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A Newsletter of the IUSB
Department of Physics & Astronomy

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3/2 Program Begins Approval Process

The proposal to create dual-degree arrangements between IUSB and two campuses of Purdue University has been approved at the first level of review, the curriculum committee of the IUSB College of Liberal Arts and Sciences. The proposal still faces review by the Dean of Liberal Arts and Science, the Academic Senate (all-campus faculty) curriculum committee, and the Vice Chancellor for Academic Affairs, before being sent to the IU central administration in Bloomington.

Under the proposed program, a well-prepared student would be able to study for three years at IUSB followed by two years at the partnering Purdue campus, and receive both a B.S. in physics from IU and a B.S. in either mechanical or electrical engineering from Purdue. We hope to extend this arrangement to the West Lafayette campus of Purdue eventually, although enrollment pressures make transfer to W. Lafayette difficult in some years.

For more information contact Dr. Monika Lynker (237-6513 or mlynker@iusb.edu), the department's principal advisor.

Contact us!

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CTS Corp. Endows Scholarship Fund

CTS Corporation, an Elkhart-based manufacturer of state-of-the-art components for wireless communications, automotive and computer applications, has endowed a scholarship fund for students studying full-time as physics majors at IUSB. The CTS Freshman Scholarship will provide at least \$1000 of support for a freshman physics major, while the CTS Continuing Student Scholarships will provide at least \$500 in support for students beyond the freshman year. A recipient of a CTS Freshman Scholarship will be eligible for CTS Continuing Student Scholarships in the three following years, for a total of at least \$2500 of support. Other scholarships are available on a competitive basis for IUSB science majors at the junior year and beyond, including the Dean's Scholarship in Mathematics and Natural Science, and the Gerkin Scholarships, for students majoring in mathematics, computer science, physics, or chemistry.

The CTS Scholarships will first be awarded for the 2004-2005 academic year. For application information visit the department web page at <http://www.iusb.edu/~iusbphys>, or contact the department secretary, Ms. Lee Scott-Green, at (574) 237-4278.

Two New Faculty Members Arrive in Fall 2003

The department welcomed two new faculty members in the current academic year. Dr. Henry Scott joined the department as an assistant professor in August, 2003. Dr. Scott earned a B.S. degree in physics from Indiana University of Pennsylvania and a Ph.D. in geophysics from the University of California at Santa Cruz. Prior to coming to IUSB, Dr. Scott was an NRC Research Fellow at the Geophysical Laboratory of the Carnegie Institution of Washington, D.C. He has received an IUSB Faculty Research Grant to work in the summer of 2004 on constructing an on-campus laboratory for his research into properties of geophysically relevant materials at high pressures. In addition to measurements in this laboratory, Dr. Scott plans to perform experiments at the Advanced Photon Source (APS) at Argonne National Laboratory, outside Chicago. Dr. Scott has taught AST A100 and GEOL G111 so far at IUSB.

Dr. Phuoc Ha joined the department as a visiting assistant professor of physics in August 2003, after two years in a similar position at Creighton University. Dr. Ha's research in theoretical physics centers on the quark model of nucleons. In addition to a Ph.D. in theoretical physics, Dr. Ha holds a M.S. in electrical engineering, both from the University of Wisconsin. This year Dr. Ha has taught PHYS P201/P202, PHYS P303 (Digital Electronics), and PHYS P340 (Thermo. and Stat. Mech.). Next fall he will teach PHYS P410 (Computer Applications in Physics) for the first time ever on this campus.

Three IUSB physics alums publish in Physical Review in 2003...

