

# DayCon 2019 Interactive Session Events

## Lasers, Transmitters, and Brains - Oh My! • Room B104

Explore neuroscience tools used to study the brain and create beautiful images. You can also hold a real brain!  
Madelyn Ray

## Learning from the Art of Botanical Collections • Prefunction Space

Using Harvard University herbaria specimens, explore the value of the Ware Collection of Blaschka Glass Models of Plants (also known as the Glass Flowers) for the study of botany  
Amy Gunzelmann

## Interstellar • Room B108

Watch the fictional story set in space that actually helped advance our scientific understanding of what space really looks like

## Waveforms in Music and Seismology • Room B105

Listen, watch, and play with seismic data, synthesizers, and musical instruments to learn about the profound connection between music, signal processing, and science  
Seth Olinger, Natasha Toghramadijan, Taylor Rysanek, Marisa Borrengine

## Scientific Art Gallery • Prefunction Space

View the diverse collection of images submitted to the SITN Art Gallery. Enter a raffle for a print giveaway. You can also explore prints for sale  
Georgia Stirz

## How Art Conservators See Through Paintings • Prefunction Space

Learn how advanced technology lead to the re-discovery of an early 15th century altarpiece painted for the Church of Santo Stefano at Monopoli in Apulia, Italy. The altarpiece is currently undergoing conservation treatment at the Museum of Fine Arts in the Conservation in Action gallery  
Lydia Vagts and Louise Orsini

## Virtual Reality: Journey Inside a Cell • Room B108

Take a journey inside the human cell and throughout the human body with VR  
Matt Courtney

science in the news presents



## The Science of Art

REGISTRATION & COFFEE

9:00 AM - 10:00 AM • Prefunction Space

SESSION I: GENERAL SEMINARS

10 AM - 11 AM • Room B103

### Opening Remarks

Kate Lachance and Eileen Ablondi, DayCon 2019 Co-Directors

### Symmetry in Art and Nature

Cari Cesarotti

### A Dialogue of Two Perspectives in Architecture

Wei Zhang

SESSION II: SPECIALIZED SEMINARS

11:00 AM - 12:00 PM

Concurrent Session A • Room B103

### The Neuroscience of Music Perception

Dana Boebinger

### The Science of Color

Rebecca Clements

### Imaging the X-Ray Universe

Heng Zuo

Concurrent Session B • Room B101

### Music and Consciousness: Why Does it Matter What Music is?

Anna Wang

### Exotic States of Light

Aditya Venkatramani

### The Art and Science of Electron Diffraction

Akshay Agarwal & Sarah Goodman

LUNCH WITH SCIENTISTS

12:00 PM - 1:00 PM • Prefunction Space

SESSION III: KEYNOTE LECTURE

1:00 PM - 2:00 PM • Room B103

### Sensation, Symphony, and Synaesthesia

Misha Oraa Ali

### The Synaesthetic Brain: Crosstalk between the Senses and the Creation of Art

Jess Kanwal

INTERACTIVE SESSION

2:00 PM - 4:00 PM • See back cover for details

SESSION IV: CONCLUDING SEMINAR

4:00 PM - 4:30 PM • Room B103

### Chasing Insight: The Art and Science of the Creative Process

Nessa Bryce

## DayCon 2019 Organizing Committee

### Co-Directors

Kate Lachance  
Eileen Ablondi

### Speaker Chairs

Apurva Govande  
Rebecca Carlson

### Interactive Session Chairs

Allison Baker  
Daeun Jeong

### Logistics Chair

Wendy Georgan

### Graphics

Olivia Foster Rhoades

### Volunteers

Simge Topaloglu  
Seda Akbiyik

Aparna Nathan  
Dana Boebinger  
Breanna Titchen

Olivia Foster Rhoades

Pascal Devant

### Feedback



<https://bit.ly/2JNNVNB>

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### **Cari Cetarotti** • *Symmetry in Art and Nature*

Cari is a second year PhD candidate in the physics department at Harvard University. She is studying theoretical particle physics in search for new fundamental particles with advisor Prof. Matthew Reece. After her time at CERN, she gained appreciation for the creation and consumption of french baked goods.



