Open Postdoctoral Positions

St. Jude Children's Research Hospital
Finding cures. Saving children.
ALSAC • DANNY THOMAS, FOUNDER

Department	Faculty Member	Research Topic
Bone Marrow Transplant &	Christopher DeRenzo	Adoptive cell therapy for pediatric patients with solid tumors
Cellular Therapy	Stephen Gottschalk	Cancer immunotherapy, cell therapy, stem cell transplantation
	Giedre Krenciute	CAR T-cell immunotherapy for brain tumors
Cell & Molecular Biology	Joseph Opferman	Regulation of cell death during hematopoiesis
	Stacey Ogden	Mechanisms of Hedgehog signal transduction
	Malia Potts	Higher-order regulation of autophagy
	Ryan Potts	Biochemical and molecular characterization of MAGE proteins
Chemical Biology & Therapeutics	Taosheng Chen	Small-molecule transcription factor drug discovery
Computational Biology	Brian Abraham	Gene expression-regulation mechanisms
	Paul Geeleher	Computational and statistical approaches to cancer therapy
	Xiaotu Ma	Mathematical modeling and early detection of cancers
	Jinghui Zhang	Genomic sequence analysis and visualization
Developmental Neurobiology	Suzanne Baker	Signaling pathways driving childhood high-grade glioma
	Xinwei Cao	Growth control during neural tube development
	Fabio Demontis	Mechanisms of skeletal muscle aging, protein homeostasis, and myokines
	Michael Dyer	Retinal development, retinoblastoma, & pediatric solid tumors
	Young-Goo Han	Primary cilia in brain development and tumorigenesis
	Jamy Peng	Epigenetic regulation of stem cell functions
	Stanislav Zakharenko	Synaptic plasticity, learning and memory; neuropsychiatric disease
Epidemiology	Kevin Krull	Neurocognitive outcomes of pediatric cancer
Hematology	Yong Cheng	Genomic approaches to studying cis-regulatory modules in hematopoiesis
	Wilson Clements	Vascular/hematpoietic development and leukemia
	Shannon McKinney-Freeman	Cellular and molecular regulation of hematopoietic stem cells
Immunology	Hongbo Chi	Cellular signaling in innate and adaptive immunity
	Thirumala-Devi Kanneganti	Mechanisms of host defense and inflammation
Oncology	Mark Hatley	Cellular and molecular origins of rhabodmyosarcoma
Pathology	Mondira Kundu	Autophagy regulation and relevance to cancer
Pharmaceutical Sciences	John Schuetz	ABC transporters and mitochondrial biology
Structural Biology	Chia-Hsueh Lee	Structural mechanisms of neuronal membrane proteins
	Junmin Peng	Proteomics to ubiquitin biology and human disease
Surgery	Andrew Davidoff	Neuroblastoma, angiogenesis inhibition cancer therapies
	Jun Yang	Cancer epigenetics and targeted therapy

St. Jude Children's Research Hospital is a private research institution in Memphis, Tennessee, where cutting-edge basic research is translated into novel therapies. We have been named on *Fortune* magazine's '100 Best Companies to Work For' list for ten consecutive years. 135 basic science faculty and 260 postdoctoral fellows collaborate with 110 clinical faculty, creating excellent translational research opportunities. State-of-the-art facilities provide an exceptional training environment.

If you are interested in postdoc positions, please e-mail your CV to **postdoc@stjude.org**, and indicate faculty of particular interest. Academic Programs staff, listed below, facilitate the application and interview process, and provide information on research and relocation. Visit **www.stjude.org/postdoc** for more information.

Linda Harris, PhD, Director of Postdoctoral Talent Acquisition
Deanna Tremblay, MSc, Senior Postdoctoral Recruiter
Enolia Marr, Postdoctoral Recruiter

To apply, email postdoc@stjude.org

Bone Marrow Transplant & Cellular Therapy

Christopher DeRenzo, MD — **Adoptive Cell Theapy for Pediatric Patients with Solid Tumors**

A position is available to study chimeric antigen receptor (CAR) T cells for the treatment of pediatric patients with solid tumors. The project will include pre-clinical development and testing of novel CAR T-cell therapies against pediatric solid tumors in vitro and in vivo.