IUSB physics alumni **Israel Owens** (BA '97), **Jason Daly** (BA '97), and **Shelly Leshner** (BA '99) all were authors of papers published in sections of *Physical Review*, a leading physics research journal, in 2003. Israel, a graduate student at Dartmouth, is the lead author of "High-order gain in a beam driven dielectric resonator," which appeared in the March 2003 issue of *Phys. Rev. E*; Jason, a graduate student at Notre Dame, co-authored the paper "Rotational and vibrational excitations in ^{84}Zr studied through in-beam ^{84}Nb beta-decay spectroscopy," in the January 2003 issue of *Phys. Rev. C*; and Shelly Leshner, who is pursuing graduate studies at Kentucky, was co-author of three *Phys. Rev. C* articles in 2003. She was a co-author with Jason on the paper cited above, and she also co-authored "Comprehensive studies of low-spin collective excitations in ^{94}Mo ," in February 2003, and "Quadrupole-octupole coupled states in ^{114}Cd ," in July 2003. We're very happy to see Israel, Jason, and Shelly progressing so well in their careers, and we look forward to similar announcements from our more recent alumni pursuing graduate studies — **William Zech** (BS '02) at Notre Dame, **Scott Michael** (BS '02) at IU Bloomington, and **Jonathan Darnel** (BS '02) at Wyoming.

... and Current IUSB Physics Majors Are Also Presenting Their Work

Scott Marley and **Ed Behnke**, undergraduate physics majors studying at IUSB, have both recently presented results of their research at national or international meetings. Scott prepared a poster presentation, entitled "High voltage control of the Modular Neutron Array," for the Conference Experience for Undergraduates (CEU) session at the Fall Meeting of the APS Division of Nuclear Physics in Tucson in October. Ed presented his work on a novel design for signal processing circuitry, developed in support of IUSB's contribution to the PICASSO dark matter experiment, at the Argonne undergraduate research symposium last fall and at the 1st International Meeting on Superheated Droplet Detectors in Montreal in March, 2004. Well done, guys!

Another IUSB physics major headed to grad school

Scott Marley, who will graduate in May, has been accepted into graduate study in physics at Western Michigan and offered a teaching assistantship. Congratulations, Scott! 100% of IUSB physics majors who have applied for graduate study in physics over the last decade have been admitted, and we understand that our graduates who enter the workplace directly have been just as successful. Needless to say, we're proud of our graduates, and we're also proud of the job we do in preparing them for graduate school and for the workplace.

Party at Monika's!

Dr. Monika Lynker will host a physics department end-of-semester party at her home, 1735 Sunnymede Ave., South Bend, on Friday, May 7, weather permitting. 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. Check the dept. web site in case of inclement weather.

IUSB Part of PICASSO Dark Matter Search

Dr. Ilan Levine, assistant professor of physics, leads a group at IUSB that is part of the PICASSO collaboration. PICASSO is an experiment to search for weakly interacting massive particles (WIMP's), one of the candidates for the dark matter that makes up the majority of the mass of the universe. Dr. Levine, Dr. Bill Feighery, associate professor of chemistry, and undergraduate student Ed Behnke all gave well-received talks at recent meetings in Montreal related to their work on PICASSO. Because of their strong contributions to date, especially the design of a novel sensor/preamp package for processing signals from PICASSO's detectors, the IUSB group has been assigned the task of producing 250 of these units, aging them, and testing them over the next few months. To learn more about PICASSO and opportunities to be involved, contact Dr. Levine (ilevine@iusb.edu).



SPS News

It has been an active year for the IUSB chapter of the Society of Physics Students (SPS). Under the leadership of officers Scott Marley, Darren Woodcox, Andrew Ratkiewicz, and Jim Evans, the SPS has organized movie nights, a trip to Chicago's Field Museum (along with the Biol/Chem club) for the Einstein exhibit, a tour of Argonne National Laboratory (with the IU Bloomington SPS chapter), and a talk by the department's newest faculty member, Dr. Henry Scott, on the topic "An Experimentalist's Journey to the Center of the Earth." Next up is a showing of the PBS series, *The Elegant Universe*, with commentary by our own string theorist, Dr. Monika Lynker, on Thursday, April 8, at 7:00 p.m., in Northside Hall 0063.