



The Printed *Physics* *Astronomy* *Geology*

A Newsletter of the IUSB
Department of Physics & Astronomy

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Physics Today Documents Job Growth in Physics

Physics Today has just published (April 2001) a special issue on "Careers for Physicists," and the news is definitely good for physics students at all levels! In four feature articles the issue documents and analyzes the substantial improvement in the physics job market over the last decade. Two of the articles focus on job prospects for physics Ph.D. recipients, but even here there is good news for physics undergraduates — the "pipeline" (i.e., bachelor's degree programs) for US graduate programs in physics is not keeping up with the demand of Ph.D. programs for qualified US applicants. The number of physics bachelor's degrees awarded annually in the US has dropped about 25% since the late 1980's (and about 40% since its peak in 1969!).

Another of the articles, entitled "Preparing Physicists for Life's Work," describes reforms and innovations undertaken by physics departments around the US to better prepare their graduates for employment outside academia. We in the IUSB physics department would be very interested in what our students and alumni think about any of these reforms.

Physics Today is available online at <http://www.aip.org/pt/>.

New Faculty Position in Geophysics

At a meeting with Dept. of Physics and Astronomy faculty on April 10, Dean Miriam Shillingsburg confirmed the approval of a new full-time faculty position for the department. A national search for a geophysicist to fill the position will take place during the 2001-2002 academic year. The creation of this position has been a priority of the department for several years. The new faculty member will provide a full-time faculty presence in the department's popular offerings in introductory geology, in addition to bringing to our faculty experience and expertise in an area of applied

physics.

It has been many years since IUSB's full-time faculty included a geologist; and while we have been fortunate in recent years to have highly capable part-time instructors for GEOL G111 and G112 (currently Brenda Borntrager, Heather Frost, and Kara Young), a full-time faculty member in geophysics will provide professional leadership and continuity for these courses, along with upper-level geology/geophysics offerings and new research opportunities for our students.

Physics Majors Headed for Research Experiences

Several IUSB physics majors are gearing up for intensive research experiences this summer. **Jon Darnel** is headed for NASA's Goddard Space Flight Center, where he'll be working on the Orbiting Wide-Angle Light-Collector (OWL) in the group of Dr. John Krizmanic. **Scott Michael** will be a participant in the NSF-sponsored Research Experiences for Undergraduates (REU) program at Ball State. **William Zech** will be spending two weeks at the Arecibo Observatory in May, where he'll take part in a large neutral hydrogen 21 cm line survey of the nearby molecular cloud MBM40. He'll also be an REU participant at Notre Dame this summer. **Anna Vida** has signed on for a summer

of research in nuclear physics, under the supervision of Prof. Hinnfeld. She'll be working on an experiment using Notre Dame's *TwinSol* radioactive beam facility and attending seminars and social events along with Notre Dame's REU participants.

W. Zech is Gerkin Scholar

William Zech, a senior double-majoring in physics and applied mathematics, has been awarded one of two Gerkin Memorial Scholarships for the 2001-2002 academic year. The Gerkin Scholarships, which are in the amount of \$1000, are named in honor of Ernest Gerkin, who taught physical sciences and mathematics in IUSB's early years. Congratulations, William!

Faculty News...

Monika Lynker will be returning to the Institute for Theoretical Physics (ITP) at UC Santa Barbara this summer for a workshop on M-theory. Prof. Lynker was among the first group of ITP Scholars, in 1998. She'll be joined in Santa Barbara this time by Rolf Schimmrigk, a long-time collaborator and erstwhile visiting faculty member at IUSB.

Steve Shore traveled recently to Nice, France, to deliver an invited talk to the European Geophysical Society. His talk, entitled "Accretion Flows and Boundary Layers: Case Studies in Astrophysical Hydrodynamics" was part of a special session on nonlinear processes in atmospheric physics and fluid mechanics, BALANCE 2001. He has also been reappointed a scientific editor of the *Astrophysical Journal* and completed his complement of articles for the 3rd edition of the Academic Press Encyclopedia of Physical Science and Technology,

for which he is the scientific section editor for astrophysics.

