

C. TRANSPORTATION: Transportation of animals must conform to all NIH and Facility guidelines/policies. If animals will be transported between facilities, describe the methods and containment to be utilized. If animals will be transported within the Clinical Center, also include the route and elevator(s) to be utilized.

Monkeys will occasionally be moved between Buildings [REDACTED] They will be transported in standard primate carrying cages using the climate-controlled NICH Shared Facilities van.

D. STUDY OBJECTIVES: Provide no more than a 300 word summary of the objectives of this work. Why is this work important/interesting How might this work benefit humans and/or animals? This should be written so that a non-scientist can easily understand it. Please eliminate or minimize abbreviations, technical terms, and jargon. Where they are necessary, they should be defined.

The overall aim of this proposed ASP renewal is to characterize how both genetic and environmental factors contribute to individual differences among rhesus monkeys in their behavioral and biological reactivity to environmental novelty and challenge throughout development. There are dramatic individual differences in how rhesus monkey infants respond to environmental novelty and challenge: while the majority (like most human infants and children) display behavioral interest and at most modest physiological arousal, some monkeys appear to be unusually fearful and withdrawn, whereas others display impulsive and aggressive reactions. The biological patterns that characterize excessive fearfulness (e.g. increased output of stress hormones) and extreme aggressiveness (e.g. impaired serotonergic function) in rhesus monkeys mirror those seen in highly fearful and aggressive children. Such differences among rhesus monkeys (a) are highly heritable, appear early in life, and typically remain relatively stable throughout development; (b) can nevertheless be modified substantially via certain early social experiences; and (c) are associated with differential risk for developing anxiety- and depressive- like disorders (for high reactive monkeys) and extreme aggressiveness (for unusually impulsive young monkeys) later in life. The proposed ASP renewal involves further development of this monkey model, with the overall objectives of enhancing our understanding of how genetic and environmental factors act and interact to shape individual differences in reactivity throughout ontogeny, as well as developing interventions that can alter developmental trajectories of individuals whose specific genetic and experiential background put them at risk for adverse developmental outcomes.

E. RATIONALE FOR ANIMAL USE: 1) Explain your rationale for animal use. 2) Justify the appropriateness of the species selected . 3) Justify the number of animals to be used. (Use additional sheets if necessary)

1. Rationale of animal use.

There is widespread current research, clinical, and even societal interest in understanding the origins, developmental course, and long-term consequences of individual differences in biobehavioral reactivity and impulsive aggressiveness. However, empirical studies of these phenomena in human infants and children face formidable ethical and practical obstacles. Investigations of gene-environment interactions in humans are appropriately limited by ethical restrictions on selective breeding and experimental control of rearing environments. Similarly, ethical and practical restrictions limit the nature and frequency of behavioral and physiological data that can be routinely collected from non-clinical samples of infants and children, especially in naturalistic settings. Finally, the relatively slow rate of maturation in humans renders many potentially important lifespan longitudinal and cross-generational studies highly impractical, if not impossible. Thus, the use of relevant animal models is highly appropriate for this area of research.

2. Justification of appropriateness of the species selected.

Although numerous mammalian and non-mammalian species display clear-cut individual differences in response to environmental challenges, nonhuman primates provide the most compelling models of human phenomena in terms of (a) magnitude of genetic overlap, (b) homology of relevant physiological systems, (c) similarity of behavioral responses to both social and nonsocial environmental stressors, and (d) highly parallel patterns and sequences of social and emotional developmental processes. Among the nonhuman primates, rhesus monkeys (*Macaca mulatta*) are arguably the most preferred species because there already exists an extensive empirical background regarding biobehavioral responses to environmental challenges across a wide range of laboratory and field settings. The complete genome for rhesus monkeys has been sequenced, facilitating studies of GxE interactions. No comparable data base exists for any other nonhuman primate species. **Moreover, the LCE possesses a unique colony of rhesus monkeys, including appropriate breeders, for whom genetic pedigrees (including specific genetic polymorphisms) and characteristic responses to environmental challenge have already been established.** It would take years, if not decades, to establish a comparable pool of subjects in another nonhuman primate species.

3. Justification of the number of animals to be used.

-see additional sheets

F. DESCRIPTION OF EXPERIMENTAL DESIGN AND ANIMAL PROCEDURES:

Briefly explain the experimental design and specify all animal procedures. This description should allow the ACUC to understand the experimental course of an animal from its entry into the experiment to the endpoint of the study. Specifically address the following: (Use additional sheets if necessary.)

- **Injections or Inoculations** (substances, e.g., infectious agents, adjuvants, etc.; dose, sites, volume, route and schedules)
- **Blood Withdrawals** (volume, frequency, withdrawal sites and methodology)
- **Minor surgical procedures** (that do not invade a body cavity)
- **Non-Survival Surgical Procedures** (Provide details of major survival surgical procedures in Section G.)
- **Radiation** (dosage and schedule)
- **Methods of restraint** (e.g., restraint chairs, collars, vests, harnesses, slings, etc.)
- **Animal Identification Methods** (e.g., ear tags, tattoos, collar, cage card, etc.)
- **Other Procedures** (e.g., survival studies, tail biopsies, etc.)
- **Potentially Painful or Distressful Effects**, if any, the animals are expected to experience (e.g., pain or distress, ascites production, etc.) For Column E studies provide: 1) a description of the procedure(s) producing pain and/or distress; 2) scientific justification why pain and/or distress can not be relieved.
- **Experimental Endpoint Criteria** (i.e., tumor size, percentage body weight gain or loss, inability to eat or drink, behavioral abnormalities, clinical symptomatology, or signs of toxicity) must be specified when the administration of tumor cells, biologics, infectious agents, radiation or toxic chemicals are expected to cause significant symptomatology or are potentially lethal. List the criteria to be used to determine when euthanasia is to be performed. Death as an endpoint must always be scientifically justified.

This study protocol involves both cross-sectional and longitudinal research elements. For example, our research into individual differences of macaques' biobehavioral reactivity assesses social and emotional developmental processes during the infant stage of development and how they are affected by environmental factors (mother vs. nursery rearing). As these assessments are mostly based on behavioral data (which is characterized by large individual differences and therefore 'noisy' compared to other types of data), a large number of subjects is required before statistically meaningful analyses can be performed. For these purposes, we propose to collect data from several infant cohorts. On the other hand, we are also interested in tracking certain individuals longitudinally to determine how genetic and environmental factors contribute to biobehavioral reactivity as monkeys transition to adulthood, their developmental stability, and how such traits may be transmitted across multiple generations. For these purposes, certain individuals are retained in the colony and data are collected for several years on these individuals.

For purposes of research planning and colony management, pregnancy status of our breeding females will be determined either by ultrasound testing or rectal palpation. For both procedures, chemical restraint of females will be used (see below for chemical restraint procedures). Ultrasounds will be performed by veterinary staff according to established methods; palpations will be carried out by trained research staff. When possible, both palpations and ultrasounds will be scheduled to coincide with standard animal health examinations so that animals stress and chemical restraint frequency are minimized. Results of these procedures are entered in databases maintained by veterinary staff (who also adds results to animal records) and research staff.

Occasionally, it becomes medically necessary to deliver infants via Caesarian section in order to save the mother's and/or infant's life. Following a C-section, mothers generally reject their infants. When the desired research goal is for the mother to rear her infant, we will perform the following procedures to reunite infants with their mothers after cesarean delivery. In accordance with the established facility SOP on Reunions, the mothers will be manipulated using operant training techniques to accept their infants. The process starts as soon as the mother has finished surgery and the veterinarian has deemed the mother and infant fit enough to withstand the rigors of the reunion procedure. The basic process involves placing the infant on the mother's ventrum until she learns to accept the infant as her own. When the mother allows the infant to be on her, she is given a food reward and then left alone. The food reward serves as a positive reinforcer of the behavior we want to shape (holding and caring for the infant) while leaving her alone serves to further strengthen this behavior through negative reinforcement. The experimenter's presence is generally stressful so that, being left alone is very positive and therefore highly rewarding. Utilizing these positive and negative reinforcement techniques significantly increase the probability of the mother learning to accept her infant. When the mother starts accepting and caring for her infant, the procedure calls for less and less frequent checks on the mother-infant pair until the reunion can be declared successful and mother and infant are reunited with their social group. Given the potential risks of this procedure (manipulating an awake adult female) we adhere to strict safety procedures: 2 staff members are always present during manipulation of the mother and chain mail catch gloves are worn over regular PPE when reaching into the cage to put the infant on the mother.

1. Neonatal Nursery procedures (Peer-only and Surrogate-Peer rearing):

Approximately half of the infants born into the study each year will be reared in the neonatal nursery in Building [redacted] according to the following procedures. After separation from the mother within 3 days after birth (usually within 12 hours) and initial processing upon arrival in the nursery, each newborn infant is given a cloth-covered (may have a cloth pouch) surrogate and

placed in individual temperature-regulated incubator with several blankets and small plastic/rubber toys. Each infant is hand-fed every 2 hours (from 8am to 8pm) until it can self-feed (usually within 4 days); thereafter for the first 30 days of life the bottle is checked every 2 hours, consumption noted, and replenished. Each nursery-reared infant's activity state is recorded just prior to bottle check using a rating scale developed by Prechtl for human infants, and weight and temperature are checked and noted daily.

Colostrum samples will be collected from mothers whose infants are to be nursery reared (NR). Upon separation of the infant from the mother, the mother will be placed in a single holding cage in Building [REDACTED]. After remaining here for 2.5 hours to allow for appropriate accumulation of colostrum, the mother will be lightly sedated with ketamine and colostrum will be collected while she is sedated. We will follow published procedures developed and validated by our collaborator, ^{Secondary personnel.} [REDACTED], for the collection of colostrum. Briefly, the mother's chest hair will be shaved around the nipples; nipples will be cleaned with alcohol-soaked gauze; the mother will be given an injection of oxytocin (0.1mU/kg) to cause immediate milk letdown; and milk will be collected into 15ml collection tubes by "stripping" the nipple with the thumb and index finger (combined with gentle squeezing). We will frequently transition back and forth between the left and right nipples, and will stop milk collection when the mammary gland is fully evacuated (i.e., when the stream of milk stops and 3 single droplets are expressed from both nipples). Immediately after colostrum collection, the mother will be allowed to recover in a recovery cart. Once she is fully alert she will be returned to her social group.

