Physics Track B.S.

Computation & Data Physics

A collaboration between the departments of physics & computer science.

The computational and data physics track provides students with a strong foundation in core physics principles coupled with courses in computer science that provide a robust literacy for solving computational problems in the physical sciences. Students who follow this track are well-suited for a variety of technical careers, most notably those in software engineering and related fields.

SELECTED COURSES

Students get to choose from a broad range of Physics and CS classes listed below, and see the catalog for details.

PHYSICS

- Modern Physics
- Mathematical Physics
- Computational Physics
- Classical Mechanics
- Quantum Mechanics
- Electricity and Magnetism
- Thermodynamics
- Advanced Lab

COMPUTER SCIENCE

- Programming Languages (Python/Java)
- Discrete Mathematics
- Space, Time, and Perfect Algorithms
- Artificial Intelligence
- Database Design
- Information Retrieval and Big Data
- Creative Software Architectures for Collaborative Projects

Classic WESTMONT

A PREMIER LIBERAL ARTS EDUCATION

FACULTY HIGHLIGHTS

BOB HARING-KAYE, PH.D.

An experimental nuclear physicist who specializes in teaching laboratory-based courses

DAVID HUNTER, PH.D.

Applies algebra, geometry and topology to computing and data

BEN CARLSON, PH.D.

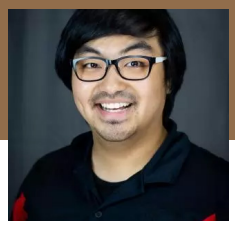
Searches for new fundamental particles at the large Hadron Collider

JEN ITO, PH.D.

Explores creation from the fingerprints of the early universe

GUANG SONG, PH.D.

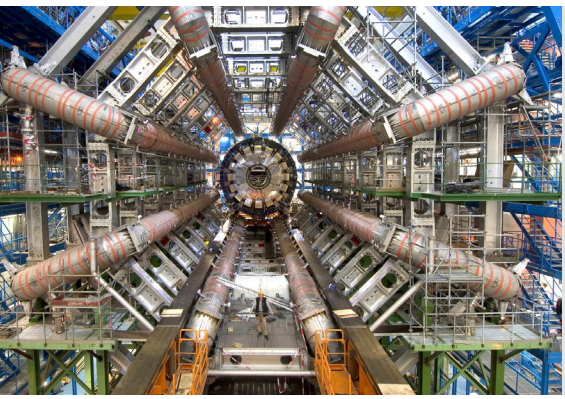
Does research in Computational Biology and Machine Learning



MIKE RYU, M.S.

Brings software engineering and technical management skills to Westmont from Silicon Valley.

RESEARCH OPPORTUNITIES



- Machine learning, computing and high speed electronics resarch for the ATLAS experiment at the Large Hadron Collider
- Early-universe cosmology using the Simons Array
- Nuclear structure studies using gamma-ray spectroscopy
- Research opportunities from CS (see CS flyer)

ALUMNI

Sarah Reed ('19, Engineering Physics) Data runs the world now, and Westmont is keeping competitive in preparing students for industry by creating a new computational and data physics track offering that allows students to learn the skills that are valuable to all engineering / physics jobs today. I get increasingly excited as I read line-by-line down the courses in the new Computational and Data Physics B.S. Track because I use the skills from these courses in my everyday job and would have been all in on this major had it been available during my time at Westmont.

CAREER PATHS

Career paths will blend scientific and engineering experience with computer science. These could include software engineering, data engineering, electrical engineering and other interdisciplinary roles.

WESTMONT

westmont.edu/physics