Jerry Hinnefeld will give a talk in late April at the Annual Meeting of the Indiana Section of the AAPT, entitled "Strong correlation between exam and web-based homework performance in introductory physics." Also, Prof. Hinnefeld's recent NSF grant, "Experiments in low-energy nuclear physics and nuclear astrophysics," along with his previous research with Soviet emigrants exposed to radiation from Chernobyl, will be featured as part of a pull-out section on IUSB in the April 13 issue of IU Home Pages, a publication for IU faculty and staff news.

Bruce Zimmerman is only pretending to be retired. For example, he's still running off to attend professional meetings — in recent months it's been the Winter Meeting of the AAPT in San Diego, and the March APS meeting in Seattle — and he's been producing some very nice holograms in the department's optics lab!

Fall 2001 Schedule — Physics, Astronomy, Geology

PHYS P100 Physics in the Modern World (5 cr.) Lec.: TR 4:00P-5:15P — Staff
Labs: W 9:00A-11:00A, or W 5:30P-7:30P

PHYS P120 Energy & Technology (3 cr.) MW 1:00P-2:15P — Hinnefeld

PHYS P151 Excursions into Physics (3 cr.) MW 1:00P-2:15P — Hinnefeld

PHYS P201 General Physics 1 (5 cr.) Lec.: TR 1:00P-2:15P — Cohen
Lab: T 10:50A-12:50P Recit: T 9:55A-10:45A

PHYS P202 General Physics 2 (5 cr.) Lec.: TR 5:30P-6:45P — Cohen
Lab: R 7:50P-9:50P Recit: R 6:55P-7:45P

PHYS P221 Physics 1 (5 cr.) Lec.: MW 11:30A-12:45P — Lynker
Lab: R 10:00A-12:30P Recit: T 11:30A-12:20P

PHYS P281 Solid State Electronics (3 cr.) M 7:00P-9:45P — Hinnefeld

PHYS P301 Physics 3 (3 cr.) MW 4:00P-5:15P — Lynker

PHYS P309 Modern Physics Laboratory (2 cr.) Arranged — Hinnefeld

PHYS P310 Environmental Physics (3 cr.) TR 3:45P-5:00P — Forinash (by 2-way video from IU Southeast; time changes to 4:45P-6:00P on Oct. 20)

PHYS P340 Thermodynamics & Statistical Mechanics (3 cr.) MW 4:00-5:15 — Shore

PHYS P405 Readings in Physics (1-3 cr.) Arranged

PHYS P406 Research (1-3 cr.) Arranged

AST A100 The Solar System (3 cr.) MW 6:55P-8:10P — Shore

AST A105 Stars and Galaxies (3 cr.) TR 10:00A-11:15A — Lynker

GEOL G111 Physical Geology (3 cr.) 4 sections — Borntreger/Staff

GEOL G112 Historical Geology (3 cr.) TR 10:00A-11:15A — Borntreger

Promotion, Tenure for Prof. Lynker

It's official! Monika Lynker has just received notification of action by the IU Board of Trustees, granting her tenure and promoting her to the rank of Associate Professor effective July 1. Congratulations, Monika!

IUSB to Host MPT

Michiana Physics Teachers (MPT), an informal organization of high school and college physics teachers in the Michiana area, will meet on Tue., April 17, at 4:30 p.m., in Northside 0062. MPT typically meets four times a year, to share ideas and techniques for effective physics instruction. If you're a physics teacher, or perhaps a physics-teacher-in-training, please join us! The MPT web site is <http://zuma.iusb.edu/~mpt>.

Yo! Party at Monika's!

The department's end-of-year party will be hosted this year by Prof. Lynker on Friday, May 4, at her home, 1735 Sunnymede Ave. Festivities will begin around 6:00 p.m. All students, faculty, staff, alumni, and friends of the Department of Physics and Astronomy, along with their significant others and children, are invited.

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