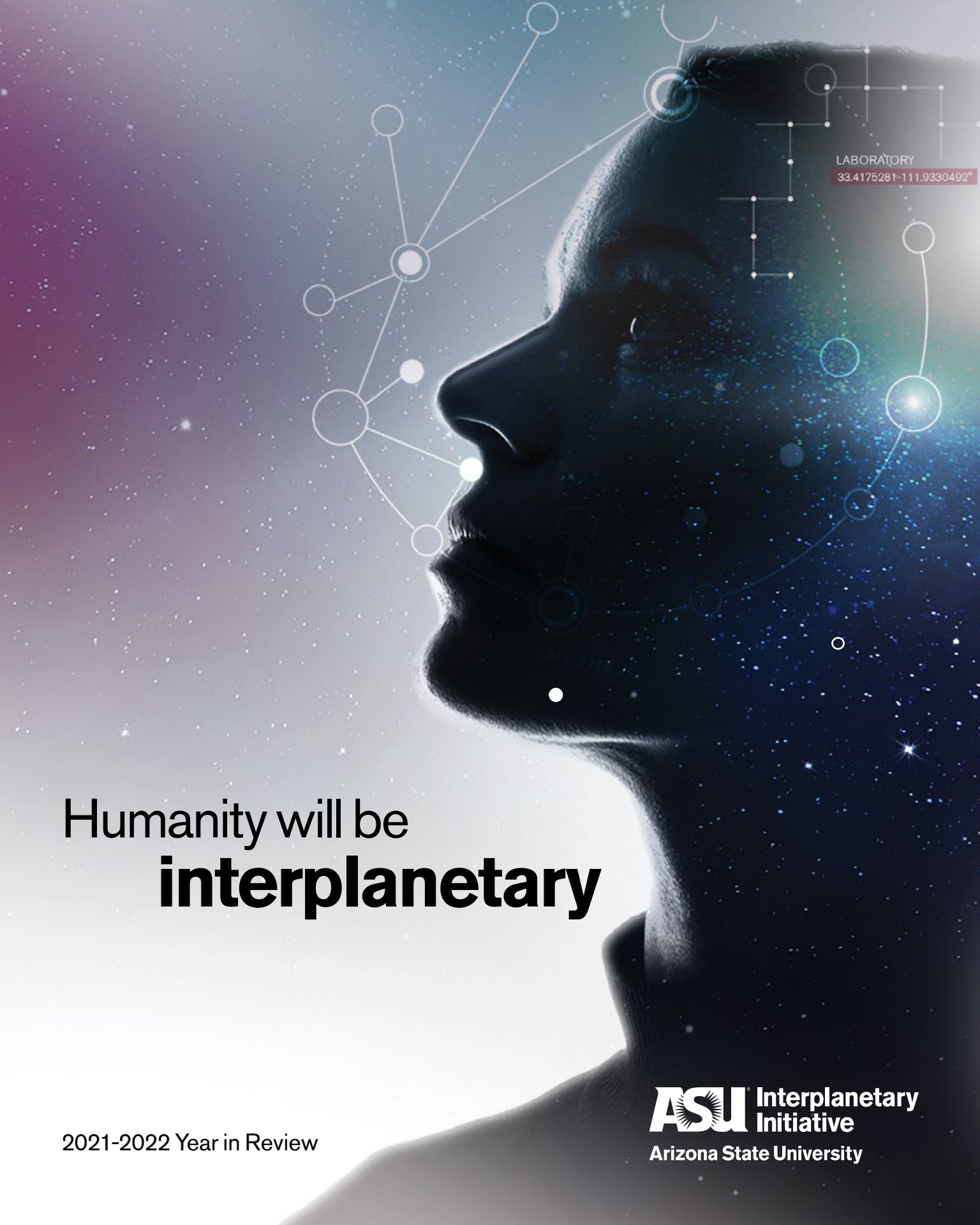


Humanity will be **interplanetary**

2021-2022 Year in Review

ASU Interplanetary Initiative
Arizona State University

ASU's Interplanetary Initiative is a pan-university effort to **build the future of humans in space.**

Learn

When we become skilled in the process of learning, we develop the agency to change the world.

Innovate

When we design teams and projects by focusing on the big questions, we speed up and extend our impact.

Collaborate

We are bringing disciplines and sectors together in new ways to prepare ourselves for the challenges and opportunities of becoming interplanetary.

Table of contents

Note from the **vice president**

Dear friends,

I write to you at the end of an exciting and eventful year at the Interplanetary Initiative. This year, we've advanced partnerships, learning programs, and our community.

In the Fall, we announced a partnership with Blue Origin and Sierra Space to develop Orbital Reef, a low-Earth orbit space station set to launch by the end of this decade. We are leading the University Advisory Council, which brings together 15 universities from across the world to establish guidelines and standards of conduct for ethical research on the station, provide consulting for those new to space research, channel academic research onto Orbital Reef, inform the academic user experience aboard the station, and conduct STEM outreach and education programs.

The Interplanetary Laboratory had continued success through the work undertaken by our student lifeguards and by engaging external partners. Students in the laboratory ran several projects from developing a sensor for the NASA mission ExoCam to CubeSat testing a novel laser communications method for the DORA mission. Our first graduating student lifeguard, Matthew Adkins, landed a job with Blue Origin, which he started in July. He credits his experience in the laboratory as what allowed him to stand out to the interview panel.

We also hosted our first-ever OpenCitizen Gathering, which brought together an innovative group of thinkers and doers to explore a common challenge: how to enable community-based teams to problem-solve in today's complex world. The event, held at Arcosanti, was a partnership between the Interplanetary Initiative, Beagle Learning, and ASU's Learning Enterprise. Participants got the chance to practice the OpenCitizen methodology for learning and taking action and left with inspiration and tools to make change in their community.

We are thrilled that our Technological Leadership program graduated its first students. Parker Cohensitt became the program's first graduate in December, and Miles English walked in May and will graduate in August. We're proud to have provided them with the tools necessary to follow their chosen career paths and make a difference in the world.

Best,

Lindy Elkins-Tanton

Vice President, ASU Interplanetary Initiative

Principal Investigator, NASA Psyche mission

Co-founder, Beagle Learning

Interplanetary Initiative

year in review

2021-2022


LABORATORY
33.424564 , -111.928001

+ Event highlights

Big Questions project launch events

The Interplanetary Initiative hosted two Big Questions project launch events this year. The events brought together members of the ASU community and industry experts to develop questions and solutions surrounding accessibility to space. Participants began by brainstorming their questions, then broke into teams to begin developing a plan to work towards answers. The events yielded 8 pilot projects seed-funded by the Interplanetary Initiative launching next fiscal year.

Deep Space Summit

The Deep Space Summit convened representatives from Artemis 1 CubeSat mission teams on October 29-31, 2021 for a reflection and analysis of the factors that promote and inhibit the success of future Deep Space CubeSats. The Summit engaged the principal investigators, system engineers, and stakeholders for an in-depth examination of shared resources, risk management, standardization and launch vehicle accommodations with the goal of accelerating the future development of interplanetary CubeSats. Insights from the 16 missions including pathfinders, technology demos, and science missions were captured in a white paper that discusses practical solutions that will ensure CubeSats remain a viable component of beyond-Earth orbit missions.

Interplanetary Project Transmission webinars

We hosted two webinars this year showcasing milestone updates from the Interplanetary Laboratory, Technological Leadership academic program, and our pilot projects including: Earth Operations Center, Five Senses in Space, Integrating Space in the Local Economy, Religious Space and Space Exploration and Sustainable Development. You can view the webinars here.

OpenCitizen Gathering

The Interplanetary Initiative hosted the first-ever OpenCitizen Gathering on November 12-14, 2021, which brought together an innovative group of thinkers and doers across 13 organizations, to explore a common challenge: how to enable community-based teams to problem-solve in today's complex world. The event, held at Arcosanti, was a partnership between the Interplanetary Initiative, Beagle Learning, and ASU's Learning Enterprise. Participants got the chance to practice the OpenCitizen methodology for learning and taking action and left with inspiration and tools to make change in their community.

Space Futures Convening

The Interplanetary Initiative hosted its annual Space Futures Convening on January 28-30, 2022 in Phoenix, marking a return to the event being in-person after a year of hosting it online. We gathered some of the best minds in the space industry to explore the biggest questions we can imagine toward forging our future in space. Participants used our Big Questions brainstorming method to collaborate and work toward solving problems surrounding creating an equitable, valuable, and peaceful space future. The convening sparked three new pilot projects with leading space expert contributions from across sectors and disciplines.

ASU 365 Community Union "Dune" movie night

We partnered with ASU 365 Community Union to sponsor a screening of Academy Award-winning "Dune" on the field at Sun Devil Stadium on January 21, 2022. Interplanetary Initiative staff were on hand to tell the public about our work, and student lifeguards gave demonstrations of the LightCube project being worked on in the Interplanetary Laboratory. Astronaut and Interplanetary Scholar Cady Coleman answered questions that had been submitted by the community in a recorded video before the show.

