

**Table 2. Participating Faculty Members  
(Alphabetically by Faculty Members)**

Name	Rank	Primary (& Secondary) Appointment(s)	Role In Program	Research Interest
Allada, Ravi, MD	Assoc. Prof.	Neurobiology and Physiology  (Biochemistry, Molecular Biology, and Cell Biology)	Mentor	Molecular genetics of circadian rhythms and sleep
Band, Vimla, PhD	Prof.	Medicine	Mentor	Early steps in human breast and cervical cancer
Band, Hamid, MD, PhD	Prof.	Hematology / Oncology	Mentor	define the elements of cancer cell signaling and use these to develop targeted therapeutics and early diagnostic/prognostic markers in cancer
Bass, Joseph, MD, PhD	Asst. Prof.	Medicine  (Neurobiology and Physiology)	Mentor	Insulin signaling and the neuroendocrine regulation of body weight and energy balance.
Beitel, Greg, PhD	Asst. Prof.	Biochemistry, Molecular Biology, and Cell Biology	Mentor	Genetic and molecular mechanisms by which endothelial and epithelial cells regulate the sizes of tubes in organs such as the vascular system, lung and kidney; molecular mechanisms and effects of cellular responses to the elevated CO <sub>2</sub>
Bergan, Raymond, MD	Assoc. Prof.	Hematology / Oncology	Mentor	Analysis of gene expression profiles in subjects with prostate cancer
Binder, Lester, PhD	Prof.	Cell and Molecular Biology	Mentor	Functions of tau; microtubule proteins; neurodegenerative disease
Bozza, Thomas, PhD	Asst. Prof.	Neurobiology and Physiology	Mentor	Olfactory system as a model to understand how genetically-defined neuronal circuits develop

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Brown, Melissa, PhD	Prof.	Microbiology - Immunology	Mentor	Mast cell and T cell IL-4 gene regulation, mast cell biology, role of mast cells in adaptive immune responses using both autoimmune and infection models in mice
Carthew, Richard, PhD	Prof.	Biochemistry, Molecular Biology, and Cell Biology	Mentor	RNA-mediated genetic interference (RNAi): mechanism and function
Chandel, Navdeep, PhD	Assoc. Prof.	Medicine (Pulmonary and Critical Care)	Mentor	Apoptosis, oxygen sensing, transcriptional control, lung inflammation/fibrosis, oxidant stress
Chenn, Anjen, MD, PhD	Asst. Prof.	Pathology	Mentor	Cell fate and proliferation in CNS
Chisholm, Rex, PhD	Prof.	Cell and Molecular Biology	Mentor	Cell motility and migration; genetics of complex disease; bioinformatics
Cianciotto, Nicholas, PhD	Prof.	Microbiology - Immunology	Mentor	Molecular and cellular pathogenesis of Legionella pneumophila, the bacterial agent of Legionnaires' disease, a potentially fatal form of human pneumonia
Clevenger, Charles, MD, PhD	Prof.	Pathology	Mentor	Molecular endocrinology of the somatolactogenic receptor complex as it pertains to the pathogenesis of human breast cancer and development of the mammary gland
Cryns, Vincent, MD	Assoc. Prof.	Endocrinology (Cell and Molecular Biology)	Mentor	Molecular mechanisms of apoptosis and cancer
Dean, David, PhD	Assoc. Prof.	Pulmonary and Critical Care	Mentor	Extracellular and intracellular trafficking of plasmids and other non-viral gene therapy vectors; development of electroporation methods for gene transfer in animals and applied to disease

