoring;
- community acceptance of the project and involvement in habitat protection and awareness raising;
- landowner agreements enabling release, including the addressing of specific permissions and permits;
- involvement of NGOs with similar or conflicting interests that may impact (positively or negatively) the project.

R-2. Rescue Of Great Apes

The sanctuary has developed guidelines for rescue work, taking into account staff and animal safety, contingencies for caring for the animal once rescued, and any local, state or national regulations or agency cooperation required.

a. Facilities accepting great apes from the illegal trade have policies and procedures (ideally in writing) in place with the appropriate authorities that allow for rapid transfer of the animals to the sanctuary or rescue center. These policies and procedures are designed to reduce the risk of:

- disease transmission;
- habituation;
- Inappropriate or inhumane treatment, due to lack of knowledge, by personnel involved in seizure of wildlife from the illegal trade.

b. In as much as possible, while respecting local or national cultural/religious tenets, a euthanasia policy is in place to address situations where the animal's prognosis for survival is too low to warrant attempting treatment.

- In situations where field euthanasia is being considered, where possible and appropriate (*e.g.*, the animal is reasonably safe from further human interference and the stress of capture would outweigh the benefit of humane euthanasia), the option of leaving the animal *in situ* may be considered.
- See also Standard V-5, "Euthanasia."

R-3. Evaluation Of Suitability For Release

Great apes admitted into sanctuary are evaluated for their potential suitability for release.

a. The sanctuary has a protocol in place (ideally in writing) to evaluate potential release candidates and to determine which apes are given priority for potential release.

- Animals who have spent little time in captivity and/or who have had little human contact are given priority for potential release.
- Animals found to be free of diseases and/or parasites of potential concern to the health of the population, particularly in the intended release area, are given priority for potential release.

b. All great apes are treated as potential release candidates, particularly those who have not been kept long term as pets. If great apes admitted into sanctuary are determined to be potential release candidates, every effort is made to protect them from exposure to human disease and to keep them as wild as possible.

R-4. Quarantine And Prerelease Housing

(See also Standards H-1 to H-9, "Great Ape Housing," and V-5, "Quarantine and Isolation of Great Apes")

The sanctuary has appropriate quarantine facilities and prerelease housing for great apes, with consideration given to sick and injured apes.

General

a. Non-quarantine housing for great apes being considered for release provides as close to natural a setting as possible. The space allows for foraging, climbing, nesting and other actions naturally performed in the wild.

b. Quarantine facilities and prerelease housing for great apes intended for release are situated a minimum of 66 ft. (20m), giving consideration to factors such as wind direction, from resident great ape populations to protect them from exposure to pathogens present in the sanctuary population that could compromise their return to the wild. A wall surrounding the quarantine area reduces pathogen transfer risk and aids in restricting access to authorized personnel.

- Where this is not possible, sanctuary residents are screened for potential pathogens of concern, and pathogen-free animals are housed closest to the animals intended for release to the wild.
- Sanctuary animals being used as surrogates are screened for pathogens prior to introduction to any orphaned apes.

c. Where possible and appropriate, sanctuaries follow International Wildlife Rehabilitation Council guidelines (http://www.nwrawildlife.org/content/minimum-standards) in dividing housing into three types:

- Restricted activity/mobility – for the initial stages of rehabilitation where the illness or injury requires the animal be treated and/or prevented from activities that would slow the rehabilitation process. At a minimum, the animal is able to maintain normal upright/alert posture and to stretch the body.
- Limited activity/mobility – for the recovery stage of rehabilitation where the animal is regaining mobility and building strength, and staff does not need access to the animal on a daily basis. The animal is able to move short distances and perform some climbing and perching activities.
- Unlimited/Prerelease – the final stages of rehabilitation where the main concern is ensuring that the animal is fit for release.In this phase, the enclosure provides the great apes with opportunities to demonstrate the skills necessary for survival in the wild.

Quarantine Housing

d. Sick or injured wildlife is quarantined in such a way that the rehabilitation process is begun during the quarantine phase.

e. Quarantine facilities have appropriate housing for the treatment of injured or ill great apes.

f. Quarantine facilities are designed to allow for monitoring and, as needed, modification of behavior of apes intended for release.

g. Healthy great apes admitted to quarantine have as large an enclosure as possible to help maintain natural locomotion and foraging behaviors.

h. Upon arrival, great apes are quarantined for an adequate number of days, ideally for a minimum of 90 days in accordance with IUCN guidelines. In some situations a longer quarantine may be advisable.

i. The attending veterinarian works closely with regional, national and international experts and authorities to determine appropriate quarantine timing based on health risks to which the newly admitted apes may have been exposed.

j. Orphaned great apes, particularly those who have been kept as pets and potentially exposed to human pathogens, are isolated until any potential health risks are evaluated.

Initial Housing for Orphaned, Ill or Injured Great Apes

k. Animals admitted requiring treatment for illness or injury are housed in enclosures that allow for ease of care. These initial care enclosures can be smaller than that which is acceptable for long-term care.
   - Dependent on illness or injury, either Restricted or Limited activity/mobility housing may be utilized.

l. Enclosures provide visual and acoustic barriers to minimize stress.

m. Orphaned great apes are housed in nursery units, preferably with conspecifics.
   - Where possible, safe, and appropriate, adult great apes are utilized as surrogates to care for the orphans, thus reducing human contact. Where this is not possible, human caregivers act in a manner that replicates the behaviors of adult, wild great apes as much as possible.
   - While a primary caregiver is designated as a surrogate, for those species where other members of the troop care for and handle the young, other caregivers working with orphaned young provide this role within the 'playgroup'.

Intermediate Housing for Orphaned Great Apes

n. As soon as the orphaned great apes have reached the stage of spending more time away from primary caregivers, they are moved to intermediate housing, where human contact is decreased and interaction with conspecifics is increased. Where possible, the animals are moved to the release site and cared for in a soft release enclosure.

o. Animals are provided with adequate opportunity for climbing, nest building and foraging.

p. In as much as possible, conspecifics are used to teach natural behaviors. Where appropriate releasable conspecifics are not available, and where possible, safe, and appropriate, resident animals with strong natural skills who do not present a disease risk to the wild population, may be used to teach these behaviors.

q. Intermediate housing is isolated from resident animal areas, ideally within a natural habitat which allows the orphans to adjust to a more wild environment.

Intermediate and Prerelease Housing for Sick or Injured Great Apes
Note: *Adult and independent subadult animals, dependent on their admitting condition, may not require intermediate housing.*

r. Animals suffering from injuries that may affect their suitability for release are moved to intermediate housing while regaining strength. Animals are regularly evaluated to determine whether they are likely to be releasable. Once the great apes are deemed fit, they are moved to prerelease housing.

s. Independent animals brought in for rehabilitation who can be released back into the environment from which they came are returned as soon as it is determined that the animal has recovered sufficiently to resume its presence in its former area.
   - Consideration is given to social and territorial issues that may affect safe return to the original habitat.

t. Prerelease housing for adult and independent subadult animals is ideally situated at the intended release site, allowing the animals to acclimate to their new environment before release.

u. In both intermediate and prerelease housing, sufficient vertical as well as horizontal space is provided to allow the apes to develop strength and display normal wild behaviors.

R-5. Diet, Nutrition And Foraging Skills

Great apes are fed an appropriate diet that approximates that which will be found in the habitat to which they are released, and foraging behavior is encouraged.

a. As early in the rehabilitation process as possible, the great apes are exposed to the types of foods found naturally within the environment where they will be released and assessed for their ability to find appropriate foods and avoid inedible or poisonous foods.

b. Release candidates are fed in such a way as to encourage natural foraging behaviors.

c. Rescued great apes admitted in poor physical condition may require specialized diets to recover their health. Nutritional deficiencies are assessed and diets modified to address those deficiencies. Once the great apes are back on a normal nutritional plane, any foods not found in their planned release area are no longer fed.

R-6. Husbandry And Health

All aspects of care, including caregiver-great ape relationships, introduction to social groups and overall health evaluation, are focused on preparing great apes for return to the wild.

a. Once a great ape has been evaluated as a potential release candidate, all aspects of care are focused on preparing the animal for the wild.
   - Human activities and noises are minimized in areas housing great apes being prepared for reintroduction.
   - Apart from dependent young with no suitable conspecific surrogates, human interaction with great apes being prepared for release to the wild is restricted to those activities that will enhance the apes' ability to live in the wild.

b. The animal is placed in an appropriate social group or paired with a compatible conspecific, depending on species. Where appropriate surrogate conspecifics are not available, dependent young may be reared by human caregivers using approved best practices for the species housed.
   - Care is taken to balance the need to nurture these young animals with their need to develop appropriate survival skills as well as intraspecific social behaviors.
   - Animals are integrated into an appropriate social group, ideally comprised of other conspecifics intended for release, as quickly as possible.

c. Introductions follow Standard W-3 "Introduction of Unfamiliar Individuals."

d. Opportunities to explore, climb and learn skills in the natural environment are provided.

e. Great apes admitted into care from the wild at the stage where they are already independent, with recoverable illness or injury problems, are treated and released as quickly as possible, taking into account the potential for the animal not being accepted back into its previous social group.

f. Caregiver-great ape relationships for animals intended for release to the wild, while ensuring the animals' psychological well-being is met, focus on:

- avoiding any types of interaction that may compromise the great apes' chances for release;
- encouraging the great apes to develop appropriate relationships with conspecifics for their social needs.

g. Veterinary staff evaluate overall health including:

- recovery from the initial cause for admission to the facility;
- pathogen surveillance to ensure the animal does not present a risk to the wild population as a result of exposure during the rehabilitation process.
    - In as much as possible, using the latest available information from the OIE-World Organization for Animal Health ((www.oie.int) and the IUCN's Conservation Breeding Specialist Group (http://www.cbsg.org), animals are monitored for human pathogens not found in the wild population.

h. Great apes being cared for in sanctuary for later release back to the wild are managed in such a way as to optimize their chances for successful return to the natural environment.

R-7. Health And Safety Of Caregivers Working With Releasable Great Apes

(See also Standard V-8, "Zoonotic Disease Program")

No caregiver begins work with releasable apes until routine testing has indicated he or she poses no risk to the great apes' release to the wild.

a. Caregivers working with great apes intended for release to the wild are routinely monitored for potential anthroponoses (diseases that have potential to be transmitted to the animals).

b. In addition to the required TB testing, vaccinations and fecal cultures for pathogens may be utilized, as appropriate for the region, to ensure the health of both the apes and their caregivers. New caregivers should not have contact with the apes for the first two weeks of employment.

c. Provision of adequate nutrition for staff is considered as a possible contribution to the continued well-being of both staff and great apes.

R-8. Assessment of Health and Skills

Apes are fully assessed for health and appropriate skills prior to release.

a. Great apes who have completed the rehabilitation process and have been successfully integrated into a social group or pair, as is species appropriate, are further evaluated for release, with attention to health and the skills attained.

b. Each animal's skills (*e.g.* foraging, nest building, appropriate interaction or avoidance behaviors in the presence of conspecfics, avoidance of dangers including poisonous foods, venomous snakes or predators) are evaluated.

c. A complete health assessment is performed including:

- Overall fitness as relates to being able to survive in the wild, keep up with a conspecific group, avoid predators, etc.
- Injuries and limitations that originally caused the animal to be brought into care are resolved, either completely, or to the extent that the great ape has a reasonable chance for long term survival.

d. Great apes have been tested, and found free of pathogens that have potential to harm the wild population in the planned release area, based on the latest current knowledge.

e. Genetic assessment has been done to ensure that the great apes being released are of an appropriate subspecies/population/subpopulation for the release site.

f. Great apes are exposed to post-release monitoring equipment prior to release to allow them to acclimate to its presence.

R-9. Determining Appropriate Release Sites

Release sites are evaluated for health and other threats and for appropriateness for the species.

a. The potential release site is evaluated for the presence of appropriate and adequate food sources.

b. The area is evaluated for potential health concerns.

c. The potential release site is surveyed to ascertain whether any wild great apes are present, either permanently or seasonally.

d. The area is evaluated to establish carrying capacity of great apes to be released. This includes taking into consideration others releases that may have already taken place and issues of territoriality.

e. The area is evaluated for instances of potential human-wildlife conflict.

f. IUCN guidelines are, in as much as possible, followed when determining release sites for rehabilitated great apes.

g. Animals are released away from areas where there is potential for or has been a history of human-animal conflict.

h. Animals are released in an appropriate habitat where carrying capacity for the species has not been reached.

R-10. The Release Process And Post Release Monitoring

Great apes are supported as needed to adapt in their new environment and are monitored post release.

a. Once it is determined that the great apes have the basic skills for foraging in their new environment, supplemental care is discontinued.

b. A post-release monitoring program is in place to ensure the rehabilitation program is providing the animals with the skills necessary to survive, that the habitat is adequate and that, as is species appropriate, great apes have integrated into the wild.

c. Ideally, great apes are returned to the wild using a soft release process wherein they are housed in an enclosure within the release area or spend time with caregivers in the release area where supplemental food may be provided as needed and observation of their acclimatization may be observed.

d. Post release monitoring, in conjunction with outside veterinary and scientific personnel, continues for a minimum of one year.

- Level of monitoring may decrease over time as great apes are determined to be acclimating to the environment.
- Longer term monitoring of the animals and their impact on the habitat is preferred.

e. Practices used and results obtained, both positive and negative, are shared both within the facility and with others involved in great ape reintroduction to aid in the continued improvement of the process.

STATE OF NEW YORK
SUPREME COURT COUNTY OF SUFFOLK

In the Matter of a Proceeding under Article 70 of the CPLR for a Writ of Habeas Corpus, THE NONHUMAN RIGHTS PROJECT, INC., on behalf of HERCULES and LEO, Petitioners, v. SAMUEL L. STANLEY JR., M.D., as President of State University of New York at Stony Brook a/k/a Stony Brook University and STATE UNIVERSITY OF NEW YORK AT STONY BROOK a/k/a STONY BROOK UNIVERSITY, Respondents.	**AFFIDAVIT OF JAMES R. ANDERSON** Index No.:

UNITED KINGDOM)
)
COUNTRY OF SCOTLAND) ss:
)
CITY OF STIRLING)

James R. Anderson being duly sworn, deposes and says:

Introduction and Qualifications

1. My name is James R. Anderson. I live and work in Stirling, Scotland. I graduated with a Bachelor of Science in Psychology from the University of Stirling in 1977, and a Ph.D. in Psychology from the University of Stirling in 1982.

2. I submit this affidavit in support of Petitioners The Nonhuman Rights Project, Inc. ("NhRP"), on behalf of Hercules and Leo, for a writ of habeas corpus. I am a non-party to this proceeding.

Peter W. A. Pratt
Notary Public

J.R. Anderson

3. I am a faculty member at the University of Stirling. My current position is Reader in Psychology, in the Division of Natural Sciences, University of Stirling. Since 1995, I have taught Introductory Psychology, Animal Behaviour, and Developmental and Comparative Psychology at the University of Stirling. I have also taught courses on Animal Behaviour and Animal Welfare at the Universities of Edinburgh, Strasbourg (France), and Kyoto (Japan).

4. Since 1998, I have been a regular Visiting Professor and Research Fellow at Kyoto University in Kyoto, Japan. With my graduate students I have collaborated with Japanese colleagues on behavioural studies of chimpanzees in captivity and in the wild (in Guinea, West Africa).

5. Since 1987, I have been a scientific advisor to the Primatology Center of Strasbourg University. I have served on the editorial boards of the following scientific journals: *Journal of Comparative Psychology* (1991-1994), *Primatologie* (1997-2007), *Current Psychology Letters: Brain, Behaviour & Cognition* (1998-2011), *Primates* (2002-present) and *American Journal of Primatology* (2006-present). I have conducted peer reviews of more than 500 manuscripts submitted to journals in psychology, biology, anthropology, and general science.

6. I am a specialist in the behaviour of nonhuman primates, with particular focus on learning and social cognition. My behavioural studies have been on multiple species of prosimians, New and Old World monkeys, and apes. In addition to work on laboratory-, park- and zoo-housed primates I have done field research on baboons and chimpanzees in West Africa, and macaques in southern India. Distinctions and awards include nomination for the Bronze Medal, Société pour le Progrès de l'Homme, and Auxiliary Award, O.P.A.L. (Ouevre pour la Protection des Animaux de Laboratoire).

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J.R. Anderson

7. I have co-edited 4 volumes: *Primates: Recherches Actuelles* (1990, Masson, Paris), and *Current Primatology*, Vols. 1, 2 and 3 (1994, Université Louis Pasteur, Strasbourg).

8. My publications include almost 200 articles on learning, behaviour, ecology, and welfare of prosimians, monkeys and apes, including over 100 peer-reviewed empirical and review articles in scientific journals including: *American Journal of Primatology, Animal Behaviour, Animal Cognition, Animal Welfare, Cognition, Current Biology, Folia Primatologica, Journal of Comparative Psychology, Nature Communications, and PLoS Biology.* I have also written numerous chapters for edited volumes covering a range of topics ranging from animal husbandry and welfare to consciousness and cognition. Specific topics include: communication, abnormal behaviour, environmental enrichment, husbandry, attachment formation, correlates of social dominance, responses to mirror-image stimulation, self-awareness, tool-use, social organisation, sleep, learning and memory, effects of ageing, behavioral inhibition and self-control, and third-party social evaluation in primates. I have made several documentary films about primate behaviour, and several of my research projects have received international media attention (radio, television, printed press, internet).

9. I have given invited lectures or participated in symposia in psychology and primatology in the following countries: Belgium, England, France, Germany, Italy, Japan, Netherlands, Scotland, Switzerland, and USA.

Basis for Opinions

10. The opinions in this Affidavit are based on my own work as well as accumulated knowledge from 35 years of hands-on research and teaching about the behaviour of nonhuman primates; this includes my knowledge of peer-reviewed literature about primatology published in

J. R. Anderson

Notary Public

respected journals, periodicals and scholarly books. A full Reference list of peer-reviewed literature cited herein is annexed hereto as **"Exhibit A"**.

Opinions

11. The close evolutionary relationship between chimpanzees, bonobos and humans is evident not only in terms of physical structure but also in behaviour and mental processes. No other species comes so close to humans in self-awareness and language abilities, and in diversity of behaviours such as tool-use, gestural communication, social learning, and reactions to death.

12. The first experimental demonstration of mirror-mediated self-recognition – widely accepted as a marker of cognitive self-awareness - in a nonhuman species was done with chimpanzees (Gallup, 1970). To be able to recognize oneself in a reflection requires holding a mental representation of what one looks like from another visual perspective. Although claims of mirror self-recognition have been made for individuals of a few non-great ape species, the evidence is indisputably strongest for chimpanzees and the other great apes (Anderson & Gallup, 2011; Gallup, Anderson & Platek, 2011). The ontogenetic emergence of self-recognition in chimpanzees is similar to that in humans (Lin, Bard & Anderson, 1992). As in humans, the capacity for self-recognition in adult chimpanzees is highly stable across time, with some decline in old age (de Veer, Gallup, Theall, van den Bos & Povinelli, 2003).

13. The capacity for self-recognition has been linked to empathic abilities (Gallup, 1982). Empathy is defined as identifying with and understanding another's situation, feelings and motives. Evidence indicates that chimpanzees are capable of highly developed empathic abilities, compared to other species of nonhuman primates (de Waal, 1990).

14. In the wild and in captivity, chimpanzees engage in sophisticated forms of tactical deception that require attributing mental states and motives to others (de Waal, 1992; Hare, Call

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& Tomasello, 2006; Hirata, 2006). They also surpass other species in terms of concern for others' welfare. This is shown when individuals console an unrelated victim of aggression by a third-party (de Waal & Aureli, 1996). Concern for others is also seen in risky situations, for example, when crossing a road stronger and more capable adult males of a chimpanzee group will investigate the situation before more vulnerable group-members cross and they also take up positions at the front and rear of the procession (Hockings, Anderson & Matsuzawa, 2006). Knowledge of one's own and others' capabilities is probably also at the origin of some instances of division of labour. This includes sex differences in cooperative hunting for live prey, and crop-raiding; these activities often lead to individuals in possession of food sharing it with those who do not (Teleki, 1973; Goodall, 1986; Hockings, Humle, Anderson, Biro, Sousa, Ohashi, & Matsuzawa, 2007).

15. Chimpanzees are adept at understanding other individuals' visual perspectives and knowledge states. For instance, when placed in a situation where they need to compete for food placed at various locations around visual barriers, subordinate chimpanzees will only approach food that they infer dominant chimpanzees cannot see (Hare, Call & Tomasello, 2001). This shows they can take the visual perspective of the chimpanzee competitor, as they understand that what they themselves see is not the same thing as what their competitor sees. Chimpanzees also exhibit referential and intentional communication. That is, they point and vocalize when they want humans and conspecifics to notice something and will adjust their gesturing to insure they are noticed (Leavens, Hopkins & Thomas, 2004; Roberts, Roberts, Vick & Buchanan-Smith, 2013; Vick, Roberts & Menzel, in press). In tasks requiring cooperation, chimpanzees recruit partners that they know to be the most skilled (Melis, Hare & Tomasello, 2006), and they take turns as appropriate when requesting and giving help to a partner (Savage-

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Rumbaugh, Rumbaugh & Boysen, 1978; Yamamoto, Humle & Tanaka, 2009). Chimpanzees also communicate intentionally when they want to inform naïve chimpanzees about something, e.g., a predator. When wild chimpanzees were presented with a model of a python, the alarm calls they made were socially directed to friends who were just arriving on the scene, associated with looking at who had visual access to the snake and who did not, and stopped calling once the others were far enough to be safe from the predator. These behaviors demonstrate that chimpanzees communicate intentionally and purposefully. (Schel, Townsend, Machanda, Zuberbhüler & Slocombe, 2013).

16. Another way chimpanzees have demonstrated their cognitive complexity is through their use of multi-object "tool-kits" (Boesch, Head & Robbins, 2009). A "tool-kit" is two or more tools used in an obligate sequence to achieve a single goal; their use indicates mental representation of a sequence of acts aimed at achieving a future desired outcome. Evidence also exists for long-term planning of tool use. An example is the transport of stones to different locations to be used as hammers to crack open nuts (Boesch & Boesch, 1984), which requires the chimpanzees to keep in mind a future use for the stone. These findings are consistent with those of Osvath (2009) who reported on a zoo-housed adult male chimpanzee who stashed stones to be used as weapons in the day or days ahead (Osvath, 2009). In this case, the fact that the weapons were stored so that human caretakers were unlikely to discover them reinforces the fact that chimpanzees understand others' knowledge states and intentions.

17. Among nonhuman primates, chimpanzees are the best imitators. New-born chimpanzees share with human new-borns the ability to selectively imitate facial expressions (Myowa-Yamakoshi, Tomonaga, Tanaka & Matsuzawa, 2004; Bard, 2007), and more mature individuals can accurately reproduce more complex motor sequences enacted by a model

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(Horner & Whiten, 2005; Whiten, McGuigan, Marshall-Pescini & Hopper, 2009); they may even abandon their spontaneously developed way of using a tool and switch to a more efficient one that they have seen a companion using (Yamamoto, Humle & Tanaka, 2013). Imitation can occur after an extended delay between exposure to a model and opportunity to reproduce the observed act (Bering, Bjorklund & Ragan, 2000), and after observing a demonstration on video (Price, Lambeth, Schapiro & Whiten, 2009). Imitation is a form of social learning that is considered important for cultural evolution.