Orbital Reef University Advisory Council meeting

Orbital Reef, a partnership between Blue Origin and Sierra Space that includes a consortium of universities led by Arizona State University, was given a NASA contract for $130M to design a space station for low-Earth orbit. The Interplanetary Initiative is leading 15 universities to plan for research on Orbital Reef. The University Advisory Council convened on January 31, 2022 in Tempe, Arizona to advance its plans for stimulating and channeling academic research onto Orbital Reef in a manner that is accessible to new groups, reaches underserved sectors and is conducted under a robust ethical framework.

Blue Origin recruiting event

The Interplanetary Initiative hosted its first in-person Blue Origin student recruiting event on March 23, 2022 in the Interplanetary Laboratory. A select number of ASU students received invitations to network with Brent Sherwood, Senior Vice President of Advanced Development Programs at Blue Origin, at a private Q&A session. The students learned about what it is like to work at Blue Origin, what they look for in new employees, and the culture they are building. Blue Origin recruiters also hosted a drop-in info session online and on-campus for all students interested in learning more about careers at Blue.

Breakthrough Starshot workshop

Breakthrough Initiatives partnered with the Interplanetary Initiative to host a Breakthrough Starshot meeting on April 25-26, 2022. Breakthrough Starshot aims to demonstrate proof-of-concept for ultra-fast, light-driven nanocrafts, and lay the foundations for a first launch to Alpha Centauri within the next generation. The in-person meeting gathered 30+ experts who exchanged ideas around the development of the Starshot communications sailcraft and ground station transmission and receiving systems.

Mission: Interplanetary podcast

Season two of "Mission: Interplanetary" launched on March 22, 2022. Hosts Astronaut Cady Coleman and scientist Andrew Maynard are back behind the microphone talking to a range of guests from the likes of Blue Origin to MIT Media Lab. Since its inception, the Mission: Interplanetary podcast has racked up 141,000+ downloads.

These events

Beyond Gravity University partnership program

Beyond Gravity launched a new University partnership program with select universities and ASU topped the list. The Interplanetary Initiative hosted an information session on April 18, 2022 with Beyond Gravity's Mike Allen, Global Vice President, Innovation to learn about the new program and subsequently lead the internal call for proposals. The company has a particular interest in navigation, flight computers, space antennas and deep space mechanical systems. The initiative facilitated the submission of 4 proposals from ASU faculty to Beyond Gravity.

programs and engaged **13,000+ people**

Top stories of the year

Technological Leadership program celebrates its first graduate

“The classes are a lot smaller, it feels a lot more personal, and in a way you kind of get to choose what you want to learn. That’s something I’ve really valued and appreciated. It’s made me feel a lot more passionate about being curious and asking questions.”
-Parker Cohensitt, first TL graduate

Student “Lifeguards” in the Interplanetary Lab assist in NASA mission

“As a young engineer, it’s hard to get opportunities to be part of a demonstration flight. It’s very rare that you get to do that, let alone run the project as students, so it was a lot of experience that I couldn’t get anywhere else.” **-Matthew Adkins, Interplanetary Initiative Lab**

Interplanetary Initiative welcomes its first Fellow

"There are many backgrounds and disciplines that come together, bringing together experts from different fields and asking the important questions. Questions like, 'What does new space look like?' New actors are emerging and developing countries have more capabilities than ever in space." **-Theodora Ogden, Interplanetary Fellow**

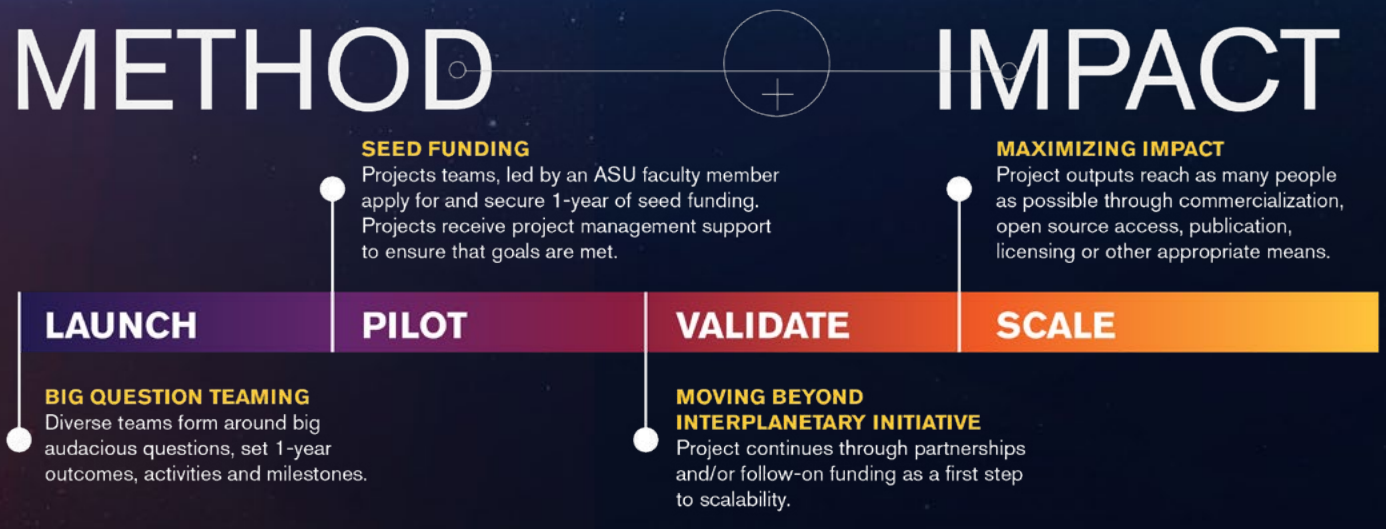
Orbital Reef University Advisory Council advances planning for research on low Earth orbit space station

"We get the chance to create the environment that will enable the research that we're going to be conducting over the coming years, so we're actually putting the pillars in place to enable us to do both exciting research and inclusive research and ethical research." **-Simon Jackman, Orbital Reef Advisory Council member**

+ Big Questions method

What if our questions **changed** the way we create **our future in space**?

ASU Interplanetary Initiative connects disciplines and sectors, working across the university to answer the big question arising from becoming a spacefaring species.



Integrating Space in the Local Economy

What are the governance and economic structures we can use to best integrate space into a local economy using the case of Arizona?

Team lead: Timiebi Aganaba, ASU School for the Future of Innovation in Society

Space as a domain has been the focus of national sovereign interests. Until recently, the "commercialization" of space has been solely focused on nationally-driven requirements in which privately-funded companies render services and technology. Today, the commercialization of space has the opportunity to expand beyond government-driven requirements, under certain conditions. As in most places around the world, "space" has been generally viewed within Arizona as a subsector of Aerospace and Defense. The advocacy groups, consortia, and foundations established over the years to address space have typically focused on education, tourism, and policy development. In contrast, with the commercialization of space, we have an opportunity to connect Arizona's strengths in space with the state's primary economic drivers, for the benefit of local communities.

Impact:

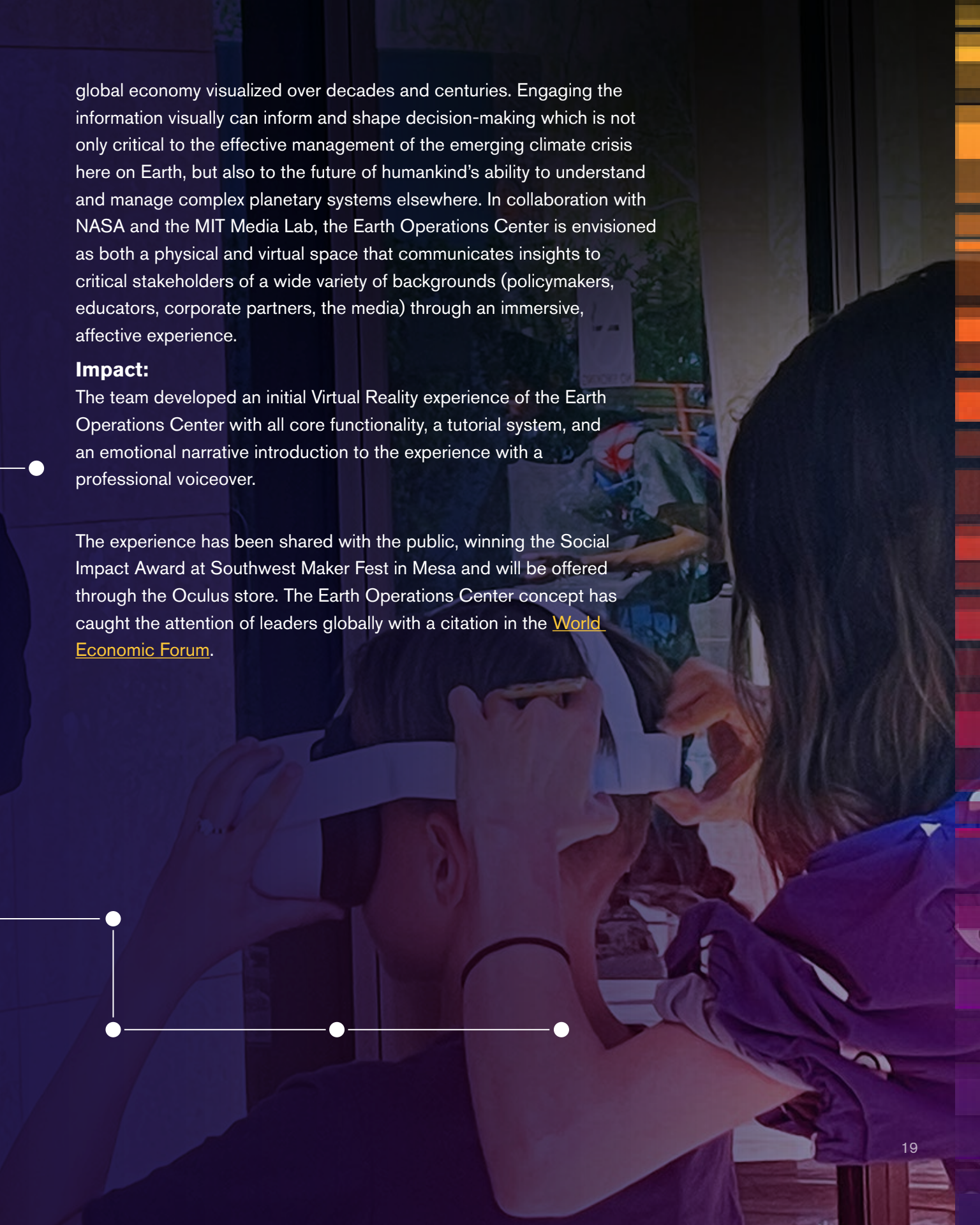
Integrating Space in the Local Economy (ISLE) project brought stakeholders together to design initial solutions that address what Arizona's place should be in the future of space, including novel financing approaches to space development. The workshop activated several organizations to advance these ideas, such as reestablishing an Arizona Space Commission and creating a Business Development Corporation as a financing vehicle for the Arizona Space industry. Watch the workshop video playlist.

