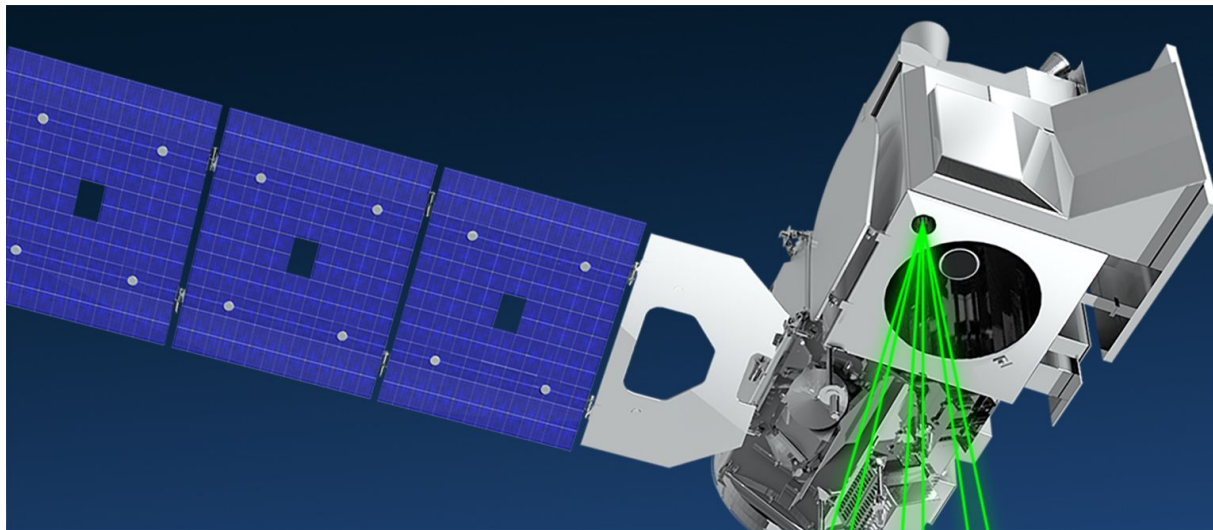


---

# Welcome to Cryospheric Sciences ICESat-2 Hackweek!

---



# Re-Naming Yourself

Let everyone else in Zoom know who you are.

1

On the bottom of your screen, click **Participants**.



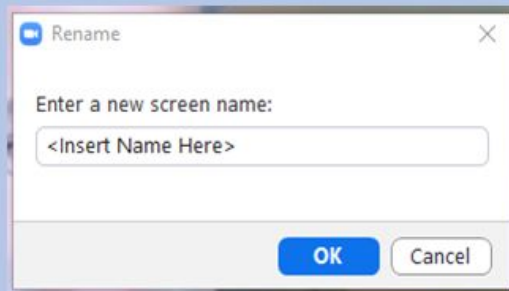
2

Find you and click **More**.



3

Enter your first & last name and click OK.



# Using the Chat Feature

Communicate with other attendees and the presenter

1

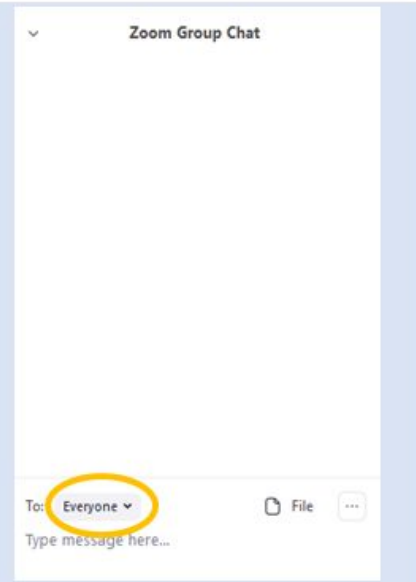
On the bottom of your screen, click **Chat**.



2

This will open chat feature.

