



PARTICIPANT HANDBOOK

presented by the
Harvard College Undergraduate Research Association



NATIONAL COLLEGIATE RESEARCH CONFERENCE

HARVARD UNIVERSITY
January 21-24, 2021



THE HARVARD COLLEGE UNDERGRADUATE RESEARCH ASSOCIATION

MISSION:

To increase the presence of undergraduate research by fostering an interdisciplinary research community and developing projects that enrich the undergraduate research experience.



HCURA

HARVARD COLLEGE UNDERGRADUATE RESEARCH ASSOCIATION

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The National Collegiate Research Conference (NCRC) is a forum to promote collaboration.

*We connect future researchers
with their peers and specialists
in their fields of interest.*

NCRC provides undergraduate researchers across all disciplines with a platform for sharing their work. As a result of our past experience with hosting local undergraduate research symposia, the Harvard College Undergraduate Research Association (HCURA) strongly believes in the ability of undergraduates to make meaningful and significant contributions through research. NCRC serves as a medium not only to share these contributions, but also to generate a sense of pride and identity in the undergraduate research community.

We maintain that collaboration with researchers from all backgrounds—university faculty, graduate school students, policymakers, experts from industry, and entrepreneurs—can have a profound impact on young and talented aspiring researchers. NCRC seeks to provide undergraduate participants with a forum to collaborate and learn about research from myriad backgrounds.

WELCOME FROM THE *CO-PRESIDENTS*

On behalf of the staff, members, and executive board of the Harvard College Undergraduate Research Association (HCURA), welcome to the tenth annual National Collegiate Research Conference (NCRC)!

As we turn the page from 2020 to 2021, we move from one extraordinarily unprecedented year to the next. The devastating impact of the coronavirus pandemic on families, businesses, and scholastic research is and continues to be immeasurable. Let us hold in our thoughts with heavy hearts those who have lost their lives or loved ones to COVID-19, and let us hope that those affected most do recover to join us in this community again in time.

During this challenging era, we believe that the need for collaboration, academic engagement, and interpersonal connection is paramount to fostering a research community where every member can participate and grow no matter the individual circumstances. Although there is no doubt that the pandemic has stymied the progression of undergraduate research on a global scale, your presence here today showcases your commitment and dedication to carrying forward the torches of scholastic development, as well as sharing your passion with avid members of the undergraduate research community.

The challenges facing our world today are great, but the desire for the production of knowledge and for the advancement of social reality has never been more compelling. Our generation stands at the precipice of a century uniquely marked by its pursuit of technological, socio-humanistic, and scientific networks, and as the arc of learning in higher education grows increasingly conscious of institutional and cultural-political circumstance, the presence of undergraduate students in research, scholarship, and innovation expands at an ever quickening pace. At the same time, the traditional lines of demarcation between disciplines have begun to blur as researchers become more attuned to the advantages and limitations within and across individual fields of study.

Born out of a distinct awareness of these underlying needs and norms, the mission of the Harvard College Undergraduate Research Association has been, for the last decade, to advance undergraduate access to and involvement in research, so that we, as some of the youngest minds in the scholastic community, can also partake in the processes of scholarly discovery, innovation, interpretation, and discourse.

Since its establishment in 2012, the National Collegiate Research Conference has represented the apical culmination of our objective and vision. In annually convening NCRC, we strive to promote a national—and now international—platform for conversations converging from multiple perspectives and grounded in myriad intellectual trajectories and genealogies. Our goal is to enrich the undergraduate research experience around the world by providing an opportunity to connect motivated students from various institutions with one another, in the hope that sharing, discussion, and engagement will further advance and compel each and every individual in his or her own scholastic pursuits.

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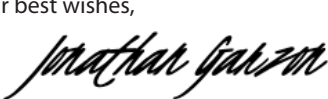
WELCOME FROM THE *CO-PRESIDENTS*

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NCRC provides the opportunity to hear from some of the world's most distinguished scholars, policymakers, writers, educators, and theorists, to attend panels, workshops, and career fairs, and to receive valuable feedback and advising through our poster presentations and mentoring roundtables. It is our hope that with this diverse and creative programming, NCRC catalyzes important interactions that inspire undergraduates to continue their research and engagement in the production of knowledge. Over the past nine years, NCRC has successfully brought together hundreds of undergraduates from over 90 universities. NCRC 2021 welcomes over 300 participants from 15 countries and 100+ universities. This number continues to grow each year as our conference gains momentum and recognition, and we are pleased that in the past few years, undergraduate students at several other prominent institutions have also begun similar conference initiatives. NCRC 2015 marked the first year that we were joined by undergraduate researchers from outside the United States, and this year, we welcome our most intellectually diverse group of conference participants to date. As the first undergraduate-run, national, interdisciplinary research conference, we continue to pride ourselves on being completely student-run, and the four days ahead of you are the product of the tireless efforts, enormous dedication, and sustained enthusiasm of our executive board, members, and staff, who have worked unremittingly over the past year to prepare for this conference, as well as of the continued support from our numerous faculty advisors, collaborators, and financial sponsors. Without them, NCRC 2021 could not have been possible. NCRC 2021 marks the first year that the conference is held through an online platform.

We thank you for joining us remotely this January for NCRC 2021, and look forward to hearing more from each of you. Please don't hesitate to send a message and introduce yourself to us during the conference. We hope you find the four days ahead to be fulfilling and illuminating, as we celebrate such an expansive undergraduate research community.

With our best wishes,



Jonathan Garzon & Sophia Tang
Co-Presidents, 2020-2021

Harvard College Undergraduate Research Association

ABOUT HCURA

The Harvard College Undergraduate Research Association (HCURA) was founded in 2007 upon the mission of building an interdisciplinary research community among undergraduates. Now at the fourteenth year anniversary of our founding, we are thrilled with how the undergraduate research community has expanded in the past decade and optimistic for the future.

Our goal to increase the scope and visibility of Harvard undergraduate research in all disciplines is the focus of our many on-campus initiatives, including the Graduate Student Mentoring Program, where graduate students mentor undergraduates interested in research; the Visitas Research Symposium, which showcases research by experienced Harvard students to admitted high school seniors; and new projects such as Research Week in the fall, which introduces research opportunities to freshmen through panels, socials, and workshops; the Harvard Science Research Conference (HSRC), a two-day conference started in 2015 for exceptional high school students interested in STEM research; and *Brevia*, our general readership publication for short articles that present nontechnical treatments of cutting-edge research. This year, we piloted our High School Mentorship Program, which brings Harvard's undergraduate researchers into local high schools to mentor young aspiring scientists.

Every January, we host our flagship event, the National Collegiate Research Conference (NCRC), at Harvard as an extension of our vision to provide the best platform for undergraduates from across the nation to share their research. NCRC features distinguished speakers, panelists, and students, along with workshops and mentoring sessions that highlight important issues in undergraduate research and several opportunities for participants to present their own research through our plenary sessions and poster competition. Through NCRC, we hope, ultimately, to further sustain interest in and access to undergraduate research as well as to foster a community of undergraduate scholars.