Earth Operations Center

How do we become better stewards of "Spaceship Earth?"

Team lead: Jake Pinholster, ASU Herberger Institute

While many organizations around the world are conducting vital research into understanding and modeling climate change, there remains a need for continual and integrated modeling of earth systems and the



global economy visualized over decades and centuries. Engaging the information visually can inform and shape decision-making which is not only critical to the effective management of the emerging climate crisis here on Earth, but also to the future of humankind's ability to understand and manage complex planetary systems elsewhere. In collaboration with NASA and the MIT Media Lab, the Earth Operations Center is envisioned as both a physical and virtual space that communicates insights to critical stakeholders of a wide variety of backgrounds (policymakers, educators, corporate partners, the media) through an immersive, affective experience.

Impact:

The team developed an initial Virtual Reality experience of the Earth Operations Center with all core functionality, a tutorial system, and an emotional narrative introduction to the experience with a professional voiceover.

The experience has been shared with the public, winning the Social Impact Award at Southwest Maker Fest in Mesa and will be offered through the Oculus store. The Earth Operations Center concept has caught the attention of leaders globally with a citation in the World Economic Forum.

Five Senses in Space

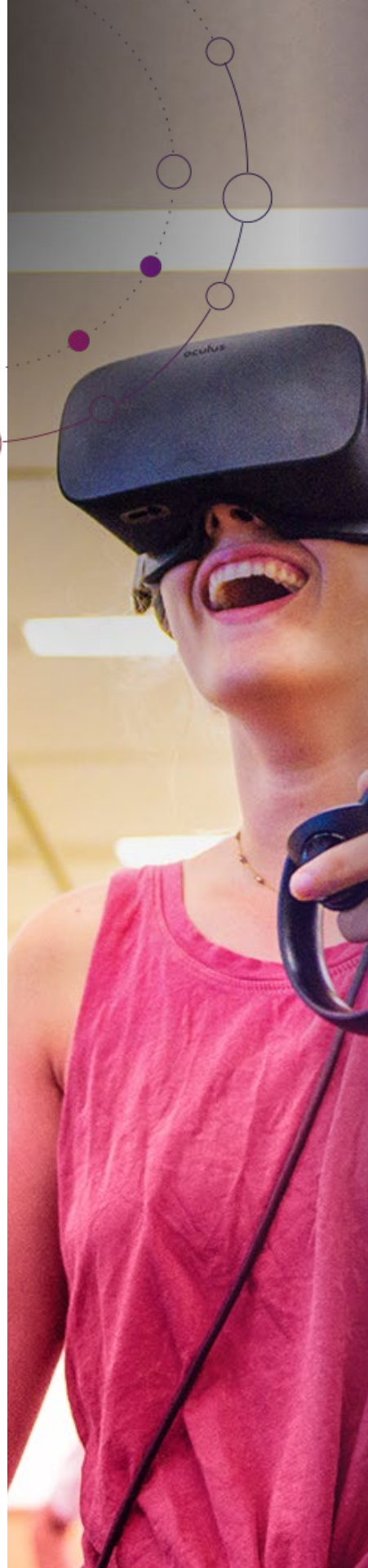
How do we galvanize public and private support for space exploration, an arena that can seem inaccessible to most people?

Team lead: Robert LiKamWa, ASU School of Arts, Media and Engineering

Five Senses in Space is introducing new perspectives on space exploration by stimulating the senses through physical, virtual, and augmented immersion and creating holodeck-like experiences of space here on Earth. Through engagement with different combinations of senses, this project seeks to be broadly accessible for differently abled individuals. The team has created a large, physical Mars Habitat, in which one can experience what it might be like in the future to "live and work on Mars", a set of virtual reality experiences in which one can see and feel what it would be like to walk out of the Mars Habitat and onto the varying terrains of Mars, and a physical smell engine that mimics the smells one is likely to experience on Mars. Through these multi-sensory experiences, Five Senses in Space marries ideas with scientific discovery to fully immerse people, both physically and virtually, in scenarios designed to heighten public support for space exploration.

Impact:

Highly detailed 3D models of rover imagery, including images from state of the art cameras on NASA's Perseverance rover, are being developed and have been used in a new prototype Dreamscape Learn experience where spacefarers travel to the red planet. Also, the smell engine developed for Five Senses in Space will be used to understand how adding olfactory cues to immersive virtual reality learning environments impacts learning as part of a new NSF funded project. Next, the team will bring Mars to the football field. "Mars on the Field" will offer an immersive walkable virtual reality experience that takes place on the physical Sun Devil Stadium field. As users begin at one end zone, they will explore the history of human understanding of Mars.



+Renewed for 2022-2023

Religious Space

What is the relationship between space and religion?

Team lead: Phil Stoesz, Herberger Institute for Design and the Arts

The role of spirituality and religion is often ignored in the academic and scientific oriented world of space exploration. However, religion and collective spiritual meaning-making is a powerful force in cultures around the world and throughout the ages, and will continue to be as humans evolve beyond the Earth's orbit. Religious Space explores the relationship between religious and spiritual practice and space exploration. Leading thinkers across cultural and religious groups were interviewed with key insights captured in a visually engaging collection, over 350 undergraduate students were surveyed about their religious perspectives in the context of space exploration and a small group discussion was held among evangelical christian, baptist, hindu, muslim and hopi faithfuls.

Impact:

The project's work culminated with a webinar: Stories and the Stars where panelists helped enlighten our current and future endeavors in space by diving into our religious and spiritual histories. Recognizing that religion is already operating in space science, economy and politics, this project challenges us to see how our ideas are products of humanity's religious worldviews, and to evolve the stories we operate under here on Earth for a more inclusive and positive future in space.

Space Exploration and Sustainable Development

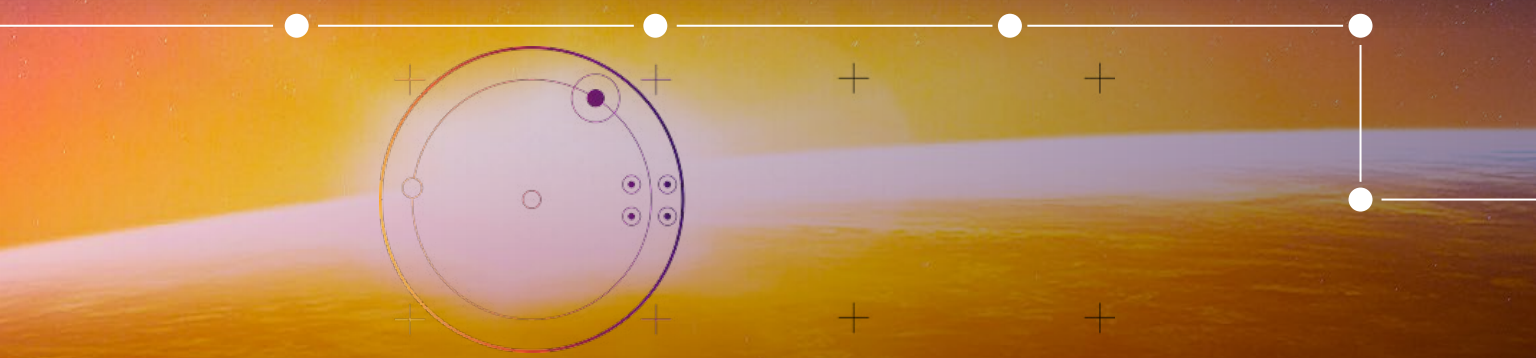
How does space exploration and development impact progress towards achieving the UN SDGs?