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				models of atherosclerosis, asthma, and acute lung injury
DiDonato, Christine, PhD	Asst. Prof.	Pediatrics	Mentor	Etiology and treatment of neuromuscular diseases
Dudley, Andrew, PhD	Asst. Prof.	Biochemistry, Molecular Biology, and Cell Biology	Mentor	Uncovering the mechanisms that govern morphogenesis, the generation of biological form
Engman, David, MD, PhD	Assoc. Prof.	Pathology (Microbiology - Immunology)	Mentor	Molecular genetics and cell biology of trypanosomes; cell biology of flagellar biogenesis; pathogenesis of Chagas disease; pathogenesis of autoimmune myocarditis; Renin-angiotensin system involvement in autoimmune disease
Folsch, Heike, PhD	Asst. Prof.	Biochemistry, Molecular Biology, and Cell Biology	Mentor	Establishment and maintenance of cell polarity
Gelfand, Vladimir, PhD	Prof.	Cell and Molecular Biology	Mentor	Cytoskeleton assembly and function; biochemistry of microtubules; mechanisms and regulation of intracellular transport
Goldman, Robert, PhD	Prof.	Cell and Molecular Biology	Mentor	Neurofilaments in cell lines and DRG, live cell imaging
Gottardi, Cara, PhD	Asst. Prof.	Medicine (Pulmonary and Critical Care)	Mentor	Molecular mechanisms of cell-cell adhesion regulation required for normal tissue morphogenesis; how alterations in cell adhesion complexes drive disease states such as cancer and fibrosis
Green, Kathleen, PhD	Prof.	Pathology (Dermatology)	Mentor	Regulation and function of intercellular junctions and cadherins
Gross, Adrian, MD	Asst. Prof.	Molecular Pharmacology and	Mentor	Structure and function of ion channels, which are membrane proteins that play many key roles in neuroscience and are

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		Biological Chemistry		targeted by essential drugs used in clinical medicine
Halder, Kasturi, PhD	Prof.	Pathology	Mentor	Host-pathogen interactions in protozoan and bacterial infections: Mechanisms of entry, trafficking, signalling and molecular mimicry in pathogenic vacuoles; Applications of functional genomics, bioinformatics and network analyses to intracellular pathogen
Hauser, Alan, MD, PhD	Assoc. Prof.	Microbiology - Immunology (Medicine)	Mentor	Pathogenesis of Pseudomonas aeruginosa, with an emphasis on this bacterium's type III secretion system
Holmgren, Robert, PhD	Prof.	Biochemistry, Molecular Biology, and Cell Biology  (Neurobiology and Physiology)	Program Director	The Hedgehog signal transduction pathway and the regulation of the Ci/Gli transcription factors
Horvath, Curt, PhD	Assoc. Prof.	Biochemistry, Molecular Biology, and Cell Biology	Mentor	Signal transduction and gene expression in mammalian cells
Huang, Sui, PhD	Assoc. Prof.	Cell and Molecular Biology	Mentor	Cancer cell biology, nuclear structure, anti-tumor drugs
Iannaccone, Philip, MD, PhD	Prof.	Pediatrics	Mentor	Tumor clonality; preimplantation; reproductive toxicity.
Jameson, J. Larry, MD, PhD	Prof.	Medicine	Mentor	ENuclear receptors, gene transcription; sex determination; genetic diseases
Jones, Jonathan, PhD	Prof.	Cell and Molecular Biology	Mentor	Elucidating how extracellular matrix regulates the behavior of cells

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Karpus, William, PhD	Prof.	Pathology  (Microbiology - Immunology)	Mentor	Chemokine regulation of central nervous system demyelinating disease pathogenesis, host responses to mucosal infection, and tumor metastasis
Kessler, John, MD	Prof.	Neurology	Mentor	Stem cell development, differentiation, and neuronal survival
Kim, J. Julie, PhD	Asst. Prof.	Obstetrics and Gynecology	Mentor	Molecular events in the endometrium during early pregnancy, endometriosis and endometrial cancer
Klein, William, PhD	Prof.	Neurobiology and Physiology	Mentor	Alzheimer's disease: molecular basis; apoptosis; signal transduction in brain development and plasticity
Klumpp, David, PhD	Asst. Prof.	Urology  (Microbiology - Immunology)	Mentor	Molecular pathogenesis of bladder inflammation
LaBonne, Carole, PhD	Asst. Prof.	Biochemistry, Molecular Biology, and Cell Biology	Mentor	Formation, migration, and differentiation of neural crest cells
Laimins, Laimonis, PhD	Prof.	Microbiology - Immunology  (Biochemistry, Molecular Biology, and Cell Biology)	Mentor	Pathogenesis of human papillomavirus infection and transformation
Lamb, Robert, PhD, ScD	Prof.	Biochemistry, Molecular Biology, and Cell Biology  (Microbiology - Immunology)	Mentor	Structure and replication of enveloped RNA viruses with particular interest in influenza virus and paramyxoviruses