Click the **drop down arrow** after "To:" to select who you want to send the chat to.



## Giving and getting feedback during a session

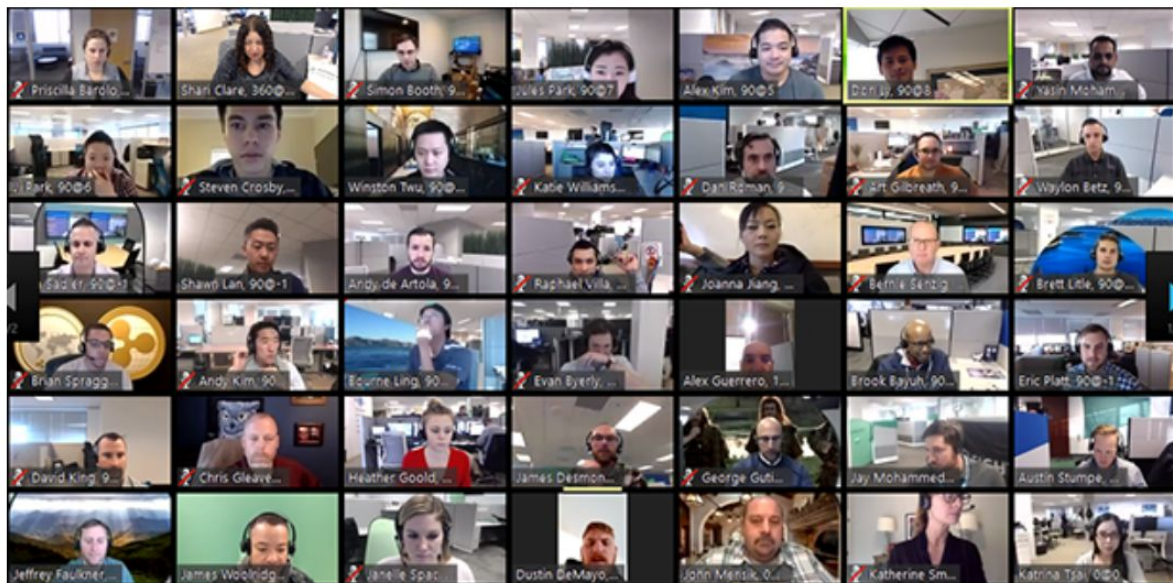
- We'll use Slack for synchronous conversations during tutorials
- Each tutorial will have its own slack channel:

### [#tutorial-introduction](#)

- helpers/TAs will be monitoring Slack and answering your questions
- We will use the zoom chat for a few interactive activities

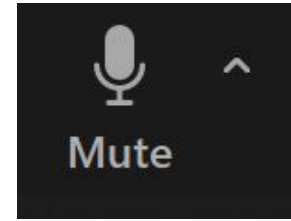
## Gallery versus speaker view

- Click Settings, and then click Video to display the video settings page.
- Enable the option Display up to 49 participants per screen in Gallery View. Note that if your computer does not meet the CPU requirements, this option is unavailable.



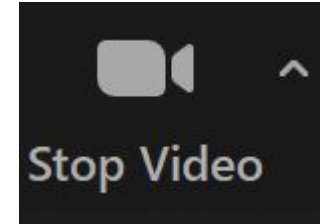
## Muting

- Please mute while not speaking
- It's easy to forget you are not muted. We may mute you if needed to minimize distraction to speaker

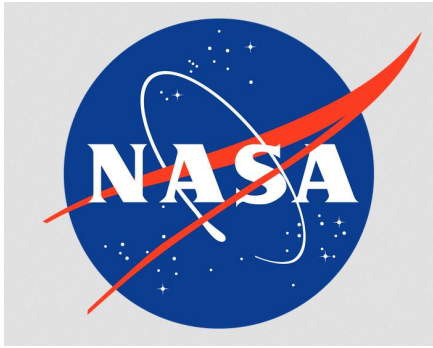


## Video

- We invite you to turn video on when speaking
- Tutorials will be recorded: turn off video if you have a question
- Virtual background option