Team lead: Eric Stribling, Interplanetary Initiative

The UN Sustainable Development Goals (SDGs) are a set of 17 global development goals and aspirations aiming for a more just, inclusive, and healthy planet by 2030. The SDGs are planetary goals, and thus are not often thought of in the context of space exploration. However, our activities in space directly and measurably impact life on Earth. With the rapid growth of the commercial space sector, this project addresses the increasing need for a framework and practical implementation strategies for the space sector to embed corporate social responsibility into their operations. As a first step, the team conducted a systematic literature review of over 12,000 papers, identifying 4 areas of activity related to the space sector that impact either positively or negatively the SDGs.

Impact:

The team will be publishing their extensive findings detailing how earth observations and remote sensing, new manufacturing capabilities, spinoff technologies and the social implications of human expansion into space advance or impede achieving the SGDs. The Interplanetary Sustainable Futures is VR experience in collaboration with LEONARDO that links the project's insights into space and sustainability to art with digital images that illuminate or inform each of the 17 SDGs. The VR art environment was designed and created in collaboration with the Meteor Studio.



+ Newly funded pilot projects 2022-2023

Preventing Space War

How do we reduce the probability of a cataclysmic space war by redefining the way that space is understood and by laying the foundations for an innovative, interdisciplinary commitment to preserving space as a collaborative domain free from war?

Team lead: Daniel Rothenberg, PhD, Professor of Practice, School of Politics and Global Studies, Co-Director, Center on the Future of War

Space war has been a concern from the mid-20th century onwards. Yet the possibility of space war - whether a war in space or the significant use of space for enabling war - is rapidly increasing at a time when our global society lacks the tools, language, and imagination to guide the conversations we need and develop the systems we require to minimize the probability of armed conflict in space. This project will, for the first time, convene experts and stakeholders to address three topics: understanding the consequences and pathways to conflict in space, open-source intelligence for space domain awareness, and understanding how space, space ownership, and space conflict is conceptualized socially, politically, and culturally.

A Global Heat Map of Space Activities

What is the state of "space activities" globally, across countries, agencies, and projects?

Team lead: Chris Bryan, Assistant Professor in Computer Science, School of Computation and Augmented Intelligence

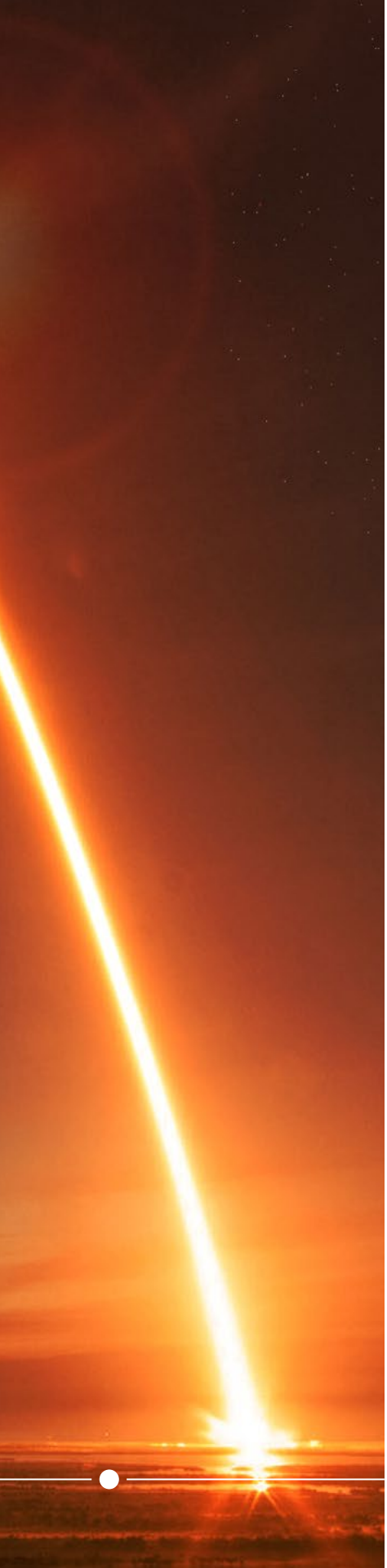
A global perspective of space activity is currently not available. This project seeks to create a viewer of space activities through the lens of their key benefits, drivers, and end goals, tracked at the project level over time, investment level, and geographic location. By visualizing space activities and how they are globally spread across our planet, the heat map will provide a rich perspective about the diversity of space activities globally, and allow stakeholders to engage with such information to help understand and drive future space-related activities. A visual, dynamic, and interactive framing of the benefits of space that will allow a broader set of stakeholders to engage with the information and take part in shaping future projects.

JEDI Space

How do we build a JEDI (just, equitable, diverse, and inclusive) space for all of humanity?

Team lead: Dr. Angela Gonzales, Associate Professor, School of Social Transformation

Many organizations are creating a Diverse, Equitable, and Inclusive (DEI) workplace environment. However, there is little focus on creating DEI access to space. It is still an exclusive club. Even more critical, there is little emphasis on the "Just" aspect of access to space and the space community. This project will seek to answer the question of what a JEDI space means and how to open space access to more of humanity through surveys, conversations and events. An important goal of this project is to inspire action to create a space community that invites people to stay, going beyond metrics to understand the root cause of the metrics.



SpaceHACK for Sustainability

How does space exploration and development impact progress towards achieving the UN SDGs?

Team lead: Eric Stribling, Interplanetary Initiative

Earth Observation (EO) satellite data is currently central to how governments monitor progress on many of the 17 SDGs' (EO is used for nearly half of the UN's 169 targets and 230 indicators.) ASU is uniquely positioned to access troves of satellite data that can be used to develop cutting edge indices on measuring achievement towards the United Nations Sustainable Development Goals (SDGs). This project will use the format of a student-led hackathon to develop novel indices that track progress towards the SDGs.

Global Space Tech

How can key spin off technologies from the space sector help advance new agencies and economies?

Team lead: Eric Stribling, Interplanetary Initiative

Technology transfer is a key to increasing participation of nations and groups who do not currently have strong accessibility to space. In the case of these new agencies, which usually require the mobilization of government resources, there need to be justification of public value. NASA publishes extensively (NASA Spinoff) on space technology spinoff in the United States, but there is far less available research on this phenomenon in emerging spacefaring nations which need to justify related expenditures against other social concerns. This project seeks to contribute to an increasingly important body of literature on space technologies in select developing countries. Understanding the positive and negative impacts of space technology spinoffs and transfers will serve to inform government decision makers in these countries.

+ Project impact by the numbers (2021-2022)

6 Projects active this year; 30 total over Interplanetary's five years.

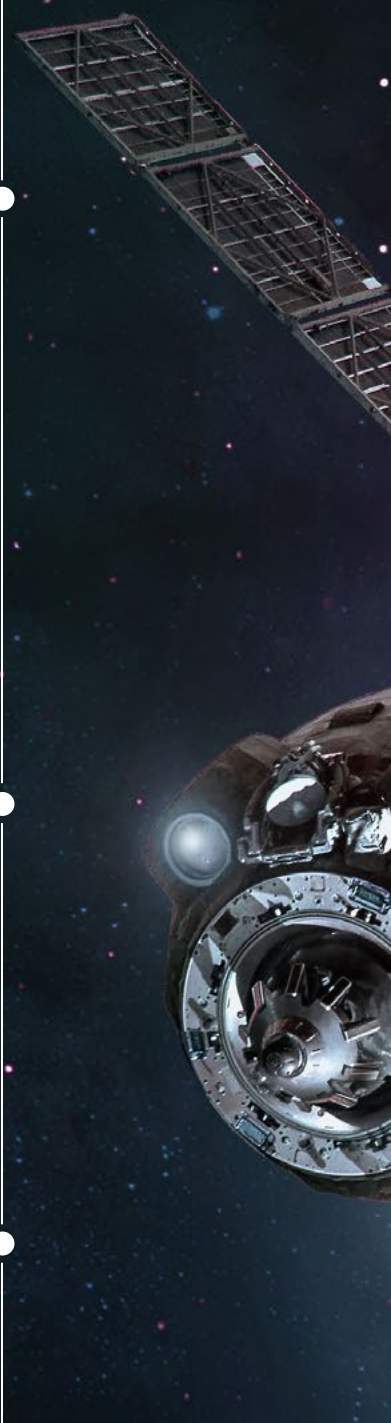
36 External collaborating organizations.

30 Disciplines crossing private, government and university sectors.

92 Team members. [92 total members, 18 of which are students]

$185,980
Interplanetary project seed funding awarded.

$1 Million+
External funding.



30 Projects

ROI 8x.

$1 Million+

Interplanetary project seed funding.

$8 Million+

External funding.

