

# NASA admin: ASU, UA 'leading the world' in training next generation of space scientists

BrieAnna J. Frank, Arizona Republic Published 4:19 p.m. MT July 17, 2019 | Updated 8:33 p.m. MT July 17, 2019

Arizona State University and the University of Arizona received a shoutout as "leading the world" in training the next generation of space scientists during a National Aeronautics and Space Administration hearing Wednesday.

The hearing, titled "Moon to Mars: NASA's Plans for Deep Space Exploration," was convened by Sen. Roger Wicker (R-Miss.), chairman of the Committee on Commerce, Science and Transportation and examined the future of NASA's human spaceflight program.

It began with Wicker mentioning that Saturday, July 20, would mark [the 50th anniversary of Apollo 11, the first manned mission to land on the moon](https://www.azcentral.com/story/travel/arizona/road-trips/2019/07/09/apollo-11-moon-landing-astronauts-trained-in-northern-arizona-50th-anniversary/3710453002/?utm_source=oembed&utm_medium=onsite&utm_campaign=storylines&utm_content=news&utm_term=1737225001) ([/story/travel/arizona/road-trips/2019/07/09/apollo-11-moon-landing-astronauts-trained-in-northern-arizona-50th-anniversary/3710453002/?utm\\_source=oembed&utm\\_medium=onsite&utm\\_campaign=storylines&utm\\_content=news&utm\\_term=1737225001](https://www.azcentral.com/story/travel/arizona/road-trips/2019/07/09/apollo-11-moon-landing-astronauts-trained-in-northern-arizona-50th-anniversary/3710453002/?utm_source=oembed&utm_medium=onsite&utm_campaign=storylines&utm_content=news&utm_term=1737225001)).

"The moon landing still unites and inspires Americans like few events in our nation's history," he said.

Wicker said that although it's "fitting to celebrate past achievements," attention should also be paid to the future of space exploration.

He said NASA's Artemis program is set to land the first woman and next man on the moon by 2024 and will establish a "sustained presence" on the moon or in lunar orbit by 2028.

After a few words by committee ranking member Sen. Maria Cantwell (D-Wash.), NASA Administrator Jim Bridenstine gave an opening statement, during which he also nodded to the Apollo 11 mission and its implications both for space exploration and politics.

"It wasn't just about technological prowess," he said. "We were trying to demonstrate that our political and economic system was in fact superior to that of the former Soviet Union."

**ARIZONA TIES:** [How northern Arizona helped put men on the moon](https://www.azcentral.com/story/travel/arizona/road-trips/2019/07/09/apollo-11-moon-landing-astronauts-trained-in-northern-arizona-50th-anniversary/3710453002/) ([/story/travel/arizona/road-trips/2019/07/09/apollo-11-moon-landing-astronauts-trained-in-northern-arizona-50th-anniversary/3710453002/](https://www.azcentral.com/story/travel/arizona/road-trips/2019/07/09/apollo-11-moon-landing-astronauts-trained-in-northern-arizona-50th-anniversary/3710453002/)).

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## NASA-university partnerships called an 'amazing success'

After several minutes of opening statements by Bridenstine, the hearing moved in to a question-and-answer format.

Sen. Kyrsten Sinema, a minority member of the committee, asked Bridenstine about the workforce capacity of NASA and its commercial partners.

Sinema noted that more than 21% of NASA's civil service workforce is eligible for retirement and more than half are over 50 years old, adding that such statistics are "challenges" NASA must address as it considers the future of its programs.

Bridenstine responded by saying NASA has several programs to get young people interested in the science, technology, engineering and math fields but concurred with Sinema's suggestion that the rising age of a significant percentage of NASA workers presents a "tremendous challenge" to the agency.

He said NASA is anticipating a "bow wave of retirements" in the near future, and that that has prompted NASA to attempt to get people inspired by space at an early age.

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**STILL THERE?** [What happened to U.S. flags on moon? ASU prof knows \(/story/news/local/arizona-science/2019/07/17/are-u-s-flags-still-on-the-moon/1361261001/\)](#)

Bridenstine said NASA is a sponsor of FIRST Robotics, an international high school robotics competition that encourages interest in the STEM fields and provides mentors for children in the program.

He moved on to discuss the gap NASA is seeing in middle management and the agency's exploration into how to recruit mid-career professionals to assist in the agency's programs.

Sinema then asked Bridenstine what role universities will play in those future programs.

She said she was "proud" of the work by UA professor Dante Lauretta, who proposed the [OSIRIS-REx mission that's set to return to Earth with a sample of a near-Earth asteroid called Bennu \(/story/news/local/arizona-science/2016/08/17/5-things-know-osiris-rex-mission-headed-university-arizona-professor/88899928/\)](#) by 2023.

"Missions like OSIRIS-REx combine innovative ideas from university researchers with NASA's technical expertise to make groundbreaking discoveries," Sinema said.

