

**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**

**5P51RR000163-46
NATIONAL PRIMATE RESEARCH CENTER**

Final

OREGON NATIONAL PRIMATE RESEARCH CENTER

OREGON HEALTH & SCIENCE UNIVERSITY

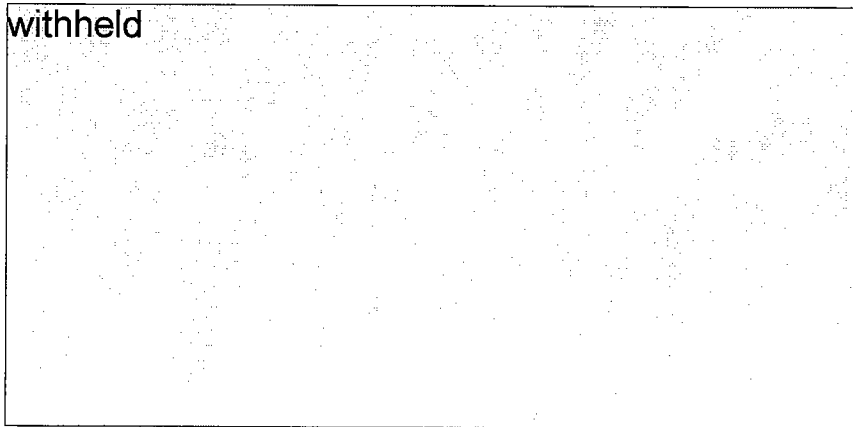
ANNUAL PROGRESS REPORT

Reporting From: 05/01/2005

Reporting To: 04/30/2006

28.071% AIDS Related

withheld



Patent or Copyright was not awarded this grant year.

PERSONNEL ROSTER

Core Doctoral Scientists

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

Core Doctoral Scientists

Name, Degree	Department	Non-Host Institution: State, Country
withheld		
		Non-Host Institution: State, Country
		UNIV WASHINGTON: WA, USA
		UNIV UTAH HEALTH SCI CTR: UT, USA
		UNIV WASHINGTON: WA, USA
		Proprietary Info
		UNIV ALABAMA: AL, USA
		Proprietary Info
		Proprietary Info
		UNIV MICHIGAN: MI, USA
		Proprietary Info
		Proprietary Info
Proprietary Info		
UNIV PITTSBURGH: PA, USA		
UNIV CALIFORNIA, DAVIS: CA, USA		
Proprietary Info		
Proprietary Info		
LOUISIANA STATE UNIV HEALTH SCI CTR: LA, USA		

Affiliated

Name, Degree	Department	Non-Host Institution: State, Country
withheld		Proprietary Info
		Proprietary Info
		Proprietary Info
		UNIV NORTH CAROLINA, CHAPEL HILL: NC, USA
		FLORIDA ATLANTIC UNIV: FL, USA
		Proprietary Info
		UNIV NEW ORLEANS: LA, USA
		Proprietary Info
		UNIV HAWAII: HI, USA
		UNIV BUFFALO: NY, USA
		UC DAVIS: CA, USA
		U OF MARYLAND, BALTIMORE: MD, USA
UNIV CAL, SAN DIEGO: CA, USA		
NEI, NIH: MD, USA		
Proprietary Info		
Proprietary Info		
Proprietary Info		
Proprietary Info		

Affiliated

Name, Degree	Department	Non-Host Institution: State, Country
withheld		UNIV ALABAMA AT BIRMINGHAM: AL, USA
		UNIV PITTSBURGH: PA, USA
		UNIV NORTH CAROLINA: NC, USA
		Proprietary Info
		Proprietary Info
		TEXAS A&M UNIVERSITY: TX, USA
		UNIV PITTSBURGH: PA, USA
		UNIV WASHINGTON: WA, USA
		NIH VACCINE RES CTR: MD, USA
		Proprietary Info
		Proprietary Info
		Proprietary Info
		Proprietary Info
		Proprietary Info
		UNIV MARYLAND: MD, USA
		NIH/NCI: MD, USA
		UNIV COLORADO HSC: CO, USA
		Proprietary Info
		Proprietary Info
		Proprietary Info
		NEW JERSEY MEDICAL SCHOOL: GA, USA
		Proprietary Info
		Proprietary Info