[grants, contracts, and royalties]

Get involved

If you are interested in pilot project collaboration or funding opportunities, please reach out to Chase Kassel at cakassel@asu.edu.

+ Cumulative return on project investments (2017-2022)

+ Interplanetary Laboratory

Building better space hardware solutions to **explore our Earth** and **beyond**.

Now established as a core facility, the Interplanetary Laboratory combines capital equipment with deep faculty expertise and the brightest students for a winning combination to solve critical problems. We invite organizations across economic sectors to join our pan-university network. Together, we can develop customized hardware and software solutions to solve society's urgent space challenges.

Engagement by the numbers

14 events

23 tours

125+ lab users

170+ visitors

Steadfast progress with active projects

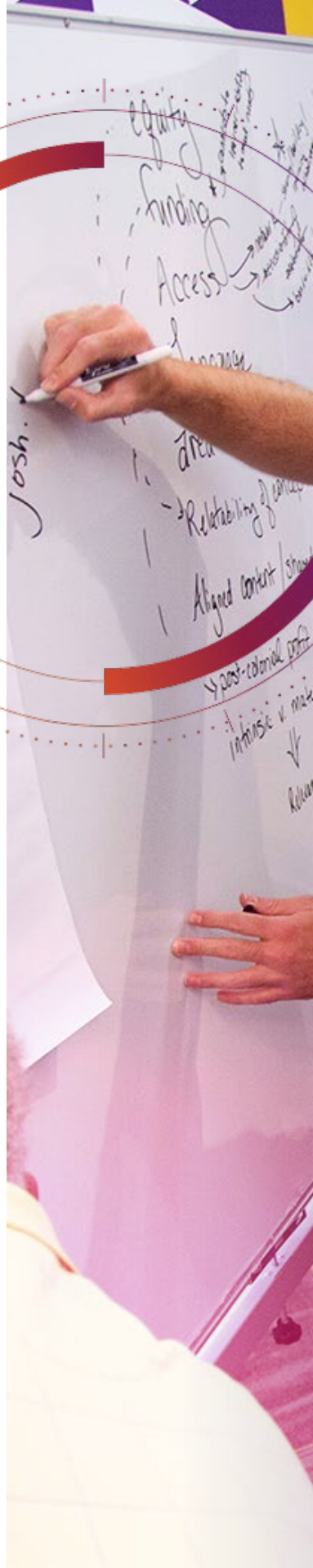
Within the last year, the Laboratory ran six projects including the DORA mission, a CubeSat testing a novel laser communications method, Lightcube, an educational mission allowing people on Earth to interact directly with an orbiting spacecraft, Exocam, finishing in 2022 and providing footage of NASA vehicles landing on extraterrestrial surfaces and capturing rocket exhaust plume data, and Charlotte, a sandbox with lunar regolith simulant designed to run a spider on it. Additional student-run projects include a ground station, telescope tracker and laboratory space support.

Laboratory collaboration lounge hosts corporate, academic and internal customers

As an ideation environment for a wide variety of events, the Laboratory lounge hosted weekly student CubeSat development hours, pilot project meetings, promotional video shoots, student advising sessions and the annual ‘Big Questions’ project launch event.

New Laboratory developments and capabilities

The Laboratory advanced their design, testing and operation capabilities by adding and upgrading prototyping, environmental testing and radio communication facilities. With the purchase of an additional 3D printer, a table top CNC machine capable of fabricating small aluminum parts and a 50 Watt laser cutter capable of cutting various plastics and wood, the Laboratory increased its capacity to prototype. To accommodate the increased volume of mechanical prototyping, they added a second CAD station providing a second resource for creating the computer models needed for mechanical parts. They also increased their testing capability by installing a cubesat mount on their vibration test facility and improved their Thermal Vacuum (TVAC) chamber to reach the high vacuum level of 10-4 Torr and a broader temperature range for reasonable space environmental testing on Earth.



Student lifeguard involvement

The Laboratory started tracking student badge swipes in January of 2022 with 300+ total swipes in the spring semester. Student lifeguard Matthew Adkins graduated in May with his masters in Mechanical Engineering and got a job working with Blue Origin, which he credits to his work in the laboratory.

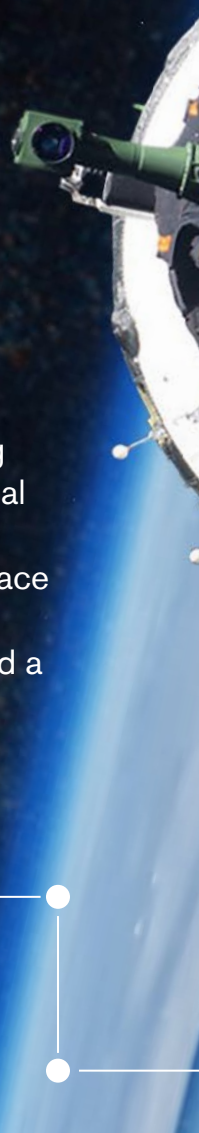
Get involved

If you're interested in exploring funding opportunities or utilizing the lab's facility, please reach out to Danny Jacobs at dcjacob2@asu.edu.


ASU Interplanetary Initiative
Arizona State University

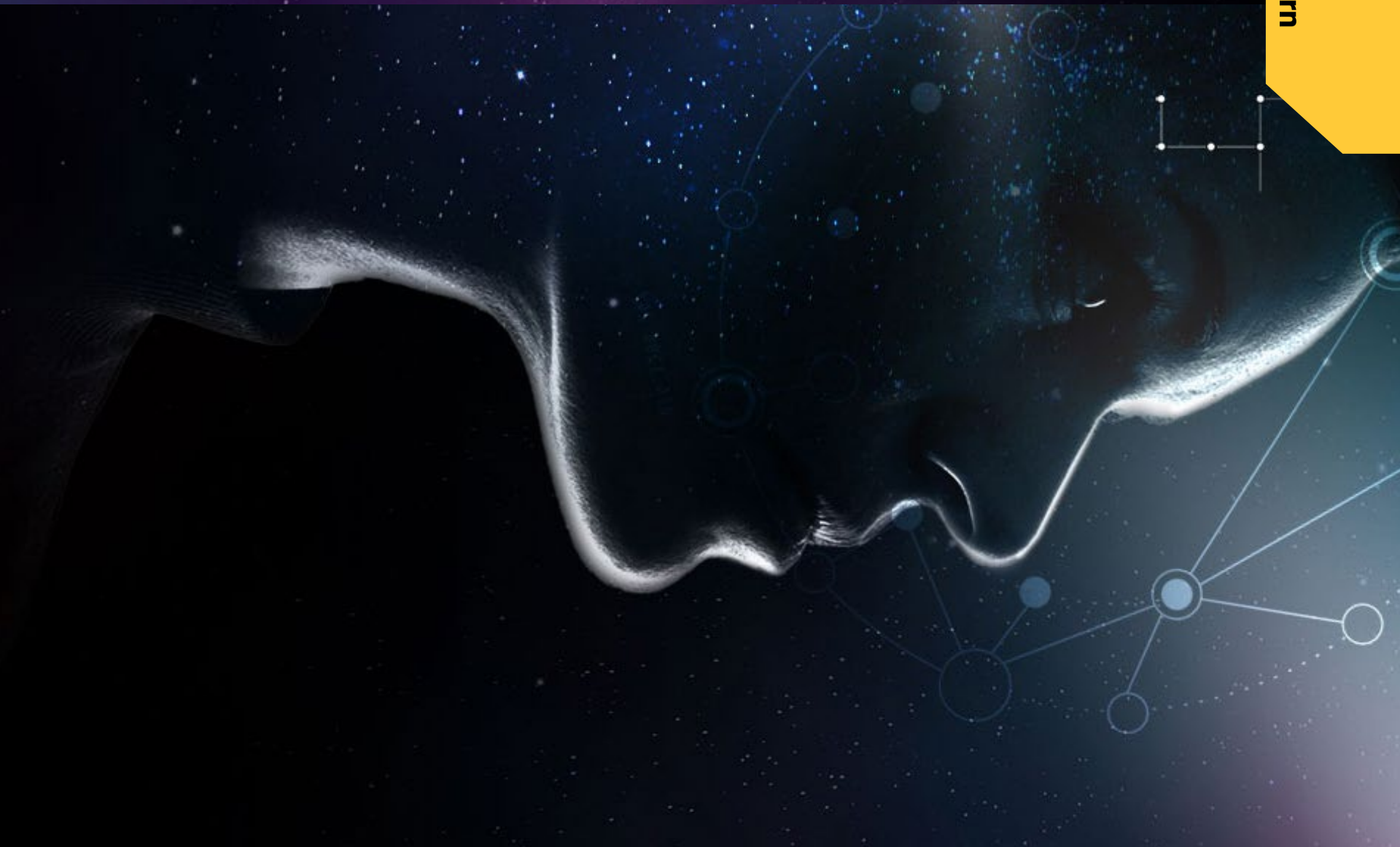
+ Interplanetary Fellowship

Pursuing **bold, interdisciplinary projects** and **thinkers** to further our **positive space future**.



