



## KEY TO FACULTY AFFILIATIONS

AC	– Anesthesia and Critical Care	<b>MB</b>	– <b>Microbiology</b>
AN	– Anthropology	<b>MC</b>	– <b>Molecular Genetics and Cell Biology</b>
AL	– Argonne Laboratory	<b>MM</b>	– <b>Molecular Medicine</b>
<b>BMB</b>	– <b>Biochemistry and Molecular Biology</b>	<b>MN</b>	– <b>Molecular Metabolism &amp; Nutrition</b>
BMI	– Ben May Institute for Cancer Research	<b>MP</b>	– <b>Medical Physics (Radiology)</b>
<b>BP</b>	– <b>Biophysical Sciences</b>	N	– Neurology
BZ	– Brookfield Zoo	<b>NB</b>	– <b>Neurobiology</b>
C	– Chemistry	<b>O</b>	– <b>Ophthalmology and Visual Science</b>
<b>CB</b>	– <b>Cancer Biology</b>	<b>OBA</b>	– <b>Organismal Biology and Anatomy</b>
<b>CNS</b>	– <b>Computational Neuroscience</b>	OG	– Obstetrics and Gynecology
<b>CP</b>	– <b>Cell Physiology</b>	<b>P</b>	– <b>Pathology</b>
<b>DB</b>	– <b>Developmental Biology</b>	PD	– Pediatrics
<b>EB</b>	– <b>Evolutionary Biology</b>	PH	– Philosophy
<b>EE</b>	– <b>Ecology and Evolution</b>	PC	– Physics
FM	– Field Museum of Natural History	PS	– Psychology
<b>G</b>	– <b>Genetics</b>	PY	– Psychiatry
GS	– Geophysical Sciences	RC	– Radiation and Cellular Oncology
HD	– Human Development	S	– Surgery
<b>HG</b>	– <b>Human Genetics</b>	SS	– Social Sciences Administration
HP	– Harris School of Public Policy	ST	– Statistics
HS	– Health Studies		
<b>I</b>	– <b>Immunology</b>		
<b>IN</b>	– <b>Integrative Neuroscience</b>		
L	– Linguistics		
M	– Medicine		
MA	– Mathematics		

**Boldface type** = Ph.D. degree-granting units in the Division of Biological Sciences  
\* = Primary appointment  
\*\* = Emeritus faculty

### A

**Mark Abney** (HG) – Statistical genetics, human population genetics, genetics of quantitative and complex phenotypes.  
**Erin Adams** (\*BMB, BP, I) - Structure and biochemistry of proteins involved in immunological recognition. Characterization of gamma delta T cell receptors and their ligands and activating and inhibitory receptors involved in the innate immune response.  
**Habibul Ahsan** (CB, HG, HS, \*M)- The interplay between environmental and genetic factors in cancer and exploiting this information in cancer prevention in humans.  
**Marisa Alegre** (I, \*M, MM) - T cell tolerance and inhibitors of T cell function.  
**Kenneth Alexander** (MB, \*PD) - Human papillomavirus transcription control, DNA replication, innate immune responses and antiviral therapy.  
**Hania Al-Hallaq** (MP, \*RC) – Image-guided radiotherapy, tumor hypoxia imaging.  
**Yali Amit** (CNS, \*ST) - Visual pattern recognition.  
**Stephen Archer** (\*M, P) - Translational cardiovascular research.  
**Samuel Armato** (\*MP, R) - Development of computer-aided diagnosis methods for thoracic imaging.  
**Bulent Aydogan** (MP, \*RC) - Applications of new technologies in radiotherapy. Monte Carlo application in radiotherapy. Treatment planning and dosimetry.

### B

**Hisham Bassiouny** (MM, \*S) –The causes, diagnosis, biomechanics, and treatment of vascular disease.  
**John Bates** (EB, \*FM) - Genetic structure and evolution of tropical birds, historical biogeography, conservation biology.  
**Sian Beilock** (PS) - Attention and executive control processes governing complex cognitive and sensorimotor skills; memorial substrate of skill execution; expertise; skill performance under pressure and stereotype threat; embodied cognition



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**Graeme Bell** (\*G, HG, M, MM, MN) - Molecular genetics of diabetes mellitus; molecular biology of insulin secretion.  
**Albert Bendelac** (I, \*P) - Interfaces between innate and adaptive immunity; immune recognition of glycolipids; CD1-mediated glycolipid antigen presentation.  
**Joy Bergelson** (EB, \*EE, G, MB, MM) - Ecology and evolution of resistance in plants, plant-enemy interactions, coevolution.  
**Eric Beyer** (CB, CP, MM, \*PD) - Studies of gap junction-mediated intercellular communication.  
**Francisco Bezanilla** (BM, \*BMB, CP, N, \*PD) - Biophysics and dynamics of ion channels  
**Rüdiger Bieler** (EB, \*FM) - Molluscan evolutionary biology, phylogenetic systematics, invertebrate anatomy.  
**Konstantin Birukov** (CP, \*M, MN) - Molecular mechanisms involved in the regulation of lung vascular permeability under physiological and pathological conditions associated with ventilator-induced lung injury or bacterial lipopolysaccharide-induced inflammation; Signaling by small GTPases and cytoskeletal mechanisms in regulation of endothelial permeability.  
**Douglas Bishop** (CB, G, MC, \*RC) – Meiotic recombination, recombinational DNA repair, and cell cycle control in yeast and mammalian cells. Responses to DNA damage in *S. cerevisiae*; recombinational repair and cell cycle regulation.  
**Bruce Bissonette** (\*M, MN) - Nutrition as it relates to colonic carcinogenesis.  
**John Bolt** (EB, \*FM) - Early diversification of tetrapods, particularly amphibians, of late Paleozoic age (ca. 360 to 270 million years before present); systematics; comparative and functional morphology; biogeography.  
**David Boone** – (I, \*M, MB, MM, MN, P) - Regulation of inflammation, especially as it relates to gastrointestinal disorders like Crohn's disease, ulcerative colitis and inflammatory liver diseases.  
**Justin Borevitz** (\*EE, G) – Quantitative and population genetic approaches in *Arabidopsis thaliana* are used to dissect local and regional phenotypic variation. What genes and what alleles explain differential survival (germination/elongation) and reproduction (flowering time) in the field? Are these new variants or new combinations of existing polymorphisms?  
**Kevin Boyce** (EB, EE, \*GS) – Early vertebrate diversity and evolution, comparative anatomy and interrelationships of acanthodians, and the morphology and systematics of sparid teleosts.  
**Matthew Brady** (\*M, , MM, MN) - Role of protein phosphatase-1 and glycogen targeting subunits in insulin metabolic signaling.  
**James Brorson** (CP, NB, \*N) - Expression patterns of glutamate receptors; glutamate receptor-mediated cell death.  
**Deborah Burnet** (\*M, MN, PD) - Primary care for adults and children, obesity, and type 2 diabetes in youth.

