



# Southwest National Primate Research Center

## Instructions for Preparation of Applications for STUDENT INTERNSHIP PROGRAM

The Southwest National Primate Research Center (SNPRC) provides educational and training opportunities for a limited number of students during an 8-10 week summer session. Both undergraduate and graduate (Ph.D. and veterinary) students at accredited academic institutions are welcome to apply.

### Application Process

Complete the application form as follows:

1. Personal information - Fill in your name, mailing address, a phone number where you can be reached during the day, your e-mail address, and the institution where you are currently a student.
2. References - Enter the names of two people who are familiar with your academic performance who will send a letter of reference to the address given below. The letters should address both your potential to benefit from this program and your ability to function in a research environment.
3. Mentors - Interns must have a mentor on the SNPRC staff who will be responsible for designing and overseeing that intern's training program. Select one or more names of the SNPRC staff members who have agreed to serve as mentors (see Page 3 below). Contact Dr. Tom Folks (tfolks@sfbgenetics.org) for more information and to discuss mentor choices.
4. Attachments - Include with your application form a transcript of your grades, and a one-page description of your interests and what you hope to gain from this internship.
5. Submission - (a) Mail, fax, or e-mail the form and attachments, and (b) ask your references to mail or fax their letters of reference to the Southwest National Primate Research Center. The address is

Ms. Barbara Gault  
Southwest National Primate Research  
Center P.O. Box 760549  
San Antonio, TX 78245-0549  
210-258-9883 (fax)  
e-mail: bgault@sfbgenetics.org

**We must receive all application materials no later than February 26, 2008.**

## **Review and Acceptance**

Applications will be reviewed by an acceptance committee. Decisions regarding acceptance will be made by March 15.

Selection criteria include

- GPA, course background
- The written letter of intent
- Two letters of reference
- Availability of a willing mentor

The number of interns accepted for any given session will be set by the availability of mentors and funds, but are unlikely to exceed 2-3 per summer.

## **Procedures Following Acceptance**

Upon acceptance, each applicant will be provided with another packet containing information about the primate center, San Antonio, and housing opportunities. While we can provide some logistical assistance, interns will be responsible for arranging their own transportation and housing.

Interns will be offered a flat stipend for their participation in the program - \$2,500 for an undergraduate and \$3,500 for a graduate student. Up to \$1,000 per student will be supplied for supplies or other research-related expenses incurred at SNPRC.

## **Training program**

Interns are expected to commit to a minimum eight-week training program, complete a research project conducted entirely at the SNPRC, and to make an oral presentation of their research results at the end of their internship.

## **Mentors for Summer, 2008**

### **Jon Allan, DVM**

Students would help develop new methods for identifying viral infections in nonhuman primates. State of the art diagnostics are used to test for simian retroviral infections in a wide range of nonhuman primate species. It is expected that the student would learn molecular and immunological techniques applied to simian viral infections.

### **Kathy Brasky, VMD**

Dr. Brasky is a clinical and research veterinarian. She will be available to mentor a veterinary student, who will get hands-on experience in research veterinary procedures with a variety of nonhuman primate species.

### **Anthony Comuzzie, PhD**

A summer intern working with Dr. Comuzzie may assist in genetics analysis, laboratory assays, or experimental procedures (e.g., insulin clamp studies). The work in Dr. Comuzzie's laboratory focuses on the genetics of obesity and diabetes, with an increasingly large experimental component focused on physiology and metabolism.

### **Melissa de la Garza, DVM**

Dr. de la Garza is a veterinarian involved with both clinical and research aspects of laboratory animal medicine. Students with interest in animal work will be exposed to the basic problem-solving approach to clinical evaluation and subsequent diagnosis and treatment of nonhuman primates. Students may also have opportunity to observe various clinical and experimental procedures as they arise.

### **Luis Giavedoni, PhD**

A summer student working with Dr. Giavedoni will participate in the molecular characterization of MHC-I genes in rhesus macaques housed at the SNPRC. Major Histocompatibility Complex class I (MHC-I) genes encode proteins central to the adaptive immune response, signaling infection by binding pathogenic peptides and presenting them on the cell surface to cytotoxic T cells. In addition, class I molecules are critical to the innate immune response, providing both inhibitory and stimulating signals to NK cells. Rhesus macaques are relevant preclinical models for human diseases and transplantation, and experimentally infected rhesus monkeys serve as an indispensable animal model to assess the pathogenesis, to validate therapy approaches and to develop vaccination strategies against AIDS. The student will perform DNA extraction from macaque's lymphocytes, MHC-specific PCR amplification, DNA hybridization, and flow cytometry.

### **Lorena Havill, PhD**

Osteoporosis (also known as "fragile bone disease") is an age-related health problem of immediate public health concern that, according to the National Osteoporosis Foundation, results in 1.5 million fractures in the U.S. each year. Osteoporosis and associated fragility fractures are of increasing public health concern as the U.S. population (and the world population in general) ages. The number of individuals in the U.S. alone whose well-being is threatened by the fragility of their skeleton is expected to increase from 43.6 million in 2002 to

61.4 million in 2020. Dr. Havill's research with humans and baboons centers on identification of factors, both environmental and genetic, that contribute to variation in bone health. There are a number of current research projects in which interns can be involved. One body of research involves determining the degree to which various measures of bone strength are due to the effects of genes. The traits being examined include cortical bone microstructure and remodeling, mechanical and material properties of cortical and trabecular bone, and degree of bone mineralization. A second body of research employs a novel method to discover genes that affect bone health. RNA is extracted from bone and other relevant tissues and is then used to obtain whole genome transcriptional profiles for the specific tissue. Gene expression is then examined relative to the trait of interest to identify genes that are correlated with variation in the trait. The mechanisms underlying these correlations are then pursued. As an intern with Dr. Havill, one would have the opportunity to learn standard lab techniques, skeletal anatomy and biology, how to implement cutting-edge high throughput genetic analysis tools, and the application of all of these to the study of bone health.

### **Gene Hubbard, DVM, MS and Edward Dick, DVM**

Drs. Hubbard and Dick are board certified veterinary pathologists. Interns working with Drs. Hubbard and Dick would be able to take advantage of a complete clinical and anatomic pathology laboratory, conducting hands on gross and histological pathology for both clinical and experimental purposes. They will be expected to prepare a manuscript for publication.

### **Natalia Schlabritz-Loutsevich, MD, PhD**

A student in Dr. Schlabritz-Loutsevich's program will be involved in development of new molecular biological methods for estimation of fetal cells in maternal circulation in early pregnancy in the baboon. Through this project, the student will learn about the fields of experimental gynecology (progestin therapy, follicular maturation) and obstetrics (telemetry recording of blood pressure and temperature, Doppler ultrasonography).

### **Suzette D. Tardif, Ph.D.**

Dr. Tardif's present research centers on the study of obesity in marmoset monkeys. She is beginning a new study to determine the effect of obesity during pregnancy on mothers and their offspring. A summer student coming to work with Dr. Tardif will most likely participate in the development of behavioral tests designed to quantify the response of both adult and infant marmosets to food.