



Application Instructions

Section 1: Information needed to complete the application.

- A copy of your transcripts for upload.
- The names and contact information for two references.
- Numerical ranking of the top 5 mentors you would like to work with (the mentor list is provided in section 3).

When requesting a Reference Letter, please provide your reference with the following guidelines (copy and paste the following into your email request to them):

Thank you for providing a reference for the CanSUR Program. A list of criteria is provided below that we ask you to address in your letter, to the best of your knowledge. Once completed, please email reference letters directly to cansur@case.edu to the attention of Gena Richmann. Please comment on:

- How long you have known the applicant and in what capacity.
- Their passion for science.
- Their experience with science/research
- Any notable achievements.
- The likelihood that they will pursue graduate or medical school.
- Their personality.

Section 2: Applicant eligibility and classifications

Due to NIH guidelines, CanSUR scholars must be U.S. citizens and permanent residents.

Creating a diverse CanSUR scholar cohort fostering diversity in the scientific research workforce is a key component of the NIH strategy to identify, develop, support and maintain the quality of the biomedical research workforce. NIH's ability to help ensure that the nation remains a global leader in scientific discovery and innovation is dependent upon a pool of highly talented scientists from diverse backgrounds who will help to further NIH's mission. The CanSUR

program is committed to creating a diverse student and faculty population. We highly encourage individuals from groups identified as underrepresented in the biomedical, clinical, behavioral and social sciences to apply. Underrepresented populations are described as:

A. Racial and ethnic groups that have been shown to be underrepresented in biomedical research, including: African Americans, Hispanics/Latinos, American Indians, Alaska Natives, and Native Hawaiians and other Pacific Islanders.

B. Individuals with disabilities are defined as those with a physical or mental impairment that substantially limits one or more major life activities, as described in the [Americans with Disabilities Act of 1990, as amended](#). See NSF data at, http://www.nsf.gov/statistics/wmpd/2013/pdf/tab7-5_updated_2014_10.pdf.

C. Individuals from disadvantaged backgrounds, defined as:

1. Individuals who come from a family with an annual income below established low-income thresholds. These thresholds are based on family size, published by the U.S. Bureau of the Census; adjusted annually for changes in the Consumer Price Index; and adjusted by the Secretary for use in all health professions programs. The Secretary periodically publishes these income levels at <http://aspe.hhs.gov/poverty/index.shtml>.

2. Individuals who come from an educational environment such as that found in certain rural or inner-city environments that has demonstrably and directly inhibited the individual from obtaining the knowledge, skills, and abilities necessary to develop and participate in a research career.

Section 3: CanSUR Mentors

The names and research interests of potential CanSUR mentors are provided below. We will do our best to accommodate each applicant's request, but numerous factors are considered when matching CanSUR scholars with mentors and we cannot guarantee placement into the lab of your top choices. For more information on CanSUR mentors, please see our [member directory](#).

Cancer Cell Signaling

Eli Bar, PhD. Assistant Professor, Neurological Surgery.

Research Focus: Signal transduction, glioma cell biology, stem-like glioma cells.

Susann Brady-Kalnay, PhD. Professor, Molecular Biology and Microbiology.

Research Focus: Receptor protein tyrosine phosphatases and cell adhesion, novel imaging agents for glioma.

Matthias Buck, PhD. Professor, Physiology and Biophysics.

Research Focus: Protein-protein interactions in cell signaling of small GTPases, Plexin and Eph receptors.

Fabio Cominelli, MD, PhD. Professor, Gastroenterology.

Research Focus: Intestinal inflammation and colitis-associated tumorigenesis.

David Danielpour, PhD. Professor, General Medical Sciences-Oncology.

Research Focus: Role of TGF- β 1 signaling as a mediator androgen-withdrawal induced apoptosis and the mechanism by which AR controls TGF- β signaling.

Clark W. Distelhorst, MD. Professor, Hematology and Oncology.

Research Focus: Chronic lymphocytic leukemia (CLL); BCL2 blockade.

Thomas T. Egelhoff, PhD. Professor, Cellular and Molecular Medicine.

Research Focus: Cytoskeleton; wound healing; metastasis; cell migration; breast cancer invasion.

Charis Eng, MD, PhD. Professor, Genomic Medicine.

Research Focus: Genetics, signaling pathways and mouse modeling of inherited PTEN mutations as they predispose to cancer and autism, leading to gene-enabled risk assessment, genetic counseling and management; microbiome as a modifier of disease.

Paul L. Fox, PhD. Professor, Cellular and Molecular Medicine.

Research Focus: Angiogenesis; cell migration; endothelial cells; iron metabolism; macrophages; translational control VEGF-Ax as a cancer inhibitor, translation mechanism.

Clifford V. Harding, MD, PhD. Professor, Pathology.

Research Focus: Cell biology of antigen presenting cells (APCs) and their regulation by Toll-like receptors.