Requirements: PhD in the area of immunology, cancer biology, cancer immunotherapy, or a related field.

Stephen Gottschalk, MD — **Cancer Immunotherapy, Cell Therapy, Stem Cell Transplantation**

A position is available to develop immune-based therapies. Research is aimed to combine T-cell-based therapies with oncolytic viruses for pediatric malignancies. Studies are focused on using genetic engineering approaches to not only render immune cells cancer specific, but also improve their effector function. Genetically modified immune cells in combination with oncolytic viruses will be studied in preclinical models with special emphasis on how adoptively transferred cells interact with tumor cells, the tumor microenvironment, and resident immune cells. Ultimate goal of these studies are to translate these approaches into early Phase clinical testing.

Requirements: PhD or equivalent degree in molecular biology, cell biology, genetics, genomics, immunology, or a related field. A strong immunology and cell biology background, with an emphasis on cellular immunology, and genetic manipulation of mammalian cells. Applicants with experience in generating and evaluating human immune cells, gene editing, or xenograft models including PDX models are strongly encouraged to apply.

Giedre Krenciute, PhD — **CAR T-cell Immunotherapy for brain tumors**

We use genetically engineered T cells to design novel and safe therapeutic approaches for pediatric brain tumors. Projects include 1) Designing CAR T-cellls to target brain tumor associated genes, 2) Enhancing CAR T effector function using different genetic manipulations, and 3) Studying tumor microenvironment and its effect on CAR T function.

Requirements: PhD and/or MD; experience in cell biology, molecular biology, and biochemistry. Training in brain tumor research, immunology and/or CAR T-cell biology preferred.

Cell & Molecular Biology

Joseph Opferman, PhD — **Regulation of Cell Death During Hematopoiesis**

BCL-2 family members are well recognized regulators of programmed cell death and are responsible for regulating the homeostasis of tissues, and defects in this pathway contribute to a variety of human diseases. We revealed that in addition to its canonical role in antagonizing cell death that Myeloid cell leukemia sequence 1 MCL-1 also promotes normal mitochondrial function in cells. Additionally, MCL-1 is a highly amplified gene in human cancer leading to the possibility that both of these functional aspects may contribute to malignant cell growth and evasion of apoptosis. We use a multidisciplinary approach to dissect mechanistically how these functions of MCL-1 are regulated and to understand how these functional roles of MCL-1 contribute to normal development and oncogenesis.

Requirements: PhD and/or MD, and experience in cell biology, molecular biology, and biochemical techniques.

Stacey Ogden, PhD — **Mechanisms of Hedgehog Signal Transduction**

A position is available to study mechanisms of Sonic Hedgehog signal transduction. The successful candidate will join a collaborative work group aimed at understanding how the Sonic Hedgehog pathway is regulated during development, and dissecting how its regulation is usurped in cancer. Areas of interest include biogenesis and secretion of the Hedgehog ligand, contributions of lipid metabolism to pathway activity, regulation and signaling of the signal transducer Smoothened and investigation of the downstream effectors to which it signals. Research projects in the lab will entail use of biochemical and cell biological techniques and mouse model systems.

Requirements: A PhD, with prior experience with signal transduction research, lipid metabolism or mouse model systems preferred.

Malia Potts, PhD — **Higher-order regulation of autophagy**

A position is available to study autophagy in mammalian cells and tissues. Autophagy degrades dangerous or superfluous intracellular cargo via sequestration and delivery to the lysosome. Autophagy protects against tumor initiation, autoimmunity, and neurodegeneration but can also contribute to therapeutic resistance in advanced cancers. Research is focused on the discovery, characterization, and pharmacological manipulation of regulatory systems that control cargo selection and the rate of autophagic flux.