18. Another form of imitation is contagious yawning. When tested in similar experimental situations using video stimuli, chimpanzees show contagious yawning in much the same way as humans do (Anderson, Myowa-Yamakoshi & Matsuzawa, 2004). The finding that chimpanzees yawn more frequently in response to seeing familiar individuals yawning compared to unfamiliar others provides support for a link between contagious yawning and empathy (Anderson & Matsuzawa, 2006; Campbell & de Waal, 2011).

19. One of the consequences of self-awareness may be awareness of death (Gallup, 1979). Recent observations of the responses of a group of chimpanzees to a dying, elderly member of the group provide further evidence of compassion, bereavement-induced depression, and an understanding of the distinction between living and non-living. The group responded with special attention and pre-death care of an ailing female, male aggression towards the corpse, close inspection and testing for signs of life at the moment of death, all-night attendance by the deceased's adult daughter, cleaning the corpse, and, later, avoidance of the area where death occurred. These behaviours recall human responses to the death of a close relative (Anderson, Gillies & Lock, 2010) and are consistent with several other reports of the reactions of wild and

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captive chimpanzees to the death of a group member (Boesch, 2012), strongly suggesting that chimpanzees, like humans, feel grief and compassion when dealing with mortality.

J.R. Anderson
James R. Anderson

Sworn to before me
this 21th day of November, 2013
[signature]
Notary Public

APOSTILLE

(Convention de La Haye du 5 octobre 1961)

1.	**Country:** Pays/Pais	United Kingdom of Great Britain and Northern Ireland
	This public document Le présent acte public / El presente documento público	
2.	**Has been signed by** a été signé par ha sido firmado por	Peter Pratt
3.	**Acting in the capacity of** agissant en qualité de quien actúa en calidad de	Notary Public
4.	**Bears the seal/stamp of** est revêtu du sceau / timbre de y está revestido del sello / timbre de	The Said Notary Public
	Certified Attesté / Certificado	
5.	**at** á / en	London
6.	**the** le / el día	21 November 2013
7.	**by** par / por	Her Majesty's Principal Secretary of State for Foreign and Commonwealth Affairs
8.	**Number** sous no / bajo el número	J855548
9.	**Seal / stamp:** Sceau / timbre: Sello / timbre:	FOREIGN AND COMMONWEALTH OFFICE LONDON
10.	**Signature:** Signature: Firma:	J Morrison

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If this document is to be used in a country which is not party to the Hague Convention of 5th October 1961, it should be presented to the consular section of the mission representing that country.

EXHIBIT A

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CERTIFICATE OF CONFORMITY

I, Peter William David Alexander Pratt, of 10 Albert Place, Stirling, FK8 2QL, a Solicitor (and Attorney) duly licensed to practice law in Scotland, affirm under penalty of perjury and certify that, I witnessed the signature of Professor James R Anderson as applied to the Affidavit annexed to this Certificate, which was signed and dated on 20 November, 2013. The manner in which same was signed was, and is, in accordance with, and conforms to, the Laws for taking oaths and acknowledgments, in Scotland.

Dated: 20 November, 2013

Peter William David Alexander Pratt

STATE OF NEW YORK
SUPREME COURT COUNTY OF SUFFOLK

In the Matter of a Proceeding under Article 70 of the CPLR for a Writ of Habeas Corpus, THE NONHUMAN RIGHTS PROJECT, INC., on behalf of HERCULES and LEO, Petitioners, v. SAMUEL L. STANLEY JR., M.D., as President of State University of New York at Stony Brook a/k/a Stony Brook University and STATE UNIVERSITY OF NEW YORK AT STONY BROOK a/k/a STONY BROOK UNIVERSITY, Respondents.	**AFFIDAVIT OF CHRISTOPHE BOESCH** Index No.:

FEDERAL REPUBLIC OF GERMANY)
FREE STATE OF SAXONY) ss :
CITY OF LEIPZIG)

Christophe Boesch being duly sworn, deposes and says:

Introduction and Qualifications

1. My name is Christophe Boesch. I received a Maturite scientifique from College Calvin, Geneve in 1970, a Diplome de biologiste from the University of Geneva, Switzerland in 1975, and a Ph.D. from the University of Zurich, Switzerland in 1984. I work and reside in Leipzig, Germany.

2. I submit this affidavit in support of Petitioners The Nonhuman Rights Project, Inc. ("NhRP"), on behalf of Hercules and Leo, for a writ of habeas corpus. I am a non-party to this proceeding.

3. I am currently an Honorary Professor in the Department of Zoology at the University of Leipzig, Germany where I have been a member of the faculty for 14 years. I am also the Director of the Max Planck Institute of Evolutionary Anthropology, and Founder and President of the Wild Chimpanzee Foundation. I have directed 16 diploma theses, 24 Ph.D. theses for both European and American students, and the post-doctoral work for 8 students. I have also regularly taught classes in Behavioural Ecology, Evolutionary Biology, and Population Biology in the 22 years that I have been teaching.

4. I have twice been awarded the Great Apes Fellowship of the Leakey Foundation in Pasadena, California. In addition, I received the Prix Cortaillod for talented Swiss scientists under 35 years old from the University of Neuchâtel, Switzerland, and was awarded the Medal "Officier de l'Ordre National" by the president of Côte d'Ivoire Alassane Ouattara in 2013.

5. I have been a member of the International Primate Protection League, the IUCN/SSC Primate Specialist Group, and the International Primatological Society since 1986. I am also currently a member of: (1) the Behavior and Brain Sciences Associates (since 1991); (2) the Pan Africa News Editorial Board (since 1997); (3) Steering Committee of the World Heritage Species Status Taskforce (since 2002); and (4) the IUCN/SSC/ Section of the Great Apes (since 2003). Additionally, I am the Co-chairman of the Scientific Committee of the Great Apes Survival project of the UNEP/UNESCO (since 2003). I previously served as a: (1) scientific board member of the Fyssen Foundation, Paris (1985-1989); (2) consultant to the World Wide Fund for Nature International (1987-1988); (3) Project Coordinator for the World Wide Fund for Nature International in the Taï National Park, Ivory Coast (1988-1992); (4) executive council member of the Committee for the Care and Conservation of Chimpanzee (1988-1992); and (5) member of the Society for the study of Animal Behaviour (1993-1998).

6. During my career, I have served as a grant reviewer for the following institutions and foundations: NIH, National Science Foundation (USA), Swiss National Science Foundation, Leakey Foundation, National Geographic Society, Fulbright Foundation, and Wenner-Gren Foundation. Additionally, I have served as an ad hoc reviewer for a number of prominent peer-reviewed journals including: *Behavioural and Brain Sciences, Animal Behaviour, Nature, Behaviour, Ethology, Primates, International Journal of Primatology, American Journal of Primatology, Folia Primatologica, American Journal of Physical Anthropology, Current Anthropology, Behavioural Ecology, Proceedings of the National Academy Science, Series B, Quarterly Review of Biology, American Naturalists, Journal of Human Evolution, Proceedings of the Royal Society: Biological Sciences,* and *Journal of Evolutionary Biology.*

7. I have specialized in the study of wild chimpanzees for approximately 35 years. In 1976, I spent 8 months in the Taï National Park, Ivory Coast conducting a preliminary study on the behaviour of wild chimpanzees. I have completed on-going studies of these chimpanzees since 1979. My research on these chimpanzees has principally focused on ecology, social organisation, tool-use, hunting, cooperation, food-sharing, inter-community relationships and cognitive capacities. I also conducted a comparative field study on the chimpanzees of Gombe Stream National Park, Tanzania in 1990 and 1992 (April to July). Then in 1999 (August to October), I undertook a comparative field study on the chimpanzees of the Mahale Mountains National Park, Tanzania.

8. I have authored or co-authored 14 books on primate behavior, cognition, and evolution. Some of the most relevant include: (1) *Tool Use in Animals - Cognition and Ecology* (2013, Cambridge: Cambridge University Press); (2) *Wild Cultures: A Comparison between Chimpanzee and Human Cultures* (2012, Cambridge: Cambridge

University Press); (3) *The Real Chimpanzee: Sex Strategies in the Forest* (2009, Cambridge: Cambridge University Press); (4) *Feeding Ecology in Apes and Other Primates* (2006, Cambridge: Cambridge University Press); (5) *Regional Action Plan for Chimpanzees and Gorillas in West Equatorial Africa* (2005, Washington: Conservation International); (6) *Behavioural Diversity in Chimpanzees and Bonobos* (2002, Cambridge: Cambridge University Press); and (7) *The Chimpanzees of the Taï Forest: Behavioural Ecology and Evolution* (2000, Oxford: Oxford University Press).

9. Since 1978, I have published at least 215 articles on the cognitive and learning capabilities, intelligence, communication, or language skills of apes and chimpanzees specifically. These articles are published in many of the in the world's most-cited peer-reviewed scientific journals, including: *Science, Nature, Journal of Comparative Psychology, Conservation Biology, American Journal of Primatology, International Journal of Primatology, Ecology and Evolution, Animal Behaviour, Journal of Human Evolution, American Journal of Physical Anthropology, Journal of General Virology, Folia Primatologica* (the official journal of the European Federation for Primatology), *Biological Conservation, Molecular Ecology,* and *Natural History.* I have also published articles in *The Oxford Handbook of Comparative Evolutionary Psychology, Proceedings of the National Academy of Sciences* and in *Proceedings of the Royal Society B.* Several articles of mine have also appeared in *BBC Wildlife Magazine.* Specific topics of these publications include: ecology and cognition of tool use in chimpanzees, chimpanzee culture, meat eating and hunting specialization in chimpanzees, botanical skills in chimpanzees, long-term spatial memory in chimpanzees, chimpanzee conservation, female gregariousness in chimpanzees, social behavior and cognition in primates, habitat use and competitive exclusion among sympatric chimpanzee, gorilla and elephant, cultural differences between neighboring chimpanzee communities, reciprocity

and trades in wild chimpanzees, locomotion and tool-use in chimpanzees, altruism in forest chimpanzees, adoption in chimpanzees, paternity and social rank in wild chimpanzees, feeding competition in chimpanzees, male aggression and sexual coercion in chimpanzees, reciprocation of grooming in chimpanzees, vocal, gestural and locomotor responses of wild chimpanzees to intruders, chimpanzee population size, social bonds in chimpanzees, sophisticated Euclidean maps in forest chimpanzees, integration of chimpanzee and human culture, wild ape health, infant mortality cycles in chimpanzees, sexual swelling cycles in chimpanzees, food choice in chimpanzees, paternity in wild chimpanzees, locomotor behavior in chimpanzees, cooperative hunting in chimpanzees, bisexually-bonded ranging in chimpanzees, group-specific calls in chimpanzees, effects of community size on wild chimpanzees social organization, decision-making in conflicts of wild chimpanzees, mortality rates in chimpanzees, female reproductive strategies, buttress drumming by wild chimpanzees, innovation in wild chimpanzees, predator-prey systems in chimpanzees, nut cracking in wild chimpanzees, handedness in chimpanzees, symbolic communication in wild chimpanzees, teaching in wild chimpanzees. My Curriculum Vitae fully sets forth my educational background and experience and is annexed hereto as **"Exhibit A"**.

<u>Basis for Opinions</u>

10. The opinions I state in this Affidavit are based on my professional knowledge, education, training, and 35 years of research and field work with chimpanzees, as well as my knowledge of peer-reviewed literature about primatology published in the world's most respected journals, periodicals and books that are generally accepted as authoritative in the field of primatology, many of which were written by myself and colleagues with whom I have worked for many years and with whose research and field

work I am personally familiar. A full reference list of peer-reviewed literature cited herein is annexed hereto as **"Exhibit B"**.

Opinions

11. Scientific knowledge about chimpanzees is vast and has been increasing at an exponential rate. We must therefore be aware that what we know now is still only a small fraction of what chimpanzees are capable of. Here I discuss several areas particularly relevant as evidence of the autonomous nature of chimpanzees.

A. Foreplanning and Episodic Memory: Components of an Autobiographical Self

12. Self-aware, autonomous individuals understand that they exist through time, that is, they have an autobiographical self. This level of awareness makes it possible to recollect past events and plan for the future. Chimpanzees clearly possess an autobiographical self, as they are able to prepare for the future (Beran et al., 2004; Mulcahy and Call, 2006; Osvath, 2009; Osvath and Osvath, 2008) and can remember highly specific elements of past events over long periods of time (Janmaat et al., 2013a, b; Martin-Ordas et al., 2013; Normand and Boesch, 2009; Normand et al., 2009)

13. A wealth of experimental evidence shows that chimpanzees plan for the future. For instance, in a sequential numbering task it was found that their performance was only explainable if the chimpanzees were planning their responses one step ahead (Beran et al., 2004). Also, they can select, transport and save appropriate tools for a task in the future (Mulcahy and Call, 2006; Osvath and Osvath, 2008). The planning for future use of tools and objects has not only been demonstrated experimentally, but has been documented in a long-term observational study of spontaneous tool use and innovation in a captive chimpanzee (Osvath, 2009). In this study, a male chimpanzee in a zoo collected and stowed away sharp stones in his display area for use as projectiles thrown at visitors (Osvath, 2009). The chimpanzee also engaged in deceptive behavior by stashing the

stones in a "calm manner," so as not to be noticed (Osvath and Karvonen, 2012). Therefore, chimpanzees are not only able to mentally prepare for an upcoming event and alter the future but they are able to use intentional deception in the process. Intentional deception is a hallmark of the ability to take the perspective of and model mental states in others (de Waal, 2005).

14. Just as they can mentally run through steps in their mind to plan for future actions, chimpanzees can remember and mentally re-experience events in the past (also known as episodic memory). Several experimental studies demonstrate this capacity in chimpanzees (Martin-Ordas et al., 2010; 2013). For instance, chimpanzees can use information about tools they recall from an event that occurred only four times three years earlier (Martin-Ordas et al., 2013). They can also make complex decisions about which food items to choose based on perishability by keeping in mind two food items presented separately one hour apart (Martin-Ordas et al., 2013).

15. It is critical for chimpanzees living in a forest to retain knowledge of good sources of food using spatial memory. And it is particularly advantageous to remember which trees tend to yield an abundance of fruit. In an observational study of several female chimpanzees living in the Taï Forest in the Ivory Coast, my team discovered that, during their travels, they visited specific abundantly fruiting trees in a very deliberate and goal-directed manner, rather than through haphazard discovery. They clearly recalled the location of some of these tress for as long as three years. These visits were not initiated by visual cues or smell and occurred more often when females were foraging alone. These results strongly suggest that goal-directed monitoring is guided by a long-term "what and where" (episodic) memory of the location of good potential sources of fruit. (Janmaat et al., 2013a). In another study my team found evidence that the chimpanzees were using botanical features of the trees in their foraging plans. That is, they took advantage of the

timing of fruiting of different types of trees (e.g., making efficient direct lines to trees that were fruiting synchronously) and based their expectations of finding fruit on this botanical knowledge (Janmaat et al., 2013b). In another set of studies of foraging, my colleagues and I found that the chimpanzees knew precisely where they were going, were traveling in a straight line to reach food sources, and were aware of the distance they needed to walk. Moreover, the direction they started out in was exactly the direction needed to take them to their food source, suggesting that they were not meandering and using landmarks along the way but, rather, were depending on detailed spatial memories. They also returned to a food source from many different directions depending upon their starting point. (Normand and Boesch, 2009; Normand et al., 2009). These observations strongly suggest that, when foraging, the chimpanzees are using sophisticated Euclidean mental spatial maps based on long-term episodic memories (Normand and Boesch, 2009; Normand et al., 2009). These findings not only provide evidence of complex mental representational abilities in chimpanzees but also the use of long-term knowledge from specific memories within the context of an autobiographical sense of their own experiences over time.

B. Cultural Traditions

16. Culture depends upon several complex cognitive capacities, including significant behavioral flexibility and innovation, social learning, cumulative knowledge, and adherence to traditions. The evidence for these capacities in wild chimpanzees is robust and indisputable and our knowledge of the richness of their different cultures continues to grow. Chimpanzees possess widespread cultures that are found in all known populations and that distinguish them from other populations (Boesch, 2003, 2012; Whiten and Boesch, 2001; Whiten et al. 1999, 2001). Within the same forest, neighbor groups distinguish themselves with different cultural traits that are maintained over decades despite the exchange of females across groups. New immigrants adopt the

cultural traditions of the new group rapidly through social learning (Boesch, 2003, Luncz et al., 2012) allowing for the maintenance of continuity in different traditions within each group. They also show evidence of symbolic cultural traditions based on arbitrary gestures that have no direct connection with their meanings but are understood by all group members (Boesch, 2003; 2012). These characteristics of chimpanzee culture – diverse, innovative, group specific and even symbolic – point to the striking similarities in the cognitive mechanisms underlying chimpanzee and human culture.

C. Understanding of death

17. An understanding of death requires an ability to recognize the continuity of self and others through time. Self-recognition, which chimpanzees demonstrate, would be a requirement for understanding the irreversibility of death. Self-aware individuals, such as chimpanzees, seem to have an understanding of death as a kind of irreversible situation. They often respond with elaborate mourning rituals that demonstrate some understanding of the concept of life and its ending. Years of independent observations of wild chimpanzees in the Taï forest and elsewhere in Africa lead to the conclusion that chimpanzees realize dead individuals do not move and do not need help anymore, and that they will remain in that state. Once they come to this realization they enact behaviors which can be described as mournful, respectful, and almost-ritualistic (Boesch,2012; Goodall, 1986). As an example, a 10-year old female, Tina, was mortally wounded by a leopard in the Taï forest. Upon seeing her, several individuals in the community surrounded her body. The alpha male and two high-ranking females inspected the body by sniffing the wound while others held her hand. The body was guarded by the males and the highest-ranking female. Infants and low-ranking adults were chased away. Others allowed near the body approached quietly. The only infant allowed to approach Tina's body was her son, Tarzan. The males, who never groom a juvenile female under normal

circumstances, spent an hour grooming her body. One of the males gently tapped Tina on the chin while looking in her eyes and shook her arm while looking at her face as if to confirm the death. After six hours all finally left in a silent procession (Boesch, 2012). In another observation at Gombe National Park, the deceased, an adult female, was visited in succession by other high-ranking members of the group while juveniles and lower-ranking members looked on but were kept from touching the body. Several individuals formed a tight circle around her corpse and the alpha males guarded her (Goodall, 1986). There is even evidence of covering the body with leaves and branches (Boesch, 2012). Altogether, numerous independent observations from different chimpanzee communities strongly suggest a complex group response unique to death involving guarding of the dead body for hours, helping orphans who remain close to their dead mothers, testing for a reaction by shaking the body, grooming the body but not licking blood or wounds as is usually done with injured individuals, showing signs of sorrow when leaving the body, showing signs of respect by keeping youngsters at bay, and, sometimes, carrying the corpse to a safe place. (Boesch, 2012 ; Boesch and Boesch-Achermann 2000). It is notable that chimpanzees distinguish between mortal wounds and other kinds of injuries. If the individual is still alive, other chimpanzees will sometimes clean the wound by licking it and removing debris. However, no one licks similar wounds of deceased individuals; they seem to understand that it will not do any good (Boesch, 2012). Another example of distress at the death of a friend and the realization that the individual is beyond help comes from one chimpanzee, Falstaff's, severe injury during a leopard attack and the response of his hunting partner and friend, Snoopy. Snoopy stayed with the immobile Falstaff for two hours even though the rest of the males of the community were moving on. Snoopy would walk a few steps and look behind him at Falstaff to see if he was following him. He then moved 200 meters north and drummed loudly and repeatedly on a large tree to apparently communicate to Falstaff. When Falstaff did not answer Snoopy let out a loud distressed scream as he finally realized Falstaff was not coming and he had to move on (Boesch, 2012). In the case of mothers who lose an infant, although they may be hesitant to abandon the corpse, they do not behave towards their dead infants as they would if they were alive and they eventually leave them behind (Boesch, 2012). These and many other examples strongly indicate that chimpanzees faced with the death of a friend or family member will not immediately give up but, after several attempts, experience strong bouts of grief and distress as they come to the realization that the deceased is not coming back and the condition is irreversible. Their responses are, at the least, equivalent to the first stage of understanding of death - irreversibility - which human children pass through at about age five (Speece and Brent, 1984), which is well past the age of the emergence of self-recognition and during a period of developing theory of mind and empathy.

D. Empathy and Compassion

18. Empathy is the ability to put oneself in the situation of another perceptually and cognitively. It is only possible if one can adopt another's perspective. Empathy, and, in particular, compassion, require not only a sense of self but the ability to attribute feelings to others, i.e., to understand that someone else could be in a different state than you or could be feeling differently from you. Evidence from both captive and wild chimpanzees indicates that they are capable of highly developed empathic abilities (de Waal, 1990). I have observed clear instances of compassionate care and empathy among wild chimpanzees towards injured individuals. Moreover, responses to others' wounds are not based on simple learning rules because wound licking and tending are only done under specific circumstances, e.g., when the wounded individual is too weak to care for himself or when wounds are in hard-to-reach places. Wound tending is also done by individuals are not close family relatives of the injured. Finally, empathic tendencies vary across

chimpanzee individuals and populations. Wound-tending is quite common in the Taï forest chimpanzees. Saliva has a strong antiseptic property and its regular application to a fresh wound speeds up healing. Taï chimpanzees have been observed licking wounds on the injured feet of others and cleaning out a cut over an eye. Moreover, chimpanzees are aware of the intentions of another chimpanzees when being helped. I observed a female chimpanzee whose hand was trapped in a snare, extend her wounded hand to a male friend and sit still to allow him to remove the cables (Boesch, 2012). These and other examples are striking evidence for the chimpanzee empathy, compassion and recognition when someone else is trying to help them – all complex aspects of self-awareness.

Prof. Dr. Christophe Boesch
Director, Dept. of Primatology
Max Planck Institute for Evolutionary Anthropology

Sworn to before me
this 19. day of November, 2013

Torsten Zapf, LL.M.
Public Notary

TORSTEN ZAPF
NOTAR IN LEIPZIG

FileNo. [redacted]67/2013

The following notarial act is just a confirmation of signature.