We will continue to assess the imitative capabilities of nursery-reared monkeys during their initial days and weeks of life. Research carried out over the past 30 years has demonstrated that most human newborns are capable of reproducing simple facial muscle movements, e.g. lip protrusion, mouth openings, and tongue protrusions, when such facial expressions are directed toward them by their mothers or other caregivers within 24h after birth. We have developed a procedure to assess this imitative capacity in all our nursery-reared infants on days 1, 3, 5, and 7 (or within one day of these dates). We remove each infant from its incubator, swaddle it, and bring it to one of the nursery procedure rooms of Building [REDACTED] (Room [REDACTED]). One experimenter will hold the infant, while a second experimenter will present facial gestures (e.g. lipsmacking, tongue protrusion), hand gestures (e.g. grasp, reach) or control object movements (e.g. rotation of a colored plastic disk) to the infant. Testing will last up to 5 minutes, after which the infant will be returned to its incubator; there are up to 3 test sessions a day. Each imitation session is videotaped for subsequent behavioral analyses.

We will also continue to collect EEG recordings during the imitation task maximal twice between ages 3-5 days and maximal twice between ages 10-12 days. This allows us to track any potential changes in EEG signal due to infant maturation. To collect EEG, we will shave the hair off the infant's head and place a specially-designed cap on the infant's head. The cap is affixed with a total of 8 electrodes, and is similar in design and electrode placement to one utilized in human infant studies. This procedure is non-invasive and has been demonstrated to present minimal discomfort for the animal to the point that ongoing behaviors (imitative and non-imitative) are not disrupted. EEG is recorded while an experimenter presents facial gestures, hand movements, or control object movements to the infant. The cap is removed at the end of the test session, the infant's head is gently cleaned, and infants are returned to the incubator.

Between 20-30 days old, infants will be tested in an imitation recognition test. An experimenter will sit in front of the infant's home cage and imitate infants' lipsmacking and tongue protrusion gestures for up to 5 minutes. Infants' reactions will be videotaped and analyzed offline.

We will also mimic social bonding with nursery-reared infants in order to investigate the functional significance of face-to-face interactions in primate infants. All nursery infants are bottle-fed, and bottles are checked and re-filled every 2h between 8am and 8pm for the first 30 days of life. We propose that during these bottle-checks, research personnel will either simply hold select infants, or direct facial gestures (lipsmacking or tongue protrusions) at select infants for approx. 5 minutes. These interactions will be done for a maximum of 4x times per day for the first 30 days of life with the number of interactions per day decreasing as infants get older. Personnel will hold the infants in their arms in the usual feeding manner, approx. 12 inches from their faces. As the purpose is to create a bond with infants through face-to-face interactions, if infants struggle or show signs of distress, we will stop any attempt at face-to-face interactions, return infants to cages, and attempt another intervention at another feeding time.

A second study aimed at mimicking social bonding will take place when infants are 21-28 day old. Infants will be taken to a test room during which time they will be held by an experimenter who will collect the first (baseline) saliva sample (#1) for oxytocin measurement, which takes about 5-10 min to collect. After this collection, the experimenter will engage in a 20 min videotaped interaction with the infants, which will consist of 5 min bouts of facial imitation, alternating with 5 min bouts of gentle touch (experimenter "grooming" infant). Immediately following this interaction, a second saliva sample will be collected (#2). After that, the infant will be returned to his/her home cage for 15 min. Then a final saliva sample will be collected (#3).

These procedures (imitation, EEG, imitation recognition, social bonding) involve minimal disruption or distress for the infants inasmuch as all rhesus monkey infants reared in the neonatal nursery are similarly removed from their home cage, swaddled, and handled by nursery staff several times a day as part of the existing nursery caretaking and SOPs. The one major departure from these existing SOPs is that the experimenter does not wear a mask during these procedures (imitation, EEG, imitation recognition, social bonding), although he/she continues to wear eye protection. We have previously discussed this departure from SOP with both the facility veterinarian and the institute veterinarian, and both agree that it involves minimal risk to the experimenter given that all infants are offspring of females in the LCE colony who have tested B virus negative for the past 9 years. Moreover in the last 10 years in which we have used this procedure, not a single exposure incident has occurred during the testing procedure.

At 14 days of age the infant is moved out of the incubator into a larger cage with its surrogate and blankets. To habituate infants to solid food, monkey chow is also placed in their home cage. Infants will receive milk formula until 4 months old, at which point they will start to be weaned off the milk formula, and stop receiving milk formula at 6 months old.

On days 14 and 30, each infant is given a standardized battery of tests designed to assess neonatal temperamental, interactive, and motor functioning; the test battery was derived from the Brazelton Neonatal Assessment Scale and modified for rhesus monkeys (Schneider and Suomi, 1992). After the assessment, an eye tracking task performed followed by chemical restraint and a sample of cerebrospinal fluid (CSF) is removed from the cistern magnum; a blood sample is also taken (see below for chemical restraint, blood and CSF sampling procedures). While infants are restrained, we will also collect anthropometric data by measuring infants (e.g. crown-rump, ulnar, femur, and finger length; neck, chest, abdominal, and bicep circumference; scapular and abdominal skinfold thickness; etc.). These measurements will allow us to directly assess infant physical throughout development.

Between 20-30 days old, infants will be tested in a ball grasp task. An experimenter will hold each infant, and a brightly colored ball will be positioned at various distances from the infants. A video camera will tape all reaching attempts and accuracy of reaching attempts towards the ball.

We will also examine the effects of oxytocin administration on infant macaque monkeys' social perception, specifically social interest, memory for social events, affiliation, and communication with a human experimenter. We will deliver 25 international units per infant (125 ml @ 20 IU/ml; Bimeda-MTC Animal Health, Inc) of oxytocin, or 1.25 ml of a 9% NaCl solution, via nebulizing it into the nose and mouth continuously for 5 min (5IU/min). Infants will be cradled in the arms of a trained experimenter, and a small nebulization mask will be gently held over the nose and mouth. Two treatments will be administered between days 25 and 40. On one day, we will administer either oxytocin or saline (NaCl solution), and on a second day the other treatment will be given. One to two hours after treatment, animals will participate in an eye tracking task and a social memory task. We will collect saliva samples on infants while they are awake in order to non-invasively assess their oxytocin and cortisol levels. Saliva samples will be collected 1-2 hours after treatment by giving the infants a flavored dental cotton rope to chew. Once saturated, the ropes will be collected from the infants, and processed for storage.

At 40-60 days old, we will conduct a working memory assessment. Infants will be removed from their home cages, and held by a trained experimenter. A second experimenter will present interesting social and non-social objects (e.g. toys, human face) at one of three locations from behind a screen, then re-direct the infant's attention to the middle of the screen. The direction of the first look following the look at the central location is taken as a measure. A video camera placed centrally will record all behavior for later analysis. We propose to conduct up to 20 trials per session, 2 sessions per infant (on separate days), and each session should take no more than 10 minutes. Upon completion infants will be returned to the home cage.

At ages 27-45 days, 2.5-4 months of age, and 5-7 months of age, we will further expose infants to novel persons and novel objects in order to measure fear responses. The first assessment, which we refer to as the "stranger test," involves having either a familiar person or a stranger (a researcher or caretaker with whom the monkeys are relatively unfamiliar) stand or sit in front of the infant's cage to be at eye-level with the infant, approximately 2.5 feet from the front of the cage (an arm's reach away). This human model will not wear a face mask over his/her mouth, but he/she will wear protective eyewear and other PPE (hair cover, scrubs, gloves, shoe covers), just as we do for the neonatal imitation and other assessments in the first month of life. The human model will make eye contact with the infant, and will keep a record of the frequencies with which the infant makes eye-contact for a total of 4 minutes. The infant will be videotaped for the duration of the test. The first 2 minutes the human model will simply make eye contact with the infant, and in the last 2 minutes the model will additionally place his/her non-dominant (non-writing) hand on the feeder box outside of the infant's cage. For the novel object test, a novel toy will be placed in the infant's cage for 5 minutes, and interactions will be videotaped for later analysis. At later ages, infants may be tested in a specific test cage rather in their home cage.

Cognitive, motor, and behavioral testing will begin at 4 months old and continue until infants are weaned (6-8 months old). Surrogate-peer reared infants will be tested in their home cage; peer-reared infants will be acclimated to being temporarily separated from their peers in their 4 bank home cages for the duration of testing, up to 30 minutes. A standardized battery of behavioral tests will be performed, which measure infants' ability to locate and grasp objects in plain view, partially hidden, or completely hidden. Tests (aimed at testing learning, attention, and cognitive development) include:

Object concept (object permanence) testing: Plain reach, Well task, Screen task, A not B task, and visible displacement tasks, and repeated independent fine motor movements task.

WGTA testing (Wisconsin General Testing Apparatus): Testing sequence is Adaptation, black-white discrimination, black-white reversal, Hamilton search series, non-match to sample, delayed non-match to sample, match to sample, delayed match to sample, learning set, spatial memory task, oddity test.

Around 37 days of age, each peer-only infant is placed (with its surrogate) into a group cage with 3-4 like-reared, same age peers. At the same age, each surrogate-peer reared infant is placed with a surrogate into a group of 3-4 age-matched peers who interact with each other in a play cage filled with toys and manipulanda for 2 hours each weekday. When the infants are not in the play cage, they are housed in individual cages with their surrogate, hanging plastic chains, and various other manipulanda. Infants are picked up and physically moved from their home cages to the play cage (and after 2h, moved back to the home cage) by nursery personnel. This procedure has been widely used in this and other primate facilities to socialize the infants in the absence of a mother without allowing the infants to become overly attached to one another. Surrogate-peer infants retain their surrogates and receive play sessions until they move out of the nursery.

Ca. 2 weeks after peer and surrogate-peer groups have been formed, infants will be chemically restraint and an additional blood sample will be taken.

