

NATIONAL INSTITUTES OF HEALTH
DEPARTMENT OF HEALTH AND HUMAN SERVICES

NATIONAL PRIMATE RESEARCH CENTERS (NPRC) PROGRAM
DIVISION OF COMPARATIVE MEDICINE
NATIONAL CENTER FOR RESEARCH RESOURCES

5P51RR000167-46
NATIONAL PRIMATE RESEARCH CENTER SUPPORT

Final

UNIVERSITY OF WISCONSIN-MADISON

ANNUAL PROGRESS REPORT

Reporting From: 04/30/2006

Reporting To: 04/29/2007

43.000% AIDS Related

withheld



Patent or Copyright was awarded this grant year.

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PERSONNEL ROSTER

Core Doctoral Scientists

| Name, Degree | Department | Non-Host Institution: State, Country |
|--------------|------------|--------------------------------------|
| withheld | | |

Affiliated

| Name, Degree | Department | Non-Host Institution: State, Country |
|--------------|------------|---|
| withheld | | Proprietary Info |
| | | UNIVERSITY OF ALABAMA-BIRMINGHAM: AL, USA Proprietary Info |
| | | Proprietary Info |
| | | Proprietary Info |

Affiliated

| Name, Degree | Department | Non-Host Institution: State, Country |
|--------------|------------|--|
| withheld | | UNIVERSITY OF ALABAMA: AL, USA Proprietary Info Proprietary Info Proprietary Info Proprietary Info Proprietary Info Proprietary Info |
| | | Proprietary Info NENPRC & Proprietary Info Proprietary Info Proprietary Info Proprietary Info |
| | | UNIVERSITY OF ILLINOIS, COLLEGE OF MEDICINE: IL, USA Proprietary Info U MASS. MEDICAL SCHOOL: MA, USA Proprietary Info WAYNE STATE UNIVERSITY: MI, USA Proprietary Info |

Affiliated

| Name, Degree | Department | Non-Host Institution: State, Country |
|--------------|------------|---|
| withheld | | ONPRC: OR, USA |
| | | UNIVERSITY OF TEXAS AT AUSTIN: TX, USA |
| | | Proprietary Info |
| | | UNIVERSITY OF MINNESOTA: MN, USA |
| | | Proprietary Info |
| | | Proprietary Info |
| | | UNIVERSITY OF OKLAHOMA: OK, USA |
| | | UNIVERSITY OF WISCONSIN-MILWAUKEE: WI, USA |
| | | Proprietary Info |
| | | Proprietary Info |

Affiliated

Name, Degree

Department

Non-Host Institution: State, Country

withheld

OKLAHOMA HEALTH SCIENCES
CENTER: OK, USA
UNIVERSITY OF PITTSBURGH: PA,
USA
ONPRC: OR, USA

Proprietary Info

Proprietary Info

OREGON HEALTH SCIENCES
UNIVERSITY: OR, USA

Proprietary Info

WANPRC: WA, USA

UNIVERSITY OF
CALIFORNIA-BERKELEY: CA, USA
UNIVERSITY OF
CALIFORNIA-DAVIS: CA, USA

UNIVERSITY OF
CALIFORNIA-RIVERSIDE: CA, USA

Proprietary Info

UNIVERSITY OF MINNESOTA: MN,
USA

VIRGINIA COMMONWEALTH
UNIVERSITY: VA, USA

Proprietary Info

Proprietary Info

Affiliated

| Name, Degree | Department | Non-Host Institution: State, Country |
|--------------|------------|--|
| withheld | | UNIVERSITY OF CALIFORNIA-DAVIS: CA, USA SOUTHWEST NATIONAL PRIMATE RESEARCH CENTER: TX, USA Proprietary Info |
| | | CALIFORNIA NATIONAL PRIMATE RESEARCH CENTER: CA, USA Proprietary Info |
| | | Proprietary Info |
| | | UNIVERSITY OF PITTSBURGH: PA, USA |
| | | UNIVERSITY OF WISCONSIN-WHITEWATER: WI, USA UNIVERSITY OF NEBRASKA: NE, USA Proprietary Info |
| | | Proprietary Info |

SUBPROJECT DESCRIPTIONS

NPRC MANAGEMENT SUBPROJECTS

WNPRC ANIMAL SERVICES DIVISION (0214)

NPRC UNIT: ADMINISTRATIVE

%NPRC \$: 7.000% **AIDS RELATED RESEARCH**

| INVESTIGATOR | DEGREES | STAFF | DEPARTMENT | NON-HOST INSTITUTION: STATE, COUNTRY |
|--------------|---------|-------|------------|--------------------------------------|
| | | CODE | | |
| withheld | | | | |