**C**

**John T. Cacioppo** (PS) - investigating the social and neural mechanisms underlying complex human behavior through an approach termed social neuroscience.  
**Kathleen Cagney** (\*HS) - Race and ethnic differences in access to health care/long-term care; Demography of aging; Life course approaches to research in health; Health status assessment.  
**Malcolm Casadaban** (G, MB, \*MC) - Gene structure and regulation; gene fusing, cloning and engineering; DNA transposition and mutator phage; nonhomologous recombination.  
**Lawrence P. Casalino** (\*HS) - Institutional and organizational sociology and institutional economics; creation and change of markets; forms of organization of physician practice; forms of physician-health plan relationships; regulatory issues in healthcare.  
**Eugene Chang** (CP, \*M, MM, MN) - Intestinal adaptation mechanism for nutrient and electrolyte absorption in disease and hormonal regulation of intestinal absorption and secretion.  
**Chin-Tu Chen** - (MP, \*R) – Functional and molecular imaging in cancer, neuroscience, and other biomedical applications.  
**Alexander Chervonsky** (I, \*P) - Pathogenesis of autoimmune diseases  
**\*\*Kwen-Sheng Chiang** (\*MC) - A novel non-binary propagation pathway of plant mitochondria.  
**Anita Chong** (I, \*S) - Transplantation tolerance, mechanisms of rejection, and the regulation of T and B cell responses to allografts.  
**Marcus Clark** (CB, I, \*M, MM, P) - Molecular mechanisms by which B cell antigen receptors couple to/activate tyrosine kinases.  
**Philippe Cluzel** (\*BP, PC) - Real-time systems analysis of signal transduction and genetic networks at the single cell level.  
**Marcus Coates** (EB, \*OBA) - Vertebrate paleontology, systematics and phylogenetics, origins of major taxa including gnathostomes, early jawed fishes and basal tetrapods, historical patterns of biodiversity and morphology, and the integration of paleo- with developmental biology.  
**David Cohen** (\*OG, MM) – Fertility preservation in cancer patients.  
**Ron Cohen** (\*M, MN) - Role of corepressor action with nuclear hormone receptors.  
**Susan Cohn** – (CB, \*PD) – Investigating the role of angiogenesis in neuroblastoma pathogenesis.  
**Joel Collier** - (P, \*S) - Molecular biomaterials for tissue repair



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**Suzanne Conzen** (CB, \*M, MM) - Mammary epithelial cell survival signaling pathways and the role of ubiquitin modification in regulating kinase activity.  
**Joshua Correll** (PS) - Racial bias in the decision to shoot; Can training moderate or eliminate this effect and, if so, how; Intergroup conflict and conflict over scarce resources; the psychological value of group membership.  
**Jack Cowan** (\*MA, CNS) - Mathematical analysis of cortical dynamics and maps  
**Nancy Cox** (G, \*HG, M, MM) - Genetics of complex disorders; methodology development for mapping and identifying genes.  
**Jerry Coyne** (EB, \*EE) - Experimental population and evolutionary genetics, speciation, ecological genetics, molecular evolution.  
**Sean D. Crosson** (\*BMB, BP, MB) - Deciphering the structure, function, and topology of microbial signaling systems.  
**John Cunningham** (DB, \*PD) - Hematopoietic stem cells; transcriptional control of early development.

## D

**Soma Das** (\*HG) – Gene mutation analysis and molecular diagnostics of genetic disease.  
**Robert Daum** (MB, MM, \*PD) - Bacterial Pathogenesis and Antibiotic Resistance.  
**Glyn Dawson** (BMB, CB, DB, NB, \*PD) - Lipid-derived second messengers; response of normal and malignant brain cells to stress.  
**Jean Decety** (IN) - Investigate the core of dynamic interpersonal experience – how emotion and subjective feelings about others and self are represented in the brain and manifested in social interaction.  
**\*\*Leslie DeGroot** (I, \*M, MM) - Radiology; autoimmune thyroid disease.  
**Dianne Deplewski** (MN, \*PD) - Role of amino-terminus of PPAR gamma in adipogenesis.  
**Eugene DeSombre** (\*BMI, CB) - Estrogen receptors and steroid receptor-directed imaging and therapy.  
**Harriet de Wit** (NB, \*PY) - Human behavioral pharmacology; subjective, physiological, and behavioral effects of abused drugs in normal volunteers.  
**Jerome Dickstein** (MM, \*P) - Molecular biology of megakaryopoiesis.  
**James Dignam** (HS) - Competing risks survival analysis; design and analysis of clinical trials; effects of race/ethnicity, obesity and other non-clinical factors on cancer prognosis.  
**Aaron Dinner** (BP, \*C, I) - Molecular mechanisms of cellular dynamics through the development and application of theoretical approaches.  
**Anna Di Rienzo** (G, \*HG) – Human and primate genome diversity, pharmacogenetics, natural selection, type 2 diabetes.  
**William Dobyns** (G, \*HG, N, PD) – Developmental Neurogenetics, especially human brain development and the molecular genetics of brain malformations.  
**Kunio Doi** (MP, \*R) - Development of computer-aided diagnosis schemes to detect lesions in mammography, angiography, chest and bone radiography as well as ultrasound, CT, MRA and PET.  
**Eileen Dolan** (CB, \*M, MM) - Modulation of DNA repair to enhance chemotherapy.  
**Wei Du** (\*BMI, CB, DB, G, MM) - Function and regulation of the retinoblastoma family of proteins.  
**Vanja M. Dukic** (\*HS) - - Biostatistics, statistical modeling and computing, meta-analysis, diagnostic testing, mathematical biology  
**Stephanie Dulawa** (G,NB,\*PY) - Animal models of psychiatric disorders.  
**Nikolai Dulin** (CB, CP,\*M, MM) - Signaling mechanisms by G protein coupled receptors (GPCR)  
**Greg Dwyer** (EE, EB) - Disease ecology, spatial ecology, population genetics, animal behavior and conservation biology.

## E

**David Ehrmann** (\*M, MN) - Pathogenesis and therapy of hyperandrogenic states and genetics of insulin secretion and action in polycystic ovary syndrome (PCOS).  
**Nathan Ames Ellis** (G, \*M) - Molecular mechanisms that maintain genomic integrity, with special emphasis on the RecQ helicases; the genetics colon cancer susceptibility.  
**\*\*Rochelle Easton Esposito** (G, \*MC) - Meiotic chromosome behavior, cell cycle progression and spore development during gametogenesis in yeast.  
**J. Terry Ernest** (\*O) - Ocular physiology.



## F

**Murray Favus** (\*M, MN) - Bone loss in women; molecular regulation of renal metabolism of vitamin D and calcium, pathogenesis of calcium metabolism in calcium kidney stone formation.

**Martin Feder** (EB, MM, \*OBA) - Evolutionary and ecological functional genomics of heat-shock proteins and the heat-shock response in *Drosophila*; heat-shock protein-mediated protection of development against environmental stress; evolutionary physiology.

**Richard Fehon** (CB, DB, G, \*MC) - Molecular genetic analysis of specialized membrane domains.

**Edwin Ferguson** (CB, DB, G, \*MC, OBA) - Pattern formation during early embryogenesis; role of *dpp* in *Drosophila* embryo.

**Michael Foote** (EB, \*GS) - Large-scale evolutionary patterns, morphological diversification, evolutionary rates.

**Aaron Fox** (CP, MM, NB) - Recording of channel behavior and cell physiology.

**\*\*Harry Fozzard** (CP, MM, M) - Cellular and single-channel electrophysiology of cardiac muscle.

**Karen Frank** (CB, G, I, MM, \*P) - Molecular basis of antigen receptor formation in lymphocytes and mechanism of DNA double strand break repair.

**David Freedman** (CNS, NB) - Neurophysiology of visual learning, memory and recognition.

**Yang-Xin Fu** (I, MM, \*P) - Molecular mechanisms underlying lymphoid microenvironment formation and immune response, and its role in vaccination, autoimmunity, and tumor immunity.

