

INDE 217: Physician Scientist Hour		
PhySH schedule for 2020-2021		
Autumn Quarter 2020		
9/14/20	Electron Kebebew	Virtual
9/21/20	G2 Presentations: Maria Filsinger Interrante	Virtual
10/5/20	Taia Wang	Virtual
10/12/20	G2 Presentations: Ved Topkar; Kathryn Wu	Virtual
10/19/20	Steve Goodman #1	Virtual
10/26/20	G2 Presentations: Angela Zhang; Shivam Verma	Virtual
11/9/20	Tom Rando	Virtual
11/16/20	G2 Presentations: Aaron Wilk; Tim Chai	Virtual
11/30/20	Steve Goodman #2	Virtual
Winter Quarter 2021		
1/11/21	G2 Presentations: Vipul Vachharajani; Andrea Garofalo	Virtual
1/25/21	Ellen Yeh	Virtual
2/1/21	G2 Presentations: Alvaro Amorin; David Wang	Virtual
2/8/21	Mental Health Check-in	Virtual
2/22/21	M1 Check-in	Virtual
3/1/21	Paul George	Virtual
3/8/21	Catherine Blish	Virtual
Spring Quarter 2021		
3/29/21	MSTP Town Hall	Virtual
4/5/21	Laura Dassama	Virtual
4/19/21	Christopher Barnes	Virtual
4/26/21	PJ Utz	Virtual
5/10/21	Matthew Porteus	Virtual
5/17/21	Katrin Svensson	Virtual
5/24/21	Special Invited Speaker: Vivien Cheung	Virtual

Due to the COVID-19 pandemic, PhySH will be virtual for the 2020-2021 academic year (via Zoom).

Autumn 2020 PhySH Schedule

Electron Kebebew

September 14, 2020

What to Investigate and Why?

Dr. Kebebew is the Harry A. Oberhelman, Jr and Mark L. Welton Professor of Surgery and is Chief of the Division of General Surgery & Lab Director at Stanford. Dr. Kebebew's translational and clinical investigations have three main scientific goals: 1) to develop effective therapies for fatal, rare and neglected endocrine cancers, 2) to identify new methods, strategies and technologies for improving the diagnosis and treatment of endocrine neoplasms and the prognostication of endocrine cancers, and 3) to develop methods for precision treatment of endocrine tumors.

G2 Presentation: Maria Filsinger Interrante

September 21, 2020

Targeting the Prehairpin Intermediate of HIV-1 Fusion Towards Development of a Prophylactic Vaccine

Lab of Peter Kim, PhD

Program in Biophysics

Taia Wang

October 5, 2020

Reflections and Q&A on My Physician-Scientist Training Path and Transition to a Faculty Position

Dr. Wang's research is aimed at defining mechanisms in human immunity and disease. The Wang laboratory uses in vivo and in vitro systems to study how antibodies can modulate viral infections or anti-viral vaccine responses through signaling interactions with Fc gamma receptors (FcγRs). The overarching goal of projects in the Wang lab is to elucidate FcγR pathways that can be harnessed towards the development of enhanced vaccines and therapeutics.

G2 Presentations: Ved Topkar; Kathryn Wu

October 12, 2020

Ved Topkar

Structural Characterization of mRNA Transport in Oligodendrocytes

Lab of Rhiju Das, PhD

Program in Biophysics

Kathryn Wu

How Schwann Cells Sort and Myelinate Axons

Lab of Brad Zuchero, PhD

Program in Neurosciences

Steve Goodman #1

October 19, 2020

Research Reproducibility - Definitions and Practice of "Rigor and Reproducibility" in Proposals and in Lab and Clinical Research

Dr. Goodman's research concerns the proper measurement, conceptualization and synthesis of research evidence, with particular emphasis on Bayesian approaches to quantitation, and qualitative approaches arising from the philosophy of science. He is also interested in developing methods to use shared data to confirm and extend published science, as well as to explore new hypotheses. He also has worked on the connections between ethics and scientific methods, particularly in the domain of interventional research, and policy making.

G2 Presentations: Angela Zhang; Shivam Verma

October 26, 2020

Angela Zhang

Developing Label Free Methods to Characterize Induced Pluripotent Stem Cell Derived Cardiomyocytes

Labs of Joseph Wu, MD, PhD, and Russ Altman, MD, PhD
Program in Biomedical Informatics

Shivam Verma

Templated Production of Single-Stranded DNA in Mammalian Cells

Lab of Carolyn Bertozzi, PhD
Department of Chemical and Systems Biology

Tom Rando

November 2, 2020

The Journey of a Physician Scientist: Random Walks and Infinite Sample Space

Dr. Rando's research focuses on tissue-specific stem cells in aging and disease, and on pathogenetic mechanisms and gene therapy for muscular dystrophies. His research on aging has demonstrated that it is possible to identify biochemical stimuli that can induce stem cells in old tissues to repair injuries as effectively as in young tissues, and this work has broad implications for the fields of regenerative medicine and stem cell transplantation.

G2 Presentations: Aaron Wilk; Tim Chai

November 9, 2020

Aaron Wilk

Seq-ing Answers to COVID-19: Lessons From Multimodal Immune Profiling

Lab of Catherine Blish, MD, PhD
Program in Immunology

Tim Chai

How T Cells Communicate With Cancer Cells

Lab of Irving Weissman, MD
Program in Cancer Biology

MSTP Diversity Working Group (DWG)

November 16, 2020

DWG's Structure and Goals for the Upcoming Year The mission of the MSTP Diversity Working Group (DWG) is to promote and support diversity of all kinds, at all phases of the physician scientist training process, by fostering and advocating for the equal treatment of all prospective and current MSTP students in recruitment, admission, retention and career placement of MSTP students.