SUBPROJECT DESCRIPTION

To oversee all animal care and other colony-related activities for the Wisconsin National Primate Research Center, toward the goal of studying nonhuman primates to improve human and nonhuman primate health:

- 1) To provide an excellent and consistent standard of animal husbandry for the nonhuman primate (nhp) colonies of the WNPRC.
- 2) To provide an excellent and consistent standard of veterinary care for the nhp colonies of the WNPRC.
- 3) To provide research support for researchers performing animal research at the WNPRC.
 - a. Through provision of healthy animals
 - b. Through provision of expert veterinary assistance
- 4) To ensure compliance of researchers, facilities with all institutional, local, state, federal laws, regulations, and guidelines pertaining to the performance of animal research.
- 5) To ensure proper and thorough training of all personnel employed by the WNPRC.

To fulfill the objectives outlined above, the Animal Services Division of the WNPRC is composed of four specialized individual units that maintain their own personnel and budgets. The individual units are: Colony Management, Veterinary Services, Behavioral Management, and Compliance and Training

Each of the four units performs their own individual duties but also act in synergy to fulfill the specific aims of the division. Furthermore, the individual units interact with the other divisions to fulfill the goals of the entire Center.

Veterinary Services Unit

The Veterinary Services Unit of the WNPRC is composed of five veterinarians and six veterinary technicians. The principal objective of the unit is to provide consistent and excellent care to the nhp colonies housed at the WNPRC. To achieve this objective, the unit has created and implemented a collection of policies that guide the provision of veterinary care at the WNPRC. These policies, which encompass pertinent topics such as nhp quarantine, preventative medicine, and clinical/surgical care, are based on the most contemporary techniques available to nhp veterinarians.

The second major objective of the unit is to provide support for the investigators performing research at the WNPRC.

The primary way in which the unit supports the investigators is by ensuring a consistent supply of healthy nhps is available for utilization in experimental studies. The veterinary staff also assists investigators by meeting with them prior to an experiment to discuss and plan for each proposed study, by helping compose IACUC protocols, by performing procedures beyond the skill level of the investigators, and by providing clinical care for the nhps assigned to research projects.

The final objective of the unit is to provide training for personnel working with nhps at the WNPRC and at other institutions. Through didactic and applied instruction, the unit provides training to veterinary and veterinary technical students, visiting veterinarians and veterinary technicians, WNPRC and visiting investigators, and scientific support staff.

The Veterinary Services Unit works closely with the other units of the Animal Services Division as well other divisions of the WNPRC. This collaboration ensures the most complete and effective care of our animals and benefits the Veterinary Services unit as well the other individual units and divisions of the WNPRC.

Colony Management Unit

The Colony Management Unit is one of the most crucial components of the WNPRC infrastructure as it supports the entire animal husbandry program of the Center. The Colony Management Unit consists of a colony manager, 3 supervisors, 22 full-time animal research technicians, and 2 colony records assistants. The daily tasks performed by the Colony Management Unit include:

- Provision of food to the nonhuman primate colonies
- Thorough cleansing of the enclosures and rooms that house the nonhuman primates
- Thorough cleansing of the remainder of the animal holding facilities
- Minor maintenance of the animal holding facilities

In addition to their husbandry duties, the personnel of the Colony Management Unit perform pivotal tasks for the Veterinary Services, Behavioral Management and Enrichment, and the Centralized Protocol Implementation Units of the

Center. These tasks include, but are not limited to the following:

- Documentation and communication of daily health reports on the nonhuman primate colonies
- Maintenance of colony records
- Collection of behavioral and scientific data
- Administration of medical and experimental treatments
- Delivery of environmental enrichment objects
- Collection of blood and other tissue samples for experimental and clinical purposes.

Finally, in cooperation with the Senior Management Team, the Colony Manager maintains the nhp breeding colonies of the Center and ensures that a sufficient supply of healthy, genetically characterized animals are available to core, collaborative, and outside investigators.

Colony Records Subunit

One **EFFO** and one **EFFOR** assistant staff this subunit of Colony Management. The subunit's staff is responsible for the daily entry of all data related to the nonhuman primate colony including clinical procedures, animal location transfers, treatments, research procedures, surgical procedures, sample collections, and health observations. Colony Records staff also assure the quality control of data entries, train new staff on how to use the Animal Records Database, and perform database queries. The subunit is appropriately situated in the Colony Management unit to foster frequent communication among personnel performing the work being documented. The unit works closely with the Information

Services Division of the WNPRC to continuously improve the Internet-based version of the Colony Records Database and to facilitate and simplify the data entry and retrieval process.

