

Mentors for 2017 SNPRC Summer Intern Program

Marcel Daadi, PhD

Dr. Marcel Daadi is a scientist with expertise in stem cell biology and translational research focused on developing therapies for neurological disorders. In academic and industrial settings, Dr. Daadi's group has developed neural stem cell and gene therapy for treating Parkinson's disease, stroke, and for targeting brain tumors. Summer students will have the opportunity to participate in cell culture techniques of various types of stem cells including neural stem cells, the use of cellular, and molecular techniques for studying how stem cells behave in a cell culture dish and after transplantation into the brain of a nonhuman primate model of a neurodegenerative disease. Other approaches we use include stereotaxic brain surgeries, behavioral analysis, and brain imaging.

Edward J. Dick, Jr., DVM, Dipl. ACVP

Dr. Edward Dick, ACVP is a board certified veterinary pathologist. Trainees will be fully involved in the pathology service, conducting gross and microscopic pathologic evaluations of clinical and experimental cases in nonhuman primates. The trainees will also have access to the clinical pathology laboratory, which conducts hematology, blood chemistries, cytology, and fecal parasite exams. Trainees will be expected to prepare a manuscript for publication.

Patrice A. Frost, DVM

Dr. Patrice Frost is one of six veterinarians participating in clinical and research support at the SNPRC. Dr. Frost believes that education is the gate to one's future. As a team of veterinarians, we are committed to providing candidates with an opportunity to get first-hand knowledge in the field of primate medicine. She has had the privilege throughout her 31-year career in primate medicine guiding over 65 students with a variety of educational backgrounds through their introduction to nonhuman primates. Based on the applicant's individual goals and knowledge, we try to build a rewarding experience to include both clinical and research aspects of our practice.

Shannon Hall-Ursone, DVM

Dr. Shannon Hall-Ursone is one of the newest veterinarians at the Primate Center but she is excited about the opportunity to be a mentor. Dr. Hall-Ursone has been in the field of Laboratory Animal Medicine since graduating from Veterinary school in 2005, and has worked with a wide variety of species. Students will have the opportunity to see and participate in both the clinical and research duties held by research veterinarians at the SNPRC. They will also have the opportunity to work with other sections such as the behavioral team and pathologists so they get the understanding that providing the best care is a team effort.

Ruth M. Ruprecht, MD, PhD

Dr. Ruth Ruprecht is a physician-scientist with expertise in virology, molecular biology, immunology, and especially vaccine research. Dr. Ruprecht's group has developed the technology to generate recombinant monoclonal antibodies from rhesus monkeys that were protected by novel AIDS vaccines against repeated challenges with different viruses. Summer students have an opportunity to participate in antibody engineering, protein biochemistry and/or virology, depending on prior experience.

Marie Claire Gauduin, PhD

Maternal transmission of human immunodeficiency virus type 1 (HIV-1) accounts for most cases of pediatric HIV-1 infection. Approximately 75 to 85% of perinatally HIV-1-infected infants develop a slowly progressive course of infection with a slow CD4 decline. In contrast, 10 to 25% of infected infants develop rapidly progressive infection with early CD4+ T-cell depletion followed by death within the first two years of life. The mechanism whereby the first group maintains some control over viral replication is not understood. Our laboratory has been focusing on Pediatric AIDS Research using the simian immunodeficiency virus (SIV) /macaque model for AIDS. SIV infection of infant macaques is a highly relevant animal model of pediatric HIV infection with which to rapidly evaluate the efficacy of pediatric HIV vaccine and drug interventions. We have recently demonstrated that newborn monkeys infected with a less pathogenic SIV can control infection even in the absence of antiviral treatment, which suggests that treatment may be quite successful in "rescuing" or preserving the infant's immune response. We are actively pursuing this fundamental research in newborn monkeys infected with pathogenic or less pathogenic/attenuated SIV to: 1) investigate the development of early virus-specific cellular immune responses; 2) carefully define developmental changes in T cells composition and function compared to uninfected naïve aged-matched neonates; and, 3) characterize any functional impairments of the response using optimized techniques for the detection, quantitation, and characterization of virus-specific T lymphocytes using intracellular cytokine flow cytometry staining, ELISPOT, and tetramer assays. Summer students will have the opportunity to learn and perform several virological and immunological techniques and participate in our Pediatric AIDS research.