Affiliated

Name, Degree	Department	Non-Host Institution: State, Country
withheld		Proprietary Info
		UNIV WASHINGTON: WA, USA
		Proprietary Info
		UNIV CALIFORNIA, DAVIS: CA, USA
		UNIV FLORIDA: FL, USA
		Proprietary Info
		Proprietary Info
		UNIV CA, BERKELEY: CA, USA
		Proprietary Info
		NIH: MD, USA
		UNIVERSITY OF VIRGINIA CHARLOTTESVILLE: VA, USA
		NIH/NIAD: MD, USA
		Proprietary Info
		Proprietary Info
	UNIV MICHIGAN: MI, USA	
	CALIFORNIA NATIONAL PRIMATE RESEARCH CENTER: CA, USA NIA, NIH: MD, USA	
	Proprietary Info	
	Proprietary Info	
	UNIV WISCONSIN MEDICAL SCHOOL: WI, USA	
	Proprietary Info	
	Proprietary Info	
	NIH: MD, USA	

Affiliated

Name, Degree	Department	Non-Host Institution: State, Country
withheld		U PITTSBURGH: PA, USA
		Proprietary Info
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		Proprietary Info
		Proprietary Info
		FLORIDA INTERNATIONAL UNIV: FL, USA
		Proprietary Info
		UNIVERSITY OF UTAH: UT, USA
		Proprietary Info
		Proprietary Info
		Proprietary Info
		Proprietary Info
		Proprietary Info
		Proprietary Info
		Proprietary Info

VAMC: OR, USA

NIH: MD, USA

Proprietary Info

Proprietary Info

Proprietary Info

NIH: MD, USA

Proprietary Info

Affiliated

Name, Degree	Department	Non-Host Institution: State, Country
withheld		NEW ENGLAND PRIMATE RES CTR: MA, USA
		Proprietary Info
		NEW ENGLAND PRIMATE RESEARCH CENTER: MA, USA
		UCLA: CA, USA UNIV VIRGINIA: VA, USA
		Proprietary Info
		VAMC: OR, USA
		NIA: MD, USA Proprietary Info
		Proprietary Info UNIV MARYLAND-BALTIMORE: MD, USA
		Proprietary Info Proprietary Info
		Proprietary Info NIH: MD, USA UNIV VIRGINIA: VA, USA
		Proprietary Info
		Proprietary Info

Affiliated

Name, Degree	Department	Non-Host Institution: State, Country
withheld		Proprietary Info
		Proprietary Info
		UNIV NEBRASKA MED CTR: NE, USA UNIV WASHINGTON/APPLIED BIOMECHANICS LAB: WA, USA VAMC: OR, USA
		Proprietary Info
		FLORIDA STATE UNIV/TALLAHASSEE: FL, USA
		Proprietary Info
		NIA, NIH: MD, USA UNIV NEBRASKA MEDICAL CENTER: NE, USA UNIV WASHINGTON: WA, USA
		Proprietary Info
		Proprietary Info UNIV TEXAS SOUTHWESTERN MED CTR: TX, USA HARBOR-UCLA MED CTR: CA, USA
		Proprietary Info NIH/NCI: MD, USA
		Proprietary Info
		UNIV CALIFORNIA/SAN FRANCISCO: CA, USA
		Proprietary Info
		UNIV PITTSBURGH: PA, USA VAMC: OR, USA
Proprietary Info		
Proprietary Info		


Affiliated

Name, Degree	Department	Non-Host Institution: State, Country
withheld		UNIV ARIZONA SCHOOL OF MED: AZ, USA NATIONAL INSTITUTE ON AGING MD, USA
		UNIV CALIFORNIA-SAN FRANCISCO: CA, USA VAMC: OR, USA
		Proprietary Info
		SOUTHWESTERN NATL PRIMATE RES CTR: TX, USA
		USDA HUMAN NUTR RES CTR ON AGING, Proprietary Info UNIV PITTSBURGH: PA, USA
		NIAAA, NIH: MD, USA
		NEI, NIH: MD, USA
		Proprietary Info
		UNIV TEXAS: TX, USA NEW ENGLAND PRIMATE RES CTR: MA, USA
		UNIV WYOMING: WY, USA MICHIGAN STATE UNIV: MI, USA
		Proprietary Info
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		Proprietary Info
		UNIV. TEXAS SW MED. CTR.: TX, USA
		Proprietary Info
Proprietary Info		