Behavioral Management Unit

In 2006, the Environmental Enrichment Subunit of Colony Management was elevated to Unit status and was renamed Behavioral Management. The Behavioral Management Unit promotes and enhances psychological well being for the entire nhp colony while ensuring that the animals are free from unnecessary pain and distress. By utilizing a combination of environmental enrichment, behavior modification, and positive reinforcement, the program attempts to promote a diverse array of species typical behaviors in the captive nhps, increases each animal's control and utilization of their environment, and decreases the occurrence of stereotypical and self-injurious behavior

To help achieve the objectives of the Behavioral Management Program the personnel of the unit have fashioned a thorough and creative Environmental Enrichment Plan. This plan consists of the following components:

- Social companionship
- Foraging
- Food enrichment
- Human to non-human interaction
- Structural enrichment
- Manipulanda
- Additional sensory stimulation

Each component of the enrichment plan has been designed to work in unison with the other components to create a comfortable and psychologically challenging environment for the nhps. An active enrichment committee, which is composed of ARTs, members of the veterinary staff, and members of the Central Protocol Implementation group, along with all the Behavioral Management Unit's personnel, continually evaluates existing techniques and creates and implements new approaches.

Compliance and Training Unit

Compliance and Training is a multi-dimensional unit with a variety of responsibilities. The primary objectives of the unit are to train all personnel at the WNPRC who may come in contact with nhps or their tissue; to ensure that the WNPRC facilities and personnel remain compliant with all animal welfare regulations; to assist investigators in the development of IACUC protocols; and to guide the Occupational Health and Safety Program of the Center. Since its inception in 2005, the unit has worked in collaboration with the various divisions and investigators of the WNPRC to standardize training and promote a center-wide atmosphere of regulatory compliance.

Publications note: Animal Services support is involved in practically every journal article that depends in part or in full on WNPRC resources.

DIRECTOR'S OFFICE (0184)

NPRC UNIT: ADMINISTRATIVE

%NPRC S: 1.000% AIDS RELATED RESEARCH

| INVESTIGATOR | DEGREES | STAFF | DEPARTMENT | NON-HOST INSTITUTION: STATE, COUNTRY |
|--------------|---------|-------|------------|--------------------------------------|
| | | CODE | | |

| | | | | |
|----------|--|--|--|--|
| withheld | | | | |
|----------|--|--|--|--|

SUBPROJECT DESCRIPTION

To oversee all research, services, infrastructure, planning and growth, facilities and communications for the Wisconsin National Primate Research Center, toward the goal of studying nonhuman primates to improve human and nonhuman primate health.

A notable accomplishment in the Director's Office has been the highly efficient teamwork and well honed institutional knowledge of its small but dedicated core staff **withheld** who has enjoyed a long and productive research career at the Wisconsin National Primate Research Center, has been its director **withheld**

withheld—who coordinates all conferences, retreats, seminars, numerous reports, scientific visits and other activities hosted by the Director's Office **withheld**

withheld The tenure of these three individuals together totals

withheld of dedication to the Primate Center.

The Director's Office hosted two general staff meetings in FY 2006-2007 (July and December), scientific research retreats (September, December and March), two strategic planning sessions (September and October), monthly internal advisory board meetings, and a chancellor's visit in December. The deans of the UW-Madison Graduate School and Medical Schools also attended the chancellor's visit. The Primate Center hosted a special seminar by **withheld** **withheld** Food Emergency Response Network in December.

Highlights discussed at the research retreats included progress in the new Information Services Division, progress in the Genetics Core, facilitation of project/grants management, updates in our current research program, and research presentations.

In other key updates:

- The director was awarded the Knox Courage Award from the Wisconsin Association for Biomedical Research in January 2007 (See the awards section of this annual progress report.)
- The director presided over a five-year NIH base grant renewal site visit in January 2007.
- The director hosted the first Pathology Image Database Steering Committee meeting at the Center in December.
- New hires included two **EFFOR** pathologists, who report to the director.
- Preparations began to host the Fall 2008 Nonhuman Primate Models for AIDS Conference in Madison, Wisconsin.

