NIH Global Doctoral Partnerships Annual Workshop & 20th Anniversary

CELEBRATING SCIENCE:
LOOKING BACK & LOOKING FORWARD

via virtual platform

JULY 13-15

NIH

UNIVERSITY OF OXFORD

UNIVERSITY OF CAMBRIDGE

NIH Oxford-Cambridge Scholars Program

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INTERNATIONAL BIOMEDICAL RESEARCH ALLIANCE

2021 Workshop Program Booklet

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Acknowledgements

The National Institutes of Health Oxford-Cambridge (NIH OxCam) Scholars Program and NIH Wellcome Trust Program would first like to acknowledge the immense contributions of the Workshop Planning Committee. These students have contributed a significant amount of time and energy to organize this year's colloquium. They worked closely with OxCam leadership including Drs. Katie Stagliano, Kristi Porter, Kenton Swartz, and Megan Janasiewicz to put together all the events taking place across these three days of the Workshop. Their outstanding service and dedication have made the 2021 Global Doctoral Partnerships Research Workshop a great success. Below are the exceptional student members of the Workshop Planning Committee:

Yasemin Cole (Committee Chair)	Class of 2020
Sahba Seddighi (Committee Vice Chair)	Class of 2020
Kritika Singh	Class of 2020
Alex Waldman	Class of 2018
Neha Wali	Class of 2020
Jiali Zhang	Class of 2020

The Workshop Planning Committee would like to recognize our partnering programs and institutions, particularly the University of Oxford, University of Cambridge, and Wellcome Trust Program. We also thank the OxCam Executive Committee (ExComm) and program faculty for their insightful feedback and willingness to lead and participate in various capacities. The Planning Committee also appreciates our faculty judges' and students' participation for long talks, poster presentations, and elevator pitches, and our keynote speakers, Dr. Vivian Lee and Professor Mihaela van der Schaar, for their generous donation of time to speak with the student body.

The Planning Committee would also like to thank Dr. Michael Lenardo, Dr. Richard Siegel, Dr. Daniel Douek, Professor Sir Keith Peters, and Professor Gavin Screaton for sharing their experiences as program founders. Moreover, the Planning Committee appreciates Class of 2017 and 2016 Scholars Stewart Humble, Connie Mackenzie-Gray Scott, Hannah Mason, Allison Meadows, Laura Palmieri, and Jyothi Purushotham for lending their insights as they reflected on their journeys through the program. The Planning Committee is extremely grateful to Drs. Bhooma Aravamuthan, Adjoa Smalls-Mantey, and Judith Walters for participating in the women in STEM discussion panel. The Planning Committee also thanks OxCam alumni Drs. Aaron Alexander-Bloch, Elizabeth Brickley, Adam Knight, Tamara Litwin, Madhav Sukumaran, Madhvi Venkatesh, Katherine Warner, and Tracy Yuen for their willingness to partake in the career panels.

The NIH OxCam Scholars Program and NIH Wellcome Trust Program also recognize our external stakeholders who help make the Global Doctoral Partnerships Research Workshop possible. Additional thanks go to vFairs personnel Lynn Malas, Hammad Saleem, Aniqa Safdar, and Nabil Sajid for designing and managing the Workshop website. Finally, the Planning Committee would like to extend their sincere gratitude to Randi Balletta, Alexandra Ambrico, and the International Biomedical Research Alliance Board of Directors for their participation and continued support of Scholars.

Events at a Glance

Day 1 - Tues July 13

Start Time (EST)	Event
10:00 AM	Keynote Talk - Professor Mihaela van der Schaar, PhD
11:00 AM	OxCam Founders Panel
12:00 PM	Break
12:15 PM	Class of 2018 Concurrent Long Talks
1:15 PM	Break
1:30 PM	Class of 2017/2016 OxCam Journey Reflections Panel
2:30 PM	Adjourn (link for *Picture a Scientist* sent out)

Day 2 - Wed July 14

Start Time (EST)	Event
10:00 AM	Keynote Talk - Dr. Vivian Lee, MD, DPhil, MBA
11:00 AM	Class of 2020 Elevator Pitches
12:00 PM	Break
12:15 PM	Class of 2019 Concurrent Poster Sessions
1:15 PM	Break
1:30 PM	Women in STEM Discussion Panel
2:30 PM	Adjourn

(Program continues on next page)

Day 3 - Thurs July 15

Start Time (EST)	Event
10:00 AM	Concurrent Alumni Panels & Alumni Reunion Rooms
11:00 AM	Awards Ceremony & Alumni Reunion Rooms
12:00 PM	Break
12:30 PM	Class of 2021 Introductions
1:00 PM	Town Hall
2:30 PM	Closing Remarks by Workshop Planning Committee & Adjourn
3:30 PM	Pub Quiz

Full Program of Events

Day 1 - Tues July 13

Start Time (EST)	Event

10:00 AM **Keynote Talk – Looking Forward**
Professor Mihaela van der Schaar, PhD

Moderated by: Yasemin Cole

11:00 AM **OxCam Founders Panel**
Dr. Michael Lenardo, MD
Dr. Richard Siegel, MD, PhD
Dr. Daniel Douek, MD, PhD
Professor Sir Keith Peters
Professor Gavin Screaton

Moderated by: Steven McLean

12:00 PM **Break**

12:15 PM **Class of 2018 Concurrent Long Talks**

Infectious Disease
1. John Shannon
2. Lawrence Wang
3. Yifan Zhou

Moderated by: Sahba Seddighi

Neurology & Cancer
1. Mihael Cudic
2. Emily Kolyvas
3. Matthew Mulé
4. Alex Waldman

Moderated by: Hannah Mason

Developmental Biology, Genetics, & Immunology
1. Maddie Epping
2. Taylor Farley
3. Mehdi Seif Hamouda
4. Lauren Wedekind

Moderated by: Katherine Masih

(Program continues on next page)