# ICESat-2 hackweek sponsors



Applied Physics Laboratory  
UNIVERSITY *of* WASHINGTON



GORDON AND BETTY  
**MOORE**  
FOUNDATION



ALFRED P. SLOAN  
FOUNDATION

# Thank-you!



Yu-Chan Chao



ALEX HUYNH  
ADMINISTRATIVE ASSISTANT  
APL



JANE KOH  
ADMINISTRATIVE SPECIALIST  
ESCIENCE INSTITUTE



Charley Haley  
Collaboration Designer



# Thank-you!



**AMY STEIKER**  
DATA SUPPORT SPECIALIST  
NATIONAL SNOW AND ICE DATA  
CENTER



**TOM NEUMANN**  
RESEARCH SCIENTIST  
NASA GODDARD SPACE FLIGHT  
CENTER



**ALEK PETTY**  
RESEARCH SCIENTIST  
UNIVERSITY OF MARYLAND



**NICK HOLSCHUH**  
POSTDOCTORAL SCHOLAR  
DEPARTMENT OF EARTH AND SPACE  
SCIENCES, UW



**MATTHEW  
SIEGFRIED**  
ASSISTANT PROFESSOR  
DEPARTMENT OF GEOPHYSICS,  
COLORADO SCHOOL OF MINES



**SEBASTIAN ALVIS**  
DATA SCIENTIST  
ESCIENCE & APL



**JESSICA SCHEICK**  
RESEARCHER/SOFTWARE  
DEVELOPER  
UNIVERSITY OF MAINE



**AXEL SCHWEIGER**  
SENIOR PRINCIPAL SCIENTIST  
APL



**ANTHONY ARENDT**  
PRINCIPAL RESEARCH SCIENTIST  
ESCIENCE & APL



**BEN SMITH**  
PRINCIPAL PHYSICIST  
APL



**LINDSEY HEAGY**  
POSTDOCTORAL FELLOW  
U. C. BERKELEY



**DAVID SHEAN**  
ASSISTANT PROFESSOR  
CIVIL AND ENVIRONMENTAL  
ENGINEERING



**SCOTT  
HENDERSON**  
POSTDOCTORAL FELLOW  
ESCIENCE & ESS



**TYLER SUTTERLEY**  
RESEARCH ASSOCIATE  
APL



**SHANE GRIGSBY**  
POSTDOCTORAL FELLOW  
DEPARTMENT OF GEOPHYSICS,  
COLORADO SCHOOL OF MINES



**ELLEN BUCKLEY** <sup>SD</sup>  
PHD CANDIDATE  
UNIVERSITY OF MARYLAND



**YARA MOHAJERANI**  
POSTDOCTORAL SCHOLAR  
UC IRVINE



**FERNANDO PEREZ**  
ASSISTANT PROFESSOR/FACULTY  
SCIENTIST  
DEPARTMENT OF STATISTICS, UC  
BERKELEY



**JOHAN NILSSON**  
SCIENTIST  
