

# Notre Dame QuarkNet and High Energy Physics

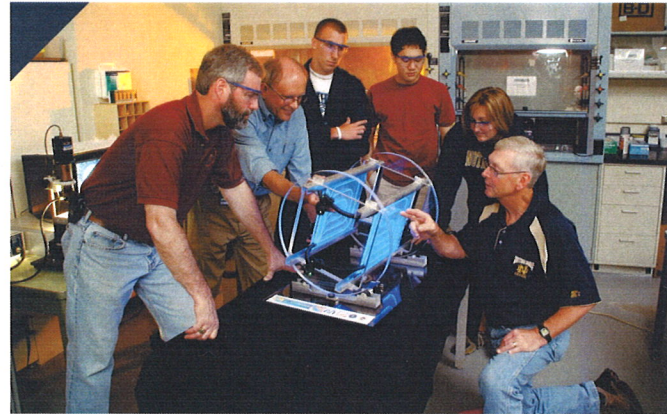
We are a community of researchers including physicists, engineers, technicians, high school teachers, as well as postdoctoral, graduate, undergraduate, and high school students. The center conducts research, engages teachers and students, and provides authentic, scientific experiences for the community.

## Research

High-energy particle physics (HEP) research is linked to experiments at CERN in Geneva, Switzerland and Fermilab in Illinois.

Research projects in the HEP Lab include:

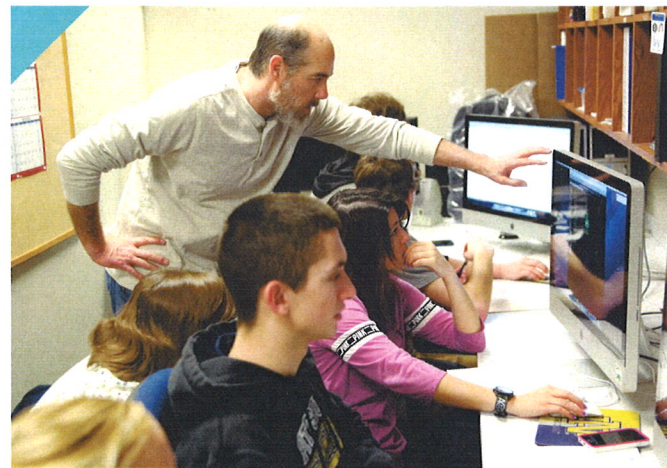
- Compact Muon Solenoid (CMS) Experiment at the LHC Collider at CERN laboratory in Switzerland.
- Collaborations on detector development.



## Education and Outreach

QuarkNet's educational outreach involves students, teachers, faculty, and physicists:

- Investigating particle physics through publicly released CMS data.
- Learning and teaching fundamental physics.
- Collaborating with physicists and students worldwide.
- Experiencing the scientific process with tabletop particle detectors.



Educational projects in the HEP Lab include:

- QuarkNet
- RET (Research Experiences for Teachers)
- REHS (Research Experiences for High School Students)
- CMS Education and Outreach

## Digital Visualization Theater

Summer research is the cornerstone of the Notre Dame QuarkNet program. Teachers and students split up to investigate different projects. One group of teachers and students conducted research and then presented their work on the 360-degree domed theater at Notre Dame's Digital Visual Theater in the Jordan Hall of Science.