NATIONAL COLLEGIATE
RESEARCH CONFERENCE



HARVARD COLLEGE UNDERGRADUATE
RESEARCH ASSOCIATION

NCRC 2021
CONFERENCE DIRECTORS



Jonathan Garzon
Co-President
Harvard College, '21



Sophia Tang
Co-President
Harvard College, '21



Alyssa Klee
Vice-President
Harvard College, '22



Alisha Yi
Chief of Operations
Harvard College, '22



Carolyn Beaumont
Co-Director of
Programming
Harvard College, '23



Maria Kaltchenko
Co-Director of
Programming
Harvard College, '23



Brian Wee
Co-Director of
Programming
Harvard College, '23

CONFERENCE **PROGRAM AND SCHEDULE**

DAY 1: January 21st (Thursday)

11:00-11:20 AM	Welcome & Opening Remarks Zoom Password: nrcr2021
11:30 AM-12:20 PM	Keynote: Maya Ajmera Zoom Webinar Password: nrcr2021
12:20-2:00 PM	Social Lunch Congregate Password: nrcr2021congregate
2:00-2:50 PM	Keynote: Holden Thorp Zoom Webinar Password: nrcr2021
3:00-3:20 PM	Plenary Session I Zoom Password: nrcr2021
3:30-4:20 PM	Workshop/Panel Session I Zoom Password: nrcr2021
4:30-4:50 PM	Plenary Session II Zoom Password: nrcr2021
10:00-11:00 PM	Evening Cocktail Social I Run The World Password: nrcr2021socials

DAY 2: January 22nd (Friday)

11:00-11:50 AM	Workshop/Panel Session II Zoom Password: nrcr2021
12:00-1:30 PM	Keynote: Mahzarin Banaji Zoom Webinar Password: nrcr2021
1:30-2:00 PM	Social Lunch Congregate Password: nrcr2021congregate
2:00-2:50 PM	Workshop/Panel Session III Zoom Password: nrcr2021
3:00-3:20 PM	Plenary Session III Zoom Password: nrcr2021
3:30-3:50 PM	Peer Review Workshop Zoom Password: nrcr2021
4:00-4:50 PM	Keynote: Barbara Liskov Zoom Webinar Password: nrcr2021

CONFERENCE **PROGRAM AND SCHEDULE**

DAY 3: January 23rd (Saturday)

11:00-11:50 AM	Keynote: Jeffrey Stewart Zoom Webinar Password: nrcr2021
12:00-12:30 PM	Social Lunch Congregate Password: nrcr2021congregate
12:30-1:20 PM	Keynote: Magdalena Skipper Zoom Webinar Password: nrcr2021
1:30-2:20 PM	Workshop/Panel Session IV Zoom Password: nrcr2021
2:20-3:00 PM	Coffee Break Congregate Password: nrcr2021congregate
3:00-4:20 PM	Poster Session I Remo Building A Building B
4:30-5:30 PM	Keynote: Sylvester Gates Zoom Webinar Password: nrcr2021
9:00-10:00 PM	Evening Cocktail Social II Run The World Password: nrcr2021socials

DAY 4: January 24th (Sunday)

11:00 AM-12:20 PM	Poster Session II Remo Building A Building B
12:30-1:30 PM	Social Lunch Congregate Password: nrcr2021congregate
1:30-2:50 PM	Poster Session III Remo Building A Building B
3:00-3:50 PM	Graduate Student Mentoring Event Zoom Password: nrcr2021
4:00-5:00 PM	Coffee Break Congregate Password: nrcr2021congregate
5:00-5:50 PM	Keynote: Michael Rosbash Zoom Webinar Password: nrcr2021
6:00-6:30 PM	Closing Remarks Zoom Password: nrcr2021

CONFERENCE **TECHNOLOGY LOGISTICS**

This year, due to the COVID-19 pandemic, NCRC will be run entirely virtually.

Keynote addresses will be held on Zoom Webinars; **there is a different webinar link for each keynote.**

The Opening and Closing Addresses, Workshops and Panels, Plenary Presentations, Peer Review Workshop, and Graduate Student Mentoring Event will all occur over Zoom. **There is only one Zoom link for all of these events.** Many of these events will utilize breakout rooms. To ensure that you are able to choose your own breakout room, **please be sure that you have the most updated version of Zoom.**

Participants who are giving poster presentations will present their research over Remo. Presentations will be 10-15 minutes, including time for questions. **Participants must use the same email address to log in to Remo as the one they submitted for conference registration, as this is how access is determined (do not use Google to log in to Remo).**

Participants will receive their table assignment on the morning of Saturday 1/23. The Remo session will be divided into two buildings (A and B). When in Building A, Building B can be accessed with a button in the top left of the floor (and vice versa). Floor 1 of each building will be a waiting room, Floors 2-4 will be where presentations are held, and Floor 5 is a social floor to chat or follow-up with anyone you meet in the poster session. Please note that due to the design of Remo, upon entering each floor, you will be placed randomly into a table on that floor. Be careful with your mic so that if you accidentally join a table where another participant is being judged, you do not disturb their presentation.

Please see the Remo Presenter Guide for more information.

CONFERENCE *TECHNOLOGY LOGISTICS*

Social lunches and Coffee Breaks will be held over Congregate. The Congregate works similarly to Remo as there are tables so that participants can move freely around and chat with each other. HCURA members will be at many tables if you wish to chat; they will have the HCURA logo as a profile picture so that it is easy to tell where they are. The Congregate will be up throughout the entire day if you ever wish to chat during the 10 minute breaks between the main events. No Congregate events are mandatory to attend.

Evening social events will be held over Run the World in a speed dating format. Run the World works on both desktop and mobile, so please join from whatever is comfortable. Please see the Run the World guide for more information.

OPENING KEYNOTE
SPEAKER ON THURSDAY

MAYA AJMERA



Maya Ajmera is the President and CEO of Society for Science & the Public (SSP) and Publisher of its award-winning magazine Science News and its family of media properties. Founded in 1921, SSP works to promote the understanding and appreciation of science, and the vital role it plays in human advancement. It is best known for its world-class science competitions including

the Regeneron Science Talent Search, Intel International Science and Engineering Fair, and Broadcom MASTERS. Ajmera is an alumna of the Westinghouse Science Talent Search, which is now sponsored by Regeneron.

In 1993, Ajmera founded The Global Fund for Children (GFC), a non-profit organization that invests in innovative, community-based organizations working with some of the world's most vulnerable children and youth. Under her 18 years of leadership, GFC grew from a seedling vision into one of the largest networks of grassroots organizations working on behalf of vulnerable children. To date, GFC has awarded nearly \$40 million to over 600 grassroots organizations in 80 countries, touching the lives of nearly 10 million children. Ajmera is also an award-winning children's book author of over 20 titles, including *Every Breath We Take*, *Children from Australia to Zimbabwe*, *Faith*, and *To Be a Kid*, with nearly 5 million readers worldwide. She holds an AB from Bryn Mawr College and a MPP from the Sanford School of Public Policy at Duke University.

CONFERENCE KEYNOTE
SPEAKER ON THURSDAY

HOLDEN THORP

Holden Thorp is the Editor-in-Chief of the Science Family of Journals, American Association for the Advancement of Science (AAAS). Thorp is the 21st editor-in-chief of Science since the journal's inception in 1880.

Prior to joining Science, Thorp was the Rita Levi-Montalcini Distinguished University Professor at Washington University in St. Louis, Missouri. Thorp held faculty appointments in both chemistry and medicine, and served as Washington University's provost

from 2013 until concluding his term in 2019. During his tenure as provost, he led the university's academic enterprise through a period of growth in several key areas, including efforts to increase socioeconomic diversity. Prior to joining Washington University, Thorp spent three decades at the University of North Carolina at Chapel Hill, where he served as its 10th chancellor from 2008 through 2013.



MAHZARIN BANAJI



Mahzarin Banaji studies thinking and feeling as they unfold in social context, with a focus on mental systems that operate in implicit or unconscious mode. She studies social attitudes and beliefs in adults and children, especially those that have roots in group membership. She explores the implications of her work for questions of individual responsibility and social justice in democratic societies.

Her current research focuses on the origins of social cognition and applications of implicit cognition to improve individual decisions and organizational policies. Dr. Banaji taught at Yale from 1986-2002 where she was the Ruben Post Halleck Professor of Psychology. Since 2002 she has been Richard Clarke Cabot Professor of Social Ethics in the Department of Psychology at Harvard University while also serving as the first Carol K. Pforzheimer Professor at the Radcliffe Institute for Advanced Study, and as the George A. and Helen Dunham Cowan Chair in Human Dynamics at the Santa Fe Institute.

Banaji was elected fellow of the Society for Experimental Psychologists, Society for Experimental Social Psychology, the American Academy of Arts and Sciences, named Herbert A. Simon Fellow of the American Academy of Political and Social Science and named William James Fellow for a lifetime of significant intellectual contributions to the basic science of psychology by the Association of Psychological Science, an organization of which she also served as President. She also received the Carol and Ed Diener Award for Outstanding Contributions to Social Psychology. Banaji published *Blindspot: Hidden Biases of Good People* with Anthony Greenwald in 2013.

