FACULTY

Richard Barrans

Michael Brotherton
(Ph.D., University of Texas, 1996) Multimwavelength observations of quasars; issues of quasar/galaxy mutual evolution.

Yuri Dahnovsky
(Ph.D., Russian Academy of Sciences, Institute of Chemical Physics, 1983) Theoretical and computational physics; molecular electronic devices; solar cells; electron transfer; photono-assisted tunneling.

Daniel Dale (Chair)
(Ph.D., Cornell University, 1998) Ground and space based infrared studies of galaxies; clusters of galaxies; cosmology.

Adrian E. Feiguin
(Ph.D., Universidad Nacional de Rosario, Argentina) Computational condensed matter: strongly correlated systems; exotic quantum phases; quantum magnetism; time dependent and non-equilibrium phenomena; quantum transport; spintronics; cold atomic gases.

Paul Johnson
(Ph.D., University of Washington, 1979) Biophysics: medical instrumentation detection of pathogenic microorganisms; detection of chemical contaminants.

Chip Kobulnicky
(Ph.D., University of Minnesota, 1997) Ground & space-based studies of dynamics & chemical abundances in galaxies; radio, optical, and infrared spectroscopy; young star clusters; astronomical instrumentation; massive star formation.

Edward Koncel

Rudi Michalak
(Ph.D., RUB in Germany, 1993) Exotic superconductors; low dimensional magnetic structures; NMR spectroscopy; MRI imaging.

Michael Pierce
(Ph.D., University of Hawaii, 1988) Galaxies; clusters of galaxies; large-scale structure of the universe; observational cosmology; astronomical instrumentation.

Jinke Tang
(Ph.D., Iowa State University, 1989) Materials for spintronic applications including magnetic semiconductors and half metals; thermoelectric and energy materials.

David Thayer
(Ph.D., Massachusetts Institute of Technology, 1983) Plasma physics; fluid physics; turbulence theory; nonlinear dynamics; global change research; quantum mechanical foundations; computational fluid dynamics and chemical plume tracing.

Wenyong Wang
(Ph.D., Yale University, 2004) Fabrication and charge transport characterization of self assembled molecular junctions; spin dependent transport study of novel magnetoelectronic devices; characterization of noise properties in nanoscale conductors.

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PHYSICS & ASTRONOMY

University of Wyoming
Why Physics and Astronomy?

Physics and astronomy deals with the very nature of the laws that govern our existence—gravity, motion, heat, light, matter and energy, and life itself. Physics and astronomy provides the fundamental tools for understanding the behavior of the most basic, yet the most challenging of all systems, from the subatomic to size scales larger than galaxies. As physics majors, you’ll take courses in:

- Circuits
- Electricity and magnetism
- Mathematical and computational physics
- Mathematics
- Mechanics
- Modern physics
- Optics
- Quantum mechanics
- Statistical mechanics
- Thermodynamics

The undergraduate curriculum provides for a direct experience in fundamental laboratory research.

Scientists are commonly perceived as solitary creatures wearing long white lab coats, but, in our fast-paced world, many of today’s science jobs reach far beyond traditional university-based research into exciting and profitable areas of industry. Physics and Astronomy majors possess many marketable skills that make them attractive to potential employers. According to a series of recent studies done by the American Institute of Physics (AIP)*, it pays to major in physics, and the job market is steadily growing.

The median starting salary for a person with a physics bachelor’s degree was $44,000 in 2006. The private sector continues to be the single largest employer of physics bachelor’s hiring 57% of the bachelors who secured full-time employment directly after receiving their degree. A significant proportion (43%) of new physics bachelor’s took positions as high school teachers. Seventy percent of these new teachers indicated they were teaching at least one physics class.

There is a steadily growing need for physics and astronomy graduates who can:

- Write software for educational, technical and financial applications.
- Design and interface high-tech equipment with computers.
- Develop, operate, and maintain new devices for use in medical areas.
- Create and manipulate mathematical models for the stock market and communicate this information to financial consulting firms.

Undergraduate Studies

Our undergraduate program offers four degrees: B.S in physics, B.A. in physics, astronomy and astrophysics and our innovative professional degree, Physics Plus.

The Bachelor of Science programs are intended for students who will pursue a career or a graduate degree in the field, whereas the Bachelor of Arts program is primarily geared toward those who are interested in pursuing physics as a second major. The Physics Plus curriculum is intended for students preparing for strictly technological careers and hence want heavily technological undergraduate educations.

All four curricula offer:

- A sound physics and mathematical foundation through a core curriculum.
- Practical computational programming skills at all levels of instruction.
- Practical electronics and optics experience integrated into computational program development.
- An undergraduate research experience through internships mentored by active research faculty.

In addition to a solid foundation in physics and astronomy, each of our students will have the unique benefit of conducting novel research, mentored through our active research faculty, in such diverse areas as:

- Stellar evolution
- Nanotechnology
- Plasma and fusion physics
- Chemical and biophysics
- Quantum foundations and computations
- Cosmology
- Active and infrared galaxies
- Chemical properties of galaxies
- Condensed matter physics
- Magnetism