



UNIVERSITY of WISCONSIN - EAU CLAIRE

Department of Physics and Astronomy

Faculty Research Interests 2003-2004

Astronomy/Astrophysics

Dr. Lyle Ford

- Asteroid photometry. Measuring the light curves of asteroids to determine their rotational properties
- Gamma-Ray Burst spectroscopy. Investigating details of the gamma-ray burst environment

Dr. Lauren Likkel

- Near-infrared spectra of planetary nebulae
- Image processing and data reduction

Dr. Nathan Miller

- Using NASA's Chandra X-ray Observatory to study the X-rays emitted from hot stars and their powerful winds
- Theoretical investigations of the role of magnetism in creating disks around emission-line B-stars
- Starting a new program of optical spectroscopy of emission-line B-stars using Hobbs observatory

Dr. George Stecher

- CCD photometry of asteroids. Using apparent brightness variations of asteroids to determine rotational properties
- The physics of flying discs, i.e. Frisbees
- Building and controlling small to medium-sized telescopes (This is not a major area of research, but occasionally I have interesting projects available.)

Dr. Paul Thomas

- Numerical simulation of problems in planetary science
- Impact physics applied to the study of asteroids and comets
- The thermal and dynamical state of the interiors of the planets, especially the proposed ocean inside Europa

Atomic Physics

Dr. Scott Whitfield

- Experimental studies of the dynamics of the photoionization process in atoms, with a particular emphasis on open-shell atoms

Computational Physics

Dr. Paul Thomas

- Numerical simulation of problems in planetary science

Dr. Jin Huang

- Collaborates with Argonne National Laboratory in computational modeling of electronic and structural properties of heavy element ions in solids

Dr. Lyle Ford

- N-body gravitational simulations

Materials Science/Solid State Physics/Surface Physics

Dr. Doug Dunham

- Electronic and structural characterization of materials using X-ray Photoemission Spectroscopy (XPS)
- Metal/semiconductor and insulator/semiconductor interfaces

Dr. Matt Evans

- Investigating the growth of metals on silicon studied by scanning tunneling microscopy (STM)
- Molecular Beam Epitaxy (MBE) of thin magnetic films on gallium arsenide, and investigation of their electronic and magnetic properties

Dr. Kim Pierson

- Collaborations with local semiconductor companies (Students help perform analysis of R&D samples using Transmission Electron Microscopy - get exposure to local high tech companies)
- Thin film deposition and analysis for semiconductor applications

Optics

Dr. Jin Huang

- Collaborates with Argonne National Laboratory in Laser spectroscopy
- Holography, Optics in general

Oscillating Systems

Dr. Thomas Lockhart

- Experimental studies of optical, acoustic and other oscillating systems

Physics Education

Dr. Erik Hendrickson

- Participate in and create conferences, workshops, & grants to study student learning and teaching methods

Dr. Lauren Likkel

- Planetarium: astronomy education and audio-visual presentations

Mr. John Stupak

- Building and maintaining physics demonstration equipment

If you are interested in getting involved or would just like more information regarding any of these research interests, please stop in and talk to the faculty member.

In particular, the following faculty are looking for students to help on research projects during the 2003-2004 academic year: Dunham, Ford, Miller, Likkel, Stecher, Thomas, Whitfield and Stupak. Some of the faculty will also be looking for students for summer '04 research projects.