I hereby certify that the above is the true signature, subscribed in my presence, of

Mr. **Prof. Christophe Boesch**

Date of Birth: 11-08-1951 in St. Gallen

adress: Bleichertstraße 2 in 04155 Leipzig

- identified by his French Passport No. 13BC63470

Leipzig, 11/19/2013

Torsten Zapf, public notary

APOSTILLE

(Convention de La Haye du 5 octobre 1961)

1. Land: **Bundesrepublik Deutschland**

   Diese öffentliche Urkunde

2. ist unterschrieben von **Herrn Zapf**
3. in seiner Eigenschaft als **Notar**
4. sie ist versehen mit dem Siegel des

   Notars in Leipzig Torsten Zapf

Bestätigt

5. in **Leipzig** 6. am **21.11.2013**
7. durch **den Präsidenten des Landgerichts**
8. unter Nr. **910A-765/2013** In Vertretung
9. Stempel/Siegel 10. Unterschrift

FREISTAAT SACHSEN
DER PRÄSIDENT DES LANDGERICHTES LEIPZIG

Kai Deusing
Vizepräsident

FREISTAAT SACHSEN
DER PRÄSIDENT DES LANDGERICHTES LEIPZIG

Christophe Boesch CV

Personal

Date of Birth: 11-08-51 in St Gallen, Switzerland
Nationality: French and Swiss
Marital status: Married, two children (1983, 1988)
Languages: French, English, German

Education

Secondary school	1965-68: Lycée François Villon, Paris 1968-70: Collège Calvin, Genève degree: Maturité scientifique.
University of Geneva, Switzerland	1970-75: Faculty of Biology, Diplôme de biologiste, 1975: supervisor: Prof. Hans Huggel
University of Zürich, Switzerland	1979-1984: Department of Ethology and Wildlife Research Ph.D. degree, 1984: Title: "Nut-cracking behaviour of wild chimpanzees", supervisor: Prof. Hans Kummer.
University of Basel, Switzerland	Habilitation degree (Privat Dozent): 1994. supervisor: Prof. Stephen Stearns.

Professional experience

1973	3 months of census work on the Mountain Gorilla in the Virunga National Park, Rwanda. Supervised by Dr. Dian Fossey. This work was the basis of my diplom master thesis.
1975 and 1977	Teaching biology at a secondary school, Collège Moderne, in Geneva.
1976	8 months in the Taï National Park, Ivory Coast, for a preliminary study of the nut-cracking behaviour of wild chimpanzees and an evaluation of the feasibility of a long-term study.
1978	4 months assistant at the Department of Ethology and Wildlife Research (Prof. Hans Kummer) at the University of Zürich.
1979-ongoing	Long-term study of the wild chimpanzees in the Taï National Park in the Ivory Coast. Principal themes under study; ecology, social organisation, tool-use, hunting, cooperation, food-sharing, inter-community relationships, cognitive capacities.
1984-1990	Postdoctoral Research Associate at the Department of Ethology (Prof. Hans Kummer) at the University of Zurich.
1987-1989	4 months visit at the Department of Population Biology (Prof. Stephen Stearns), University of Basel.
1990 and 1992 (April to July)	Comparative field study on the chimpanzees of Gombe Stream National Park, Tanzania.
January 1991-September 1997	Assistant professor at the department of Population Biology (Prof. Stephen C. Stearns), University of Basel (Switzerland).
1995 Spring	Visiting Professor, University of Rennes, France.
1996 Spring	Visiting Professor, Ecole Normale Supérieure, Paris, France.

1997- ongoing	Director, Max Planck Institute of Evolutionary Anthropology in Leipzig, Germany.
1999 (August to October)	Comparative field study on the chimpanzees of the Mahale Mountains National Park, Tanzania.
1999- ongoing	Honorary Professor, Dept. of Zoology, University of Leipzig, Germany.
2000- ongoing	Founder and President of the Wild Chimpanzee Foundation.

Teaching experience

Directing field work of students:	Diplom thesis: 16 students of different European universities. Ph. D. thesis: 24 students from European and American universities. Post-doctoral work: 8 students from European universities.
Teaching at the University of Basel:	Spring 1991: Behavioural Ecology of Primates (2 hours per week). Winter semester (1991- 1997): Evolution, Ecology and Behaviour (4 hours per week). Behavioural Ecology and Sociobiology (2 hours per week). Seminar on Population Biology (1 hour per week). Summer semester (1992-1997): Field course in Population Biology (2 weeks). Field course in Evolutionary Biology (1 week)
Teaching at the University of Leipzig:	Summer semester (1999-ongoing): Behavioural Ecology (2 hours per week)

Offices and advisory work

- Fyssen Foundation, Paris, scientific board member (1985-1989)
- World Wide Fund for Nature International (WWF Int.): Consultant to negotiate with the Ivorian government a conservation project for the Taï National Park (1987-1988).
- World Wide Fund for Nature International: Coordinator project in the Taï National Park, Ivory Coast (1988-1992).
- Committee for the Care and Conservation of Chimpanzee (CCCC), executive council (1988-1992)
- Society for the study of Animal Behaviour, Member (1993-1998)
- IUCN/SSC Primate Specialist Group (1986-ongoing)
- International Primatological Society (1986-ongoing)
- International Primate Protection League (1986-ongoing).
- International Journal of Primatology, Editorial Board (1990-2004).
- Behavioral and Brain Sciences, Associates (1991-ongoing)
- Pan Africa News, Editorial Board (1997-ongoing)
- Steering Committee of the World Heritage Species Status Taskforce, Member (2002-ongoing)
- IUCN/SSC/ Section of the Great Apes (SGA), Excecutive Committee Member (2003-ongoing)
- Co-chairman of the Scientific Committee of the Great Apes Survival project (GRASP) of the UNEP/UNESCO (2003-ongoing)

Grant reviewer: NIH, National Science Foundation (USA), Swiss National Science Foudation, Leakey Foundation, National Geographic Society, Fulbright Foundation, Wenner-Gren Foundation,

Ad Hoc Reviewer: Behavioural and Brain Sciences, Animal Behaviour, Nature, Behaviour, Ethology, Primates, International Journal of Primatology, American Journal of Primatology, Folia Primatologica, American Journal of Physical Anthropology, Current Anthropology, Behavioural Ecology, Proceedings of the National Academy Science, Serie B, Quaterly Review of Biology, American Naturalists, Journal of Human Evolution, Proceedings of the Royal Society: Biological Sciences, Journal of Evolutionary Biology.

Awards and other honours

1985 Prix Cortaillod for talented Swiss scientists under 35 years old, University of Neuchâtel, Switzerland.
1987 Great Apes Fellowship of the Leakey Foundation, Pasadena.
1989 Great Apes Fellowship of the Leakey Foundation, Pasadena.
1999 Phillip Morris Research Price, München.
2013 Medal "Officier de l'Ordre National" by the president of Côte d'Ivoire Alassane Ouattara 2013

Publications

Books:

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Doran, D. and Boesch, C. 2003. Special Issue on Western Lowland Gorillas. American Journal of Primatology.

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EXHIBIT B

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STATE OF NEW YORK
SUPREME COURT COUNTY OF SUFFOLK

In the Matter of a Proceeding under Article 70 of the CPLR for a Writ of Habeas Corpus, THE NONHUMAN RIGHTS PROJECT, INC., on behalf of HERCULES and LEO, Petitioners, v. SAMUEL L. STANLEY JR., M.D., as President of State University of New York at Stony Brook a/k/a Stony Brook University and STATE UNIVERSITY OF NEW YORK AT STONY BROOK a/k/a STONY BROOK UNIVERSITY, Respondents.	**AFFIDAVIT OF JENNIFER M.B. FUGATE** Index No.:

COMMONWEALTH OF MASSACHUSETTS)
) ss:
COUNTY OF BRISTOL)

Jennifer M.B. Fugate being duly sworn, deposes and says:

Introduction and Qualifications

1. My name is Jennifer M.B. Fugate. I reside and work in Dartmouth, Massachusetts. I have a B.S. (1999) from the University of Wisconsin – Madison in Psychology and Zoology, and a Ph.D. (2008) from Emory University in Atlanta, Georgia in Psychology (Neuroscience and Animal Behavior). I was a Postdoctoral Fellow at Boston College in Psychology from 2008-2010 and a Postdoctoral Researcher in Psychology at Northeastern University from 2010-2012.

2. I submit this affidavit in support of Petitioners The Nonhuman Rights Project, Inc. ("NhRP"), on behalf of Hercules and Leo, for a writ of habeas corpus. I am a non-party to this proceeding.

3. I am currently a Full-time Lecturer at the University of Massachusetts – Dartmouth in the department of Psychology. I have been in this position since the fall of 2012. My duties include teaching, advising, and service to the community and University. In addition, I perform some research related to my area of study as a postdoctoral fellow (human social cognition) and continue to write theoretical pieces on chimpanzee cognition and communication. I have taught six different courses at UMass-Dartmouth (General Psychology, Social Psychology, Cognitive Processes, Statistics for Psychology, Child Psychology, and a College of Arts and Sciences freshman seminar), and several others during graduate and postdoctoral training (Primate Social Cognition, Research Methods in Psychology, Psychological Construction of the Mind).

4. I am the recipient of a Ruth Kirschstein National Research Service Award (NRSA) grant (funded by the NIMH, 2010-2012) for my postdoctoral research. I have also received several teaching and development grants, including an IBIS (Blended Learning for the Improvement of Student Learning) grant (funded by Davis Educational Foundation through UMASS-Dartmouth, PI: Jeannette Riley, 2012-2013), an ORDER (On Recent Discoveries by Emory Researchers) grant (funded by Howard Hughes through Emory University; PI: David Lynn, 2007-2008) and an Academic Staff Development grant (through University of WI-Madison, 1999).

5. My specialization is in human and nonhuman social cognition, especially the role of language in emotion perception. I am a reviewer for several major academic journals in social and cognitive psychology.

6. My graduate research involved rhesus macaques, chimpanzees, and human participants. My research during this time involved studying the production and perception of vocalizations in rhesus macaque monkeys, and the perception of vocalizations and perception of facial expressions in chimpanzees. My research was conducted at the Yerkes Primate Research

Center, and included animals at both "main station" (pair-housed) and "field station" (group-living). Currently, I do not have access to nonhuman primates and my empirical research in the last four years has been exclusive to humans. I continue to write theoretically about the cognitive capacities of nonhuman and human primates.

7. I have written chapters for three books, one of which is relevant to the discussion here: *Evolutionary Constraints and Cognitive Mechanism in the Construction of Emotion: Insights form Human and Nonhuman Primates* (to appear in *The Psychological Construction of Emotion.* New York: Guilford, L. F., and Russell, J. A., Eds.) (*in press*).

8. I have published several peer-reviewed articles on different research areas, two of which are relevant to the discussion here: *Emotional Communication in Primates: Implications for Neurobiology (2005)* and *Reading Chimpanzee Faces: Testing the Structural and Conceptual Hypotheses of Categorical Perception (2010).* My dissertation (2008, Emory University) is entitled: *An Investigation of Categorical Perception for Chimpanzee Facial Expressions by Conspecifics.* Together, these publications examine how chimpanzees and humans perceive chimpanzee emotional expressions, and whether the structural information provided by a face is sufficient for emotion perception or whether additional (auditory or linguistic) information is necessary.

9. I have presented my research at over 30 national and international conferences, with the most relevant work being presented at meetings sponsored by the *International Society for Research on Emotion, International Primatological Society, Animal Behavior Society, International Conference on Comparative Cognition,* and *American Psychological Society.* I have also given research talks on chimpanzee communication and emotion at several universities, including Emory University and Boston College. I am a past or current member of nine

professional societies, including *American Psychological Society, International Society for Research on Emotion, International Primatological Society, Animal Behavior Society, and Comparative Cognition.*

Basis for Opinions

10. The opinions I state in this Affidavit are based on my professional knowledge, education, training, and 10 years of research with chimpanzees, as well as my reading of peer-reviewed articles published in some of the world's most respected journals and books that are generally accepted as authoritative in the field of comparative social cognition, many of which were written by colleagues with whose research I am personally familiar. A full reference list of peer-reviewed literature cited herein is annexed hereto as **"Exhibit A"**.

Opinions

11. Some of the most recent advances in our understanding of emotion in animals, particularly in such nonhuman primates as chimpanzees, have come from communication research (Parr and Waller, 2006). This includes significant advances in our understanding of the signals and expressions used by nonhuman primates to communicate about emotion. The accumulation of evidence suggests that the emotional systems of chimpanzees may have become specialized to cope with the increasing demands of complex social organization and more elaborate relationships.

12. Chimpanzees have approximately 20-30 different facial expressions and their vocalizations have been divided into several categories based on morphology and apparent function (Parr, Cohen, and de Waal, 2005). Several independent lines of evidence suggest that many facial expressions are shared across humans and chimpanzees. First, the facial musculature which forms the structure of facial expressions is essentially the same in humans and chimpanzees (Burrows et al., 2006; Huber, 1931). Likewise, stimulation of these muscles in both species

produces nearly identical facial movements (Waller et al., 2006; Vick et al.,2007). This implies that, with few exceptions, the facial expressions of humans and chimpanzees can be compared directly.

13. Many of the expressions in chimpanzees and humans are displayed in similar circumstances, suggesting a common function or meaning. Since chimpanzees live in complex social groups, they must possess well-developed emotion processing skills in order to be able to interpret the many different meanings associated with facial displays used in different emotional contexts (Parr, Cohen, and de Waal, 2005). These facial expressions reflect the motivations and tendencies towards certain actions in the individual given a set of social and environment conditions (Seyfarth and Cheney, 2003).

14. Chimpanzees also exhibit "emotional contagion," which is a basic form of empathy that results from watching a behavior in others (Preston and deWaal, 2002). There is evidence of this kind of empathy in chimpanzees for contagious yawning, scratching, and such emotional behavior as play and aggression (Anderson, Myowa-Yamakoshi, and Matsuzawa, 2004; Parr and Hopkins, 2001). This kind of complex emotional awareness plays a key role in coordinating activities among group members, including facilitating social bonding and motivating cooperation, conciliation, and other forms of pro-social behaviors in chimpanzees. One of the neurobiological bases for empathy may be the presence of mirror neurons, special nerve cells in the primate brain. Mirror neurons are found in the prefrontal cortex of all primates, including humans and chimpanzees. They allow for the ability to share and relate to another's emotional state. These specialized cells respond to actions performed by an individual but also when that individual watches the same action performed by others, forming the basis of empathic responses (Preston and de Waal, 2002).

15. Chimpanzees, with minimal training, are not only able to recognize familiar individuals but are able to discriminate different species-typical facial expressions of unfamiliar individuals when presented on a computer screen. These findings show that chimpanzees are sensitive to the distinctive features of different facial expressions (Parr, Hopkins and de Waal, 1998). They are also able to extract emotional meaning from short videos depicting behavioral events (e.g. a caregiver giving a chimpanzee a hypodermic injection for veterinary purposes, or researcher rewarding another chimpanzee with food). For example, chimpanzees are able to match a positive facial expression (such as making a "play face") to positive events and negative facial expressions (such as bared teeth or "scream face") to negative events (Parr, 2001), demonstrating that these facial expressions are reliably associated with familiar emotional events.

16. Studies of captive chimpanzees show they are very competent at cross-modal perception (matching faces to voices), including matching a vocalization (audio) recording of a familiar chimpanzee individual or a video of a familiar individual chimpanzee producing a vocalization to the picture of the individual (Kojima, Izumi, and Ceugniet, 2003; Parr, 2004). Chimpanzees in captivity have also been shown to match a voice recording of a familiar human to the picture of the human (Hashiya and Kojima, 2001). These findings show that chimpanzees are highly attuned to the individual emotional expressions and states of others.

17. For the past ten years, I have studied emotions in chimpanzees and have examined, specifically, the cognitive bases of emotion. Human language provides one way for our species to make certain distinctions in emotion (Barrett, 2006a, b, 2009; 2011, Fugate, Gouzoules, and Barrett, 2010; Fugate in press), but human language may not be necessary for chimpanzees and other great apes to find meaning in basic emotional information from the face, voice, body, etc.

(this central feature of emotion – based on information other than human language- is called core affect and is shared with humans). Moreover, chimpanzee communication skills are rich and chimpanzees share components of at least three basic cognitive abilities with humans, including 1) analogical reasoning (using relational devices, like symbols, to organize information at a higher level) (Thompson and Oden, 2000), 2) shared mental states (understanding that other's have minds and goals and intentions and false beliefs) (Call et al., 2004; Hare et al., 2001), and 3) causal inference (an ability to intuit hypothetical or causal forces) (Brauer et al., 2006; see Fugate, in press; Hanus and Call, 2008).

Jennifer MB Fugate

Jennifer M.B. Fugate

Sworn to before me
this 22nd day of November, 2013

Nancy J Carvalho

Notary Public

NANCY J CARVALHO
Notary Public

STATE OF MA)
) ss:
COUNTY OF Bristol)

On the 22nd day of November in the year 2013 before me, the undersigned, a notary public in and for said state, personally appeared Jennifer MB Fugate, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her capacity, and that by his/her signature on the instrument, the individual, or the person upon behalf of which the individual(s) acted, executed the instrument, and that such individual made such appearance before me the undersigned in the County of Bristol and the State of MA.

Nancy J Carvalho
Notary Public

My Commission Expires: NANCY J CARVALHO Notary Public Commonwealth of Massachusetts My Commission Expires July 3, 2015

EXHIBIT A

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STATE OF NEW YORK
SUPREME COURT COUNTY OF SUFFOLK

In the Matter of a Proceeding under Article 70 of the CPLR for a Writ of Habeas Corpus, THE NONHUMAN RIGHTS PROJECT, INC., on behalf of HERCULES and LEO, Petitioners, v. SAMUEL L. STANLEY JR., M.D., as President of State University of New York at Stony Brook a/k/a Stony Brook University and STATE UNIVERSITY OF NEW YORK AT STONY BROOK a/k/a STONY BROOK UNIVERSITY, Respondents.	)	Index No.:

STATE OF NEW YORK)
) ss:
COUNTY OF ALBANY)

1. This Certificate of Conformity is submitted pursuant to New York CPLR 2309(c) and New York Real Property Law § 299-a.

2. I am an attorney duly licensed to practice law in the Commonwealth of Massachusetts.

3. I certify that the Affidavit of Jennifer M.B. Fugate, signed and dated on November 22, 2013, was taken in the manner prescribed by the laws of the Commonwealth of Massachusetts.

Dated: December 2, 2013
Albany, New York

Steven M. Wise, Esq.
5195 NW 112th Terrace
Coral Springs, FL 33076
Phone (954) 648-9864

Exhibit: G. to Verified Petition dated December 2, 2013
Affidavit of Mary Lee Jensvold sworn to November 21, 2013 (234-246)

STATE OF NEW YORK
SUPREME COURT COUNTY OF SUFFOLK

In the Matter of a Proceeding under Article 70 of the CPLR for a Writ of Habeas Corpus, THE NONHUMAN RIGHTS PROJECT, INC., on behalf of HERCULES and LEO, Petitioners, v. SAMUEL L. STANLEY JR., M.D., as President of State University of New York at Stony Brook a/k/a Stony Brook University and STATE UNIVERSITY OF NEW YORK AT STONY BROOK a/k/a STONY BROOK UNIVERSITY, Respondents.	**AFFIDAVIT OF MARY LEE JENSVOLD** Index No.:

STATE OF WASHINGTON)
) ss:
COUNTY OF KITTITAS)

Mary Lee Jensvold being duly sworn, deposes and says:

Introduction and Qualifications

1. My name is Mary Lee Jensvold. I reside and work in Ellensburg, Washington. I hold a Ph.D. in Experimental Psychology from the University of Nevada, Reno, which I received in 1996.

2. I submit this affidavit in support of Petitioners The Nonhuman Rights Project, Inc. ("NhRP"), on behalf of Hercules and Leo, for a writ of habeas corpus. I am a non-party to this proceeding.

3. I am currently Associate Professor in the Department of Anthropology and Museum Studies and former Director of the Chimpanzee and Human Communication Institute at

Central Washington University. I am also faculty in Primate Behavior and Ecology Program, at Central Washington University. I have taught the following courses at Central Washington University: Primate Social Behavior, Chimpanzee Culture and Communication, Introduction to Primate Laboratory Experience, Laboratory Work in Primatology, Primate Culture and Cognition, Introduction to Psychology, Psychology of Thought and Language, and Nonverbal Behavior, among others.

4. I have been a member of the Board of Directors of the Animal Welfare Institute since 2007 and Friends of Washoe (a nonprofit organization dedicated to the welfare of chimpanzees) since 1999, and have been on the Advisory Board of the Fauna Foundation (a chimpanzee sanctuary in Quebec, Canada) since 1999. From 1997 – 2000 I served on the Scientific Advisory Board for the National Chimpanzee Sanctuary. I have held positions as a chimpanzee behaviour consultant at Fauna Foundation, a Principal Investigator for "Caring for Chimpanzees" Earthwatch Program at Central Washington University, and have been a research assistant for sign language studies of chimpanzees at the University of Nevada, Reno. I was recently awarded the Sigma Xi Distinguished Lecturer Award for 2013 – 2015.

5. My research specialization is in gestural communication and use of American Sign Language in chimpanzees. Additionally, I research play behaviour, imagination, culture and intelligence, as well as husbandry, welfare and environmental enrichment in captive chimpanzees. I have over twenty-seven years of experience working with and studying chimpanzees and daily firsthand experience interacting with them. As such, I possess both a theoretical and applied understanding of chimpanzee behaviour.

6. I have published 29 peer-reviewed articles, book chapters and encyclopedia entries on gestural communication, use of American Sign Language, the evolution of social

communication, as well as environmental enrichment, effects of enclosures and social interactions, in chimpanzees. My papers have appeared in some of the most prestigious journals in the area of animal behaviour, including *Animal Cognition*, *American Journal of Primatology*, *Journal of Applied Animal Welfare Science*, *Human Evolution*, and *Journal of Sociolinguistics*.

7. I have given 91 presentations at professional conferences throughout the United States and have also given 13 invited addresses at professional research conferences and at various universities throughout the United States. These presentations have covered the following relevant topics: gestures and signing, cultural transmission, laughter and play, vocabulary development (American Sign Language), conversational use of sign language, evaluation of enriched captive environments and neuroscientific models of continuity across ape and human communication systems. My Curriculum Vitae fully sets forth my educational background and experience and is annexed hereto as **"Exhibit A"**.

Basis for Opinions

8. The opinions I state in this Affidavit are based on my professional knowledge, education, training, and 27 years of research with chimpanzees, as well as my review of peer-reviewed literature about primatology published in the world's most respected journals, periodicals and books that are generally accepted as authoritative in the field of primatology, many of which were written by myself and colleagues with whom I have worked for many years and whose research and field work I am personally familiar with. A full reference list of peer-reviewed literature cited herein is annexed hereto as **"Exhibit B"**.

Opinions

9. Chimpanzees who have acquired comprehension and production of American Sign Language (ASL) provide a unique window into the minds of chimpanzees because ASL

provides a way for them to express themselves in a manner that humans understand well. The chimpanzees I have worked with have demonstrated purposeful communication, conversation, understanding of symbols, perspective-taking, imagination, and humor through my (and my colleagues') studies of their use of ASL over many years (Davila-Ross et al., 2009; Jensvold and Fouts, 1993; Jensvold and Gardner, 2000, 2007; Leitten et al., 2012). Moreover, the development of their use and understanding of sign language, along with their natural communicative gestures and vocalizations, parallels the development of language in human children, pointing to deep similarities in the cognitive processes that underlie communication in chimpanzees and humans (Jensvold, 2009; Lyn et al., 2011).

