The COVID-19 Crisis

Update November 19, 2020
CAVEAT!
I am not THAT kind of doctor.
I study rocks.

Ariel D. Anbar
Professor
School of Earth and Space Exploration
School of Molecular Sciences
Arizona State University
June 29: Restrictions on gatherings, bars, restaurants, etc.
ICU Bed Capacity

https://www.azdhs.gov/

COVID-19 Cases by Age Group

- Less than 20 years: 823
- 20 - 44 years: 1,684
- 45 - 54 years: 674
- 55 - 64 years: 693
- 65 years and older: 688
New Deaths from COVID-19 per Day by US States/Territories, normalized by population

Data: Johns Hopkins University CSSE; Updated: 11/18/2020
Interactive Visualization: https://91-DIVOC.com/ by @profwade
MASK UP ARIZONA

MY MASK PROTECTS YOU, AND YOUR MASK PROTECTS ME.
Where are we headed?
New Confirmed COVID-19 Cases per Day by US States/Territories, normalized by population

Data: Johns Hopkins University CSSE; Updated: 11/18/2020
Interactive Visualization: https://91-DiVOC.com/ by @profwade
Vaccine Progress!


SESE Undergrad Program Update

ASU School of Earth and Space Exploration
Arizona State University
ASU Online

ASU Online is a college of ASU that permits students to earn degrees entirely online.

ASU offers 255 degree programs online, with over 30,000 students enrolled.

In the past few years, ASU has been pushing to offer science and engineering degrees online.

SESE’s new Astronomical and Planetary Sciences BS degree is one of the first natural sciences degrees offered online by ASU, and is the first online astronomy degree offered in the United States.
The Astronomical and Planetary Sciences BS

The online Bachelor of Science in astronomical and planetary sciences program provides you with broad training in the scientific foundations and fundamentals of space exploration, including ongoing advances in the field.

Learners can expect to find careers in fields that value scientific knowledge and complex problem-solving skills. This includes the ability to use modern statistical data analysis techniques. Graduates may find jobs within K-12 STEM teaching, writing and journalism, science policy or statistical data analysis and computer programming.

This online astronomy degree is ideal for individuals who would like to gain a solid understanding of astronomy and planetary science. Because this program focuses on critical thinking and innovative problem-solving, it may prepare you for law school or other graduate school opportunities related to this skill set.

However, if you plan to apply to a graduate program in astronomy or astrophysics or pursue a path as a university professor or professional astronomer, you’ll need additional advanced coursework in mathematics and physics and in-person research experience not currently provided in this degree. You may want to consider ASU’s campus Bachelor of Science in earth and space exploration.
Courses Now

- All physics and math
- Intro Astronomy AST111/112/113/114
- SES106 Habitable Worlds
- SES376/377 Science communications
- AST301 Physics of Astrophysics

Spring 21

- Scientific Programming in Python SES350

Fall 21

- Planetary and Stellar Astrophysics AST321
- A Solar System Journey SES107

Spring 22

- Galactic and Extragalactic Astrophysics AST322
Degree Launch and Growth

The APSBS degree became available for students to enroll on June 6, 2020.

The degree is now tied for the largest SESE undergrad degree (as of this Tuesday).
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New In person options:
MS degree in Exploration Systems Design and Joint 4+1 MS with Fulton Schools of Engineering

- We’re working on new 4+1 MS degree options
- SESE students will be able to do a +1 MS degree in a selection of Fulton degrees (EE and Aerospace at first, but more to come)
- FSE students will be able to do a +1 in a SESE degree (Astro, Geo or ESD)
- ESD MS should be available in Fall 2021, with 4+1 options to follow.
Community Engagement 2020
Community Conversation 11/19/20

Patrick Young on behalf of Karin Valentine, Ric Alling, Meg Hufford, Kim Baptista, Cathy Shappell, docents
Virtual Night Sky

- Zoom webinar every 2 weeks
- Sharing Marston content that participants can take outside on mobile devices and follow along in the sky
- Guest speakers
- >250 active participants each event
Signature Events

