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Six teams selected as awardees of the inaugural University of Arizona Big Idea Challenge



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Tomás Díaz de la Rubia, U of A senior vice president for research and partnerships, delivers remarks at the May 12 pitch event for the Big Idea Challenge. Six teams, all made up of experts from across campus, have been chosen as the challenge's inaugural awardees.

Leslie Hawthorne Klingler/Office of Research and Partnerships

Six teams of University of Arizona experts who presented proposals to accelerate transdisciplinary projects with the potential to transform lives, shape policy, drive economic impact and provide training for the next generation of talent have been chosen as the [**2025 Big Idea Challenge**](#) (<https://research.arizona.edu/impact/big-idea-challenge>) awardees.



One of the awarded teams presented a proposal to advance terraformation, or human development, on Mars.

Leslie Hawthorne Klingler

Administered by the [Office of Research and Partnerships](https://research.arizona.edu/) (<https://research.arizona.edu/>), the inaugural challenge generated strong engagement with 72 proposals submitted representing 19 units across the university. Submissions came from teams spanning a broad range of career stages, from undergraduate students to senior faculty. The proposals addressed six overarching focus areas: data, information systems and artificial intelligence; defense and national security; energy and environmental sustainability; the future of health and biomedical sciences; the human experience; and space sciences.

Fourteen finalist teams out of the initial 72 were then chosen to present their ideas in a venture capital-style pitch event on May 12 at the Grand Challenges Research Building.

ORP will provide \$250,000 over two years and strategic guidance to the finalists to support transformative research that seeks novel solutions to grand challenges.

Bringing together perspectives from health care, defense, venture capital, research and innovation sectors, the selection panel included:

- Tomás Díaz de la Rubia, U of A senior vice president for research and partnerships
- Dr. Corey Casper, chief research officer at Banner Research
- Karla Morales, vice president of Southern Arizona at the Arizona Technology Council
- Dan Geraci, CEO and president of FreeFall Aerospace
- Alex Rodriguez, CEO of FreeFall 5G, Inc.
- Fletcher McCusker, CEO of UAVenture Capital
- Mary O'Reilly, vice president of bioscience research programs at the Flinn Foundation
- Katharine Zeiders, professor of human development and family science at the [Norton School of Human Ecology](https://norton.arizona.edu/) (<https://norton.arizona.edu/>)

The awardees



Matt Mars, professor and interim head of the Department of Public and Applied Humanities, during his team's Big Idea Challenge pitch of their project to reduce reliance on nitrogen fertilizer in agriculture.

Leslie Hawthorne Klingler

The panelists based their final selections on how well they deemed that the projects reflected transdisciplinary research that crosses traditional academic boundaries, integrating perspectives from science, engineering, business, social sciences, arts, design and humanities to create holistic solutions to global challenges. In addition, teams needed to illustrate how projects would nucleate teams and ideas and launch high-impact, large-scale research efforts with the power to attract major external funding.

"The teams selected as awardees of the 2025 Big Idea Challenge exemplify the kind of visionary thinking and convergent research that define Arizona's research enterprise," said Tomás Díaz de la Rubia, senior vice president for research and partnerships. "They are not only pushing scientific boundaries, they are building solutions with real-world impact for Arizona and the world."

The projects awarded, and the U of A experts behind them, include:

- **Convergent Digital Health for Remote Access (CoDiRA):** Srikar Adhikari (Department of Emergency Medicine) with Vignesh Subbian (Department of Biomedical Engineering), Shu Fen Wung (College of Nursing), Shravan Guruprasad Aras (Center for Biomedical Informatics and Biostatistics), Nirav Merchant (Data Science Institute), Nicole Yuan (Department of Health Promotion Sciences) and Lifeng Lin (Department of Epidemiology and Biostatistics)
- **Summoning Microbial Allies to Reduce Nitrogen Fertilizer Dependency in Modern Agriculture:** Mark Beilstein (School of Plant Sciences), Rebecca Schomer (School of Plant Sciences), Matthew M. Mars (Department of Public and Applied Humanities), Claire Darnell McWhite (Department of Molecular and Cellular Biology)
- **Making Space for off-Earth Scalable Cloud Computing and Data Infrastructure:** Krishna Muralidharan (Department of Materials Science and Engineering), Robert Norwood (Wyant College of Optical Sciences), Karthik Kannan (Eller College of Management), Roberto Furfaro (Department of Systems and Industrial Engineering), Elizabeth Baldwin (School of Government and Public Policy)
- **From Early Earth to Mars: Advancing an Integrated 'Landscape Terraformation Science' of How Life Transforms Planets with a Multi-scale Collaboratory Digital Twinning of Biosphere 2:** Scott Saleska (Department Ecology and Evolutionary Biology), Jennifer L. Croissant (School of Sociology), Cristian Roman Palacios (College of Information Sciences), Solange Duhamel (Department of Molecular and Cellular Biology) and Ken McAllister (College of Humanities)
- **Heat and Health Resilience Innovation Consortium:** Amelia Gallitano-Mendel (College of Medicine – Phoenix), Freya Spielberg (College of Medicine – Phoenix), Kacey Ernst (Department of Epidemiology and Biostatistics), Heidi Brown (Department of Epidemiology and Biostatistics) and Mona Arora (Department of Community Environment and Policy)
- **Invest in TIME! – a New \$4M University of Arizona Facility Poised for Global Leadership in Interdisciplinary Earth Hazards Research:** Charlotte Pearson (Laboratory of Tree-Ring Research and School of Anthropology), Bryan Black (Tree Ring Lab), Joe Giacalone (Department of Planetary Sciences and Lunar and Planetary Laboratory), Soumaya Belmecheri (Tree Ring Lab), Ashraf Moradi (Department of Planetary Sciences and Lunar and Planetary Laboratory)

Selected teams will receive support from U of A Research Development Services, Lewis-Burke Associates and Foundation Relations to identify funding opportunities. Additional support for technology transfer and public engagement will be available through [Tech Launch Arizona](#) (<https://techlaunch.arizona.edu/>) and [Tech Parks Arizona](#) (<https://techparks.arizona.edu/>).

Seed support for all finalists

ORP will also provide the remaining eight finalist teams with \$5,000 in seed funding to continue advancing their proposals.

"We are committed to supporting all the finalist teams that stepped forward with courage and creativity," Díaz de la Rubia said. "Each of these proposals represented the spirit of service, collaboration and impact that defines our institution."

Looking to 2027

As a signature ORP initiative, the challenge will return in 2027 with a new call for proposals, inviting a fresh wave of big ideas from across the university, all grounded in Arizona's land-grant mission and global research excellence.

For more information on future funding opportunities and interdisciplinary research development support, visit the [Office of Research and Partnerships website](#) (<https://Office of Research and Partnerships>).

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