

INDE 217: Physician Scientist Hour		
PhySH Schedule for 2021-2022 (Hybrid format)		
	Autumn Quarter 2021	
9/20/21	John Boothroyd (RCR)	LKSC 120, Hybrid
9/27/21	G3 Journey: Adi Mukund & Lori Dershowitz	LKSC 120, Hybrid
10/4/21	Allison Rustagi (UCSF)	Virtual
10/11/21	Anne Brunet	LKSC 120, Hybrid
10/18/21	Ellen Yeh	LKSC 120, Hybrid
10/25/21	Monther Abu-Remaileh	LKSC 120, Hybrid
11/1/21	Ansu Satpathy	LKSC 120, Hybrid
11/8/21	Julia Idoyaga	LKSC 120, Hybrid
11/15/21	Town Hall	LKSC 120, Hybrid
	Winter Quarter 2022	
1/10/22	Lacra Bintu	LKSC 120, Hybrid
1/24/22	Katherine Wu (The Atlantic)	Virtual
1/31/22	Catherine Blish	LKSC 120, Hybrid
2/7/22	Ron Vale (HHMI)	Virtual
2/14/22	MSTP Diversity Working Group: Ken Sutha, KE Bauer-Rowe, Meaghan Roye-O'Reilly	LKSC 120, Hybrid
2/28/22	Dean Felsher (RCR - Peer Review)	LKSC 120, Hybrid
	Spring Quarter 2022	
	Speakers / Topic	LKSC 120, Hybrid
3/28/22	Freda Lewis-Hall (Pfizer)	Virtual
4/4/22	Matt - How to give a talk, talk	LKSC 120, Hybrid
4/11/22	Martha Cyert	LKSC 120, Hybrid
4/18/22	Derek Amanatullah	LKSC 120, Hybrid
5/2/22	Elizabeth Egan	LKSC 120, Hybrid
5/16/22	Maya Kasowski	LKSC 120, Hybrid
5/23/22	Student Fellowship/F30 Session: Tara Murty, Vipul Vachharajani, Preksha Bhagchandani, Harrison Besser	LKSC 120, Hybrid

Due to the COVID-19 pandemic, PhySH will be hybrid for the 2021-2022 academic year (LKSC classroom and via Zoom).

Autumn 2021 PhySH Schedule

John Boothroyd

September 20, 2021

Managing up, down and across: How to have productive, stress-free relationships at work (RCR)

Dr. Boothroyd's research interests have spanned from viruses such as bacteriophage T7 and Foot and Mouth Disease Virus through to protozoan parasites such as *Trypanosoma brucei*, the cause of African sleeping sickness, and *Toxoplasma gondii*, a serious pathogen in newborns and individuals who are immunocompromised. Currently, his lab is focused on the interaction between the animal host and *Toxoplasma*. Together with their collaborators, the lab asks: (1) how does *Toxoplasma* invade and co-opt almost any cell type from almost any animal; (2) once in, how does it persist in its hosts for their entire lifetime; and 3) how do the polymorphic "effectors" that *Toxoplasma* injects into a host cell produce different disease outcomes.

Allison Rustagi (UCSF)

October 4, 2021

Parenting as a physician-scientist: Research, personal stories, and opportunities for change

Dr. Rustagi obtained a bachelor's in Human Biology from Stanford University, an M.D. from UCSF and a Ph.D. in Epidemiology from the University of Washington, in which she found cervical cancer screening reduces mortality among women even up to age 79. During her post-doctoral Fellowship in Global Health at the University of Washington, she conducted a cluster randomized trial of quality improvement interventions in sub-Saharan Africa, which increased uptake of interventions that reduce mother-to-child HIV transmission. Her current research focuses on implementation of lung cancer screening in the VA; she also has an interest in gender discrimination in medicine.

Anne Brunet

October 11, 2021

Understanding and modeling aging

Dr. Brunet's lab is interested in the molecular mechanisms of aging and longevity, with a particular emphasis on the nervous system. Her lab is interested in identifying pathways involved in delaying aging in response to external stimuli such as availability of nutrients and mates. She also seeks to understand the mechanisms that influence the rejuvenation of old stem cells. Finally, her lab has pioneered the naturally short-lived African killifish as a new model to explore the regulation of aging and age-related diseases.

Ellen Yeh

October 18, 2021

From parasites to plankton: The opportunities and challenges of switching fields

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.

Monther Abu-Remaileh

October 25, 2021

Functional characterization of the lysosomal function in health and disease

Dr. Abu-Remaileh's lab is interested in identifying novel pathways that enable cellular and organismal adaptation to metabolic stress and changes in environmental conditions. It also study how these pathways go awry in human diseases such as cancer, neurodegeneration and metabolic syndrome, in order to engineer new therapeutic modalities. By examining 1) how the lysosome communicates with other cellular compartments to fulfill the metabolic demands of the cell under various metabolic states, 2) and how its dysfunction leads to rare and common human diseases, his lab hopes to engineer novel therapies to modulate the pathways that govern human disease.

Ansu Satpathy

November 1, 2021

High-throughput genomics in cancer immunotherapy

Dr. Satpathy's lab works at the interface of immunology, cancer biology, and genomics to study cellular and molecular mechanisms of the immune response to cancer. In particular, it is leveraging high-throughput genomic technologies to understand the dynamics of the tumor-specific T cell response to cancer antigens and immunotherapies (checkpoint blockade, CAR-T cells, and others). The lab is also interested in understanding the impact of immuno-editing on the heterogeneity and clonal evolution of cancer.

