

Residency Training at Children's Memorial Hospital Research Opportunities

**NORTHWESTERN UNIVERSITY'S
FEINBERG SCHOOL OF MEDICINE
CHILDREN'S MEMORIAL HOSPITAL**
Department of Pediatrics

Children's Memorial Research Center



Children's Memorial Hospital seeks to encourage the development of pediatric physician-scientists by recruiting MD/PhD candidates and other candidates with strong research interests into its residency training program. The program offers flexibility in scheduling activities and appropriate mentoring for those interested in pursuing an academic pediatric career. To facilitate career development, the Department of Pediatrics participates in the Northwestern University Feinberg School of Medicine-wide Physician Scientist Training Program (www.pstp.northwestern.edu).

A central component of the program is the Children's Memorial Research Center (CMRC). One of only five institutions in the U.S. dedicated exclusively to pediatric research, CMRC is designed to link Children's proven clinical expertise with the strength of outstanding basic research. In addition to the role CMRC plays in incubating new biomedical advancements, it also provides an excellent training ground for physicians interested in laboratory investigation.

In 1995, CMRC moved into a new 70,000-square-foot, state-of-the-art facility located just a block from the main hospital. A second wing with 50,000 square feet of research space was completed in December, 2003. This year, CMRC investigators received \$25 million in external funding. CMRC core facilities include

rodent, zebrafish and small mammal facilities, a cell imaging and microscope facility, a viral vector core, a biostatistics and experimental design facility, and other resources. This spring, 75 trainees presented research posters at our Annual Scholar Recognition Day.

To enhance the cross-fertilization of ideas among researchers and students in various disciplines, CMRC is organized around seven interdisciplinary programs: Cancer Biology and Epigenomics, Developmental Biology, Experimental Therapeutics, Human Molecular Genetics, Molecular and Cellular Pathobiology, Neurobiology, and Smith Child Health Research Program. Research projects include the study of early genetic specification of fate by transcription factors, the use of viral-mediated gene therapy to treat neurological disease, and investigations of the relationship of cell plasticity to mechanisms underlying childhood cancer. Clinical studies include the molecular epidemiology of low birth weight and population-based analyses of childhood obesity and of accidental injury.

CMRC's researchers interact closely with investigators at the medical school, the Robert H. Lurie Comprehensive Cancer Center, the Feinberg Cardiovascular Research Institute, the Northwestern University Institute for Neurobiology, and the University's Evanston campus.

A partial list of current CMRC investigators and their research interests is included on the opposite side of this sheet.

We are planning a special interview day for resident applicants with previous research experience and the goal of a career in research. If you are interested in more information about research opportunities, please contact William Schnaper, MD. at (pedsvicechair@childrensmemorial.org)