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Lee, Chung, PhD	Prof.	Urology	Mentor	Role of hormones in tumor growth
Leis, Jonathan, PhD	Prof.	Microbiology - Immunology	Mentor	Multidisciplinary molecular genetics and biochemical approaches in the study of replication of avian and human retroviruses, especially reverse transcription, viral DNA integration, and virion assembly
Levine, Jon, PhD	Prof.	Neurobiology and Physiology	Mentor	Neuroendocrine mechanisms controlling reproduction; steroid hormone actions in the brain
Lomasney, Jon, MD	Assoc. Prof.	Pathology	Mentor	Cardiac angiogenesis, stem cell biology in the myocardium; lipid-protein interactions
Longnecker, Richard, PhD	Prof.	Microbiology - Immunology	Mentor	Epstein-Barr virus transformation, latency and entry
Matouschek, Andreas, PhD	Prof.	Biochemistry, Molecular Biology, and Cell Biology	Mentor	Mechanisms of protein unfolding in the cell
Mayo, Kelly, PhD	Prof.	Biochemistry, Molecular Biology, and Cell Biology  (Neurobiology and Physiology)	Mentor	Gene regulation in the mammalian neuroendocrine system
Meade, Thomas, PhD	Prof.	Chemistry  (Biochemistry, Molecular Biology, and Cell Biology) (Neurobiology and Physiology) (Radiology)	Mentor	Biological microscopy, contrast agent, molecular imaging

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Miller, Richard, PhD	Prof.	Molecular Pharmacology and Biological Chemistry	Mentor	Role of chemokine signaling in the developing and adult nervous systems
Miller, Stephen, PhD	Prof.	Microbiology - Immunology (Dermatology)	Mentor	Immunoregulation of T cell-mediated CNS autoimmune and virus diseases
Miller, William, PhD	Prof.	Chemical and Biological Engineering	Mentor	Regulation of hematopoietic stem cell expansion and differentiation
Mondragon, Alfonso, PhD	Prof.	Biochemistry, Molecular Biology, and Cell Biology	Mentor	Structure and function of proteins and nucleic acids
Morimoto, Richard, PhD	Prof.	Biochemistry, Molecular Biology, and Cell Biology	Mentor	Chaperone networks and mechanisms of protein conformational disease
O'Halloran, Thomas, PhD	Prof.	Chemistry (Biochemistry, Molecular Biology, and Cell Biology)	Mentor	Regulatory biology and chemistry of transition metal receptors involved in signaling and trafficking pathways
Pasche, Boris, PhD	Assoc. Prof.	Hematology / Oncology	Mentor	Transforming growth factor beta (TGF- $\beta$ ) in cancer development and progression
Pelling, Jill, PhD	Prof.	Pathology	Mentor	Molecular mechanisms of chemoprevention, signal transduction pathways in UV response, hypoxia in prostate carcinogenesis
Pinto, Lawrence, PhD	Prof.	Neurobiology and Physiology	Mentor	Ion channels, ENU mouse mutagenesis
Platanias,	Prof.	Hematology /	Mentor	Cytokine-signaling in malignant cells and mechanisms of signal

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Leonidas, MD, PhD		Oncology		transduction of all-trans-retinoic acid (ATRA) and arsenic trioxide
Radhakrishnan, Ishwar, PhD	Assoc. Prof.	Biochemistry, Molecular Biology, and Cell Biology	Mentor	Structural biology of eukaryotic transcription factors, interactions with proteins and DNA and implications in transcription regulation; informatics of macromolecular complexes; structural biology of endocytic proteins and monoubiquitin signal recognition
Raman, Indira, PhD	Assoc. Prof.	Neurobiology and Physiology	Mentor	Ionic mechanisms of neuronal excitability
Rao, Yi, PhD	Prof.	Neurology	Mentor	Molecular mechanisms of axon guidance and neuronal migration
Rice, Sarah, PhD	Asst. Prof.	Cell and Molecular Biology	Mentor	Mechanisms of molecular motor control
Rosen, Steven, MD	Prof.	Hematology / Oncology  (Lurie Comprehensive Cancer Center)	Mentor	Translational research investigating biologic therapies of cancer using multiple myeloma as a model system
Rosenzweig, Amy, PhD	Prof.	Biochemistry, Molecular Biology, and Cell Biology  (Chemistry)	Mentor	Structure and function of metalloproteins
Satchell, Karla, PhD	Asst. Prof.	Microbiology - Immunology	Mentor	Structure-function and mechanism of action of the Vibrio cholerae RTX toxin and the role of cholera toxin and accessory toxins in the pathogenesis and modulation of innate immune response during V. cholerae infection
Scarpulla,	Prof.	Cell and Molecular	Mentor	Gene regulation, transcription factors, intracellular signaling,

