

DAYCON 2018 INTERACTIVE SESSION EVENTS

For All Mankind • Room B103

Get an up-close look at the NASA Apollo space missions and our travels to the moon

Energy Q&A • Room B101 • 2:30 PM – 3:30 PM

An introduction and discussion of current advances in nuclear and battery power with Patrick White and Richard Park

Hands on Nano • Prefunction Space

Explore promising quantum materials and their properties with the Museum of Science, Rodrick Kuate Defo, Michael Walsh, and Eric Bersin

Non-traditional Robotics • Room B104

A closer look at insect-scale microrobots and larger-scale soft robots with the Harvard Microrobotics Lab

Structural Color • Prefunction Space

Make colors out of invisible material with the Aizenberg Biomineralization and Biomimetics Lab

Biopotential to Control Robots • Prefunction Space

Use signals generated by the human body to control simple robots with Steve McInturff

Microscopy at the Nanoscale • Room B105

Explore cutting-edge techniques to observe nature's nanoscale processes with Akshay Agarwal and Sarah Goodman

How Holograms Work • Prefunction Space

Experiment with light to investigate the basic principles behind holography and learn how 3D objects are "captured" on film through hands-on activities with the MIT Museum

Visualizing Fossil Morphologies • Prefunction Space

See how CT scanning, 3D modeling, and new visualization techniques help us analyze fossils and understand how animals evolved with the Harvard Museum of Natural History

Exploring Virtual Reality • Room B108 • Sign-up Required!

Experience the latest in virtual-reality technology firsthand with HTC Vive and Oculus Rift headsets with the Harvard Visualizations Lab

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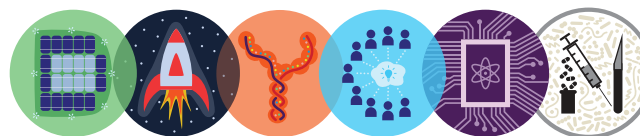


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HARVARD'S **SCIENCE IN THE NEWS** PRESENTS



DAYCON 2018: **TOMORROW'S TECH, TODAY**

SESSION I: GENERAL SEMINARS

10 AM – 11 AM • Room B103

Opening Remarks

Alyson Warr and Catherine Freije, *DayCon 2018 Co-Chairs*

Ethics of Emergent Technologies

Olivia Foster and Jeff Rhoades

Microbes as the Engines of Biotechnology

Braden Tierney

MORNING COFFEE + SNACK BREAK

11 AM – 11:30 AM • Prefunction Space

SESSION II: SPECIALIZED SEMINARS

11:30 AM – 12:30 PM

Concurrent Session A • Room B103

Viruses As Medicine

Jason Nomburg

Quantum Technology

David Layden

The World's Electronic Graveyard: Solving the E-waste Dilemma

Jayson Toweh

Concurrent Session B • Room B101

Geoengineering: A Risky Climate Solution

Josh Moss

Technologies and Designs for Crowdsourcing

Jessica Huang

Brain-Machine Interfaces: Bridging the Accessibility Gap

Libby Zhang

LUNCH WITH SCIENTISTS

12:30 PM – 1:30 PM • Prefunction Space

INTERACTIVE SESSION

1:30 PM – 3:30 PM • See back cover for details

SESSION III: KEYNOTE LECTURE

3:30 PM – 4:30 PM • Room B103

How Genetic Engineering is Shaping the Future of Medicine

Aseda Tena



Olivia Foster • *Ethics of Emergent Technologies*

Olivia is a third year PhD student in the Harvard Program of Biological and Biomedical Sciences where she investigates how genes are controlled within the genome. Her interests include science policy and graphic design, and she is pursuing a secondary concentration in Science, Technology and Society at the Harvard Kennedy School. When she isn't reading science papers or legal briefs, Olivia enjoys reading young adult fiction in coffee shops and generally soaking up the sun like the Californian she is.

Jeff Rhoades • *Ethics of Emergent Technologies*

Jeff works in the Department of Brain and Cognitive Sciences at MIT and is an incoming PhD student in the Harvard Program in Neuroscience. His current research investigates the functional architectures of biological circuits in the nervous system. With a background in computer science, psychology and neurobiology, Jeff is interested in biomimicry in the context of AI and computing architectures. Outside of science, Jeff is novelist, musician and rock climber who often misses the sandstone cliffs of his hometown in Montana.