-see additional sheets for further details

G. MAJOR SURVIVAL SURGERY - If proposed, complete the following:

If None, check here

1. Identify and describe the surgical procedure(s) to be performed. Include the aseptic methods to be utilized.
(Use additional sheets if necessary):

2. Who will perform surgery and what are their qualifications and/or experience?

3. Where will surgery be performed, Building and Room?

4. Describe post-operative care required, including consideration of the use of post-operative analgesics, and identify the responsible individual:

5. Has major survival surgery been performed on any animal prior to being placed on this study? Y/N

If yes, please explain:

6. Will more than one major survival surgery be performed on an animal while on this study? Y/N.

If yes, please justify:

H. RECORDING PAIN OR DISTRESS CATEGORY - The ACUC is responsible for applying U.S. Government Principle IV, contained in Appendix 3: Proper use of animals, including the avoidance or minimization of discomfort, distress, and pain when consistent with sound scientific practices, is imperative. Unless the contrary is established, investigators should consider that procedures that cause pain or distress in human beings may cause pain or distress in other animals. Check the appropriate category(ies) and indicate the approximate number of animals in each. Sum(s) should equal total from Section B.

IF ANIMALS ARE INDICATED IN COLUMN E, A SCIENTIFIC JUSTIFICATION IS REQUIRED TO EXPLAIN WHY THE USE OF ANESTHETICS, ANALGESICS, SEDATIVES OR TRANQUILIZERS DURING AND/OR FOLLOWING PAINFUL OR DISTRESSFUL PROCEDURES IS CONTRAINDICATED. FOR USDA REGULATED SPECIES, PLEASE COMPLETE THE EXPLANATION FOR COLUMN E LISTINGS FORM ON PAGE 6. THIS FORM WILL ACCOMPANY THE NIH ANNUAL REPORT TO THE USDA. FOR ALL OTHER SPECIES, THE JUSTIFICATION FOR SUCH STUDIES MUST BE PROVIDED IN SECTION F. NOTE: THIS COLUMN E FORM AND ANY ATTACHMENTS, E.G., THE ASP, ARE SUBJECT TO THE FREEDOM OF INFORMATION ACT.

NUMBER OF ANIMALS USED EACH YEAR

	Year 1	Year 2	Year 3
<input checked="" type="checkbox"/> USDA Column C - Minimal, Transient, or No Pain or Distress	251	251	251
<input type="checkbox"/> USDA Column D - Pain or Distress Relieved By Appropriate Measures			
<input type="checkbox"/> USDA Column E - Unrelieved Pain or Distress			

Describe your consideration of alternatives to procedures listed for Column D and E that may cause more than momentary or slight pain or distress to the animals, and your determination that alternatives were not available. [Note: Principal Investigators must certify in paragraph N.5. that no valid alternative was identified to any described procedures which may cause more than momentary pain or distress, whether it is relieved or not.] Delineate the methods and sources used in the search below.

Database references must include the databases (2 or more) searched, the date of the search, period covered, and keywords used:

I. ANESTHESIA, ANALGESIA, TRANQUILIZATION - For animals indicated in Section H, Column D, specify the anesthetics, analgesics, sedatives or tranquilizers that are to be used. Include the name of the agent(s), dosage, route and schedule of administration.

If None, Check here

J. METHOD OF EUTHANASIA OR DISPOSITION OF ANIMALS AT END OF STUDY: Indicate the proposed method, and if a chemical agent is used, specify the dosage and route of administration. If the method(s) of euthanasia include those not recommended by the AVMA Guidelines on Euthanasia, provide justification why such methods must be used. Indicate the method of carcass disposal if not as MPW.

If None, Check here

This is an ongoing longitudinal study with no terminal procedures proposed. However, whenever an animal dies of natural causes or is euthanized for clinical purposes, a liver biopsy is collected to provide an additional sample of DNA prior to necropsy by DVR personnel.

K. HAZARDOUS AGENTS: Use of hazardous agents requires the approval of an IC safety specialist. Registration Documents for the use of recombinant DNA or potential human pathogens may be attached at the discretion of the ACUC.

If None, check here

YES NO **List Agents and Registration Document Number (If Applicable)**

1. Radionuclides

2. Biological Agent

3. Hazardous Chemical or Drugs

4. Recombinant DNA

Study Conducted at Animal Biosafety Level:

Describe the practices and procedures required for the safe handling and disposal of contaminated animals and material associated with this study. Use of volatile anesthetics requires a description of scavenging methods used. Also describe methods for removal of radioactive waste and, if applicable, the monitoring of radioactivity.

Additional safety considerations:

L. BIOLOGICAL MATERIAL/ANIMAL PRODUCTS FOR USE IN ANIMALS (e.g., cell lines, antiserum, etc.)

If None, Check here

1. Specify material

2. Source

Material Sterile or Attenuated

Yes

No

3. If derived from rodents, has the material been MAP/RAP/HAP/PCR tested?

Yes (Attach copy of results

No

4. I certify that the MAP/RAP/HAP/PCR tested materials to be used have not been passed through rodent species outside of the animal facility in question and/or the material is derived from the original MAP tested sample. To the best of my knowledge the material remains uncontaminated with the rodent pathogens.

Initials of Principal Investigator

M. SPECIAL CONCERNS OR REQUIREMENTS OF THE STUDY : List any special housing, equipment, animal care (i.e., special caging, water, feed, or waste disposal, etc.) Include justification for exemption from participation in the environmental enrichment plan for nonhuman primates or exercise for dogs.

If None, check here

All animals will be housed in compatible social groups except as specified in Section F. All monkeys will be provided with environmental enrichment in accordance with the Shared Facility SOP for environmental enrichment.

O. CONCURRENCES: PROPOSAL NUMBER _____ (LEAVE BLANK)

Laboratory/Branch Chief: certification of review and approval on the basis of scientific merit. Scientific Director's signature required for proposals submitted by a Laboratory or Branch Chief

Name C. A. STRATAKIS Signature /S/ Date 3/12/2014

Facility Manager: certification of resource capability in the indicated facility to support the proposed study

Facility SF Name Secondary personnel. Signature Secondary personnel. Date 3/20/14

Facility _____ Name _____ Signature _____ Date _____

Facility _____ Name _____ Signature _____ Date _____

Facility _____ Name _____ Signature _____ Date _____

COMMENTS:

Facility Veterinarian: certification of review

Facility SF Name Secondary personnel. Signature Secondary personnel. Date 3/18/14

Facility _____ Name _____ Signature _____ Date _____

Facility _____ Name _____ Signature _____ Date _____

Facility _____ Name _____ Signature _____ Date _____

P. FINAL APPROVAL :

Certification of review and approval by the NICHD Animal Care and Use Committee Chairperson and Animal Program Director.

Joseph Mat Schech, D.V.M., A.P.D. Signature [Signature] /S/ Date 4/16/14

Karl Pfeifer, Ph.D., Chair ACUC Signature [Signature] /S/ Date 4/16/14

Safety Representative certification of review and concurrence. (required of all studied utilizing hazardous agents.)

Name _____ Signature _____ Date _____

Column E Explanation Form For Regulated Species

This form is intended as an aid to completing the Column E explanation. Names, addresses, protocols, veterinary care programs, and the like, are not required as part of an explanation. A Column E explanation must be written so as to be understood by lay persons as well as scientists.

1. **Registration Number:** 51-F-0016
2. **Number of animals used under Column E conditions in this study.**
3. **Species (common name) of animals used in this study.**
4. **Explain the procedure producing pain and/or distress, including reason(s) for species selected.** *From ASP section F.*
5. **Provide scientific justification why pain and/or distress could not be relieved. State methods or means used to determine that pain and/or distress relief would interfere with test results.** *From ASP Section F*

Information below will NOT be forwarded to USDA as part of the Annual Report

IC	ASP Number	ASP Title	Date
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INSTRUCTIONS FOR EMERGENCY ANIMAL TREATMENT AND CARE

Principal Investigator Date

ASP # Office Phone Home Phone

ASP Title

Use a separate form if care is different for each species

Species Species Species

Animal Housing Location. Use a separate form if care differs by location

Bldg Bldg Bldg

List of Procedures: (surgery, tumor implant, catheter)

Primary Point of Contact (POC) in case of Emergency

Work Phone Home Phone Cell or Beeper

Alternate Point of Contact in case of Emergency

Work Phone Home Phone Cell or Beeper

Potential or Expected Complications

Circumstances Requiring Contact

Treatment (indicate appropriate response): Treatment determined by veterinarian Yes NO

If NO specify restrictions as follows:

Specific treatment as follows
Tetracycline or related antibiotics

Criteria for Euthanasia (indicate appropriate response) At Vet discretion if poor condition, severe pain or distress Yes NO

If NO, specify treatments or restrictions

Notify POC* Yes No

Requested euthanasia agent and route of administration

Specific criteria for euthanasia

- If Euthanasia is performed or animals are found dead:
- | | | |
|-------------------------------|-----------------------------------------|----------------------------------------|
| a. Contact POC | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| b. Refrigerate carcass | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| c. Dispose of carcass | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| d. Submit to DVR for necropsy | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |

CAN Number for Submission

Principal Investigator Signature and Date

*The veterinarian will take the appropriate action in an emergency if no response from PI/POC is received within 30 minutes after an attempt at notification is made.

3. Justification of the number of animals to be used.

The total number of animals for this ASP renewal includes not only the infants born into the study (and their biological parents) who will be followed longitudinally throughout the period of study, but also the juvenile and adolescent monkeys who were born in previous years of the project and who have been followed since birth. The approx. 35-40 infants born each year will be distributed across the various gene-polymorphism-rearing conditions experimental subgroups, with approximately $\frac{1}{2}$ being reared by their biological mothers and $\frac{1}{2}$ assigned to the nursery rearing condition ($\frac{1}{4}$ peer-reared and $\frac{1}{4}$ surrogate-peer reared; see Section F). This will result in approximately 16-20 monkeys per rearing condition, with each rearing group containing individuals of differing allelic status for the 5-HTT and MAO-A genes, respectively. Within the peer-rearing and surrogate-peer rearing conditions, infants will be reared and/or socialized in subgroups of 4-5 infants each. These numbers represent the minimum sample size (N) needed to obtain statistically reliable differences and interactions among allelic status and rearing groups, as well as between subgroups and for the peer-reared and surrogate-peer-reared monkeys each year, while allowing for some possible subject attrition in any one rearing group or subgroup. These choices of subject N per rearing group and subgroup has been found to be highly effective and efficient in numerous previous studies of rhesus monkey biobehavioral development and this and other primate facilities around the world.