BARBARA LISKOV

Barbara Liskov is an Institute Professor and head of the Programming Methodology Group. Liskov's research interests lie in programming methodology, programming languages and systems, and distributed computing. Major projects include: the design and implementation of CLU, the first language to support data abstraction;



the design and implementation of Argus, the first high-level language to support implementation of distributed programs; and the Thor object-oriented database system, which provides transactional access to persistent, highly-available objects in wide-scale distributed environments. Her current research interests include Byzantine-fault-tolerant storage systems, peer-to-peer computing, and support for automatic deployment of software upgrades in large-scale distributed systems.

Liskov is a member of the National Academy of Engineering, and a fellow of the American Academy of Arts and Sciences, and the Association for Computer Machinery. She received The Society of Women Engineers' Achievement Award in 1996 and the IEEE von Neumann medal in 2004. At the ACM SIGPLAN Programming Languages Design and Implementation Conference in 2008, she was awarded the Programming Languages Achievement Award. In 2009, she received the A.M. Turing Award from ACM.

CONFERENCE KEYNOTE
SPEAKER ON SATURDAY

JEFFREY STEWART



Jeffrey C. Stewart is a professor of Black Studies at UC Santa Barbara, since 2007, when he was hired as Chair of the Department of Black Studies, a position he served in until 2016. Stewart's most recent book is *The New Negro: The Life of Alain Locke*, published by Oxford University Press, 2018 and won the 2018 National Book Award for Nonfiction and the 2019 Pulitzer Prize for Biography among numerous other prizes. Enrolling as an undergraduate at UCLA, Stewart shifted to UC Santa Cruz,

where he received his B.A. in Philosophy with honors. Stewart attended graduate school at Yale University, where he received a M.A., M. Phil. and Ph.D. in American Studies in 1979. Currently Professor of Black Studies at the University of California at Santa Barbara, he has held numerous fellowships, visiting professorships, and lectureships at Harvard University, Yale University, UCLA, Tufts University, Howard University, George Mason University, the University of Rome, and the Terra Foundation in Giverny, France. Dr. Stewart is also a curator, producing two major exhibitions with accompanying scholarly catalogues--*To Color America: Portraits by Winold Reiss* at the Smithsonian's National Portrait Gallery, and *Paul Robeson: Artist and Citizen* (1998), that originated at the Zimmerli Museum of Art at Rutgers University and toured nationally. He is the author of numerous articles, essays, edited volumes, and a popular African American history, *1001 Things Everyone Should Know About African American History* (1996). His next book, *The New Negro Aesthetic*, will appear in January of 2022.

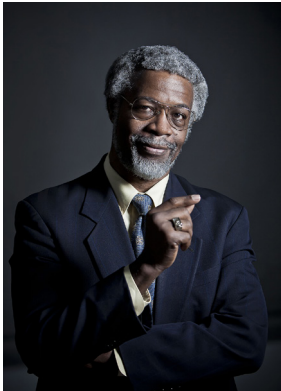
MAGDALENA SKIPPER

Dr. Magdalena Skipper is Editor-in-Chief of Nature and Chief Editorial Advisor for Nature Research. A geneticist by training, she holds a PhD from University of Cambridge, UK. She has considerable editorial and publishing experience, having worked as Chief Editor of Nature Reviews Genetics, Senior



Editor for genetics and genomics at Nature and Editor in Chief of Nature Communications. She is passionate about mentorship, research integrity, co-production in research and innovation in science publishing. As part of her desire to promote underrepresented groups in research, in 2018 she co-launched the Nature Research Inspiring Science Award for early-career female researchers.

SYLVESTER GATES



Sylvester James "Jim" Gates, Jr. is an American theoretical physicist. He received two B.S. degrees and a Ph.D. degree from the Massachusetts Institute of Technology. His doctoral thesis was the first one at MIT to deal with supersymmetry. Gates is currently the Brown Theoretical Physics Center Director, Ford Foundation Professor of Physics, an Affiliate Mathematics Professor, and a Faculty Fellow, Watson Institute for International Studies & Public Affairs at Brown University.

Gates served on the U.S. President's Council of Advisors on Science and Technology, the Maryland State Board of Education from 2009-2016, and the National Commission on Forensic Science from 2013-2016. He is known for his work on supersymmetry, supergravity, and superstring theory. In 1984, Gates co-authored *Superspace*, the first comprehensive book on the topic of supersymmetry. In 2017, he co-authored *Reality in the Shadows (Or) What the Heck's the Higgs?* In 2019, he co-authored *Proving Einstein Right: The Daring Expeditions that Changed How We Look at the Universe*.

He is a past president of the National Society of Black Physicists, and is a NSBP Fellow, as well as a Fellow of the American Physical Society, the American Association for the Advancement of Science, and the Institute of Physics in the U.K. He also is an elected member of the American Academy of Arts and Sciences, and the American Philosophical Society. In 2013, he was elected to the National Academy of Sciences, becoming the first African-American theoretical physicist so recognized in its 150-year history. On November 16, 2013, Prof. Gates was awarded the Mendel Medal by Villanova University "in recognition of his influential work in supersymmetry, supergravity and string theory, as well as his advocacy for science and science education in the United States and abroad." President Obama awarded Prof. Gates the National Medal of Science, the highest award given to scientists in the U.S., at a White House ceremony in 2013. During 2014, he was named the Harvard Foundation's "Scientist of the Year."

MICHAEL ROBASH

Michael Rosbash is a Professor of Biology at Brandeis University, Investigator of the Howard Hughes Medical Institute, and Nobel Laureate in Physiology or Medicine. Rosbash uses genetics to understand the underlying mechanisms of circadian rhythms. In 1984, Rosbash, along with collaborator Jeff Hall, cloned the period gene in *Drosophila*, which led them to discover the transcriptional negative feedback loop of circadian clocks several years later.



Since that time, Rosbash and Hall have identified several other important circadian genes and their functions.

More recently, Rosbash's studies have focused on understanding how neuronal function and gene expression regulation contribute to circadian rhythmicity. His lab is additionally utilizing ChIP-Seq and high-throughput screening techniques to further identify circadian gene expression. For his seminal discoveries, Rosbash was elected to the National Academy of Sciences in 2003. Rosbash graduated with a BS in Chemistry from Caltech in 1965, and then spent a year at the Institut de Biologie Physico-Chimique in Paris on a Fulbright Scholarship. He earned his PhD in Biophysics from the Massachusetts Institute of Technology in 1970. Rosbash joined the faculty at Brandeis University in 1974 after a three-year post-doctoral fellowship at the University of Edinburgh.

CONFERENCE **PANELS AND WORKSHOPS**

WORKSHOP/PANEL I: Thursday, 3:30 PM

Panel: Graduate School

ZOOM Password: ncr2021

Gregory Tucci, PhD

Dr. Gregg Tucci is a Senior Lecturer on Chemistry and Chemical Biology and the Director of Undergraduate Studies in Chemistry at Harvard University. He received a B.S. in Chemistry from Villanova University and a PhD in Chemistry from Harvard University; as an undergraduate and graduate student, much of his work focused on problems involving metals and biological systems. At Harvard University, he has developed and taught many courses, among them an undergraduate introduction to chemistry and microbiology, a practicum in teaching for first-year graduate students in chemistry, and a course in general chemistry for post-baccalaureate pre-medical students. Some of his current research interests include the impact of technology, learning styles, and high school preparation in university science classrooms. He is actively involved in advising and mentoring undergraduate students, and he has won awards for both teaching and advising.

Karen L. Thornber, PhD

Dr. Karen L. Thornber is the Herry Tuchman Levin Professor of Literature and a Professor of East Asian Languages and Civilizations at Harvard University. She has served in various positions, including as Victor and William Fung Director of the Harvard University Asia Center and Conference Chair of the 2016 American Comparative Literature Association Annual Meeting (the largest conference ever held at Harvard). She earned her A.B. from Princeton University summa cum laude with a prize-winning senior thesis, and her PhD from Harvard University with a dissertation that received the Charles Bernheimer Prize, the International Convention of Asia Scholars Book Prize, and the Achilles Fang Prize. She is a prolific author as well as a prize-winning translator of Japanese literature. Her research interests include environmental and medical humanities, East Asian literatures and cultures, and transculturation, postcolonialism, and ecocriticism.