The director attended the following meetings off site in FY 2006-2007:

- Visit to BIRN and the California National Primate Research Center, July.
- Institute for Laboratory Animal Research Council meeting, Woods Hole, Massachusetts, July.
- Served as member of Special Emphasis Panel Review Committee (NIDDK), Washington, DC, July.
- 29th meeting of the American Society of Primatologists (ASP), San Antonio, TX, August.
- National Primate Research Centers Directors' meeting, Atlanta, GA, October.

- BIRN meeting, San Diego, CA, October.
- Institute for Laboratory Animal Research Council meetings, Washington, DC, November.
- The Gerontological Society of America 59th Annual Scientific meeting, Dallas, TX, November. (Program Chair for Biological Sciences)
- Kinetics Workshop, Dallas, TX, November.
- Institute for Laboratory Animal Research Council meeting, Irvine, CA, March, 2007.

The Primate Center's general progress is readily available to a variety of audiences via printed and electronic materials produced by the Public Information Office. Most of these materials—press releases, Centerline newsletter articles, a brochure and fact sheets—appear at www.primate.wisc.edu. In addition, the public information officer completed a major overhaul to the center's research portal on the website, based on input from the fall staff strategic planning sessions. The research link now includes more information useful to researchers, students, the media and the public. This includes links to 80 public lab pages of scientists who are using or have recently used the Primate Center. The PIO also edited a grants page for the website, and photographed all staff members for an internal Human Resources web page. Another major project completed was photographing the Center's entire aged rhesus colony. These images have been used already by at least three investigators for scientific talks.

Local, national and international scientific media interest in WNPRC activities remained high, with weekly scientific media queries and near monthly visits by science journalists and documentary crews. The P01 caloric restriction and aging study generated a record number of science news stories in this reporting period, being covered by more than 20 major news media outlets nationally and internationally, as well as numerous health sites and blogs. Other topics garnering science news media coverage and citing the Wisconsin National Primate Research Center included AIDS, Parkinson's disease and embryonic stem cell research. Animal rights related press coverage about the Primate Center was limited to sporadic local coverage and there were no organized protests.

The public information officer gave one invited out-of-state talk at the ST Dystonia Annual Symposium in Seattle in September, and numerous outreach talks for schools and community groups within Wisconsin on primate research and animal care. The PIO is active through the Chancellor's Speakers Bureau, UW-Madison Science Alliance and the Center's in-house outreach program in disseminating these presentations.

The biggest challenge to the PIO during this reporting period was trying to meet the demands of the job during a three-month period of 50% layoff due to funding cuts. Fortunately, the position returned to near **EFFORT** in November and the office continues to meet its deadlines and productivity standards in publishing, media relations, outreach, and in-house staff requests for information and photography.

WNPRC RESEARCH SERVICES DIVISION (0340)

NPRC UNIT: ADMINISTRATIVE

%NPRC S: 1.000% AIDS RELATED RESEARCH

| INVESTIGATOR | DEGREES | STAFF | DEPARTMENT | NON-HOST INSTITUTION: STATE, |
|--------------|---------|-------|------------|------------------------------|
| | | CODE | | COUNTRY |

withheld

SUBPROJECT DESCRIPTION

The Associate Director for Research Services oversees activities in the Primate Center's five service units. As always, the organization and presence of different Units continues to be dynamic, and responsive to the needs of the investigators and cutting edge science. In 2005 the five Units consisted of Assay, Genetics, Pathology, Virology and Immunology, and Centralized Protocol Implementation (CPI) Services. The CPI Service Unit continues to expand and refine its operations. The Pathology Unit's confocal system with 4 visible light lasers and the pulsed near infrared laser for multiphoton excitation is being increasingly utilized by stem cell investigators and developmental biologists as well as AIDS investigators.

WNPRC INFORMATION SERVICES DIVISION (0383)

NPRC UNIT: ADMINISTRATIVE

%NPRC \$: 1.000% AIDS RELATED RESEARCH

| INVESTIGATOR | DEGREES | STAFF | DEPARTMENT | NON-HOST INSTITUTION: STATE, |
|--------------|---------|-------|------------|------------------------------|
| | | | CODE | COUNTRY |
| withheld | | | | |

SUBPROJECT DESCRIPTION

To support the research and outreach missions of the National Primate Research Center.

The Information Services Division, established in 2006, consists of two existing units, the Jacobsen Library and the Information Technology and Systems Services Unit (IT) Unit. In addition, we will continue to build upon the existing strengths within both Units in order to support the Centers informatics initiatives. Both Units will work closely together to provide a continuum of information services and resources to the Primate Center.