Our current research colony consists of 206 animals, including 46 breeders and 160 non-breeders/juveniles. Furthermore, we expect to transfer some adult male animals to the protocol (from other NIH research groups or approved outside vendors) to be used for breeding purposes. Thus each year, the colony will increase by up to 45 animals. Out of the juvenile animals who have grown beyond the infant research age (at ca. 2 years old), a small sub group of 12-15 female animals will be retained for future breeding purposes. All other juveniles from each year and adult animals who have become unsuitable for breeding purposes (due to age or medical conditions) are to be sold or donated to collaborators or other NIH research programs. Thus the colony will also decrease by approx. 45 animals each year.

F: Description of the experimental design and animal procedures

Whilst housed in the nursery, we will further assess social competencies in infant macaques by collecting eye gaze data on various social and non-social stimuli using eye tracking technology starting at 10 days old. The eye tracker (Tobii XL60) is integrated into a video monitor that simply requires each infant to be placed within a distance of 65cm of the monitor. When images or video clips are played on the monitor, the eye tracker non-invasively and unobtrusively detects direction and duration of infant's gaze at these stimuli. During data collection, an experimenter will hold the infant in his/her arms, and gently orient it towards the monitor. The length of each test session will depend on the ease with which the equipment can be calibrated for each individual infant, and will typically last between 5-max. 20 minutes. After testing, infants will be returned to their home cages.

When 2-5 months old, infants will undergo an additional EEG test session (1 session per day for max. 4 days). The procedure will be the same as during the first month of life, i.e. a trained experimenter will

hold the infant, we will shave the infant's head and place a (slightly larger) custom made EEG cap on the infant's head. EEG is recorded while an experimenter presents facial gestures, hand movements, or control object movements to the infant. The cap is removed at the end of the test session, the infant's head is gently cleaned, and infants are returned to their home cage. This additional EEG test will allow us to examine changes in EEG/mu rhythm in relation to infant's social and motor development. For half the sessions, we will further first nebulize infants with Oxytocin or saline, via nebulizing it into the nose and mouth following the same procedure as when infants are 25-35 days old (dosage will be adjusted for infants' weight). Furthermore, to check for effectiveness of the nebulizing procedure, we will collect 3 saliva samples (baseline before nebulizing, pre-test before EEG, and post-test after EEG) to be analyzed for oxytocin concentration.

Between 90-120 days old, infants will undergo the BioBehavioral Assessment (BBA), a behavioral and physiological test battery developed by the California National Primate Research Center. A maximum of 4 infants at a time will be relocated from their home cages to specific new housing cages, and infants will remain singly housed for the duration of the test. The test will comprise six assessments during a 25-hour separation of the infants. Infants will receive their regular food and water whilst undergoing this assessment.

Assessments:

Cortisol: Saliva samples for cortisol assay will be taken immediately upon separation (baseline) and at the end of the battery of behavioral assessments.

Living Cage Observations: In order to assess response to separation and relocation, each infant will be observed using a predetermined random order for a five-minute period at the beginning and at the end of the 25-hr. separation period; that is, once on Day 1 and once on Day 2. Data will be collected either by videotaping infants or by live scoring using the Observer (Noldus) program. Behaviors recorded will reflect activity states, as well as self-directed behaviors, vocalization, facial gestures and environmental exploration of the infants' cage.

Preferential Look Test: The goal of this test is to assess the animals' recognition memory. While placed in a test cage, we will position a monitor in front of the test cage and present pictures and/or video clips of monkeys/faces/objects to infants. A video camera located above the monitor will record infants' gaze behavior towards the monitor, which we will later code for analysis. This test will be up to 15 minutes long and will be administered twice per infant.

Human Intruder Test: The goal of this test is to assess the responsiveness of the monkeys under standardized conditions of challenge. This assessment involves video recording of a 20-minute test wherein a novel human presents her profile to the monkey for 2 minutes after a 10 minute baseline, then makes eye contact with the monkey for 2 minutes followed by another undisturbed videoed period of 6 minutes.

Response to Novel Objects: The goal of this test is to assess the animals' responsiveness to objects while in their test cage. A novel toy is placed in the test cage, and infants are videotaped for 5 minutes. At the end of the test battery, infants are returned to their home cages.

Starting from the first week infants come to the nursery, each infant is typically observed for a 5 minute period several times each week (and more often during experimental manipulations) in order to

characterize its behavioral repertoire. During each scoring period, the monkey is watched by an observer in front of its cage/pen in accordance with established NICHD safety SOPs. The observer records the frequency, duration, and sequence of the monkey's behaviors as well as the specific identity and specific responses to any interactive partner, on a laptop computer according to an exhaustive category scoring system employed in our laboratory over the past decade. The observations are all non-intrusive in nature, i.e. the observer avoids direct visual or auditory interactions with the subject at all times. In some studies these observations are supplemented by videotaping sessions in order to record behavior including vocalizations for later analyses.

Whilst housed in the nursery, there will be environmental enrichment rotation for all nursery monkeys. Each infant will be provided with three floor toys including one new enriching stimulus (toy) every day such that no stimulus is used more than twice a month. Old toys are replaced daily with new ones, and are either washed with an industrial strength washer or manually scrubbed with soap and disinfecting agent. We also provide 3-4 small pieces of cloth (blankets), which the animals use for comfort and self-soothing. We replace dirty blankets with clean ones every morning, and wash dirty blankets in a standard washing machine with detergent and bleach. Each home cage contains plastic "chew chains" and 1-2 toys randomly hung in the cage, allowing for 3-dimensional exploration. These are altered every 2 weeks during cage cleaning. Manipulanda in the play cage will be rotated through several sets so that a new set is introduced every other week.

2. Mother-reared procedures

Infants who are to be reared by their mothers under social housing conditions will also undergo certain testing procedures.

In order to gain access to infants, trained nursery personnel who have shown proficiency in catching animals with nets in animal holding runs will separate mother-infant pairs from the rest of the group, and chemically restrain mothers (see below for chemical restraint procedures). When infants are 3-5 days old, they will be tested in an imitation task similar to the procedures used with nursery infants, i.e. an experimenter will show facial and/or hand gestures to infants while infants are videotaped. For select infants, we will also collect EEG during this time, i.e. we will shave the infant's head, place a macaque infant-sized EEG cap on its head, and record brain activity while the infant is watching facial gestures and/or control stimuli. This procedure will take 45-60 minutes, after which infants will be reunited with their mothers and returned to their social group.

On days 14 and 30, each infant is given the Brazelton tests identical to the Brazelton tests in the nursery. Afterwards, infants will be given an eye tracking task followed by chemical restraint and a sample of cerebrospinal fluid (CSF) is removed from the cistern magnum; a blood sample is also taken (see below for chemical restraint, blood and CSF sampling procedures), and anthropometric data will be collected. A further blood sample will be taken from infants at ca. 60 days old.

Mothers will be chemically restrained on days 14 and 30 to facilitate infant separation for the Brazelton test. A blood sample will be collected from them on both days, and a CSF sample will be collected on D30. After collection of the blood and CSF samples, the mother will be placed in a loose-fitting jacket to

ensure that the infant does not suckle upon its return to her after the 1-hr Brazelton procedure. The mother will be placed in a single holding cage in Building [redacted] (adjacent to her social housing run) for 2.5 hours to allow for milk accumulation during recovery from chemical restraint. Once the infant's Brazelton is complete, it will be returned to its mother in the single cage, thus allowing it to have physical contact with its mother without draining her of the collecting milk. At the end of 2.5 hours (generally the infant will have 1.5hrs of mother contact after the Brazelton, but before milk collection), the mother will be lightly sedated again and milk collection will proceed as outlined for colostrum collection for nursery-reared infants. Immediately after milk collection, both mother and infant will be allowed to recover in a recovery cart. Once the mother is fully alert, she and her infant will be returned to their social group.

Infants and their mothers will also be subject to behavioral observations where a trained observer will score their behavior with a laptop computer while seated outside their home enclosure. These observations are non-invasive and may be supplemented by video recordings.

At 90-120 days old, infants will undergo the same Biobehavioral Assessments as nursery-reared infants. Mother-infant pairs will be separated from the social group, and mothers will be chemically restrained to allow removal of the infant. Infants will undergo the same physiological and behavioral battery, which lasts 25h; mothers will be returned to the social group in the meantime. Upon completion of the test, infants will be reunited with their mothers.

Starting at 4 months old and continuing until weaning (6-8 months old), infants will undergo cognitive testing to assess learning, attention, and cognitive development (similar to nursery-infant cognitive testing). To achieve a suitable testing environment, we will place a wire mesh 'cage' into the infants' breeding runs with a small tunnel that only the infant can enter. The cage measures 34" wide by 36" high by 20" deep, with the tunnel measuring 8" long. The tunnel allows the infant to readily return to its mother for contact comfort as needed. The cage will rest on the floor and will be attached to the chain link front of the breeding run so that observers may administer the cognitive task. The cage will not be a permanent fixture, but will be attached and removed on a daily basis for testing. During attachment and removal, monkeys in a particular breeding run will be temporarily locked inside (max. 10 minutes). Once the cage is in place, cognitive testing will commence. Testing will be administered for a maximum of 5 days per week for a maximum of 4 hours per day. Research staff will be present at all times when the test cage is in the breeding run.

3. Post-weaning procedures

Social dominance is assessed annually by scoring the direction of spatial displacements during competitive social interactions (i.e. when monkey A approaches, monkey B moves from its position, exhibits a fear face, and/or flees as monkey A approaches). In these tests, treats (grapes, sunflower seeds etc.) are thrown into the enclosure or an aspartame-sweetened water bottle is hung on the side of the cage to elicit competition for these highly desirable resources, a standard method used by investigators in the field. Displacements, threats, and physical aggression are recorded during these

brief periods, which have not resulted in any injuries requiring veterinary treatment in over a decade of dominance testing.

After infants are weaned from Building [redacted] and continuing into adulthood, buccal swabs, blood samples (see blood draw procedures below), hair, saliva, and anthropometric measurements will be collected every 3 months. All samples will be collected while animals are under chemical restraint (see chemical restraint procedures below); whenever possible, collections will occur during regularly-scheduled health exams, which are routine veterinary procedures, to minimize animals' stress.

We will also conduct a Human Intruder Test (HIT) Assessment on adult monkeys to assess behavioral reactivity to a novel, socially-relevant (human) stimulus. This is a standardized procedure that has been utilized by primate facilities across the country since its development in 1991 by Kalin et al. at the University of Wisconsin. This assessment involves video recording of a 20-minute test wherein a novel human presents her profile to the monkey for 2 minutes after a 10 minute baseline (where the monkey is videoed but undisturbed), then makes direct eye contact with the monkey for 2 minutes followed by another undisturbed videoed period of 6 minutes.