Cori Tucker-Price, PhD

*Cori Tucker-Price is a Guarini Dean's Postdoctoral Fellow in Ethnicity, Race, and Migration in the U.S. Context. After completing a B.A. from UCLA, she would continue to earn several graduate degrees from Harvard University: M.T.S., A.M., and a PhD. Her research and teaching focus on African American history, religion and the American West, migration studies and religion, and media. Her current book project, *In the Land of Milk, Honey, and Hollywood! Religion and Black Urban Life in Los Angeles, 1903-1953*, traces the historical and social forces that shaped the practices of African American religious institutions in Southern California. Dr. Tucker-Price has been selected as a Public Fellow in Religion and the American West at the New-York Historical Society, funded by the Henry Luce Foundation. Her work has been supported by the Forum for Theological Exploration (FTE), the Franklin Delano Roosevelt Foundation (FDR), and the Harvard Horizons Scholar program.*

WORKSHOP/PANEL I (cont.)

Panel: Diversity in Research

ZOOM Password: nrcr2021

Chad M. Topaz, PhD

Dr. Chad M. Topaz is an applied mathematician and a Professor of Mathematics at Williams College. He earned an A.B. from Harvard University, an M.S. from Northwestern University, and a PhD from Northwestern University, all in Applied Mathematics. He has an interest in studying nonlinear systems in biology, chemistry, physics, and the social sciences through various mechanisms, including (but not limited to) data science, topology, and geometric dynamical systems. Additionally, he is passionate about social justice, having co-founded QSIDE (the Institute for the Quantitative Study of Inclusion, Diversity, and Equity), a nonprofit organization that utilizes quantitative tools to bear on issues of social justice, for which he currently serves as Executive Director of Research. He has co-authored numerous publications, many of which study the area where data and quantitative measures of analysis intersect with diversity, equity, and inclusion.

Joseph P. Gone, PhD

Dr. Joseph P. Gone is a Professor in the Faculty of Arts and Sciences (Anthropology) and a member of the Faculty of Medicine (Global Health and Social Medicine). He earned an A.B. from Harvard College, an M.A. and PhD in Clinical & Community Psychology from the University of Illinois at Urbana-Champaign. He has collaborated for 25 years with Native American and other Indigenous communities to rethink community-based mental health services and to harness traditional culture and spirituality for advancing indigenous well-being. Dr. Gone's projects include comparisons of Indigenous cultural psychologies with the logics of the mental health professions, critical analysis of the concept of Indigenous historical trauma, collaborative development of the Blackfeet Culture Camp for community-based treatment of addiction, and commissioned formulation of the Urban American Indian Traditional Spirituality Program.

Laura Lewis

Laura Lewis is a graduate student at Harvard University in the Department of Human Evolutionary Biology. She is broadly interested in the evolution of primate social cognition and is fascinated by the evolution of social influence on attention and preferences, long-term social memory, and language comprehension. She leverages eye-tracking methods with chimpanzees and bonobos living in zoos around the world in order to probe their social cognition and hypothesize about the selective pressures that have led to humans' robust socio-cognitive abilities.

WORKSHOP/PANEL I (cont.)

Panel: Careers in Humanities**ZOOM Password: nrc2021****Ann M. Blair, PhD**

*Dr. Ann M. Blair is an American historian, as well as Carl H. Pforzheimer University Professor and the Chair of the Department of History at Harvard University. She received her PhD from Princeton University and has also studied at Harvard University and the University of Cambridge. She is the author of the bestselling book *Too Much to Know: Managing Scholarly Information before the Modern Age*, and she specializes in the cultural and intellectual history of early modern Europe with an emphasis on France. Throughout her career, she has authored and co-edited multiple books, co-organized conferences, and delivered lecture series. She has received numerous awards in teaching and mentoring, including the Harvard Phi Beta Kappa Teaching Prize and the Everett Mendelsohn Excellence in Mentoring, as well as fellowships and other awards from sources such as the National Endowment for the Humanities, the MacArthur Foundation, and the Mellon Foundation.*

Geraldine Brooks, MS

*Geraldine Brooks is an Australian-American journalist and novelist with a focus on historical fiction, and currently a visiting lecturer at Harvard University. She attended the University of Sydney and later earned her master's degree at Columbia University Graduate School of Journalism. She worked as a foreign correspondent for *The Wall Street Journal*, covering environmental issues and conflicts in Africa, the Balkans, and the Middle East. Her first book (*Nine Parts of Desire*) was an international bestseller translated into 17 languages, and her first novel (*Year of Wonders*) was also an international bestseller translated into more than 25 languages. March, her second novel, won the 2006 Pulitzer Prize for fiction, and her following novels *People of the Book* and *Caleb's Crossing* were *New York Times* bestsellers. She was awarded the Dayton Literary Peace Prize for Lifetime Achievement and, in 2020, was Centennial Writer in Residence at the American Library in Paris.*

Yota Batsaki, PhD

Dr. Yota Batsaki is the Executive Director of the research institute and historic estate Dumbarton Oaks as well as the co-founder of the Harvard Summer Program in Greece, where she continues to teach. Her research interests lie in Enlightenment political economy and literature. She earned her PhD in comparative literature from Harvard University, and she was previously a Fellow and Director of Studies in English at St. John's College, Cambridge, and a Newton Trust lecturer in the English Faculty of the University of Cambridge. She has published essays on eighteenth-century literature and culture and has coedited three volumes. From the years 2018-2021, Dr. Batsaki will manage the Mellon-funded Plant Humanities Initiative, a digital tool developed in collaboration with JSTOR and related research and scholarly programming to advance the field of plant humanities.

WORKSHOP/PANEL I (cont.)

Workshop: Brevia

ZOOM Password: ncr2021

Brevia is the official publication of the Harvard College Undergraduate Research Association, a forum for science, culture and other big ideas. It is committed to bringing all disciplines of research out of the ivory tower and into the discourse of the interested public. You can find past issues of Brevia [HERE](#). In this workshop, learn more about the publication, what goes into writing research articles accessible to the public, and how to start a magazine publication at your school.

Marissa Sumathipala

Marissa Sumathipala is the Co-Editor-in-Chief of Brevia. Marissa is a junior studying Computational Neuroscience with a secondary in Psychology. She has previously conducted both wet-lab and computational biology research and combines both in her current research on large scale sequencing of synapses. Outside of Brevia, Marissa is president of the Harvard Figure Skating Club and a start-up founder in the Harvard i-Lab Venture Incubation Program. In her free time, Marissa loves spending time outdoors, baking, and reading.

Minjue Wu

Minjue Wu is a sophomore concentrating in History and Science. A native of Anhui, China, Wu currently resides in Columbus, Ohio and has studied classical piano performance for fourteen years. She enjoys neurobiology research, volunteering in Boston city schools, and penning absurd fiction and journalistic commentaries. When not doing research, Wu can be found aimlessly roaming Boston at midnight, fueled by post-figure skating adrenaline and an insatiable desire for boba. She loves cooking, pretending to be a violinist, horticulture, moss-backed turtles, and wholesome friendships.

CONFERENCE **PANELS AND WORKSHOPS**

WORKSHOP/PANEL II: Friday, 11 AM

Panel: Pathways to Medical School

ZOOM Password: nrc2021

Peter Kalugin

Peter Kalugin is a fourth-year MD-PhD student at Harvard Medical School studying Neuroscience, and a resident tutor at Eliot House at Harvard College. He did his undergraduate studies in Molecular and Cellular Biology and Mathematics at Johns Hopkins University, and then completed a master's degree in Oncology at the University of Oxford supported by a Rhodes scholarship. At HMS, Peter was a representative on the student council, and completed his clerkship year at Cambridge Health Alliance. His current PhD work in the labs of Professors Maria Lehtinen and Mark Andermann focuses on the dynamic regulation of the contents of the cerebrospinal fluid. In the future, Peter plans to work at the intersection of basic science and the clinic, using knowledge from both fields to deliver accessible treatments for neurological diseases to patients.