Day 1 - Tues July 13

Start Time (EST)	Event
1:15 PM	**Break**
1:30 PM	**Class of 2017/2016 OxCam Journey Reflections Panel** Stewart Humble Connie Mackenzie-Gray Scott Hannah Mason Allison Meadows Laura Palmieri Jyothi Purushotham *Moderated by: Alex Waldman*
2:30 PM	**Adjourn (link for *Picture a Scientist* sent out)**

Day 2 - Wed July 14

Start Time (EST)	Event

10:00 AM **Keynote Talk – Looking Back**
Dr. Vivian Lee, MD, DPhil, MBA

Moderated by: Jiali Zhang

11:00 AM **Class of 2020 Elevator Pitches**

Moderated by: Taylor Farley

Team 1: Resting Pitch Face

Yasemin Cole	*Dr. Jeffrey Diamond, PhD (ExComm Lead)*
Hannah Dada	*Dr. John Niederhuber, MD (Alliance Lead)*
Byron Mui	*Alex Waldman (Student Lead)*
Sahba Seddighi	
Ai Phuong Tong	
Neha Wali	

Team 2: [Team Name TBD]

Hugo Ferreira Pontes	*Dr. Sonja Best, PhD (ExComm Lead)*
Jacob Gordon	*Alan Jones (Alliance Lead)*
Anagha Krishnan	*Katherine Masih (Student Lead)*
Samantha Lish	
Kritika Singh	
Stephanie Williams	
Jiali Zhang	

Team 3: Science Olympians

Sooraj Achar	*Dr. Alan Sher, PhD (ExComm Lead)*
Francisco Battiti	*Shamit Grover (Alliance Lead)*
Asmaysinh Gharia	*Taylor Farley (Student Lead)*
Benjamin Lee	
Daniel Rosoff	
Emily Steffke	

12:00 PM **Break**

(Program continues on next page)

Day 2 - Wed July 14

Start Time (EST)	Event

12:15 PM **Class of 2019 Concurrent Posters**

Cancer and Neurodegeneration

1. Aaron Bernstein
2. Sean Corcoran
3. Amelia Foss
4. Katherine Masih
5. Nicholas Pasternack
6. Marya Sabir
7. Mario Shammas
8. Boya Wang

Cellular Biology, Genetics, Physiology, & Imaging

1. Teddy Cai
2. David Cruz Walma
3. Stephen Gadomski
4. Abigail Giles
5. Olive Jung
6. Sara Saheb Kashaf
7. Samika Kumar

1:15 PM **Break**

1:30 PM **Women in STEM Discussion Panel**
Dr. Bhooma Aravamuthan, MD, DPhil
Dr. Adjoa Smalls-Mantey, MD
Dr. Judith Walters, PhD

Moderated by: Sahba Seddighi and Lauren Wedekind

2:30 PM **Adjourn**

Day 3 - Thurs July 15

Start Time (EST)	Event

10:00 AM **Concurrent Alumni Panels & Alumni Reunion Rooms**

Academia/Physician-Scientist Career Panel
Dr. Aaron Alexander-Bloch, MD, PhD
Dr. Elizabeth Brickley, PhD
Dr. Madhav Sukumaran, MD, PhD
Dr. Madhvi Venkatesh, PhD

Moderated by: Dr. Kathryn Zoon, PhD and Lauren Wedekind

Government & Industry Career Panel
Dr. Adam Knight, PhD
Dr. Tamara Litwin, PhD, MPH
Dr. Katherine Warner, PhD
Dr. Tracy Yuen, PhD

Moderated by: Jeremy Goldberg and Jiali Zhang

11:00 AM **Awards Ceremony & Alumni Reunion Rooms**

Awards presented by OxCam Leadership, ExComm, Student Leadership Board, and Workshop Planning Committee

12:00 PM **Break**

12:30 PM **Class of 2021 Introductions**

1:00 PM **Town Hall**

Moderated by: OxCam Leadership, ExComm, and Student Leadership Board

2:30 PM **Closing Remarks by Workshop Planning Committee & Adjourn**

3:30 PM **Pub Quiz**

Hosted by: Dr. Kenton Swartz, PhD and Neha Wali

Pub Quiz Instructions

As a fun social activity to conclude the Workshop, a pub quiz will be held over Zoom and Kahoot. There will be **5 rounds with 10 questions per round and 2 minutes per question**. Rounds range from general trivia to notable people at the NIH and in the UK, as well as a surprise round comprising questions pertaining to Workshop sessions held during the week. The winning team will receive OxCam-branded YETI mugs. Specific instructions are below:

- There will be at most 6 teams for the pub quiz, each capped at a maximum of 6 people per team. Per team, there will be only 1 person who will log into Kahoot *using the team name (not their own name)* and submit answers for the team.
- Pursuant to the above, please sign up for a team at this link. If you would like to be the sole designated submitter for answers, please sign up in that column as well.
- *Before the pub quiz*, finalize a team name and make arrangements with your fellow team members on a method to discuss answers outside of the quiz Zoom call (i.e. form a group chat or call through WhatsApp, Facebook Messenger, Slack, Signal, FaceTime, etc.). Alternatively, you can DM the designated submitter on Zoom and converse on answers, but ensure that you are well-versed on this method lest your discussions are visible to everyone on the call.

The Zoom link and Kahoot quiz code will be sent out the day of the pub quiz. Designated submitters should enter the Kahoot quiz code into https://kahoot.it/ on a computer or the Kahoot app on a mobile device to join the quiz. May the best team win!

