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Illinois Teacher Aims for Stars in Research Program

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Tri-Valley High School senior River Wilson works with a plasma globe during an advanced placement physics class

taught by Jeff Benter at the school in Downs, Ill., Thursday, Jan. 20, 2022. (David Proeber/The Pantagraph via AP) **THE ASSOCIATED PRESS**



By CONNOR WOOD, The Pantagraph

DOWNS, III. (AP) — There is something about NASA and astronomy at draws students in, Tri-Valley High School teacher Jeff Benter said. Their interest in turn drives his own energy for the subject.

"The more you learn about it, the more you enjoy it," he told The Pantagraph.

Benter hopes to bring more of that learning to students through a project he will be completing through the NASA/IPAC Teacher Archive Research Program (NITARP). The program gives high school teachers a chance to work with researchers at national astronomy labs on a project using data collected by telescopes. The teachers then bring back what they have learned to improve their own teaching and share it with other teachers in their district.

"We're kind of ambassadors after this is over," Benter said.





He will be working with Varoujan Gorjian, a researcher at NASA's Jet Propulsion Laboratory at Caltech. He is also working with three other teachers, including a mentor teacher. The mentor teachers have already completed the program and help the other teachers. The system provides helpful advice and structure, Benter said.

The program uses existing data collected from telescopes and emphasizes doing original research, not working through prepared lab projects or re-doing prior research projects, the program's website says. It is run through the Spitzer Science Center and NASA's Infrared Processing and Analysis Center.

An earlier version of the program, called the Spitzer Space Telescope Research Program for Teachers and Students, started in 2004. The name changed in 2009 to reflected changed funding. Since the start of the program, 130 teachers have done research projects. Benter is the first from downstate Illinois.

Along with Benter's group, another group of four teachers and a researcher will be working through the year.

Benter's group will be using the existing data to look for terrestrial planets around red dwarf stars, he said. The planets cause such systems to emit extra infrared radiation.

The search for exoplanets, or planets outside our solar system, is a hot topic in astronomy right now, Benter said. The project could even be used as ground work for future research using the newly launched James Webb Space Telescope. The new telescope has better infrared vision than the Hubble telescope.

NASA has announced that the new telescope had reached its final orbit, around 1 million miles from Earth. It was launched in late December.

"We're one step closer to uncovering the mysteries of the universe. And I can't wait to see Webb's first new views of the universe this summer!" NASA Administrator Bill Nelson said.

There are also opportunities for student involvement, although Benter is not sure what that will look like quite yet, he said.

"I've already talked about the research in some of my classes," he said.

Benter's educational approach also puts science in the hands of students. On a recent visit, Tri-Valley High School students Anthony Decker, Lucas Burgard, River Wilson and Adam Hupf experimented with a static electricity generator, watching how different objects interact.

Benter said astronomy requires a different approach than a lot of high school science courses. Given the difficulties of bringing astronomy experiments to Earth's surface, much less into the classroom, there is a level of creativity required that students seem to enjoy.

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The project will be the real research project Benter will do in astronomy, he said. He grew up in Gibson City and then studied chemistry and teaching at the University of Illinois Urbana-Champaign. He has been at TVHS since 2001.

The program runs January through January. While most past participants have gotten to meet their teams in-person at the start of the project, this year they had to make do with remote meetings, IAPC's announcement of the new cohort said. They hope to meet in-person next January to present findings.

Benter is looking forward to participating in the research, but is also glad that he is able to use the experience to help other area teachers and in his classroom.

"(I hope to) bring back to the kids a sense of questioning and wonder, the scientific method," Benter said.

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