Josh Moss • *Geoengineering*

Josh is a third year Ph.D. candidate in Prof. Jesse Koll's group at MIT, and his research focuses on understanding the complex chemical and physical processes governing smog formation and evolution in Earth's atmosphere. Like any good half-French half-Californian, Josh loves cooking, good wine, weightlifting, and spending as much time in nature as the east coast's temperamental weather allows.

Jessica Huang • *Technologies for Crowdsourcing*

Jessica is a second-year doctoral student in public health at Harvard, and has been exploring collaborative designs to engage communities since her earlier days working with D-Lab at MIT. She also served as a fellow with the MIT Climate CoLab, an initiative of the Center for Collective Intelligence that provides an open problem-solving platform for people from around the world to innovate together to address complex environmental challenges. Outside of work, she is often found playing music and rock climbing.



Braden Tierney • *Microbes in Biotechnology*

Braden is a second year graduate student in Harvard's Biological and Biomedical Sciences program. His work involves developing methods for data-driven, high-throughput modeling and engineering of microbial ecosystems. Over the past decade, he has worked in a variety of industrial and academic settings, studying microbes and their functions in all manner of environments, from soil to stool to saliva.



Libby Zhang • *Brain-Machine Interfaces*

Libby is a graduate student in Professor Michael Cima's lab at MIT, where she works with a cross-disciplinary team on chronically-implantable, microinvasive probes for deep-brain structures. She will pursue her Ph.D. in Electrical Engineering at Stanford next fall, and she aims to continue developing instrumentation and numerical techniques for translational neuroengineering.

Jason Nomburg • *Viruses As Medicine*

Jason is a first year Ph.D. student in Harvard's Virology Ph.D. program. While his research interests are primarily focused on the molecular biology of DNA tumor viruses, Jason also has a standing interest in biomedical informatics and computational approaches to addressing important biological problems. Jason is a graduate of the College of Creative Studies at the University of California, Santa Barbara.



Patrick White • *Atoms for Climate Change*

Patrick is a third-year PhD student in the Nuclear Science and Engineering Department at MIT. His research focuses on regulation, licensing, and safety analysis methods for advanced nuclear power plants. Patrick's current work is part of the MIT "Future of Nuclear Energy in a Carbon-Constrained World" study, focusing on licensing issues related to advanced nuclear reactor deployment and the potential role of nuclear power in mitigating climate change.



David Layden • *Quantum Technology*

David is a graduate student at MIT's Research Laboratory of Electronics, in Nuclear Science and Engineering. His research is aimed at creating a new generation of near-term technologies which make use of quantum physics. He is also an avid runner and occasional triathlete.



Richard Park • *Batteries 101*

Richard is a second-year graduate student in the Materials Science and Engineering program at MIT. His current research focuses on studying the fundamental physics behind why certain types of lithium batteries short circuit and fail irreversibly. In his spare time he enjoys rowing with the MIT Rowing Club, playing the guitar, or learning a new language.

Jayson Toweh • *The World's Electronic Graveyard*

Jayson is an Environmental Health Master of Science student at Harvard T.H. Chan School of Public Health. Jayson is originally from just north of Atlanta, GA and graduated from the University of Michigan with a BS in Environmental Science. He has previously conducted research in Ghana on how electronic waste recycling can best be managed. Additionally, he is interested in the health and climate benefits from shifting from fossil fuels to renewable energy. He previously interned at the US EPA working on sustainable freight transportation in the SmartWay Transport Partnership and interns for EPA now in their Office of Inspector General.



Aseda Tena • *Genetic Engineering and Medicine*

Aseda is a third-year doctoral student in the Biological and Biomedical Sciences and Leder Translational Medicine program at Harvard University. Since college she joined the Transplantation Biology Research Center at Massachusetts General Hospital and spent six years working on xenotransplantation research. Her efforts were geared toward genetic modifications of the swine genome to develop a clinically applicable model for xenotransplantation of porcine organs into non-human primates. Her current PhD thesis is to identify and investigate DNA break cluster genes in mouse and human neural progenitor cells. Outside the laboratory Aseda enjoys spending time at the MFA, Boston Opera House and taking trips to her home country, Albania.

