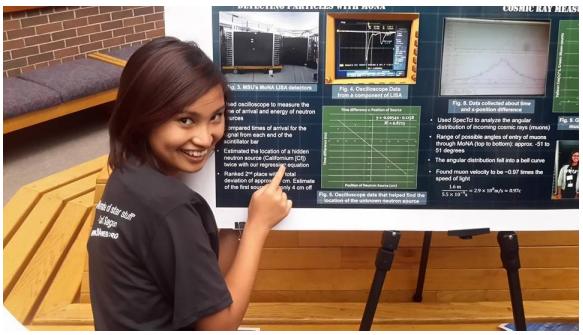
Joint Institute for Nuclear Astrophysics

Physics of Atomic Nuclei (PAN) High School Students 2014

The goals of PAN are different from most JINA K-12 outreach programs, which is normally to increase interest in physics. Instead, a high interest in physics is a prerequisite for participation in PAN, and the primary goal is to mentor and train youth who are considering a research career in physics. They are treated as young scientists in training during the week, and also experience college life by living in residential halls, many for the first time. Some of the most beneficial interactions occur during lunch or in the evenings when the students have time to talk informally with graduate students and faculty about their research and life in academia.

PAN hosted 44 high school students from more than a dozen states and 2 foreign countries during the summer of 2014. We continued to have a common application and allow students to apply to both programs (MSU & ND) simultaneously. We had a record number of 220 applications from which to select participants for both locations. Although we have routinely imposed a gender balance at each location, we had struggled to find ways of increasing participating from underrepresented minority students. The new acceptance procedure identifies a cutoff in the scored applications, above which we feel any student would succeed in the program. By accepting all URM above the 'cutoff score, we can negate the hidden barriers that often prevent these students from acceptance into similar programs. This revised acceptance method has increased our participation of URMs to 25% in the PAN Program.

Above: Students contemplate the gamma ray spectrum at ND
Below: Student shows off her poster at the end of the program.



In many ways, the programs at the two institutions are very similar. During the respective weeks, students were presented with lectures by physics faculty, performed experiments using nuclear detection techniques, and presented their findings in poster presentations to parents and physicists. The primary difference is that students at MSU worked with MoNA, a neutron detector array, at NSCL and students at ND performed experiments with equipment in the advanced modern lab in Jordan Hall of Science.

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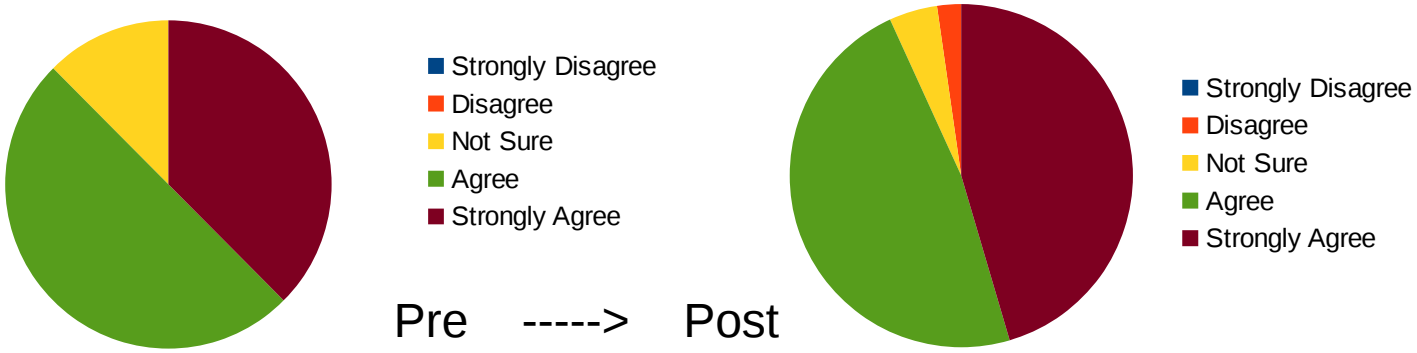
The charts below demonstrates that PAN is succeeding in its mission to help students understand what a science career entails and how to prepare for one.

I understand how to prepare for a science career



What other educational opportunities could JINA offer that would interest you?

Most common response:
Online lecture, mini-courses, or Q&A with expert physicists

By giving hands-on experience on research in nuclear physics, I feel a lot more confident about what I would do if I choose physics as a career.

It was awesome. This was my first time staying on a college campus and I loved it. Also, the fact that we were doing physics all day and having tons of fun was great.

Group photo at ND

Group photo at MSU

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