Alumni Panelists

Aaron Alexander-Bloch, MD, PhD

Director, Brain-Gene-Development Laboratory
Assistant Professor of Psychiatry
Children's Hospital of Pennsylvania Research Institute
University of Pennsylvania

Dr. Alexander-Bloch investigates normal brain development and the altered neurodevelopmental trajectories that lead to mental illness. He completed medical school at UCLA, an MPhil in computational biology and PhD in neuroscience at the University of Cambridge, and psychiatry residency at Yale. As the director of the Brain-Gene-Development lab at the CHOP/Penn Lifespan Brain Institute, Dr. Alexander-Bloch investigates psychopathology with a computational approach that includes brain imaging, genomics and clinical phenomics. He works closely with other labs at the University of Pennsylvania and The Children's Hospital of Philadelphia, as well as national and international collaborators. His lab's current areas of focus include network models of functional and structural dysconnectivity, lifespan growth charts of brain morphology, and imaging-genetic studies of common and rare genetic variants.

Elizabeth Brickley, PhD

Assistant Professor of Infectious Disease Epidemiology
London School of Hygiene and Tropical Medicine
Adjunct Assistant Professor of Epidemiology
Geisel School of Medicine at Dartmouth College

Dr. Elizabeth Brickley (she/her) is an Associate Professor in the Department of Infectious Disease Epidemiology at London School of Hygiene & Tropical Medicine (LSHTM) where she leads the Health Equity Action Lab (www.healthequityactionlab.org), an international team of epidemiologists and public health practitioners undertaking policy-relevant, community-engaged research on infectious diseases and the social determinants of health. Dr. Brickley's recent studies are primarily based in Brazil where she contributes to clinical studies of Congenital Zika Syndrome and large-scale electronic health records research on leprosy, arthropod-borne viruses, and child health. Dr. Brickley also conducts vaccine research in support of global polio eradication efforts and has advised on the COVID-19 pandemic response. At LSHTM, Dr. Brickley is actively engaged in efforts to enhance equality, diversity, and inclusion and serves as a 'Decolonizing the Global Health Curriculum' Facilitator.

Adam Knight, PhD

Founder and Chief Business Officer
Neuron23

Adam graduated from the NIH-OxCam program in 2015, and his research focused on the genetic basis of neurodegenerative disease. After graduate school, he worked in management consulting at IQVIA and translational research at Lentigen, before joining the Venture Capital firm Kleiner Perkins to find and build new biotech companies. Adam evaluated dozens of investment opportunities as a VC, prior to finding the opportunity that became Neuron23—which he subsequently left Kleiner Perkins with Series A funding to build as Founder and CEO. Adam is currently Founder and Chief Business Officer at Neuron23, which is focused on discovering and developing precision medicines for neurological and immunological disorders, and has raised over $100 million in funding from biotech VCs and hedge funds.

Tamara Litwin, PhD, MPH

Epidemiologist
All of Us Research Program
National Institutes of Health

Tamara Litwin, PhD, MPH is an epidemiologist in the All of Us Research Program's Division of Medical and Clinical Review, working on the program's scientific agenda, data, and protocol. Prior to joining All of Us, Dr. Litwin worked at the National Cancer Institute's Division of Cancer Epidemiology and Genetics (NCI DCEG), where her research focused on improved screening and early detection of ovarian and cervical cancers through biomarker discovery, validation, and translation.

Dr. Litwin earned an SB in chemistry from MIT and a PhD in biophysics from the University of Cambridge through the NIH-Oxford-Cambridge Scholars Program. In her doctoral work, Dr. Litwin used biophysical methods to investigate how DNA topology affects DNA interactions with topoisomerases and other DNA binding proteins. Subsequently Dr. Litwin earned an MPH with a concentration in epidemiology and biostatistics from the Johns Hopkins Bloomberg School of Public Health as part of the NCI's Cancer Prevention Fellowship Program in preparation for her research in DCEG.

Madhav Sukumaran, MD, PhD

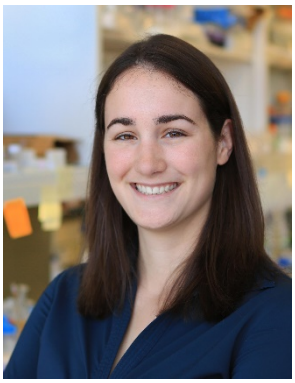
Neurosurgery Resident
Feinberg School of Medicine at Northwestern University

Madhav Sukumaran's interests in neuroscience and interdisciplinary studies were kindled during his undergraduate days at Columbia University, where he received a BS in biomedical engineering as well as a BA in political science, history, and biophysics. Drawn to academic medicine and basic science research, he joined the Medical Scientist Training Program at the Icahn School of Medicine at Mt. Sinai and the NIH-OxCam partnership. Madhav completed his thesis work at the MRC Laboratory of Molecular Biology at Cambridge University and the NIH, focusing on structural and biophysical studies of glutamate-gated neurotransmitter receptors in order to elucidate their function within neural circuits as well as establish novel therapeutic targets. After graduating from medical school, Madhav trained in neurosurgery at Northwestern University, where he also completed specialized training in neuroendovascular techniques. After residency, Madhav will be joining the Brigham and Women's Hospital and Harvard Medical School as a Clinical Fellow in Cerebrovascular Neurosurgery. Madhav's academic interests include advancing neurosurgical and cerebrovascular care for patients, furthering our understanding of the human brain and neuronal function, as well as training the next generation of neurosurgical residents and medical students.

Madhvi Venkatesh, PhD

Lecturer on Biological Chemistry and Molecular Pharmacology
Associate Director of Graduate Education
Department of Biological Chemistry and Molecular Pharmacology
Harvard Medical School

Dr. Madhvi Venkatesh (NIH-Oxford '16) is a Lecturer and Associate Director of Graduate Education in the Department of Biological Chemistry and Molecular Pharmacology at Harvard Medical School. In her role, she leads efforts to create, implement, and assess initiatives to enhance the training of graduate students in departmental courses and programs. She also researches student outcomes that result from educational innovations designed to promote graduate student professional development and wellness.



Katherine Warner, PhD

Founder and Vice President, RNA Biology
Ribometrix

Katie Warner founded Ribometrix in 2015 with Kevin Weeks and is currently the VP of RNA Biology. Ribometrix is a platform therapeutics company discovering small molecule drugs that target functional 3D RNA structures to treat human diseases. Since its founding, Ribometrix has raised venture capital investment, partnered with Vertex Pharmaceuticals and Genentech, and grown to more than 35 employees.