Mark W. Jackson, PhD. Associate Professor, Pathology.

Research Focus: Cellular transformation; Tumor microenvironmental cytokines and cancer cell plasticity; JAK/STAT, EGFR, RAS signaling.

Ruth A. Keri, PhD. Professor, Pharmacology.

Research Focus: genomic and signaling mechanisms that control mammary gland development and cancer.

Justin D. Lathia, PhD. Assistant Professor, Cellular and Molecular Medicine.

Research Focus: Glioblastoma; role of CSCs in tumorigenesis, cell to cell communication; in vivo imaging.

Xiaoxia Li, PhD. Professor, Immunology.

Research Focus: IL-1 receptor/Toll-like receptor (IL-1R-TLR) signaling mechanisms.

Shigemi Matsuyama, PhD. Associate Professor, Hematology and Oncology.

Research Focus: Role of bcl2, Bax and Ku70 in cell survival and cell death.

Monica M. Montano, PhD. Associate Professor, Pharmacology.

Research Focus: Identification of factors in breast and prostate cancer critical in the transition to hormone-independence, resistance to cancer therapeutics, and ability to metastasize.

Agne Petrosiute, MD. Assistant Professor, Hematology and Oncology.

Research Focus: Immune checkpoint regulation and tumor immunology.

Parameswaran Ramakrishnan PhD. Assistant Professor, Pathology. Research Focus: Signal transduction in autoimmunity and inflammation as well as immunometabolism.

Ofer Reizes, PhD. Assistant Professor, Cellular and Molecular Medicine.

Research Focus: Obesity; breast cancer; leptin; cancer stem cell; nanog; cancer stem cells.

William P. Schiemann, PhD. Professor, General Medical Sciences-Oncology.

Research Focus: "TGF β Paradox" and its relationship to the initiation of epithelial-mesenchymal transition and cancer stem cells

Nima Sharifi, MD. Associate Professor, Cancer Biology. Research Focus: Steroid metabolism and prostate cancer resistance to hormonal therapies.

Robert H. Silverman, PhD. Professor, Cancer Biology.

Research Focus: Molecular pathways of the anti-viral and anti-cancer activities of interferon.

George R. Stark, PhD. Professor Emeritus, Cancer Biology.

Research Focus: Interferons; JAK/STAT signaling; EGFR; NF κ B; drug resistance; DNA repair; lung, breast, prostate brain cancer.

Vinay Varadan, PhD. Assistant Professor, General Medical Sciences-Oncology. Next-generation sequencing, computational systems biology, functional genomics and genomics-enabled clinical trial development.

Bingcheng Wang, PhD. Professor, Nephrology and Hypertension.

Research Focus: Eph/ephrin systems in mammalian physiology and tumorigenesis.

Aaron Weinberg, DMD, PhD. Professor, Biological Sciences.

Research Focus: Fusobacterium in human colon cancer.

Jennifer Yu, MD, PhD. Associate Professor, Regional Oncology.

Research Focus: Glioblastoma cancer stem cells, DNA repair, radiotherapy.

Youwei Zhang, PhD. Associate Professor, Pharmacology.

Research Focus: Chk1, 53BP1 regulation of DSB repair and chromosome stability.
Saba Valadkhan, PhD. Assistant Professor, General Medical Sciences-Oncology.
Research Focus: Non-coding RNAs in disease, and in metastasis progression.

Experimental Therapeutics

Paolo Caimi, MD. Assistant Professor, Hematology and Oncology.

Research Focus: Investigator-initiated clinical trials; AML relapse after stem cell transplant; lymphoma.

Marcos de Lima, MD. Professor, Hematology and Oncology.

Research Focus: Hematopoietic Stem Cell Transplant, NK cell immunotherapy.

Chris G. Dealwis, PhD. Associate Professor, Pharmacology.

Research Focus: Development of novel ribonucleotide reductase inhibitors.

Stanton L. Gerson, MD. Professor, Hematology and Oncology.

Research Focus: Hematopoietic stem cell (HSC) survival, drug resistance and leukemic transformation; targeting DNA repair pathways can enhance the anti-cancer effect of DNA damaging agents; stem cells and DNA repair.

Sanjay Gupta, MS, PhD. Professor, Urology.

Research Focus: Development of biomarkers for early detection and prognosis of prostate cancer; identification of novel targets to monitor the efficacy of treatment with chemopreventive or therapeutic agents.

Chao-Pin Hsiao, PhD, RN. Assistant Professor, Nursing. Research Focus:

Molecular-genetic mechanisms of cancer-related fatigue; stress responses, symptoms, symptom distress, and symptom self-management in localized prostate cancer.

Alex Huang, MD, PhD. Associate Professor, Hematology and Oncology.

Research Focus: Pediatric hematology oncology; tumor immunology and immune-mediated cancer therapy.

John Letterio, MD. Professor, Hematology and Oncology.