Requirements: A PhD, with prior experience with biochemistry, signal transduction, or models of autophagy-relevant physiology or disease is preferred.

Ryan Potts, PhD — **Biochemical and Molecular Characterization of MAGE Proteins**

We are looking for highly talented, self-motivated individuals passionate about science and making high impact discoveries to work on the molecular mechanisms behind the function of MAGE proteins. In particular, the candidate will utilize structural and biophysical approaches to study MAGE proteins.

Requirements: PhD, experience in structural and biophysical techniques, including crystallography required. Experience analyzing small molecule interaction with proteins preferred.

Chemical Biology & Therapeutics

Taosheng Chen, PhD — **Small-Molecule Transcription Factor Drug Discovery**

This lab studies roles of PXR and CAR (ligand-regulated transcription factors) in regulating drug-induced liver toxicity and cancer drug resistance. We develop novel chemical probes/therapeutic leads by using a multidisciplinary approach, and use them to interrogate the function of PXR and CAR in order to overcome drug toxicity and drug resistance in cellular and animal models. Available projects: 1) Lead optimization of small molecule modulators of PXR and CAR (medicinal chemistry & structure-based approach). 2) In vitro and in vivo validation of novel small molecule modulators of PXR and CAR in regulating drug metabolism, toxicity and resistance (pharmacological approach). 3) Regulation of PXR and CAR signaling pathways (multidisciplinary approach).

Requirements: PhD or MD. Biologists, pharmacologists, medicinal chemists, or structure biologists are encouraged to apply. Significant experience in one of the following areas is desirable: cell and molecular biology, biochemistry, pharmacology, medicinal chemistry, or structural biology.

Computational Biology

Brian Abraham, PhD — **Gene Expression-Regulation Mechanisms**

This lab studies gene expression-regulation mechanisms. We are recruiting computationally talented individuals or biologically talented individuals seeking to transition into computational/bioinformatics research. We build analytical software pipelines to find answers to biological questions about gene regulation in big datasets, usually from applied sequencing experiments like ChIP-Seq, RNA-Seq, and Hi-ChIP. Our interest centers on enhancers and super-enhancers, how these regulatory elements establish gene expression programs in healthy cells, and how enhancers are altered, abused, and targetable in diseased cells. Particular focus is on characterizing the core regulatory circuitry driving understudied human cancers, and on understanding how mutations in the non-coding DNA of tumor cells can drive their survival and proliferation through misregulation.

Requirements: Experience building analysis pipelines in Unix using widely available genomic analysis toolkits (e.g. bedtools, samtools), fundamental understanding of gene expression mechanisms (e.g. transcription factors, enhancers, genome structure, and transcriptional condensates), and have experience building succinct, clear figures using R.

Paul Geeleher, PhD — **Computational and Statistical Approaches to Cancer Therapy**

Research is focused on developing computational and statistical approaches to inform and improve therapies for pediatric cancer. Current projects: 1) Machine learning approaches for integration of pre-clinical, clinical genomics and electronic health data for drug re-purposing and pharmacogenomics of anticancer agents. 2) Statistical methods for integrating single cell and bulk tissue expression data to understand the relationship between common inherited genetic variation, gene expression, and drug response.

Requirements: Applicants with a PhD in a quantitative field are encouraged to apply. Strong candidates from a primarily wet-lab or clinical background who wish to develop quantitative skills will also be considered. Experience working in pediatric cancer is an advantage.

Xiaotu Ma, PhD — **Mathematical Modeling and Early Detection of Cancers**

Research is focused on developing novel computational approaches to understand the molecular mechanisms underlying cancer initiation and clonal evolution, which is expected to significantly impact early detection of cancers and clonal tracking during or post treatment. The lab has extensive experience in cancer genomics, intra-tumor heterogeneity and computational method development.

Requirements: Applicants with a PhD in a quantitative field are encouraged to apply. Strong candidates from a primarily wet-lab or clinical background who wish to develop sophisticated quantitative skills will also be considered. Experience working in DNA sequence analysis, mathematical modeling, and algorithm development is desired.