10. Studies of cross-fostered chimpanzees, that is, those who have been raised by humans and acquired a symbol-based language, reveal similar patterns of cognitive and communicative development in human infants and chimpanzees. There are numerous parallels in the way chimpanzee and human communication skills develop over time, suggesting a similar unfolding cognitive process across the two species and an underlying neurobiological continuity (Fouts and Waters, 2001). Chimpanzees show some of the same early developmental tendencies and changes in their communication skills as human children (Brakke and Savage-Rumbaugh, 1995; Fouts and Fouts, 2004; Gardner and Gardner, 1989; 1998). For instance, chimpanzees acquire vocabulary in patterns that resemble human children, with the difference being that the chimpanzees begin to sign earlier than children (Gardner & Gardner, 1994). The development of phrases in chimpanzees also parallels that in human children. Early vocabulary content of the chimpanzees' resembles that of human children as well. Patterns of eye gaze and turn taking (Hartmann, 2011) in conversation resemble human children as well. Chimpanzees modulate their signs, for example, changing the place where a sign occurs, to change the meaning of signs,

just as humans do (Charlcraft & Gardner, 2005). Declaratives are important because they show the communicator is using language as a way to share experience with another and not just request items like food or a toy both human children and signing and other symbol using chimpanzees use declaratives to name objects, to interact, and to negotiate (Lyn et al., 2011; Leeds and Jensvold, In press). They also use symbols to comment on other individuals and about past and future events (Lyn et al., 2011). The ability to communicate about past and future events is based on the shared sophisticated cognitive capacity for "mental time travel" for which there is substantial evidence in chimpanzees (Osvath and Osvath, 2008). In fact, chimpanzees have been found to make more statements about what they intended to do in the future compared with human children (Lyn et al., 2011). Chimpanzees and human children also combine gestures with pointing to refer to objects (Krause and Fouts, 1997). Therefore, these findings show that chimpanzees can make declarative statements and, thus, use language in a similar purposeful way as human children do (Lyn et al., 2011; Leeds and Jensvold, in press).

11. Purposeful communication is based on conversational interaction in which each of the participants exchanges turns communicating in a give-and-take manner and participants respond appropriately to the communicative actions of each other. Moreover, when the conversation becomes confusing, participants make contingent adjustments, e.g. offering a revised or alternative utterance/gesture or repeating a gesture or "sign" in order to continue the conversation. Signing chimpanzees demonstrate contingent communication with humans at the same level as young human children (Leitten et al., 2012). When humans feel that a conversation has broken down they repeat their utterance and also add more information to the original utterance. Likewise, chimpanzees engaged in sign language conversation with humans respond in the same way. When they make a request and it is satisfied, they cease signing their

request. When the request is misunderstood, refused or not acknowledged, they repeat and revise their signing until they get a satisfactory response. As in humans, this pattern of contingency in conversation is a key demonstration of volitional and purposeful communication and thought (Leavens et al., 2005; Leitten et al., 2012). In one of our studies, a human waited for a signing chimpanzees to initiate a conversation and responded in one of four ways: asking for more information, on-topic questions, off-topic questions, or negative statements. The rejoinders of the chimpanzees depended upon the kind of response they received from the human. Specifically, they reiterated, adjusted, and shifted the signs they were making to create conversationally appropriate rejoinders. For instance, if refused something by the human some of them persisted in their utterances while others shifted to another topic. Their reactions to and interactions with a conversational partner resembled patterns of conversation found in similar studies of human children (Jensvold and Gardner, 2000, 2007). In other studies, chimpanzees have demonstrated the capacity to understand that conversation involves turn-taking and mutual attention. If they wish to communicate with a human whose back is turned to them they will make attention-getting sounds, i.e. using only signs with a noisy sound component, such as smacking the hand. If the human is turned to them, they then switch to conversational sign language with few sounds (Bodamer and Gardner, 2002). Therefore, they intentionally try to alter the attentional state of the human. Not only do chimpanzees engage in conversation when signing but both wild and captive chimpanzees string together multiple gestures to create gesture sequences (Campion et al., 2011; Hobaiter and Byrne, 2011; McCarthy et al., 2013). Gestures may be combined into long series, within which gestures may overlap, be interspersed with bouts of response waiting or be exchanged back and forth between individuals. Here, too, their contingent use of gestural sequences demonstrates that their communication abilities are far more complex than simple calls based on stimulus and response. Chimpanzees adjust their gestures and gestural sequences to the attention state of the individual they are trying to communicate with, using visual gestures towards an attentive partner and tactile and auditory gestures more often toward inattentive partners. If the partner does not respond, they repeat the gesture (Campion et al, 2011; Hobaiter and Byrne, 2011; Larson et al., 2011; McCarthy et al., 2011). Therefore, there is an abundance of evidence that both signing and wild chimpanzees understand the give-and-take of a conversation and adjust their communication to the attentional state of the individual they want to communicate with. This demonstrates visual perspective-taking and mental state modeling.

12. Signing chimpanzees also sign amongst themselves and exhibit a telltale sign of volitional use of language, that is, private signing or signing to themselves, also known as private speech. These examples show that chimpanzee sign language use is not a simple response to prompting by humans and is similar to the way human children develop language. Furthermore, signing chimpanzees spontaneously use ASL to communicate with each other (Fouts et al., 1989; Jaffe et al., 2002). For instance, Loulis (a male chimpanzee) was not raised with humans and was not taught ASL by humans. Nor did humans use ASL in his presence. But he was the adopted son of another signing chimpanzee, Washoe. Loulis acquired his signs from Washoe and the other signing chimpanzees. He was the first non-human to learn a human language from other non-humans. Thus, Loulis observed the other chimpanzees using the signs of ASL around him, like CHASE and TICKLE during play interactions. Moreover, Washoe would mold his hand into signs like MORE for more food. Loulis learned to use many signs in different categories (names, pronouns, verbs, etc.) as a direct consequence of social learning and being taught by his mother's

intentional and goal-directed shaping of his abilities (Fouts et al., 1989). Washoe's behavior toward her adopted son demonstrates perspective-taking and empathy (Fouts et al., 1989).

13. Human children from ages 2-7 years engage in private speech, i.e. talking to themselves (and it starts to trail off by late elementary school years). There is much evidence to support the argument that private speech has many functions and is a part of normal development of communication, self-guidance, self-regulation of behavior, planning, pacing, and monitoring skills (Furrow, 1984; Vygotsky, 1962). Private speech helps children to control and regulate their emotions and thoughts by focusing them on their own concerns and providing a buffer from external distractions. Private signing by signing chimpanzees has been well-documented (Bodamer et al., 1994; Fouts et al., 1984) and my colleagues and I have shown that there are numerous similarities to private speech in human children and chimpanzees (Bodamer et al., 1994). Chimpanzee private signing can be placed into the same functional categories as that of human children, and, just as with children, a few categories account for the majority of the utterances. In our studies we found that, just as in human children, a high percentage of the private utterances referred to objects present in the environment (Bodamer et al., 1994).

14. Human children also use private speech during creative and imaginative play. For instance, children often talk to themselves when playing imaginative and pretend games. Private speech is related to more creative play - the more frequently children engage in private speech, the more creative, flexible, and original thought they display (Winsler, 2009). We have found that chimpanzees engage in imaginary private signing as well. Chimpanzees create word-play, or transform a sign or its referent to a different meaning, whether it is present or not. An example is placing a wooden block on one's head and referring to it, in sign, as a "hat" (Bodamer et al.,

1994; Jensvold and Fouts, 1993). This is, by far, not the only form of imaginative play chimpanzees engage in.

15. Imagination is a key component of mental representation (the ability to represent an object or concept in one's mind), metacognition (the ability to reflect upon one's own thoughts) and the ability to mentally create other realities. There are several reports of imaginary play in captive chimpanzees (Bodamer et al., 1994; Fouts et al., 1991; Gardner and Gardner, 1969; Hayes, 1952; Jensvold and Fouts, 1993), a captive bonobo (Savage-Rumbaugh and McDonald, 1988), and wild chimpanzees (Goodall,1986; Hayaki, 1985). Goodall (1986) reported that a 4-year-old wild chimpanzee, Wanda, had been watching her mother, who was perched on a branch above a termite hill, dip a stick into the insects' hole and pull it out loaded with termites. Wanda then picked up a small twig, perched herself on a sapling branch, and poked her stick in a downward direction. A similar instance of imaginary play is very common in human children using cups, saucers, pots, and toy stoves to pretend to prepare and serve a meal as they see their parents do. In these instances a child uses adult tools to go through the motions of a common adult activity, be it children using pots for cooking or chimpanzees using twigs for dipping, these are analogous behaviors. My colleagues and I studied imaginary play in five signing chimpanzees and found strong parallels with that of 2-6 year old human children (Matthews, 1977) including the categories of Animation and Substitution (Jensvold and Fouts, 1993). Animation is pretending that an inanimate object is alive, e.g., talking to a teddy bear, and substitution is pretending an object has a new identity, e.g., placing a block on the head as a hat (Jensvold and Fouts, 1993). Altogether chimpanzees have demonstrated all six different categories of imaginary play found in human children.

16. A very similar behavior to imaginary play is deception; both require behaviors directed toward something that is not there and often involve modeling mental states. There are many instances of deception reported in chimpanzees (Goodall, 1986; de Waal, 2005; Melis et al., 2006; Whiten & Byrne, 1988). Since this is a common behavior and so closely related to imaginary play, it should not be surprising that chimpanzees have been observed in imaginary play.

17. Finally, in addition to imagination, chimpanzees have a sense of humor and are known to laugh under many of the same circumstances humans laugh, e.g., signing a ―joke" or funny statement, during play, when tickled, etc. (Davila-Ross, 2009; Hedden et al., 2005). Altogether these findings provide further evidence for cognitive similarities between humans and chimpanzees in the domains of mental representation, intentionality, imagination, and mental state modeling œall fundamental components of autonomy.

Mary Lee Jensvold

MARLA K. COMMISSION NO P AUG STATE OF

Sworn to before me
this ____ day of November, 2013

____
Notary Public

STATE OF Washington)
) ss:
COUNTY OF Kittitas)

On the 21st day of November in the year 2013 before me, the undersigned, a notary public in and for said state, personally appeared Mary Lee Jensvold, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her capacity, and that by his/her signature on the instrument, the individual, or the person upon behalf of which the individual(s) acted, executed the instrument, and that such individual made such appearance before me the undersigned in the County of Kittitas and the State of Washington.

Marla K Williams

Notary Public

My Commission Expires: 08/25/17

Attached to Affidavit

MARLA K. WILLIAMS
COMMISSION EXPIRES
NOTARY
PUBLIC
AUGUST 25, 2017
STATE OF WASHINGTON

ILLIAMS
EXPIRES
RY
IC
25, 2017
ASHINGTON

STATE OF NEW YORK
SUPREME COURT COUNTY OF SUFFOLK

In the Matter of a Proceeding under Article 70 of the CPLR for a Writ of Habeas Corpus, THE NONHUMAN RIGHTS PROJECT, INC., on behalf of HERCULES and LEO, Petitioners, v. SAMUEL L. STANLEY JR., M.D., as President of State University of New York at Stony Brook a/k/a Stony Brook University and STATE UNIVERSITY OF NEW YORK AT STONY BROOK a/k/a STONY BROOK UNIVERSITY, Respondents.	)	Index No.:

STATE OF WASHINGTON)
) ss:
COUNTY OF WHATCOM)

1. This Certificate of Conformity is submitted pursuant to New York CPLR 2309(c) and New York Real Property Law § 299-a.

2. I am an attorney duly licensed to practice law in the State of Washington.

3. I certify that the Affidavit of Mary Lee Jensvold, signed and dated on Nov. 21, 2013, was taken in the manner prescribed by the laws of the State of Washington.

Dated: November 24, 2013 in the City of Bellingham, Wash.

Karp

Adam P. Karp, Esq., WSB No. 28622
Animal Law Offices of Adam P. Karp
114 W. Magnolia St., Ste. 425
Bellingham, Wash. 98225

Mary Lee Abshire Jensvold, Ph.D.

Vita

Chimpanzee & Human Communication Institute
Department of Anthropology
Central Washington University
Ellensburg, WA 98926-7573
Office Phone: (509) 963-2215
email: jensvold@cwu.edu

EDUCATION

Ph.D., Experimental Psychology, 1996, University of Nevada, Reno, NV
Dissertation: Cross-fostered Chimpanzee Responses to Questions
M.S., Experimental Psychology, 1989, Central Washington University, Ellensburg, WA
Thesis: Imaginary Play in Chimpanzees
B.A., Major: Psychology Minor: Anthropology, 1985, University of Oregon, Eugene, OR

PROFESSIONAL EXPERIENCE

Associate Professor 2011-present/Assistant Professor 2008-present.
Department of Anthropology and Museum Studies, Central Washington University, Ellensburg, WA.

Director 2011-2013/Associate Director 2008-2011/Assistant Director 2000-2008.
Chimpanzee & Human Communication Institute, Central Washington University, Ellensburg, WA.

Director 2006-2010.
Bridges to Baccalaureate: YVCC to CWU Program. '

Adjunct Faculty/Research Associate/Lecturer 1993-2008.
Primate Behavior and Ecology Program, Anthropology & Psychology Departments, Central Washington University, Ellensburg, WA.

Chimpanzee Behavior Consultant 1998.
Fauna Foundation, Chambly, Quebec, Canada.

Coordinator/Principal Investigator 1996-2006.
Caring for Chimpanzees Earthwatch Program, Chimpanzee & Human Communication Institute, Central Washington University, Ellensburg, WA.

Coordinator 1995-2011.
Summer Apprentice Program, Chimpanzee & Human Communication Institute, Ellensburg, WA.
Coordinate all aspects of the summer program.

Instructor 1993-1997.
Senior Ventures, Central Washington University, Ellensburg, WA.
Instruct summer classes at the Chimpanzee & Human Communication Institute.

Instructor 1992-1996.
Elder Hostel, Central Washington University, Ellensburg, WA.

Instruct 1- and 2-week course at the Chimpanzee & Human Communication Institute.

Instructor 1992.
Extended University Program, Central Washington University, Ellensburg, WA.
Instruct Psychology of Adolescence at YVCC .

Animal Technician I 1992-2000.
Chimpanzee & Human Communication Institute, Ellensburg, WA.
Responsible for daily care of chimpanzees, training student interns, operating hydraulics doors.

Graduate Teaching Assistant 1990-1991.
Department of Psychology, University of Nevada, Reno, NV.
Instruct statistics and research methods laboratory.

Research Assistant 1990-1991.
Sign Language Studies of Chimpanzees, University of Nevada, Reno, NV.
Laboratory assistant in research on development of cross-fostered chimpanzees.

Biological Technician 1989-1992.
U.S. Forest Service, Cle Elum, WA.
Spotted owl field surveys.

Research Assistant 1986-1992.
Chimpanzee & Human Communication Institute, Ellensburg, WA.
Care for chimpanzees and research assistant with signing chimpanzees.

Graduate Teaching Assistant 1986-1989.
Department of Psychology, Central Washington University, Ellensburg, WA.
Assist with PSY 101 class.

CWU AFFILIATIONS

Department of Anthropology
Primate Behavior & Ecology
Graduate Faculty
Psychology Department

COURSES TAUGHT

Central Washington University

- ANTH 313 Primate Social Behavior
- ANTH 416/Prim 516 Pongid Behavior
- ANTH/COMM 380 Nonverbal Communication
- ANTH 498 Special Topics: Chimpanzee Culture and Communication
- ANTH 496 Advanced Readings in Nonverbal Behavior
- PRIM 220 Introduction to Primate Laboratory Experience
- PRIM 320 Laboratory Work in Primatology
- PRIM 504 Primate Culture & Cognition
- PSY 101 Introduction to Psychology
- PSY 447 Psychology of Adolescence
- PSY 473 Psychology of Thought and Language

University of Nevada-Reno

- PSY 210 Introduction to Statistics Laboratory
- PSY 301 Experimental Psychology Laboratory

PUBLICATIONS

Peer Reviewed Journals

Leeds, C.A. & Jensvold, M.L (In press.) The communicative functions of five signing chimpanzees (*Pan troglodytes)* Pragmatics & Cognition 21:1.

McCarthy, M., Jensvold, M.L., & Fouts, D.H. (2012). Use of gesture sequences in captive chimpanzee (*Pan troglodytes*) play. *Animal Cognition,* doi: 10.1007/s10071-012-0587-6

Leitten, L., Jensvold, M.L., Fouts, R., & Wallin, J. (2012). Contingency in requests of signing chimpanzees (*Pan troglodytes*). *Interaction Studies, 13,* 147-164.

Campion, T.L., Jensvold, M.L., & Larsen, G. (2011). Use of gesture sequences in free-living chimpanzees (*Pan troglodytes schweinfurthii*) in Gombe National Park, Tanzania. *American Journal of Primatology, 73(supplement 1)*, 97.

Jensvold, M.L., Buckner, J., & Stadtner, G. (2010). Caregiver-chimpanzee interactions with species-specific behaviors. *Interaction Studies. Special Issue of Human-Animal Interactions, 11*, 396-409.

Jensvold, M.L. (2008). Chimpanzee (*Pan troglodytes*) responses to caregiver use of chimpanzee behaviors. *Zoo Biology, 27,* 345-359.

Jensvold, M.L. (2007). Promoting positive interactions between chimpanzees (*Pan troglodytes*) and caregivers. *Laboratory Primate Newsletter, 46,* 1-4.

Jensvold, M.L., Field, A., Cranford, J., Fouts, R.S., & Fouts, D.H. (2005). Incidence of wounding within a group of five signing chimpanzees (*Pan troglodytes*). *Laboratory Primate Newsletter, 44*, 5-7.

Jensvold, M.L.A., Sanz, C.M., Fouts, R.S., & Fouts, D.H. (2001). The effect of enclosure size and complexity on the behaviors of captive chimpanzees (*Pan troglodytes*). *Journal of Applied Animal Welfare Science, 4,* 53-69.

Jensvold, M.L.A., & Gardner, R.A. (2000). Interactive use of sign language by cross-fostered chimpanzees. *Journal of Comparative Psychology, 114,* 335-346.

Jensvold, M.L.A. (2000). A review of Apes, Language, and the Human Mind. *Journal of Sociolinguistics, 4,* 277-281.

Bodamer, M.D., Fouts, R.S., Fouts, D.H., & Jensvold, M.L.A. (1994). Private signing in chimpanzees. *Human Evolution*, *9*, 281-296.

Jensvold, M.L.A., & Fouts, R.S. (1993). Imaginary play in chimpanzees (*Pan troglodytes*). *Human Evolution, 8,* 217-227.

Book Chapters, Abstracts, & Encyclopedia

Jensvold, M.L., Zager, L., & Bismanovsky, D. (2013). Promoting Nonhuman Animal Welfare: Interactions with Caregivers and Zoo Visitors. *Journal of Applied Animal Welfare Science. 16*, 384-385.

Jensvold, M.L., Wilding, L., Schulze, S.M. (In press). Signs of Communication in Chimpanzees. G. Witzany (Ed.), *Biocommunication of animals* pp. 7-19). Dordrecht: Springer.

Jensvold, M.L. (Under review). Experimental Conversations: Sign Language Studies with Chimpanzees. (Eds.) Gontier, N. & Pombo, O. *The evolution of social communication in primates – a multidisciplinary approach.* Springer.

Jensvold, M.L. (2009). Animals and language. In K. Malmkjaer (Ed.), *Linguistics encyclopedia* (pp. 9-15). Routledge: London.

Jensvold, M.L., & Fouts, R.S. (2008). Learning from chimpanzees: Internships at the Chimpanzee & Human Communication Institute. In R. L. Miller, R. F. Rycek, E. Balcetis, S. T. Barney, B. C. Beins, S. R. Burns, R. Smith, & M. E. Ware (Eds.), *Developing,* *promoting, & sustaining the undergraduate research experience in psychology* (pp. 172-176). Retrieved from the Society for the Teaching of Psychology Web site: http://teachpsych.org/resources/e-books/ur2008/ur2008.php.

Jensvold, M.L., & Gardner, R.A. (2007). Conversational use of sign language by cross-fostered chimpanzees. In F.R. Lewis (Ed.), *Focus on non-verbal communication research* (pp. 237-279). Hauppauge, NY: Nova Science Publishers.

Jensvold, M.L., & Sheeran, L.S. (2006). Ape cognition. In H. J. Birx (Ed.), *Encyclopedia of anthropology* (pp. 207-212). Thousand Oaks, CA: Sage Publications.

Fouts, R., Jensvold, M.L. & Fouts, D. (2004). Talking chimpanzees. In M. Bekoff (Ed.) *Encyclopedia of animal behavior* (pp. 324-327). Westport, CN: Greenwood Publishing Group.

Jensvold, M.L., Fouts, R.S., & Fouts, D.H. (2004). Assessment of species typical behaviours in captive chimpanzees. *Animal Welfare, 13,* S245.

Jaffe, S., Jensvold, M. L., and Fouts, D. (2002) Chimpanzee to Chimpanzee Signed Interactions. In V. Landau (Ed.), *Chimpanzoo conference proceedings: The chimpanzee community* (pp. 67-75). Tucson, AZ: ChimpanZoo.

Fouts, R.S., & Jensvold, M.L.A. (2002). Armchair delusions vs. empirical realities: A neurological model for the continuity of ape and human languaging. In M. Goodman & A.S. Moffat (Eds.), *Probing human origins* (pp. 87-101). American Academy of Arts and Sciences.

Fouts, R.S. Jensvold, M.L.A., & Fouts, D.H. (2002). Chimpanzee signing: Darwinian realities and Cartesian delusions. In M. Bekoff, C. Allen, & G. Burghardt (Eds.). *The cognitive animal: Empirical and theoretical perspectives in animal cognition* (pp. 285-292). MIT Press.

Sanz, C.M., & Jensvold, M.L.A. (2001). Chimpanzee. In C. Bell (Ed.), *Encyclopedia of the world's zoos* (pp. 248-253). Chicago: Fitzroy Dearborn.

Tecot, S., Jensvold, M.L., & Fouts, R. (1999). Evaluation of an enriched physical environment: Space and structure utilization in Pan troglodytes [Abstract]. *American Journal of Physical Anthropology, 28,* 264.

Jensvold , M.L.A., & Fouts, R.S. (1994). Behavioral changes in chimpanzees following a move to a larger facility [Abstract]. *American Journal of Primatology, 33,* 218.

Fouts, R.S., Abshire (Jensvold), M.L., Bodamer, M., & Fouts, D.H. (1989). Signs of enrichment: Toward the psychological well-being of chimpanzees. In E.F. Segal (Ed.), *Housing care and psychological wellbeing of captive and laboratory primates* (pp. 376-388). New Jersey: Noyes.

Newsletters

Jensvold, M.L. (Summer, 2012) Chimpanzees in the news: Not always a nice story. *Friends of Washoe, 33(4)*, 3-4.

Larson, G., Campion, T., & Jensvold, M.L. (Spring, 2012). Gesture use by free-living chimpanzees related to partner attentional state. *Friends of Washoe, 33(3)*, 7-8.