Beginning in January 2005, the Wisconsin National Primate Research Center embarked on an informatics strategic planning process. Recognizing the importance of collaboration and data sharing, the center has invested both time and local funds to develop an understanding of what needs to be done to make this a reality. The Informatics Strategy takes the idea of sharing information and data to the next level, which is the creation of a systems environment to optimally support primate research activities collaboratively across the primate research community through the sharing of information, tools and best practices.

Each of the units, under the auspices of the Information Services Division, while continuing to provide services and resources to the Primate Center, will play a key role in furthering the center's Informatics Strategy.

Staff Member Training/Conferences (all units):

- Sixth Comparative Medicine Resource Directors Meeting. Sponsored by the National Center for Research Resources (NCRR), California National Primate Research Center, Davis, CA, Nov. 15-16, 2006.
- Pathology Image Database: Steering Committee Meeting. Sponsored by the WNPRC, Madison WI, Dec. 14, 2006.
- BIRN (Biomedical Informatics Research Network) All Hands Meeting. NIH/NCRR/BIRN-CC, San Diego, CA, Oct. 23-25, 2006.
- Annual Meeting of the American Society of Primatologists, San Antonio, TX, Aug. 16-19, 2006.
- Promoting Effective Workplace Dynamics. 8th Annual Manager/Supervisor Conference, sponsored by the University of Wisconsin, Madison Office of Human Resource Development, Madison, WI, October 4, 2006.
- Moving at the Speed of Byte: Emerging Technologies for Information Management. 3.5 MLA contact hrs, MLA Webcast, Madison, WI, Nov. 8, 2006.
- NPRC Library Consortium Meeting. (Coordinated Information Services for Primate Research, P40

RR015311)

Madison, WI, April 3, 2006.

- Empowering Our Patrons. WiLSWorld Conference, Madison, WI, July 26-27, 2006.
- Academic Libraries: Pointing Toward New Directions. Wisconsin Association of Academic Librarians, Stevens Point, WI, March 28-31, 2006.
- OCLC Connexion Holdings Maintenance. Webinar, Feb. 23, 2006.
- Lockdown 2006. Sponsored by DoIT, University of Wisconsin-Madison, Madison, WI, July 28, 2006.
- Web Development Series. DoIT, University of Wisconsin-Madison, Madison, WI, June 5-9, 2006.

Publications note: Information Services support is involved in numerous journal articles that depend in part or in full on WNPRC resources.

WNPRC OPERATIONAL SERVICES DIVISION (0390)

NPRC UNIT: OPERATIONAL SERVICES

%NPRC \$: 1.000% AIDS RELATED RESEARCH

INVESTIGATOR

DEGREES

STAFF

DEPARTMENT

NON-HOST INSTITUTION: STATE,
COUNTRY

withheld

SUBPROJECT DESCRIPTION

To provide all necessary services and assistance to support the Center's infrastructure and independently funded research projects of WNPRC principal investigators.

Operational Services, directed by withheld is the WNPRC's business office and serves as the central point for the following administrative functions: Human Resources, Payroll and Benefits, Grants Management, Financial Services, Facilities, and General Shop.

All personnel in Operational Services appreciate and promote a customer service approach in carrying out the day-to-day administrative functions. In addition, Operational Services staff work to assure compliance with all administrative and regulatory requirements of the university, State of Wisconsin and federal cognizant agencies.

Over the last 12 months, Operational Services has accomplished the following:

Human Resources withheld

The HR Office made a great deal of progress in FY2006-2007. In conjunction with an important initiative by our host institution, we engaged in a formal program to ensure equity and to increase our workforce diversity. Our program has six elements: establishment of an in-house committee to develop a mission statement and the guide the implementation of the program; seminars and training classes (e.g. a Spanish in the Workplace series); efforts to attract and retain employees from the growing Hispanic workforce locally; networking with other departments and programs on campus; advertising opportunities for employment in targeted media outlets; and analysis of applicant database and identification of successful strategies. The university and the community have praised our equity and diversity program.

We reorganized and enhanced our employee orientation program for new employees: The program is now a full-day event that incorporates more information, policies, meeting of key staff, tours, and time for questions than ever before.

We are enhancing our website to add an internal link for staff in addition to the public information we provide for prospective employees and students. Finally, travel coordination for Primate Center staff recently transferred from Purchasing to the HR Office.