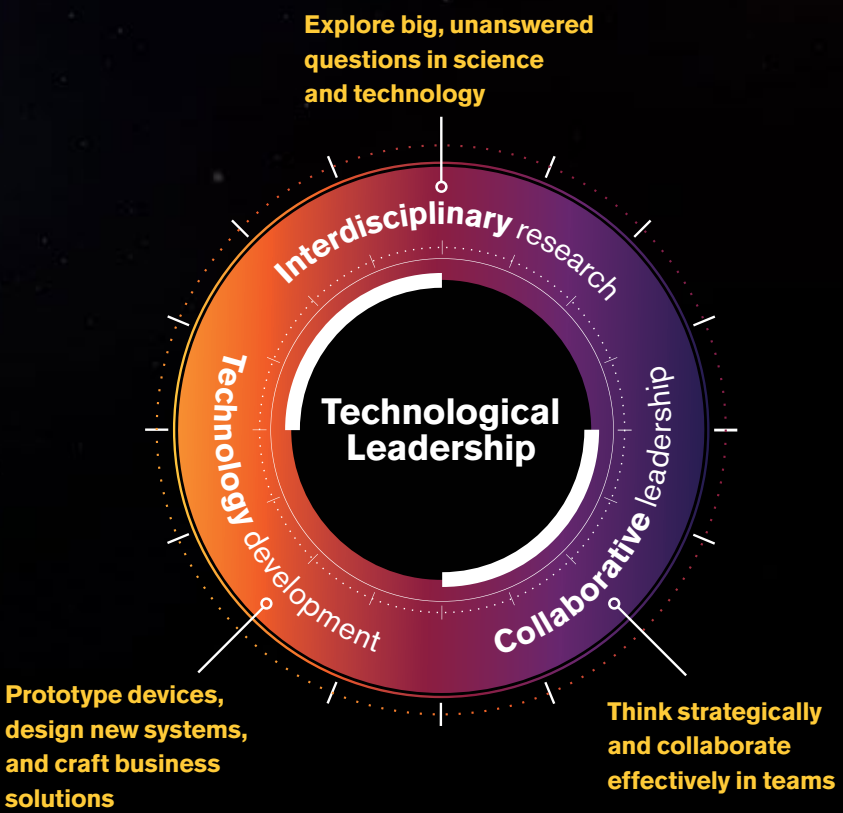
This year, we welcomed Theodora Ogen as our first Interplanetary Fellow. One of the themes for the fellowship was “How can we bring space agencies and economies to new countries?” Ogden’s proposal entitled “New Space Agencies and Economies” looked at both developing and developed countries and identified ways to make space more inclusive, while considering the risks and potential threats of having more actors in that space. Her work resulted in this article and a final report.

+ Interplanetary Initiative Learning Programs



Preparing the **problem-solvers** of the **future**.

Our educational endeavors foster student agency and empower learners to become the leaders and collaborative problem-solvers of tomorrow.



Technological Leadership, B.S. and *new* minor

We're proud to have wrapped up the second academic year offering our innovative Bachelor of Science in Technological Leadership degree. This year, we celebrated the program's first two graduates—Parker Cohensitt and Miles English—and grew our active student population by 32%. Parker landed a job with Hanger, a large manufacturer of orthotics and prosthetics. As a computer design technician, Parker customizes 3D designs for patients. Our current students have also landed a variety of exciting internships at organizations like American Express, Skysong Innovations, Stellar Amenities, and the Office of the U.S. Chief Technology Officer.

We're also thrilled to be launching a brand new minor in Technological Leadership, offered both on-ground and online. Through a series of engaging and hands-on courses, this minor complements and enhances a student's existing program of study with key skills in collaborative research, technology design and interdisciplinary leadership. We welcome students from all majors to join us!

Designing & Making for an Interplanetary Future course

This past fall, we launched an exciting new hands-on making course, IPI 241: Designing and Making for an Interplanetary Future, and we're proud that instructor Eric Stribling received the Spring 2022 ASU Graduate and Professional Student Association (GPSA) Teaching Excellence Award for this class!

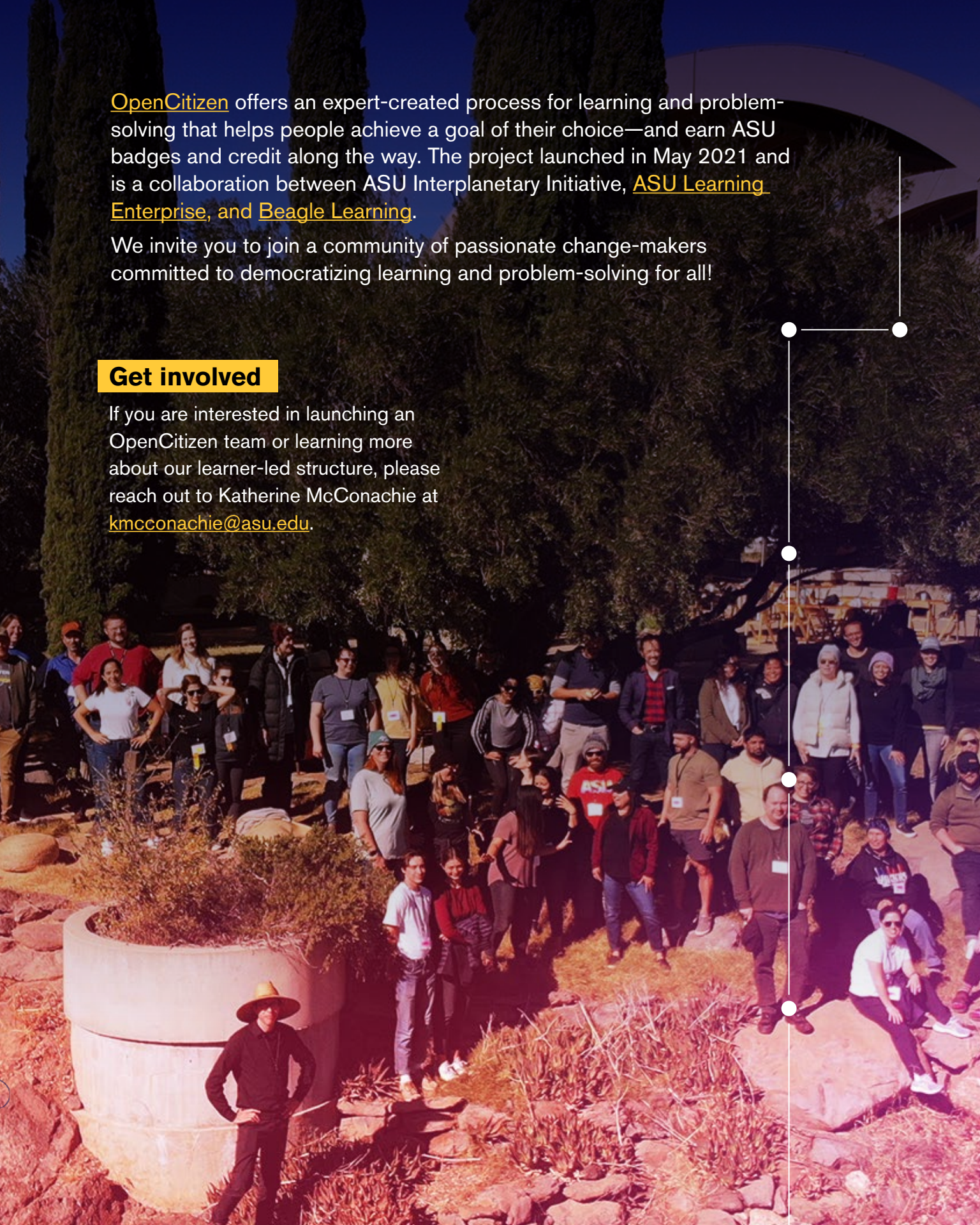
In this course, students gain basic proficiency in the mechanical, electrical, computer programming and design aspects of technology development in makerspaces, through creative projects that relate to aerospace engineering, space exploration, and an inclusive, interplanetary future. The course is available both on-ground and online, and you can learn more about the course development process by listening to this episode of the EdPlus Course Stories podcast.

Online Undergraduate Research Scholars (OURS) program

This spring, we were honored to be awarded an Online Undergraduate Research Scholars (OURS) program grant from The College of Liberal Arts and Sciences and EdPlus to support ASU Online student involvement in our Interplanetary Initiative research projects. Launching in Fall 2022, this program will train students in key interdisciplinary research skills as well as support their career growth and professional development.

+OpenCitizen

Training **individuals, teams, and organizations** on the processes for learning and problem-solving needed for **communities to thrive**.



OpenCitizen offers an expert-created process for learning and problem-solving that helps people achieve a goal of their choice—and earn ASU badges and credit along the way. The project launched in May 2021 and is a collaboration between ASU Interplanetary Initiative, ASU Learning Enterprise, and Beagle Learning.

We invite you to join a community of passionate change-makers committed to democratizing learning and problem-solving for all!