4. Chemical restraint procedures

Chemical restraint will be achieved by administering 8-20mg/kg ketamine hydrochloride IM, or through other anesthesia as recommended by facility veterinarian.

5. Blood draw procedures

Blood draws will be taken femorally while the subject is manually restrained or under chemical restraint using ketamine hydrochloride in accordance with laboratory SOPs established over the past decade. We will take up to 10ml/kg per month. The withdrawal site will be swabbed with alcohol, and a 23 or 25 gauge needle with a 1ml or 3ml syringe or a vacutainer blood collection system will be used. Upon withdrawal of the needle, pressure will immediately be placed on the site using dry gauze to prevent hematoma. The animals will then be closely monitored by research staff until they are fully recovered.

6. CSF sampling procedures

Cerebrospinal fluid (CSF) samples are obtained from subjects under chemical restraint. One cc of CSF is obtained in each tap for monkeys during their first 150 days of life (3cc for mothers) according to the schedule described above. All taps will be performed by trained technical staff. For each tap, the subject is shaved from the nuchal crest to the top number 3 vertebra. The hair is retained for subsequent assay cortisol. A betadine swab followed by an alcohol swab is used to cleanse and sterilize the puncture site. During this time the subject physically restrained by personnel to preclude any injury that might occur if the animal twitches or makes ketamine-induced limb motions. A small 22 gauge needle is used in order to facilitate healing and to minimize injury potential, and if CSF is not obtained by the third puncture, the procedure is terminated and the puncture is allowed to heal prior to any rescheduling of the procedure. For analgesic purposes, subjects will receive a shot of Ketofen (2mg/kg or 0.02ml/kg IM)

after CSF sampling. Subjects will be closely monitored during recovery and are returned to their social groups once fully recovered.

7. Saliva and hair sampling procedures

After animal capture and chemical restraint, each animal will have a 1 inch cotton dental rope placed in its mouth for approx. 5-10 minutes until it is thoroughly saturated with saliva. Each animal will also have its neck shaved between the cistern magna and the scapular bones to obtain a hair sample.

Training and Experience Form

Animal Study Proposal

Print Form

ASP # _____ Principal Investigator Stephen J. Suomi

ASP Title Developmental continuity of individual differences in rhesus monkey biobehavioral reactivity

Section A: Information for New Personnel

Name: Stephen J. Suomi

Phone No: 301.496-____ Bldg/Rm: _____ Email: _____@nih.gov

PI Course Completion Dates 1/2/2014 AU Course Completion Date _____

1) What is your experience or training for procedures you will be performing on this ASP (e.g. number of years working with the species and proficiency with techniques listed such as injections, blood collection, surgery, behavior test, etc)?

B.A. Psychology (Stanford 1968), M.A. & Ph.D Psychology (University of Wisconsin, 1969, 1971). 10 plus years of research experience with nonhuman primates, mostly with rhesus and capuchin monkeys.

2) Name of PI and/or designee who will provide supervision and training in the techniques you will be performing on this ASP until your are fully qualified to perform these animal activities independently. if necessary Secondary personnel. _____

3) Yes No This ASP involves Nonhuman Primate procedures. If yes, complete Section B. If no, go to Section C.

SECTION B: Nonhuman Primate (NHP) Procedures

1) Nonhuman Primate Safety Course (IC component completion date) 7/13/99

2) Yes No There will be "awake" NHP procedures performed as part of this ASP, e.g. squeezing up for injections, pole/collar, restraint chairs, operant procedures, etc. If yes, complete 3 and 4. If no, go to Section C.

3) I will be performing the following awake NHP procedures: periodic behavioral observations

4a) I am currently proficient in performing all of the awake NHP procedures I've listed above.

OR

4b) [name(s) of PI or designee] will provide my supervision and training until I am fully qualified to perform these awake NHP procedures proficiently and independently.

SECTION C: Assurances

Yes No I have read or will read the final, approved version of this ASP and will limit my activities to performance of only those procedures described in the approved ASP.

Yes No I understand my responsibilities for acquiring training on techniques I am asked to perform on animals as described in this ASP but am not currently proficient in performing. Additionally, if my support role for this ASP changes, I will submit a new T&E form and acquire training prior to performing new procedures.

Animal User Signature: _____ /S/ Date 4/1/14

As the PI, I assume the responsibility to ensure that this Animal User's training and experience for procedures he/she will be performing under this ASP has been or will be assessed, and if this person is not proficient in performing these procedures, training will be provided, and proficiency verified, before the person is allowed to conduct these procedures independently.

Principal Investigator Signature _____ /S/ Date 4/1/14

ASP # 11-043 Principal Investigator Stephen J. Suomi

ASP Title Developmental continuity of individual differences in rhesus monkey biobehavioral reactivity

Section A: Information for New Personnel

Name: Secondary personnel

Phone No: 301-443- Bldg/Rm: Email: @nih.gov

PI Course Completion Dates AU Course Completion Date 9/24/2012

1) What is your experience or training for procedures you will be performing on this ASP (e.g. number of years working with the species and proficiency with techniques listed such as injections, blood collection, surgery, behavior test, etc)?

I have 15 years of experience working hands-on with nonhuman primates, including physiological sample collection, behavioral data collection, research study design, and data analysis.

2) Name of PI and/or designee who will provide supervision and training in the techniques you will be performing on this ASP until your are fully qualified to perform these animal activities independently. Stephen J. Suomi, PhD

3) Yes No This ASP involves Nonhuman Primate procedures. If yes, complete Section B. If no, go to Section C.

SECTION B: Nonhuman Primate (NHP) Procedures

1) Nonhuman Primate Safety Course (IC component completion date) 10/01/2012

2) Yes No There will be "awake" NHP procedures performed as part of this ASP, e.g. squeezing up for injections, pole/collar, restraint chairs, operant procedures, etc. If yes, complete 3 and 4. If no, go to Section C.

3) I will be performing the following awake NHP procedures administering injections, saliva sample collection, operant conditioning for cognitive testing

4a) I am currently proficient in performing all of the awake NHP procedures I've listed above,

OR

4b) [name(s) of PI or designee] will provide my supervision and training until I am fully qualified to perform these awake NHP procedures proficiently and independently.

SECTION C: Assurances

Yes No I have read or will read the final, approved version of this ASP and will limit my activities to performance of only those procedures described in the approved ASP.

Yes No I understand my responsibilities for acquiring training on techniques I am asked to perform on animals as described in this ASP, but am not currently proficient in performing. Additionally, if my support role for this ASP changes, I will submit a new T&E-form and acquire training prior to performing new procedures.

Animal User Signature: Secondary personnel Date 2/28/14

As the PI, I assume the responsibility to ensure that this Animal User's training and experience for procedures he/she will be performing under this ASP has been or will be assessed, and if this person is not proficient in performing these procedures, training will be provided, and proficiency verified, before the person is allowed to conduct these procedures independently.

Principal Investigator Signature /S/ Date 4/1/14

Training and Experience Form

Animal Study Proposal

Print Form

ASP # _____ Principal Investigator Dr. Stephen Suomi

ASP Title Developmental continuity of individual differences in rhesus monkey biobehavioral reactivity

Section A: Information for New Personnel

Name: Secondary personnel.

Phone No: 301 443 _____ Bldg/Rm: _____ Email: _____@mail.nih.gov

PI Course Completion Dates 2012 _____ AU Course Completion Date _____

1) What is your experience or training for procedures you will be performing on this ASP (e.g. number of years working with the species and proficiency with techniques listed such as injections, blood collection, surgery, behavior test, etc)?

10+ years of cognitive testing and behavioral observations with Macaca mulatta and Cebus apella

2) Name of PI and/or designee who will provide supervision and training in the techniques you will be performing on this ASP until your are fully qualified to perform these animal activities independently.

3) Yes No This ASP involves Nonhuman Primate procedures. If yes, complete Section B. If no, go to Section C.

SECTION B: Nonhuman Primate (NHP) Procedures

1) Nonhuman Primate Safety Course (IC component completion date) 2006

2) Yes No There will be "awake" NHP procedures performed as part of this ASP, e.g. squeezing up for injections, pole/collar, restraint chairs, operant procedures, etc. If yes, complete 3 and 4. If no, go to Section C.

3) I will be performing the following awake NHP procedures
cognitive testing, behavioral observations

4a) I am currently proficient in performing all of the awake NHP procedures I've listed above,

OR

4b) [name(s) of PI or designee] will provide my supervision and training until I am fully qualified to perform these awake NHP procedures proficiently and independently.

SECTION C: Assurances

Yes No I have read or will read the final, approved version of this ASP and will limit my activities to performance of only those procedures described in the approved ASP.

Yes No I understand my responsibilities for acquiring training on techniques I am asked to perform on animals as described in this ASP, but am not currently proficient in performing. Additionally, if my support role for this ASP changes, I will submit a new T&F form and acquire training prior to performing new procedures.

Animal User Signature: _____ Date 3/20/14

As the PI, I assume the responsibility to ensure that this Animal User's training and experience for procedures he/she will be performing under this ASP has been or will be assessed, and if this person is not proficient in performing these procedures, training will be provided, and proficiency verified, before the person is allowed to conduct these procedures independently.

Principal Investigator Signature _____ /S/ _____ Date 4/1/14

NICHHD Training and Experience Form

SECTION A: General Information

Principal Investigator (PI) or Animal User (AU) Name: [Secondary personnel]

ASP#/Title: 11-043/Developmental Continuity of Individual Differences in Rhesus Monkey Biobehavioral Reactivity

Phone No.: 301-443 [] Bldg/Rm: [] Email: []@mail.nih.gov

PI Course completion dates: (Initial) [] (Refresher) []

AU Course completion dates: (Initial) 3/15/2002 (Refresher) 3/21/2013

1) What is your experience or training for procedures you will be performing on this ASP (e.g. number of years working with the species and proficiency with techniques listed such as injections, blood collection, surgery, behavior tests, etc.)?

