

# Pre-college science programs lead to more science majors

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High school students who take part in pre-college programs that focus on science are much more likely to pursue higher education and, eventually, careers in science, technology, engineering and medicine - the STEM disciplines.

In a paper published in the *Journal of Higher Education Outreach and Engagement*, Michigan State University researchers from the National Superconducting Cyclotron Laboratory, the Joint Institute for Nuclear Astrophysics and the College of Education used an MSU program as a case study for why these programs are key to training tomorrow's generation of scientists.

The joint NSCL/JINA program, the Physics of Atomic Nuclei, is for both [high school students](#) and [science](#) teachers and designed to get them excited about science and, in particular, nuclear astrophysics.

In assessment questionnaires given to participants, a vast majority said the PAN program strongly affected how they view science and convinced the [students](#) they may want to pursue a career in that field.

"PAN is just one example of how outreach programs can specifically respond to the call to strengthen the pipeline of talent into STEM by helping students visualize, take realistic actions and create strategic plans to pursue a career in physics and STEM," said Zachary Constan, outreach coordinator for the NSCL and co-author of the paper.

In fact, in a survey sent to students who participated in the program, 100 percent of the respondents said they planned to attend or were attending a four-year college, with nearly 90 percent of them majoring in STEM.

Constan said that while it's true most of the PAN students were already predisposed to science, the study showed that their participation helped them to further develop their science interests and take the next steps toward a career path.

Constan said one of the benefits of majoring in physics or one of the STEM disciplines is that the student learns many other skills - problem solving, communication, working as part of a team - that are applicable in areas such as medicine, law and business.

"With a physics background, for example, you can have more choices, which can lead to greater satisfaction," he said. "A person can find their niche, the thing that really inspires them."

The other benefit of this paper is it gives other similar programs a blueprint to assess themselves. Constan said most programs are run by scientists, people who are good at the science but need some help evaluating what they do.

"This is a good primer for other similar projects to assess how they are doing by initiating interdisciplinary university collaborations," he said.

Provided by Michigan State University

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