PRINCIPAL INVESTIGATOR	RESEARCH INTERESTS
Sara Ahlgren, PhD	Interaction of environmental toxicants (like alcohol) with genetic mutations during development
Estella Alonso, MD	Pediatric liver failure and transplantation
Alex Bassuk, MD, PhD	Genetics of neurodevelopmental disorders
Helen Binns, MD, MPH	Strategies to prevent lead poisoning, smoking, and obesity in community pediatric practice
Martha C. Bohn, PhD	Neurotrophic factors in development and neurodegeneration and the use of gene transfer to the CNS
Jennifer Cartland, PhD	Demographic analysis of pediatric and adolescent health behaviors
Earl Cheng, MD	Bladder tissue regeneration
Katherine Kaufer Christoffel, MD, MPH	Injury epidemiology and prevention, outcomes research, physical activity and its relationship to obesity and pedestrian injury
Robert W. Dettman, PhD	Cell biology of vascular development in the embryonic heart and lung
Isabelle G. DePlaen, MD	Pathogenesis of bowel injury and initial triggering factors of gut inflammation as seen in necrotizing enterocolitis of the newborn
Christine DiDonato, PhD	Spinal muscular atrophy linked to a single recessive gene
Maria Dizon, MD	Effect of neonatal ischemia on neural development
Leon G. Epstein, MD	HIV-1 induced neuronal injury in the developing nervous system and strategies for neuroprotection
Kathryn Farrow, MD, PhD	Phosphodiesterases and pulmonary vascular tone
Robert Garofalo, MD, MPH	Disease education, prevention and treatment in underserved populations
Stewart Goldman, MD	Pediatric brain tumors
Daniel Harrington, PhD	Bladder tissue engineering
Ann Harris, PhD	Genetics of cystic fibrosis
Mary Hendrix, PhD	Stem cells and their differentiation in cancer biology
Laura Herzing, PhD	Mechanisms underlying autism and seizure disorders that involve chromosome 15
Jane Holl, MD	Health care policy
Philip M. Iannaccone, MD, DPhil	Developmental biology of early fate specification and organogenesis
Sookyong Koh, MD, PhD	Brain plasticity and inflammation in seizures
Jhumku D. Kohtz, PhD	Mechanisms involved in forebrain patterning
Marilyn Lamm, PhD	Signaling in prostate cancer bone metastases
Jon Lavigne, MD	Treatment of oppositional disorders and ADHD
Honglin Li, PhD	Role of caspases in the signaling pathway of apoptosis
Susanna McColley, MD	Treatment of cystic fibrosis
Bernard L. Mirkin, PhD, MD	Regulation of neuroblastoma tumor growth and differentiation by growth factors and pharmacological agents; mechanisms of drug resistance in neuroectodermal tumors
Jill Morris, PhD	Role of gene DISC1 (Disrupted-In-Schizophrenia 1) in the development of schizophrenia
Douglas Nordli, MD	Consequences of prolonged seizures
Lauren Pachman, MD	Immunogenetic studies of pathogenesis, vascular injury, and response to therapy in pediatric rheumatic disease
Elizabeth Perlman, MD	Molecular predictors of prognosis and responsiveness to therapy in pediatric renal tumors
Jacqueline Pongracic, MD	Immunologic approaches to reducing inner-city asthma
Abdelhadi Rebaa, PhD	Intercellular signaling and drug resistance
Anne H. Rowley, MD	Molecular pathogenesis of Kawasaki disease
William Schnaper, MD	Molecular regulation of signal transduction by TGF- β in glomerular mesangial cell fibrogenesis
Paul Schumacher, PhD	Mitochondrial and oxygen sensing in pulmonary epithelial
Roopa Seshadri, PhD	Statistical analysis of complex health problems
Hans-Georg Simon, PhD	Molecular mechanisms regulating pattern formation in vertebrate limb development and regeneration
Bento Soares, PhD	Genomic instability, aberrant transcription and dysfunctional splicing in tumorigenesis and metastasis
Robin Steinhorn, MD	Altered regulation of cyclic GMP phosphodiesterase activity in lambs with persistent pulmonary hypertension
Riccardo A. Superina, MD	Changes in graft infiltrating cell populations with tolerance induction after heart transplantation
Francis Szele, PhD	Migration of adult CNS stem cells
Xiao-Di Tan, MD	Molecular mechanisms of epithelial cell wound healing and regulation of mucosal barrier function
Alexis Thompson, MD, MPH	Clinical drug trials in hematologic diseases
Jacek Topczewski, PhD	Transcription factors during early development of the brain
William Tse, MD, PhD	Developmental potential of bone marrow stem cells for tissue regeneration and clinical transplantation for the treatment of hematopoietic disorders and other diseases
Mark Wainwright, MD, PhD	Neuroinflammatory responses to ischemic and traumatic brain injury
David O. Walterhouse, MD	Role of the oncogene GLI1 in normal development and neoplasia
Xiaobin Wang, MD, MPH, ScD	Molecular epidemiology of preterm births, with focus on the interaction between genes and environment and their effects on reproductive outcomes
Peter Whittington, MD	Biology of non-alcoholic steatohepatitis (NASH)
Ram Yogev, MD	Pediatric AIDS clinical trials