I have been working with rhesus macaques for 10+ years. I am trained in venipuncture on both awake and anesthetized animals, CSF sampling, hand catching in home cage and run, giving injections (IM, IV, Sub cue), handling awake and anesthetized animals, behavioral observations, providing enrichment, taking care of infant macaques, gavage feeding infant macaques, and running behavioral studies all with rhesus macaques. With capuchins (cebus apella) catching animals in home cage and social group, venipuncture and running behavioral studies.

2) [Name(s) of PI and/or designee] will provide supervision and training in the techniques I will be performing on this ASP until I am fully qualified to perform these animal activities independently.

3) Yes [] No []: This ASP involves Nonhuman Primates procedures. If yes complete Section B. If no, go to Section C.

SECTION B: Nonhuman Primate (NHP) Procedures

1) Nonhuman Primate Safety Course: (IC component date) 3/15/2002 (Facility component date(s): [] ; [] ; []

2) Yes [] No [] There will be "awake" NHP procedures performed as a part of this protocol, e.g. squeezing up for injections, pole/collar, restraint chairs, operant procedures, etc. If Yes - complete 3 and 4. If no, go to Section C.

3) I will be performing the following awake NHP procedures: []

Hand catching in runs, squeezing up for injections and giving injections

4a) [] I am currently proficient in performing all of the awake NHP procedures that I've listed above, OR

4b) [name(s) of PI or designee] will provide my supervision and training until I am fully qualified to perform these awake NHP procedures proficiently and independently.

SECTION C: Assurances

Yes [] No [] : I have read or will read the final, approved version of this ASP and will limit my activities to performance of only those procedures described in the approved ASP.

Yes [] No [] : I understand my responsibilities for acquiring training on techniques I am asked to perform on animals as described in this ASP, but am not currently proficient in performing. Additionally, if my support role for this ASP changes, I will submit a new T&E form and acquire training prior to performing any new procedures. Secondary personnel.

Animal User signature: [] Date: 3/20/2014

As the PI, I assume the responsibility to ensure that this Animal User's training and experience for procedures he/she will be performing under this ASP has been or will be assessed, and if this person is not proficient in performing these procedures, training will be provided, and proficiency verified, before the person is allowed to conduct these procedures independently.

Principal Investigator signature: [] /S/ Date: 4/1/14

Training and Experience Form
Animal Study Proposal

Print Form

ASP # 11-043 Principal Investigator Stephen J. Suomi

ASP Title Developmental continuity of individual differences in rhesus monkey biobehavioral reactivity

Section A: Information for New Personnel

Name: Secondary personnel.

Phone No: 301-443- Bldg/Rm: Email: @mail.nih.gov

PI Course Completion Dates AU Course Completion Date 6/9/2011

1) What is your experience or training for procedures you will be performing on this ASP (e.g. number of years working with the species and proficiency with techniques listed such as injections, blood collection, surgery, behavior test, etc)?

3 years experience collecting behavioral data with rhesus macaque infants.

2) Name of PI and/or designee who will provide supervision and training in the techniques you will be performing on this ASP until you are fully qualified to perform these animal activities independently. Dr. Stephen J. Suomi

3) Yes No This ASP involves Nonhuman Primate procedures. If yes, complete Section B. If no, go to Section C.

SECTION B: Nonhuman Primate (NHP) Procedures

1) Nonhuman Primate Safety Course (IC component completion date) 6/1/2011

2) Yes No There will be "awake" NHP procedures performed as part of this ASP, e.g. squeezing up for injections, pole/collar, restraint chairs, operant procedures, etc. If yes, complete 3 and 4. If no, go to Section C.

3) I will be performing the following awake NHP procedures

4a) I am currently proficient in performing all of the awake NHP procedures I've listed above,

OR

4b) [name(s) of PI or designee] will provide my supervision and training until I am fully qualified to perform these awake NHP procedures proficiently and independently.

SECTION C: Assurances

Yes No I have read or will read the final, approved version of this ASP and will limit my activities to performance of only those procedures described in the approved ASP.

Yes No I understand my responsibilities for acquiring training on techniques I am asked to perform on animals as described in this ASP, but am not currently proficient in performing. Additionally, if my support role for this ASP changes, I will submit a new T&E form and acquire training prior to performing new procedures.

Animal User Signature: Secondary personnel. Date 3/20/14

As the PI, I assume the responsibility to ensure that this Animal User's training and experience for procedures he/she will be performing under this ASP has been or will be assessed, and if this person is not proficient in performing these procedures, training will be provided, and proficiency verified, before the person is allowed to conduct these procedures independently.

Principal Investigator Signature /S/ Date 4/1/14

Training and Experience Form

Animal Study Proposal

ASP # 11-043

Principal Investigator Stephen J. Suomi

ASP Title Developmental continuity of individual differences in rhesus monkey biobehavioral reactivity

Section A: Information for New Personnel

Name: Secondary personnel.

Phone No:

Bldg/Rm:

Email:

@gmail.com

PI Course Completion Dates

AU Course Completion Date

1/17/2013

1) What is your experience or training for procedures you will be performing on this ASP (e.g. number of years working with the species and proficiency with techniques listed such as injections, blood collection, surgery, behavior test, etc)?

4 years working with adult rhesus monkeys. Performed single neuron recordings, trained monkeys on pole/collaring and did operant task training. 1 year working with infant rhesus monkeys. Performed EEG recording.

2) Name of PI and/or designee who will provide supervision and training in the techniques you will be performing on this ASP until you are fully qualified to perform these animal activities independently.

3) Yes No This ASP involves Nonhuman Primate procedures. If yes, complete Section B. If no, go to Section C.

SECTION B: Nonhuman Primate (NHP) Procedures

1) Nonhuman Primate Safety Course (IC component completion date) 2/08/2013

2) Yes No There will be "awake" NHP procedures performed as part of this ASP, e.g. squeezing up for injections, pole/collar, restraint chairs, operant procedures, etc. If yes, complete 3 and 4. If no, go to Section C.

3) I will be performing the following awake NHP procedures

EEG data collection

4a) I am currently proficient in performing all of the awake NHP procedures I've listed above,

OR

4b) [name(s) of PI or designee] will provide my supervision and training until I am fully qualified to perform these awake NHP procedures proficiently and independently.

SECTION C: Assurances

Yes No I have read or will read the final, approved version of this ASP and will limit my activities to performance of only those procedures described in the approved ASP.

Yes No I understand my responsibilities for acquiring training on techniques I am asked to perform on animals as described in this ASP, but am not currently proficient in performing. Additionally, if my support role for this ASP changes, I will submit a new T&E form and acquire training prior to performing new procedures.

Animal User Signature:

Secondary personnel.

Date 03/20/2014

As the PI, I assume the responsibility to ensure that this Animal User's training and experience for procedures he/she will be performing under this ASP has been or will be assessed, and if this person is not proficient in performing these procedures, training will be provided, and proficiency verified, before the person is allowed to conduct these procedures independently.

Principal Investigator Signature

[Signature]

Date 4/1/14

Training and Experience Form

Animal Study Proposal

Print Form

ASP # ASP 11-043

Principal Investigator Stephen J. Suomi

ASP Title Developmental continuity of individual differences in rhesus monkey biobehavioral reactivity

Section A: Information for New Personnel

Name: Secondary personnel.

Phone No: (301)442- [redacted]

Bldg/Rm: [redacted]

Email: [redacted]@nih.gov

PI Course Completion Dates

AU Course Completion Date 02/06/2013

1) What is your experience or training for procedures you will be performing on this ASP (e.g. number of years working with the species and proficiency with techniques listed such as injections, blood collection, surgery, behavior test, etc)?

14 months of experience. I have been involved in collecting behavioral data and participating in milk collection procedures for rhesus macaque. I will be part of the feeding nursery infants team this late spring & summer.

2) Name of PI and/or designee who will provide supervision and training in the techniques you will be performing on this ASP until you are fully qualified to perform these animal activities independently. Secondary personnel.

3) Yes No This ASP involves Nonhuman Primate procedures. If yes, complete Section B. If no, go to Section C.

SECTION B: Nonhuman Primate (NHP) Procedures

1) Nonhuman Primate Safety Course (IC component completion date) 2/21/13

2) Yes No There will be "awake" NHP procedures performed as part of this ASP, e.g. squeezing up for injections, pole/collar, restraint chairs, operant procedures, etc. If yes, complete 3 and 4. If no, go to Section C.

3) I will be performing the following awake NHP procedures

Handling and feeding neonate rhesus macaque

4a) I am currently proficient in performing all of the awake NHP procedures I've listed above,

OR

4b) Secondary personnel. [name(s) of PI or designee] will provide my supervision and training until I am fully qualified to perform these awake NHP procedures proficiently and independently.

SECTION C: Assurances

Yes No I have read or will read the final, approved version of this ASP and will limit my activities to performance of only those procedures described in the approved ASP.

Yes No I understand my responsibilities for acquiring training on techniques I am asked to perform on animals as described in this ASP, but am not currently proficient in performing. Additionally, if my support role for this ASP changes, I will submit a new T&E form and acquire training prior to performing new procedures.

Animal User Signature: Secondary personnel. Date 3/24/14

As the PI, I assume the responsibility to ensure that this Animal User's training and experience for procedures he/she will be performing under this ASP has been or will be assessed, and if this person is not proficient in performing these procedures, training will be provided, and proficiency verified, before the person is allowed to conduct these procedures independently.

Principal Investigator Signature /S/ Date 4/1/14

Training and Experience Form

Animal Study Proposal

Print Form

ASP # [] Principal Investigator Stephen J. Suomi

ASP Title Developmental continuity of individual differences in rhesus monkey biobehavioral reactivity

Section A: Information for New Personnel

Name: [Secondary personnel]

Phone No: [] Bldg/Rm: [] Email: []@gmail.com

PI Course Completion Dates [] AU Course Completion Date 10/25/13

1) What is your experience or training for procedures you will be performing on this ASP (e.g. number of years working with the species and proficiency with techniques listed such as injections, blood collection, surgery, behavior test, etc)?

1.5 years working with Rhesus macaques, experience w/ husbandry, forms, weights, handling

2) Name of PI and/or designee who will provide supervision and training in the techniques you will be performing on this ASP until your are fully qualified to perform these animal activities independently. [Secondary personnel]

3) Yes No This ASP involves Nonhuman Primate procedures. If yes, complete Section B. If no, go to Section C.