Leeds, A. & Jensvold, M.L. (Spring, 2012). The spontaneous and adjacent utterance use of signing chimpanzees. *Friends of Washoe, 33(3)*, 9-11.

Jensvold, M.L. (Fall, 2011). Project Nim highlights heartbreaks of chimpanzees in captivity. *AWI Quarterly, 6 (4)*, 24-25.

Bismanovsky, D. & Jensvold, M.L. (Summer, 2011). Chimpanzee responses to visitors using chimpanzee-friendly behaviors. *Friends of Washoe, 32(4), 9.*

Larson, G., Jensvold, M.L., Campion, T. (Summer, 2011). Gesture use by free-living chmpanzees related to partner attentional state. *Friends of Washoe, 32(4),* 9-10.

Davis, A., Leeds, C., Jensvold, M.L., & Fouts, D. (Summer, 2011). Evidence for menstrual synchrony in captive chimpanzees. *Friends of Washoe, 32(4),* 10.

Bismanovsky, D., Zager, L., Jensvold, J.L. & Fouts, D. (Spring, 2010). Recent patterns of language in an adult chimpanzee using American Sign Language. *Friends of Washoe, 31(3)*, 23-25.

Cole, M., Herigstad, T., & Jensvold, M.L. (Spring, 2010). Daily arousal levels' effect on a chimpanzee's categorical sign usage. *Friends of Washoe, 31(3)*, 20-22.

Gibbons, J., Leake, M., Potosky, & Jensvold, M.L. (Spring, 2010). Use of holiday related signs by a cross-fostered chimpanzee. *Friends of Washoe, 31(3)*, 17-19.

Metzler, D., Jensvold, M.L., Fouts, D., & Fouts, R. (Spring, 2010). Vocabulary growth in adult cross-fostered chimpanzees. *Friends of Washoe, 31(3)*, 13-16.

Rasmussen, C.L., & Jensvold, M.L. (Winter, 2009). Contra-lateral pointing in cross-fostered chimpanzees. *Friends of Washoe, 30(2)*, 7-10.

Cole, M., Hendershott, R., Lynn, L., Sadlier-Brown, E., Ventura, B., & Jensvold, M.L. (Fall, 2009). Sorting chimpanzee drawings based on similarity of form. *Friends of Washoe, 31(1)*, 7-9.

Leeds, C., McCarthy, M., Morrison, J., Jensvold, M.L., & Fouts, D. (Fall, 2009). Social structure in three captive chimpanzees. A reexamination. *Friends of Washoe, 31(1)*, 11-12.

McCarthy, M., Brown, H., Gray, A., Lee, K., Steele, R., Jensvold, M.L., Fouts, D., & Reveles, J. (Fall, 2009). Effects of the Chimposium educational program on visitor knowledge and attitudes. *Friends of Washoe, 31(1)*, 13-17.

Jensvold, M.L. (Fall, 2009). Book review of The Wauchula Woods Accord by Charles Siebert. *Animal Welfare Institute Quarterly, 58(4)*, 24.

Metzler, D.K., Jensvold, M.L., Fouts, R.S., & Fouts, D.H. (Spring, 2009). The acquisition of new signs in adult cross-fostered chimpanzees. *Friends of Washoe, 30(3)*, 11-13.

O'Rahilly, K., Leake, M., Potosky, R., Wallin, J.M., Jensvold, M.L., Fouts, D.H., & Fouts, R.S. (Spring, 2009). Vocabulary use of four cross-fostered, signing chimpanzees. *Friends of Washoe, 30(3)*, 7-10.

McCarthy, M., Bismanovsky, D., Denton, T., Leeds, A., Stucker, M., & Jensvold, M.L. (Fall, 2008). Social structure in three captive chimpanzees. *Friends of Washoe, 30(1)*, 14-18.

Rasmussen, C.L., Jensvold, M.L., Fouts, R.S., Fouts, D.H., & Wallin, J.M. (Summer, 2008). Signs of cultural transmission in a chimpanzee. *Friends of Washoe, 29(4)*, 9-10.

Wallin, J.M., Jensvold, M.L., Fouts, R.S., & Fouts, D.H. (Summer, 2008). The recent expressive lexicon of a cross-fostered chimpanzee. *Friends of Washoe, 29(4)*, 5-7.

Jensvold, M.L. (Spring, 2007). Species-specific behaviors. *Animal Welfare Institute Quarterly, 56(2)*, 20.

Jensvold, M.L. (Fall, 2006). Why I do what I do: Data collection at the Zoo Northwest Florida. *Friends of Washoe, 28 (1)*, 1-5.

McCarthy, M.S., Jensvold, M.L., Fouts, R.S., & Fouts, D.H. (Summer, 2006). Space use in captive chimpanzees. *Friends of Washoe, 27(4)*, 9-10.

Puffer, A.M., Jensvold, M.L., Fouts, D.H., & Fouts, R.S. (Summer, 2006). Weather influences chimpanzees choice to go outside. *Friends of Washoe, 27(4)*, 5-8.

Hedden, B., Lammert, R., Hill, A., Goldfein, J., Jensvold, M.L., Dietz, L., & Sheeran, L.K. (Fall, 2005). Laughter, smiling and humor: A preliminary report. *Friends of Washoe, 27(1)*, 16-17.

McCarthy, M., Haight, J., Helble, N., Moskowitz, H., Smith, L., Smith, S., Jensvold, M.L., & Keyser, J. (Fall, 2005). Forage pilot study. *Friends of Washoe, 27(1)*, 13-15.

Dietz, L., Puffer, A., Jensvold, M.L., Fouts, R.S., & Fouts, D.H. (Spring, 2005). Chimpanzees' use of an outdoor enclosure as a function of weather. *Friends of Washoe, 26(3)*, 8-12.

Jensvold, M.L., Baeckler, S., Fouts, R.S., & Fouts, D.H. (Fall, 2004). Their own terms: Techniques in humane caregiving of captive chimpanzees. *Friends of Washoe, 26(1)*, 14-18.

Derbawka, M., Jensvold, M.L., Fouts, D.H., & Fouts, R.S. (Winter, 2004). Chimpanzees' use of objects on theme days. *Friends of Washoe, 25(2)*, 7-9.

Jensvold, M.L. (Spring, 2003). A visit to the Center for Captive Chimpanzee Care in New Mexico. *Friends of Washoe, 24(3)*, 2-3.
Jensvold, M.L., Fouts, R.S., & Fouts, D.H. (Spring, 2003). Assessment of species typical behaviors in captive chimpanzees. *Friends of Washoe, 24(3),* 8-12.
Jensvold, M.L., Fouts, D.H., & Fouts, R.S. (Fall/Winter, 2002/2003. Caring for chimpanzees: A humane approach. *Friends of Washoe, 24(1/2)*, 7-8.
Jensvold, M.L. (Summer, 2002). The celebration of life. *Friends of Washoe, 23(4)*, 3.
Hayashida, C., Jensvold, M.L., Grandia, A., Blake, S., Eburn, A., Jung, C., Parker, S., & Fouts, R. (Winter, 2002). Social hierarchy of five captive chimpanzees. *Friends of Washoe, 23(2),* 7-13.
Martinson, J., Jensvold, M.L., Cohen, N., Pieracci, M., Tata, M.J., & Fouts, R.S. (Fall, 2001). An educational program's effect on attitudes toward chimpanzees. *Friends of Washoe, 23(1),* 12-14.
Jensvold, M.L., Fouts, D.H., & Fouts, R.S. (Summer, 2001). Species typical use of objects in captive chimpanzees. *Friends of Washoe, 22(3),* 6-9.
Jensvold, M.L., Fouts, R.S., & Fouts, D.H. (Summer/Fall, 1998). Preliminary report of space use and locomotion in captive chimpanzees. *Friends of Washoe*, *19(3/4)*, 22-26.
Sanz, C. & Jensvold, M.L.A. (Summer/Fall, 1997). Chimpanzees' reaction to naïve versus educated visitors. *Friends of Washoe, 18 (3/4)*, 9-14.
Fouts, R.S., Fouts, D.H., Jensvold, M.L.A., & Bodamer, M.D. (Spring, 1994). An enriching approach to captive chimpanzee care. *In Touch, 1,* 1-7.
Jensvold, M.L.A., & Fouts, R.S. (1993). Imaginary play in chimpanzees (*Pan troglodytes*). *Human evolution, 8(3)*, 217-227.
Abshire (Jensvold), M.L., & Raymond, E. (Summer/Fall, 1991). Imaginary play in deaf children. *Friends of Washoe, 11/12(3)*, 8-9.

PROFESSIONAL PRESENTATIONS

Carner, A., Sullins, K., Wilding, L., Hendrickson, B., & Jensvold, M.L. (2013, May). Nighttime Enrichment Preferences of Three Captive Chimpanzees (*Pan troglodytes*). Poster presented at Symposium on Undergraduate Research and Creative Expression, Central Washington University, Ellensburg WA.
Keenan, S. & Jensvold, M.L. (2013, May). Sign Dialects in Chimpanzees. Paper presented at Symposium on Undergraduate Research and Creative Expression, Central Washington University, Ellensburg WA.
Mas, J., Carner, A., Sullins, K., Jensvold, M.L., & Zager, L. (2013, May). Exploring Visitor Behavior at a Florida Zoo. Poster presented at Symposium on Undergraduate Research and Creative Expression, Central Washington University, Ellensburg WA.
Schulze, S., Mas, J., Stafford, R., & Jensvold, M.L. (2013, May). Captive Chimpanzee Preference for Environmental Enrchment: Naturalistic Vs. Artificial. Poster presented at Symposium on Undergraduate Research and Creative Expression, Central Washington University, Ellensburg WA.
Keenan, S., & Jensvold, M.L. (2013, March). Sign Dialects in Chimpanzees. Paper presented at the Northwest Anthropological Association Conference, Portland, OR.
Carner, A., Sullins, K., Wilding, L., Hendrickson, B., & Jensvold, M.L. (2013, March). Nighttime Enrichment Preferences of Three Captive Chimpanzees. Poster presented at presented at the Northwest Anthropological Association Conference, Portland, OR.
Pritchard, A., Sheeran, L., Jensvold, M.L., Gabriel, K., Li, J., & Wagner, S., (2013, March). Measuring Personality Traits in Provisioned Tibetan Macaques (*Macaca thibetana*), Mt. Huangshan, China. Poster presented at presented at the Northwest Anthropological Association Conference, Portland, OR.

Schulze, S., Mas, J, Stafford, R., & Jensvold, M.L. (2013, March). Captive Chimpanzee Preference for Environmental Enrichment: Naturalistic vs. Artificial. Poster presented at presented at the Northwest Anthropological Association Conference, Portland, OR.

Keenan, S., & Jensvold, M.L. (2012, May). Using Type-Token Ratio as Measurement for Lexical Diversity in Chimpanzees. Paper presented at Paper presented at Symposium on University Research and Creative Expression, Central Washington University, Ellensburg, WA.

Keenan, S., & Jensvold, M.L. (2012, April). Using Type-Token Ratio as Measurement for Lexical Diversity in Chimpanzees. Paper presented at Rocky Mt. Psychological Association, Reno, NV.

Larsen, G., Campion, T., & Jensvold, M.L. (2012, April). Gesture Use by Free-living Chimpanzees (*Pan troglodytes*) Related to Partner Attentional State. Poster presented at Rocky Mt. Psychological Association, Reno, NV.

Leeds, C. & Jensvold, M.L. (2012, April). Spontaneous and Adjacent Utterances in Chimpanzee Conversations. Poster presented at Rocky Mt. Psychological Association, Reno, NV.

Mas, J., Pritchard, A., Jensvold, M.L., & Zager, L. (2012, April). The Effect of Signage on Zoo Visitors at a Chimpanzee (*Pan troglodytes*) Exhibit. Poster presented at Rocky Mt. Psychological Association, Reno, NV.

Jensvold, M.L., Zager, L., & Bismanovsky, D. (2011, August). Promoting Animal Welfare: Interactions with Caregivers and Zoo Visitors. Paper presented at From Good Care to Great Welfare: Advancing Zoo Animal Welfare Science and Policy Symposium. Detroit, MI.

Bismanovsky, D. & Jensvold, M.L. (2011, May). Chimpanzee Responses to Visitors Using Chimpanzee-Friendly Behaviors. Paper presented at Symposium on Undergraduate Research and Creative Expression, Central Washington University, Ellensburg, WA.

Davis, A., Leeds, C.A., Jensvold, M.L., & Fouts, D. (2011, May) Symposium on Undergraduate Research and Creative Expression, Central Washington University, Ellensburg, WA.

Larsen, G., Jensvold, M.L., & Campion, T. (2011, May). Gesture Use by Free-Living Chimpanzees (*Pan troglodytes*). Poster presented at Symposium on Undergraduate Research and Creative Expression, Central Washington University, Ellensburg, WA.

Reveles, J. & Jensvold, M.L. (2011, May). Visitor Opinion in Artificial vs. Natural Enrichment Conditions. Poster presented at Symposium on Undergraduate Research and Creative Expression, Central Washington University, Ellensburg, WA.

Leeds, C.A., Davis, A., Jensvold, M.L., & Fouts, D. (2011, March). Evidence for Menstrual Synchrony in Captive Chimpanzees. Poster presented at the Northwest Anthropological Association, Moscow ID.

Zager, L. & Jensvold, M.L. (2011, March). Encouraging Friendly Chimpanzee Behaviors. Paper presented at the Northwest Anthropological Association, Moscow ID.

Jensvold, M.L., Stadtner, G., & Buckner, J. (2010, June). Measuring the Quality of Interactions Between Caregivers and Chimpanzees. Poster presented at Science in the Service of Animal Welfare, Universities Federation of Animal Welfare, York, UK.

Metzler, D., Jensvold, M.L., Fouts, D., & Fouts, R. (2010, May). Vocabulary Growth in Adult Cross-Fostered Chimpanzees. Paper presented at the Symposium on Undergraduate Research and Creative Expression, Central Washington University, Ellensburg, WA.

Jensvold, M.L. (2010, April). Interactive use of sign language by cross-fostered chimpanzees. Paper presentation at Sign Language Studies of Cross-Fostered Chimpanzees: Ongoing Inquiry Symposium. University of Nevada-Reno, NV.

Bismanovsky, D., Zager, L., & Jensvold M.L. (2010, March). Recent Patterns of Conversation in an Adult Chimpanzee Using American Sign Language. Paper presented at the Northwest Anthropological Association, Ellensburg, WA.

Cole, M., Herigstad, T., & Jensvold, M.L. (2010, March). Daily Arousal Level's Effect on a Chimpanzee's Categorical Sign Usage. Paper presented at the Northwest Anthropological Association, Ellensburg, WA.

Gibbons, J., Leake, M., Potosky, R., & Jensvold, M.L. (2010, March). Use of Holiday Related Signs by a Cross-Fostered Chimpanzee. Paper presented at the Northwest Anthropological Association, Ellensburg, WA.

Metzler, D., Jensvold, M.L., Fouts, D, & Fouts R. (2010, March). Vocabulary Growth in Adult Cross-Fostered Chimpanzees. Paper presented at the Northwest Anthropological Association, Ellensburg, WA.

Reveles, J., & Jensvold, M.L. (2010, March). Visitor Knowledge Gains in a New Educational Workshop: The Chimposium. Poster presented at the Northwest Anthropological Association, Ellensburg, WA.

Jensvold, M.L., Buckner, J., & Stadtner. (2009, September). Caregiver-Chimpanzee Interactions with Species-Specific Behaviors. Paper presented at the joint conference of the International Congress of Zookeepers and American Association of Zookeepers, Seattle, WA.

McCarthy, M., Brown, H., Gray, A., Lee, K., Steele, R., Jensvold, M.L., & Fouts, D. (2009, May). The Effects of the Chimposium Educational Program on Visitor Knowledge and Attitudes. Paper presented at the Symposium on University Research and Creative Expression, Ellensburg, WA.

Leeds, C.A., McCarthy, M., Bismanovsky, D., Denton, T., Jensvold, M.L., & Fouts, D. (2009, May). Social Structure in Three Captive Chimpanzees. Poster presented at the Symposium on University Research and Creative Expression, Ellensburg, WA.

Metzler, D., Jensvold, M.L., Fouts, R., & Fouts, D. (2009, May). The Acquisition of New Signs in Adult Cross-Fostered Chimpanzees. Poster presented at the Symposium on University Research and Creative Expression, Ellensburg, WA.

O'Rahilly, K., Leake, M., Potosky, R., Wallin, J., Jensvold, M.L., Fouts, D., & Fouts, R. (2009, May). Vocabulary Use of Four Cross-Fostered Signing Chimpanzees. Poster presented at the Symposium on University Research and Creative Expression, Ellensburg, WA.

Metzler, D.K., Jensvold, M.L., Fouts, R.S., & Fouts, D.H. (2009, April). The Acquisition of New Signs in Adult Cross-Fostered Chimpanzees. Poster presented at the Northwest Anthropological Conference, Newport, OR.

O'Rahilly, K., Leake, M, Potosky, R., Wallin, J., Jensvold, M.L., Fouts, D., & Fouts, R. (2009, April). Vocabulary Use of Four Cross-Fostered Signing Chimpanzees. Poster presented at the Northwest Anthropological Conference, Newport, OR.

Rasmussen, C.L., & Jensvold, M.L. (2009, April). Contra Lateral Pointing in Cross-Fostered Chimpanzees. Poster presented at the Northwest Anthropological Conference, Newport, OR.

Rasmussen, C.L., & Jensvold, M.L. (2008, November). Contra Lateral Pointing in Cross-Fostered Chimpanzees. Poster presented at the Annual Biomedical Research Conference for Minority Students, Orlando, FL.

Jensvold, M.L. (2008, April). The effects of species-specific behaviors in captive chimpanzees. Paper presented at the Rocky Mountain Psychological Association, Boise, ID.

Rasmussen, C., Jensvold, M.L., Fouts, R.S., Fouts, D.H., & Wallin, J. (2008, April). Signs of cultural transmission in a chimpanzee. Poster presented at the Rocky Mountain Psychological Association, Boise, ID.

Wallin, J. M., Jensvold, M. L., Fouts, R. S., & Fouts, D. H. (2008, April). The recent expressive lexicon of a cross-fostered chimpanzee. Poster presented at the 2008 Rocky Mountain Psychological Association, Boise, ID.

Jensvold, M.L. (2007, October). Caregiver's use of chimpanzee behaviors promotes positive interactions. Paper presented at the American Association of Zookeepers, Galveston, TX.

Jensvold, M.L. (2007, October). Conversational repair in cross-fostered chimpanzees. Paper presented at the Semiotic Society Association, New Orleans, LA.

Halberg, R., Jensvold, M.L., & Sheeran, L. (2007, May). Laughter, number of play partners, age and play bout duration in captive chimpanzees (*Pan troglodytes*) in an African sanctuary. Poster presented at the Symposium for University Research and Creative Expression, Ellensburg, WA.

Jensvold, M.L. (2007, May). Use of species-specific behaviors in chimpanzee/caregiver interactions. Paper presented at the Central Washington University Symposium on University Research and Creative Expression, Ellensburg, WA.

McCarthy M.S., Jensvold, M.L., Fouts. R.S., & Fouts, D.H. (2007, May). Use of gesture sequences in captive chimpanzee play. Paper presented at the Central Washington University Symposium on University Research and Creative Expression, Ellensburg, WA.

Wallin, J. M., Jensvold, M. L., & Sheeran, L. K. (2007, May). Play, laughter, and humor in captive chimpanzees (*Pan troglodytes*). Paper presented at the Central Washington University Symposium on University Research and Creative Expression, Ellensburg, WA.

Marburg, T.L., Jensvold, M.L., Fouts, R., & Fouts, D. (2007, April). Comparison of intragroup greeting and reassurance behaviors across four chimpanzee (*Pan troglodytes*) social groups in American and African sanctuaries. Paper presented at the Northeast Anthropological Association, New York.

Hartel J.A., Jensvold M.L., Fouts R.S., & Fouts D.H. (2007, March). Signing chimpanzees' (*Pan troglodytes*) interactions with familiar and unfamiliar signers and nonsigners. Poster presented at The Mind of the Chimpanzee Conference, Chicago, IL.

McCarthy M.S., Jensvold, M.L., Fouts. R.S., & Fouts, D.H. (2007, March). Use of gesture sequences in captive chimpanzee play. Paper presented at the Rocky Mountain Psychological Association, Denver, CO.

Wallin, J., Jensvold, M.L. & Sheeran, L. (2006, October). Chimpanzee play, laughter and humor. Poster presented at the Murdock Charitable Trust Annual Regional Undergraduate Research Conference. Portland, OR.

McCarthy, M., Jensvold, M.L., Fouts, D.H., & Fouts, R.S. (2006, May). Space use in captive chimpanzees. Paper presented at CWU Symposium on University Research and Creative Expression, Ellensburg, WA.

Jensvold, M.L., Sheeran, L., Halberg, R. & Keyser, J. (2006, May). Laughter, number of play partners, and play bout duration in captive chimpanzees (*Pan troglodytes*). Paper presented at CWU Symposium on University Research and Creative Expression, Ellensburg, WA.

McCarthy, M., Jensvold, M.L., Fouts, D.H., & Fouts, R.S. (2006, April). Space use in captive chimpanzees. Paper presented at the Rocky Mt. Psychological Association Conference, Park City, UT.

Puffer, A. M., Jensvold, M.L., Fouts, D.H., & Fouts, R.S. (2006, April). Weather influences chimpanzees' choice to go outside. Paper presented at the Rocky Mt. Psychological Association Conference, Park City, UT.

Shiau, S. J., & Jensvold, M.L. (2006, April). Chimpanzee use of modulation in response to questions. Paper presented at the Rocky Mt. Psychological Association Conference, Park City, UT.

Jensvold, M.L., Sheeran, L.S., Halberg, R.H., & Keyser, J. (2006, March). Laughter, number of play partners, and play bout duration in captive chimpanzees (*Pan troglodytes*). Paper presented at the Northwest Anthropological Conference, Seattle, WA.

Jensvold, M.L., Fouts, D.H., & Fouts, R.S. (2005, November). Caring for chimpanzees. Poster presented at the annual Earthwatch Conference, Cambridge, MA.

Jensvold, M.L., Baeckler, S.A., Fouts, R.S., & Fouts, D.H. (2004, October). Their own terms: Techniques in humane caregiving of captive chimpanzees. Poster presented at the International Society of Anthrozoology, Glasgow, Scotland, UK.

Jensvold, M.L., Fouts, D.H., & Fouts, R.S. (2004, April). Environmental enrichment with objects and caregivers for captive chimpanzees. Paper presented at the Rocky Mt. Psychological Association, Reno, NV.

Hartel, J., Jensvold, M.L., Bowman, H., Fouts, R., & Fouts, D. (2004, April). The effect of foraging on the activity budgets of four captive chimpanzees. Poster presented at the Rocky Mt. Psychological Association, Reno, NV.