JET PROPULSION LABORATORY,  
NASA



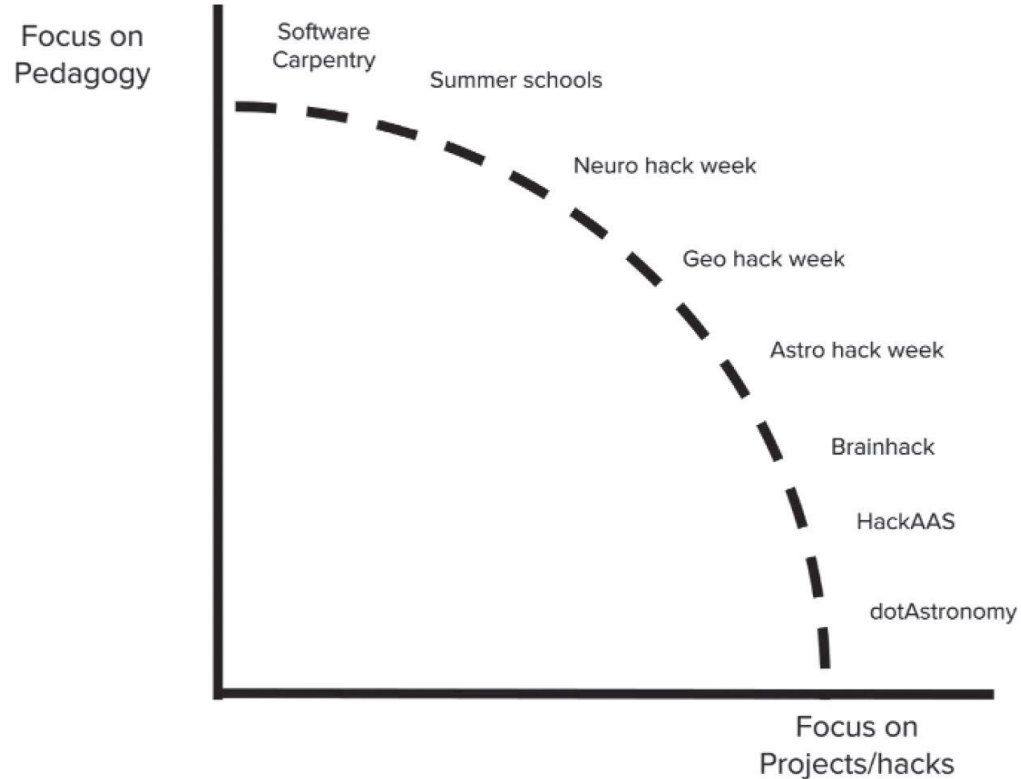
**FERNANDO PAOLO**  
POSTDOCTORAL SCHOLAR  
NASA JET PROPULSION  
LABORATORY



**DANIEL SHAPERO**  
PRINCIPAL RESEARCH SCIENTIST  
APL

Peer learning

# Hackweeks



Collaboration

# What is a hackweek?

## Hack weeks as a model for data science education and collaboration

Daniela Huppenkothen<sup>a,b,c,d,1</sup>, Anthony Arendt<sup>d,e</sup>, David W. Hogg<sup>c,b,f,g</sup>, Karthik Ram<sup>h,i</sup>, Jacob T. VanderPlas<sup>d</sup>, and Ariel Rokem<sup>d</sup>

<sup>a</sup>Institute for Data-Intensive Research in Astrophysics and Cosmology, Department of Astronomy, University of Washington, Seattle, WA 98195; <sup>b</sup>Center for Data Science, New York University, New York, NY 10003; <sup>c</sup>Center for Cosmology and Particle Physics, Department of Physics, New York University, New York, NY 10003; <sup>d</sup>The University of Washington eScience Institute, The Washington Research Foundation Data Science Studio, University of Washington, Seattle, WA 98105; <sup>e</sup>Polar Science Center/Applied Physics Laboratory, University of Washington, Seattle, WA 98105-6698; <sup>f</sup>Max-Planck-Institut für Astronomie, D-69117 Heidelberg, Germany; <sup>g</sup>Center for Computational Astrophysics, Flatiron Institute, New York, NY 10010; <sup>h</sup>Berkeley Institute for Data Science, University of California, Berkeley CA 94720; and <sup>i</sup>Berkeley Initiative in Global Change Biology, University of California, Berkeley CA 94720

Edited by Russell A. Poldrack, Stanford University, Stanford, CA, and accepted by Editorial Board Member Marlene Behrmann July 9, 2018 (received for review September 29, 2017)

