

Faculty

A

Rosemary Akhurst, PhD [1] studies the role of signaling molecules and genetic modifiers in vasculogenesis, the formation of the vascular network, during development.

Tamara Alliston, PhD [2] studies mechanisms of differentiation of bone-depositing cells and the regulation of bone quality.

Arturo Alvarez-Buylla, PhD [3] studies the origin of the adult brain's stem cells, the migration of young neurons from their site of birth to their final destinations, the functional contribution of neurons born in the adult brain, and whether brain tumors originate from neural stem cells. He has initiated studies exploring progenitor cell transplants for the treatment of Parkinson's disease and epilepsy.

Mark Anderson, MD, PhD [4] studies immune tolerance and the role of the thymus in type 1 diabetes and autoimmune disease.

B

Allan Balmain, PhD [5] focuses on the role of stem cells and cancer, and thereby specifically aims to identify the critical target cells of origin for different tumor types in the skin and lung. Identification of these target cells, and the mechanisms by which they become transformed, will be important both for stem cell therapy and for cancer therapy.

Scott Baraban, PhD [6] studies mouse mutants featuring gene deletions identified in children with malformation-associated epilepsies, and exploring how seizures develop. He also examines the potential of embryonic progenitor cells to inhibit epilepsy following transplantation.

Michael Beattie, PhD [7] does basic and translational research aimed at enhancing the treatment of brain and spinal cord injuries.

Hilary Beggs, PhD [8] studies the molecular mechanisms that underlie a number of significant eye diseases, including microphthalmia, cataracts, and retinal degeneration/dysplasia.

Mitchel Berger, MD [9] studies the correlative biology and outcome of patients with both low-grade and high-grade gliomas

Sigurd Berven, MD [10] an orthopedic spine surgeon, has research to evaluate the use of mesenchymal stem cells in an animal model of disc degeneration for potential repair mechanisms.

Daniel Bikle, MD, PhD [11] studies the mechanisms by which hormones, especially vitamin D, insulin like growth factor-I (IGF-I), and parathyroid hormone PTH, regulate calcium homeostasis. He is currently working in two main areas: Skeletal: role of IGF-I in mediating the skeletal effects of PTH, in mediating the skeletal response to mechanical load, and in mediating cell-cell communication during fracture repair; Skin: mechanisms by which calcium and vitamin D regulate keratinocyte differentiation and epidermal cancer formation.

Robert Blelloch, MD, PhD [12] Studies the molecular basis of stem cell self-renewal, differentiation and cancer and is an expert in animal SCNT.

Brian Black PhD [13] Transcriptional Control of Mammalian Organogenesis

Jeffrey Bluestone, PhD [14] is the Director of the Diabetes Center and conducts basic and clinical research on the causes and cures for Diabetes.

Nancy Boudreau, PhD [15] Role of Homeobox genes in cancer, angiogenesis and wound healing

Andrew Brack, PhD [16] We are focused on understanding the cellular communication between the muscle stem cell and its environment to identify strategies that improve skeletal muscle regeneration and ameliorate its environment to identify strategies that improve skeletal muscle regeneration and ameliorate sarcopenia.

Jacqueline Bresnahan, PhD [17] does basic and translational research aimed at enhancing the treatment of brain and spinal cord injuries

Katja Brückner, PhD [18] studies the ability of epithelial cells to transdifferentiate in to mesenchymal cells in Drosophila. The epithelial-to-mesenchymal transition is an important and initial step in invasion of epithelial cells, both in normal development and in invasion of cancer cells, leading to metastasis.

Benoit Bruneau, PhD [19] studies the transcriptional and epigenetic regulation of cardiogenesis.

Trevor Burt, MD [20] studies the development and function of fetal T cells to better understand the basis of fetal immune tolerance and the susceptibility of the newborn infant to infections.

Jeff Bush, PhD [21] Signaling control of craniofacial development and congenital disease

Marcelle Cedars, MD [22] is the Director of the Division of Reproductive Endocrinology and Infertility and the UCSF Reproductive Health Clinic, and studies ovarian aging, polycystic ovarian syndrome, and assisted reproductive methods in clinical and basic studies.

Chapman, Harold MD [23] understanding and targeting the emerging relationship between hypoxia, EMT, and tissue remodeling during fibrogenesis and cancer progression.

Benjamin Cheyette, MD, PhD [24] studies signal scaffold proteins in embryonic and neural development, including stem cells.

