

VALPARAISO UNIVERSITY

PHYSICS AND ASTRONOMY FACULTY

Assistant Professor Todd Hillwig:

Education: Indiana University, Ph.D.
Major Field: Astronomy and astrophysics
Teaching specialty: Astronomy, observational astronomy, introductory physics, mechanics
Research activity: Observational astronomy and astrophysics: studies of interacting binary stars and circumstellar gas (nova shells, planetary nebulae). Data are collected at major telescope facilities around the world, including: Kitt Peak National Observatory (AZ), Cerro Tololo Inter-American Observatory (Chile), Mauna Kea Observatory (Hawaii), McDonald Observatory (TX). User of the SARA telescope at Kitt Peak, which is operated by VU and nine other universities.
VU Faculty: 2004
Other Interests: Golf, reading, woodworking, miniatures, camping

Professor Bruce Hrivnak:

- Education: University of Pennsylvania, Ph.D.
- Major Field: Astronomy and astrophysics
- Teaching specialty: Astronomy, astrophysics, and space science
- Research activity: Observational astronomy and astrophysics: studying the properties of evolved stars and binary stars. Data are collected at major telescope facilities: Kitt Peak National Observatory (AZ), Mauna Kea Observatory (Hawaii), Cerro Tololo Inter-American Observatory (Chile), and from NASA satellites, including the Hubble Space Telescope and Spitzer Space Telescope. Some of this work involves undergraduate students.
- VU Faculty: 1984
- Other Interests: Reading, science and faith

Senior Research Professor Donald Koetke:

- Education: Northwestern University, Ph.D.
- Major Field: Sub-nuclear physics
- Teaching specialty: Nuclear physics and introductory physics
- Research activity: Experimental nuclear and elementary particle physics. Data are collected for experiments at major accelerator facilities (e.g., Fermi National Accelerator Laboratory (IL), TRIUMF (Canada), and Brookhaven National Laboratory (NY). Extensive preparation and analysis work is done at VU. VU students are directly involved in the experiments as research assistants. Colleagues Manweiler and Stanislaus collaborate. Annual research grant: \$175,000.
- VU Faculty: 1977
- Other Interests: Jogging, photography, backpacking, canoeing, bicycling

Professor Robert Manweiler:

- Education: Cornell University, Ph.D.
- Major Field: Elementary-particle physics
- Teaching specialty: Quantum mechanics, advanced mechanics, electromagnetic theory
- Research activity: Nuclear and elementary particle physics. Collaborates with faculty and students on an international collaboration at Brookhaven National Laboratory (NY) studying baryon resonances and the source of the proton's spin.
- VU Faculty: 1981
- Other Interests: Jogging, downhill skiing, hiking, great music, and great books

Associate Professor Gary A. Morris:

- Education: Rice University, Ph.D.
- Major Field: Air quality & physics education research
- Teaching specialty: Introductory physics
- Research activity: Tropospheric ozone pollution; analysis of satellite observations of atmospheric trace gases; modeling of atmospheric dynamics. Dr. Morris' research involves active collaborations with faculty at Rice University, the University of Houston, Penn State, and the University of Maryland Baltimore County and with researchers at NASA's Goddard Space Flight Center.
- VU Faculty: 1998-2000; 2004
- Other Interests: Faculty advisor to Dance, Etc. ballroom dancing club.

Assistant Professor Andrew G. Richter:

- Education: Northwestern University, Ph.D.
- Major Field: Surface physics, organic thin films, nanoscience, and x-ray physics
- Teaching specialty: Introductory physics, quantum mechanics, advanced laboratory
- Research activity: X-ray studies of protein adsorption onto surfaces; self-assembled monolayers; hydrophobic interfaces; creation of nanoporous films for use as sensors. X-ray studies are primarily done at the Advanced Photon Source (APS) at Argonne National Laboratory. Collaborates with researchers at the APS and at the University of Memphis.
- VU Faculty: 2005
- Other Interests: Programming, reading, guitar, helping raise my son.

Associate Professor Shirvel Stanislaus:

- Education: University of British Columbia, Ph.D.
- Major Field: Sub-nuclear physics
- Teaching specialty: Analytical mechanics, electricity and magnetism, introductory physics, and modern physics
- Research activity: Experimental nuclear and elementary particle physics. Collaborates with faculty and students from a large number of US and foreign universities on electroweak interaction and baryon spectroscopy studies. Data collected at Los Alamos National Laboratory (NM), Brookhaven National Laboratory (NY), and TRIUMF (Canada).
- VU Faculty: 1992
- Other Interests: Photography

Associate Professor Stan Zygmunt:

- Education: Massachusetts Institute of Technology, Ph.D.
- Major Field: Materials science and electronic materials
- Teaching specialty: Condensed matter physics, thermal physics, introductory physics
- Research activity: Theoretical investigation of the electronic structure of molecules and solids. Current studies involve reactions of hydrocarbons in zeolites and other catalysts with important applications in the petrochemical industry. This work is done with students at VU and at Argonne National Laboratory.
- VU Faculty: 1988
- Other Interests: Faculty advisor to InterVarsity Christian Fellowship group, distance running, golf, reading