



The Printed *Physics* *Astronomy* *Geology*

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Department of Physics & Astronomy

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Prof. Shore Joins Faculty at Pisa

Prof. Steve Shore, chair of the Department of Physics and Astronomy since his arrival at IUSB in 1993, has been appointed Professor of Astrophysics at the University of Pisa. Prof. Shore will take up his duties in Italy this summer. He will be on leave from IUSB until the summer of 2005.

As chair, Dr. Shore has overseen dramatic changes in the department over the last ten years, including the addition of a B.S. track to our degree offerings, the creation of a new tenure-track position in geophysics, and a dramatic increase in the research activity in the department, by both faculty and students. More significant than any of these changes, though, and more lasting, is the legacy of three excellent faculty members -- Monika Lynker, Ilan Levine, and Henry Scott -- that he has attracted to the department.

Steve leaves an indelible mark on the department and on the university. We will miss having him among us, but we are proud of his accomplishments at IUSB and excited for him about the new opportunities presented by his appointment in Pisa.

Contact us!

Dept. of Physics and Astronomy
Indiana University South Bend
1700 Mishawaka Avenue
South Bend, IN 46634-7111
Phone: (574) 237-4478
FAX: (574) 237-6589
Email: sbphys@iusb.edu
URL: <http://www.iusb.edu/>

Geophysicist to Join Dept. in Fall

Dr. Henry Scott will join the faculty of the Department of Physics and Astronomy in August, 2003 as an assistant professor of physics. Dr. Scott, an outstanding young geophysicist, is currently a National Research Council Post-Doctoral Fellow at the Geophysical Laboratory of the Carnegie Institution of Washington. He received a Ph.D. in geophysics from the University of California at Santa Cruz in 2001, and he holds a B.S. in applied physics from Indiana University of Pennsylvania. Dr. Scott's research involves the experimental study of geophysically relevant materials at extraordinarily high pressures, using diamond anvil cells and other laboratory techniques to simulate conditions encountered in the deep interiors of planets. He plans to continue this line of research at IUSB, both in a lab he will construct in Northside Hall and as a user at the Advanced Photon Source (APS) at Argonne National Laboratory.

Dr. Scott's teaching will initially be primarily in geology, where he will help to develop a formal laboratory component for the popular course, GEOL G111 - *Physical Geology*. He is already an experienced teacher, having been chosen while still a graduate student to teach a course for earth science majors at UC Santa Cruz.

This faculty position, which will bring a tenure-track faculty presence to our offerings in geology, is a new one for the department.

Dr. Scott will be an excellent addition to our department and our university, and we look forward anxiously to his arrival.

SNO Among Top Science Stories of 2002

The resolution of the solar neutrino problem, and the confirmation of a major gap in the Standard Model of particle physics, by scientists working at the Sudbury Neutrino Observatory (SNO) in Ontario, Canada, was named the second most important scientific achievement of 2002 by *Science* magazine. Dr. Ilan Levine, who joined the Department of Physics and Astronomy as an assistant professor in 2002, played an important role in the measurements at SNO, where as a post-doctoral research associate from 1997 to 2002 he developed techniques to reduce and to monitor the levels of natural background radiation in the SNO detector materials.

Prof. Levine continues as a member of the SNO collaboration, and has plans to expand on his earlier work in low-background techniques in an on-campus laboratory at IUSB. At present his research efforts are focused on the PICASSO project, a search for weakly interacting massive particles (WIMP's), which have been proposed as a possible form for the missing mass of the universe.

Changes This Fall in Physics Courses

Some important curricular changes will take place in the physics department, effective with the Fall 2003 semester. PHYS P301 - *Physics 3* is being replaced at IUSB by the two-semester sequence PHYS P323/P324 - *Physics 3* and *Physics 4*. The change will allow for a more in-depth treatment of the modern physics content of PHYS P301, which was felt by the department faculty to be too extensive for more than superficial coverage in a one-semester course. PHYS P323 will focus on special relativity, statistical physics, quantum physics and introductory quantum mechanics, and atomic and molecular physics; while PHYS P324 will include solid state physics, nuclear structure and reactions, elementary particles, and an introduction to general relativity.