SECTION B: Nonhuman Primate (NHP) Procedures

1) Nonhuman Primate Safety Course (IC component completion date) 10/31/13

2) Yes No There will be "awake" NHP procedures performed as part of this ASP, e.g. squeezing up for injections, pole/collar, restraint chairs, operant procedures, etc. If yes, complete 3 and 4. If no, go to Section C.

3) I will be performing the following awake NHP procedures

Temping, weighing, feeding monkeys

4a) I am currently proficient in performing all of the awake NHP procedures I've listed above,

OR

4b) [] [name(s) of PI or designee] will provide my supervision and training until I am fully qualified to perform these awake NHP procedures proficiently and independently.

SECTION C: Assurances

Yes No I have read or will read the final, approved version of this ASP and will limit my activities to performance of only those procedures described in the approved ASP.

Yes No I understand my responsibilities for acquiring training on techniques I am asked to perform on animals as described in this ASP, but am not currently proficient in performing. Additionally, if my support role for this ASP changes, I will submit a new T&E form and acquire training prior to performing new procedures.

Animal User Signature [Secondary personnel] Date 3/31/14

As the PI, I assume the responsibility to ensure that this Animal User's training and experience for procedures he/she will be performing under this ASP has been or will be assessed, and if this person is not proficient in performing these procedures, training will be provided, and proficiency verified, before the person is allowed to conduct these procedures independently.

Principal Investigator Signature [S] Date 4/1/14

Training and Experience Form

Animal Study Proposal

Print Form

ASP # 11-043 Principal Investigator Stephen J. Suomi

ASP Title Developmental continuity of individual differences in rhesus monkey biobehavioral reactivity

Section A: Information for New Personnel

Name: Secondary personnel

Phone No: Bldg/Rm: Email: @nih.gov

PI Course Completion Dates AU Course Completion Date May 5, 2012

1) What is your experience or training for procedures you will be performing on this ASP (e.g. number of years working with the species and proficiency with techniques listed such as injections, blood collection, surgery, behavior test, etc)?

6yrs experience, injections, blood collection, behavior test

2) Name of PI and/or designee who will provide supervision and training in the techniques you will be performing on this ASP until you are fully qualified to perform these animal activities independently. Secondary personnel

3) Yes No This ASP involves Nonhuman Primate procedures. If yes, complete Section B. If no, go to Section C.

SECTION B: Nonhuman Primate (NHP) Procedures

1) Nonhuman Primate Safety Course (IC component completion date) May 14, 2012

2) Yes No There will be "awake" NHP procedures performed as part of this ASP, e.g. squeezing up for injections, pole/collar, restraint chairs, operant procedures, etc. If yes, complete 3 and 4. If no, go to Section C.

3) I will be performing the following awake NHP procedures

Handling, feeding, sedation

4a) I am currently proficient in performing all of the awake NHP procedures I've listed above,

OR

4b) [name(s) of PI or designee] will provide my supervision and training until I am fully qualified to perform these awake NHP procedures proficiently and independently.

SECTION C: Assurances

Yes No I have read or will read the final, approved version of this ASP and will limit my activities to performance of only those procedures described in the approved ASP.

Yes No I understand my responsibilities for acquiring training on techniques I am asked to perform on animals as described in this ASP, but am not currently proficient in performing. Additionally, if my support role for this ASP changes, I will submit a new T&E form and acquire training prior to performing new procedures.

Animal User Signature: Secondary personnel Date 3/31/14

As the PI, I assume the responsibility to ensure that this Animal User's training and experience for procedures he/she will be performing under this ASP has been or will be assessed, and if this person is not proficient in performing these procedures, training will be provided, and proficiency verified, before the person is allowed to conduct these procedures independently.

Principal Investigator Signature /S/ Date 4/1/14

Training and Experience Form

Animal Study Proposal

Print Form

ASP # 11-043

Principal Investigator Stephen J. Suomi

ASP Title Developmental continuity of individual differences in rhesus monkey biobehavioral reactivity

Section A: Information for New Personnel

Name: [Secondary personnel]

Phone No: na

Bldg/Rm: []

Email: []@yahoo.com

PI Course Completion Dates []

AU Course Completion Date 5/14/12

1) What is your experience or training for procedures you will be performing on this ASP (e.g. number of years working with the species and proficiency with techniques listed such as injections, blood collection, surgery, behavior test, etc)?

handling/feeding infant macaques, cleaning incubators, May 2012 - Aug 2012
temping/weighing infant macaques, May 2013 - Aug 2013

2) Name of PI and/or designee who will provide supervision and training in the techniques you will be performing on this ASP until you are fully qualified to perform these animal activities independently. [Secondary personnel]

3) Yes No This ASP involves Nonhuman Primate procedures. If yes, complete Section B. If no, go to Section C.

SECTION B: Nonhuman Primate (NHP) Procedures

1) Nonhuman Primate Safety Course (IC component completion date) 6/4/12

2) Yes No There will be "awake" NHP procedures performed as part of this ASP, e.g. squeezing up for injections, pole/collar, restraint chairs, operant procedures, etc. If yes, complete 3 and 4. If no, go to Section C.

3) I will be performing the following awake NHP procedures

handling infants, temping infants, weighing infants, holding for testing

4a) I am currently proficient in performing all of the awake NHP procedures I've listed above.

OR

4b) [Secondary personnel]

[name(s) of PI or designee] will provide my supervision and training until I am fully qualified to perform these awake NHP procedures proficiently and independently.

SECTION C: Assurances

Yes No I have read or will read the final, approved version of this ASP and will limit my activities to performance of only those procedures described in the approved ASP.

Yes No I understand my responsibilities for acquiring training on techniques I am asked to perform on animals as described in this ASP, but am not currently proficient in performing. Additionally, if my support role for this ASP changes, I will submit a new T&E form and acquire training prior to performing new procedures.

Animal User Signature: [Secondary personnel]

Date 3/21/2014

As the PI, I assume the responsibility to ensure that this Animal User's training and experience for procedures he/she will be performing under this ASP has been or will be assessed, and if this person is not proficient in performing these procedures, training will be provided, and proficiency verified, before the person is allowed to conduct these procedures independently.

Principal Investigator Signature

[Signature] /S/

Date 4/1/14

Training and Experience Form

Animal Study Proposal

Print Form

ASP # _____ Principal Investigator Stephen J. Suomi

ASP Title Developmental continuity of individual differences in rhesus monkey biobehavioral reactivity

Section A: Information for New Personnel

Name: [Secondary personnel. Redacted]

Phone No: 301 443 [Redacted] Bldg/Rm: [Redacted] Email: [Redacted]@n.h.gwu

PI Course Completion Dates _____ AU Course Completion Date 9/7/12

1) What is your experience or training for procedures you will be performing on this ASP (e.g. number of years working with the species and proficiency with techniques listed such as injections, blood collection, surgery, behavior test, etc)?

Working w/ macaques for over 7 years. Trained to tap, bleed, handle infants, adult capture and handling, care for infants.

2) Name of PI and/or designee who will provide supervision and training in the techniques you will be performing on this ASP until your are fully qualified to perform these animal activities independently. [Secondary personnel. Redacted]

3) [X] Yes [] No This ASP involves Nonhuman Primate procedures. If yes, complete Section B. If no, go to Section C.

SECTION B: Nonhuman Primate (NHP) Procedures

1) Nonhuman Primate Safety Course (IC component completion date) 1/4/06

2) [X] Yes [] No There will be "awake" NHP procedures performed as part of this ASP, e.g. squeezing up for injections, pole/collar, restraint chairs, operant procedures, etc. If yes, complete 3 and 4. If no, go to Section C.

3) I will be performing the following awake NHP procedures Feeding and care of infants, blood/csf collection of infants + adults, net capture awake adults.

4a) [X] I am currently proficient in performing all of the awake NHP procedures I've listed above, OR

4b) _____ [name(s) of PI or designee] will provide my supervision and training until I am fully qualified to perform these awake NHP procedures proficiently and independently.

SECTION C: Assurances

[X] Yes [] No I have read or will read the final, approved version of this ASP and will limit my activities to performance of only those procedures described in the approved ASP.

[X] Yes [] No I understand my responsibilities for acquiring training on techniques I am asked to perform on animals as described in this ASP, but am not currently proficient in performing. Additionally, if my support role for this ASP changes, I will submit a new T&E form and acquire training prior to performing new procedures.

Animal User Signature: [Redacted] Date 3/31/14

As the PI, I assume the responsibility to ensure that this Animal User's training and experience for procedures he/she will be performing under this ASP has been or will be assessed, and if this person is not proficient in performing these procedures, training will be provided, and proficiency verified, before the person is allowed to conduct these procedures independently.

Principal Investigator Signature [Signature] /S/ Date 4/1/14

Training and Experience Form
Animal Study Proposal

Print Form

ASP # _____ Principal Investigator Stephen J. Suomi

ASP Title Developmental continuity of individual differences in rhesus monkey biobehavioral reactivity

Section A: Information for New Personnel

Name: Secondary personnel.

Phone No: 301.443 _____ Bldg/Rm: _____ Email: _____@nih.gov

PI Course Completion Dates _____ AU Course Completion Date 1/29/2013

1) What is your experience or training for procedures you will be performing on this ASP (e.g. number of years working with the species and proficiency with techniques listed such as injections, blood collection, surgery, behavior test, etc)?

-1 year experience with behavioral observations and cognitive testing in rhesus monkeys.

2) Name of PI and/or designee who will provide supervision and training in the techniques you will be performing on this ASP until you are fully qualified to perform these animal activities independently. Secondary personnel.

3) Yes No This ASP involves Nonhuman Primate procedures. If yes, complete Section B. If no, go to Section C.

SECTION B: Nonhuman Primate (NHP) Procedures

1) Nonhuman Primate Safety Course (IC component completion date) 2/8/2013

2) Yes No There will be "awake" NHP procedures performed as part of this ASP, e.g. squeezing up for injections, pole/collar, restraint chairs, operant procedures, etc. If yes, complete 3 and 4. If no, go to Section C.

3) I will be performing the following awake NHP procedures
Handling, feeding and cognitive testing

4a) I am currently proficient in performing all of the awake NHP procedures I've listed above,
OR

4b) Secondary personnel. [name(s) of PI or designee] will provide my supervision and training until I am fully qualified to perform these awake NHP procedures proficiently and independently.

