

May 15, 2002

Dear Friends and Alumni,

This past year has been a very exciting year for the physics program and we would like to share with you some of the events that have occurred in the department.

This past fall we hosted an event to celebrate two of The University of South Dakota's most illustrious graduates. John and Ernest Lawrence were brothers from Canton, SD. They left the campus in the 1920s and went on to earn international reputations in the field of science. Ernest became a Nobel Prize winner in physics and John became known as the "Father of Nuclear Medicine." The year 2001 marked the centennial of Ernest O. Lawrence's birth and the seventy-fifth anniversary of John H. Lawrence's graduation from The University of South Dakota. The event was entitled "The Physics of Life" to honor both brothers' contribution to nuclear physics and medicine. Keynote speeches were given by Dr. Kenneth Lande, Professor of Physics at the University of Pennsylvania, who discussed his research in solar neutrinos at the Homestake Mine in Lead, as well as the future of Homestake as a national laboratory and Dr. Stephen Holmes, physicist and Associate Director for Accelerators at the Fermi National Accelerator Laboratory in Illinois who discussed the history and theory behind accelerator physics. Sioux Falls native, Dr. Robert Berdahl, Chancellor of the University of California at Berkeley spoke on "The Lawrence Legacy." Also on this day, the Akeley Science Center was renamed Akeley-Lawrence Science Center. The participation and enthusiasm for this event on our campus was incredible. We were very happy to see many of you in attendance.

This past spring, through the efforts of Dr. Keating and Dr. Heaton (Earth Sciences) and the support of the Office of Research, we hosted astronaut Harrison Schmitt for a combined Astronomy/Earth Day event. Dr. Schmitt was a member of Apollo 17 and is the last man to walk on the Moon. In addition to presenting a general lecture to the campus community on lunar resources, he also spoke to various classes and student groups on campus and visited all of the public schools in Vermillion.

We have been shorthanded in the department since the middle of November. Dr. Keating, who was in the Naval Reserve, has been recalled to active duty in support of Operation Enduring Freedom. Fortunately for us, he has been stationed in Omaha, NE. Even though he has not been able to teach courses for us, he has continued to participate in departmental activities. He has submitted several grant requests and supervised several student research projects. One student, Maria Martin, accompanied Dr. Keating to The National

Radio Science Meeting in Boulder, CO at which their research was presented. Wayne James continues to teach, maintain and produce the online manual for the introductory physics labs. He has also stepped in and taught our algebra-based physics course in Dr. Keating's absence. We continue to share some of our upper-division physics courses with both SDSU and SDSM&T. Courses are taught using a two-way interactive audio-video system called VTel and are located in the Governor's Electronic Classroom on each campus.

Unfortunately, with Dr. Keating's limited presence in the department, the observatory project has slowed somewhat. The dome has been moved to the shop of a local welder and repairs are scheduled to begin soon. As you can see from the pictures below, moving the dome was quite a task.



We have obtained a portion of the funds necessary for the observatory project. The South Dakota Community Fund contributed \$10,000 to assist with installing the Internet connection to the observatory. Our intent has been to allow remote control of the observatory so that users across the state could access this resource from their own computers. In response to our mailing last spring, we have obtained over \$9,000 in donations and pledges toward the observatory. Thank you all very much.

Last spring we graduated three outstanding physics majors. Tricia Lawrence received the Goldwater scholarship as an undergraduate and was accepted into The University of South Dakota Medical School. Michael Harkness, after completing a triple major in physics, mathematics and history; will enter the PhD program at The University of Oklahoma this summer to study physics. As an undergraduate, his research activities were chosen for "Posters on the Hill," a very prestigious opportunity for undergraduate students to present their research in Washington D.C. Stephen Solberg is working for an acoustics firm, Coffeen Fricke & Associates, Inc. of Kansas City. As an undergraduate, Stephen was very active in acoustical research and presented his work at the South Dakota Academy of Science. This past December, Vernon McBride received his B.S. in Physics. While Dr. Keating is on military leave, Vern has pitched in and covered several of our introductory physics lab sections. Just this past weekend, Trevor Anderson received his physics degree and will enter USD's medical school this fall.

Of our current undergraduates, Kortney Klinkel of Spearfish, SD received a Goldwater Scholarship. The Goldwater Scholarship is a very competitive program and we are very pleased to have had two Goldwater recipients in the last several years. Tim Margheim of Vermillion received an EPSCoR research stipend last summer to study the visualization of physics problems. Using Macromedia Flash, he has created a large number of simulations that are very popular in our undergraduate introductory courses for physics majors.

If you have an opportunity to browse the web sites for these courses, you should look for Tim's simulations. They are very good. We are able to offer several small scholarships to our undergraduate majors. This past year, Maria Martin, Erin Konwinski, and Cara Hamilton each received the Joseph and Margaret Nelson scholarship. Chris Dabney received the G.I. Moller scholarship. Many of you may remember G.I. Moller, who taught in our program for many years. The scholarship was established several years ago to honor the memory of G.I. If any of you would like to contribute to this scholarship fund, please contact the USD Foundation for information. Having scholarship money available in physics allows us to attract and retain some of the best and brightest students to our program.

In addition to asking for money, I have another easier request for each of you. We would like to include updates on our graduates in future mailings. If you have an opportunity to do so, please send us some information about your current position—email would be preferred. Send the information to ckeller@usd.edu or you may send the information to me via regular mail in care of the physics program at USD.

Thank you for all of your support and I look forward to hearing from you.

Best Wishes,

Tina Keller, Chair