• Virtual ESE Day: almost 200 participants, 50 SESE presenters, 22 activities

• New Discoveries Lecture Series - Elizabeth Trembath-Reichert

• Ask Me Anything with Cady Coleman

• Mars 2020 and EMIR launch events

• Fall welcome and recruitment webinars
Virtual Classroom Visits and Online Labs

• Virtual SESE field trips and in-class activities

• Developed and presented by docents in collaboration with Mary Lou Fulton Teachers College

• Schools in AZ and CA

• Labs for online AST courses and Astronomical and Planetary Science BS

• Developing labs for sale to other universities
Gallery of Scientific Exploration and Marston

- Update of Curiosity rover to Perseverance
- Psyche model structurally complete, parts prepared for assembly
- Marston servers upgraded
- Magic Planet software overhaul allows for custom SESE content
SESE Website and Intranet

- Website revamp rollout Dec. 4th
- Staff and grad students please fill out iSearch profiles! Contact Cathy Shappell for help (catherine.Shappell@asu.edu).
- Limited rollout of SESE Intranet on Canvas - guidelines, contacts, forms for business office, HR, etc.
SESE Inclusive Community

COMMUNITY CONVERSATION

NOVEMBER 18, 2020
Meet the Task Force

| Christy Till, Associate Professor and Associate Director for an Inclusive Community |
| Elizabeth Trembath-Reichert, Assistant Professor |
| Phil Christensen, Full Professor |
| Enrique Vivoni, Full Professor and Associate Dean for Graduate Programs |
| Desiree Crawl, SpaceGrant Coordinator |
| Kimberly Baptista, Alumni & Special Events Coordinator |
| Aaron Boyd, LROC research staff |
| Sean Peters, Postdoctoral fellow |
| Christine O’Donnell, Postdoctoral fellow |
| Ed Buie II, Graduate Student |
| Alexa Drew, Graduate Student |
| Miles Enolish, Undergraduate Student |
| Eric Gutierrez, Undergraduate Student |

- Meets weekly
- Highest priority activity is developing a 3-5 year plan to improve equity within SESE structures & communities
- Leading development of a SESE Code of Conduct
- Oversee SESE JEDI Small Grants Program
Reminder!

SESE JEDI Seed Grants are due tomorrow Nov. 20th!

Submit to sesejeditaskforce@gmail.com.

School of Earth and Space Exploration JEDI Seed Grant
--Fall 2020 Application--

Motivation
The School of Earth and Space Exploration solicits seed grant applications that promote the mission statement of the JEDI Task Force: The SESE JEDI Task Force empowers a just, equitable, and inclusive School of Earth & Space Exploration by facilitating and promoting individual action, dialog, education, long-term planning and systemic change.

Who Can Apply?
We encourage applications from the broad SESE community including students, staff, and faculty. Alumni are welcome to co-propose with current SESE students, staff, and/or faculty.

Funding Amount and Relevant Dates
Total funding available for all grants awarded through this call is $2,000. The number of grants awarded will depend on the number and size of the submitted compelling applications. To fund as many grants as possible, we encourage applications with the minimum funding necessary to accomplish goals. We welcome applicants to reach out to the SESE Seed Grant Task Force to discuss their proposed budget. Applications are due by November 20th. We anticipate the first round of selections by the end of Fall term.

Selection Criteria
We encourage all potential applicants to reach out to the SESE Seed Grant Task Force to discuss their proposal or be connected with others with similar objectives in SESE to strengthen individual proposals.

In addition to the Application Elements outlined below, successful applications will endeavor to include the following, as appropriate to the proposed initiative:

- Discussion of relevance to JEDI Task Force mission statement
- Feasibility of implementing the initiative with the funding
- Metrics to evaluate effectiveness of the proposed initiative and discuss the likelihood of the initiative producing desired outcomes
- Include a proposed plan of sustainability of the initiative beyond seed funding
- Be developed with the target audience, rather than for those individuals
- Will discuss the scope of the impact in SESE and beyond (larger scope of impact will generally viewed as more favorable, with some exceptions)
- Articulate the “level of need” (e.g., are there other ways to achieve the desired outcomes besides this initiative?)

Application Elements
Please submit no more than 2 pages, single spaced, 12 point arial font with the following information:

1. Title of initiative
2. Name and email of all applicants
3. Description of program or initiative - this can include goals of the project, why it is needed in SESE, proposed methods, and any evidence that supports proposed
What are microagressions?