SECTION C: Assurances

Yes No I have read or will read the final, approved version of this ASP and will limit my activities to performance of only those procedures described in the approved ASP.

Yes No I understand my responsibilities for acquiring training on techniques I am asked to perform on animals as described in this ASP, but am not currently proficient in performing. Additionally, if my support role for this ASP changes, I will submit a new T&E form and acquire training prior to performing new procedures.

Animal User Signature: Secondary personnel. Date 04/02/2014

As the PI, I assume the responsibility to ensure that this Animal User's training and experience for procedures he/she will be performing under this ASP has been or will be assessed, and if this person is not proficient in performing these procedures, training will be provided, and proficiency verified, before the person is allowed to conduct these procedures independently.

Principal Investigator Signature [Signature] Date 4/3/14

Training and Experience Form
Animal Study Proposal

Print Form

ASP # _____ Principal Investigator Stephen J. Suomi

ASP Title Developmental continuity of individual differences in rhesus monkey biobehavioral reactivity

Section A: Information for New Personnel

Name: Secondary personnel. _____

Phone No: 301.496. _____ Bldg/Rm: _____ Email: _____@mail.nih.gov

PI Course Completion Dates 12/13/13 AU Course Completion Date _____

1) What is your experience or training for procedures you will be performing on this ASP (e.g. number of years working with the species and proficiency with techniques listed such as injections, blood collection, surgery, behavior test, etc)?

DVM degree in 1991, 20 years experience as a laboratory animal veterinarian specializing in nonhuman primate medicine and surgery.

2) Name of PI and/or designee who will provide supervision and training in the techniques you will be performing on this ASP until you are fully qualified to perform these animal activities independently. _____

3) Yes No This ASP involves Nonhuman Primate procedures. If yes, complete Section B. If no, go to Section C.

SECTION B: Nonhuman Primate (NHP) Procedures

1) Nonhuman Primate Safety Course (IC component completion date) 5/20/2002

2) Yes No There will be "awake" NHP procedures performed as part of this ASP, e.g. squeezing up for injections, pole/collar, restraint chairs, operant procedures, etc. If yes, complete 3 and 4. If no, go to Section C.

3) I will be performing the following awake NHP procedures
venipuncture, CSF tap, anesthesia, pregnancy ultrasound and hand catching/manual restraint as needed.

4a) I am currently proficient in performing all of the awake NHP procedures I've listed above,

OR

4b) _____ [name(s) of PI or designee] will provide my supervision and training until I am fully qualified to perform these awake NHP procedures proficiently and independently.

SECTION C: Assurances

Yes No I have read or will read the final, approved version of this ASP and will limit my activities to performance of only those procedures described in the approved ASP.

Yes No I understand my responsibilities for acquiring training on techniques I am asked to perform on animals as described in this ASP, but am not currently proficient in performing. Additionally, if my support role for this ASP changes, I will submit a new T&E form and acquire training prior to performing new procedures.

Animal User Signature _____

Date 4/3/14

As the PI, I assume the responsibility to ensure that this Animal User's training and experience for procedures he/she will be performing under this ASP has been or will be assessed, and if this person is not proficient in performing these procedures, training will be provided, and proficiency verified, before the person is allowed to conduct these procedures independently.

Principal Investigator Signature _____ /S/

Date 4/3/14

Training and Experience Form

Animal Study Proposal

Print Form

ASP # _____ Principal Investigator Stephen J. Suomi

ASP Title Developmental continuity of individual differences in rhesus monkey biobehavioral reactivity

Section A: Information for New Personnel

Name: Secondary personnel. _____

Phone No: 301-305-____ Bldg/Rm: _____ Email: _____

PI Course Completion Dates _____ AU Course Completion Date 12/30/13

1) What is your experience or training for procedures you will be performing on this ASP (e.g. number of years working with the species and proficiency with techniques listed such as injections, blood collection, surgery, behavior test, etc)?

No experience. will be trained.

2) Name of PI and/or designee who will provide supervision and training in the techniques you will be performing on this ASP until your are fully qualified to perform these animal activities independently. Secondary personnel. _____

3) Yes No This ASP involves Nonhuman Primate procedures. If yes, complete Section B. If no, go to Section C.

SECTION B: Nonhuman Primate (NHP) Procedures

1) Nonhuman Primate Safety Course (IC component completion date) 4/3/14

2) Yes No There will be "awake" NHP procedures performed as part of this ASP, e.g. squeezing up for injections, pole/collar, restraint chairs, operant procedures, etc. If yes, complete 3 and 4. If no, go to Section C.

3) I will be performing the following awake NHP procedures: cognitive testing, handling & feeding rhesus monkey infants

4a) I am currently proficient in performing all of the awake NHP procedures I've listed above,

OR

4b) Secondary personnel. _____ [name(s) of PI or designee] will provide my supervision and training until I am fully qualified to perform these awake NHP procedures proficiently and independently.

SECTION C: Assurances

Yes No I have read or will read the final, approved version of this ASP and will limit my activities to performance of only those procedures described in the approved ASP.

Yes No I understand my responsibilities for acquiring training on techniques I am asked to perform on animals as described in this ASP, but am not currently proficient in performing. Additionally, if my support role for this ASP changes, I will submit a new T&E form and acquire training prior to performing new procedures.

Animal User Signature: Secondary personnel. _____ Date 4/3/14

As the PI, I assume the responsibility to ensure that this Animal User's training and experience for procedures he/she will be performing under this ASP has been or will be assessed, and if this person is not proficient in performing these procedures, training will be provided, and proficiency verified, before the person is allowed to conduct these procedures independently.

Principal Investigator Signature /S/ _____ Date 4/3/14

Training and Experience Form

Animal Study Proposal

Print Form

ASP # 11-105

Principal Investigator Stephen J. Suomi

ASP Title Developmental continuity of individual differences in rhesus monkey biobehavioral reactivity

Section A: Information for New Personnel

Name: Secondary personnel

Phone No: 301-363- Bldg/Rm: Email: @nih.gov

PI Course Completion Dates AU Course Completion Date 8/15/13

1) What is your experience or training for procedures you will be performing on this ASP (e.g. number of years working with the species and proficiency with techniques listed such as injections, blood collection, surgery, behavior test, etc)?

7 months experience performing behavioral tests, on Rhesus Macaques

2) Name of PI and/or designee who will provide supervision and training in the techniques you will be performing on this ASP until your are fully qualified to perform these animal activities independently.

Secondary personnel. Stephen J. Suomi

3) Yes No This ASP involves Nonhuman Primate procedures. If yes, complete Section B. If no, go to Section C.

SECTION B: Nonhuman Primate (NHP) Procedures

1) Nonhuman Primate Safety Course (IC component completion date) 8/19/13

2) Yes No There will be "awake" NHP procedures performed as part of this ASP, e.g. squeezing up for injections, pole/collar, restraint chairs, operant procedures, etc. If yes, complete 3 and 4. If no, go to Section C.

3) I will be performing the following awake NHP procedures

Cognitive testing, handling & feeding rhesus monkey infants

4a) I am currently proficient in performing all of the awake NHP procedures I've listed above,

OR

4b) Secondary personnel [name(s) of PI or designee] will provide my supervision and training until I am fully qualified to perform these awake NHP procedures proficiently and independently.

SECTION C: Assurances

Yes No I have read or will read the final, approved version of this ASP and will limit my activities to performance of only those procedures described in the approved ASP.

Yes No I understand my responsibilities for acquiring training on techniques I am asked to perform on animals as described in this ASP, but am not currently proficient in performing. Additionally, if my support role for this ASP changes, I will submit a new T&E form and acquire training prior to performing new procedures.

Animal User Signature: Secondary personnel Date 3/21/14

As the PI, I assume the responsibility to ensure that this Animal User's training and experience for procedures he/she will be performing under this ASP has been or will be assessed, and if this person is not proficient in performing these procedures, training will be provided, and proficiency verified, before the person is allowed to conduct these procedures independently.

Principal Investigator Signature /S/ Date 4/3/14

Training and Experience Form

Animal Study Proposal

Print Form

ASP # _____ Principal Investigator Stephen J. Suomi

ASP Title Developmental continuity of individual differences in rhesus monkey biobehavioral reactivity

Section A: Information for New Personnel

Name: Secondary personnel.

Phone No: _____ Bldg/Rm: _____ Email: _____

PI Course Completion Dates _____ AU Course Completion Date 6/4/11

1) What is your experience or training for procedures you will be performing on this ASP (e.g. number of years working with the species and proficiency with techniques listed such as injections, blood collection, surgery, behavior test, etc)?

During the past two years I have worked as a nursery technician. I have experience in assisting with and completing behavioral tests. I have also been trained to handle, feed and give injections.

2) Name of PI and/or designee who will provide supervision and training in the techniques you will be performing on this ASP until you are fully qualified to perform these animal activities independently. Secondary personnel.

3) Yes No This ASP involves Nonhuman Primate procedures. If yes, complete Section B. If no, go to Section C.

SECTION B: Nonhuman Primate (NHP) Procedures

1) Nonhuman Primate Safety Course (IC component completion date) 6/13/11

2) Yes No There will be "awake" NHP procedures performed as part of this ASP, e.g. squeezing up for injections, pole/collar, restraint chairs, operant procedures, etc. If yes, complete 3 and 4. If no, go to Section C.

3) I will be performing the following awake NHP procedures

Handling, feeding and cognitive tests with infant rhesus monkeys

4a) I am currently proficient in performing all of the awake NHP procedures I've listed above,

OR

4b) Secondary personnel. [name(s) of PI or designee] will provide my supervision and training until I am fully qualified to perform these awake NHP procedures proficiently and independently.

SECTION C: Assurances

Yes No I have read or will read the final, approved version of this ASP and will limit my activities to performance of only those procedures described in the approved ASP.

Yes No I understand my responsibilities for acquiring training on techniques I am asked to perform on animals as described in this ASP, but am not currently proficient in performing. Additionally, if my support role for this ASP changes, I will submit a new T&E form and acquire training prior to performing new procedures.

Animal User Signature: _____ Date 3/31/14

As the PI, I assume the responsibility to ensure that this Animal User's training and experience for procedures he/she will be performing under this ASP has been or will be assessed, and if this person is not proficient in performing these procedures, training will be provided, and proficiency verified, before the person is allowed to conduct these procedures independently.

Principal Investigator Signature /S/ Date 4/1/14