Affiliated

Name, Degree	Department	Non-Host Institution: State, Country
withheld		OREGON STATE UNIV: OR, USA
		UNIV IOWA: IA, USA
		Proprietary Info
		NIH: MD, USA
		Proprietary Info
		Proprietary Info
		Proprietary Info
		UNIV WISCONSIN: WI, USA
		Proprietary Info
		Proprietary Info
		Proprietary Info
		Proprietary Info
		UNIV TEXAS SOUTHWESTERN MED CTR: TX, USA
		Proprietary Info
		Proprietary Info
		Proprietary Info
		Proprietary Info
		UNIV ALABAMA, BIRMINGHAM: AL, USA
		GRC, NIA, NIH: DC, USA
		UNIV WISCONSIN, MADISON: WI, USA
	Proprietary Info	
	Proprietary Info	
	Proprietary Info	

Affiliated

Name, Degree	Department	Non-Host Institution: State, Country
withheld		UNIV PITTSBURGH- PA, USA
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		Proprietary Info
		Proprietary Info
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		Proprietary Info
		Proprietary Info
		UNIV CALIFORNIA-IRVINE: CA, USA

SUBPROJECT DESCRIPTIONS

NPRC MANAGEMENT SUBPROJECTS

DIVISION OF ANIMAL RESOURCES (0107)

NPRC UNIT: ADMINISTRATIVE

%NPRC \$:

INVESTIGATOR

**DEGREES STAFF DEPARTMENT
CODE**

**NON-HOST INSTITUTION: STATE,
COUNTRY**



UNIV WASHINGTON/APPLIED
BIOMECHANICS LAB, WA USA

SUBPROJECT DESCRIPTION

The primary goals of the Division of Animal Resources (DAR) are to maintain procedures and facilities necessary for husbandry and veterinary care of primates within the colony in order to maximize production to make available nonhuman primates for research protocols while maintaining a program to optimize the physical and psychological health of individual animals. These efforts include basic husbandry and care of animals, a psychological well being program, technical support, veterinary consultation to investigators and diagnosis and treatment of spontaneous disease and abnormalities that may result secondary to a research protocol.

DAR voluntarily participates in the Association for Assessment and Accreditation of Laboratory Animal Care International and is in full accreditation status, and is regularly inspected by the USDA for compliance with regulation and guidelines.

The rhesus macaque production colony is managed to maintain a specific pathogen free status for specific retroviruses (SRV, STLV, SIV) and Ceropithecine herpesvirus 1 (Herpes B).

Pathology Services provide diagnostic pathology and services for Center animal resources pathology support for Center and collaborative research programs, and directs the Center's nonhuman primate Tissue Distribution Program. The Virology Laboratory provides core laboratory resources in support of nonhuman primate colony surveillance, the SPF macaque breeding program, and support for research projects and genetic evaluation.

Surgery services, directed by a veterinary surgeon, support the total animal resource program and research

programs. Laparoscopic surgery techniques are a major focus.

Oregon Graduate Institute and OHSU collaborators, listed above as affiliated scientists, use ONPRC animal facilities in the **Personal** and **Personal** for their research.

SUBPROJECT PROGRESS

The past year has been one of implementing changes that enable DAR to meet the needs of research and improve the care of animals. The opening of the ASB3 in December 2004 added 25,394 sq. ft. of indoor animal facility space. In March 2005, 8 new sheltered housing units were opened, adding an additional 8,000 sq. ft. of space. **EFFOR** were added to Primate Operations. DAR now has 38 animal technicians and two supervisors to care for approximately 3,900 NHPs housed in 145,600 sq. ft. of animal facility space, plus 324,000 sq. ft. of outdoor corral housing. Ninety-five more NHPs were assigned to research projects this year, for a total of 2,259. Additional updates include: a 49% increase in the number of procedures performed by Surgical Services (4,926 total); a 68% increase in the number of tissues distributed by Pathology Services (4,571 total); enhanced IT capabilities that improve efficiency of animal ordering, billing, and IACUC compliance monitoring; initiation of monkey training programs to facilitate cooperation with husbandry and research procedures to decrease stress associated with these procedures; and parentage analysis for pedigree development was completed for the SPF rhesus breeding colony to support studies requiring genetic analysis and to aid in management of the colony that maximize genetic diversity. Two separate comprehensive USDA inspections resulted in one noncompliant item (recently expired drugs were found) that did not affect animal welfare. There were no other issues with regulatory compliance or AAALAC accreditation.