Research Focus: Adolescent and young adult cancers; drug discovery and preclinical development; targeting CDK5 and TGF-beta to alter PD-L1 and PD-1 expression.

Jaroslav Maciejewski, MD, PhD. Professor, Translational Hematology and Oncology
Research.

Research Focus: Molecular disease mechanisms of bone marrow failure syndromes, including myelodysplastic syndrome (MDS).

Folashade Otegbeye, MD, MPH. Assistant Professor, Hematology and Oncology.

Research Focus: Ex-vivo manipulation of donor natural killer cells to produce sufficient therapeutic cell doses and highly activated/cytotoxic cells for infusion.

John Pink, PhD. Assistant Professor, General Medical Sciences-Oncology.

Research Focus: novel targets for cancer therapy.

Reshmi Parameswaran, PhD, MS. Assistant Professor, Pathology.

Research Focus: Cell therapy for various hematological malignancies using Natural Killer (NK) cells; development of novel therapeutic trials.

Yogen Sauntharajah, MD. Professor, Hematology and Medical Oncology.

Research Focus: Molecular targets for p53-independent, non-cytotoxic cancer therapy.

David Wald, MD, PhD. Assistant Professor, Pathology.

Research Focus: Acute myeloid leukemia (AML), cancer model systems and drug development.

Zhenghe (John) Wang, PhD. Professor, Genetics and Genome Sciences.

Research Focus: Novel therapeutic approaches to target PIK3CA-mutant colorectal cancers.

Cancer Genetics

Nathan Berger, MD. Professor, Hematology and Oncology. Co-Investigator.

Research Focus: GI malignancies; obesity and aging-related cancers.

J. Mark Brown, PhD. Assistant Professor, Cellular and Molecular Medicine.

Research Focus: lipid metabolism; lipoprotein metabolism; microenvironment; high fat diet-induced hepatocellular carcinoma (HCC).

Amitabh Chak, MD. Professor, Gastroenterology.

Research Focus: Genetics of Familial Barrett's Esophagus.

Jeffery Collier, PhD. Associate Professor, General Medical Sciences.

Research Focus: Regulation of mRNA degradation and translation.

Stephen Fink, PhD. Assistant Professor, Hematology and Oncology.

Research Focus: Colon cancer biomarker discovery; targeting 15-PGDH in colorectal cancer prognosis, prediction, prevention, and treatment.

Kishore Guda, DVM, PhD. Assistant Professor, General Medical Sciences-Oncology.

Research Focus: Genetic mechanisms underlying colon and esophageal cancer risk.

Ahmad Khalil, PhD. Assistant Professor, Genetics and Genome Sciences.

Research Focus: Long intergenic non-coding (linc)RNAs as that contribute to cancer initiation, progression and metastasis.

Sanford Markowitz, MD, PhD. Professor, Hematology and Oncology.

Research Focus: GI SPORE; Colon cancer genetics; 15-PGDH.

Brian P. Rubin, MD, PhD. Professor, Anatomic Pathology.

Research Focus: Genetics and biology of sarcomas with particular interest in identification and validation of therapeutic biomarkers and targets.

Derek Taylor, PhD. Assistant Professor, Pharmacology.

Research Focus: Induction of cancer cell death by telomerase-mediated DNA mis-incorporation.

Joseph Willis, MD. Professor, Pathology.

Research Focus: Genetics of colon carcinogenesis; somatic mutation differences between colon cancers in African Americans and Caucasian Americans.

Peter Scacheri, PhD. Associate Professor, Genetics and Genome Sciences.

Research Focus: Novel methods for analysis of gene enhancers, predict drug response in colon cancers.

Imaging

James Basilion, PhD. Associate Professor, Radiology.

Research Focus: Program Leader Cancer Imaging; Molecular imaging and development of novel imaging probes and paradigms to image cancers non-invasively and in real time

Agata A. Exner, PhD. Professor, Radiology.

Research Focus: Deeply penetratable ultrasound contrast agents; molecular detection of prostate specific membrane antigen (PSMA) for detection and biopsy guidance in prostate cancer

Chris A. Flask, PhD. Assistant Professor, Radiology.

Research Focus: Development of new preclinical and clinical MRI acquisition and analysis techniques to assess disease mechanisms in vivo; breast, lung, and brain cancer

Mark A. Griswold, PhD. Professor, MRI.

Research Focus: Magnetic resonance fingerprinting (MRF); Imaging hardware design and optimization

Zheng-Rong Lu, PhD. Professor, Biomedical Engineering. Research Focus

Research Focus: Design and development of novel contrast agents MRI; imaging tumor microenvironment

Anant Madabhushi, PhD, MS. Professor, Biomedical Engineering.

Research Focus: Informatics; developing efficient computational and pattern recognition methods, the existence and correspondence of biological patterns across heterogeneous data

such as cancer biopsies.