David Velasquez

David Velasquez is a fourth-year medical student at Harvard and a joint degree student at Harvard Kennedy School of Government and Harvard Business School. He graduated summa cum laude from the University of Southern California where he taught organic chemistry, co-founded a group that organizes health fairs in medically underserved areas, and dabbled in clinical research. In medical school, he served on the legislative committee of the Massachusetts Medical Society, created a community partnership between New England's largest Spanish newspaper outlet and Harvard Medical School, and worked on a hospital initiative to improve health care delivery for persons experiencing homelessness. These experiences, combined with his upbringing in low-income neighborhoods, drive him to understand the role our health care system should play in addressing social needs. He currently advocates for marginalized communities through writing, researches health care delivery innovation plus payment reform, and interns with MassHealth.

Dr. Steven T. Chen, MD, MPH, MS-HPed

Steven T. Chen (MD, MPH, MS-HPed) is a board-certified internist and dermatologist at MGH, and an Assistant Professor Harvard Medical School. Dr. Chen graduated with Honors from Johns Hopkins University where he earned a BS in Biology. He subsequently earned a Masters in Public Health (MPH) and a medical degree (MD) at Johns Hopkins, after which he pursued residency training at Harvard, where he completed an Internal Medicine residency at Beth Israel Deaconess Medical Center and a Dermatology residency in the Harvard Combined Dermatology Program. His clinical interests include cutaneous lymphomas, complex medical dermatology, inpatient dermatology, and medical education. Dr. Chen attends on both the dermatology and internal medicine services. He is an Associate Program Director for the Harvard dermatology residency program, and a co-chair for the Eliot House Premedical Committee at Harvard College.

WORKSHOPS/PANEL II (cont.)

Panel: Research for Global Impact

ZOOM Password: nrcr2021

Dr. Aaron Bernstein, MD, MPH

Dr. Aaron Bernstein is a Pediatric Hospitalist at Boston Children's Hospital, an Assistant Professor of Pediatrics at Harvard Medical School, and the Interim Director of the Center for Climate, Health, and Global Environment at the Harvard T.H. Chan School of Public Health. He received his Bachelor's degree in Human Biology from Stanford University before completing his medical degree at the University of Chicago and public health degree at Harvard University. He leads Climate MD, a Harvard Chan C-CHANGE program that works to encourage physicians to transform climate change from a political issue to one that is relevant to people's everyday personal health. His work focuses on the children's health impacts of the climate crisis and developing solutions to improve the health and wellbeing of children around the world.

Natalia Linos, MSc, ScD

Natalia Linos is the Executive Director of the FXB Center for Health and Human Rights at Harvard and serves on the Poor People's Campaign COVID-19 Health Justice Advisory Committee. She earned her Bachelor of Arts, Master of Science, and Doctor of Science at Harvard University. After her doctoral training, she led the United Nations Development Programme at the intersection of health and climate change, and worked as Science Advisor to the New York City Health Commissioner during the Ebola epidemic.

Dr. Michaela Thompson, PhD

Dr. Michaela Thompson is a Giorgio Ruffolo Post-doctoral Research Fellow in Sustainability Science at Harvard Kennedy School's Mossavar-Rahmani Center for Business & Government. She received her Bachelor of Arts from Carleton College, a Master of Arts from Northeastern University, and a PhD in History, Anthropology, and Science, Technology, and Society from the Massachusetts Institute of Technology. Her current research is focused on the long-term environmental histories of marine spaces and sustainable management of marine resources.

Workshop: Ethics as it Relates to COVID-19

ZOOM Password: nrcr2021

Holly Tabor, PhD

Dr. Tabor is Associate Professor of Medicine and the Associate Director for Clinical Ethics and Education for the Stanford Center for Biomedical Ethics. She is also Co-Chair of the Ethics Committee at Stanford Hospital and Lucile Packard Children's Hospital. Dr. Tabor graduated from Harvard University with a concentration in History of Science and then went on to receive her PhD in Epidemiology from Stanford University. Her research is focused on the ethical issues in genetics and genomics, especially in regards to exome and whole genome sequencing.

WORKSHOPS/PANEL III: Friday, 2 PM

Panel: Translational Medicine**ZOOM Password: ncr2021****Dr. Shiv Pillai, MBBS, PhD**

Dr. Shiv Pillai is a Professor of Medicine at Harvard Medical School is the Director of an NIH Funded Autoimmune Center of Excellence at Massachusetts General Hospital, the Director of the Harvard Immunology PhD program and a Member of the Ragon Institute of MGH, MIT and Harvard. Dr. Pillai is a world leader in the study of fundamental B-cell immunology. Dr. Pillai coined the term "surrogate light chains" for proteins that he identified, as part of a novel receptor, now known as the pre-B receptor. His laboratory also showed that Btk, the product of the gene mutated in X-linked agammaglobulinemia, is functionally linked to the pre-B receptor and the B cell receptor. Btk inhibitors are now widely used in lymphoid malignancies and autoimmunity. One area of current interest is in pathogenic mechanisms that are of importance in systemic sclerosis and IgG4-related disease, Dr. Pillai is also the co-author of two widely used textbooks of immunology.

Dr. Richard Lee, MD

Dr. Richard T. Lee is Professor of Stem Cell and Regenerative Biology at Harvard University and Professor of Medicine at Harvard Medical School. He is certified by the American Board of Internal Medicine in cardiovascular disease. Lee is Leader of the Cardiovascular Diseases Program of the Harvard Stem Cell Institute. He is also a member of the Editorial Board of the journal Circulation. Dr. Lee has published over 270 peer-reviewed articles based on his research, and teaches undergraduates at Harvard College. In addition, he is an active clinician. He regularly treats patients as a cardiologist at Brigham and Women's Hospital. Richard T. Lee's laboratory seeks to understand heart failure and metabolic diseases that accompany human aging, and to translate that understanding into therapies, including stem cell transplantation strategies and new biological agents. Ongoing projects in the laboratory include studies of cardiac regeneration, diabetes, aging and metabolism.

Dr. Lisa Nickerson, PhD

Dr. Lisa Nickerson is an Assistant Professor at Harvard Medical School and the Director of the Applied Neuroimaging Statistics Lab at McLean Hospital. Her research program focuses on the development and application of data-driven machine learning statistical methods for multi-modal imaging data fusion and for analysis of structural and functional MRI, perfusion MRI, and PET data to investigate the structural and functional human brain connectome. Her lab also applies these methods to large-scale open access neuroimaging and deep phenotyping datasets collected in thousands to a 100K participants, including the Human Connectome Projects and the UK Biobank datasets, to investigate the neurobiology of drug addiction and psychiatric disorders.

WORKSHOPS/PANEL III (cont.)

Workshop: Science Writing & Journalism

[ZOOM](#) Password: ncr2021

Dr. Laura Helmuth, PhD

Dr. Laura Helmuth is the Editor-in-Chief of Scientific American. Before she turned to science writing, Dr. Helmuth earned her PhD in cognitive neuroscience at UC Berkeley. After earning a graduate certificate in science communication at UC Santa Cruz, she has worked as an editor or writer at numerous renowned journalistic organizations, namely the Washington Post, where she was the Health and Science Editor, National Geographic, Science, Slate, Smithsonian, and the New York Times. Dr. Helmuth was also the President of the National Association of Science Writers from 2016 to 2018. While working at The Washington Post, she oversaw "The Vaccine Project", which tackles the issue of vaccine hesitancy. More recently, Dr. Helmuth created a tip sheet for journalists to avoid spreading misinformation about COVID-19.

WORKSHOPS/PANEL IV: Saturday, 1:30 PM

Panel: Industry vs. Academia

[ZOOM](#) Password: nrcr2021

Corey I Cheng, PhD

Dr. Cheng is a Senior Industrial Liaison Officer at the MIT Office of Corporate Relations. He received his BA in physics from Harvard University, MA in Electro-Acoustic Music from Dartmouth College, and PhD in Electrical Engineering from the University of Michigan. Dr. Cheng has worked with numerous multinational companies in fields including music engineering, materials science, electronics, computer science, chemical engineering, energy, and transportation.