Katie was an early pioneer in SHAPE technologies, showing in 2009 with Dave Mathews and Kevin Weeks that SHAPE data can be used to model RNA secondary structure at high accuracy. She continued her work with Adrian Ferré-D'Amaré and Chris Abell to show the first structure-based proof-of-principle that RNA is targetable by fragments. Katie has solved multiple RNA-small molecule crystal structures, including the fluorogenic RNAs "Spinach" and "Corn."

Katie received a BA in Chemistry from the University of North Carolina at Chapel Hill, and an MPhil in Pathology and PhD in Chemistry from the University of Cambridge. Katie was a Beckman Scholar, a Churchill Scholar, an RNA Society/Scaringe awardee and an NIH-Oxford-Cambridge Scholar.

Tracy Yuen, PhD

Senior Scientist
Department of Neuroscience
Genentech

Tracy Yuen, PhD is currently a Senior Scientist in the Department of Neuroscience at Genentech. She leads the company's research efforts studying mechanisms of glial cell interactions, neuroinflammation, and white matter development/repair, as well as identifying therapeutic targets to promote remyelination in neurodegenerative diseases. Prior to joining Genentech, she completed her postdoctoral training at UCSF and graduated from the NIH-Cambridge program in 2011.

Keynote Speakers

Vivian Lee, MD, DPhil, MBA

President of Health Platforms
Verily Life Sciences
Senior Lecturer, Harvard Medical School and Massachusetts General Hospital
Senior Fellow, Institute for Healthcare Improvement

Vivian Lee, MD, DPhil, MBA, is the author of *The Long Fix: Solving America's Health Care Crisis with Strategies that Work for Everyone* (Norton). She is President of Health Platforms at Verily Life Sciences. A physician and health care executive, Lee also serves as a senior lecturer at Harvard Medical School.

Prior to joining Verily, Lee served as the Dean of the Medical School and CEO of the University of Utah Health Care, an integrated health system with a budget of $3.6 billion, including a 1400-member physician group and health insurance plan. During her tenure, she led University of Utah Health to recognition for its health care delivery system innovations that enable higher quality at lower costs and with higher patient satisfaction, and superior financial performance. In 2016, University of Utah was ranked first among all university hospitals in quality and safety (Vizient). Dr. Lee previously was the inaugural Chief Scientific Officer of New York University's Langone Medical Center.

Elected to the National Academy of Medicine with over 200 peer-reviewed publications, Lee serves on the Board of Directors of the Commonwealth Fund, the Board of Trustees of Boston Children's Hospital, and is also a director on the board of Zions Bancorporation, a publicly traded company.

Dr. Lee is a *magna cum laude* graduate of Harvard, received a DPhil in medical engineering from Oxford University as a Rhodes Scholar, earned her MD with honors from Harvard Medical School, and her MBA from NYU. She was named by Modern Healthcare as one of the 50 Most Influential Clinical Executives in 2020.

Mihaela van der Schaar, PhD

John Humphrey Plummer Professor of Machine Learning, Artificial Intelligence and Medicine
University of Cambridge
Fellow, The Alan Turing Institute
Chancellor's Professor
University of California, Los Angeles
Founder and Director, Cambridge Centre for AI in Medicine

Mihaela van der Schaar is the John Humphrey Plummer Professor of Machine Learning, Artificial Intelligence and Medicine at the University of Cambridge, a Fellow at The Alan Turing Institute in London, and a Chancellor's Professor at UCLA.

Mihaela was elected IEEE Fellow in 2009. She has received numerous awards, including the Oon Prize on Preventative Medicine from the University of Cambridge (2018), a National Science Foundation CAREER Award (2004), 3 IBM Faculty Awards, the IBM Exploratory Stream Analytics Innovation Award, the Philips Make a Difference Award and several best paper awards, including the IEEE Darlington Award.

Mihaela's work has also led to 35 USA patents (many widely cited and adopted in standards) and 45+ contributions to international standards for which she received 3 International ISO (International Organization for Standardization) Awards.

In 2019, she was identified by National Endowment for Science, Technology and the Arts as the most-cited female AI researcher in the UK. She was also elected as a 2019 "Star in Computer Networking and Communications" by N²Women. Her research expertise spans signal and image processing, communication networks, network science, multimedia, game theory, distributed systems, machine learning and AI.

Mihaela's research focus is on machine learning, AI and operations research for healthcare and medicine. In addition to leading the van der Schaar Lab, Mihaela is founder and director of the Cambridge Centre for AI in Medicine (CCAIM).

OxCam Journey Reflections Panelists

Stewart Humble

Supervised by: Dr. Michael Ward, Professor Richard Wade-Martins
IC and university: NINDS, University of Oxford

I am an MD/DPhil Candidate through LSU Health Sciences Center, New Orleans and the National Institutes of Health in Washington, D.C. As an NIH-Oxford Scholar, I am a joint DPhil student between the Ward Lab at the NIH/NINDS and the Wade-Martins Group at the University of Oxford. My current DPhil work focuses on functional genomics and genetic interaction mapping in hiPSC-derived neurons by combining our i^{3}Neuron technology, CRISPR Interference (CRISPRi), high-throughput robotics, and high-content imaging/analysis. Recently, I have been able to build and implement an advanced screening platform in order to interrogate gene interactions via combinatorial pairwise knockdown of many FTD/ALS and Parkinson's Disease (PD) genes and modifiers. The overarching goal of my work includes identifying common pathogenic changes elicited by disease-relevant genes that can help us understand the underlying converging mechanisms between PD and FTD/ALS. Upon completion of my DPhil, I plan to resume my medical studies at LSUHSC New Orleans and continue to contribute to the field during Residency and Fellowship.