DIVISION OF NEUROSCIENCE (0103)

NPRC UNIT: ADMINISTRATIVE

%NPRC \$:

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

SUBPROJECT DESCRIPTION

The Division of Neuroscience conducts research aimed at identifying and defining fundamental aspects of the cellular and molecular mechanisms underlying nervous system function. The guiding principle of these research efforts is the concept that our nonhuman primate resource can be best utilized by implementing a "vertical integration" approach in which studies are first conducted in laboratory animals, before selecting those issues that require the participation of nonhuman primates. A major focus of the Division is on developmental neurosciences and neuroendocrinology. Programs aimed at understanding the molecular bases of neurodegenerative diseases, neurobiology of aging, the molecular bases of mental illness, and the neurogenetics of complex behaviors add diversity to this central theme. Efforts to develop unique primate models for the understanding of selected human diseases of the nervous system represent a major long-term goal of the Division. A significant number of research programs employ genetic approaches and genetic models for the understanding of nervous system function. The recent completion of the human genome project is exerting a major impact on the Division's investigative activities, as a variety of genomics tools and bioinformatic strategies are rapidly becoming available to our researchers via both ONPRC-sponsored projects and OHSU-based new genomics facilities. In addition to its investigative activities, the Division of Neuroscience provides specialized research training to both graduate students, postdoctoral research fellows, and visiting scientists. Its faculty members hold appointments in and actively contribute to two main OHSU Graduate Programs, namely, Neuroscience, and Developmental Biology. Finally, the Division serves as a regional, national and international resource for integrative neuroscience research because of its unique capabilities to conceptually and experimentally link neural functions of evolutionary, less advanced mammalian species with those particular to nonhuman and human primates.

SUBPROJECT PROGRESS

withheld who works in the area of alcohol and behavior has joined the Division as a withheld with a joint appointment in the withheld at OHSU. withheld was appointed withheld to replace withheld. withheld research program is entirely consistent with the mission of the Division as he works on development of hypothalamic circuitries controlling food intake. withheld was promoted to the rank of withheld because of his scientific stature in the neuroendocrine field. During the last year of core grant support, the Division has trained 15 postdoctoral fellows and 5 graduate students.

DIVISION OF PATHOBIOLOGY AND IMMUNOLOGY (0105)

NPRC UNIT: ADMINISTRATIVE

%NPRC \$: AIDS RELATED RESEARCH

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

SUBPROJECT DESCRIPTION

The Division of Pathobiology and Immunology (P&I) continues to build its strong programs in AIDS pathogenesis and vaccine development, immunosenescence, and biodefense, the latter including programs in West Nile virus and pox virus pathogenesis and vaccine development. The P&I continues to expand in vivo and in vitro virology, and flow cytometry core facilities. Additional resources include a Palm laser capture microscope, RT-PCR and phosphorimager, and mAb production facilities. All P&I projects either employ or intend to employ the nonhuman primate system as the most relevant and efficient correlate for human infectious disease research and vaccine development.

SUBPROJECT PROGRESS

Progress for P&I projects will be described in their respective project descriptions. During the past year, a total of 16 postdoctoral students and 9 graduate students have been trained in the P&I division.

EDUCATIONAL ACTIVITIES AND STAFF TRAINING (0094)

NPRC UNIT: ADMINISTRATIVE

%NPRC \$:

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

SUBPROJECT DESCRIPTION

Educational Activities: Through academic appointments at OHSU and involvement in community activities, scientists participate in a wide variety of educational activities, including providing lectures to medical and graduate students, medical residents, and community based programs in science for high school students. There are graduate and postdoctoral students who receive training in Center laboratories.

