

## Drexel Physics Faculty

- Shyamalendu Bose** (Ph.D., Maryland, 1967).  
Theory of nanotubes, nanoshells and fullerenes; high-temperature superconductivity.
- N. John DiNardo** (Ph.D., Pennsylvania, 1982).  
Experimental study of surfaces and interfaces.
- Frank Ferrone** (Ph.D., Princeton, 1974).  
Protein dynamics; biological self-assembly.
- Leonard X. Finegold** (Ph.D., London, 1959).  
Biophysics; granular physics.
- Avijit Ghosh** (Ph.D., Columbia, 1999). Numerical biophysics; protein folding and drug design.
- Robert Gilmore** (Ph.D., MIT, 1967). Nonlinear dynamics and chaos.
- David Goldberg** (Ph.D., Princeton, 2000).  
Astrophysics and Cosmology; parallel computing.
- Fredrick House** (Ph.D., Wisconsin, 1965).  
Satellite Meteorology; Earth energy budget.
- Charles Lane** (Ph.D., Caltech, 1987).  
Non-accelerator-based particle physics; solar neutrinos and neutrino oscillations.
- Teck-Kah Lim** (Ph.D., Adelaide, 1968).  
Physics Education.
- Jelena Maricic** (Ph.D., Hawaii, 2005). Neutrino Oscillations, Geoneutrinos, Solar Neutrinos, and Neutrino Applications.
- Steve L. W. McMillan** (Ph.D., Harvard, 1983).  
Stellar dynamics; large-scale computations of stellar systems.
- Roberto C. Ramos** (Ph.D., Washington, 1999).  
Low temperature physics; quantum fluids; quantum computing.
- Gordon Richards** (Ph.D., Chicago, 2000).  
Quasars, Galaxy Evolution, Sloan Digital Sky Survey.
- Richard I. Steinberg** (Ph.D., Yale, 1969).  
Experimental tests of invariance principles; solar neutrinos and neutrino oscillations.
- Somdev Tyagi** (Ph.D., Brigham Young, 1976).  
High-temperature superconductivity; fiber optical sensors.
- Michel Vallieres** (Ph.D., Pennsylvania, 1972).  
Department Head. Nuclear physics.
- T. S. Venkataraman** (Ph.D., Worcester Polytechnic, 1976). Joint Professor of Materials Engineering. Physics Education.
- Michael Vogeley** (Ph.D., Harvard, 1993).  
Cosmology; Sloan Digital Sky Survey.
- Guoliang Yang** (Ph.D., Southern Illinois, 1992).  
AFM studies of single protein molecules.
- Jian-Min Yuan** (Ph.D., Chicago, 1973). Chaos in atomic and molecular systems; protein folding.



## About Drexel University

Founded in 1891 by financier and philanthropist Anthony Drexel, Drexel University holds a unique place in higher education as Philadelphia's technological, cooperative education university. Drexel is nationally known for its co-op program and is a leader in curriculum innovation. With a total of 18,466 enrolled students, Drexel has the nation's largest private undergraduate engineering school and largest private medical school. Drexel University is ranked by the U.S. News and World Reports as one of the best national doctoral universities.

Drexel University is located just a few blocks away from the vibrant and historic downtown Philadelphia. New York and Washington DC are only a short train ride away.



For Online Applications:

<http://www.drexel.edu/em/apply/>

For Physics General Information please visit our website

[www.physics.drexel.edu](http://www.physics.drexel.edu)

To arrange a tour please contact:

**Prof. Michel Vallières**

Department Head

Department of Physics

Drexel University

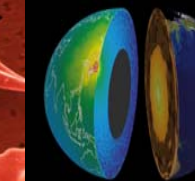
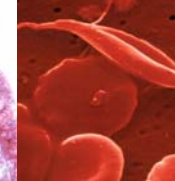
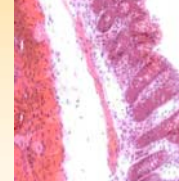
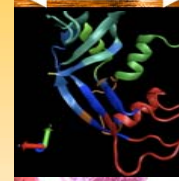
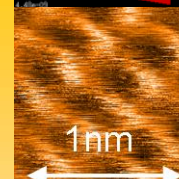
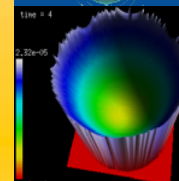
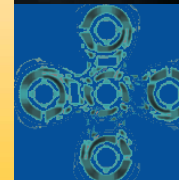
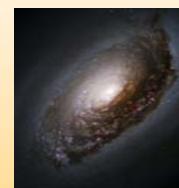
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## UNDERGRADUATE STUDIES