## G

**Thomas Gajewski** (CB, I, M, MM, \*P) - Research, Committees on Cancer Biology and Immunology, Department of Pathology. Regulation of T-cell activation, T-cell signaling, tumor immunology, immunotherapy of melanoma.

**David Gallo** (CN, \*PY) - Cognitive neuroscience of memory

**Jia-Hong Gao** (MP, PY, \*R) - Functional magnetic resonance imaging and human brain mapping.

**Joe G.N. Garcia** (CB, \*M) - Vascular leak syndromes, including new ways to prevent leaks, reduce swelling, minimize tissue damage, and restore the integrity of vessel walls.

**Margaret Gardel** (BP, \*PC) - The biophysical properties of the cytoskeleton of eukaryotic cells and how these regulate cell physiology.

**Elliot Gershon** (MM, NB, \*PY) - Psychiatric genetics, psychopharmacology, epidemiology.

**Godfrey Getz** (BMB, M, MM, MN, \*P) - Molecular mechanisms involved in nutritional and hormonal control of apolipoprotein gene expression; site-specific mutagenesis in function of lipoproteins, and role of apolipoproteins in atherosclerosis and Alzheimer's disease.

**Maryellen Giger** (MP, \*R) - Computer-aided diagnosis methods in mammography, chest radiography, skeletal radiography and CT.

**Yoav Gilad** (\*HG) - Gene expression patterns in primates and olfaction

**Conrad Gilliam** (\*HG) - Identification of genetic determinants of common genetic disorders, with a particular emphasis on neurological and psychiatric genetic disease.

**Benjamin Glick** (BP, CP, G, \*MC) - Organelle biogenesis; compartmental organization of the Golgi apparatus in yeast and mammalian cells.

**Michael Glotzer** (BP, DB, G, \*MC) - The molecular mechanism of cytokinesis in animal cells.

**Lucy Godley** (CB, \*M) - The role of DNMT3B in mediating the abnormal methylation patterns of cancer cells; defining the molecular events that accompany unusual cases of hematopoietic malignancies.

**Jay Goldberg** (CNS, NB) - Vestibular end organs and their central pathways in mammals.

**John Goldsmith** (CNS, \*L) - Unsupervised learning of natural language.

**Steve Goldstein** (BP, CNS, CP, NB, P, \*PD) - Understanding how ion channels operate in health and illness.

**William Goldstein** (IN) - Aspects of judgment and decision making that emphasize the psychology of preference, uncertainty, and the resolution of conflicting goals.

**Tatyana Golovkina** (\*I, MC) - Retroviruses to study different aspects of virus-host interactions, including the anti-virus immune response and the genetics of resistance to retroviral infection and to virally induced tumors.

**Christopher Gomez** (\*N, MM, NB, P) - Molecular and genetic causes of neurodegenerative disease.



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**Kathleen Goss** (CB, CP, MM, \*S) - The APC tumor suppressor: a critical regulator of development and neoplasia of the intestine and mammary gland.

**Fotini Gounari** (I, \*M) - Thymocyte development and transformation.

**Lance Grande** (EB, \*FM) - Phylogenetic interrelationships, historical biogeography of fossil and living actinopterygian fishes.

**Michael Grassi** (MB, \*O) - Developing cell based models of retinal disease for enhancing the current understanding of the molecular basis of retinal disease.

**David Grdina** (CB, MP, \*RC) - Tumor heterogeneity and its role in tumor resistance to radiation and chemotherapy, radiobiology, and radiation modifiers.

**James L. Green** (\*O) - Medical and surgical treatment of vitreal-retinal diseases; surgical treatment of retinal holes that directly affect vision.

**William Green** (CP, DB, MM, \*NB) - Neurotransmitter receptor assembly and expression.

**Jean Greenberg** (DB, G, MB, \*MC) - Arabidopsis defense mechanisms against bacterial infection; *Pseudomonas syringae* virulence mechanisms.

**Geoffrey Greene** (\*BMI, BMB, BP, CB) - Mechanism of action of female steroid hormones and nuclear receptors; development and characterization of novel SERMs.

**Martin Gross** (DB, MM, \*P) - Translational control of protein synthesis, regulation of polypeptide chain initiation, role of accessory proteins in promoting the protein folding and renaturation activity of hsp 70, mechanism by which Herpes Simplex Virus-1 defends against the interferon-mediated, host cell response to viral infection.

**Elizabeth Grove** (CB, DB, N) - Cellular and molecular mechanisms that control patterning, cell fate choice, and differentiation in the mammalian forebrain.

**Jose Guevara-Patino** (I, \*S) - Molecular aspects of cancer, focusing on tumor immunity at a cellular and molecular level.

## H

**Shannon Hackett** (EB, \*FM) - Avian molecular systematics and evolution, neotropical biogeography, phylogenetic analysis.

**Melina Hale** (CNS, N, NB, \*OBA) - Combining neurobiology and functional morphology to examine how neural circuits in the hindbrain and the spinal cord control musculoskeletal mechanics and generate locomotor movements.

**Howard Halpern** (CB, MP, \*RC) - Electron paramagnetic resonance (EPR) imaging, molecular oxygen imaging with EPR, radiation treatment planning, oxygen free radicals.

**Kimm Hamann** (I, \*M, MM) - Adhesion molecules and signaling in human eosinophils.

**Dorothy Hanck** (CNS, CP, \*M, MM, NB) - Biophysics and physiology of ion channels.

**Manami Hara** (\*M, MN) - Identification and characterizing the cells that define the niche that gives rise to the pancreatic beta cell.

**Robert Haselkorn** (BMB, BP, C, DB, G, MB, \*MC) - Organization and regulation of genes for nitrogen fixation and photosynthesis; acetyl CoA carboxylase in plants.

**Nicholas Hatsopoulos** (\*OBA, NB, CNS) - Population coding in primate motor cortex .

**Tong-Chuan He** (BP, CB, G, MM, \*S) - Deregulation of beta-catenin signaling in human cancer; molecular genetics of bone and soft tissue tumors; molecular basis of bone formation; gene therapy.

**Lawrence Heaney** (EB, \*FM) - Mammalian evolution and ecology, evolutionary biogeography, origin and maintenance of patterns of biological diversity, conservation biology, tropical biology.

**Robert Ho** (DB, G, \*OBA) - Pattern evolutionary developmental biology of teleost fish: axis formation, segmentation, limb development and morphogenesis.

**James M. Holaska** (CP, DB, \*M) - Regulation of gene expression, chromatin dynamics and nuclear architecture by nuclear envelope proteins: Implications for muscular dystrophy, heart disease and aging.

**Haochu Huang** (I, \*M) - B cell tolerance and activation in autoimmunity.

**Richard Hudson** (EB, \*EE, G, HG) - Population genetics theory and the analysis of molecular variation within and between populations.

## I

**Akira Imamoto** (\*BMI, CB, CP, DB, G) - Tyrosine kinase-mediated signaling to the cytoskeleton in mouse development and in cancer.



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**Rustem Ismagilov** (BP) - Developing new microfluidic technology we use our knowledge of organic chemistry, surface chemistry, fluid flow, interfacial phenomena, and biomolecular interactions; applying this technology to high-throughput, economical methods for structural and functional proteomics.

**Naoum Issa** (CNS, NB) - Visual control physiology.

**J**

**David Jablonski** (EB, \*GS) - Macroevolution; paleobiology; evolutionary paleoecology, especially in marine invertebrates.