Po-Shen Loh, PhD

Dr. Loh is a Professor of Mathematics at Carnegie Mellon University and founder of ExPii, a platform that provides free personalized learning, and NOVID, a “COVID-19 radar” app that shows users’ social proximity to the virus. He graduated first in his class from Caltech with a BS in Mathematics, received his MS in Mathematics from the University of Cambridge, and completed his PhD at Princeton University. Dr. Loh was a former International Mathematical Olympiad Silver Medalist and is currently the national head coach for the United States Mathematical Olympiad Program. Dr. Loh’s research interests include a broad range of topics including combinatorics, probability, and computer science.

Jonathan Scheiman, PhD

Dr. Scheiman is the Co-Founder and CEO of FitBiomics, a microbiome biotechnology company that sequences biological information from elite athletes to enhance next-generation probiotics for consumers. He was a former research fellow at Harvard Medical School and the Wyss Institute for Biologically Inspired Engineering in the laboratory of George Church. Dr. Scheiman’s research interests include transformative sequencing technologies as well as programmable cellular engineering.

CONFERENCE **PANELS AND WORKSHOPS**

WORKSHOPS/PANEL IV (cont.)

Workshop: Research and Sustainability

ZOOM Password: ncr2021

John C. Warner, PhD

Dr. John C. Warner is a chemist, educator, and entrepreneur, with experience in both industry and academia. He received a B.S. in chemistry from the University of Massachusetts Boston and a PhD in chemistry from Princeton University. His innovation has been recognized with many awards, among them the Perkin Medal, widely acknowledged to be the highest honor given in US industrial chemistry. He is considered one of the founders of the field of green chemistry, co-authoring its foundational text (Green Chemistry: Theory and Practice) and establishing the world's first PhD program in green chemistry during his time at the University of Massachusetts. Committed to a sustainable future through utilizing chemistry, Dr. Warner co-founded the Warner-Babcock Institute for Green Chemistry as well as Beyond Benign, a nonprofit dedicated to green chemistry education, and has spoken at a number of green chemistry and sustainability conferences globally.

Workshop: Presenting Research

ZOOM Password: ncr2021

Mr. Gregory Llacer

Mr. Greg Llacer is the director of the Harvard College Office of Undergraduate Research and Fellowships. An associate of Leverett House and a member of the Harvard College Board of Freshman Advisers, Greg has also been the director of the Harvard College Program for Research in Science and Engineering (PRISE) since its inception in 2005. In addition to his Harvard responsibilities, Greg is editorial chair of the national Mellon-Mays Undergraduate Research Journal; director of the Global Program Office for Amgen Scholars, a consortium of 24 international undergraduate summer research programs focused on biotechnology; and a consultant for the newly-formed Association of Southeast Asian Nations (ASEAN) Future of Work Fellowship. Prior to his appointment as URAF director, Greg served in several administrative roles, including institutional director of postdoctoral affairs and interim chief of staff for the vice provost of research (in the Office of the President and Provost) as well as coordinator of Herchel Smith-Harvard Undergraduate Science Research Program and the Michael C. Rockefeller Memorial Postgraduate Fellowship (in the College). Before arriving at Harvard in 2004, he managed educational initiatives and academic enrichment programs for the Harvard-MIT Division of Health Sciences and Technology (HST). Greg spent the first 16 years of his administrative career in the academic and research planning unit of the Office of Graduate Studies and Research at the University of California, San Diego, where he was senior research analyst for the vice chancellor for research. Greg received an AB degree from San Diego State University in liberal studies with an emphasis on education, and conducted postgraduate study at UCSD and SDSU focused on policy studies in language and cross-cultural education.

CONFERENCE
PLENARY SESSIONS: SCHEDULE

Thursday, January 21st

Session I: 3:00-3:20 PM

[ZOOM](#) Password: ncrc2021

Elliot Dickman Digital Media, Drexel University

Practical Applications of Strange Attractors in Generative Design

Kate Kushner: Political Science, Yale University

The NAACP in the South: Local Branches in the Carolinas, 1917-1930

Emma McMorran: Art History, University of Georgia

Artistic Appropriation: John Baldessari's Tetrad Series

Peggy Randon: Microbiology, University of Michigan

CD6 as a Target in the Treatment of Autoimmune Diseases and Cancer

Hansen Tjo: Chemical Engineering, University of Massachusetts
Amherst

Nature-Inspired Molecular Engineering

Thursday, January 21st

Session II: 4:30-4:50 PM

ZOOM Password: ncrc2021

Connie Cai: Chemical and Physical Biology, Harvard University
Developing a novel temperature-modulated CRISPR/Cas12a gene editing system for iPSC disease modeling in X-linked Dystonia Parkinsonism

David Chung: Applied Mathematics and Biomedical Research, University of California, Los Angeles
Chemogenetic modulation of parvalbumin-positive interneurons to rescue circuit defects in developing somatosensory cortex and tactile defensiveness in the Fragile X mouse.

Leena Hamad: Molecular and Cellular Biology, Harvard College
Characterizing the Role of Superoxide Dismutase in the Human Gut Microbiome

Helen Hsiao: Microbiology and Immunology, University of British Columbia
fMRI analysis of functional brain networks involved in memory and perception tasks in healthy individuals

Emmaline Miller: Chemical Engineering, Louisiana State University
A Circulating Co-Culture Microfluidic Device for the Dynamic Sampling of Paracrine Factors

Friday, January 22nd

Session III: 3:00-3:20 PM

[ZOOM](#) Password: **ncrc2021**

University of British Columbia's iGEM Team:

Emilia Chen: Microbiology & Immunology and Computer Science, University of British Columbia

Samuel Hahn: Chemical & Biological Engineering, University Of British Columbia

Samuel King: Biology, University of British Columbia
The Viral Predictor for mRNA Evolution

Mohit Dighamber: Physics; Mathematics, Massachusetts Institute of Technology
Hunting for Prime Exoplanets with TESS and SPECULOOS

Sarah Elbasheer: Medicine, Science, and the Humanities, Johns Hopkins University
The Tānsūqnāma: Chinese-Persian Medical Poetry

Preeti Juturu: Public Policy & Economics, University of California, Riverside
Assessing Emergency Healthcare Accessibility in the Salton Sea Region of Imperial County, California

Anne Lheem: Social Anthropology, Harvard College
Aesthetics of Becoming: Beauty, Biopolitics, and Subjectivities of South Korean Women in an Age of Cosmetic Citizenship

CONFERENCE

PLENARY SESSIONS: SPEAKERS

Connie Cai

Chemical and Physical Biology, Harvard University, Class of 2021

Connie Cai is a senior at Harvard College studying chemical and physical biology. She is part of the Bragg lab at Massachusetts General Hospital, and her current research focuses on stem cell modeling of rare neurodegenerative diseases, specifically X-linked Dystonia Parkinsonism (XDP). She is interested in how creating stem cell-derived, disease-specific neurons can improve in vitro modeling of diseases and create an improved platform for drug screening and therapeutics development in the field of neurodegenerative diseases. Her research is funded by the Herchel Smith-Harvard Undergraduate Science Research Program and the Harvard Program for Research in Science and Engineering (PRISE). Connie is an aspiring clinician-scientist and plans to go to medical school next year to pursue an MD/PhD. Outside of research, Connie loves to spend her free time hiking, cooking, and kayaking.

David Chung

Applied Mathematics and Biomedical Research, University of California, Los Angeles, Class of 2021

David Chung is a senior at UCLA with a major in Applied Mathematics and a minor in Biomedical Research. Over the past year and a half, he studied tactile sensory processing in the mouse model of Fragile X Syndrome under the guidance of Dr. Carlos Portera-Cailliau. His current research focuses on rescuing behavioral deficits present in the Fragile X mouse by modulating the ratio of neuronal excitation and inhibition within the primary somatosensory cortex. He is highly interested in network level activity within the brain and aspires to pursue this field of research through the lens of brain computer interfaces as a future academic physician. Outside of research and classes, David enjoys spending his free time listening to music, building computers, and exploring coffee shops in Los Angeles.