Connie Mackenzie-Gray Scott

Supervised by: Dr. Chris McBain, Professor Andrew Trevelyan
IC and university: NICHD, Newcastle University

I am a final year Wellcome Trust/NIH PhD student working in the labs of Dr. Chris McBain at the NICHD and Prof. Andy Trevelyan at Newcastle University. My PhD has focused on investigating the role of parvalbumin-expressing inhibitory interneurons (PVINs) in different disease models using cellular and network level electrophysiological techniques. In Newcastle, this work involved looking at the participation of PVINs in the development of seizure-like activity in brain slices from mice lacking the transcriptional co-activator PGC-1a. While at the NIH, I was focusing on the impact of plaque pathology on PVIN function and network rhythmogenesis in a model of Alzheimer's disease. This experience has given me the opportunity to develop my skills in the field of cellular neuroscience and I hope to be able to pursue a postdoctoral position in this area upon completion of my PhD.

Hannah Mason

Supervised by: Dr. Dorian McGavern, Professor Ole Paulsen
IC and university: NINDS, University of Cambridge

Hannah Mason is an NIH-Cambridge Scholar in the Class of 2017. She works in the laboratories of Dr. Dorian McGavern (NINDS) and Professor Ole Paulsen (University of Cambridge), studying how the immune system reacts and responds to both repetitive head injury and neurodegenerative diseases. This coming fall, she will move to Cambridge to complete her final year of the PhD before returning to Atlanta, Georgia to begin medical school at Emory University (automatic track 3).

Allison Meadows

Supervised by: Dr. Michael Sack, Professor Jules Griffin
IC and university: NHLBI, University of Cambridge

Allison Meadows is an NIH-Cambridge MD/PhD scholar from the Class of 2017. She studies how fasting influences the function of the immune system. Her work, spanning biochemistry, systems biology, and immunology, has centered on characterizing the immune-modulatory role of metabolite-sensing G-protein-coupled receptors. After returning to medical school, she plans to pursue a career in academic medicine with a focus on teaching and mentorship.

Laura Palmieri

Supervised by: Dr. Bruce Cumming, Professor Jenny Read
IC and university: NEI, Newcastle University

My current research focuses on the neurophysiology of human stereoscopic vision. I am using a combination of computational modeling, in vivo electrophysiological recording in NHP from the primary visual cortex, and the parallel classification of behavioral performance in humans to understand the neural circuitry and processing involved in normal and impaired binocular vision. In the future, I am planning to carry on working in the field of system and computational neuroscience, possibly exploring more techniques (photon imaging) and investigating other brain areas where sensorimotor information is encoded.

Jyothi Purushotham

Supervised by: Dr. Vincent Munster, Professor Sarah Gilbert, Professor Teresa Lambe
IC and university: NIAID, University of Oxford

Jyothi's research has involved the development and preclinical evaluation of vaccines for emerging outbreak viral pathogens, namely Lassa virus and SARS-CoV-2. Specifically, a large portion of her doctoral work has focused on deep immune profiling in macaque challenge models to characterize determinants of vaccine efficacy. In the future, Jyothi hopes to pursue postdoctoral research at the intersection of public health, vaccinology, and infectious disease immunology. She is particularly interested in exploring the role of underlying comorbidities in mediating vaccine efficacy in large clinical trial cohorts.

Program Founders

Michael Lenardo, MD

NIH Distinguished Investigator
Chief, Molecular Development of the Immune System Section
Co-Director, NIAID Clinical Genomics Program
National Institute of Allergy and Infectious Diseases
National Institutes of Health

Michael Lenardo was born in Chicago, Illinois on December 1, 1955. He attended the Johns Hopkins University and graduated with a Bachelor of Arts in Natural Sciences in 1977. He then attended Washington University in St. Louis, Mo. and obtained his Doctor of Medicine (MD) in 1981. He carried out clinical and research training at the University of Iowa from 1981-1985. He was then a Research Fellow at the Whitehead Institute for Biomedical Research at Massachusetts Institute of Technology with an adjunct appointment at Harvard Medical School. During this time, he carried out molecular biology research under the mentorship of Nobel laureates David Baltimore and Philip Sharp. He was then appointed Section Chief in the National Institute of Allergy and Infectious Diseases, National Institutes of Health from 1989 to the present, directing research on T-lymphocyte regulation, HIV-1, and genetic diseases of the immune system. He has served on the editorial boards for the European Journal of Immunology, the Journal of Experimental Medicine, Science magazine, and Biology Direct. He is an Adjunct Professor of Pathology at the University of Pennsylvania School of Medicine, and a Visiting Fellow at Cambridge University.

He has founded or co-founded several joint research programs including the NIH-Oxford-Cambridge Biomedical Research Scholars, the NIH-University of Pennsylvania Immunology Program, the NIH-Marshall Scholars, the NIH-Rhodes Scholars, the National M.D./Ph.D. partnership program, and the NIH-Institut Pasteur Infectious Disease and Immunology Program. Dr. Lenardo has published over 200 scholarly works and holds a number of medical patents. He discovered the propriocidal mechanism of immune regulation and his work has defined several genetic diseases of the immune system including the Autoimmune Lymphoproliferative Syndrome, Caspase-8 deficiency syndrome, and X-linked magnesium deficiency with EBV and neoplasia (XMEN) disease. He is currently the Director of the Clinical Genomics Program and Chief of the Molecular Development of the Immune System Section, National Institute of Allergy and Infectious Diseases, National Institutes of Health. Among his honors and awards, he is Officer of the Most Excellent Order of the British Empire (OBE), conferred by Queen Elizabeth II, a member of the National Academy of Sciences and the National Academy of Medicine, and was recently named as the recipient of the American Association of Immunologists Steinman Award for Human Immunology Research. In 2019 he became an NIH Distinguished Investigator. He is married to Lesley-Anne Furlong, MD and has two sons, Brian and Timothy.