### **Aditya Venkatramani** • *Exotic States of Light*

Aditya is a PhD student in physics at Harvard studying quantum properties of light. He is interested in understanding the microscopic world of atoms and light and engineering their properties and behavior. Outside research he like likes being outdoors hiking, sailing, or climbing.

### **Wei Zhang** • *A Dialogue of Two Perspectives in Architecture*

Wei is a PhD student in Graduate School of Design at Harvard. He studied Engineering, History, and Architecture in China and France. He worked as professional engineer in Grenoble and Paris in France; his research in Harvard focuses on the fields of Architectural Technology and Artificial Intelligence.



### **Akshay Agarwal** • *The Art and Science of Electron Diffraction*

Akshay is a fifth year PhD student in Electrical Engineering and Computer Science at MIT. His research is aimed at enabling the use of electron microscopes to image single proteins and other biological molecules at atomic resolution. He is also interested in physics teaching and education. In his spare time, Akshay likes to sleep.



### **Dana Boebinger** • *The Neuroscience of Music Perception*

Dana Boebinger is a PhD student in the Harvard-MIT program in Speech and Hearing Bioscience and Technology, studying how the human brain understands complex sounds like speech and music. She is passionate about public engagement with science and improving scientific literacy in the general public, and has been involved with Science in the News since her first year of graduate school. In her little remaining free time, Dana plays the flute in a few local orchestras, traverses the Charles River with MIT's rowing club, and obsesses over her cats.



### **Sarah Goodman** • *The Art and Science of Electron Diffraction*

Sarah is a fifth year PhD student in Materials Science and Engineering at MIT, and she received her BA in Chemistry from Rutgers University. She uses electron microscopy to study defects in LEDs (light emitting diodes). Outside of the lab, Sarah enjoys teaching kids about microscopy, advocating for graduate students, and singing.

### **Rebecca Clements** • *The Science of Color*

Rebecca is a third year PhD student in the Biological and Biomedical Sciences program at Harvard. She studies the malaria parasite, *Plasmodium falciparum*, in order to understand how the parasite causes disease and to identify new targets for antimalarial drugs. When she's not in the lab, she spends her time painting, dancing, cooking, and playing soccer.



### **Misha Oraa Ali** • *Sensation, Symphony, and Synaesthesia*

Misha does research at the Harvard Lab for Developmental Studies, and is an incoming PhD student at Brown University where they will be studying cognitive science and psycholinguistics. They are interested in understanding how we communicate our thoughts and the cognitive computations that are involved in the process. They are also a DJ at MIT's radio station, WMBR, and like to make art.



### **Heng Zuo** • *Imaging the X-Ray Universe*

Heng is a PhD candidate at MIT Department of Aeronautics & Astronautics. Her research focuses on experiments and numerical analysis of mirror manufacturing and correction techniques of thin segmented optics for X-ray space telescopes. She has a Master's degree from MIT and a Bachelor's degree from Tsinghua University. As a motivated learner and passionate team player, Heng has been involved in diverse student entities and initiatives, and organizations of various communities both within MIT and nationally. In her spare time, she enjoys daily work-out and numerous sports activities. She also likes playing music, writing and cooking.



### **Jess Kanwal** • *The Synaesthetic Brain: Crosstalk between the Senses and the Creation of Art*

Jess is a recent graduate of the Neurobiology PhD program at Harvard. She studies how the tiny brain of the fruit fly larva combines smell and taste information in order to perceive flavor. In her free time, Jess enjoys dancing to Bhangra music, making pottery in the studio, or hiking and exploring the outdoors.

### **Anna Wang** • *Music and Consciousness: Why Does it Matter What Music is?*

Anna is a second year PhD student in Music Theory at Harvard. She studies how differences in theoretical systems across musical cultures arise in part from the unique aesthetic ecologies they reside within. She also seeks to understand the mechanism by which music rehabilitates the consciousness following brain damage. Her spare time is spent dragon boating on the Charles River and lounging about with her fiancé and her cat.



### **Nessa Bryce** • *Chasing Insight: The Art and Science of the Creative Process*

Nessa Bryce is a first year PhD student in the Clinical Psychology program at Harvard, under the supervision of Dr. Katie McLaughlin. She is interested in examining how childhood experiences, particularly traumatic ones, shape our brains and thus how we understand and interact with the world around us. While by day Nessa wears her science cap, by night she picks up her paint brushes and ventures into the world of art and illustration.