Elliot Dickman

Digital Media, Drexel University, Class of 2023

Elliot Dickman is a third-year student at Drexel University majoring in animation and visual effects, concurrently pursuing minors in computer science and immersive media as well as a master's degree in digital media. He currently serves as the vice president of DUXR, Drexel's virtual and augmented reality student group, and has served on the board of the Motion Capture Club. Elliot has worked on a wide variety of digital media projects, particularly in the fields of immersive media and procedural content generation. His primary research objectives lie in developing novel implementations of computational technologies in the fields of digital and interactive design. Much of his recent work involves applications of machine learning within a digital media framework, and he hopes to continue research in this field in the future.

Mohit Dighamber

Physics, Mathematics, Massachusetts Institute of Technology (MIT), Class of 2023

Mohit Dighamber is a sophomore majoring in Physics and Mathematics at the Massachusetts Institute of Technology (MIT). He conducts research at the MIT Kavli Institute, and through his work he has been able to develop a new exoplanet detection software package. Working at the heart of the team answering the question, "Are we alone?," and potentially discovering worlds similar to our own, is a great honor that Mohit is glad he can be a part of.

CONFERENCE **PLENARY SESSIONS: SPEAKERS**

Sarah Elbasheer

Medicine, Science, and the Humanities, Johns Hopkins University, Class of 2022

Sarah Elbasheer is a junior at the Johns Hopkins University, majoring in Medicine, Science, and the Humanities, an interdisciplinary major that combines her interests in history, philosophy and art with science. She is a Woodrow Wilson Research Fellow at JHU studying the exchange of medical knowledge between China and Persia in the 14th century. She has also worked on other projects in bioethics and global health, and leads an interdisciplinary research cluster in the humanities that broadly promotes cross-cultural studies on campus. Sarah is passionate about creating opportunities for dialogue between her diverse peers and participates in several interfaith, intercultural student groups. Outside of research, Sarah is an avid science-fiction and fantasy reader, and enjoys practicing tai chi and playing the koto.

Leena Hamad

Molecular and Cellular Biology, Harvard College, Class of 2021

Leena Hamad is a senior at Harvard College from Manchester, New Hampshire. She is majoring in MCB (Molecular and Cellular Biology), but her interests span the academic spectrum. Alongside her coursework in biology, Leena also studies government and Arabic, which have helped to round out the sociopolitical and cultural angles of her interests in global health and health equity. For the past two years, Leena has worked in the lab of Professor Emily Balskus at the Harvard Department of Chemistry and Chemical Biology. Her projects generally address the intersection between biochemistry and microbiology; her current research focuses on the role of antioxidant enzymes in the gut microbiome environment. More broadly, she is fascinated by the mystique and intrigue of the human microbiome – and its potential for new discoveries, therapeutics, and biochemical tools. Outside of research, Leena enjoys creative writing, watching soccer, experimenting in the kitchen, and exploring the lovely trails of New Hampshire.

Helen Hsiao

Microbiology and Immunology, University of British Columbia, Class of 2021

Helen is a senior studying Microbiology and Immunology at the University of British Columbia (UBC) in Vancouver, Canada. Besides her interest in infectious diseases and the immune system, she has a passion for mental health and psychiatric disorders research and has been conducting an independent project at the Cognitive Neuroscience of Schizophrenia Lab at the British Columbia Mental Health and Addictions Research Institute with a goal to help develop a possible alternative treatment for brain disorders. Outside of research, she has been actively involved in student government and was elected by the UBC Science Student body to serve as the 2019-2020 Vice President Administration of the UBC Science Undergraduate Society, supporting and representing over 8000 students and 35 student clubs. She is interested in helping students who are looking to become involved in research and has spoken and presented at research conference workshops and panels to offer tips and advice to students seeking research opportunities and to encourage more undergraduate students to pursue research. In her free time, Helen loves to dance, watch movies, and listen to rap music. She also loves to travel and meet new people. She looks forward to meeting all the NCRC participants this year.

CONFERENCE

PLENARY SESSIONS: SPEAKERS

Preeti Juturu

Public Policy & Economics, University of California, Riverside, Class of 2022

Preeti Juturu is a third-year student at the University of California, Riverside (UCR) studying public policy and economics, with concentrations in health/population policy and urban/environmental policy. Originally from the San Joaquin Valley, Juturu became fascinated by environmental health outcomes, social inequalities, and health disparities through her experiences in a primarily rural community. In the summer of 2020, Juturu participated in the University of California Center, Sacramento program and began researching health disparities in the agricultural regions of Inland California using geospatial methods. Juturu is currently an undergraduate researcher for the UCR Center for Geospatial Sciences as well as a research assistant and intern for the UCR Center for Health Disparities Research. Juturu is interested in conducting research that is interdisciplinary in nature, focusing on health disparities, environments, and urban/regional infrastructure. Specifically, she hopes to conduct mixed methods research and study these broad topics through a geospatial, sociological, and public policy lens. Following graduation, Juturu intends to pursue a doctoral program in either sociology or anthropology.

Kate Kushner

Political Science, Yale University, Class of 2021

Kate Kushner is a senior at Yale University with research interests in African American history, southern political history, and American political development. In addition to her work on the NAACP, she has conducted archival research on the career of James Weldon Johnson and serves as a student researcher for a study of Yale's historical connections to slavery and abolition. Her senior thesis examines how Black organizing impacted the Democratic Party in North Carolina during the 1930s and 1940s. At Yale, Kate has also danced with three different dance teams and is a site coordinator for Yale's Volunteer Income Tax Assistance clinic. She is originally from Raleigh, North Carolina and hopes to pursue a PhD in History.

Anne Lheem

Social Anthropology, Harvard College, Class of 2021

Anne is a senior at Harvard College studying social anthropology, global health, and health policy. She is primarily interested in questions around bodily aesthetics, cultural constructions of beauty norms, young people's engagement in body modification practices, and cultural psychiatry, especially regarding eating disorders. While her interests are wide-ranging across the social sciences, Anne is most passionate about global mental health, fighting for health equity through research and activism, advocating for more culturally attuned methods of identifying and treating mental health conditions, and education reform. Her current research focuses on understanding the historical origins and present-day consequences of South Korean beauty standards, with a particular emphasis on the physical and mental health of young South Korean women who engage in cosmetic surgery to conform to such beauty standards. Outside of her academic research, Anne is engaged in health advocacy, peer mental health counseling, epidemiological research in global health, dancing, and choreographing of all styles.

CONFERENCE

PLENARY SESSIONS: SPEAKERS

Emma McMorran

Art History, University of Georgia, Class of 2021

Emma McMorran is a senior in the Honors Program at the University of Georgia completing a major in Art History, minor in English, and a Certificate in Museum Studies. As an Honors Scholar within the Center for Undergraduate Research Opportunities, she has conducted faculty-mentored research in the arts since her first year as an undergraduate. Her research explores the criteria that must be met in order for a work to be considered an art object, the evolution of the readymade, and artistic appropriation. Outside of her research, she enjoys leading campus tours as an Arch Society ambassador, where she has the opportunity to introduce everyone from kindergarteners to state officials to the different traditions at the University of Georgia. Emma has previously held leadership positions on campus as an Honors Teaching Assistant, Vice President of Alpha Gamma Delta, Panhellenic Recruitment Counselor, Justice on University Judiciary, "Digital Dawg" Social Media Ambassador, and as an Honors Program Student Ambassador. Emma's current curatorial internship with the Georgia Museum of Art has fortified her ambitions to become a curator specializing in contemporary and modern art after she obtains her PhD.