“...the brief and commonplace daily verbal, behavioral, and environmental indignities, whether intentional or unintentional, that communicate hostile, derogatory, or negative racial, gender, sexual-orientation, and religious slights and insults to the target person or group” (Sue et al., 2007)
Can you identify microaggressions?

**Alien in One’s Own Land**
To a Latinx: “No, where are you really from?”

**Ascription of Intelligence**
To person of Asian descent, “You’re all good at computers, can you help me with this problem?”

**Color Blindness**
“I don’t see race.”

**Traditional Gender Role**
A teacher asks a student if she is planning to have children.

**Pathologizing Cultural Values/Communication Styles**
To a Black woman: “Why are you always so angry?”

**Myth of Meritocracy**
“Everyone can succeed if they work hard enough.”

**Use of Heterosexist Language**
“That’s so gay.”

“*You Latinos are always so loud.”
Real Microaggressions Witnessed by SESE Members

1. Suggesting that someone achieved their position based on something other than merit (gender, race, etc.)
2. Suggesting that someone will ‘understand better’ once they are more senior
3. Taking credit for someone else’s ideas.
4. Asking where someone is from (“But where are you REALLY from??”).
5. Using ableist language (e.g., dumb, lame, retarded, schizophrenic, insane)
6. Consistently using the incorrect pronouns for someone when they’ve told you what pronouns they prefer.
7. Assuming that an unnamed scientist in a story is male/white.
8. “I know what you’re going through and I’m here to fix it,” from someone with a very different level of privilege.
9. Saying you are “color blind”.
10. Assumed a person could take the stairs, do a “walking meeting”, or walk to a distant location without asking or knowing about their mobility requirements.
11. “You’re not like other XXXXX” as a compliment.
12. Asked me if belonged in the building (asked to see my ID).
13. Refused to use a microphone when someone requested it.
14. Asking a minoritized person to ‘speak generally’ for a group
15. Talked over quieter people because your “opinion” mattered more
17. Failing to directly invite someone who is minoritized to an event.
18. Referring to “illegal immigrants” instead of “undocumented immigrants”.
19. Suggesting to a student that they might not be cut out for the field.
Documented Effects of Microaggressions

Psychological
- Personal relationships
- Safety
- Mental health
- Depression
- Fear
- Trust
- Trauma

Professional
- Access to opportunities
- Personal relationships
- Insecurity
- Productivity
- Recruitment
- Retention
- Advancement

Physiological
- Physical injuries
- Trauma
- High blood pressure
- Weight gain

Economic
- Access to opportunities
- Productivity
- Job insecurity
- Promotion

Societal
- Distrust in leadership
- Hostile climates
- Weakens academic enterprise
Poll Question (Multiple Choice)

I regularly experience or witness microaggressions by members the SESE Community.

• Strongly Agree
• Agree
• Neutral
• Disagree
• Strongly Disagree
SESE’s Current Mission Statement

The mission of the School of Earth and Space Exploration centers on four points.

1. **We conduct pathbreaking research on the Earth, other planets and space.**

   At SESE, our faculty, researchers and students seek to expand the frontiers of knowledge through the exploration of Earth, space, matter, time and life. More and more, successful exploration depends on engineering theory and practice to create technologies for scientific advances. Our programs explicitly emphasize the importance of technology in modern scientific research.

2. **We focus on the education of our undergraduate and graduate students.**

   Our educational aim is to produce and evolve scientists and engineers who can tackle significant problems across traditional disciplines and create new instruments to push out the frontiers of knowledge. SESE students learn the means to advance Earth, planetary and astrophysical sciences.

3. **We reach out to the community and K-12 students and educators with our research and training.**

   Tomorrow’s explorers are in elementary, middle and high schools today. We provide educators of all levels with professional development to advance their understanding of science and technology. We seek to inspire the next generations to be open to science and to understand it both as a quest and as a way to answer questions — not as a set of facts to memorize.

4. **We foster a positive collaborative academic community.**

   We are a community of researchers who look beyond traditional boundaries for big problems to solve, and we invent the means to solve them. Interdisciplinary work requires team support, and we strive to maintain a team-oriented, positive community.
Poll Question:

What (if anything) do you think is missing from SESE’s current Mission Statement regarding SESE’s Inclusive Community values?

(Open Answer)