Changes in the department's electronics offerings will also take effect this fall. PHYS P303 - *Digital Electronics* will be expanded from 3 to 4 credit hours, and PHYS P281 - *Solid State Electronics* will no longer be offered. The content from PHYS P281 that is essential as preparation for the study of digital electronics will be moved to the beginning of PHYS P303 (hence the increase in credit hours and instructional time), and the content that dealt with semiconductors and semiconductor devices will now be covered, in a more physical way, in the new PHYS P324.

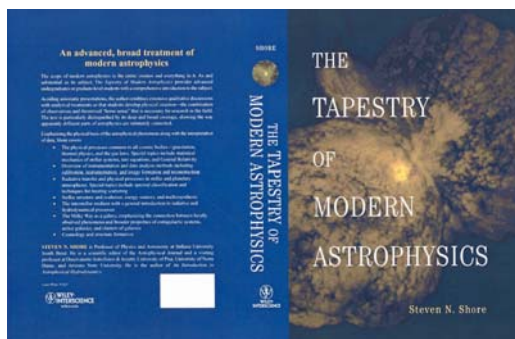
PHYS P323 will be taught by Dr. Monika Lynker in Fall 2003, in the slot occupied by PHYS P301 in the printed schedule of classes.

We believe these changes will better serve the educational needs of both physics majors and computer science majors, the principal clientele of PHYS P303, and we are pleased to see them go into effect.

If you are a physics major with questions about how these changes will affect your course of study, please consult a member of the department's faculty.

Prof. Shore Authors Astrophysics Text

The Tapestry of Modern Astrophysics, by IUSB's Prof. Steven Shore, was published in 2002 by Wiley. It is intended as a text for an advanced undergraduate or graduate level course in astrophysics. We in the department know how long and hard Prof. Shore has worked on this project, and we are very pleased to see the beautiful result of his efforts. Well done, Steve!



Party at Jerry's! Jerry and Suzanne Hinnefeld will host a physics department end-of-semester party and cookout at their home, 2910 Miami St., South Bend, on Friday, May 2. All faculty, staff, students, and friends of the department are welcome, along with their families and friends. Show up any time after 5:00 p.m. This will provide an opportunity to extend our thanks and best wishes to Steve as he prepares for his move to Italy.

Hinnefeld To Be Next Department Chair

Dean Miriam Shillingsburg of the College of Liberal Arts & Sciences recently announced that Prof. Jerry Hinnefeld will be the next chair of the Department of Physics and Astronomy. Prof. Hinnefeld came to IUSB as an Assistant Professor in 1991. He was promoted to Associate Professor in 1997 and has recently been promoted to Professor, effective July 1, 2003.

“What Isn’t Science”

Prof. Steven Shore will present a public lecture entitled “What Isn’t Science” on Thursday, May 1, from 7:00-8:30 p.m., in Northside Hall 158. The talk will examine the growth of science, especially physics, in the last two centuries with a look ahead. Both the lecture and the discussion are free and open to the public.

SPS Activities

On Thursday, April 10, IUSB's chapter of the Society of Physics Students (SPS) sponsored a presentation on career options and career choices in physics, by Profs. Jerry Hinnefeld, Jerry Nurenberg, and Steve Shore. Presentations included a statistical overview of employment trends for physics bachelor's, master's, and doctoral degree recipients, as well as descriptions of the individual career paths of the presenters.

The SPS chapter also organized a tour of the Nuclear Structure Laboratory at the University of Notre Dame. About fifteen IUSB students, accompanied by Prof. Jerry Hinnefeld, joined a tour of the accelerator lab facilities on Saturday, April 19, led by Dr. Larry Lamm, the laboratory's Technical Director.