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Richard, PhD		Biology		mitochondrial disease
Schleimer, Robert, PhD	Prof.	Allergy - Immunology	Mentor	Mechanisms of pathogenesis in allergic disease, role of cytokines and chemokines, mechanism of action of glucocorticoids, role of innate and adaptive immune responses in airways, translational investigations in humans to molecular biological assessment
Schnaper, H. William, MD	Prof.	Pediatrics	Mentor	Cellular signal transduction mechanisms related to fibrogenesis
Seifert, H. Steven, PhD	Prof.	Microbiology - Immunology	Mentor	Bacterial pathogenesis, gonorrhea, Neisseria, pilus, antigenic variation, DNA repair, DNA replication, neutrophils, oxidative responses
Simon, Hans-Georg, PhD	Asst. Prof.	Pediatrics	Mentor	Tbx4/5 regulatory pathways in limb and heart developmental and regenerative processes
Smith, Gregory, PhD	Asst. Prof.	Microbiology - Immunology	Mentor	Herpesvirus dissemination in the vertebrate nervous system, microtubule-based transport of herpesvirus particles in sensory axons, herpesvirus assembly
Sontheimer, Erik, PhD	Assoc. Prof.	Biochemistry, Molecular Biology, and Cell Biology	Mentor	Ribonucleoproteins and eukaryotic gene expression
Spruston, Nelson, PhD	Prof.	Neurobiology and Physiology	Mentor	Dendritic integration in hippocampal pyramidal neurons
Stein, Paul, PhD	Assoc. Prof.	Dermatology (Microbiology - Immunology)	Mentor	Signal transduction in regulating development and activation of lymphocytes
Surmeier, Jr., D. James, PhD	Prof.	Physiology	Mentor	Neuromodulator control of cellular excitability

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Topczewski, Jacek, PhD	Asst. Prof.	Pediatrics	Mentor	Morphogenetic processes in vertebrate embryo
Tourtellotte, Warren, MD, PhD	Asst. Prof.	Pathology (Neurology)	Mentor	Gene regulation in the central nervous system; nerve-muscle induction mechanisms; growth factor regulation; sympathetic nervous system development; learning, memory and synaptic plasticity
Turek, Fred, PhD	Prof.	Neurobiology and Physiology	Mentor	Sleep and circadian rhythms, and seasonal reproductive cycles
Van Eldik, Linda, PhD	Prof.	Cell and Molecular Biology	Mentor	Mechanisms and modulation of brain inflammation, glia-neuron interactions, drug discovery for neurodegenerative disorders
Volpe, Thomas, PhD	Asst. Prof.	Cell and Molecular Biology	Mentor	Heterochromatin formation in higher eukaryotes
Wang, Xiaozhong (Alec), PhD	Asst. Prof.	Biochemistry, Molecular Biology, and Cell Biology	Mentor	Genetic analysis of protocadherin diversity in the central nervous system
Weiss, Eric, PhD	Asst. Prof.	Biochemistry, Molecular Biology, and Cell Biology	Mentor	Signaling pathways in the control of cell architecture
Widom, Jonathan, PhD	Prof.	Biochemistry, Molecular Biology, and Cell Biology (Chemistry)	Mentor	Molecular mechanisms in gene regulation; the molecular biophysics of DNA and protein-DNA complexes
Winandy, Susan, PhD	Asst. Prof.	Microbiology - Immunology	Mentor	Role of the transcriptional regulator, Ikaros, in T cell development and leukemogenesis
Woloschak, Gayle, PhD	Prof.	Radiology	Mentor	Radiation-inducible nanocomposites that target DNA; radiation sensitive mice and their molecular biology

Principal Investigator/Program Director (Last, First, Middle): Holmgren, Robert A.

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Woodruff, Teresa, PhD	Prof.	Obstetrics and Gynecology  (Neurobiology and Physiology) (Neurobiology and Physiology)	Mentor	Regulation of ovarian follicle growth during the mammalian reproductive cycles
Woolley, Catherine, PhD	Assoc. Prof.	Neurobiology and Physiology	Mentor	Hormone-driven plasticity of neural circuitry, learning & memory, epilepsy, addiction