**Bana Jabri** (I, \*M, MM, MN, P) - Regulation of memory/effector T cell mediated immune responses in normal and diseased conditions; interface between innate and adaptive immunity.

**Yulei Jiang** (MP, \*R) - Development and evaluation of computer-aided diagnosis methods in breast cancer and prostate cancer imaging.

**Richard Jones** (BP, \*CB, CP) - Focused systems-level analyses of cellular signal transduction.

**Robert Josephs** (\*MC) - Structure of sickle-cell hemoglobin fibers and the red cell cytoskeleton by cryoelectron microscopy and image reconstruction.

**K**

**Un Jung Kang** (\*N, MM, NB) - Somatic gene therapy of neurodegenerative disorders; effects of BDNF fibroblasts on cholinergic neurons.

**Chien-Min Kao** (MP, \*R) - Positron emission tomography instrumentation and imaging, tomographic image reconstruction.

**Gregory Karczmar** (CB, MP, \*R) - Early detection of cancer.

**Leslie Kay** (CNS, IN, \*PS, N) - Perceptual physiology of olfactory and limbic systems.

**Maureen Kearney** (OBA) - Comparative anatomy, development, systematics, and evolution of reptiles.

**Barbara Kee** (CB, DB, I, MM, \*P) - Transcriptional regulation of hematopoietic development.

**Robert Keenan** (\*BMB, BP) - Structural biology and directed evolution.

**Stephen Kent** (\*BMB, BP, C, IBD) - Application of chemistry to the study of proteins. Chemical protein synthesis. Protein mass spectrometry. Functional Proteomics. Mechanism of enzyme catalysis.

**Susan Kidwell** (EB, \*GS) - Fossilization processes and their consequences for the nature of the fossil record, especially the ecological fidelity of fossil communities; also marine invertebrate paleoecology and sedimentary geology.

**Helen H. Kim** (\*OG, MM, MN) - Molecular mechanisms involved in the regulation of the mouse Gonadotropin-releasing Hormone (mGnRH) gene.

**Rick Kittles** (CB, HG, \*M) - Genetics of prostate cancer.

**Shohei Koide** (\*BMB, BP) - Protein folding, design and engineering. Protein structure-function relationship. Bimolecular NMR spectroscopy.

**R. Tamara Konetzka** (\*HS) - Health economics; long-term care and aging; quality of care.

**Anthony Kossiakoff** (\*BMB, BP, IBD) - Structure and function of hormone-receptor interactions, enzyme-inhibitor interfaces, and synthetic proteins.

**David Kovar** (BMB, BP, G, \*MC) - Molecular mechanisms of cytokinesis and actin assembly in fission yeast: molecular genetic to in vitro single molecule studies.

**Richard Kraig** (MM, \*N, NB) - Cellular mechanisms of brain injury ischemia; metabolism of glial cells.

**Martin Kreitman** (EB, \*EE, G) - Molecular population genetics, genetics of speciation.

**Stephen Kron** (CB, CP, G, \*MC, MM) - Role Molecular genetics of cell-cycle progression, checkpoints and morphogenesis in yeast.

**Vinay Kumar** (BP, I, MM, \*P) - Cellular and molecular biology of natural killer (NK) cells; origin and differentiation of NK cells, and their role in bone marrow allograft rejection; molecular biology of NK cell receptors and their role in NK cell activation.

**Lianne Kurina** (\*HS) - Social context of depressive illness; relationship between physical illness and depression; genetic determinants of cortisol secretion.

**L**



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- Michael LaBarbera** (EB, GS, \*OBA) – Biomechanics, especially in marine invertebrates including bizarre extinct forms.
- Robert Lacy** (\*BZ, EB) - Genetic management of endangered species, in- and out-breeding depression, evolution in structured populations.
- Benjamin Lahey** (HS) - Taxonomy of child and adolescent mental disorders; developmental and genetic epidemiology of youth mental disorders; Attention-Deficit/Hyperactivity Disorder.
- Bruce Lahn** (CB, DB, EB, G, \*HG) - Mammalian genetics, development and function of the brain, and comparative and evolutionary genomics.
- Ratneshwar Lal** (BP, \*M) - Development of nanotechnologies for and multi-scale biophysical and system biology studies of channels and receptors.
- Gayle Lamppa** (G, \*MC) - Chloroplast development; expression of nuclear genes coding for chloroplast proteins; protein import mechanism; posttranslational processing.
- Deborah Lang** (CB, \*M) -Transcriptional regulation in normal development, stem cell regeneration and repair, and in disease progression.
- Patrick La Riviere** (MP, \*R) – Tomographic image reconstruction, molecular imaging, optoacoustic imaging, X-ray fluorescence imaging.
- Diane S. Lauderdale** (\*HS) - Epidemiology, social determinants of health and disease, health of immigrant populations.
- Michelle LeBeau** (CB, G, HG, \*M) - Characterization of recurring chromosomal abnormalities in human tumors; gene mapping.
- Ka Yee Christina Lee** (BP, \*C) - Fundamental studies on the interactions between lipids and proteins to gain insights into the biophysical aspects of a wide variety of diseases which are results of deficient or abnormal protein-lipid interactions.
- Raphael Lee** (MM, OBA, \*S) - Tissue injury in electrical trauma; biophysical control of cellular biosynthetic processes; electromechanical transduction.
- Alan Leff** (CP, \*M, MM, ) - Cellular pathophysiology of asthma.
- Ernst Lengyel** (\*OG, CB) - Understand the role of tumor-associated proteases in ovarian cancer invasion and metastasis and identify novel targets for treatment.
- David Levin** (\*MP) - fMRI studies of motor and sensory functions; MR image acquisition and reconstruction utilizing prior knowledge.
- Susan Levine** (\*PS) - Cerebral lateralization of cognition and learning in normal and brain-damaged children.
- Wen-Hsiung Li** (EB, \*EE, G) - Molecular evolution, including experimental studies and statistical analysis of DNA and protein sequence data. Evolutionary and computational genomics, and bioinformatics.
- Yanchun Li** (MN, \*M) - Function of the Vitamin D endocrine system.
- Shutsung Liao** (\*BMI, BMB, CB) - Mechanisms and control of the functions of nuclear receptors for male hormones and other hormones involved in progression of prostate cancer as well as cardiovascular and cerebrovascular diseases.
- Scott Lidgard** (EB, \*FM) - Evolution and ecology of cheilostome bryozoans, particularly the relationships of colonial growth and form; evolutionary paleoecology and the resolution of large-scale patterns in the fossil record; angiosperm diversification and Cretaceous floristic trends.
- Anning Lin** (\*BMI, CB) - Mechanisms and regulation of protein kinase-mediated signal transduction in inflammation, apoptosis, and neoplastic transformation.
- Mark Lingen** (MM, \*P, CB) Basic and translational research focused on tumor angiogenesis, tumor suppressor gene biology and molecular diagnostics.
- Rebecca Lipton** (MM, MN, \*PD) - Diabetes in childhood, obesity in childhood, and their implications on public health.
- Chun-Yu Liu** (G) - Genetics/genomics underlying neuropsychiatric disorders.
- Philip Lloyd** (CP, NB) - Functions of peptide co-transmitters.
- R. Eric Lombard** (EB, \*OBA) - Comparative, functional, and evolutionary studies on feeding and sensory adaptations in lower vertebrates.
- Manyuan Long** (\*EE, G, EB) – Origin Molecular evolution, evolutionary genomics.
- Elizabeth Lonsdorf** (EB) - Animal behavior, with interests in animal cognition, social learning, infant development, mother-infant interactions, sex differences in behavior and the interface of conservation and behavior.
- Christopher Lowe** (DB, EB, \*OBA) – Evolution of development, nervous system evolution, and body plan evolution during early deuterostome evolution
- Thorsten Lumbsch** (FM) - Main research interests include evolution of fungi belonging to Ascomycota, especially lichen-forming fungi and their diversity, with focus on groups with centres of distribution in the tropics and southern Hemisphere. A wide array of methods is employed, including micromorphological, developmental, chemical and molecular approaches.