Jensvold, M.L., Fouts, R.S., & Fouts, D.H. (2003, April). Assessment of species typical behaviours in captive chimpanzees. Poster presented at Science in the Service of Animal Welfare, Universities Federation of Animal Welfare Symposium, Edinburgh, Scotland, UK.

Derbawka, M., Jensvold, M.L, Fouts, R., & Fouts, D. (2003, May). Chimpanzees' use of objects on theme days. Poster presented at Source Undergraduate Conference, Ellensburg, WA.

Jensvold, M.L., Fouts, R.S., & Fouts, D.H. (2002, November). Caring for chimpanzees. Poster presented at the annual Earthwatch Conference, Cambridge, MA.

Jensvold, M.L. (2002, May). Interactive use of sign language by cross-fostered chimpanzees. Paper presented at the First Conference of Faculty and Graduate Students Research on Scholarly Achievements, Ellensburg, WA.

Bowman, H., Jensvold, M.L., Fouts, D.H., & Fouts, R.S. (2002, May). Species typical use of objects in captive chimpanzees. Paper presented at the First Conference of Faculty and Graduate Students Research on Scholarly Achievements, Ellensburg, WA.

Cohen, N., Martinson, J., Pieracci, M., Tata, M.J., Jensvold, M.L., & Fouts, R. (2001, September). The effect of an educational program on attitudes toward chimpanzees. Poster presented at the Chimpanzoo Conference, Portland, OR.

Hayashida, C., Grandia, A., Blake, S., Eburn, C., Jung, C., Parker, S., Jensvold, M.L., & Fouts, R. (2001, September). A social hierarchy of five chimpanzees. Poster presented at the Chimpanzoo Conference, Portland, OR.

Jaffe, S., Jensvold, M.L., & Fouts, D. (2001, September). Chimpanzee to chimpanzee signed interactions. Poster presented at the Chimpanzoo Conference, Portland, OR.

Fouts, R.S., & Jensvold, M.L. (2001, July). Armchair delusions v. empirical realities: A neurological model for the continuity of ape and human languaging. Paper presented at the American Academy of Arts and Sciences, Cambridge, MA.

Jensvold, M.L.A., Fouts, R.S., & Fouts, D.H. (2001, April). Novelty, plurality, and species typical behaviors: Their role in object enrichment in captive chimpanzees. Paper presented at the Rocky Mountain Psychological Association, Reno, NV.

Jensvold, M.L.A. (2000, June). Cross-fostered chimpanzee conversational responses in signed interactions with humans. Poster presented at American Psychological Association, Miami, FL.

Jensvold, M.L.A. (1999, April). Discussant for Ethological Studies of Captive Chimpanzees. Symposium at the Rocky Mountain Psychological Association, Ft. Collins, CO.

Jensvold, M.L.A., Fouts, R.S., Hood, J.H., Fouts, D.H., & Waters, G. (1999, June). Development of phrases in a signing chimpanzee. Paper presented at the Human Behavior and Evolution Society, Salt Lake City, UT.

Martin, A., Jensvold, M.L., Fouts, R.S., & Fouts, D.H. (1999, October). Behavioral changes in captive chimpanzees between two facilities. Paper presented at the Chimpanzoo Conference, Manhatten, KS.

Sanz, C.M., Fouts, D.H., Jensvold, M.L.A., & Fouts, R.S. (1999, April). Space use and locomotion behavior of five socially housed chimpanzees. Symposium conducted at the Rocky Mountain Psychological Association, Ft. Collins, CO.

Waters, G.S., McDowell, R.R., Jensvold, M.L., Fouts, R.S., & Fouts, D. (1999, October). Captive chimpanzee (*Pan troglodytes*) object enrichment: The effect of item novelty, category, and amount. Paper presented at the Chimpanzoo Conference, Manhatten, KS.

Fouts, R.S., Fouts, D.H., & Jensvold, M.L.A. (1998, October). Space use and locomotion behaviors in chimpanzees. Poster presented at the Earthwatch Conference, Cambridge, MA.
Fouts, R.S., Fouts, D.H., & Jensvold, M.L.A. (1998, October). Caring for chimpanzees. Paper presented at the Earthwatch Conference, Cambridge, MA.
Sanz, C., King, B., Jensvold, M.L.A., Fouts, R., & Fouts, D. (1998, October). Human aesthetics versus chimpanzee needs. Poster presented at Chimpanzoo Conference, Los Angeles, CA.
Jensvold, M.L.A. (1997, April). Chimpanzee's responses to question series. Symposium conducted at Northwest Anthropological Association Conference, Ellensburg, WA.
Sanz, C.M., & Jensvold, M. L. A. (1997, April). Chimpanzees' reaction to naive and educated visitors. Symposium conducted at Northwest Anthropological Association Conference, Ellensburg, WA.
Sanz, C.M., & Jensvold, M.L.A. (1997, May). Chimpanzees' reaction to naive and educated visitors. Paper presented at Undergraduate Research Symposium, Ellensburg, WA.
Jensvold, M.L.A. (1996, April). Chimpanzee responses to question series. Symposium conducted at the Rocky Mountain Psychological Association, Park City, UT.
Jensvold , M.L.A., & Fouts, R.S. (1994). Behavioral changes in chimpanzees following a move to a larger facility. Paper presented at the American Society of Primatologists, Seattle, WA.
Fouts, R.S., Fouts, D.H., Bodamer, M., Jensvold, M.L.A., Shaw, H., Radeke, M., & Simpson, D. (1993, July). Novel enrichment ideas for five socially housed chimpanzees. Poster presented at the First Annual Environmental Enrichment Conference, Portland, OR.
Fouts, R.S., Glenn, J., Jensvold, M.L.A., & Krause, M. (1993, July). A standard operating procedure for chimpanzee enrichment. Poster presented at the First Annual Environmental Enrichment Conference, Portland, OR.
Jensvold, M.L.A., Fouts, R.S., & Radeke, M. (1993, July). Environmental enrichment and species typical behaviors in captive chimpanzees. Poster presented at the First Annual Environmental Enrichment Conference, Portland, OR.
Jensvold, M.L.A., Kowalski, A., Radeke, M., & Fouts, R.S. (1993, April). Activity budgets of five socially housed chimpanzees. Poster presented at the Joint Conference of Western and Rocky Mountain Psychological Association, Phoenix, AZ.
Abshire (Jensvold), M.L. (1991, April). Imaginary play in deaf children. Paper presented at the Western Psychological Association, Los Angeles, CA.
Fouts, R.S., Fouts, D.H., Abshire (Jensvold), M.L., & Bodamer, M. (1991, December). Private signing and imagination. Paper presented at Understanding Chimpanzees, Chicago Academy of Science, Chicago, IL.
Abshire (Jensvold), M.L. (1989, April). New directions in chimpanzee sign language research. Symposium conducted at the Western Psychological Association, Reno, NV.

INVITED ADDRESS

Jensvold, M.L. (2012, September). Experimental Conversations: Sign Language Studies with Chimpanzees. Plenary Speaker at From Grooming to Speaking: Recent trends in Social Primatology and Human Ethology. Centre for Philosophy of Science of the University of Lisbon. International Colloquium September 10-12, 2012.
Jensvold, M.L. (2011, April). Keynote Address: The Ethological Roots of Language Acquisition. Washington Association of Foreign Language Teachers. Ellensburg, WA.
Jensvold, M.L. (2011, April). Drawings, Imaginary Play, and Private Signing in Chimpanzees. Central Washington University, Primate Awareness Week.
Jensvold, M.L. (2010, September). Conversations With Chimpanzees: Transforming our View of Nature. Florida Gulf Coast University, Ft. Myers.
Jensvold, M.L. (2010, April). Improving Captive Care: Taking Them on Their Own Terms. Primate Awareness Week. Central Washington University, Ellensburg, WA.

Jensvold, M.L. (2010, April). Interactive Use of Sign Language by Cross-Fostered Chimpanzees. Symposium on Sign Language Studies of Cross-Fostered Chimpanzee: Ongoing Inquiry. University of Nevada-Reno, NV.

Jensvold, M.L. (2010, February). Conversations with Chimpanzees: Only in Ellensburg. Ellensburg Rotary Club, Ellensburg, WA.

Jensvold, M.L. (2008, November). Conversations with Chimpanzees: Transforming our View of Nature. St. Johns Episcopal Church, Tallahassee, FL.

Jensvold, M.L. (2007, April). Caring for chimpanzees on their own terms: Research with signing and zoo chimpanzees. University of West Florida, Pensacola.

Jensvold, M.L. (2003, March). Chimpanzees and sign language. Oakland Zoo, Oakland, CA.

Jensvold, M.L. (2003, March). The roots of early language development. Head Start/ECEAP Child Development/Mental Health/Family Support Interdisciplinary Conference, Central Washington University, Ellensburg, WA

Jensvold, M.L. (2001, May). Caring for chimpanzees. Wenatchee Valley Community College, Wenatchee, WA.

Jensvold, M.L.A. (1999, April). Aspects of signing in chimpanzees: Studies inspired by Beatrix Gardner. Invited address at the Rocky Mountain Psychological Association, Ft. Collins, CO.

MEDIA COVERAGE

Great Apes Great Dilemma. Jane Gargas, *Yakima* Herald, April 7, 2013.

Planning a Future of CWU's Chimps. Andy Matarrese, *Daily Record*, April 13-14, 2013.

CWU Facing Decision on Chimps: Add More or Move. *The Bellingham Herald.* April 15, 2013.

Chimp Researchers Cheer Proposed NIH Changes. *Yakima Herald Republic*. February 6, 2013.

In Loving Memory of Dar. KIMA, Yakima. December 10, 2012.

Mourning the Loss Dar, The Chimp Who Touched Many Lives. KNDO Yakima. December 9, 2012.

Chimpanzee Leaves Legacy. Andy Matarrese, *Daily Record*, December 10, 2012.

Chimp Leaves a Legacy of Lessons for Humans. Jerry Large, *Seattle Times*, November 28, 2012.

Chimp Died of Cardiac Failure. Justin Pittman. *The Daily Record.* November 28, 2012.

Central Washington University Hopes to Replace Dead Chimps. Tom Bonse, KPLU, November 27, 2012.

Dar, the Signing Chimpanzee, Dies Suddenly; "Hurt" Not Among Last Words. Nina Shapiro. *Seattle Weekly*. November 27, 2012.

Chimp Who Knew Sign Language Dies at 36. *UPI.com*. November 26, 2012.

CWU Chimp, Dar, Dies at Age 36. Justin Pittman, *Daily Record*, November 26, 2012.

Chimpanzee at CWU Dies. *San Francisco Chronicle*. November 25, 2012.

Chimpanzee at CWU Dies. KHQ, Spokane, November 25, 2012.

Chimpanzee at CWU Dies. *East Oregonian*. November 25, 2012.

Chimpanzee at CWU Dies. *Tri-City Herald.* November 25, 2012.

Chimpanzee at CWU Dies. *Seattle Times*. November 25, 2012.

Central Washington University Chimp Who Learned Sign Language Dies. NWCN/ KING5.com Seattle. November 25, 2012.

Chimpanzee Who Used Sign Language Dies in Ellensburg. KOMO News. November 25, 2012.

CWU Chimpanzee Who Learned American Sign Language Dies at 36. *The Inquisitr.com*. November 25, 2012.

Introducing Humans to Chimps. Jane Gargas, *Tri-City Herald.* October 13, 2012.

Learning Their Language. Jane Gargas, *Yakima Herald Republic*. October 7, 2012.

Ellensburg honors its famous chimpanzee. KNDO, Yakima, September 22, 2012.

Ellensburg Park, Chimp Sculpture to Honor Washoe. *Yakima Herald-Republic.* September 20, 2012.
New Park Honors Washoe. *Ellensburg Daily Record.* September 21, 2012.
Claims of Octogenerian Chimp Prompts Questions. *CNN,* December 30, 2011. http://www.cnn.com/2011/12/29/showbiz/florida-tarzan-chimp/index.html
Harmful Chimpanzee Research Not Worth the Pain. *Wired.com*, December 15, 2011.
Apemania and Project Nim. *Pasadena Art Beat,* July 12, 2011. http://pasadenaartbeat.wordpress.com/2011/07/15/apemania-and-project-nim/.
Watching For Signs. *Pasadena Weekly*, July 14, 2011. http://www.pasadenaweekly.com/cms/story/detail/watching_for_signs/10329/
Into the Sunset: Couple Who Brought Chimps to CWU Retires. *Ellensburg Daily Record*, June 21, 2011.
Longtime Chimpanzee Research Team Retires. *Yakima Herald-Republic*, June 26, 2011.
Life of the chimpanzees. *The Observer*, January 20-26, 2011.
Animal Intelligence: Do Animals Think? *Congressional Quarterly Researcher*, October 22, 2010, 20 (37), 869-892.
Chimps Adjust to Life After Washoe, Ellensburg Daily Record, September 18, 2010.
Woman Who Chats with Chimps in Sign Language to Appear Here, Eagle News, September 15, 2010.
WCGU–FM (an NPR affiliate), Ft. Myers, FL. Gulf Coast Live "Teaching Chimps to Sign" Aired September 10, 2010.
KCWU TV, Ellensburg, WA. Interview on Robert Lowery's "Conversations" program. Spring 2010.
WCOA AM Radio, Pensacola, FL. Interview on Taris Savel's "Conversations on the Go" program. Aired July 11 & 12, 2009.

GRANTWRITING AND EXTRAMURAL FUNDING DEVELOPMENT

2013. Bohnett Foundation, Chimpanzee Caregiver. $30,000. Funded.
2013. Promoting 2013 Chimposium. City of Ellensburg. Funded.
2013. Promoting 2013 Chimposiums. Kittitas County. $2,000. Funded
2012. NEAVES. Operational support. To Friends of Washoe. $5,000.
2012. Winley Foundation/Friends of Washoe. Chimpanzee Caregiver. $45,000. Funded.
2012. National Endowment of the Humanities. CWU/CHCI Archiving Project. $32,000. Pending.
2012. Promoting 2012 Chimposiums. City of Ellensburg. $8,463. Funded.
2012. Promoting 2012 Chimposiums. Kittitas County. $2,000. Funded.
2012. Chimpanzee Caregiver Fall 2012 Graduate Assistant. Friends of Washoe $3,277. Funded.
2012. Chimpanzee Caregiver Maternity Relief Request, Friends of Washoe $3,232. Funded.
2012. Chimpanzee Caregiver Request, Friends of Washoe (Bohnett), $43,780.
2011. City of Ellensburg Lodging Tax, Chimposium Advertising, $7,543. Funded.
2011. Kittitas County Lodging Tax, Chimposium Advertising. $2,000. Funded.
2011. Lounsbury Foundation. Data Inventory, Preservation, and Access Project. $60,022. Funded.
2011. Friends of Washoe. Full-Time Chimpanzee Caregiver. $30,000. Funded.
2010. Hugh & Jane Ferguson Foundation, Outreach Coordinator to FOW, $7,500, Funded.
2010. CWU College of the Sciences Faculty Summer Research Grant. $3,000, Funded.
2010. Friends of Washoe. Half-time Position Chimpanzee Caregiver, $17,000, Funded.
2010. Friends of Washoe. Full-Time Chimpanzee Caregiver, $35,000, Funded.
2010. Lush, amount unspecified. Pending.
2010. The Brinson Foundation. Chimposium Improvement Project, $5,000. Rejected.
2006-09. Bridges to Baccalaureate, National Institute of Health, Director, $253,631, Funded.

2009. CWU Technology Grant. Rejected.
2009. Len-Thayer, Central Washington University, Partial funding for caregiver position, $5000. Rejected.
2009. Co-PI with Lori Sheeran. SOAR, CWU. Rejected.
2008. Visitor Effect in Zoo-Living Chimpanzees. Animal Refinement Award, Animal Welfare Institute, PI, $10,000, Funded.
2006. Caregiver Interactions with Chimpanzees, Animal Welfare Institute Refinement Award. PI $6,000, Funded.
2006. Caring for Chimpanzees. Earthwatch. Co-PI. $13,410, Funded.
2005. Caring for Chimpanzees. Earthwatch. Co-PI. $87,990, Funded.
2005. Central Washington University Research Equipment Grant. $3,310, Funded.
2005. Laughter in Chimpanzees (Pan troglodytes) Function and Evolutionary Significance. Central Washington University Faculty Seed Grant, Co-PI, $1,935, Funded.
2005. Interdisciplinary Continuity of the Arts & Sciences, Co-PI, 68,564, Rejected.
2004. Caring for Chimpanzees. Earthwatch. Co-PI. $50,075, Funded.
2004. Conversational Responses of Chimpanzees, American Association of University Women, PI, $30,000, Rejected.
2004. Conversational Competence in Signing Chimpanzees, NSF, PI, $188,410, Rejected.
2003. Caring for Chimpanzees. Earthwatch. Co-PI. $71,400, Funded.
2002. Caring for Chimpanzees Earthwatch, Co-PI, $91,200, Funded.
2002 Len Thayer Small Grant, "Workshop on Humane Techniques in Caring for Chimpanzees". $2,000, Rejected.
2002. AALAS Foundation, "Workshop in Enriching Care for Chimpanzees". $7,965.00, Rejected.
2001. Caring for Chimpanzees. Earthwatch. Co-PI. $97,200, Funded.
2001. Lounsbury Foundation, $40,000, Funded.
2000. Caring for Chimpanzees. Earthwatch. Co-PI. $100,800, Funded.
1999. Lounsbury Foundation, $85,000, Funded.
1999. Caring for Chimpanzees. Earthwatch, Co-PI. $91,200, Funded.
1998. Caring for Chimpanzees. Earthwatch. Co-PI. $96,000, Funded.
1998. Central Washington University Foundation Grant. $2,500, Funded.
1996. Liasoned with a private donor. $25,000, Funded.
1993. Anonymous private matching grant. $3,000, Funded.
1993. Proctor & Gamble matching grant. $9,000, Funded.

PROFESSIONAL SERVICE

2008-2010	Faculty Affiliate, Museum of Culture & Environment, Central Washington University. Ellensburg, WA
2007-present.	Member, Board of Directors, Animal Welfare Institute, Washington, DC.
2007.	McNair, Advisory Board, Central Washington University, Ellensburg, WA.
2007.	Chairperson, Chimpanzee Care Committee, Chimpanzee Sanctuary Northwest, Cle Elum, WA
2003-2007.	Member, Board of Directors, Chimpanzee Sanctuary Northwest, Cle Elum, WA
1999-present.	Member, Advisory Board, Fauna Foundation, Chambly, Quebec, Canada
1999-present.	Member, Board of Directors, Friends of Washoe, Ellensburg, WA
1997-2000.	Member, Scientific Advisory Board, National Chimpanzee Sanctuary

COMMUNITY SERVICE

2008-2009	4H Leader, Kittitas County Extension, Ellensburg, WA
2005-2006.	Member, Board of Directors, Friends of the Roslyn Library, Roslyn, WA
2003-2005	Member, Roslyn Historic and Preservation Commission, Roslyn, WA

2005-2008 Speaker, Expanding Your Horizons. A hands-on exploration of careers for women in math, science, and technology for 5th through 9th grade girls.
Periodically Speaker, Roslyn Library Armchair Traveler Speaker Series.

PROFESSIONAL MEMBERSHIP
Sigma Xi
Phi Kappa Phi
International Society for Anthrozoology
Rocky Mountain Psychological Association

STUDENT MENTORSHIPS
Masters Thesis Committee Chair:
Davis, Amanda, Effects of Conversational Partner Familiarity in Deaf Humans (*Homo sapiens*), July, 2012.
Leeds, Charles Austin, The Communicative Function of Five Signing Chimpanzees (*Pan troglodytes*), June, 2012.
Sorenson, Hilaree, Environmental Enrichment for Captive Chacma Baboons (*Papio ursinus*) at the Centre for Animal Rehabilitation & Education (CARE), June, 2012.
Campion, Tracy, Use of Gesture Sequences in Free-Living Chimpanzee (*Pan troglodytes schweinfurthii*) Play in Gombe National Park, Tanzania, March, 2012.
Bismanovsky, Daniella, Chimpanzee (*Pan troglodytes*) Responses to Visitors Using Chimpanzee-Friendly Behaviors, October, 2011.
Leake, Madeleine, Topic Maintenance in Chimpanzee's Conversations. June, 2011.
Zager, Lindsay, Visitor Effect in Zoo-Living Chimpanzees. June, 2011.
Metzler, Deborah, Vocabulary Growth in Adult Cross-Fostered Chimpanzees. March, 2011.
Robin Potosky, Use of Modulation in Response to Requests for Clarification in Chimpanzees. July, 2010.
Stadtner, Gina. The Effect of Reciprocal Chimpanzee (Pan troglodytes) Behavior by Caregivers. December, 2009.
Buckner, Jacquelyne. The Behavioral Effects of the Use of Chimpanzee-Specific (Pan troglodytes) Behaviors and Vocalizations by Human Caregivers. November, 2009.
Martinsen, Jessica. Sorting Chimpanzee Drawings Based on Similarity of Form. November, 2007.
Marburg, Trijntje. A Comparison of Intragroup Greeting and Reassurance Behaviors Across Chimpanzee (*Pan troglodytes)* Social Groups in American and African Sanctuaries. June, 2007.
McCarthy, Maureen. Use of Gesture Sequences in Captive Chimpanzee (*Pan troglodytes)* Play. May, 2007.
Keyser, Jennifer. Communicative Role of Play Behaviors in Captive Chimpanzee Play. March, 2007.
Gallucci, Julia. Chimpanzee Threat Gestures: Community-Level Differences. November, 2006.
Shiau, Jen-shiuan. Chimpanzee Use of Modulation in Response to Question. November, 2005.
Hartel, Jessica. Effects of Familiarity and Use of American Sign Language (ASL) on Chimpanzee (*Pan troglodytes*) Conversational Behavior. November, 2005.
Egan, Tennyson. Chimpanzees Exhibit Imaginary Play. July, 2005.

Masters Thesis Committee Member:
Heggs, Laura, The Influence of a Novel Outdoor Environment on the Behavior of Captive Chimpanzees (*Pan troglodytes)* in a Sanctuary Setting, July, 2012.
Enlow, Grace. Vocalizations and Pair-Bonding Behaviors in Bornean White-Bearded Gibbon in Sabangau National Park, Indonesia. July, 2010.

Tierney, Deborah. Communicative Competence in Four Captive Chimpanzees as Indicated by Responses to Questions Versus Statements. June, 2005.
Reider, Shannon. Community Level Differences in the Use of Grooming Gestures. June, 2004.
Bowman, Holly. Interactions Between Chimpanzees and Their Human Caregivers in Captive Settings: The Effects of Gestural Communication on Reciprocity. May, 2003.
Sloan, Anna. Bilingual Conversations in Chimpanzees. May, 2002.
Caparaso, Kimberly. Behaviors used in chimpanzee to chimpanzee sign initiated interactions. March 2002.
Daspit, Lesley. Folkecology of Bofi Farmers and Foragers: Values, Knowledge and Information Pathways. May, 2001.
Waters, Gabriel. Sympathetic Mouth Movements Accompanying Fine Motor Movements in Five Captive Chimpanzees. July, 2000.
King, Bonita. The Effect of Familiarity on Social Interactions Between Captive Chimpanzees (*Pan troglodytes*) and Humans (*Homo sapiens*). August, 1999.
Sanz, Crickette. Fecal Testosterone and Corticosterone Levels and Behavioral Correlates in a Socially Stable Group of Five Captive Chimpanzees (*Pan troglodytes*). March, 1999.

