

PIXE-PAN 2008 @ Notre Dame



Continuing success in the tradition of JINAs PAN program at MSU has marked the third year of PIXE-PAN at Notre Dame. The PIXE-PAN program uses the existing low energy accelerator facility during a two-week program to introduce high school high school students and teachers, as well as individuals who are working toward teaching certification to material analysis techniques with accelerators. The program introduces participants to the fundamentals of the extremely small domain of atomic nuclei and its connection to the extremely large domain of astrophysics and cosmology. Lectures and hands-on experiments are led by senior faculty and staff of the Institute for Structure and Nuclear Astrophysics (ISNAP) at the University of Notre Dame.

This year's first week of PIXE-PAN took place June 16 through 20, 2008, with three high school teachers from three states earning continuing education credits, and one IUSB student who earned three research credit hours for the course. The thirteen students who joined them the next week came from five states, representing ten different schools and one homeschool venue. The student population included six young men and seven young women.

Several lectures on nuclear physics, accelerator physics, beam interactions, astronomy, x-ray spectroscopy, radiation chemistry, and material science were offered by the faculty. The first week was dedicated to teacher training in accelerator operation, detector use, and data analysis. During the second week, the students and teachers worked together on three distinct experimental setups covering accelerator based PIXE, measurement of the speed of light, XRF, and Compton Scattering. The teachers and students both were given the freedom to design and perform their own experiments using provided equipment. During the last day of the program, the students presented their results to an audience including their parents and several faculty members.

The overall response of the participants was very positive, and it was clear from the quality of the presentations that the students not only enjoyed the experience, but also learned a great deal.



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