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**Yves Lussier** (\*M, P) - Development and use of high throughput phenotyping technologies to integrate and analyze genomes with phenotypes and to accurately individualize the prediction and the treatment of diseases.

## M

**Jason MacLean** (CNS, NB) - Optical probing and imaging of neuronal microcircuits.

**Kay Macleod** (\*BMI, CB, DB, I) - Regulation of cell cycle and differentiation during mouse development and tumorigenesis.

**James Madara** (MM, \*P) - Molecular mechanisms of pathogen interactions with polarized epithelia, neutrophil interactions with polarized epithelia, and junction mediated interactions between polarized epithelia.

**Dario Maestripietri** (EB, \*HD, NB) - Neuroendocrine, ecological, and evolutionary aspects of social behavior in primates.

**\*\*Anthony Mahowald** (DB, G, \*MC) - Developmental genetics of oogenesis; ovarian germline stem cell; genetics of spermatogenesis.

**Carl Maki** (CB, \*MP) - Regulated activity and degradation of p53 and p53-pathway proteins.

**Marvin W. Makinen** (\*BMB, MM) - Electron magnetic resonance; enzyme mechanisms; metalloenzymes; molecular dynamics; structural basis of enzyme action.

**Peter Makovicky** (EB) - Systematics and evolution of archosaurs, especially dinosaurs; Mesozoic biogeography and faunal evolution.

**Jocelyn Malamy** (DB, G, \*MC) - Molecular mechanisms of plant developmental responses to the environment; molecular regulation of root system growth and development; drought tolerance in plants.

**Willard G. Manning** (\*HP, HS) - Health economics: health insurance, mental health, and poor health habits.

**Daniel Margoliash** (IN, NB, \*OBA, PS) - Neural mechanisms of behavior; neuroethology of avian vocal learning.

**Susan Margulis** (EB) - The effects of the captive environment on behavior and reproduction; behavioral development and parental care in mammals.

**Jeremy Marks** (CP, \*M, MM, N) - Developmental regulation of neuronal vulnerability to injury; polymer-mediated cell repair.

**Robert Martin** (EB) - Evolutionary biology, paleontology and conservation of primates.

**Terence Martin** (CB, I, \*MC) - The role of nuclear and cytoplasmic ribonucleoprotein complexes in the processing and transport of RNA; functional domains of the cell nucleus; effect of viruses.

**Juan Martinez** (MB) - Elucidation and characterization of adhesin-host cell receptor interactions involved in Spotted Fever Group (SFG) Rickettsia pathogenesis.

**Peggy Mason** (NB) - Brainstem anatomy and physiology of pain modulation.

**James Mastrianni** (MB, \*N, NB) - Prions and Pathology of Neurological Disorders. .

**Jill Mateo** (EB) - Mechanisms, genetics and functions of kin recognition, nepotism and mate choice in small mammals; MHC; predator-prey interactions and development of survival behaviors; sexual selection; behavioral endocrinology; paternity.

**Karl S. Matlin** (CP, \*S) - The biogenesis of epithelial polarity in both cultured cells and epithelial injury models.

**Jeffrey B. Matthews** (CP, \*S) - Surgical treatment of pancreatitis and a range of complex gastrointestinal disorders; studies inflammation, and the effects of temporary loss of blood supply to the intestine and its ability to recover after such an injury.

**Martha McClintock** (CNS, EB, NB, \*PS) - Pheromonal communication, social behavior and the regulation of fertility, behavioral and environmental modulation of immune function and susceptibility to disease, ethology of reproduction in domestic and wild *Rattus norvegicus*.

**Jennifer McElwain** (EB) - Paleobotany, global climate change, history of the carbon cycle and atmospheric composition, new techniques in paleoaltimetry using fossil plants.

**Daniel McGehee** (\*AC, CP, NB) - Neuronal nicotinic receptors and synaptic transmission.

**Rima McLeod** (G, I, M, MM, \*O, P) - Immunobiology of toxoplasmosis.

**Elizabeth McNally** - (DB, G, HG, \*M) - Genetics of heart and muscle development and disease in humans and mice.

**Mary Sara McPeck** (G, \*ST) - Applications of probability and statistics to genetics, including linkage and linkage disequilibrium mapping of complex traits, modeling of background linkage disequilibrium.

**Shane Meehan** (\*P) - Kidney allograft immunopathology.

**Stephen Meredith** (BMB, BP, I, MM, MN, \*P) - Lipid-protein interactions; lipoprotein structure; surface phenomena in biology.

**Laurens Mets** (G, \*MC) - Chloroplast biogenesis and genetics; biochemical genetics and photophysics of photosynthesis; correlated genomic and genetic analysis.

**Charles Metz** (MP, \*R) - Quantitative evaluation of imaging systems and procedures; image processing, image reconstruction & analysis.



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**Kathleen Millen** (DB, G, \*HG, NB) – Genetic analysis of pattern formation during vertebrate CNS development and the genetic basis of congenital brain malformations in humans and mice.

**Jonathan Miller** (MM, \*P) - Study of the regulation of the platelet receptor for von Willebrand factor (glycoprotein Ib/IX/V complex), with long-term goal the development of anti-thrombotic agents based upon insights gained from study of the pathophysiology of platelet-type von Willebrand disease and the Bernard-Soulier disease syndromes; molecular characterization of autoantibody development against the glycoprotein Ib/IX/V complex in ITP.

**R. Michael Miller** (\*AL, EB) - Soil ecology, mycorrhiza, restoration ecology. I am interested in the mechanisms of how mycorrhizal fungi influence the ability of plants to adapt to climate forcing factors and atmospheric pollutants (CO<sub>2</sub>, water, warming, Ozone)..

**Dominique Missiakas** (\*MB) - Bacterial physiology and pathogenesis.

**Keith Moffat** (\*BMB, BP, IBD) - Synchrotron radiation; time-resolved macromolecular crystallography; polypeptide hormones and calcium binding proteins.

**Anthony Montag** (\*P) - Bone and soft tissue tumors. I have also worked with mouse models of autoimmune disease and transplant tolerance.

**Ivan Moskowitz** (DB, MM, P, \*PD) - Developmental genetics of cardiac morphogenesis and congenital heart disease.

**Milan Mrksich** (BP, \*C) - Combine chemistry and materials science to create model surfaces that mimic complex biological surfaces to study the adhesion of cells to the extracellular matrix and to construct biochip arrays for the analysis of biological function.

**Gregory Mueller** (EB, \*FM) - Systematics, population biology, biogeography, and ecology of fungi.

**Salikoko Mufwene** (EB, \*L) – Language evolution: the birth of new language varieties, the sustained vitality and spread of many, and the loss of many others.