## PHYSICS

**DREXEL UNIVERSITY**

## Why study Physics?

### What will a degree in Physics give you?

Physics is the fundamental search to understand reality at its deepest levels. At Drexel, physics majors study phenomena spanning a broad range of length scales: from astrophysics and cosmology using the universe as a laboratory, to biophysics at the organic and cellular scales, down to condensed matter at the micro- and nano-scale, and finally, to particle physics at sub-atomic scales.

Along this journey, our majors acquire a *solid understanding of physical principles, problem-solving strategies, mathematical and computational skills, and broad experimental training*. They work with *cutting-edge science* using high-tech tools such as lasers, atomic force and scanning tunneling microscopes, fiber-optics, cryogenics, particle detectors, superconductors and supercomputers.

### What careers await a Physics Major?

With the discipline and training that goes with a Physics degree, majors go on to prestigious careers as physicists, educators, engineers, medical physicists, materials scientists, financial analysts, computer scientists, biophysicists, etc. They are hired by universities, national laboratories (NASA, NIH, NIST), semiconductor companies (Intel, AMD), engineering companies, biomedical firms, defense agencies and contractors (NSA, Boeing, Raytheon), Wall Street and Information Technology (IT) firms, among others.

### Getting paid to do science:

According to a 2004 US Dept of Labor survey, physicists rank in the top 20 highest-paying professions in the US, with a median annual salary of \$ 87,450.00. Astronomers rank in the top 11 with a median annual salary of \$97,320.00!

## The Department of Physics



*Students chat informally with 2006 Physics Nobel Laureate Dr. John C. Mather. Each year, our Department brings distinguished physicists to campus.*

*The Drexel University chapter of the Society of Physics Students has received the Marsh W. White Outreach Award*



*Our Department organized the Narducci Symposium which brought prominent scientists including four Physics Nobel Laureates among them.*

*Students during an observing session under the supervision of Dr. D. Goldberg, Director of the Lynch Observatory at Drexel*



*The Department of Physics provides undergraduates with a study area and relaxation room. The lounge is redecorated with comfortable and stylish furniture. It's located on the 7th floor of Disque Hall, Room 708.*

## Physics Program

### What does Drexel's Physics Program Offer?

From the first physics course you take at Drexel, you will see that our program is unique. Our innovative freshman physics sequence emphasizes the big picture right away. Drexel pioneered micro-computing in college education; our department has **integrated computational physics** into our curriculum. **21 full-time faculty members** offer the advantage of high faculty-to-student ratio, resulting in a **quality and personalized learning environment**. All majors are assigned to a faculty advisor on their first day of class.

Drexel has a **unique co-op system** through which students alternate periods of full-time classroom studies and full-time research work at national labs, private industry and universities. Recent co-op students worked at NASA, Caltech, LIGO, the Anglo-Australian Observatory, University of Washington, and Princeton.

### What are our research specialties?

Our physics majors are actively involved with our world-class theoretical, computational and experimental programs in astrophysics, biophysics, biomedical physics, high-power computing, low temperature physics, nanotechnology, nonlinear dynamics, particle physics, and quantum computing. We have world-wide collaborations, including the Chooz and KamLAND neutrino oscillation experiments, Sloan Digital Sky Survey and with the Albert Einstein Medical School.

### What special facilities do physics majors use?

The Physics Department has a 16-inch telescope (largest in Philadelphia) with CCD camera, a scanning tunneling microscope for surface science studies, an atomic force microscope for biophysics studies, a helium dilution refrigerator to study matter at ultra-low temperatures, detectors for non-accelerator particle physics, pulsed lasers and Beowulf computer clusters to study biophysical phenomena, a fiber-optic biosensors lab, a parallel computing server and computers networked to supercomputers, an Electronics Shop and access to facilities at Drexel's Nanotechnology Institute. Physics majors have an Undergraduate Physics Lounge where they meet study and plan activities.