



# CMB-S4 Flagship Outreach Program

CMB-S4 Workshop, March 12, 2021



# Brainstorm Questions Focus & Share Ideas

- Session Introduction (10min)
  - Outreach Programs Examples
- Brainstorm in breakout (40 min)
  - Focus questions to encourage ideas
- Share CMB-S4 Flagship Program Ideas (40)



# Collaborations & Outreach Programs

**ICECUBE** – South Pole Neutrino Observatory- Approximately 300 physicists from 53 institutions in 12 countries

- Ex. Flagship Program: IceCube Masterclass – a program for young students held at locations around the world learn about particle astrophysics by doing real research.
- Research Experiences for Undergraduates (REU)- “REU students contribute to maintaining IceCube’s place at the forefront of astrophysics and astroparticle physics research.”
- South Pole Experiment: The IceCube Collaboration’s South Pole Experiment Contest aims to engage middle school students from around the world in science exploration conducted in Antarctica. (virtual)

<https://icecube.wisc.edu/outreach/students/>

# Collaborations & Outreach Programs

**Big Astronomy** is a multifaceted research and outreach project supported by several partners and funded by the National Science Foundation.

## Online Resources

- **Informal Activities:** Big Astronomy Outreach Toolkit, a collection of activities and demonstrations supporting the Big Astronomy planetarium show. This Toolkit has four themes covered within six activities and demonstrations designed for use by amateur astronomers and museum professionals.
- **Astronomy Space for Everyone Banner Activity:** “Becoming an astronomer is one way to learn more about the sky. There are also many other ways to participate in the joy of astronomy – there is space for everyone! How will you engage with our Universe?” (target audiences – child, teen, adult)
- **Partners & Sponsors:** NSF, Abrams Planetarium, AUI, Peoria Riverfront Museum, Aura, Ward Beecher Planetarium and California Academy of Sciences.

# Flagship Program: Institute for the Science of Origins

**Mission:** The Institute for the Science of Origins initiates and conducts scientific research on, educates students about and increases public understanding of the origin and evolution of systems, simple and complex, natural and human, and the applications of that knowledge.

**Goal II:** Promote the scientific understanding of origins:

**IIA:** Serve as an active link, facilitator and convener of collaborations between the producers of origins science and the creators and disseminators of scientific content for the public, such as television, radio, museums and planetariums, and print media.

**IIB:** Produce origins science content for the general public, and for students.

**Goal III:** Educate the discoverers and disseminators of tomorrow:

**IIIA:** Create and implement an undergraduate major in origins that utilizes the resources of the partner institutions and their departments.

**IIB:** Develop and administer inter-disciplinary degree programs at the graduate level.

**IIIC** Provide educational opportunities in origins science for a wide range of undergraduates.

<https://origins.case.edu/>







## Brainstorming Questions:

- What should be the goals of the CMB-S4 collaboration in the areas of education and public outreach?
- What audiences do we want to reach? (target audiences)
- What do we want these audiences to gain from the outreach experiences?
- How can we use CMB-S4 outreach to address inequalities in STEM education?
- How does flagship programming best represent the collaboration? (Also think about including community partners such as museums, planetariums, and local STEM/STEAM outreach organizations.)
- How can we partner with minority serving universities, institutions, and organizations?
- How do you involve CMB-S4 senior members, postdocs, graduate students, staff?
- What would a flagship program look like? (concepts)