Computational Biology, continued

Jinghui Zhang, PhD — **Genomic Sequence Analysis and Visualization**

We are seeking highly motivated and creative candidates to lead discovery and/or methods development in the following areas: a) non-coding driver variants that affect gene regulation in the context of predisposition, initiation, and progression of pediatric cancer; b) clonal evolution of relapsed cancer; and c) genomic cloud, clinical data integration and visualization. Candidates will have access to the large collection of genomic and epigenetic data generated from pediatric cancer patients, 3D genome technology such as Hi-C/Capture C, long-read sequencing platform, and state-of-art visualization tools. The successful candidate will have a strong interest in quantitative data analysis or data visualization with formal training in one of the following areas: genomics, bioinformatics, computer science, genetics, or cancer biology. Computer programming skills are preferred and interest or experience in genome analysis is a plus

Successful candidates are expected to excel at critical thinking and be capable of applying or developing novel computational methods for solving complex problems. Candidates must have an excellent publication record, interest in computational analysis, and great communication skills. The lab will provide working experience for a fellow who is interested in leading or participating in all aspects of cancer omics studies via multi-disciplinary teamwork. Each fellow will have opportunities to interact with leaders in the fields of pediatric cancer, epigenetics and translational research. Inter-disciplinary training will be provided to broaden or strengthen computational or biological expertise.

Developmental Neurobiology

Suzanne Baker, PhD — **Signaling Pathways Driving Childhood High-Grade Glioma**

A position is available to study connections between development, epigenetics and cancer, focusing on pediatric high-grade gliomas as a model system. The Baker lab is a collaborative and interactive environment investigating the role of developmental context and cellular plasticity in cancer, and the role of epigenetic regulation in normal and tumorigenic development in brain. Our recent findings helped to define the unique genetic mutations in pediatric high-grade glioma (Wu et al, Nature Genetics 2012, 2014), and to show how epigenetic dysfunction induced by histone H3K27M mutations drives selective changes in gene expression and differentiation state (Larson et al, Cancer Cell 2019, Silveira et al, Acta Neuropath, 2019). Our research projects leverage patient tumors, in vivo model systems including genetically engineered mouse models and patient-derived xenografts, and in vitro model systems for mechanistic studies and integrated analyses of the genome, transcriptome and epigenome.

Requirements: PhD and/or MD degree, with experience in molecular and cellular biology and biochemistry, along with epigenetics, mouse modeling, or developmental biology.

Xinwei Cao, PhD — **Growth Control During Neural Tube Development**

We study the molecular and cellular mechanisms that regulate development and tumorigenesis of the vertebrate nervous system. We use transgenic and knockout models, and employ an integrated set of molecular, cellular, biochemical, and imaging techniques. We seek self-motivated scientists with a strong background in developmental biology, cell biology, signal transduction, or gene regulation, and experience in biochemical, molecular, mouse genetics, or imaging techniques

Fabio Demontis, PhD — **Mechanisms of Skeletal Muscle Aging, Protein Homeostasis, and Myokines**

A position is available to study inter-tissue signaling during aging in *Drosophila*. We use *Drosophila* and mice to decipher the conserved mechanisms of skeletal muscle aging and proteostasis, and how muscle-derived signals (myokines) affect lifespan and the progression of age-related diseases in other tissues (www.stjude.org/demontis).

Requirements: PhD and expertise in molecular, biochemical and/or cell biological techniques. Training in aging research, proteostasis, and/or *Drosophila* genetics preferred.

Michael Dyer, PhD — **Retinal Development, Retinoblastoma, and Pediatric Solid Tumors**

Three positions are available in this lab. The first position will study the role of core regulatory circuit super-enhancers in retinal development and diseases such as macular degeneration and diabetic retinopathy. The second position will work with a spontaneous human retinoblastoma tumor model using 3D retinal organoids produced from patients with germline RB1 mutations. This position will be part of a multidisciplinary team made up of computational and stem cell biologists, pediatric oncologists, pathologists and biostatisticians who use this innovative new model of retinoblastoma to answer fundamental questions in the field. The third position will study immunotherapy for pediatric solid tumors. Our goal is to develop more effective chemoimmunotherapeutic regimens for children with solid tumors.