Center scientists participate in a number of training grants (PIs listed as affiliated scientists above) that provide support for graduate and postdoctoral students, as well as faculty. The Fogarty International Center/NICHD training grant, a collaborative effort with **Proprietary Info** provides support for two predoctoral candidates per year. In addition, support is provided for two established scientists to spend a sabbatical year at the ONPRC/OHSU. A number of scientists have graduate and postdoctoral students in their laboratories who are supported by either the NICHD Reproductive Biology Training Grant, the NIDDK Multidisciplinary Training in Neuroendocrinology Training Grant, or individual RO1 grants. Scientists also serve as mentors for junior clinical faculty who are supported by NIH K awards: Womens Reproductive Health Research Grant, Building Interdisciplinary Research Careers in Women's Health Grant and the Oregon Child Health Research Center Grant.

The Division of Animal Resources continues to present extensive training opportunities for research and investigative staff as well as mandatory hands-on training concerning various animal care and use procedures for animal care staff.

Environmental Health and Safety Training is provided in the areas of animal-, laboratory- and SIV/HIV-biosafety, bloodborne pathogens, chemical hygiene, radiation safety, ergonomics, emergency response, drug-free workplace training, CPR and first aid, and shipment of hazardous materials.

SUBPROJECT PROGRESS

The Center is diversifying its graduate student population. We have attracted graduate students to our new Genetics Resource and Informatics Program. Two Master's degree students worked at the Center during this past year. For the first time, veterinary students from the College of Veterinary Medicine at the Oregon State University will receive training at the Oregon Center. During this year, arrangements were completed for 10 summer interns to receive training from the veterinarian staff. Planning for the new SEPA grant, awarded to OHSU, also took place during this year. This grant provides science training for middle school teachers; this training will

begin in the summer of 2006 and continue in the summer of 2007. The ONRPC will partner with the OHSU GCRC to provide education in various areas of science. The teachers will begin their training at the Primate Center to learn about basic research and then move to the GCRC to learn about clinical research in a related area. The Center has developed a disaster preparedness plan and has held educational workshops for the entire Center staff.

DIRECTOR'S OFFICE (0141)

NPRC UNIT: ADMINISTRATIVE

%NPRC \$:

INVESTIGATOR

DEGREES STAFF DEPARTMENT

NON-HOST INSTITUTION: STATE, COUNTRY

withheld

SUBPROJECT DESCRIPTION

The Director is responsible for oversight of all of the Center activities and for developing new research programs and funding sources. She is aided in this responsibility by the Associate Director for Research, the Assistant Director for Animal Services, and the Heads of the three Research Divisions and of the three Service Divisions, who report directly to her. Her office is responsible for production of annual progress reports, the 5-year core grant renewal, and facilities grants, such as the CO6 and G20. The Director has overall responsibility to insure that OHSU activities on the OHSU West Campus are supportive of the missions and goals of the Center. The Associate Director works with the Director in the overall planning of Center programs; he is also responsible for Research Services, including oversight of personnel and development of new technologies. He oversees the development of external research projects proposed by private companies.

The Public Information Officer uses a variety of methods to create public awareness, understanding, and support for ONPRC research, primate research, and all biomedical research involving animals. She assists OHSU media personnel in writing news releases, preparing information packets for media representatives, arranging interviews, and escorting reporters around ONPRC. She edits an employee newsletter entitled Centerpage, writes brochures, publishes the biennial report, edits the Center's web site and serves as ONPRC spokesperson. Public relations activities include conducting tours, giving speeches to community organizations and representing ONPRC on OHSU's Science Outreach and Resources Committee. Among special programs the Public Information Officer supervises are the Summer Science Apprenticeship Program for high school students and the Teacher Internship Program for high school teachers.

SUBPROJECT PROGRESS

During this past year, the Center successfully recruited 3 new scientists to the Center. Of these, 1 was a joint recruitment with the withheld at OHSU. The new scientists include withheld as an withheld in the withheld as an withheld replacement for withheld as a withheld EFFOR. These scientists bring new expertise to the research programs at the Center. In September 2005, the Center hosted the NPRC Directors' meeting in Portland and the annual NHP Models of AIDS Symposium. In addition, a scientific retreat was held to develop a 5-year plan for research; the Scientific Advisory Board attended along with the scientific staff. Our new Public Information Officer, withheld, greatly expanded public outreach efforts. She has represented the Center at a variety of meetings within the Portland area. Our summer intern program has also grown substantially due to her efforts during this past year. During the summer of 2006, there will be 36 interns, including high school students, high school teachers, and college students. For the first time, a group of veterinarian students from Oregon State University will be doing a summer internship at the Oregon Center.