Across many scientific disciplines, methods for recording, storing, and analyzing data are rapidly increasing in complexity. Skillfully using data science tools that manage this complexity requires training in new programming languages and frameworks as well as immersion in new modes of interaction that foster data sharing, collaborative software development, and exchange across disciplines. Learning these skills from traditional university curricula can be challenging because most courses are not designed to evolve on time scales that can keep pace with rapidly shifting data science methods. Here, we present the concept of a hack week as an effective model offering opportunities for networking and community building, education in state-of-the-art data science methods, and immersion in collaborative project work. We find that hack weeks are successful at cultivating collaboration and facilitating the exchange of knowledge. Participants self-report that these events help them in both their day-to-day research as well as their careers. Based on our results, we conclude that hack weeks present an effective, easy-to-implement, fairly low-cost tool to positively impact data analysis literacy in academic disciplines, foster collaboration, and cultivate best practices.

data science | education | interdisciplinary collaboration | reproducibility

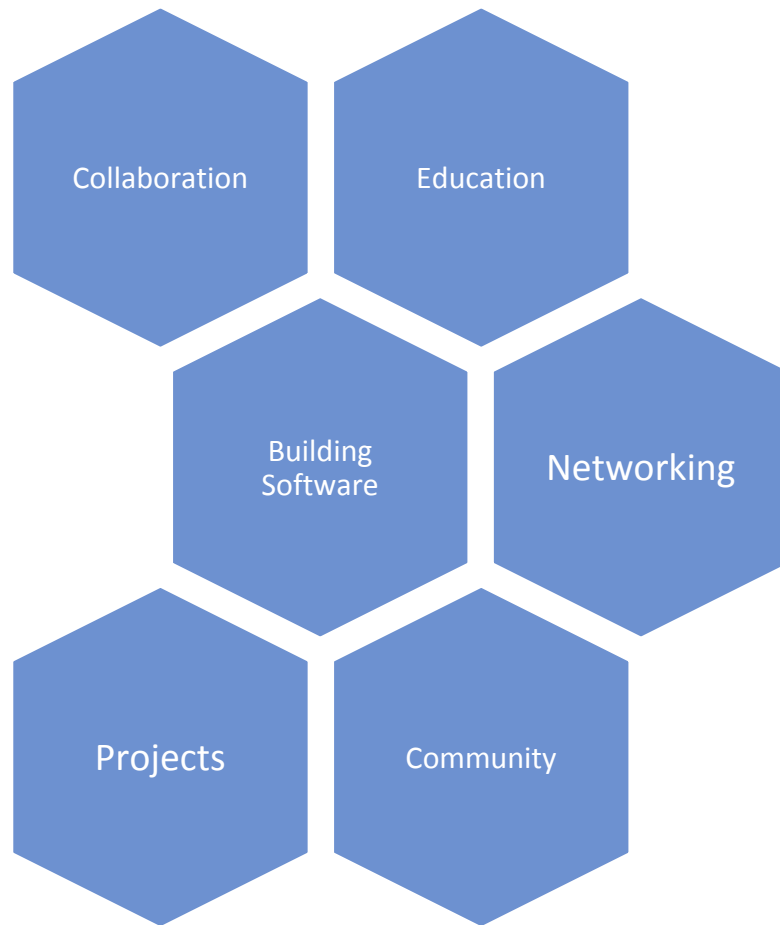
event (Fig. 1). Pedagogically focused events follow a classic academic model where novices learn new skills from experts. This model tends to focus on a one-way flow of information from instructor to student and is usually targeted toward participants in the training phase of their career. On the other end of the spectrum, project-focused workshops emphasize collaborative activities using existing skills, leading to the common perception that they are designed for technical experts. This may limit their audience. To bridge this gap, we describe here a model that we have implemented: “Hack Weeks” that aim to capitalize on the advantages of each of these models. These week-long events combine structured periods focused on pedagogy (often with an emphasis on statistical and computational techniques) and less structured periods devoted to hacks and creative projects, with the goal of encouraging collaboration and learning among people at various stages of their career.