Requirements: PhD and training in epigenetics, retinal biology and human stem cell research is preferred for the first position. PhD and training in cancer biology, cancer clonal evolution and/or human stem cell research is preferred for the second position. PhD and training in immunology and/or human stem cell research is preferred.

Young-Goo Han, PhD — **Primary Cilia in Brain Development and Tumorigenesis**

Positions are available studying molecular and cellular mechanisms of brain development and cancer. The neocortex, the seat of complex behavior, cognition, and intellect, is tremendously expanded and folded in certain mammals including humans. However, little is known about the mechanisms underlying this neocortical expansion and folding (gyrencephaly). We have shown that Hedgehog signaling promotes gyrencephaly and generated the first transgenic murine model for gyrencephaly, where the small and smooth murine neocortex becomes large and folded one with anatomical and developmental hallmarks of gyrencephalic brains. We also use human cerebral organoids and a naturally gyrencephalic model organism, to extend our findings in murine models to naturally gyrencephalic species. Using these models we identified several genes that may play key roles in expansion and folding of the neocortex. We seek candidates who will (1) study the function of these identified genes in neocortical expansion and folding or (2) investigate the development and function of expanded and folded cortical area in a mutant murine model at the cellular, anatomical, physiological, and behavioral levels. Another research focus is the function of primary cilia and Hedgehog signaling in cancer. Primary cilia play critical roles in multiple signaling pathways and cell cycle progression. Currently, we are investigating the molecular and cellular mechanism of ciliary function in medulloblastoma and the function of translational targets of Hedgehog signaling in medulloblastoma.

Requirements: Strong background and interest in development, stem cells, neuroscience, or cancer. Experience with in utero gene delivery and live-cell imaging preferred.

Jamy Peng, PhD — **Epigenetic Regulation of Stem Cell Function**

A position is available to study epigenetic mechanisms that regulate stem cell functions. Stem cells are responsible for originating and maintaining adult tissues in the human body. Over proliferation of stem cells can cause cancer, and under proliferation of stem cells leads to a variety of diseases such as tissue dystrophy and immuno-deficiency. Improved understanding of stem cell regulation will contribute to fundamental knowledge about human health and likely accelerate the progress of regenerative medicine. We utilize human neural stem cells to understand how chromatin structure and gene expression programming underlie human neural development. Regulators of the modifications of lysine 27 in histone H3 (H3K27) are our focus because they are amongst the most recurrently mutated epigenetic modifiers in pediatric cancers. We generated preliminary findings to identify novel epigenetic mechanisms balancing the division and differentiation of human neural stem cells. These findings have strong implications for how dysfunction of H3K27 modifications lead to stem cell defects, contributing to neurodevelopmental defects and/or cancer

Requirements: PhD with experience in mouse genetics and stem cell culturing.

Stanislav Zakharenko, MD, PhD — **Synaptic Plasticity, Learning and Memory; Neuropsychiatric Disease**

Positions are available for individuals interested in cellular and molecular mechanisms of cognitive and sensory abnormalities in mouse models for schizophrenia and 22q11 deletion syndrome. Multidisciplinary approach includes molecular biological techniques, single-cell electrophysiology, two-photon imaging, two-photon glutamate uncaging, behavioral tests.

Requirements: Preference will be give to recent PhD graduates with experience in single-cell electrophysiology, 2-photon imaging, and molecular biology techniques.