Payroll and Benefits withheld

Payroll and Benefits worked hard over the past year to keep staff up to date on State of Wisconsin announcements, changes and resources regarding payroll, holidays, reimbursement plans for daycare and medical expenses, retirement benefits and planning, health, dental and life insurance, income continuation, long-term care, and myriad of other benefits.

Grants Management withheld

Grants Management continues to assist PIs with grants resources and assistance. A Grants Management link was just added to the Primate Center website.

Financial Services **withheld**

The Purchasing Unit further streamlined its cataloging, ordering and purchase tracking functions during this reporting period.

During the last period, the Accounting Unit worked with WNPRC IT Department to establish a web based chargeback system. This system improved efficiency by reducing staff processing time in down loading chargeback's from WNPRC Animal Services Area.

Facilities **withheld**

We are working within our Master Plan to redevelop our facilities on campus. Our target is to double our animal holding capacity to accommodate the increasing research demand for our resources. Construction is well underway on the Interdisciplinary Research Complex adjacent to UW Hospital and Clinics, in which we will have space for approximately 350 macaques. Our project there has been funded by a CO6 grant from NCRR. Occupancy is expected to occur in 2008 or early 2009.

Pending Support

1) Due to budget constraints and to realize major costs savings, the facilities staff was instrumental in negotiating an early termination of our lease at UW Research Park. Through efficient coordination and the outstanding cooperation of those affected, we consolidated the administrative staff back into to the campus Primate Center location.

2) The Facilities Unit is responsible for Primate Center construction projects. The unit staff worked to gain NIH approved drawings and specifications for our CO6 construction grant. This CO6 construction grant will provide 350-primate space at the Integrated Research Center (IRC) on UW-Madison campus. In addition, construction has commenced on the IRC project and Facilities continues to work with the suppliers and contractors. Occupation is project to be in late 2008.

3) During the project period, this unit completed and finalized the Primate Center's Emergency Response Plan.

General Shop **withheld**

During the last project period the Shop has completed the following activities:

Parkinson's Research (Supporting **withheld**)

The Shop built three MRI Stereotaxic Instruments equipped with specialized hollow tipped ear bars, calibrated frame bars

and adjustable brass/delrin tooth and eye bars.

Animal Services - WNPRC

In terms of ongoing Primate Housing maintenance, the Shop completely disassembled and removed stationary non human primate housing in three rooms and six pens allowing Physical Plant trades people to perform required repairs to these areas. Made repairs and modifications to housing units and reinstalled.

Aging Research (Supporting withheld)

The Shop designed and built four testing cages and two isolation chambers used to study Cognitive Decline Behavioral Testing in Aging Monkeys. The chambers are equipped with a monitor screen, reward dispenser and white noise source.

Capital Equipment Purchases

The following capital equipment purchase was completed during the last project period:

- 1) Upgrade kit, 3730 50cm Array, \$125,000
- 2) BD LSRH #338301, \$39,600
- 3) Biosafe L-80XP Ultracentrifuge System, \$63,050
- 4) AS2800 TRI-CARB 2800TR Liquid Scintillation Analyzer, \$22,652
- 5) AutoMACS PRO Separator, \$37,400
- 6) Mirco Plate Washer, \$7,590
- 7) Computer Equipment, \$19,246

Publications note: Operational Services support is involved in numerous journal articles that depend in part or in full on WNPRC resources.

WNPRC AGING COLONY RESOURCE (0409)

NPRC UNIT: RESEARCH SERVICES

%NPRC S: 1.200%

| INVESTIGATOR | DEGREES | STAFF | DEPARTMENT | NON-HOST INSTITUTION: STATE, COUNTRY |
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withheld

SUBPROJECT DESCRIPTION

To maintain an aged rhesus macaque colony as a specialized resource for studies relating to normal aging.

Allocation of Resource Access

The WNPRC has approximately 90 rhesus monkeys over 20 years of age. Support is provided in part by the National Institute of Aging to maintain these animals for studies relating to normal aging. During FY2006-2007, approximately 20 investigators used these animals in studies related to neuroendocrinology, calorie restriction, glucose metabolism, ovarian dysfunction, bone mineral density, osteoarthritis, immunology, ophthalmology, oncology and reproduction. No request has been denied.

Dissemination

Knowledge is disseminated to the scientific community via publications in peer reviewed journals and scientific meeting attendance. The Wisconsin National Primate Research Center also holds quarterly research retreats to create increased communication between the various service and resource units.

Training

Training is available in established protocols food intake measurement, body composition assessment, physical activity monitoring, cognitive and motor skills assessment, and metabolic assessments. Training in all of these areas was carried out during the past year.