Pao-Tien Chuang, MD, PhD [25] Hedgehog Signaling in Mammalian Embryogenesis and Postnatal Physiology

Bruce Conklin, MD [26] Gladstone Institute of Cardiovascular Disease Departments of Medicine and Pharmacology, Mission Bay UCSF Dr. Conklin's research focuses genes involved in "Sudden Death" due to abnormal heart rhythm, as well as genes involved in heart failure from cardiomyopathy. His research is focused on rebuilding the heart with new cells, finding heart better drugs and personalized medicine. Dr. Conklin's laboratory works with induced pluripotent (iPS) cells are derived from patients with disease, or have been engineered to test the role of genetic changes on disease. Dr. Conklin began his research career working for two years with Nobel Laureate Julius Axelrod, Ph.D., at the National Institutes of Health. He then completed his residency at Johns Hopkins Hospital and a postdoctoral fellowship in the laboratory of Henry Bourne, M.D. at UCSF. In 1995 Dr. Conklin joined the Gladstone Institutes and the UCSF faculty where he has advanced to become a Senior Investigator at Gladstone, and a Professor at UCSF. Dr. Conklin is the founder of several public stem cell and genomics projects including BayGenomics, GenMAPP, AltAnalyze and WikiPathways. Dr. Conklin pioneered the field of using designer G protein coupled receptors (RASSLs) for tissue engineering. He was the founding director of the Gladstone Genomics Core and the Gladstone Stem Cell Core. He is a member of several honorary societies including the American Society for Clinical Investigation, and is a Fellow in the California Academy of Sciences.

Marco Conti, MD [27] focuses on signal transduction required for germ cell development.

Joseph Costello, PhD [28] studies the onset of tumorigenesis with an emphasis on discovering the mechanisms by which genes accumulate changes that may activate or inactivate tumor genes.

Jason Cyster, PhD [29] studies lymphocyte trafficking and homeostasis.

D

Graeme Davis, PhD [30] studies the cellular and molecular mechanisms of neuronal development and plasticity.

Jayanta Debnath, MD [31] wishes to understand the role and regulation of autophagy in epithelial homeostasis and cancer pathogenesis.

Pamela Den Besten, DDS [32] studies the development of ameloblasts, the cells that deposit enamel on developing teeth, and explores the development of stem cells derived from tooth pulp in the reconstruction of teeth.

Rik Derynck, PhD [33] is the Co-Director of the Eli and Edythe Broad Center of Regeneration Medicine and Stem Cell Research. He studies signaling mechanisms that regulate the generation of bone, muscle and fat cells and how these cells derive from mesenchymal stem cells. This knowledge is used to direct mesenchymal stem cells and pre-adipocytes toward the generation of bone and muscle tissues.

Tejal Desai, PhD [34] focuses on the design, fabrication, and use of advanced micro/nano biosystems.

F

Donna Ferriero, MD [35] is Director of the Neonatal Brain Disorders Center and studies the pathobiology of hypoxic-ischemic injury in the developing nervous system.

Steven Finkbeiner, MD, PhD [36] studies molecular mechanisms of plasticity and neurodegeneration. He is unraveling how an inherited genetic mutation leads to neuronal dysfunction and degeneration in ALS, Frontotemporal dementia, Huntington's and Parkinson's disease.

Susan Fisher, PhD [37] studies mechanisms whereby human placental cells invade the uterus during pregnancy and uses this knowledge to study the behavior during cell differentiation. She also studies the early steps of differentiation and the maintenance of human embryonic stem cells.

G

Zev Gartner, PhD [38] is working to organize the body's building blocks into defined structures spanning the subcellular to tissue length scales.

Elena Gates, MD [39] is the Director of the Human Embryonic Stem Cell Tissue Bank and is an obstetrician/gynecologist at the UCSF Women's Health Offices. She has a special interest in the medical ethics relating to women's health care, reproduction and stem cell biology.

Michael German, MD [40] studies the cascade of gene activation underlying the development of the beta-cells from less differentiated cells during embryogenesis or from stem cells in the adult pancreas, and how these genes function in the mature beta-cell.

Ruby Ghadially, MD [41] is a dermatologist with research interests in skin stem cells and their use for in vivo expansion of keratinocytes for autologous burn and wound therapy.

Kathy Giacomini, PhD [42] research group focuses on membrane transporters, which are

of great pharmacological importance as they play a major role in drug disposition and response.

Stephen Gitelman, MD [43] is the Director of the UCSF Pediatric Diabetes Program, and has active clinical research interests in diabetes, particularly in the prevention of type 1 diabetes mellitus.

Linda Giudice, MD, PhD [44] is the Chair of Obstetrics, Gynecology & Reproductive Sciences and is a specialist in assisted reproduction. She studies human uterine receptivity in pregnancy and embryo development and has initiated studies on human somatic cell nuclear transfer and human embryonic stem cells differentiating into placental cells.

Andrei Goga, MD, PhD [45] studies genetic approaches to understanding cell cycle control and applications to human malignancy, and seeks to develop mouse model systems to study basic cell cycle regulation in normal and tumor cells and to facilitate the development of cell cycle inhibitors as therapeutics.

Douglas Gould, PhD [46] to understand how mutations in the *COL4A1* gene, and other basement membrane components, lead to multi-factorial human diseases.

Dieter Gruenert, Ph.D. [47] Cell and molecular biology studies that focus on the generation, characterization and directed differentiation of pluripotent stem cells for the study of disease processes and the development of new therapies for inherited diseases (e.g. cystic fibrosis and hemoglobinopathies) and cancer.

Su Guo, PhD [48] uses molecular genetic approaches in zebrafish to identify novel genes involved in fate determination of dopaminergic neurons.

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