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A Newsletter of the IUSB
Department of Physics & Astronomy

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Mark Austin Sherman (1961—2001)

We were saddened in the fall to learn of the death of Mark Sherman, B.A. (Physics) '99.

Born in Michigan, Mark graduated from West Iron H.S. in Stambaugh, Michigan, and began his undergraduate studies at Michigan Tech in Houghton (1980-83). In 1987, he transferred to IUSB and began taking courses while working full time at Allied as an engineer. With singular determination and dedication, he continued as a physics major until, in 1999, he graduated with a B.A. and the Physics Excellence award.

Mark struggled for years obtaining his physics degree while working full time and, unknown to most, battling cancer. Liz, his wife and herself a professional engineer at Bosch, understood what this meant to him and they faced the challenge with heroism. Modest in the struggle, stoic in facing the odds, Mark continued in R&D at Allied until his death on 29 September, 2001. His life was an example, his memory an inspiration.

A commemorative prize has been established in his memory to recognize students who are following the same non-traditional path with distinction. For details, contact Prof. Shore (sshore@iusb.edu).



Particle Physicist to Join Faculty

Dr. Ilan Levine will join the IUSB faculty as an Assistant Professor of Physics in August, 2002. Dr. Levine earned a B.S. in physics from Yale, and M.S. and Ph.D. degrees in physics from Purdue. As a graduate student and as a Research Associate at Purdue, he worked on the TOPAZ experiment at KEK, Japan's National Laboratory for High Energy Physics. Since 1997 he has held a research appointment at the Sudbury Neutrino Observatory (SNO), in northern Ontario.

One of the most important experiments of the last 50 years, SNO is a major international effort to resolve the so-called "solar neutrino problem," the fact that all previous solar neutrino experiments have measured a lower neutrino flux, by a factor of two or three, than predicted by generally accepted solar models. First results from SNO, as reported last year in *Physical Review Letters*, indicate that this discrepancy is most likely due to the transformation of e' -neutrinos into ν - or μ -neutrinos, a result which conflicts with the standard model of electroweak interactions.

Dr. Levine has been a leader in efforts to reduce the background radioactivity in and around the SNO detector to levels that allow its successful operation. He has had responsibility for the design, commissioning, and operation of SNO's cover gas system, which is the main protection of the detector from background radioactivity in laboratory air. As part of this effort, he developed techniques for measuring radon concentrations as small as 0.1 atoms per liter of gas. Dr. Levine plans to continue this line of work at IUSB, developing a laboratory for research and development in techniques for controlling and measuring low levels of radioactivity.

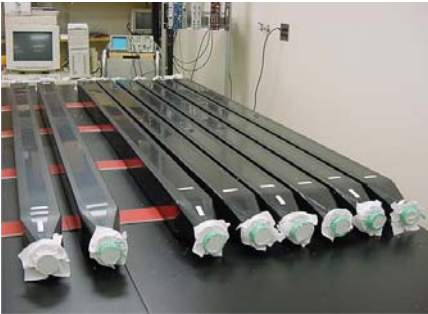
In addition to his experience as a graduate teaching assistant at Purdue, Dr. Levine has supervised a number of undergraduate students during their 4-month coop terms at SNO. He will bring to his work at IUSB great enthusiasm for both his teaching and his research, and we are sure that he will make great contributions in both areas in the coming years.

Three Physics Majors To Graduate in May

Three IUSB physics majors — Jon Darnel, Scott Michael, and William Zech — will graduate with B.S. degrees in May. This is the largest group of May physics graduates from IUSB since 1985. All three are planning to pursue graduate study in physics. William will attend Notre Dame, Scott will be at IU Bloomington, and Jon is headed to Wyoming. As always, we will miss seeing these students in our classes and around the department, but we celebrate with them the successful completion of their undergraduate studies, and we wish them all the best in their future endeavors. Keep in touch, guys...

MoNA Project Gearing Up

The first complement of eight scintillator bars for IUSB's layer of MoNA (see Sept. 2001 *Printed PAGE*) arrived on April 9, 2002, with the remaining eight bars expected in June. The thirty-two photomultiplier tubes should arrive in late May. Scott Marley and Jim Evans, IUSB physics majors, have signed on to assist Prof. Jerry Hinnefeld with the assembly and testing of IUSB's MoNA layer during the summer of 2002. More information about MoNA can be found at <http://groups.nsl.msu.edu/mona/>.



Top left: Participants at the first annual MoNA Workshop at MSU, Feb. 23, 2002. Jim Evans and Scott Marley are 2nd and 3rd from the left in the front row, and Jerry Hinnefeld is near the middle of the back row. *Top Right:* Prof. Bryan Luther of Concordia College demonstrates testing procedures for workshop participants with a prototype scintillator bar. *Left:* The first eight scintillator bars of IUSB's MoNA layer in the basement of Northside Hall.

Dr. Lynker at Fermilab Next Year

Dr. Monika Lynker will spend the 2002-03 academic year on sabbatical at Fermilab. Although a string theorist by training, Prof. Lynker has recently begun working in experimental particle physics. Through an adjunct faculty appointment at Notre Dame she is a member of the *D0* ("D-zero") collaboration, and she will spend next year working at the *D0* detector site at Fermilab.

Fall Registration Under Way

Registration for the Fall 2002 semester opened for returning students on April 8 and for new and stop-out students on April 15, and continues throughout the summer months.

The department's Fall 2002 offerings include:

- PHYS P100 — Physics in the Modern World (5 cr.)
- PHYS P201 — General Physics 1 (5 cr.); algebra-based intro. physics
- PHYS P202 — General Physics 2 (5 cr.);
- PHYS P221 — Physics 1 (5 cr.); calculus-based intro. physics
- PHYS P281 — Solid State Electronics (3 cr.)
- PHYS P301 — Physics 3 (3 cr.)
- PHYS P441 — Analytical Mechanics (3 cr.)

- AST A100 — The Solar System (3 cr.)
- AST A105 — Stars and Galaxies (3 cr.)

- GEOL G111 — Physical Geology (3 cr.)
- GEOL G112 — Historical Geology (3 cr.)

Prof. Shore in Panel Discussion with NPR's Ira Flatow

Prof. Steve Shore participated with scientists from other area colleges and universities in a panel discussion with National Public Radio's science correspondent, Ira Flatow. Flatow visited the area at the invitation of public radio station WVPE, which is marking 25 years of operations in Elkhart. The panel discussion, held during a luncheon at the University of Notre Dame, was a local version of Flatow's popular "Science Friday" radio show. Prof. Shore talked about his research on turbulence in the interstellar medium.

3/2 Engineering Program Being Explored

It may soon be possible for students to spend three years studying at IUSB, followed by two years of study at another institution, and receive both a B.S. in physics from IUSB and a bachelor's degree in engineering from the other institution. Discussions of such arrangements are taking place with a number of engineering departments. It is hoped that agreements with participating engineering programs will include guaranteed admission for students who perform at an appropriate level in a set of prescribed courses while at IUSB.

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