Progress

During the current reporting year, approximately 20 investigators have utilized animals from the aging colony. We continue to monitor the health and well-being of all animals in the colony and evaluate aging individuals from the general colony to evaluate their appropriateness for inclusion in the aging colony.

Publications note: Aging Resource support is involved in numerous journal articles that depend in part or in full on WNPRC resources.

WNPRC GENE TRANSFER RESOURCE (0411)

NPRC UNIT: RESEARCH SERVICES

%NPRC \$: 1.100%

| INVESTIGATOR | DEGREES | STAFF CODE | DEPARTMENT | NON-HOST INSTITUTION: STATE, COUNTRY |
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withheld

SUBPROJECT DESCRIPTION

To develop a specialized resource for studies relating to gene transfer and primate transgenesis.

Allocation of Resource Access

The Gene Transfer resource unit at the Wisconsin National Primate Research Center provides expertise and reagents to interested investigators. Over the past year 2 investigators have received plasmids used for reporter gene expression. No request has been denied.

Dissemination

Knowledge is disseminated to the scientific community via publications in peer reviewed journals and scientific meeting attendance. The Wisconsin National Primate Research Center also holds quarterly research retreats to create increased communication between the various service and resource units.

Training

Training is available in established protocols for quantitative RT-PCR for transgene expression, and in developing individual investigator-specific target genes. Training in RT-PCR and gene expression analysis was carried out during the past year.

Progress

During the current year, we evaluated transgene expression in offspring from embryonic gene transfer experiments, and pilot studies in reproductive tract gene transfer. Transgene DNA and RNA was documented in individual tissue biopsies. Further evaluation is anticipated to define vector integration into individual tissues and gain insight into molecular events occurring during embryonic gene transfer.

Publications note: Gene Transfer Resource support is involved in several journal articles that depend in part or in full on WNPRC resources.

WNPRC GENETICS SERVICES UNIT (0405)

NPRC UNIT: RESEARCH SERVICES

%NPRC \$: 5.000% AIDS RELATED RESEARCH

| INVESTIGATOR | DEGREES | STAFF CODE | DEPARTMENT | NON-HOST INSTITUTION: STATE, COUNTRY |
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SUBPROJECT DESCRIPTION

To provide core, campus and non-host investigators with sophisticated and specialized genetics resources and expertise.

Progress and concerns

In 2006, the Genetics Service established a high-throughput DNA sequencing facility. From May 1, 2006 to December 31, 2006, the sequencing facility processed more than 30,000 DNA sequences for 22 users. Sequence quality was high, with an average read length of more than 670 bases in December, 2006. Responding to the popularity of the service in 2006, we recently upgraded the sequencing hardware to double throughput and capacity. The Genetics Service also provides increasingly sophisticated MHC genotyping of WNPRC macaques. The tools developed for these analyses are now being adapted by outside investigators with WNPRC assistance.

Allocation of resource access

The Genetics Service sequencing facility was designed as an economical and rapid alternative to existing DNA sequencing services for nonhuman primate researchers with medium-to-high throughput needs. Current clients are drawn largely from WNPRC AIDS laboratories that perform extensive SIV and immunogenetics research.

Dissemination

We request that projects utilizing Genetics Service acknowledge the service in manuscripts and presentations, withheld the PI for Genetics Services, lectures regularly on NHP genetics.

Training

All 22 users of the sequencing service received training in the submission and retrieval of data during 2006. A subset of these users obtained advanced training in the analysis of sequence data from Genetics Services staff. Additionally, methods for MHC genotyping macaques using microsatellite markers were provided to laboratories in the USA, UK, and Australia.

WNPRC CENTRALIZED PROTOCOL IMPLEMENTATION UNIT (0404)

NPRC UNIT: RESEARCH SERVICES

%NPRC \$: 1.000% AIDS RELATED RESEARCH

| INVESTIGATOR | DEGREES | STAFF CODE | DEPARTMENT | NON-HOST INSTITUTION: STATE, COUNTRY |
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SUBPROJECT DESCRIPTION

To provide core, campus and non-host investigators with organized and efficient WNPRC and UW-Madison resources, protocol management and expertise.

Progress and Concerns

CPI had over 4000 procedures for more than 1400 experiments since May 1, 2006. These were for 56 different projects involving 30 investigators (13 WNPRC core scientists, 8 UW affiliates, 7 affiliates from other academic institutions, and 2 investigators from the industry/biotech sector). We have also developed 15 budget estimates for pending projects.