Emmaline Miller

Chemical Engineering, Louisiana State University, Class of 2023

Emmaline Miller is in her third year studying Chemical Engineering and Entrepreneurship at Louisiana State University. She is also pursuing a minor in Spanish with hopes of studying abroad and is a Louisiana Service and Leadership Scholar through the Ogden Honors College. Emmaline is the team lead on her project studying the intercellular communication of cancer cells in biologically relevant microfluidic environments. She has worked under her research mentor doctor Adam Melvin for two and half years and is pursuing funding for several other endeavors emerging from the Melvin Research Group. She also interns for the office of Innovation, Technology and Commercialization at LSU advancing patented inventions across all areas of study at the university. She serves as an Ambassador for LSU, Deputy Attorney General for student government, and Director of Virtual Recruitment for her sorority Zeta Tau Alpha. She was fortunate to be supported by her parents and teachers, so she volunteers locally to give students the reading support and STEM exposure she received. Emmaline's current career focus is commercializing technology efficiently and the university-industry relationships that facilitate dissemination of scientific breakthroughs. Outside of research, she enjoys competing in pageants, yin yoga, and French cooking à la Julia Child.

CONFERENCE

PLENARY SESSIONS: SPEAKERS

Peggy Randon

Microbiology, University of Michigan, Class of 2021

Peggy is a senior studying microbiology at the University of Michigan. For the past two and a half years, Peggy has worked under the guidance of Drs. David A. Fox, Jeffrey H. Ruth, and Mikel Gurrea-Rubio developing a novel immune checkpoint inhibitor, UMCD6, which targets the CD6-CD318 axis in cancer. She intends to receive an M.D and a Ph.D. in Immunology to conduct drug discovery research while directing a lab at the university level. She is keenly interested in STEM knowledge acquisition as a form of advancement for ethnically marginalized groups, and she would like to one day play a role in bridging the STEM education gap through mentorship in her hometown of Detroit, Michigan. Outside of her research, she is most inspired leading creative-art workshops in juvenile detention centers and C.S. Mott Children's Hospital, and while mushroom foraging in Nichols Arboretum in Ann Arbor.

Hansen Tjo

Chemical Engineering, University of Massachusetts Amherst, Class of 2021

Hansen is a chemical engineering senior from the University of Massachusetts Amherst. He has worked on understanding complex coacervation in polyelectrolyte-micelle systems for the past three years, cementing his interests in soft matter. Through research conducted at Columbia, he became fascinated with synthetic biology and renewable energy topics, which reflects the interdisciplinary nature of his talk. Following graduation, he hopes to increase scientific accessibility through policy and outreach. Outside the lab, he enjoys hiking, brewing coffee, and writing.

UBC's International Genetically Engineered Machine (iGEM) Team

Emilia Chen

Microbiology & Immunology; Computer Science, University of British Columbia, Class of 2022

Samuel Hahn

Chemical & Biological Engineering, University Of British Columbia, Class of 2021

Samuel King

Biology, University of British Columbia, Class of 2021

UBC's International Genetically Engineered Machine (iGEM) team is a multidisciplinary group of undergraduate and graduate students who are deeply intrigued by synthetic biology and the potentials of genetic technology. Every year, they develop a genetic engineering research project, designing and building biological systems, to address pressing global issues. Their previous projects range from discovering biosensors for potent neurotoxins, to synthesizing anticancer drugs, and even developing probiotics for bees. In the midst of the COVID-19 pandemic they seized the opportunity to develop a deep learning software to provide solutions for future pandemics. Members of UBC iGEM get real opportunities to practice what they are learning, innovate at the cutting edge of biotechnology, and cultivate their skills in a motivated environment. iGEM projects are not only biology-based, but are multi-faceted through science, coding, business, design, engineering, and much more.

CONFERENCE **POSTER SESSIONS: JUDGES**

We appreciate the kind efforts of our judges, composed of graduate students, postdoctoral fellows, research associates, individuals from industry, and faculty, most of whom are affiliated with the various departments, institutes, and schools of Harvard University.

Mr Abdelrahman Mahmoud, Graduate Student, History Department
Mr Aditya Mate, PhD student, School of Engineering and Applied Sciences
Ms. Aleyda Treviño, Graduate Student, Earth and Planetary Sciences
Mr. Amirhassan Shams-Ansari, Graduate Student, SEAS
Miss Ana Pereira, Research Scientist, Broad Institute
Ms Anastasia Repouliou, Graduate student, MCB
Dr. Andrea Di Donato, Assistant Professor, SEAS
Dr. Andres Colubri, Assistant Professor, Organismic and Evolutionary Biology
Miss Anitha Gollamudi, Graduate Student, Computer Science
Ms. Anna Renner, Graduate student, Chemistry and Chemical Biology
Ms. Anna Waldeck, Graduate student, Earth and planetary sciences
Dr. Antonio Serrato, Postdoctoral Fellow, Organismal and Evolutionary Biology
Dr. Anvay Ukidve, Scientist, SEAS
Mr. Brian Plancher, Graduate Student, SEAS
Ms. Bridget Bickner, Graduate Student, Organismic and Evolutionary Biology
Dr. Bruno de Medeiros, Postdoctoral Fellow, Museum of Comparative Zoology
Ms. Carol Lynn Alpert, Director, Strategic Projects, Museum of Science, Boston
Dr. Cary Aileen García Yero, Postdoc, Weatherhead Center for International Studies
Dr. Cathy Zhang, Alumni, SEAS
Ms. Courtney T. Wittekind, PhD Candidate, Social Anthropology
Mr Daniel Alabi, Graduate student, Computer Science
Mr. Daniel Erdosy, Graduate Student, CCB
Ms Daria Kovaleva, Graduate Student, History Department
Dr. David Ricketts, Fellow, Technology and Entrepreneurship Center at Harvard
Mr. Derick, PhD student, Sociology
Ms. Dominika Sarnecka, PhD Candidate, Organizational Behavior
Mr. Dvir Reif, Graduate Student, MCB
Mr. Dylan Renaud, Graduate Student, SEAS
Prof. Edw. S. Ginsberg, Assoc. Prof. of Physics, UMass Boston, Dept. of Physics
Mr. Ehsan Hajiesmaili, Graduate student, SEAS
Dr. Wei-Hsi (Ariel) Yeh, Alumni, Harvard CCB, DMS
Me. Xiaoting Yang, Graduate Student, Earth and Planetary Sciences
Mrs Ya Min, Graduate Student, OEB
Sir Yaowei Li, Graduate student, SEAS/GSAS
Ms Yu Xie, Graduate student, SEAS, applied physics
Ms. Ziwei Qiu, Graduate student, SEAS
Ms. Emily Kerr, Grad Student, CCB
Mr. Erik Nook, Graduate student, Psychology
Mr Evan Hockridge, Graduate Student, Organismic and Evolutionary Biology

CONFERENCE

POSTER SESSIONS: JUDGES

- Dr. Garth Coombs**, Postdoctoral College Fellow, Psychology
Mr. George Touloumes, Graduate student, SEAS (Bioengineering)
Dr Hai Bi, Postdoctoral fellow, SEAS
Mr. Hao Wu, Graduate Student, Department of Chemistry and Chemical Biology
Mr. Hsiang Hsu, Graduate student, CS
Dr Ida Pavlichenko, Associate, SEAS
Ms. Inbar Maayan, PhD Student, OEB
Mr. Jack Bruno, Graduate Student, Earth and Planetary Sciences
Mr. Jackson Killian, Graduate Student, SEAS
Mr Jacob Suissa, Graduate student, Organismic and Evolutionary Biology
Ms. Jessie Zhang, Graduate student, Physics
Mr. Joseph Gavino Nunez III, Graduate student, Anthropology
Mr. Joshua Cox, Graduate Student, CCB/SEAS
Mr. Joshua Shutter, Graduate student, Chemistry and Chemical Biology
Ms. Krithika Swaminathan, Graduate Student, SEAS
Dr Laura Germiné, Assistant Professor, Psychiatry
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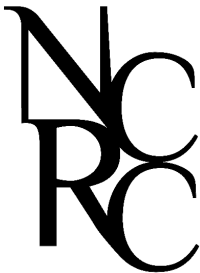
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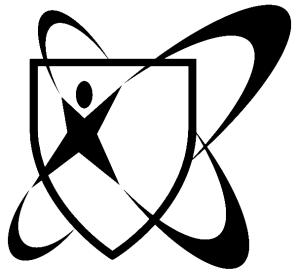
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