Lauretta released through the University later Wednesday:

"Through our leadership of NASA's OSIRIS-REx mission, the University of Arizona provides its students with unmatched opportunities to gain experience in all aspects of planetary exploration. We're proud to be training the next generation of leaders in the fields of space science and engineering, and I'm thrilled to have our efforts recognized by Administrator Bridenstine."

Bridenstine responded by saying the agency has had "amazing success" with university partnerships before moving on to specifically praise contributions from Arizona schools.

"Arizona universities, whether it's the University of Arizona or Arizona State, these two universities are leading the world when it comes to university engagement with NASA and developing these programs and projects," Bridenstine said.

He said university partnerships are the key to developing the future workforce as NASA's current workforce retires.

"Having principal investigators at universities that propose projects and then using universities to develop those projects is a great way to stay on cost and schedule to develop the workforce of the future and to get young folks involved in our missions," he said.

## Universities respond

UA President Robert C. Robbins, in a statement to The Republic, said that he was "thrilled" by the NASA shoutout.

He noted that the university's work on the OSIRIS-REx mission is its way of cultivating the workforce of the future.

"Ultimately, that is the mission of a Research I university with a focus on students, so there is no greater compliment," he said.

ASU President Michael Crow said the university was "deeply committed to finding answers to the biggest questions about our world and our universe" and mentioned how its researchers are leading NASA's Psyche mission, humanity's first trip to an all-metal asteroid.

"Importantly, our space exploration and planetary science initiatives put ASU students at the forefront of space research and technology," Crow said in his statement to The Republic.

"This prepares our graduates for careers in space exploration and mission management, key areas in which NASA will need a skilled workforce to build on its future success."

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The shout out comes just one day after UA announced it would use \$3 million in funding from NASA to research the low-gravity surface environments of asteroids and provide students from underrepresented backgrounds the opportunity to build miniature satellites at the university.

The Psyche mission was announced in 2017 by NASA, which noted it would be [ASU's first major, multi-million dollar space mission](https://story/news/local/arizona-science/2017/01/04/asu-gets-nasa-space-mission-asteroid-psyche/96154738/) ([/story/news/local/arizona-science/2017/01/04/asu-gets-nasa-space-mission-asteroid-psyche/96154738/](https://story/news/local/arizona-science/2017/01/04/asu-gets-nasa-space-mission-asteroid-psyche/96154738/)) to send an unmanned spacecraft to the distant asteroid.

It will launch a refrigerator-size spacecraft in 2023 to an asteroid about the size of Massachusetts named "16 Psyche."

The robotic spacecraft will take 4½ years to reach the asteroid, which is located between Mars and Jupiter.

The goal is to study the asteroid's all-metal core, which is similar to the Earth's, in hopes of understanding more about how planets form.

[Both universities also played a role in the Apollo mission](https://story/travel/arizona/2019/07/09/apollo-11-asu-university-arizona-scientists-helped-moon-landing-happen/1599900001/) ([/story/travel/arizona/2019/07/09/apollo-11-asu-university-arizona-scientists-helped-moon-landing-happen/1599900001/](https://story/travel/arizona/2019/07/09/apollo-11-asu-university-arizona-scientists-helped-moon-landing-happen/1599900001/)) that was mentioned several times during the Wednesday hearing.

Foremost among the UA scientists was Gerard Kuiper, who is sometimes referred to as the father of modern-day planetary science. Kuiper established the university's Lunar and Planetary Laboratory.

Using the best available photographs of the moon, Kuiper and his team put together four atlases that were instrumental in planning the moon missions.

- Kuiper also headed a group of UA scientists that was also instrumental in getting three series of unmanned spacecraft to the moon.
- The Ranger series was the first effort to get close-up photos of the moon before those vehicles crashed (by design) into the lunar surface.
- The Surveyor vehicles landed safely and sent back panoramic photographs. The Surveyor proved the lunar surface was solid enough to land on.
- Lunar Orbiter vehicles took photos of the moon from orbit that were used to help select the Apollo landing sites.

Carleton Moore, who would become ASU's first director of the Center for Meteorite Studies, did research for NASA, the National Science Foundation and the U.S. Geological Survey from 1963 to 1987. His work on moon dust and rocks brought back by the Apollo astronauts was well publicized.

Ron Greeley was involved in mapping Apollo landing sites while at NASA prior to coming to ASU in 1977, where he turned his attention to Mars. Greeley was a pioneer in the field of planetary geology. The Ron Greeley Center for Planetary Studies at ASU is one of 17 regional sites NASA has designated to archive images for educational and scientific use.

*Republic reporters Anne Ryman and Weldon B. Johnson contributed to this report.*

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- [These Arizona places were critical to the Apollo 11 moon landing. Here's what you should see.](https://www.azcentral.com/story/travel/arizona/road-trips/2019/07/01/apollo-11-moon-landing-flagstaff-arizona-meteor-crater-lowell-observatory-cinder-lake-crater-field/1517388001/?utm_source=oembed&utm_medium=onsite&utm_campaign=storylines&utm_content=news&utm_term=1737225001)  
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