Richard Siegel, MD, PhD

Global Head, Translational Medicine, Autoimmunity, Transplantation, and Inflammation Disease Area
Novartis Institute for BioMedical Research

Richard Siegel's interest in immunology and apoptosis began as an MD/PhD student at the University of Pennsylvania School of Medicine. He trained in Internal Medicine and Rheumatology at Hospital of the University of Pennsylvania and then moved to the NIH in 1996 for postdoctoral training with Michael Lenardo in the Laboratory of Immunology in the National Institute of Allergy and Infectious Disease. At the NIH, Dr. Siegel studied patients with inherited mutations in Fas/CD95 and how these disrupt lymphocyte apoptosis in Autoimmune Lymphoproliferative Syndrome (ALPS). In 2001, Dr. Siegel moved to the National Institute of Arthritis, Musculoskeletal Diseases and Skin (NIAMS) at the NIH as a Principal Investigator, where he also attends on the Rheumatology service at the NIH Clinical Center. Dr. Siegel has made multiple influential contributions in the area of TNF-receptor family signaling which have furthered our understanding of immunological and inflammatory diseases. He has defined a self-assembly domain (PLAD) in these receptors that controls signaling before receptor ligation. More recently, his laboratory has identified a new molecular mechanism for inflammation in patients with TNF-Receptor-1 mutations associated with periodic fever syndromes driven by receptor misfolding and retention in the endoplasmic reticulum. His current research interests include regulation of cellular survival and death in the immune system by TNF family receptors, and the manipulation of these signaling pathways to treat autoimmune diseases. He is also committed to advance the training of future physician-scientists, as he has established and directed a partnership training program that allows MD/PhD students to do some or all of their research training at the NIH.

Daniel Douek, MD, PhD

Senior Investigator
Chief of Human Immunology Section, Vaccine Research Center
National Institute of Allergy & Infectious Disease
National Institutes of Health

Dr. Douek studied medicine at the Universities of Oxford and London, receiving academic scholarships from both institutions. He then practiced internal medicine and became a Member of the Royal College of Physicians (London) in 1993. He was awarded a Wellcome Trust Clinical Graduate Training Fellowship to pursue a PhD in immunology at the University of London, which he earned in 1997. He completed his postdoctoral work at the Rockefeller University and the University of Texas Southwestern Medical Center, Dallas, where he was named assistant professor in infectious diseases (2000). While a postdoctoral fellow with Dr. Richard Koup, he developed the "TREC assay" to measure thymic output in humans. Dr. Douek was appointed to a tenure-track position in the Vaccine Research Center (VRC) Laboratory of Immunology in November 2000. Dr. Douek brought impressive academic credentials, training, and experience to the VRC and is internationally recognized in the fields of basic immunology, HIV, and transplantation biology. He was converted to a tenured senior investigator position in February 2007, the year in which he was presented with the World AIDS Day Award. He serves as chief of the Human Immunology Section at the VRC.

Professor Sir Keith Peters

Emeritus Regius Professor of Physic
University of Cambridge

Sir Keith Peters, Emeritus Regius Professor of Physic, was Head of the Cambridge University School of Clinical Medicine, 1987-2005, and with Michael Lenardo and John Bell in Oxford helped establish the NIH Scholars program. Sir Keith is a physician-scientist and clinical immunologist who made substantial contributions to the immunopathology of renal diseases and their treatment. He is a Fellow of the Royal Society of London, Past President of the UK Academy of Medical Sciences, and Foreign Member of the US National Academy of Medicine.

Professor Gavin Screaton

Professor of Medicine
Head of the Medical Sciences Division
University of Oxford

Professor Screaton received his first degree from Cambridge in 1984 before moving to Oxford to complete his medical studies in 1987. He then completed training in general internal medicine and obtained a DPhil from Oxford University in 1998. In 2004, Professor Screaton was appointed to the Chair of Medicine at Hammersmith Hospital, Imperial College and became Dean of the Faculty of Medicine in 2015. He returned to Oxford as Head of the Medical Sciences Division in October 2017.

His research, which has been supported by a series of Fellowships awarded by the MRC and Wellcome Trust, has covered a variety of topics from control of RNA processing and apoptosis to immunology. The current interests of his laboratory revolve around the immunology of infectious diseases with a special interest in dengue haemorrhagic fever and Zika, where his research is currently funded by the Wellcome Trust, with active research collaborations in South-East Asia. His laboratory has recently contributed to knowledge of the antibody response to SARS-CoV-2.

Professor Screaton is a Fellow of the Academy of Medical Sciences, a Fellow of the Royal College of Physicians, and was made a Founder Senior Investigator in the National Institute for Health Research. He is a Non-Executive Director of Oxford University Hospitals NHS Foundation Trust.

Women in STEM Panelists

Bhooma Aravamuthan, MD, DPhil

Assistant Professor
Department of Neurology, Division of Pediatric Neurology
Washington University in St. Louis

Dr. Aravamuthan is an Assistant Professor of Neurology and pediatric movement disorders specialist in the Cerebral Palsy Center at the Washington University School of Medicine. She completed her research doctorate at the University of Oxford in England, medical school and pediatrics residency at Washington University in St. Louis, and child neurology and movement disorders fellowships at Boston Children's Hospital and Massachusetts General Hospital before returning to Wash U as faculty in 2018. She leads the Cerebral Palsy Research Network Committee on Dystonia Quality Improvement, is a founder and director of the Child Neurology Society Cerebral Palsy Special Interest Group, and is Vice Chair of the American Academy of Neurology Intellectual and Developmental Disabilities Section. Her translational research seeks to uncover what causes dystonia after neonatal brain injury and has received early career recognition from the Child Neurology Society and the American Neurological Association.