**Mark Musch** (\*M, MN) - Intestinal function during inflammation.

## N

**Thomas Nagylaki** (EB, \*EE, G) - Theoretical population biology, especially geographical variation; gene conversion in multi-gene families; random genetic drift; natural selection.

**Piers D. Nash** (\*BMI, CB, MM) - Modular protein interaction domains in signal transduction and the cell cycle.

**Viswanathan Natarajan** (\*M, MM) - The role of NADPH oxidase sub-components and its homologs in production of reactive oxygen species leading to vascular leakiness and crosstalk between g-protein coupled receptors and growth factor receptors in lysophosphatidic acid mediated cytokine secretion and innate immunity.

**Deborah Nelson** (CP, NB, M, MM, MN) - Function of ion channels in excitation-secretion coupling.

**Robert Nishikawa** (MP, \*R) - Development of CAD for clustered microcalcifications in digital mammograms; clinical evaluation of computer-aided diagnosis.

**Partha Niyogi** (CNS, \*CS, ST) - Computational studies of the perception and acquisition of speech and language.

**Marcelo Nobrega** (\*HG) - Genetics of heart development and heart diseases. Genetic engineering of mouse models of human diseases. Genomic organization and gene regulatory architecture. Vertebrate comparative genomics.

**Avertano Noronha** (I, \*N) - Neuroimmunology; multiple sclerosis.

**Jim Norris** (BP, \*C) - Study of natural and artificial photosynthesis so that artificial photosynthesis can be a reality. The mechanism and structural requirements of photosynthesis are explored via a series of photosynthetic proteins altered by sitedirected mutagenesis and by model compounds.

**Howard Nusbaum** (CNS, IN, \*PS) - Spoken language recognition and comprehension.

## O

**Bill O'Brien-Penney** (MP, \*R) - Single photon emission computed tomography reconstruction methods.

**Carole Ober** (EB, G, \*HG, MM, OG) - Genetics of complex traits; human population genetics; immunogenetics.

**Funmi Olopade** (CB, G, \*M, MM) - Cancer genetics, especially genes involved in tumor suppression; genetics of cancer predisposition; genetics of breast and ovarian cancers.

**Kenan Onel** (CB, \*PD) - Pathways of apoptosis and DNA repair; genetic susceptibility to cancer.



**P**

**H. Clive Palfrey** (CB, CP) - Second messenger systems and protein phosphorylation.

**Abraham Palmer** (G, \*HG, NB) – Genetic basis of animal behavior, quantitative trait mapping, drug abuse and psychiatric phenotypes, translation of genetic findings to human populations.

**Tao Pan** (\*BMB, MB) - RNA folding and catalysis; RNA-protein interactions.

**Xiaochuan Pan** (MP, \*R) - Tomographic imaging and its applications and classification in medical science.

**Bruce Patterson** (EB, \*FM) - Historical and insular biogeography, systematics and niche relationships of mammals, distribution and abundance.

**Charles Pelizzari** (MP, \*RC) - Multimodality image registration; 3D display and analysis of medical image data; image processing for radiotherapy.

**Robert Perlman** (CP, NB, \*PD) - Signal transduction mechanisms in adrenergic neurons.

**Eduardo Perozo** (BMB, CP, MM, NB, \*PD) - Structure and dynamics of ion channels

**Marcus Peter** (\*BMI, CB, I) - Apoptosis signaling pathways.

**Cathy Pfister** (EB, \*EE) - Marine population ecology, models in ecology, dynamics of exploited populations, interactions among species, ecology of marine algae.

**Louis Philipson** (CP, \*M, MM, MN) - Molecular biology of ion channels.

**Joseph Piccirilli** (\*BMB, BP, C) - Chemistry/biochemistry of nucleic acids; structure and mechanism of ribozymes (catalytic RNA); bioorganic chemistry.

**Evgeny Pilipenko** (\*MB, N) – Cell-specific translational control and viral pathogenesis; picornaviruses.

**Joel Pokorny** (CNS, IN, \*O, PS) - Unified perceptions in color vision, hereditary color defects.

**Brian Popko** (G, MM, \*N, NB) – Mouse models of neurological disorders, including both forward and reverse genetics approaches.

**Nanduri R. Prabhakar** (CP, \*M, NB) - Identify novel signaling pathways and molecular mechanisms underlying the morbidity associated with chronic intermittent hypoxia.

**Brian Prendergast** (IN, NB, \*PS) - Biological Rhythms: formal, hormonal, and neural bases of mammalian photoperiodism and circadian and seasonal timekeeping; neuroendocrine bases of seasonal and stress-induced changes in immune function; evolution of biological timekeeping mechanisms.

**Daphne Preuss** (BP, DB, G, IBD, \*MC) - Genetic analysis of fertilization in Arabidopsis reproduction. Structure and function of plant centromeres.

**Trevor Price** (\*EE, G) – Speciation, sexual selection, community ecology, phylogeny, biogeography of Indian birds.

**Victoria Prince** (DB, EB, NB, G, \*OBA) - Mechanisms of patterning the anterior-posterior body axis during development of zebrafish and other teleosts, using molecular, cellular and comparative approaches.

**Jonathan Pritchard** (EB, G, \*HG) – Population genetics, complex trait mapping, development of statistical methods for analyzing genetic variation within and between populations.

**Stephen Pruett-Jones** (EB, \*EE) - Sexual selection, evolution of mating systems, communication, population biology of birds, introduced species, damselflies.

**Molly Przeworski** (\*HG) – Population genetics, molecular evolution, human evolution.

**Q**

**Jose Quintans** (\*P) - Apoptosis; autoimmunity.

**R**

**Clifton Ragsdale** (CB, DB, \*NB, OBA) - Molecular genetics of neuronal patterning in vertebrate brain development

**Jan-Marino Ramirez** (MM, NB, \*OBA) - Neuronal basis of motor behavior.

**Glenn Randall** (I, \*MB) - Hepatitis C virus (HCV)-host interactions in viral replication and pathogenesis.

**Paul J. Rathouz** (\*HS) Estimating functions as tools for statistical inference, nuisance parameters, measurement error in regression covariates, missing data, longitudinal data; applications to aging research, psychiatric epidemiology, environmental health.

**Catherine Reardon-Alulis** (MM, MN, \*P) - Molecular regulation of APO E metabolisms; cholesterol management.



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**Ilaria Rebay** (\*BMI, CB, DB, G, MC) - Transcriptional regulatory circuitries in development and disease; receptor tyrosine kinase signal transduction.

**Anthony Reder** (I, \*N, NB) - Neuroimmunology; multiple sclerosis; ACTH and cortisol regulation; neuropeptides and immune function.

**Richard Ree** (FM) - Flowering plant evolution and systematics, phylogenetic and macroevolutionary theory, biodiversity informatics.

**\*\*Samuel Refetoff** (G, \*M, MM, PD) - Molecular basis of inherited thyroid diseases.

**Chester Reft** (MP, \*RC) - Absolute dosimetric measurements for various types of radiation; dose perturbation measurements at interfaces.

**Terry Regier** (CNS, \*PY) - Connectionist modeling of language.

**Christopher J. Rhodes** (\*M, MN) - Signaling transduction mechanisms in the pancreatic  $\beta$ -cell for control of insulin production & secretion;  $\beta$ -cell growth and death.