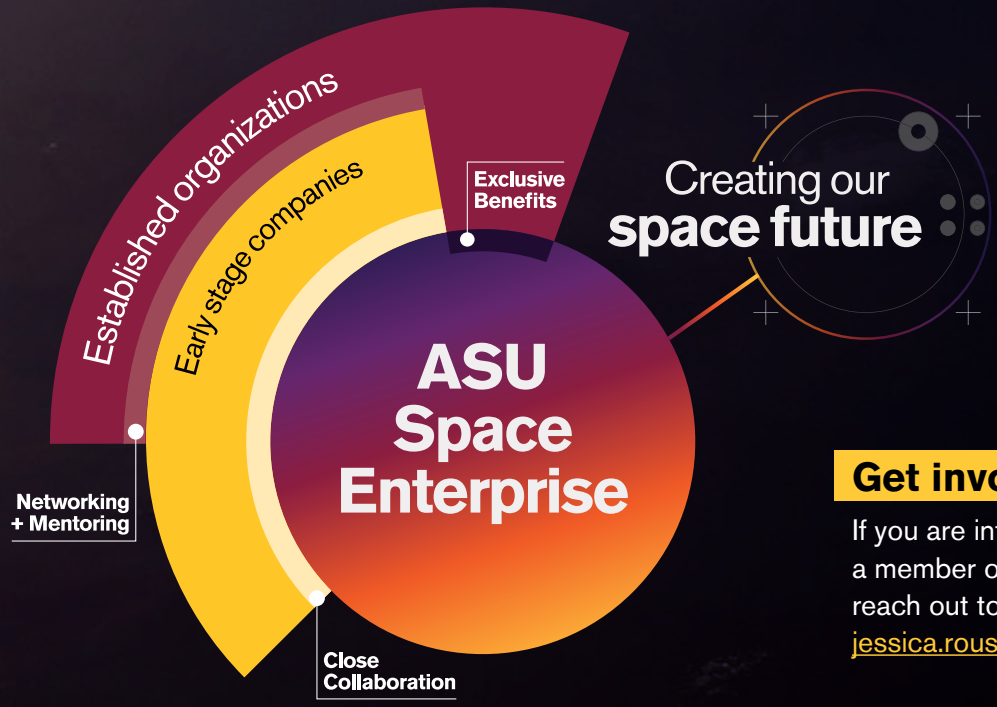
Get involved

If you are interested in launching an OpenCitizen team or learning more about our learner-led structure, please reach out to Katherine McConachie at kmcconachie@asu.edu.

ASU Space Alliance

Creating our Space Future across disciplines, sectors and cultures.

Meaningfully engaging the private sector to advance humanity's future in space is a priority at the Interplanetary Initiative. We launched the ASU Space Alliance to give our industry partners easy entry into the rich space ecosystem of ASU. Alliance members have the opportunity to engage broadly across ASU to advance their workforce, product and business development goals. View detailed benefits.

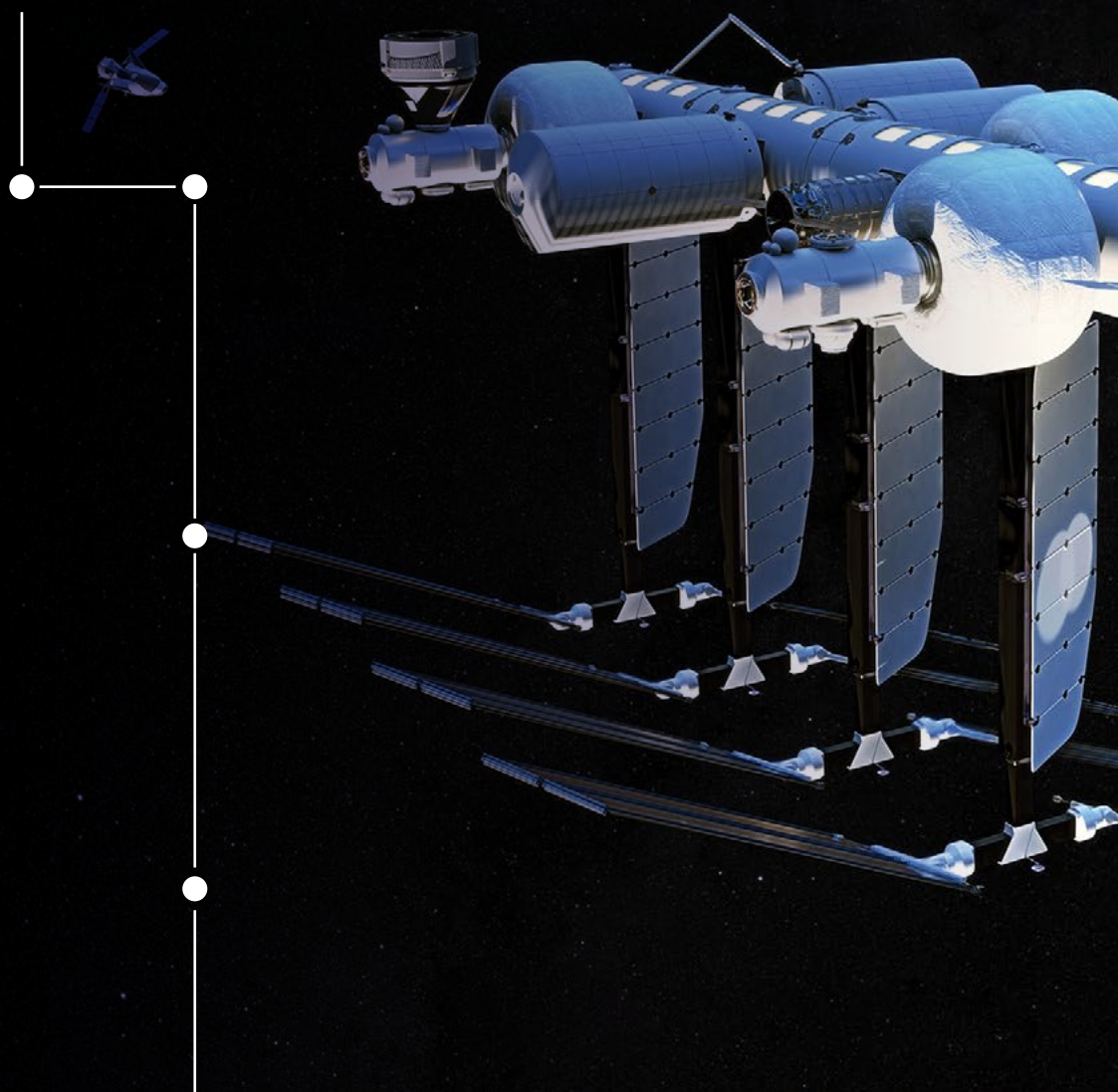


Get involved

If you are interested in becoming a member or learning more, please reach out to Jessica Rousset at jessica.rousset@asu.edu.

Orbital Reef: University Advisory Council

We announced a partnership with Blue Origin and Sierra space this year to collaborate on a low-Earth orbit (LEO) space station, called Orbital Reef, which received $130 million in funding from NASA through a funded Space Act Agreement. The Interplanetary Initiative is leading the University Advisory Council. The newly-formed 15-member Council brings together leading universities in space exploration, microgravity research and human spaceflight from around the globe. They will focus on advocating for the academic community's needs, stimulating broad participation in research in LEO, advising novice researchers, evolving standards of conduct, and leading STEM outreach. The Council has held two meetings to kickstart its work including an in-person and hybrid meeting at ASU's Tempe campus in January to define its first year goals.



Interplanetary Award

The idea behind the Interplanetary Award is to encourage anyone in the world to shape our space future by sharing the stories of how people dream and create solutions for interplanetary humanity across all fields of human endeavor. Our first award, made possible by the generous gift from the Shojaee Foundation, recognized outstanding achievement in CubeSat delivery by a novice team. A $7,500 cash prize was awarded to a student team from the Universidad del Valle de Guatemala. Guatemala has no aerospace programs, and the team behind the Quetzal-1 CubeSat overcame many obstacles: lack of funding, a cultural fear of failure, a lack of physical space (they started in the cafeteria!), and inexperience at all levels. Despite these hurdles, over the course of six years, the resourceful tight-knit team pushed through. In early March 2020, the bars in Guatemala turned the channel away from football to watch the successful launch of Quetzal-1, which stayed active in space for 211 days, making Guatemalan scientific history.
Read their full story and meet the team.

Team


xploration
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Our team is built on character, rooted in deliberation, and energized through action. Respect, curiosity, and inclusivity drive our culture and the space futures we seek to create.

We strive to embrace diversity in all its forms, including race, ethnicity, gender identity, sexual orientation, religion, nationality, age, ability, veteran status, and neurotype. We believe achieving greater diversity in our faculty, staff, and partners will advance our mission to create positive space futures.