Allocation of Resource Access

So far there have been no denials on incoming project requests. Projects must fall within the mission of WNPRC, be approved by the director, and WNPRC have the resources to provide support. In addition, CPI will seek consultation with WNPRC core scientists.

Dissemination (All Divisions and Units)

In addition to the WNPRC web site, we rely on recommendations by core and affiliate scientists. We are also sending CPI staff to annual scientific meetings to present what resources and techniques are available to the scientific members in attendance.

Training (All Divisions and Units)

The veterinary head of CPI in coordination with other veterinary staff members, as needed, accomplishes training of CPI personnel for the multitude of procedures cited above. Verbal and written instruction as well as hands-on training and oversight of procedures to assure proficiency are utilized to provide a highly skilled technical staff to researchers. We are in the process of formalizing our training documentation, so that each technician will have a complete record of every procedure he/she is trained on and to what level of proficiency.

Publications

Virtually all publications relying on WNPRC resources in part or in full involved the use of the CPI Unit.

WNPRC PATHOLOGY SERVICES UNIT (0402)

NPRC UNIT: RESEARCH SERVICES

%NPRC \$: 1.000% AIDS RELATED RESEARCH

| INVESTIGATOR | DEGREES | STAFF | DEPARTMENT | NON-HOST INSTITUTION: STATE, COUNTRY |
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| withheld | | | | |

SUBPROJECT DESCRIPTION

To provide core, campus and non-host investigators with sophisticated and specialized pathology resources and expertise.

Progress and concerns

The WNPRC hired two **EFFOR** pathologists in 2006 to replace departed staff. These two individuals report to the Director. While there was some adjustment as with any major staff changes, the unit is functioning smoothly. In fact, Pathology Services was instrumental in organizing and participating in the first ever Pathology Image Database Steering Committee meeting at the Center in December.

Allocation of Resource Access

Pathology Services notifies investigators of the resource via the Primate Center website and scientific meetings. To date, no requests have been denied. Nearly all core WNPRC labs use Pathology Services at some point in their projects, and numerous campus affiliates avail of this service. In addition, since May 1, 2006, 11 investigators from non-host institutions received a total of 685 samples, representing tissues, organs and genetic material from macaca mulatta and callithrix jacchus. Please see the Research Services section of this progress report for a table of species, specimen types and numbers.

Dissemination

We request that projects utilizing Pathology Services acknowledge the WNPRC in manuscripts and presentations.

Training

In 2006 the Pathology Unit created a training manual for banking brain tissues. Two staff members participated in clinical pathology training to provide additional services for colony management. Unit members provided training for six pathology residents on campus.

Publications

Pathology Services has contributed to numerous publications that involved use in part or in full of the WNPRC.

WNPRC STEM CELL RESOURCE (0410)

NPRC UNIT: RESEARCH SERVICES

%NPRC S: 1.100%

| INVESTIGATOR | DEGREES | STAFF | DEPARTMENT | NON-HOST INSTITUTION: STATE, COUNTRY |
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| withheld | | | | |

SUBPROJECT DESCRIPTION

To maintain and further develop a specialized resource for studies relating to embryonic stem cell research.

Allocation of Resource Access

To date, the stem cell resource unit at the Wisconsin National Primate Research Center provides frozen rhesus and marmoset ES cells to interested investigators. Over the past year investigators have received three different strains of rhesus ES cells and one strain of marmoset ES cells. No request has been denied. Additionally, the stem cell resource unit provides zebrafish bFGF for culturing primate ES cells. To date five investigators have received the recombinant protein. The DNA plasmid used to purify the protein itself has been sent to over 10 investigators and is now available through Addgene (www.addgene.com)

Dissemination

Knowledge is disseminated to the scientific community via publications in peer reviewed journals and scientific meeting attendance. The Wisconsin National Primate Research Center also holds quarterly research retreats to create increased communication between the various service and resource units.

Training

Training in culture techniques of primate embryonic stem cells is available. Many new investigators have taken advantage of this resource in previous reporting periods however there have been no new investigators trained this year.

Progress

Cynomologous ES cell derivation: During 2006, 10 embryos were collected. Five were cultured to blastocyst and stem cell derivation was attempted using immunosurgery techniques. There has been one cell line in culture since March and this cell line is being characterized. The cell line is negative for Herpes B and mycoplasma and has been injected into Rag-1 mice to determine pluripotency.

Publications note: Stem Cell Resource support is involved in numerous journal articles that depend in part or in full on WNPRC resources.