Epidemiology

Kevin Krull, PhD — **Neurocognitive Outcomes of Pediatric Cancer**

Positions are available in pediatric cancer survivorship research. Diverse research opportunities include epidemiology, genetics, computational biology, psychology and neuropsychology, neuroscience, exercise physiology, oncology, pharmacology, radiology, surgery and biostatistics. St. Jude leads two of the world's largest pediatric survivorship research studies, St. Jude LIFE and the Childhood Cancer Survivor Study (CCSS). Fellows have access to exceptional core facilities to help advance your research, the opportunity to obtain a Master of Public Health in epidemiology or biostatistics with full tuition, and the opportunity to participate in St. Jude Global Pediatric Medicine conducting research in Central America, South America, Mexico, Eastern Mediterranean region, China, and Southeast Asia.

Requirements: PhD, MD, DO, or PharmD in a relevant field. Multiple positions are available, funded through a new T32 training grant from the National Cancer Institute or our institutional budget. Applicants to positions funded by the T32 training grant must be citizens or noncitizen nationals of the United States or have been lawfully admitted for permanent residence at the time of appointment.

Hematology

Yong Cheng, PhD — **Genomic Approaches to Studying cis-Regulatory Modules in Hematopoiesis**

This lab uses functional genomic and computational genomic approaches to systematically study the impacts of genetic variants, especially non-coding variants, on normal blood development and disorders. We built our research program on unique clinical resources, cutting-edging technologies and strong data mining techniques. We have one of the largest pediatric sickle cell programs in the country. Our project has direct access to thousands of Whole Genome Sequencing data from patients with blood disorders. We apply different cutting-edge high-throughput functional genomic, single-cell omic-profiling and genomic/epigenomic editing technologies to identify, validate and understanding the mechanism of causal variants. We also have rich experience in high dimensional data processing, mining and modeling.
Requirements: PhD in molecular biology, genetics, bioinformatics, biochemistry or related field. Keen interest in translational research, and high-throughput sequencing.

Wilson Clements, PhD — **Vascular/Hematopoietic Development and Leukemia**

A position is available to study how the adult hematopoietic system is established during vertebrate embryonic development. We are interested to learn how early precursors of the sympathetic nervous system interact with developing endothelial cells to establish the earliest hematopoietic stem cells. Our recent findings (Nature Cell Biology, 19:457-467, 2017) define the existence of this connection in zebrafish, and we are now working to extend these findings to mammalian systems and better understand key details.

Requirements: A PhD and experience with molecular, biochemical and cell biological techniques. Experience in developmental hematopoiesis using mouse as a model system.

Shannon McKinney-Freeman, PhD — **Cellular and Molecular Regulation of Hematopoietic Stem Cells**

Postdoctoral positions are available to study hematopoietic stem cell biology and development. Our laboratory has two major areas of focus: characterizing novel molecular regulators of hematopoietic stem cell transplantation and discovering novel mechanisms that regulate the emergence of the blood system during embryogenesis.

Requirements: The successful candidate will employ mouse genetics, ex vivo cell culture, flow cytometry, and molecular biology to study HSC biology. This position is ideal for someone with a PhD and/or MD seeking to develop expertise in stem cell biology in an intimate and vibrant laboratory setting.

Immunology

Hongbo Chi, PhD — **Cellular Signaling in Innate and Adaptive Immunity**

We study cell metabolism of the immune system and its implications in cancer and other diseases. We are particularly interested in the signaling network and metabolic programs mediated by mTOR and related pathways in basic T cell and dendritic cell biology. We also investigate mechanisms of tumor immunity and immunotherapy. Experimental models include genetically-modified mice and primary immune cells, as well as in vitro systems to explore signaling, metabolic, transcriptional and epigenetic regulation. We integrate these immunological approaches with cutting-edge systems biology tools including transcriptomics, proteomics, metabolomics and network reconstruction
Requirements: Ph.D. in immunology, biochemistry, or cell biology, with evidence of scientific accomplishment.

Thirumala-Devi Kanneganti, PhD — **Mechanisms of Host Defense and Inflammation**

A position is available investigating cellular signaling in the immune system. We are interested in signaling pathways in innate immunity and cell death (NLRs, inflammasomes). The lab offers a remarkable training environment in innate immunity.