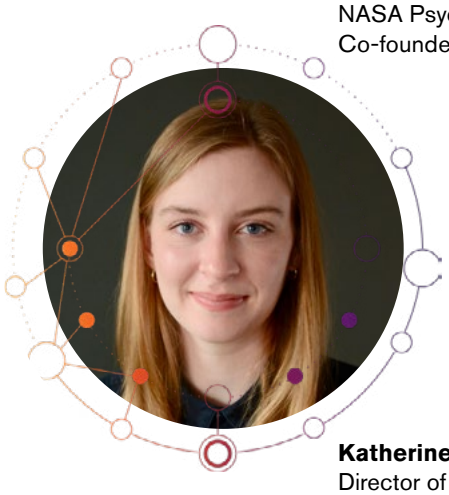
Interplanetary motto: **Everyone is invited all the time!**

Team

Michael Crow
ASU President
Co-chair,
ASU Interplanetary Initiative

Lindy Elkins-Tanton
Vice President and Co-chair,
ASU Interplanetary Initiative
Principal Investigator,
NASA Psyche mission
Co-founder, Beagle Learning

Jessica Rousset
Deputy Director,
ASU Interplanetary Initiative



Katherine McConachie
Director of Learning,
ASU Interplanetary Initiative

Lance Gharavi
Associate Director

Daniel Jacobs
Associate Director

Evgenya Shkolnik
Associate Director

Laura Craft
Business Operations Manager

Juana Garcia
Business Operations Manager

Kennedy Gourdine
Administrative student worker

Alicia Hayden
Sr. Academic Advisor

Catherine Johnston
Project Management Assistant

Chase Kassel
Portfolio Manager

Theodora Ogden
Interplanetary Fellow

Sona Seely
Executive Assistant

Eric Stribling
Instructional Professional

Taryn Struck
Sr. Program Manager

Sally Young
Sr. Communications Specialist

Matthew Adkins
Student Lab Lifeguard

Joe DuBois
Special Projects Engineer

Chandler Hutchens
Student Lab Lifeguard

Ashley Lepham
Student Lab Lifeguard

Christopher McCormick
Student Lab Lifeguard

Benjamin Weber
Student Lab Lifeguard

Advisory Board

Lisa B. Callahan
Vice President and General Manager of Commercial Civil Space, Lockheed Martin Space

Rejane Cantoni
Interactive Installation Artist

Tracy Drain
Flight Systems Engineer, Jet Propulsion Laboratory

Tanja Masson-Zwaan
President, Emerita of the International Institute of Space Law (IISL)

Rob Meyerson
Aerospace Consultant

Nnedi Okorafor
Nigerian-American writer

Amy Salzhauer
Founder and Managing Partner, Good Growth Capital

Jessy Kate Schingler
Founder and Chief Policy Analyst, Open Lunar Foundation

John Thurmond
Principal Advisor, Hess

Scott Webster
Co-founder, Executive and Director, Orbital Sciences Corp.

Affiliated Faculty

Timiebi Aganaba
ASU School for the Future of Innovation in Society

Greg Autry
Clinical Professor (FSC) Thunderbird School of Global Management

Diana Ayton-Shenker
ASU School for the Future of Innovation in Society

Jim Bell
ASU School of Earth and Space Exploration

Jeffrey Cohen
Dean of Humanities, the College of Liberal Arts and Sciences

Cady Coleman
ASU School of Earth and Space Exploration

Kevin Corley
ASU W.P. Carey School of Business

Lenore Dai
ASU School for Engineering of Matter, Transport and Energy

Robert LiKamWa
ASU School of Arts, Media, and Engineering

Phil Mauskopf
ASU School of Earth and Space Exploration

Andrew Maynard
ASU School for the Future of Innovation in Society

Joe O'Rourke
ASU School of Earth and Space Exploration

Jake Pinholster
ASU Herberger Institute

Celebrating our team member's achievements

Interplanetary Initiative Instructor Eric Stribling was selected to receive the Spring 2022 ASU Graduate and Professional Student Association (GPSA) Teaching Excellence Award for his course IPI 241: Designing and Making for an Interplanetary Future. He and his wife Caitlin also welcomed a baby girl!

Associate Director Danny Jacobs received the prestigious Faculty Early Career Development (CAREER) program award.

Associate Director Lance Gharavi was promoted to full professor in the school of Music, Dance and Theater.

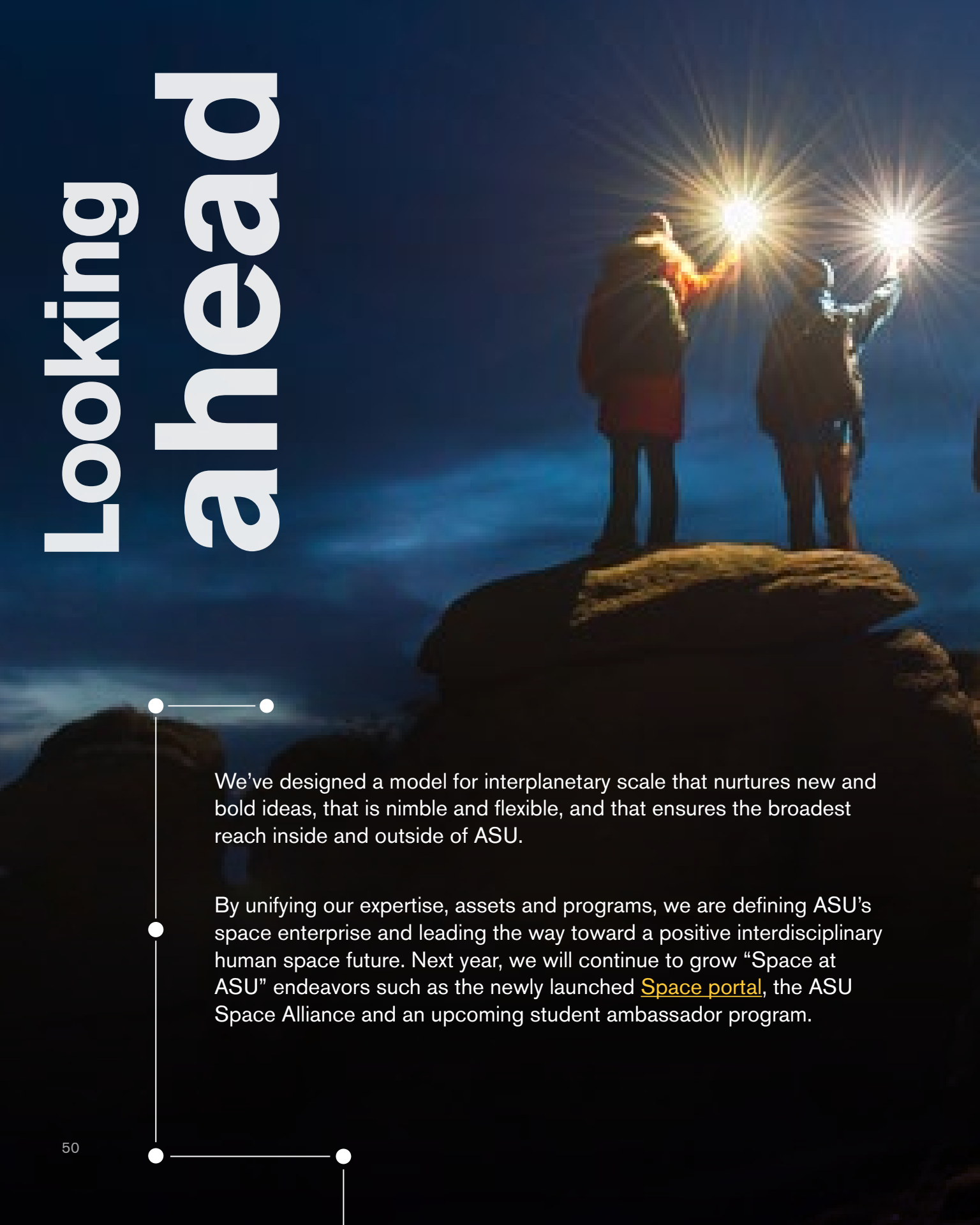
Project Management Assistant Catherine Johnston successfully defended her undergraduate thesis.

Vice President Dr. Lindy Elkins-Tanton was chosen as one of four Regents Professors for 2022, the highest faculty honor one can achieve.

Sr. Communications Specialist Sally Young enrolled in the Digital Audience Strategy master's degree program at ASU and bought her first home.

Sr. Program Manager Taryn Struck and **Sr. Engineer, Interplanetary Laboratory Joe DuBois** celebrated 5 years working for ASU.

Looking ahead



We've designed a model for interplanetary scale that nurtures new and bold ideas, that is nimble and flexible, and that ensures the broadest reach inside and outside of ASU.

By unifying our expertise, assets and programs, we are defining ASU's space enterprise and leading the way toward a positive interdisciplinary human space future. Next year, we will continue to grow "Space at ASU" endeavors such as the newly launched Space portal, the ASU Space Alliance and an upcoming student ambassador program.

We look forward to driving new connections, collaboratively expanding the ASU space enterprise, deepening our engagement with a visionary community of space sector leaders and scaling the impact of our proven programs and processes.

ASU Interplanetary Initiative
Arizona State University

Thank you
for your support

We are creating one possible vision for the New American University, and this venture will help keep ASU at the forefront of both the space enterprise, and of innovation in education.

To learn more about how you can get involved with the Interplanetary Initiative, please visit Interplanetary.asu.edu or click here to subscribe.

ASU Interplanetary Initiative is a unit of ASU Knowledge Enterprise.