We have run eight such hack week events: four focused on astronomy and two each focused on neuroscience and geoscience. Here we share the philosophy behind the hack week model, results from surveys of participants, practical lessons we have learned in organizing these events, and recommendations for future hack weeks. *SI Appendix* provides additional details on the practical aspects of organizing these events.

PNAS September 4, 2018 115 (36) 8872–8877

<https://doi.org/10.1073/pnas.1717196115>

# Hackweek Mission



# Conversation Cafe



## Round 1 (10 minutes total)

1. Introduce yourself & your institutional affiliation
2. Share your picture using screen share at the bottom of the Zoom window
3. In 90 seconds, tell us where this picture was taken and why it inspires you and your work
4. Stop sharing your screen & nominate the next person to share next

## Round 2 (10 minutes total)

1. In 90 seconds, tell us what you're excited about in your work in the Cryosphere & in Data Science?  
*\*Go more meta than micro with your details*
2. Nominate someone to share next

Make a note of (or Slack chat) those you would like chat with later



# **Code of Conduct**

# **We Continuously Strive to be Inclusive**

Members of this community recognize that we can all contribute to making our shared spaces welcoming, accessible, and inclusive. We will not discriminate against others based on their social or cultural backgrounds or identities. We will work towards minimizing the effects of power imbalances and offering diverse ways to participate as the default, rather than the exception. We will do this by listening deeply, and by staying engaged and curious in other's perspectives, even during challenging conversations.

# **We Empower One Another**

We believe in a culture of fluid collaboration and participation through which we empower one another to explore and exchange knowledge, resources, and opportunities as a community.



# **We Learn and Share**

We will cultivate a space where we can learn from and grow with each other, and we make room for not knowing. We recognize that we are all students and teachers at the same time and we all bring skills and resources that we can share.

# **We Trust - and Hold Space for - One Another**

We make an individual and shared commitment to cultivating hospitable community spaces founded on trust, open communication, and personal accountability. This commitment will support the expression of a range of emotional states including joy, vulnerability, and uncertainty, without fear of incurring harm.

# **We Express Gratitude and Recognition**

Giving thanks and acknowledgement for contributions, whether they be knowledge, experience, or other forms of support, is an important part of how we interact with each other. In tutorials, projects, group presentations and code repositories, we will set up a mutually-agreed upon system for attribution of ideas and effort. When in doubt, we will ask each other if they approve of the ways in which we plan to use and build on each other's ideas and content.

**We Continuously Strive to be Inclusive**

**We Empower One Another**

**We Learn and Share**

**We Trust - and Hold Space for - One Another**

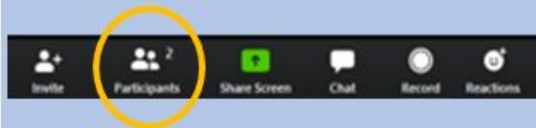
**We Express Gratitude and Recognition**

# Raising Your Hand

Let the presenter know you have something to say or that you're done with a task

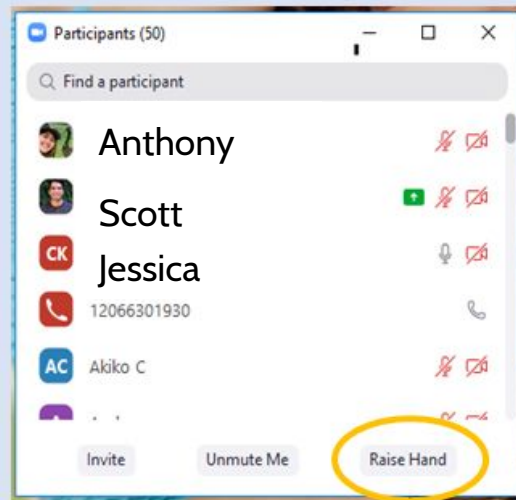
1

On the bottom of your screen, click **Participants**.