**Phoebe Rice** (\*BMB, BP) - Structure and function of protein-DNA complexes involved in genetic recombination.

**Olivier Rieppel** (EB, \*FM) - Phylogeny of Mesozoic marine reptiles.

**Carrie Rinker-Schaeffer** (CB, G, \*S) - Molecular genetics of cancer metastasis for breast and prostate cancer.

**Ronald Rock** (\*BMB, BP) - Single molecule biophysics of molecular motors.

**Michael Roe** (CP, \*M, MM, MN) - Mechanisms that regulate intracellular calcium ion signaling and insulin secretion, pathophysiology of diabetes mellitus.

**John Roeske** (\*RC) - Dosimetry; treatment planning.

**Bernard Roizman** (BMB, G, MC, \*MB) - Herpes simplex viruses, gene function and regulation, mechanisms of latent infection, vectors for gene therapy

**Brian Roman** (MN, MP, \*R) - Molecular and physiological imaging.

**Raymond Roos** (I, MB, MM, \*N, NB) - Unconventional viral infections of the central nervous system (CNS); virus vectors in CNS delivery.

**Robert Rosenfield** (M, MN \*PD) - The role of hormones in pilosebaceous cell differentiation.

**Marsha Rosner** (\*BMI, BP, CB, CP, DB, NB) - Growth factor receptor signaling leading to cell growth, cell differentiation or cell death.

**Callum Ross** (OBA) - Evolutionary morphology and biomechanics of the skull.

**Steven Roth** (\*AC, NB) - Mechanisms of ischemic damage in the retina; mechanisms of induction of tolerance to ischemia, known as ischemic preconditioning.

**Lucia Rothman-Denes** (G, MB, \*MC) - RNA polymerases structure and function; mechanisms of transcription regulation; host-viral interactions.

**Benoit Roux** (BP, \*BMB) - Theoretical and computational studies of the structure, dynamics and function of biological macromolecular systems.

**Janet Rowley** (CB, G, HG, \*M, MC, MM) - Molecular analysis of chromosome rearrangements in human malignant cells (leukemias and lymphomas).

**Manfred Ruddat** (DB, \*EE) - Host-parasite interactions; developmental aspects of gene expression.

**Ilya Ruvinsky** (DB, \*EE, G) - Evolution of development, particularly the origin and diversification of the nervous system and evolution of transcriptional regulation (using *C. elegans* as a primary model organism); comparative and computational genomics; molecular evolution.

## S

**Ravi Salgia** (\*M, CB) - Translational research in upper aerodigestive tract cancers.

**Angelo Scanu** (BMB, G, \*M, MM, MN) - Genetic mechanisms in dyslipoproteinemias in humans; metalloproteinases and kringle-containing proteins; proteoglycans in atherogenesis.

**Norbert F. Scherer** (\*C, BP) - Dynamics of chemical and physical processes in condensed phase and interfacial systems.

**Richard Schilsky** (CB, \*M) - Biochemical and clinical pharmacology of antineoplastic drugs and new drug development.

**Urs Schmidt-Ott** (DB, EB, G, \*OBA) - Evolution of developmental processes in Diptera.

**Olaf Schneewind** (\*MB) - Bacterial Pathogenesis and Protein Targeting.

**Hans Schreiber** (CB, I, MM, \*P) - Tumor immunology; tumor progression, tumor-specific T-cell clones; tumor variants.

**Eric Schwartz** (CP, MM, NB) - Mechanisms of synaptic communication.



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- Mindy Schwartz** (\*M, MN) - Nutrition in the prevention of coronary artery disease, nutritional issues in diabetes mellitus – especially Type 2, obesity.
- Nancy Schwartz** (BMB, DB, MM,\*PD) - Transcriptional control of ECM expression during chondrogenesis and neurogenesis; regulation of sulfate activation; skeletal dysplasias.
- Stuart Schwartz** (\*HG) – Molecular cytogenetics; chromosome structure and function; phenotype-karyotype correlations.
- Carol Semrad** (\*M, MN) - Celiac and malabsorptive diseases and short bowel syndrome.
- Paul Sereno** (EB, \*OBA) - Fossils, phylogenetic analysis, biogeography, dinosaur and avian radiations, molecular evolution.
- James Shapiro** (\*BMB, G) - Genome reorganization and multicellular regulatory systems in bacteria populations.
- Kamal Sharma** (DB, \*NB) – Role of transcription factors in determination of neuronal identity in relation to motor circuits in the vertebrate spinal cord.
- S. Murray Sherman** (CNS, NB) - Thalamic functional organization.
- Steven Shevell** (CNS, O, \*PS) - Perception of color and brightness.
- Rebecca Shilling** (I, \*M, MM) - The role of CD28 family member inducible costimulator (ICOS) in the development, proliferation, and effector function of Th2 cells in both humans and mice
- Neil Shubin** (DB, \*OBA) – Mechanisms behind the evolutionary origin of new anatomical features and faunas.
- Petra Sierwald** (FM) - Taxon-oriented research, specializing in the non-Insect terrestrial arthropods. Systematic, biogeographic, and evolutionary research focuses on the various spider families. Work on the class Diplopoda (millipedes) centers on higher classification.
- Ronald Singer** (\*OBA) - Evolution of man of the African Quaternary; biology of indigenous African human populations; Middle Pleistocene populations.
- Harinder Singh** (CB, DB, G, I, \*MC) - Transcription factors and mechanisms regulating gene expression and cellular differentiation in the immune system.
- Dorothy Sipkins** (CB, \*M) - Molecular characteristics of tissue microenvironments fostering the survival and regeneration of both normal and cancerous hematopoietic stem cells; the impact of malignant growth on the function of the normal hematopoietic stem cell nich.
- Sangram Sisodia** (MM, NB) - The cellular and molecular basis of Alzheimer’s disease.
- Steven Small** (CNS, \*N, NB, MP) - We use functional magnetic resonance imaging to study the normal human cerebral cortex, its functional anatomical adaptations after neurological injury, and the effects of interventions.
- Betty Soliven** (\*N, NB) - Effect of cytokines on glial cells and neurons.
- Julian Solway** (\*M, MM) - Molecular mechanisms underlying airway constrictor hyperresponsiveness in asthma.
- Tobin Sosnick** (\*BMB, IBD) - Protein and RNA/ribozyme folding; biological structure and thermodynamics as basis for understanding function.
- Daniel J. Spergel** (M, MM, MN, NB) - Calcium signaling in the pubertal activation of the GnRH neuronal network.
- Anne Sperling** (I, \*M, MM) - Role of surface molecules in the activation, differentiation, and survival of T lymphocytes.
- Jean-Paul Spire** (CNS, \*N, S) - Clinical electrophysiology.
- Walter Stadler** (\*M) - Late phase I and phase II clinical trials for genitourinary cancers with special emphasis on targeted therapies and pharmacodynamic markers of drug effect.
- Jonathan Staley** (G, \*MC) - Genetic and biochemical analysis of pre-mRNA splicing in yeast and the role of molecular motors in RNA function.
- Theodore Steck** (\*BMB, MC) - Membrane cell biology in the amoeba, *Dictyostelium discoideum*; cholesterol cell biology.
- Donald Steiner** (\*BMB, M) - Biosynthesis and evolution of pancreatic islet hormones; protein precursor processing mechanisms; development and function of the islet alpha (glucagon) and beta (insulin) cells.
- Ursula Storb** (CB, G, I, \*MC) - Immunoglobulin gene expression; somatic hypermutation; regulation and functions of DNA methylation in development and transcription.
- Douglas Stotz** (EB, \*FM) - Conservation ecology; the distribution, evolution, ecology and behavior of birds.
- \*\*Bernard Strauss** (CB, G, \*MC) - Mechanism of mutation; role of DNA polymerases in response to mutagenic agents.
- Xiao Jian Sun** (\*M, MN) - Molecular mechanism of insulin signaling and insulin resistance.
- Kenji Suzuki** (MP, \*R) – Development of computer-aided diagnosis methods of the abdomen and the thorax, development of machine-learning techniques for medical images.
- Eric Svensson** (DB, \*M, MM) - Developmental biology of the cardiovascular system with emphasis on the transcriptional regulation of cardiac development.
- Sara Szuchet** (\*N, NB) - Oligodendrocyte biology and role in multiple sclerosis.