Adjoa Smalls-Mantey, MD, DPhil

Assistant Clinical Professor of Psychiatry
Columbia University Vagelos College of Physicians and Surgeons
NYP/Columbia University Irving Medical Center

Dr. Adjoa Smalls-Mantey conducted HIV vaccine research for a decade at several institutions including the NIH and completed her D.Phil. in Pathology at the University of Oxford through the NIH-Oxford-Cambridge Scholars Program. She later earned her medical degree from Columbia University and completed her psychiatry residency at The Mount Sinai Hospital. She currently works at Columbia University Irving Medical Center and Brooklyn Methodist Hospital as an emergency room psychiatrist and is a contributor to the ABC News Medical Unit.

Judith Walters, PhD

Senior Investigator
Chief, Neurophysiological Pharmacology Section
National Institute of Neurological Disorders and Stroke
National Institutes of Health

Dr. Walters received her BA degree from Mt. Holyoke College and her PhD from Yale University, where she studied the pharmacology and neurophysiology of the dopamine system in the basal ganglia. After postdoctoral work at Yale, she joined the faculty of the Department of Psychiatry at the Yale University School of Medicine and then moved to the Experimental Therapeutics Branch in NINDS, where she now serves as Chief of the Neurophysiological Pharmacology Section. Her laboratory explores the role of dopamine in basal ganglia-thalamocortical function.

NIH Oxford-Cambridge Scholars Program

About the NIH Oxford-Cambridge Scholars Program, the Alliance and our shared desire to change the way in which scientific research is approached…

NIH Oxford-Cambridge Scholars Program

The intramural program of the National Institutes of Health (NIH), the largest biomedical research complex in the world, had no organized training program for doctoral students. In 1999, Dr. Harold Varmus, former Director of the National Institutes of Health, and Dr. Michael Gottesman, Deputy Director for Intramural Research, made a decision to change that. Their efforts opened up research opportunities in over 1200 laboratories encompassing nearly every area of biomedical research. **In 2000, the concept of NIH-U.K. partnerships was developed to address some of the observed limitations of the American graduate education in biomedical sciences:**

- **Excessive time to completion of a PhD (7.8 years per National Research Council studies)**
- **Limitation of programs to a single university, department or discipline**
- **Inadequate preparation for the global nature of contemporary science**
- **Limited experience in collaborative research**

Chief among these problems was the length of time to PhD program completion which, even at the best universities, has resulted in young scientists emerging to begin their independent research careers at the age of 35 *or even later.* The awareness of these limitations inspired the vision to develop a more efficient training experience, which incorporated global collaboration and interdisciplinary biomedical research. The Universities of Oxford and Cambridge were a clear choice for partners, due to their premier academic standards including renowned biomedical science and clinical schools and previous success working with American students. **With their participation, the vision evolved into a doctoral program that enables students to pursue collaborative thesis research with minimal course work and rotations and a completed PhD in an <u>average of four years</u>. Scholars have routinely produced two first-authored papers prior to graduation, with a total of 1100+ highly cited publications since inception of the program.** Each thesis project is co-mentored by at least two faculty members, one at Oxford or Cambridge and the other at the NIH, and involves laboratory research at both institutions.

Since 2001, more than 250 individuals pursuing PhDs in biomedical research have taken advantage of this unique program. Over 100 scholars in approximately 50 different areas of biomedical research are currently pursuing their doctoral degree. Efforts to differentiate from traditional biomedical training programs have allowed the NIH Oxford-Cambridge Scholars to enjoy intellectual freedom and flexibility, which has led to increased innovation and collaboration. In addition to the U.K., scholars have had opportunities to carry out portions of their research in China, Germany, Australia, and Africa. The Rhodes Trust, Marshall Aid Commemoration Commission, Churchill, Gates and Fulbright Scholarship programs have contributed to individuals seeking their PhDs in biomedical research through this program. In 2006 the program also established a platform for students to pursue a combined MD/PhD and extend the reach of these scholars.

For information about the NIH Oxford-Cambridge Scholars Program visit: www.oxcam.gpp.nih.gov

National Institutes of Health
NIH Oxford-Cambridge Scholars Program
6 North Court, Bldg. 15F1
Bethesda, Maryland 20892

International Biomedical Research Alliance

In 2005, the establishment of the International Biomedical Research Alliance (The Alliance), a 501(c)(3) non-profit organization, saw the creation of a unique, public-private partnership. This partnership has had an immeasurable positive impact on the NIH Oxford-Cambridge Scholars Program.

The Alliance is comprised of a group of dedicated private citizens with the shared aim of training a new generation of top biomedical researchers who are better equipped to investigate human diseases and develop new preventions, treatments, and cures. This group of individuals has been a source of ideas and support for the scholars to complement their bench research with unique educational experiences.

The Alliance organizes and funds several of the major and minor events for the program each year, specifically those designed to bring the scholars and mentors together to interact and exchange ideas and to assist the scholars in their career pathway. The Annual Global Doctoral Partnerships Scientific Research Workshop, clinical case conferences, candidate recruitment activities, scientific awards, and NIH laboratory scholarships are among the enhancements that would not be possible without the support of The Alliance.

In 2015, the Alliance partnered with the Albert and Mary Lasker Foundation to host the *Lasker Lessons in Leadership* lecture series for trainees and junior faculty at the NIH. The purpose of these lectures is for young scientists to be stimulated by the responsibility and opportunities for leadership in their careers, to learn about leadership and management tools, as well as to provide education on the many career opportunities for science investigators. The Alliance is currently collaborating with the Foundation for Advanced Education in the Sciences to provide affordable housing alternatives convenient to the NIH campus for Scholars. The Alliance is working toward creating an endowment for specific aspects of the program and the program as a whole.

For the Alliance, supporting and celebrating this accelerated, individualized, doctoral training program for advancing biomedical research is a national imperative. The best research demands funding the best talent. There is no greater satisfaction than watching our graduates as they continue to make new and exciting discoveries that will lead to a better tomorrow for patients everywhere**.**

For more information about the Alliance visit: www.biomedalliance.org

International Biomedical Research Alliance
9101 Old Georgetown Road
Bethesda, MD 20814

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NIH Oxford-Cambridge Scholars Program

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Clinical Director, NIDCD, Chief, Head and Neck Surgery Branch
Chief, Tumor Biology Section
Scientific Director, NIH MD/PhD Partnership Training Program

Save the Date

November 1, 2021

Lasker Lessons in Leadership

Kenneth C. Frazier

Executive Chairman, Merck & Co., Inc.