Juliana Idoyaga

November 8, 2021

Emerging dendritic cell heterogeneity: The in-betweens

Dr. Idoyaga's lab is focused on the function and biology of dendritic cells, which are specialized antigen-presenting cells that initiate and modulate our body's immune responses. Considering their importance in orchestrating the quality and quantity of immune responses, dendritic cells are an indisputable target for vaccines and therapies.

MSTP Town Hall

November 15, 2021

Winter 2022 PhySH Schedule

Lacra Bintu

January 10, 2022

Chromatin-mediated gene control: Single-cell and high-throughput measurements

The Bintu lab performs single-cell and high-throughput measurements of chromatin and gene

regulation dynamics, and uses these data to develop predictive models and improve mammalian cell engineering.

Katherine J. Wu

January 24, 2022

A Q&A session

Dr. Katherine J. Wu is a staff writer for The Atlantic, where she covers science. She is also a Story Collider senior producer and a senior editor at The Open Notebook. She previously served as a science reporter for The New York Times, where she reported on the COVID-19 pandemic. She's also been a staff writer for NOVA Next, an early career fellow at the Open Notebook, and a AAAS Mass Media Fellow at Smithsonian magazine.

Catherine Blish

January 31, 2022

Grant writing: F30

The Blish Lab strives 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.

Ronald D. Vale

February 7, 2022

The serendipity of a scientific career

Vale's research has focused on how cargoes are transported within cells using molecular motor proteins. Vale discovered the motor protein "kinesin," and his laboratory was involved in elucidating its mechanism of movement using structural and single-molecule approaches. For the past fifteen years, Vale has investigated the mechanism of dynein, a much larger and more complex molecular motor. His lab also discovered and studied proteins that sever, nucleate, and cap microtubules. Currently, his laboratories study T cell and macrophage signaling, RNA biology and phase separation, the role of the cytoskeleton in tissue organization, and the regulation of ciliary motility.

MSTP Diversity Working Group (DWG)

February 14, 2022

Panel discussion with the Stanford Medicine Alliance for Disability Inclusion and Equity (ADIE)

The DWG comprises of MSTP students from diverse backgrounds who meet regularly to discuss strategies to evaluate and improve diversity, equity, and inclusion within the MSTP and throughout Stanford. The DWG focuses on strategies for supporting current students, as well as Outreach/Recruitment and Admissions.

Stanford Medicine Alliance for Disability Inclusion and Equity (ADIE)

Dean Felsher

February 28, 2022

Peer review (RCR)

The Felsher's lab investigates how oncogenes initiate and sustain tumorigenesis. They developed model systems whereby they can conditionally activate oncogenes in normal human and mouse cells in tissue culture or in specific tissues of transgenic mice. In particular using the tetracycline regulatory system, they generated a conditional model system for MYC-induced tumors. They showed that cancers caused by the conditional over-expression of the MYC proto-oncogene regress with its inactivation. Thus, even though cancer is a multi-step process, the inactivation of one oncogene can be sufficient to induce tumor regression. They are now using these model systems to address how oncogenes initiate tumorigenesis, how oncogene inactivation cause tumor regression, and how tumors escape dependence on oncogenes.

Spring 2022 PhySH Schedule**Freda Lewis-Hall**

March 28, 2022

The future of healthcare: You

Dr. Freda Lewis-Hall is widely regarded for expanding outreach to patients, reshaping the focus on patient engagement and inclusion, improving health information and education, and amplifying the voice of the patient within company culture and decision-making. She served in various leadership roles at a number of pharmaceutical companies, most recently as Chief Medical Officer and Executive Vice President, and later Chief Patient Officer, at Pfizer.

Matt Porteus

April 4, 2022

How to give a talk

Dr. Matt Porteus is an Associate Director of the Stanford MSTP. The Porteus lab 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.

Marta Cyert

April 11, 2022

My 30 year love affair with calcineurin

The Cyert Lab studies Ca²⁺-dependent signal transduction, focusing on calcineurin, the highly conserved Ca²⁺/calmodulin-regulated protein phosphatase that plays critical roles in muscle, immune and neural cells. The lab established the human calcineurin signaling network, using both experimental and computational approaches, which uncovered many new functions and substrates for calcineurin, including a conserved role in regulating nuclear transport via the nuclear pore complex as well as functions at the centrosome and in lipid signaling. New work is aimed at identifying calcineurin targets that mediate pancreatitis.

Derek Amanatullah

April 18, 2022

Understanding the relationship of host immunity to periprosthetic joint infection

Dr. Amanatullah is an expert in revision joint replacement – 60% of his practice consists of fixing the failed joint replacements, primarily for infection. His current practice has focused his research interests on understanding the clinical and basic science challenges presented by periprosthetic joint infections. He created an assay that identified small colony variants as a major component of Staphylococcal biofilms. Small colony variants represent an unaddressed bacterial population creating many of the deficiencies in the treatment of periprosthetic joint infections, specifically regarding host immunosuppression.

Elizabeth Egan

May 2, 2022

Deciphering the role of the red cell in Plasmodium falciparum malaria

The Egan lab focuses on understanding how host factors from the human erythrocyte influence the biology and pathogenesis of the malaria parasite Plasmodium falciparum.

Maya Kasowski

May 16, 2022

Dissecting pathologies with scalable genomics

Dr. Kasowski's experiences as a clinical pathologist and genome scientist have made her passionate about applying cutting-edge technologies to primary patient specimens in order to characterize disease pathologies at the molecular level. The core focus of the Kasowski Lab is to study the mechanisms by which genetic variants influence the risk of disease through effects on intermediate molecular phenotypes.

Student Fellowship/F30 Session: MSTP student panel

June 23, 2022