## T

**Wei-Jen Tang** (BP, CB, CP, MB, NB) - Structure-function analysis and regulation of mammalian adenylyl cyclase; homeostasis of intracellular cAMP.

**\*\*Edwin Taylor** (BMB, \*MC) - Molecular mechanism of muscle contraction, nonmuscle actomyosin, cell motility, microfilaments, and microtubules.

**Gopal Thinakaran** (CP, MM, NB) - Cellular and molecular biology of Alzheimer's disease.

**Michael Thirman** (CB, \*M) - Characterization of 11q23 translocations in acute myeloid and acute lymphoblastic leukemia.

**Ronald A. Thisted** (\*HS, ACC, ST) - Biostatistics and epidemiology; Statistical computation: Effectiveness of medical interventions.

**J. Richard Thistlethwaite** (P, \*S) - Treatment of allograft rejection.

**Kenneth Thompson** (MB, MM, \*P) - Herbal extracts that prevent transmission of viral STDs.

**Gary Toback** (CB, CP, \*M, MN) - Growth factors in kidney epithelial cells; autocrine factor.

**V. Leo Towle** (\*N, NB, S) - Functional imaging of the human cerebral cortex.

**Philip Troyk** (CNS) - Cortical prostheses.

**Aaron Turkewitz** (CP, G, \*MC, MB) - Regulation of protein traffic; biogenesis and membrane fusion of secretory vesicles in protists.

**William Turnbull** (\*EB, FM, G) - Paleontology; Mammalian systematics, evolution, ecology and zoogeography; Functional morphology of mammalian jaws and teeth; Paleopathology; Taphonomy; group origins and replacements.

**Jerrold Turner** (CP, MM, MN,\*P) - Physiological and pathophysiological mechanisms that regulate epithelial cytoskeletal structure, tight junction barrier function, and vectorial ion transport.

**Russell Tuttle** (\*AN, EB) - Field and experimental laboratory studies pertaining to the evolution of primate morphology, locomotion, and other behaviors; paleoanthropology; history of theories on hominoid evolution and of social prejudice in physical anthropology.

## U

**Philip Ulinski** (CNS, NB, \*OBA) - Organization of the central nervous system in reptiles.

## V

**Koen van Beisen** (I, \*M) - Stem Cell Transplantation -GVHD - Clinical and Translational aspects of Tumor immunology and Transplant Immunology.

**Eve Van Cauter** (\*M, MM, MN)- Roles of sleep and circadian rhythmicity in modulating hormonal secretions and metabolism.

**Vanden Hoek, Terry** (\*M) – **Listed under Biomedical Science**

**Tyler J. VanderWeele** (HS) - Causal inference; direct acyclic graphs; epidemiologic methods; statistical applications in the biomedical and social sciences.

**Wim Van Drongelen** (CNS, \*PD) - Modeling, signal processing, electrophysiology

**Leigh Van Valen** (EB, \*EE, G) - Macroevolution, macroecology, fossil mammals, evolution of biotas, energy in ecology and evolution, ecological genetics, evolution of development and adaptation, organization and evolution of phenotype, conceptual analysis.

**James Vardiman** (\*P) - Hematopathology and laboratory hematology, including leukemia and hairy cell leukemia.

**Marion Verp** (HG, \*OG) - Clinical genetics, reproductive genetics and clinical cancer genetics.

**Paul Vezina** (NB, \*PY) - Basal ganglia neuropharmacology and the generation of appetitive behaviors.

**Mitchel Villereal** (CB, CP) - Signal transduction (bradykinin receptors, calcium channels, pH regulation, tyrosine kinases) in normal and transformed cells.

**Janet Voight** (EB, \*FM) - Marine biogeography, cephalopod evolution and ecology, biology of the deep sea.

**Harold Voris** (EB, \*FM) - Ecology and systematics of marine snakes, coevolution of pedunculate barnacles and decapod crustaceans, comparisons of old-world tropical rain forest amphibian and reptile communities.



## W

**Darrel Waggoner** (HG, \*PD) - Diagnosis and treatment of metabolic diseases; genetic aspects of hearing loss; study of chromosome abnormalities.

**Chyung-Ru Wang** (I, MB, MM, \*P) - Antigen presentation of MHC class I molecules and T-cell development.

**Mark Webster** (EB, \*GS) - Ontogeny, phylogeny, and evolutionary processes in Cambrian trilobites.

**Ralph Weichselbaum** (CB, MM, \*RC) - Signal transduction pathways following exposure to ionizing radiation; gene therapy.

**Martin Weigert** (I, MM, \*P) - Origins and regulation of antibodies specific for self-antigens.

**Roy Weiss** (\*M, MM, MN) - Clinical and molecular mechanisms of thyroid hormone and nuclear coactivator action; genetic basis of clinical thyroid disease.

**Mark Westneat** (EB, \*FM) - Vertebrate functional morphology, evolutionary biomechanics, phylogenetic systematics, coral reef fishes.

**Kevin White** (AL, DB, EE, G, \*HG) Coordinated action of networks of genes that control developmental processes.

**Amittha Wickrema** (CB, \*M, MM) - Signaling pathways regulating normal and malignant hematopoiesis.

**Barton Wicksteed** (\*M, MN) – Signaling pathways by which cyclic AMP affects pancreatic islet beta cell mass, insulin secretion and insulin synthesis in the islet beta cells.

**William Wimsatt** (\*PH, EB) - Model building and problem solving strategies and biases, units of selection, chaos in ecological systems, history of genetics and evolutionary theory.

**Ira Wool** (\*BMB) - Structure and function of eukaryotic ribosomes; RNA structures; RNA-protein interaction.

**J. Timothy Wootton** (EB, \*EE) - Experimental community ecology, theory of multi-species systems, marine ecology, stream ecology, avian ecology, species extinctions and introductions, evolutionary ecology.

**Chung-I Wu** (EB, \*EE, G) - Speciation, evolutionary genetics, molecular population genetics, genomics, sexual selection.

## X

**H. Rosie Xing** (MM, \*P) - Regulation of ErbBs and oncogenic Ras signaling in human oncogenesis, metastatic dissemination and tumor response to therapeutic interventions.

**Ming Xu** (\*AC, NB) - Neurobiology & genetics of drug addiction.

## Y

**Kamil Yenice** (MP, \*RC) – Stereotactic and image guided radiotherapy: treatment planning & delivery

## Z

**Mirjam Zegers** (CB, \*S) - The role of Rho GTPase effector molecules in the regulation of epithelial morphogenesis.

**Jian Zhang** (I, \*M, MM) - Characterizing the molecular mechanisms of T cell activation and apoptosis, and defining their roles in autoimmunity

**Xiaoxi Zhuang** (NB) - Dopaminergic mechanisms of mood disorders.