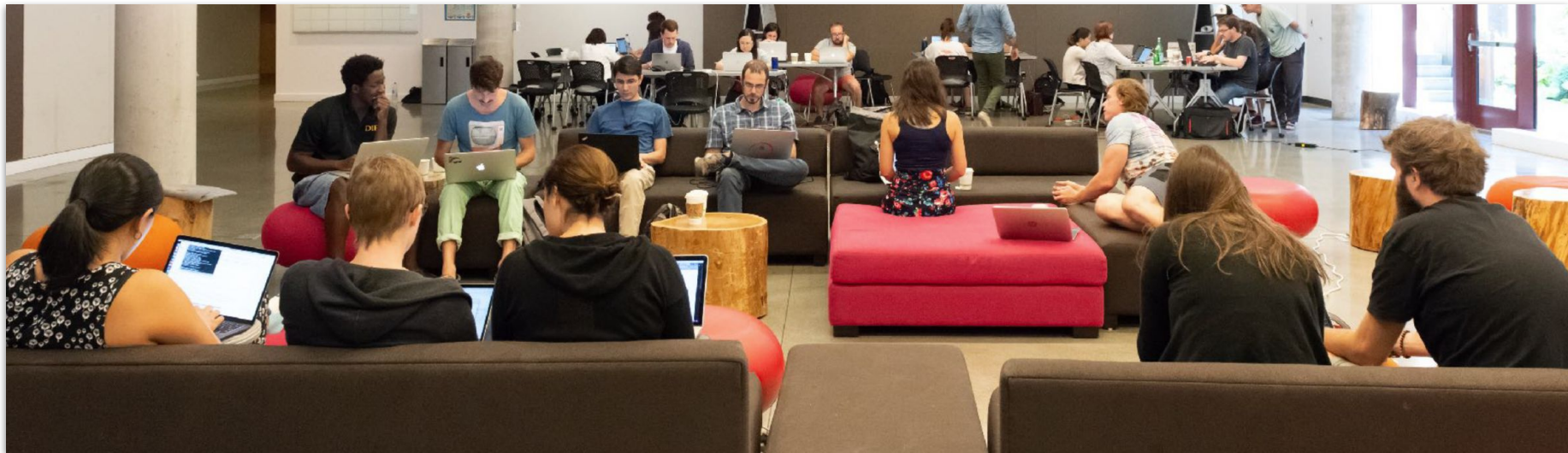
2

At the bottom of the participants list, click **Raise Hand**.



# Projects/Hacking

Share your ideas in the [#project\\_ideas\\_channel](#)!



Break time:

10:30 AM to 11:05 AM

Next tutorial

**11:05 AM to 12:35 PM: ICESat-2 Mission: Satellite, Sensor, and Data**

# Connecting Your Computer Audio

Ensure that you only show up in the participants list once

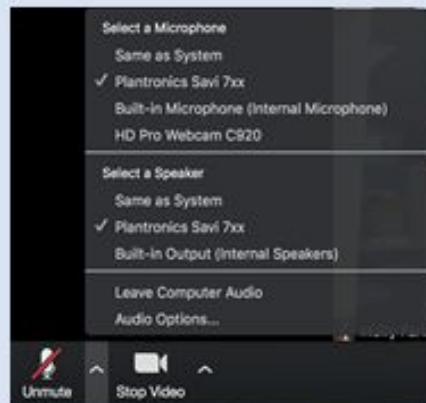
1

When you join, opt to **Join with Computer Audio** when possible.



2

If you initially joined by phone, click the **arrow next to Mute/Unmute**, plug in your headset and select it as both your Microphone and Speaker.





## 11:48 AM to 11:53 AM



# What is exciting about our work in the Cryosphere & Data Science