Current Graduate Students:
Julie Reveles, Amanda Carner, RyAnn Stafford, Savannah Schulz, Kaeley Sullins, Susie Keenan, Meg Mas, Lisa Wilding, Alexandra Casti, Whitney Emge, and Katherine MacDonald.

Undergraduate Mentor:
Glee Larson, STEP. 2010. Douglas Honors College Thesis. 2011-2012
Julie Reveles, McNair Scholar. 2009-2010.
Cristy Rasmussen, McNair Scholar. 2008-2010
Jason Wallin, College of the Sciences Undergraduate Honor Thesis Award, Co-Mentor. 2007

Faculty Mentored Presentations:
Cole, M., & Herigstad, T. (2010, May). Daily Arousal Levels' Effect on a Chimpanzee's Categorical Sign Usage. Paper presented at the Central Washington University Symposium on University Research and Creative Expression, Ellensburg, WA.
Gibbon, J., Leake, M., & Potosky, R. (2010, May). Use of Holiday Related Signs by a Cross-Fostered Chimpanzee. Paper presented at the Central Washington University Symposium on University Research and Creative Expression, Ellensburg, WA.
Potosky, R. (2010, May). Use of Modulation in Response to Requests for Clarification in Chimpanzees. Paper presented at the Central Washington University Symposium on University Research and Creative Expression, Ellensburg, WA.
Wallin, J., (2010, May). A Descriptive Analysis of Chimpanzees' Signed Conversations. Poster presented at the Central Washington University Symposium on University Research and Creative Expression, Ellensburg, WA.
Zager, L., Bismanovsky, D., & Pewitt, R. (2010, May). Recent Patterns of Language in Adult Chimpanzees Using American Sign Language. Paper presented at the Central Washington University Symposium on University Research and Creative Expression, Ellensburg, WA.
Blodgett, D., Stadtner, G., Metzler, D., Wallin, J., & Potosky, R. (2008, May). Individual- and Task-Variation in Handedness in Five Cross-Fostered Chimpanzees. Poster presented at the Central Washington University Symposium on University Research and Creative Expression, Ellensburg, WA.

AD HOC JOURNAL REVIEWER
Journal of Experimental Child Psychology
Animal Behavior

Journal Human Evolution
Zoo Biology
Journal of Comparative Psychology
Journal of Advanced Research
Journal of Animal Ethics
International Research Journal of Arts & Social Sciences
IEEE Spectrum

OTHER REVIEWER
Wadsworth Cernage Publishers, Ottenheimer, H. *The Anthropology of Language*
Rocky Mt. Psychological Association
Biotechnology and Biological Sciences Research Council, UK
National Institute of Health, P-51 Grant
John D. & Catherine T. MacArthur Foundation

AWARDS & RECOGNITION
Sigma Xi Distinguished Lecturer2013-2015
The 4th International SAGA Symposium. Young Researchers Program for Foreigners Award. 1999

Exhibit: B. to Affidavit of Mary Lee Jensvold sworn to November 21, 2013
Reference List of Peer-Reviewed Literature (264-266)

EXHIBIT B

References:

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Exhibit: H. to Verified Petition dated December 2, 2013
Affidavit of James King sworn to November 21, 2013 (267-275)

STATE OF NEW YORK
SUPREME COURT COUNTY OF SUFFOLK

In the Matter of a Proceeding under Article 70 of the CPLR for a Writ of Habeas Corpus, THE NONHUMAN RIGHTS PROJECT, INC., on behalf of HERCULES and LEO, Petitioners, v. SAMUEL L. STANLEY JR., M.D., as President of State University of New York at Stony Brook a/k/a Stony Brook University and STATE UNIVERSITY OF NEW YORK AT STONY BROOK a/k/a STONY BROOK UNIVERSITY, Respondents.	**AFFIDAVIT OF JAMES KING** Index No.:

STATE OF ARIZONA)
) ss:
COUNTY OF PIMA)

James King being duly sworn, deposes and says:

Introduction and Qualifications

1. My name is James King. I received a B.A. from the University of Arizona in 1959, a M.S. from the University of Wisconsin in 1961, and a Ph.D in Psychology from the University of Wisconsin in 1963. I work and reside in Tucson, Arizona.

2. I submit this affidavit in support of Petitioners The Nonhuman Rights Project, Inc. ("NhRP"), on behalf of Hercules and Leo, for a writ of habeas corpus. I am a non-party to this proceeding.

3. I am currently an Emeritus Professor of Psychology at the University of Arizona where I have been a member of the faculty for 43 years. I have regularly taught courses in animal behavior including *Primate Behavior*, *Animal Behavior*, *Animal Learning*, and seminars on *Evolution and Animal Behavior* and *Biopsychology*. I have directed 14 dissertations and 18 master's theses since 1970 on various topics related to primatology.

4. I have been awarded research grants for the study of primates by NASA, the U.S. Army Research Institute, and the National Institutes of Mental Health, among other organizations.

5. I served as an associate editor of the Journal of Comparative Psychology from 1995-1999. From 1959-1963, I served as a research assistant at the University of Wisconsin Primate Laboratory. I also worked at the Yerkes Regional Primate Research from 1969-1970 as a PHS Special Fellowship.

6. My area of specialization is personality structure and psychological well-being in chimpanzees and other great apes, which I have studied for the past 15 years. I have also studied complex learning and concept formation in squirrel monkeys, capuchin monkeys, rhesus monkeys, orangutans, and chimpanzees. My research has mainly been conducted on captive monkeys and apes at the University of Arizona. I have also done research at the Yerkes Regional Primate Center in Atlanta and at the University of Stirling in Scotland.

7. I have authored two edited books on primate behavior and personality: *Primate Behavior* (1982, New York: Academic Press), and *Personality and Temperament in Non Human Primates* (2011, New York: Springer).

8. I have published over 100 articles on chimpanzees, squirrel monkeys, capuchin monkeys, rhesus monkeys, and orangutans. These articles are published in many of the world's

most-cited peer-reviewed scientific journals, including: *Journal of Comparative and Physiological Psychology, Animal Behaviour, American Journal of Primatology, the International Journal of Primatology, Journal of Behavioral Genetics, the New England Journal of Medicine, Journal of Genetic Psychology, Animal Perspectives, Animal Learning and Behavior,* and *Ecology.* I have also been published in the *Encyclopaedia of Psychology and Neuroscience.* These publications covered topics on the behavior, ecology, welfare, and conservation of primates. Specific topics of these publications include: discrimination learning, concept formation, self stimulation, learning behavior, snake avoidance, sensory capacities, sameness-difference learning-set, learning capacities, mother-child relationships, social behavior sequences, licking patterns, preference differences, chimpanzee personality, chimpanzee happiness, chimpanzee health, imitation and emulation, age and sex effects in human and chimpanzee personality, determinants of longevity, heritability of personality factors, subjective well-being, genetic variation, personality development.

9. I have given numerous presentations of my research in primatology in the United Sates, Scotland, France, Madagascar and Indonesia. My Curriculum Vitae fully sets forth my educational background and experience and is annexed hereto as **"Exhibit A"**.

Basis for Opinions

10. The opinions I state in this affidavit are based on my professional knowledge, education, training, research and field work, as well as my review of peer-reviewed literature. A full reference list of peer-reviewed literature cited herein is annexed hereto as **"Exhibit B"**. In this affidavit I will focus upon the evidence for three relevant characteristics in chimpanzees in the general domains of: (A) autonomy, (B) personality, and (C) emotions.

Opinions

A. Autonomy

11. Autonomous behavior is defined as behavior that reflects a choice and is not based on reflexes, innate behaviors or on any conventional categories of learning such as conditioning, discrimination learning, or concept formation. Instead, autonomous behavior implies that the individual is directing the behavior based on some non-observable internal cognitive process. We cannot directly observe these internal processes in other people or in nonhumans but we can find evidence for them in observable behavior. Evidence for autonomous behavior in humans is not seriously disputed. In chimpanzees the behavioral evidence for autonomy is becoming increasingly conclusive as findings accumulate on their creativity and planning, all characteristics of autonomy.

12. The presence of autonomy in chimpanzees, our closest relative, is consistent with phylogenetic parsimony. That is, the simplest explanation for behaviors in chimpanzees that look autonomous is that they are based on similar psychological capacities as in humans. Biologists dating back to Charles Darwin have emphasized the slow, gradual changes in evolutionary development. Therefore, the presence of any complex cognitive-behavioral process in humans implies the likelihood of a similar but possibly more rudimentary process in apes. These similarities are not only found in the domain of autonomy but also in that of personality and emotion. My research shows the remarkable similarity between chimpanzees and humans in the structure of personality and subjective well-being (or happiness).

B. Phylogenetic continuity of personality

13. The research on chimpanzee personality by my colleagues and I has been based mainly on personality ratings of workers at zoos in the United States, Asia, and Europe. The zoo

workers completed questionnaires asking for ratings of a wide variety of personality traits for each individual chimpanzee. Examples of traits are *timid, depressed, gentle, and cautious*. The questionnaires were similar to those used to assess human personality. Some of our major findings are listed below.

14. *Factor structure*. Statistical analysis of the correlations between items by means of factor analysis indicated that *the basic factors or dimensions characterizing the personality ratings of chimpanzees are remarkably similar to the dimensions of human personality* (King and Figueredo, 1997; Weiss, King, and Perkins, 2006). In addition, there is excellent between-rater reliability and the personality factors are stable over time (King, Weiss, and Sisco, 2008). That is, the identified personality traits are consistent within individual chimpanzees and are reliably observed by different people.

15. *Personality predicts behavior.* Personality factors of chimpanzees are correlated with directly observable behaviors in a way consistent with the meaning of the factors (Pederson, King, and Landau, 2005; Uher and Asendorp, 2008). This finding shows that the personality ratings of chimpanzees have similar meaning, in terms of personality structure, to that in humans.

16. *Personality is heritable.* One of the recurring criticisms of ape personality ratings is that they are anthropomorphic projections of the raters' own personality or represent projections about correlations of human personality traits onto the apes. A demonstration that ape personality factors are significantly heritable would contradict such claims of anthropomorphic bias. We have shown that personality is heritable in chimpanzees (Weiss, King, and Enns; 2002). That is, personality traits in chimpanzees are partly attributable to genetic relationships and, therefore, as in humans, include traits shared by family members.

17. *Personality is independent of raters' language.* The factor structure of chimpanzee personality was not significantly altered when ratings were made by Japanese speakers using a translation of our standard form into Japanese (Weiss et al., 2009). This finding speaks to the universality of the personality ratings of chimpanzees.

18. *Personality is independent of setting.* Two of our studies have shown that the personality factor structure of chimpanzees is largely constant across three different habitats: laboratory, zoological park and wild (King, Weiss, and Farmer, 2005; Weiss, King, and Hopkins, 2007).

19. *Personality changes over time mimic changes in humans.* Human personality differences are now almost uniformly assumed to be best described by five factors: Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness (Digman, 1996). Across multiple cultures levels of Extraversion, Neuroticism, and Openness decrease with age while levels of Conscientiousness and Agreeableness increase (McCrae, Costa, et al., 2004). We have found that this age-related mellowing effect also occurs in chimpanzees (King, Weiss, and Sisco, 2008).

20. *Personality is not an effect of rater biases.* An issue that has overhung personality ratings of nonhumans is whether raters' expectations about the correlations between items will influence their ratings. We recently published a paper (Weiss, Inoue-Murayama, and King, 2011), based on a statistical analysis showing that factors based on between-rater differences did not resemble factors based on between-animal differences. This was the most direct evidence to date that our ape personality ratings were not tainted by anthropomorphic expectations.

21. Altogether, our extensive work on personality in chimpanzees is robust, shows a very similar combination of traits to that of humans, and is subject to changes over time similar to that observed in humans.

C. Emotions – Chimpanzees can experience happiness

22. In the past, research on the psychological well-being of animals was focused on the negative pole of the well-being dimension and, therefore, negative emotional experiences. High scores were indicated by a lack of pathological or maladaptive phenomena including behaviors (King and Weiss, 2011). Our questionnaire was directed towards the high end of the well-being dimension, positive feelings, and was based on questions similar to those used for humans. We have used the term "subjective well-being" (SWB) as a stand-in for the term happiness in order to be consistent with the terminology in human personality research. For example, one item asked raters to indicate on a seven-point scale how much the target subject enjoyed interactions with other chimpanzees. We have found:

23. *SWB is reliable and stable over time.* Interrater reliabilities for SWB ratings of chimpanzees are reliable and stable over time (King and Landau, 2003; Weiss, King and Perkins, 2006).

24. *SWB is heritable.* SWB is heritable in chimpanzees (Weiss, King, and Enns, 2002).

25. *SWB is related to personality.* Chimpanzee personality has a high positive correlation with the Extraversion and a high negative correlation with Neuroticism (King and Landau, 2005). This pattern is also present in humans.

26. *SWB undergoes a midlife dip.* A well-documented phenomenon in humans is a decrease in SWB from young adulthood to middle age. After middle age SWB then increases up

to old age. We have recently shown that a similar phenomenon occurs in chimpanzees and a low point at about 30 years (Weiss, King, Inoue-Murayama, et al., 2012). This age is comparable with the low point in humans when the difference in human and chimpanzee is taken into consideration. This "midlife crisis" occurs in chimpanzees rated with English versions of the questionnaire as well as chimpanzees rated on a Japanese version.

27. *SWB predicts longevity.* A large number of human studies have shown that longevity is positively associated with SWB. Similarly, we have shown that SWB has a strong positive effect on longevity of zoo-housed orangutans (Weiss, Adams, & King, 2011). Future studies will include the very closely related chimpanzees and gorillas.

28. To summarize, just as with personality structure, chimpanzees and humans resemble each other in terms of their ability to experience happiness and the way in which it relates to individual personality.

James King

Sworn to before me
this 21 day of November, 2013

Notary Public

State of Arizona County of Pima
Subscribed and sworn before me on 11/21/13
(Date)
(Notary Signature)

CARLOTA LARSON
NOTARY PUBLIC
PIMA COUNTY, ARIZONA
MY COMM. EXPIRES 09-25-16

STATE OF NEW YORK
SUPREME COURT COUNTY OF SUFFOLK

In the Matter of a Proceeding under Article 70 of the CPLR for a Writ of Habeas Corpus, THE NONHUMAN RIGHTS PROJECT, INC., on behalf of HERCULES and LEO, Petitioners, v. SAMUEL L. STANLEY JR., M.D., as President of State University of New York at Stony Brook a/k/a Stony Brook University and STATE UNIVERSITY OF NEW YORK AT STONY BROOK a/k/a STONY BROOK UNIVERSITY, Respondents.	)	Index No.:

STATE OF ARIZONA)
) ss:
COUNTY OF MARICOPA)

1. This Certificate of Conformity is submitted pursuant to New York CPLR 2309(c) and New York Real Property Law § 299-a.

2. I am an attorney duly licensed to practice law in the State of Arizona.

3. I certify that the Affidavit of James King, signed and dated on November 21, 2013, was taken in the manner prescribed by the laws of the State of Arizona.

Dated: this 25th day of November, 2013

Stephanie Nichols-Young
Law Office of Stephanie Nichols-Young
642 N. Third Ave.
Phoenix, AZ 85003

Exhibit: A. to Affidavit of James King sworn to November 21, 2013
Curriculum Vitae (276-284)

October, 2012

CURRICULUM VITAE
James E. King

PERSONAL

Birthdate: November 16, 1937
Birthplace: Baker, Oregon

EDUCATION

University of Arizona, B.A., 1959
University of Wisconsin, M.S., 1961
University of Wisconsin, Ph.D., 1963

Dissertation: "Transfer Relationships Between Learning-set and Concept Formation in Rhesus Monkeys"

Director: Harry F. Harlow

PROFESSIONAL AND ACADEMIC HISTORY

1976-present	Professor, University of Arizona
1967-1976	Associate Professor, University of Arizona
1969-1970	PHS Special Fellowship, Yerkes Regional Primate Research
1963-1967	Assistant Professor, University of Arizona
1959-1963	Research Assistant, University of Wisconsin Primate Laboratory

GRANTS AND AWARDS

1987-1988	Principal Investigator, NASA Contract, Behavior of Rhesus Monkeys during Spaceflight
1985-1986	Principal Investigator, U.S. Army Research Institute Contract Behavioral Sources of Enkephalin Mediated Enhancement of Complex Learning in Monkeys
1978-1981	Principle Investigator, Arizona Alumni Association Research Grant. Signal Detection
1968-1978	Program Director, NIMH Training Grant. Training in Animal Behavior (MN 11286) Analysis of Radiographic Images
1969-1970	Public Health Service Special Fellowship. Award for 1 year sabbatical at Yerkes Regional Primate Research Ctr, Atlanta, GA (HD 42963)
1964-1966	Principle Investigator, NIMH Research Grant. Comparative Study of Systematically Varied Learning (MN 10246)
2002-2004	Co-Principle Investigator. Development of a health related database for

captive chimpanzees. Katharine M. Scott Foundation.

COMMITTEE MEMBERSHIP

1995-1999 Associate Editor - Journal of Comparative Psychology

COURSES RECENTLY TAUGHT

Psychology 312	Primate Behavior
Psychology 411	Animal Behavior
Psychology 412	Animal Learning
Psychology 417	Invertebrate Behavior Laboratory
Psychology 596	Seminar in Biopsychology

MASTER'S THESES DIRECTED SINCE 1970

Curtis, Willie M. - The effect of deprivation and overtraining on spatial reversal learning.
Fobes, James L. - Hypothesis behavior analysis of discrimination learning involving preferred and avoided stimuli.
Huber, Charlene B. - Snake avoidance and tool using by Capuchin monkeys.
Kendrick, Daryl R. - Effects of Dopamine (L-Dopa) on aggression in squirrel monkeys in a water competition situation.
Lentz, James L. - The application of sequential state theory to the measurement of performance on three delayed-response tasks by Capuchin monkeys.
Murray, Sarah M. - Snake avoidance in feral and laboratory reared squirrel monkeys.
Roney, Lorna. - A multivariate behavior analysis of Female-Female competition among stump-tailed macaques.
Scanlon, J. - Attention in the discrimination learning of Capuchin monkeys.
Smith, H. J. - Effect of contiguity between stimulus and reinforcer on speed of acquisition and transfer of learning set in squirrel monkeys.
Stevens, J.J. - The effects of reward and nonreward on serial discrimination learning Cebus monkeys.
Thomas, E. D. - Sequential state theory: An analysis of signal detection data yielding measurements of observer attention to relevant information.
Medelis, P. J. H. - Weigl oddity learning by Capuchin monkeys.
Neitz, R. - Sucrose preferences in young and aged Squirrel monkeys.
Landau, V. - Dominance and capital behavior in Squirrel monkeys.
Scott, A. - Effects of response bias on learning and memory tasks in squirrel monkeys.
Daly, K. – Confirmatory factor analysis of personality structure in chimpanzees and humans.
Guggenheim, C. – Personality types in chimpanzees.
Sefcek, J. - - Is the concept of psychopathology relevant to the study of chimpanzee personality?

Schneider, S. Social networks in captive chimpanzees: Pretty pictures and problematic analyses..

DISSERTATIONS DIRECTED SINCE 1970

Fobes, J. L. - A theory of signal detection based upon hypothesis analyses.
Huebner, D. K. - Intra- and intersubject behavioral sequences by differentially socialized squirrel monkeys (Samiri sciureus).
Kendrick, D. R. - Effects of differential lighting conditions on delayed response in Capuchin and squirrel monkeys.
Kirkish, P. A. - Behavioral responses to Haldol and Sinemet in squirrel monkeys.
Landau, V. - Development of fishing and food cleaning behaviors in New World Monkeys.
Lentz, J. L. - Determination of attention in short term memory of Capuchin monkeys.
Michels, R. R. - Effects of postural stability and age on behavioral laterality in squirrel monkeys.
Roney, Lorna. - The Hera strategy: Female competition in stump-tailed macaque monkeys.
Scanlon, J. L. - Attentional mediation in the sameness-difference learning of children.
partially covering string arrays on pattern sting performance of Platyrrhine monkeys.
Scott, A. - Monkeys, memories and movements; effect of aging on short term memory of squirrel monkeys.
Smith, H. J. - Social behavior of the coati (Nasua narica) in captivity.
Roney, L. – Female competition in free ranging rhesus monkeys.
Weiss, A. – Personality and environmental determinants of subjective well-being in chimpanzees.
Schneider, S. Love, hatred, and indifference in chimpanzees: Personality, subjective well-being and dyadic-level behavior in captive chimpanzees (*Pan troglodytes*).

PUBLICATIONS

King, J. E. & Harlow, H. F. (1962). Effect of ratio of trial one reward to nonreward on the discrimination learning of macaque monkeys. Journal of Comparative and Physiological Psychology, 55, 872-875.
King, J. E. (1965). Discrimination and reversal learning in the rock squirrel. Perceptual and Motor Skills, 20, 271-276.
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Smith, H. J., King, J. E., Witt, E. D., & Rickel, J. E. (1975). Sameness-difference matching from sample by chimpanzees. Bulletin of the Psychonomic Society, 6, 469-471
Witt, E. D., Smith, H. J., & King, J. E. (1975). A new chimpanzee research station. Laboratory Primate Newsletter, 14, 1-5.
Ehrlich, A., Fobes, J. L., & King, J. E. (1976). Prosimian learning capacities. Journal of Human Evolution, 5, 599-617.
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STATE OF NEW YORK
SUPREME COURT COUNTY OF SUFFOLK

In the Matter of a Proceeding under Article 70 of the CPLR for a Writ of Habeas Corpus, THE NONHUMAN RIGHTS PROJECT, INC., on behalf of HERCULES and LEO, Petitioners, v. SAMUEL L. STANLEY JR., M.D., as President of State University of New York at Stony Brook a/k/a Stony Brook University and STATE UNIVERSITY OF NEW YORK AT STONY BROOK a/k/a STONY BROOK UNIVERSITY, Respondents.	**AFFIDAVIT OF TETSURO MATSUZAWA** Index No.:

COUNTRY OF INDIA)
STATE OF MAHARASHTRA) ss:
CITY OF PUNE)

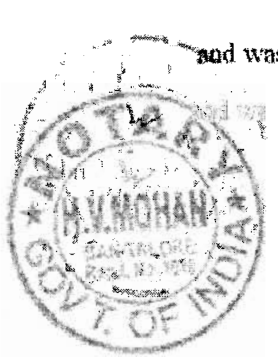
Tetsuro Matsuzawa being duly sworn, deposes and says:

Introduction and Qualifications

1. My name is Tetsuro Matsuzawa. I reside and work in Kyoto, Japan. I was awarded a Ph.D. in Science from Kyoto University in 1986.