Requirements: PhD, DVM, MD/PhD in biomedical sciences with practical experience in immunology.

Oncology

Mark Hatley, MD, PhD — **Cellular and Molecular Origins of Rhabdomyosarcoma**

Positions are available to study how normal development processes are perturbed to drive pediatric embryonal tumors using rhabdomyosarcoma as a model system. Our recent findings defined the cell of origin of rhabdomyosarcoma, a presumed skeletal muscle tumor, as an endothelial progenitor cell (Cancer Cell, 33:108-124, 2018). We now seek to elucidate the mechanism of this cell reprogramming event and its role in cell transformation. The lab leverages genetically engineered mouse models, patient-derived xenografts, human and mouse tumor and primary cell lines as well as IPS cells as model systems to interrogate the underlying pathobiology of pediatric rhabdomyosarcoma.

Requirements: PhD with less than two years of postdoctoral research. Experience in mouse models, cell biology, and molecular biology preferred.

Pathology

Mondira Kundu, MD, PhD — **Autophagy Regulation and Relevance to Cancer**

Studies will investigate the impact of ER-to-Golgi trafficking defects on neuronal homeostasis and behavior using a variety of model systems (e.g. human IPS cells and rodents).

Requirements: Previous experience in primary neuron culture, high resolution and live-cell imaging and data processing, animal handling and molecular biology preferred.

Pharmaceutical Sciences

John Schuetz, PhD — **ABC Transporters and Mitochondrial Biology**

A position is available to study ABC transporters in disease progression. Projects will utilize biochemistry, cell culture, cell biology, and animal models of disease.

Requirements: PhD with expertise in biochemistry, molecular biology, and animal models.

Structural Biology

Chia-Hsueh Lee, PhD — **Structural Mechanisms of Neuronal Membrane Proteins**

A position is available focusing on structural mechanisms of neuronal membrane proteins. We use cryo-EM and biochemical/biophysical approaches to study the function of membrane proteins (Lee and MacKinnon, Science 2018; Lee and MacKinnon, Cell 2017). The lab has access to the state-of-the-art cryoEM facility in St. Jude, which houses a 300kV Titan Krios and a 200 kV Talos Arctica electron microscope, both equipped with a K3 detector and energy filter.

Requirements: PhD in biochemistry, structural biology, biophysics, or related field. Additional experience in single particle cryo-EM or X-ray crystallography would be a plus.

Junmin Peng, PhD — **Proteomics to Ubiquitin Biology and Human Disease**

Positions are available to study ubiquitin code and RNA splicing dysfunction in Alzheimer's disease (AD). You will develop mass spectrometry-based proteomics, metabolomics and systems biology tools and/or explore AD pathogenesis by the systems biology tools, as well as diverse molecular, cellular and genetic approaches, using clinical human AD specimens, mouse models, and human stem cell-derived organoids.

Requirements: Ph.D. degree in biochemistry, cell biology, genetics, neuroscience, bioinformatics, computer science or a related field or a M.D. degree. Experience in neurobiology, systems biology, or software development is preferred but not required. Candidates must have an excellent publication record.

Surgery

Andrew Davidoff, MD — **Neuroblastoma, Angiogenesis Inhibition for Cancer Therapy**

A position is available to study translational approaches for the treatment of neuroblastoma. The lab seeks to develop novel translational approaches using anti-angiogenesis techniques to treat neuroblastoma as well as other pediatric solid tumors.

Requirements: PhD, and a strong scholarly accomplishments. Expected to develop, execute, lead a cutting edge project, and work well within a team environment.

Jun Yang, MD, PhD — **Cancer Epigenetics and Targeted Therapy**

A position is available to study epigenetic functions in solid tumors and leukemia. The major interests of the lab are to study how alterations of epigenetics causes cancer progression and therapy resistance, and to develop novel inhibitors to target epigenetic modifiers.

Requirements: PhD in molecular biology, cell biology, cancer biology, developmental biology, genetics, or related field.