Steve Goodman #2

November 30, 2020

Design, Data Analysis and Data Management

Dr. Goodman's research concerns the proper measurement, conceptualization and synthesis of research evidence, with particular emphasis on Bayesian approaches to quantitation, and qualitative approaches arising from the philosophy of science. He is also interested in developing methods to use shared data to confirm and extend published science, as well as to explore new hypotheses. He also has worked on the connections between ethics and scientific methods, particularly in the domain of interventional research, and policy making.

Winter 2021 PhySH Schedule

G2 Presentations: Vipul Vachharajani; Andrea Garofalo

January 11, 2021

Vipul Vachharajani

Single-Molecule Force Spectroscopy of Epithelial Cell Adhesion Molecules

Lab of Alex Dunn, PhD

Program in Biophysics

Andrea Garofalo

Deep Sequencing of Cell-Free DNA for Noninvasive Detection of Immunosuppression-Related Lymphoid Malignancies

Lab of Ash Alizadeh, MD, PhD

Program in Cancer Biology

Elen Yeh

January 25, 2021

A Path Less Traveled

Dr. Yeh's research focuses on the apicoplast, a prokaryotically-derived plastid organelle unique to Plasmodium (and other pathogenic Apicomplexa parasites) and a key anti-malarial drug target. Her laboratory's goal is to elucidate apicoplast biology, function, and role in pathogenesis with the ultimate goal of realizing the potential of the apicoplast as a therapeutic target.

G2 Presentation: Alvaro Amorin; David Wang

February 1, 2021

Alvaro Amorin

Dual Stem Cell Therapy for Krabbe Disease

Lab of Natalia Gomez Ospina, MD, PhD

Program in Stem Cell Biology & Regenerative Medicine

David Wang

The Role of Neuronal Activity in Building Brain Circuits

Lab of Liqun Luo, PhD

Department of Biology

Paul George

March 1, 2021

Emerging As a Physician Scientist: A Non-Linear Path to a Stimulating Career

Dr. George's lab focuses on improving stroke diagnostics as well as engineering new methods to enhance stroke recovery. Their primary focus is applying novel bioengineering techniques to understand the mechanisms of neural recovery (primarily in stroke) and discovering methods to improve patient recovery. They use rodent models of stroke combined with biomaterial techniques, stem cell transplants, and microfabrication to achieve these aims and evaluate our methods with behavior testing and various imaging techniques. Their goal is to translate these findings into clinical trials to help stroke patients.

Catherine Blish

March 8, 2021

Grant Writing: F30

The goal of Dr. Blish's research is to develop new methods to prevent and control infectious diseases through better understanding of human immunology. The lab has several major areas of ongoing investigation: understanding the diversity and biology of human natural killer (NK) cells; defining the role of NK cells in viral immunity; and immune signatures of human pregnancy.

Spring 2020 PhySH Schedule

Laura Dassama

April 5, 2021

Progress Toward the Creation of Universally Effective Fetal Hemoglobin Inducers for Sickle Cell Disease

Dr. Dassama is a bioinorganic chemist and structural biologist who uses tools of chemistry and physics to provide molecular insights into complex biological processes. Her research interests include mitigating bacterial multidrug resistance and developing therapies for sickle cell disease.

Christopher Barnes

April 19, 2021

Structural Biology in the Age of COVID-19

Dr. Barnes' work is focused on resolving fundamental questions about the mechanism by which the general transcription factors regulate RNA Polymerase II (Pol II) activity. Due to the size and complexity of such systems, he utilized unique techniques to reconstitute and achieve high-resolution structural information. He purified, assembled, and crystallized Pol II complexes for data collection at synchrotron and X-ray free electron laser sources, while also developing transmission electron microscopy methods.

PJ Utz

April 26, 2021

Autoantibodies and Autoimmunity in COVID-19

Dr. Utz's research focuses on the immune system of patients with immunodeficiency disorders, infections, and autoimmune diseases and mixed connective tissue disease. His lab develops bench-to-bedside technologies, including diagnostics and therapeutics, for human immune diseases. His lab is also active in vaccine biology, both for inducing protective immunity to pathogens and for turning off immune responses in autoimmune diseases.

Matt Porteus

May 10, 2021

From Bench to Phase I: Responsible Translational Research

Dr. Porteus' research focuses on developing genome editing by homologous recombination as curative therapy for children with genetic diseases but also has interests in the clonal dynamics of heterogeneous populations and the use of genome editing to better understand diseases that affect children including infant leukemias and genetic diseases that affect the muscle.

Katrin Svensson

May 17, 2021

Exploring the Secretome For New Metabolic Hormones

Dr. Svensson's research is dedicated to the discovery of new fundamental pathways of energy regulation. Her lab is using a combination of multi-omics, gene editing and physiology approaches to better understand how to target complex diseases such as aging, metabolic diseases, and cancer.

Vivien Cheung

May 24, 2021

From RNA Biology to Rare Disease: Journey of a Physician-Scientist

Dr. Vivian G. Cheung is the Frederick G.L. Huetwell Professor the Department of Pediatrics at the University of Michigan. Dr. Cheung is an RNA biologist and child neurologist. Dr. Cheung's laboratory has a long-standing interest in gene regulation. Her group showed that expression levels of human genes can be studied as quantitative traits. This enabled the mapping of gene regulators without a priori knowledge of the underlying mechanisms, and facilitated the identification of regulatory variants that affect disease susceptibility. This project on the genetics of human gene expression led to her current studies of the regulatory role of RNA sequences and structures. This includes determining how dysregulation of a nucleic-acid structure, R-loop, affects motor neurons in a juvenile-onset amyotrophic lateral sclerosis.