2. I submit this affidavit in support of Petitioners The Nonhuman Rights Project, Inc. ("NhRP"), on behalf of Hercules and Leo, for a writ of habeas corpus. I am a non-party to this proceeding.

3. I am currently a Full Professor of Language and Intelligence at Kyoto University and was the Director of the Primate Research Institute of Kyoto University in 2006-2012. I am



Primatology at Kyoto University, which promotes scientific research across disciplines and collaborators.

4. I am currently President of the *International Primatological Society*. I sit on the editorial board of *The Royal Society, Philosophical Transactions B*, and am the Chair of the Scientific Program for the 2016 *International Congress of Psychology*. I am the recipient of several professional honors including the Prince Chichibu Memorial Award for Science in 1991 and the Jane Goodall Award in 2001.

5. My specialization is in chimpanzee intelligence both in the wild and in the laboratory. I have studied tool use in wild chimpanzees in West Africa (Bossou-Nimba, Guinea) since 1986 and have been Director of the on-going laboratory study of captive chimpanzees known as the "Ai-project" since 1978. The "Ai-project" focuses upon language-like skills and the understanding of numbers in a female chimpanzee named Ai, her son Ayumu and three generations of chimpanzees constituting one of the longest-running laboratory research projects on chimpanzee intelligence. This combination of field and laboratory studies provides me with a uniquely comprehensive and in-depth view of chimpanzee intelligence.

6. I have written or co-edited 4 books including: *Primate Origins of Human Cognition and Behavior* (2001, Springer), *Cognitive Development in Chimpanzees* (2006, Springer), *The Mind of the Chimpanzee: Ecological and Experimental Perspectives* (2010, University Of Chicago Press), and *The Chimpanzees of Bossou and Nimba* (2011, Springer).

7. I have published 123 peer-reviewed scientific articles on cognition, intelligence, development, and welfare of chimpanzees and other primates in the world's most prominent scientific journals: *Nature, Proceedings of the National Academy of Sciences, Journal of Comparative Psychology, International Journal of Primatology, American Journal of*

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Primatology, Current Biology, Animal Cognition, Animal Behaviour, American Journal of Physical Anthropology, among others. I have also authored and co-authored 17 book chapters. The specific topics I have researched and written about on chimpanzees include: tool-making and use, culture, memory of numerals, facial perception, caregiving, development and maturation, food sharing, handedness, gaze following, and categorization and classification of colors and objects.

8. I have given over 58 invited talks at international venues in countries such as: Austria, China, France, Germany, Korea, Italy, Japan, Mexico, Scotland, Switzerland, the United Kingdom and the United States, among others. I continue to regularly give both local and international presentations at academic conferences, wildlife conservation meetings, and other scientific venues. My Curriculum Vitae fully sets forth my educational background and experience and is annexed hereto as **"Exhibit A"**.

Basis for Opinions

9. The opinions I state in this Affidavit are based on my professional knowledge, education, training, and over 37 years of laboratory research and field work with chimpanzees, as well as my review of peer-reviewed literature about primatology published in the world's most respected journals, periodicals and books that are generally accepted as authoritative in the field of primatology, many of which were written by myself and colleagues with whom I have worked for many years and whose research and field work I am personally familiar with. A full reference list of peer-reviewed literature cited herein is annexed hereto as **"Exhibit B"**.

Opinions

10. As chimpanzees and humans share close to 99% of their DNA, their brains, too, are very similar (Semendeferi and Damasio, 2000). There are a number of shared characteristics in the brain that are relevant to such capacities as self-awareness and autonomy as well as

general intelligence. Both have larger brains than expected for their body size (Armstrong, 1985; Bauchot and Stephan, 1969; Bronson, 1981). This means they both evolved to possess above-average mental abilities compared with other species of the same body size. Both share similar circuits in the brain which are involved in language and communication (Gannon, Holloway, Broadfield, and Braun, 1997; Taglialatela, Russell, Schaeffer, Hopkins, 2008; and see below). Both have evolved large frontal lobes of the brain, which are intimately involved in the capacities for insight and foreplanning (Semendeferi and Damasio, 2000). Both share a number of highly specific cell types which are thought to be involved in higher-order thinking (see below) and chimpanzee and human brains also share a number of important functional characteristics related to sense of self. Finally, both human and chimpanzee brains are similar in terms of how the brain develops and matures, indicating that chimpanzees and humans go through similar cognitive developmental stages.

11. Developmental delay (a long protracted period of brain development over many years) is a key feature of human brain evolution and is thought to play a role in the emergence of complex cognitive abilities, such as self-awareness, creativity, foreplanning, working memory, decision making and social interaction. Delayed development of the brain, and specifically the prefrontal cortex, provides a longer period in which this part of the brain may be shaped by experience and learning (Furster, 2002; Goldberg, 2002). Likewise, chimpanzee brains exhibit a very similar level of developmental delay in the prefrontal cortex, leading to the neuroanatomical basis for such high-level capacities as self-awareness, forethought, decision-making, and working memory in chimpanzees (Sakai et al., 2011; 2010). Consistent with these similar functions in humans and chimpanzees, chimpanzee infants share some common mental features and patterns with human infants (Matsuzawa, 2007). These features include the ways in which

mothers and infants interact and use social smiling and mutual gaze (looking into each other's eyes) as ways of strengthening their bond (Tomonaga et al., 2004) as well as how and when they first start to manipulate objects, which is related to their shared capacity for tool-making and use.

12. One of the hallmarks of sophisticated communication and even language-like capacities is brain asymmetry. In humans the left and right parts of the brain have different shapes which are related to language capacities. Furthermore, these brain asymmetries are correlated with handedness. That is, most humans are right-handed and process language in the left hemisphere. This is referred to as a "population-level right-handedness." Studies of the anatomy of the brain reveal that chimpanzees possess very similar patterns of asymmetry (Cantalupo and Hopkins, 2001; Dadda, Cantalupo and Hopkins, 2006; Gannon, Holloway, Broadfield and Braun, 1997). Furthermore, chimpanzees exhibit population-level right-handedness in captivity (Hopkins et al., 2010) as well as in patterns of tool use in the wild (Humle and Matsuzawa, 2009). These overall findings point to a key similarity in the way chimpanzee and human brains are structured, particularly in ways that are relevant to language and communication.

13. Language is a volitional process in humans that involves creating intentional sounds for the purpose of communication, and is, therefore, a reflection of autonomous thinking and behavior. Findings regarding functional aspects of the chimpanzee brain demonstrate volitional control over their vocalizations as well. Certain sounds are produced by chimpanzees selectively to capture the attention of an inattentive audience (Hopkins et al., 2007). These sounds are produced almost exclusively in the presence of an audience and are, therefore, under volitional control as they serve the purpose of informing others about the presence of various items, such as food or a play object or tool. Not only do chimpanzees create purposeful

NOTARY H.V.MOHAN BANGALORE Regd No. [illegible] GOVT. OF INDIA vocalizations, like humans, their brain responds differently to their own name than other sounds. In a study of brain wave patterns, one captive chimpanzee, 'Mizuki', showed specific brain wave responses to the sound of her own name, suggesting that this response might signify self-relevance in chimpanzees as for humans. Her name may have evoked a specific memory, emotion or mental representation (Ueno et al., 2009).

14. Further evidence for the similarity between human and chimpanzee brains comes from the finding that they both possess a specialized type of cell – known as a spindle cell (or von Economo neuron) – in the same area of the brain. This area, known as the anterior cingulate cortex is involved in emotional learning, the processing of complex social information, decision-making, awareness, and, in humans, speech initiation. Therefore, the presence of spindle cells in both chimpanzees (and other great apes) and humans strongly suggest they share a number of these higher-order brain functions (Allman et al., 2011; Hayashi et al., 2001).

15. The concept of self is an integral part of being able to have goals and desires, intentionally act towards those goals, and the ability to understand whether they are satisfied or not. There is abundant and robust evidence that chimpanzee possess a sense of self, as they have repeatedly demonstrated the ability to recognize themselves in mirrors (Gallup, 1970; Povinelli et al., 1993) and show a number of capacities which stem from being self-aware, such as metacognition, that is, the ability to think about and reflect upon one's own thoughts and memories (Beran et al., 2013; Call, 2010; Call and Carpenter, 2001). For instance, when given a task in which the identity of a food item is a critical piece of information needed to obtain a reward, chimpanzees, like humans, first check a container they are unfamiliar with before making their choice. They show efficient information-seeking behavior that strongly suggests they are aware of what they know and do not know (Beran et al., 2013). They, like human

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children, also know when they have enough visual information to complete a task (Call and Carpenter, 2001), and, also know that they could be wrong about the information they have and, again like human children, will check if they are uncertain (Call, 2010). All of these abilities are related to self-monitoring and self-reflection in chimpanzees as in humans.

16. The ability to distinguish actions and effects caused by oneself from events occurring in the external environment is called "self-agency" and is a fundamental component of autonomy and purposeful behavior. Chimpanzees are able to distinguish between movement of an object, e.g., a computer cursor, controlled by themselves and motion caused by someone else. These and many other similar findings demonstrate that chimpanzees and humans share the fundamental cognitive processes underlying the sense of being an independent agent (Kaneko and Tomonaga, 2011).

17. Not only do chimpanzees reflect upon their own thoughts and states of knowledge but they understand the mind's and experience of others. For instance, chimpanzees cannot only imitate the actions of others but anticipate the intentions of others when watching a human or another chimpanzee try to complete a task (Myowa-Yamakoshi and Matsuzawa, 2000). Chimpanzees know what others can and cannot see (Hare et al., 2000, 2001). Chimpanzees know when another's behavior is accidental or intentional (Call and Tomasello, 1998: Call et al., 2004). And chimpanzees use their knowledge of others' perceptions tactically to deceive another chimpanzee and obtain hidden food (de Waal, 2005; Hirata and Matsuzawa, 2001). In situations where two chimpanzees are in competition for hidden food they show a number of strategies and counter-strategies to throw each other "off the trail" and obtain the food for themselves (Hirata and Matsuzawa, 2001). This kind of complexity in understanding others' minds is key evidence of being aware of one's own mind and that of others, as chimpanzees clearly are.

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18. Finally, chimpanzees who were shown videos of other chimpanzees yawning or just showing open-mouth facial expressions that were not yawns, showed higher levels of yawning in response to the yawn videos but not to the open-mouth displays but not the other (Anderson et al., 2004). These findings are very similar to contagious yawning effects observed in humans, and are thought to be based on the capacity for empathy, the ability to put oneself in another's situation. Contagious yawning in chimpanzees provides even further evidence that they possess very complex levels of self-awareness and empathic abilities.

19. Numerosity, the ability to understand numbers as a sequence of quantities, requires not only sophisticated working memory (in order to keep numbers in mind) but also a conceptual understanding of a sequence, which is closely related to mental time travel (thinking about something in the future) and planning out the right sequence of steps towards a goal, two critical components of autonomy. Not only do chimpanzees excel at understanding sequences of numbers but they understand that Arabic symbols ("2", "5", etc.) represent discrete quantities, outperforming humans in some of these tasks (see below).

Sequential learning can be defined as the ability to encode and represent the order of discrete items occurring in a sequence (Conway and Christiansen, 2001). Sequential learning is critical for human speech and language processing, the learning of action sequences, or any task that requires putting items into an ordered sequence. Chimpanzees can count or sum up arrays of real objects or Arabic numerals (Beran et al., 1998; Beran and Rumbaugh, 2001; Boysen and Bernston, 1989; Rumbaugh et al., 1987) and display the concepts of ordinality and transitivity (the logic that if A = B and B = C, then A = C) when engaged in numerical tasks, demonstrating a real understanding of the ordinal nature of numbers (Boysen, Berntson, Shreyer, and Quigley, 1993). Chimpanzees also understand proportions (e.g., 1/2, 3/4, etc.) (Woodruff and Premack, 1981). Chimpanzees are able to learn to name (using a symbol-based computer keyboard) the number, color and type of object shown on the screen (Matsuzawa, 1985). They can use a computer touch screen to count from 0 to 9 in sequence (Inoue and Matsuzawa, 2007; Kawai and Matsuzawa, 2000; Tomonaga and Matsuzawa, 2000). Moreover, they have an understanding of the concept of zero, using it appropriately in ordinal context (Biro and Matsuzawa, 2001). Moreover, chimpanzees display indicating acts" (pointing, touching, rearranging) similar to what human children display when counting up a sum. So just as human children touch each item when counting an array of items, chimpanzees do the same thing, suggesting further similarity in the way numbers and sequences are conceptualized in chimpanzees and humans (Boysen, Bernston, Shreyer, and Hannan, 1995).

20. Not only do chimpanzees understand numbers and sequences, but their working memory of numbers is superior to that of adult humans. Working memory (or, short-term memory) is the ability to temporarily store, manipulate and recall items (numbers, objects, names, etc.). In other words, working memory has to do with how good someone is at keeping several items in mind at the same time. Working memory tasks require monitoring (i.e., manipulation of information or behaviors) as part of completing goal-directed actions in the setting of interfering processes and distractions. The cognitive processes needed to achieve this include attention and executive control (reasoning, planning and execution). Chimpanzees were shown the numerals 1-9 spread randomly across a computer screen. The numbers appeared for a very limited duration (210, 430a and 650 milliseconds and then were replaced by white squares, which had to be touched in the correct order (1-9). To complicate matters, in another version of the task, as soon as the chimpanzees touched the number 1, the remaining either were immediately masked by white squares. In order to successfully complete the task they had to

NOTARY H.V.MOHAN BANGALORE GOVT OF INDIA the task. as soon as the chimpanzees touched the number 1, the remaining either were immediately masked by white squares. In order to successfully complete the task they had to remember the location of each concealed number and touch them in the correct order. The performance of a number of the chimpanzees on these seemingly impossible memory tasks was not only accurate but much better than that of human adults, who could not even complete most of the versions of the task (Inoue and Matsuzawa, 2007). Therefore, the chimpanzees have an extraordinary working memory capability for numerical recollection better than that of adult humans, which underlies a number of mental skills related to mental representation, attention, and sequencing.

Tetsuro Matsuzawa

Sworn to before me
this 23 day of November, 2013

23 NOV 2013

Notary Public

SWORN TO BEFORE ME
H.V. MOHAN, B.A., LL.B.,
NOTARY PUBLIC, GOVT. OF INDIA
23-11-13.

NOTARY H.V. MOHAN GOVT. OF INDIA

SL. No. 266
Page No. 38
Book No. 32
Date 23/11/13

GOVT OF KARNATAKA HAS DISCONTINUED THE USE OF STAMP W.E.F 1.4.2003

MY COMMISSION EXPIRES ON 22.10.2015

Curriculum Vitae

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1969: Entered Kyoto University (Philosophy major)
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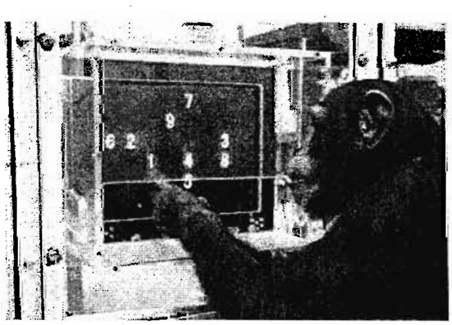
1976-present: Primate Research Institute of Kyoto University
(1976: Assistant professor, 1987: Associate professor, 1993: full professor, 2006-2012: Director)
Major: Primatology, Psychology, especially establishing "Comparative Cognitive Science"

Research Summary
Matsuzawa has been studying chimpanzee intelligence both in the laboratory and in the wild. The laboratory work is known as "Ai-project" since 1976. He has also been studying the tool use in the wild chimpanzees at Bossou-Nimba, Guinea, West Africa, since 1986. Matsuzawa tries to synthesize the field and the lab work to understand the nature of chimpanzees. He published journal papers and also the books such as "Primate origins of human cognition and behavior", "Cognitive development in chimpanzees", "The chimpanzees of Bossou and Nimba". He also published several popular books to the public too, that have been translated into Chinese and Korean. He got several prizes including Prince Chichibu Memorial Award for Science in 1991, Jane Goodall Award in 2001, and The Medal with Purple Ribbon in 2004.

Please see the web site: http://www.pri.kyoto-u.ac.jp/ai/



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***Invited talks* (2004-2013)**

2013

1) Conakry University, Jan 4, Conakry, Guinea
2) AAAS, Feb 15, Boston, USA
3) Malaysia Science University, Department of Biology, March 5, Penang, Malaysia

4) Malaysia Science University, Department of Education, March 6, Penang, Malaysia
5) Kunming University of Science and Techonology, March 24, Kunming, Yunnan, China
6) Kunming Institute of Zoology, March 25, Kunming, Yunnan, China
7) Southwest Forestry University, Kunming, Yunnan, China
8) Yunnan University of Finance and Economics, March 26, Kunming, Yunnan, China
9) Royal University of Bhutan, May, May 5, Thimpu, Bhutan
10) Archives Jean Piaget, University of Geneve, May 14, Geneve, Switzerland
11) University of Neuchatel, May 15, Neuchatel, Switzerland
12) University of St Andrews, May 20, St Andrews, Scotland, UK

2012
1) American Psychological Association, Aug 2, Florida, USA
2) International Primatological Society, Aug 15, Cancun, Mexico
3) President plenary, International Primatological Society, Aug 16, Cancun, Mexico
4) University Autonoma Metropolitana-Iztapalapa, Aug 20, Mexico City, Mexico
5) Ecole Normale Superieure, Nov 5, Paris, France
6) Le Muséum national d'Histoire naturelle, Nov 8, Paris, France
7) International Institute of Advanced Studies, Dec 8, Tokyo, Japan

2011
1) Malaysia Science University, Department of Biology, Feb 17, Penang, Malaysia
2) Boreneo Rainforest Lodge, Malaysia-Sabah University, March 26, Danum Valley, Malaysia
3) Harvard University Dept of Psychology and Dept of Anthropology, April 27, Boston, USA
4) New York Consortium for Primatology, April 28, New York, USA
5) New York City University, April 29, New York, USA
6) University of Pennsylvania, Department of Psychology, May 2, Philadelphia, PA, USA
7) UCL, Institute of Child Health, May 17, London, UK
8) Cambridge University, Department of Anthropology and Archaeology, May 18, Cambridge, UK
9) Tamagawa-CALTEC joint symposium on Neuroscience, June 7, Kyoto, Japan
10) Association for the Scientific Study of Consciousness (ASSC15), June 12, Kyoto, Japan
11) Nairobi Workshop on Lithic Techonology, Nairobi National Museum, Aug 6, Nairobi, Kenya
12) Wellcome Trust School on Biology of Social Cognition, Cambridge, UK
13) Ecole Normale Superieure, Paris, France

2010
1) i-Brain symposium, University of Ghent, March 6, Brussels, Belgium
2) Seoul National Zoo, April 28, Seoul, Korea
3) Ewha Womans University, April 29, Seoul, Korea
4) UCL, Birkbeck and Institute of Cognitive Neuroscience, May 18, London, UK
5) Cold Spring Harbor Laboratory School on Biology of Social Cognition, July 15, CSHL, NY,

USA

6) International Society for the Study of Behavioral Development (ISSBD), July 21, Lusaka, Zambia

7) International Primatological Society, September 13, Kyoto, Japan

2009

1) Chimpanzee mind: a combining effort of fieldwork and laboratory work. 2009 AAAS Annual Meeting. February 12-16, Chicago, USA.

2) ESF-JSPS Frontier Science Conference Series for Young Researchers. February 28, Napoli, Italy.

3) Chimpanzee Mind. The Primate Mind, The "Ettor Majorana" symposium, June 4-7, Erice, Italy.

2008

1) Chimpanzee mind: a combining effort of fieldwork and laboratory work. Decade of the Mind3. May 7, Des Moines, USA.

2) Comparative cognitive science: trade-off theory of memory and symbolization in humans and chimpanzees. ASSC 12th Annual Meeting. June 21, Taipei, Taiwan.

3) Chimpanzee mind: evolution of human mind viewed from panthropology. XXIX International Congress of Psychology. July 24, Berlin, Germany.

4) Trade-off theory of memory and symbolization in humans and chimpanzees. International primatological society XXII. August 5, Edinburgh, UK.

2007

1) The history of the understanding chimpanzees conference series. The Mind of the Chimpanzee: An International Multidisciplinary Conference on Chimpanzee Cognition. March 22-25, Chicago, USA.

2) Cognitive development in chimpanzees: A synthesis of field and lab study. Comparative Cognition in Context Group. March 29, Toronto, Canada.

2006

1) Numerical processing in chimpanzees. The 24th European Workshop on Cognitive Neuropsychology. January 22-27, Bressanone, Italy

2) Green corridor: An attempt at saving chimpanzees in Bossou and Nimba. The Symbol of Collaboration between Guinea and Japan: Bossou 30 ans. November 27-29, Conakry, Guinea

2005

1) Animal behavior about number processing. NUMBRA/ESCOP Summer School "Neuroscience of number processing". July 3-10, Erice, Italy.

2) How do animals think? European Forum Alpbach. August 18-25, Alpbach, Austria.

2004

1) On HOPE project. The signing ceremony of JSPS and MPG. February 12, Munich, Germany.

2) Prerequisites of cultural transmission in chimpanzees. 21COE International Symposium on African Great Apes: Evolution, Diversity, and Conservation. March 4, Kyoto, Japan.

3) HOPE: A project of KUPRI and MPIEVA 2004-2009. First International Workshop of HOPE. March 6, Kyoto, Japan.

4) The mind of the chimpanzee: In the wild and in captivity. ROH Public Symposium on "Sequencing the Chimpanzee Genome: What Have We Learned?" March12, La Jolla, CA, USA.

5) Cognition and personality in chimpanzees. ROH Expert Meeting on "Sequencing the Chimpanzee Genome: What Have We Learned?" March 13, La Jolla, USA.

6) Conservation of wild chimpanzees in West Africa. The 1st Meeting of the Section on Great Apes of the IUCN/SSC Primate Specialist Group. 17-19 April, Chicago, USA.

EXHIBIT B

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Exhibit: J. to Verified Petition dated December 2, 2013
Certificate of Conformity and Affidavit of William C. McGrew
sworn to November 21, 2013 (315-328)

CDN CONSULAR SERVICES
CDN REFERENCE
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Certificate of Conformity

I, Peter Coleman Fletcher of Cambridge, England, Notary Public duly authorised admitted and sworn, and practising within the United Kingdom and Northern Ireland do herby certify and affirm under penalty of perjury that I witnessed the signature of Professor William C. McGrew as applied to the Affidavit attached to this Certificate, which was signed and dated on 21st November 2013.

I confirm that the manner in which the Certificate was signed was, and is, in accordance with, and conforms to, the Laws for taking oaths and acknowledgements in England.

Peter Coleman Fletcher

Notary Public
21/11/13

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(Convention de La Haye du 5 octobre 1961)

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This public document Le présent acte public / El presente documento público	
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Certified
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5. at á / en London	**6. the** le / el día 22 November 2013
7. by par / por	Her Majesty's Principal Secretary of State for Foreign and Commonwealth Affairs
8. Number sous no / bajo el número	J856268
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