5:45PM Cocktail Hour
7:00PM Keynote Lecture
7:45PM Q&A
8:00PM Dinner

Hosted by the Lasker Foundation in collaboration with the International Biomedical Research Alliance and the NIH Oxford-Cambridge Scholars Program

Invitation to follow

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2021 Photo Contest Winner
Emily Kolyvas'
My OxCam Experience
Christmas in Copenhagen

2021 Photo Contest Winner
Alex Waldman's
My OxCam Experience
Embodying the “no day but today” carefree spirit of Angel Dumott Schunard in the St. Catz Drama Society Hilary Term 2020 production of RENT

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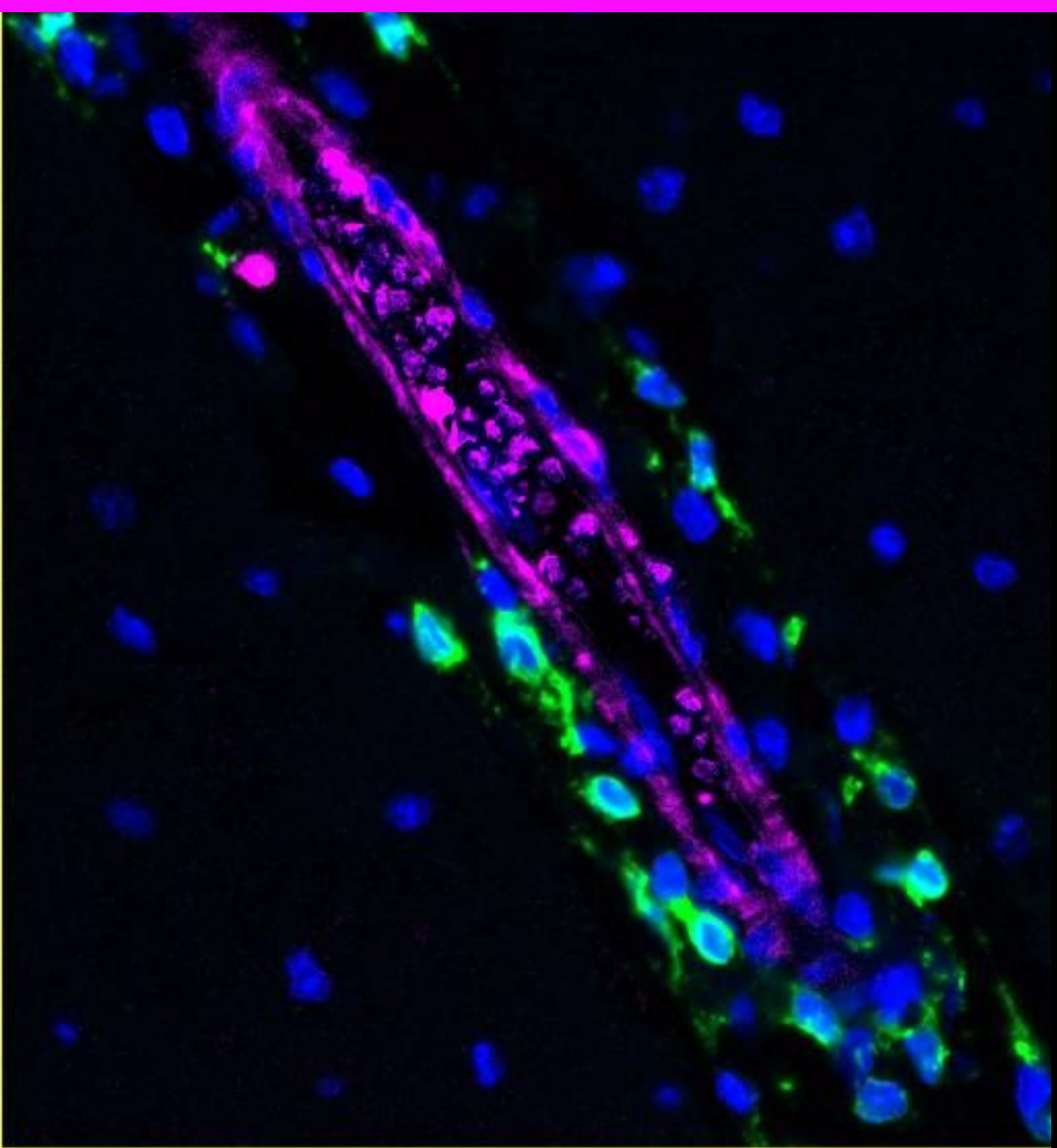
Wishes students in the NIH Oxford-Cambridge/Wellcome Trust Scholars Program a life-time of noble and compassionate work.

"The noblest motive is the public good"

- Virgil

Dr. John E. Niederhuber

President



2021 Photo Contest Winner

Alex Waldman's

My Cool Science

Immunofluorescence image of the post-mortem multiple sclerosis spinal cord demonstrating characteristic perivascular CD8+ T cell inflammation (Nuclei: Blue, CD8+ T cells: Green, Vessels: Magenta).

LASKER FOUNDATION

"If you think research is expensive...try disease"- Mary Lasker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WCG extends its warmest congratulations to all the scholars participating in the 2021 NIH Global Doctoral Partnerships Research Workshop and to the organizers who made it happen.

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2021 Photo Contest Winner
Emily Kolyvas'
My OxCam Experience
Enjoying American Football in London

2021 Photo Contest Winner
Stephen Gadomski and
Stewart Humble's
My OxCam Experience
Varsity Bowl XIV (American Football Varsity Match)

-Marie Wong