DIVISION OF REPRODUCTIVE SCIENCES (0138)

NPRC UNIT: ADMINISTRATIVE

%NPRC \$:

INVESTIGATOR

DEGREES STAFF DEPARTMENT

NON-HOST INSTITUTION: STATE,
COUNTRY

withheld

SUBPROJECT DESCRIPTION

The mission of the Division of Reproductive Sciences is to conduct basic and applied research on aspects of reproductive biology that are particularly relevant to understanding human reproduction and to controlling reproductive disorders and fertility. In addition, the division, as part of the Oregon Health & Science University, provides research training for individuals entering science-oriented careers (e.g., pre- and postdoctoral fellows) and research experience for others (e.g., high school teachers). Finally, the division serves as a regional, national and international resource for reproductive research, especially as it relates to nonhuman primates. The research of the Division's scientists [withheld] focuses on understanding the central (neural) and peripheral (endocrine, paracrine, and autocrine) mechanisms controlling reproductive function, primarily in the female. Research projects span the continuum of reproduction that begins with gamete (egg and sperm) development and ends with the birth and nursing of an offspring. A general theme apparent in all laboratories is the utilization of the Old World monkey as a model for whole animal, cellular and molecular studies of direct relevance to human reproduction. Through a better understanding of basic reproductive processes, investigators are considering the etiology and potential treatment of reproductive disorders, as well as novel approaches for contraception. Also, researchers are considering unique nonhuman models for future biomedical research through assisted reproductive technologies, including the study and application of primate embryonic stem cells. Many advances can be directly translated to issues in women's health, cancer, diabetes, cardiovascular research, aging, obesity, neuroscience and behavior.

SUBPROJECT PROGRESS

Two scientists were recruited to sustain the Division's expertise on the primate reproductive tract [withheld] and to increase our research effort on early embryogenesis in primates [withheld]. Researchers continue to attract grant awards, e.g., SPID 0533 to use nonhuman primate embryonic stem cells to study the differentiation and function of specific neuronal cells and to have funded grants renewed, e.g., SPID 0102, to continue studies on the causes and prevention of preterm labor plus its effects on the fetus in primates. Efforts continue to successfully attract nonfederal support for applied research, e.g., from [Proprietary] to identify novel agents that could serve as contraceptives to block ovulation (SPID 0625) or implantation (SPID 0635). Also, a consortium of investigators from the [withheld] further evaluated the vervet monkey as a nonhuman primate model for reproductive research (SPID 0639, 0640, 0641). The translational research effort of affiliate scientists from the Oregon Health & Sciences University continues to receive acclaim, including that of [withheld] prize paper at the 2005 annual meeting of the American Society for Reproductive Medicine). Also, the NICHD-sponsored Specialized Cooperative Research Center for Reproductive and Infertility Research (SCCPRR) facilitates interactions with other scientists around the United States, including a new project with the [Proprietary Info] to evaluate factors promoting egg maturation and fertilization (SPID 0659). More information on advances relating to women's health, reproductive aging, cancer and other issues can be found in individual SPIDs.

RESEARCH SERVICES (0097)

NPRC UNIT: RESEARCH SERVICES

%NPRC \$:

INVESTIGATOR

DEGREES STAFF DEPARTMENT

NON-HOST INSTITUTION: STATE,
COUNTRY

withheld

Proprietary Info

Proprietary Info

UNIV NEW ORLEANS, LA USA

Proprietary Info

UNIVERSITY OF VIRGINIA
CHARLOTTESVILLE, VA USA

Proprietary Info

Proprietary Info

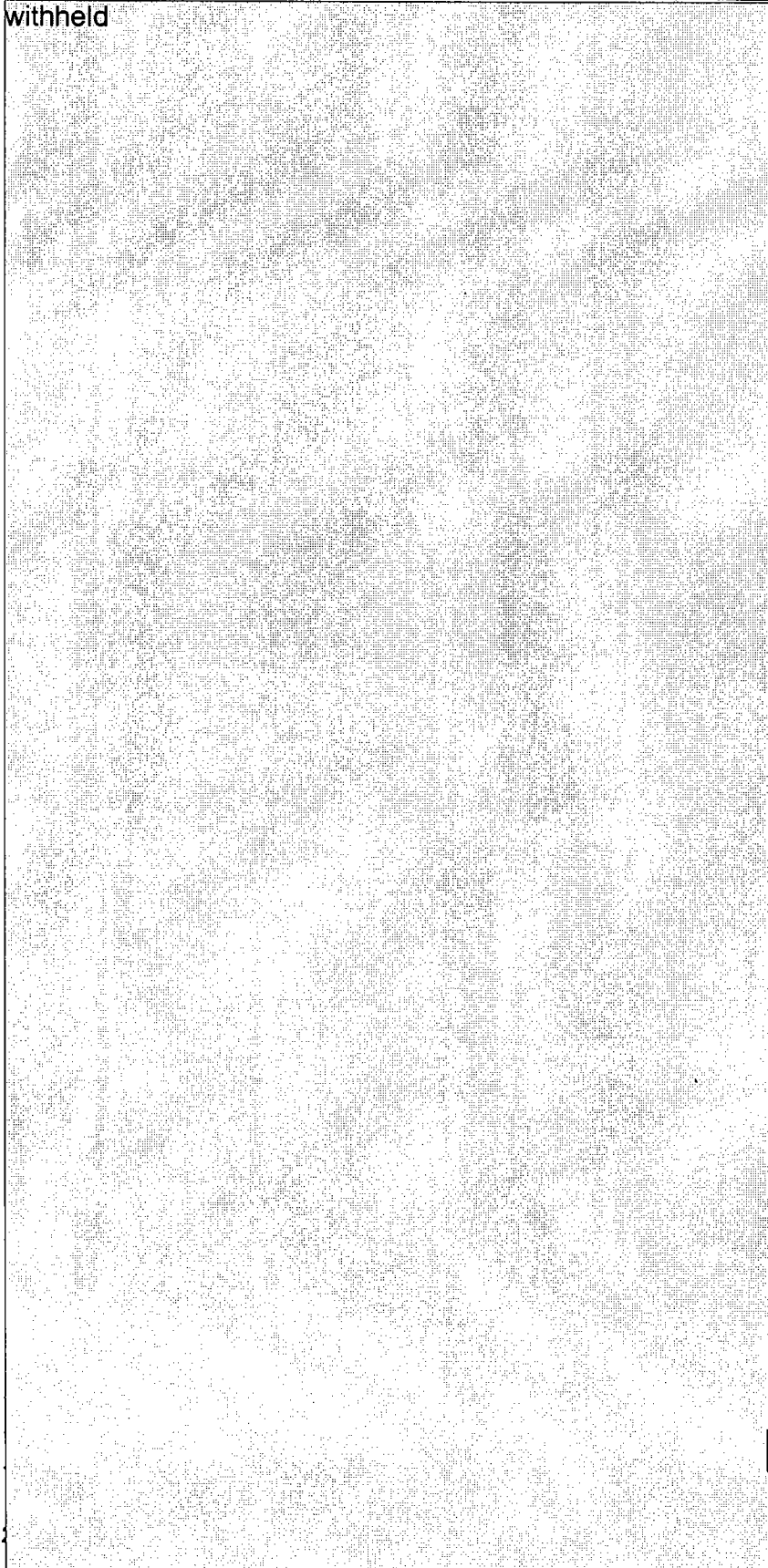
NEW ENGLAND PRIMATE RES CTR,
MA USA

UCLA, CA USA

TULANE NATL PRIMATE RES CTR,
LA USA

VAMC, OR USA

withheld



Proprietary Info

Proprietary Info U

WASHINGTON, WA USA
VAMC, OR USA
UNIV WASHINGTON, WA USA

UNIV TEXAS SOUTHWESTERN MED
CTR, TX USA
HARBOR-UCLA MED CTR, CA USA

VAMC, OR USA

UNIV ARIZONA SCHOOL OF MED,
AZ USA

VAMC, OR USA

Proprietary Info

Proprietary Info

UNIV TEXAS SOUTHWESTERN MED
CTR, TX USA

Proprietary Info

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BIOLOGY, UNSU

