Greetings Alumni and Friends,

The past year has seen us continue to grow. Our current enrollment is 57 undergraduate and 20 graduate students. Two of the graduate students are pursuing M.S. degrees in science teaching, while seven undergraduates are pursuing teaching careers by concurrently majoring in physics and secondary education, a new option for UWyo undergraduates. In addition, unlike many public four-year institutions, which have canceled or severely curtailed the hiring of faculty, UWyo as a whole continues to grow. Our department has a new faculty member this year and we will hire again next year. Assistant Professor Adrian Feiguin, a condensed matter physicist who specializes in computational approaches to strongly correlated systems, is featured in this newsletter. He is particularly excited about using the NCAR supercomputer center in Cheyenne, the construction of which is slated to begin in the spring of 2010.

The renaissance of the department has coincided with a rejuvenation of curriculum. We offer an advanced undergraduate physics lab course once again, and our introductory astronomy lab has been revamped to be a more inquiry-based, experiential learning experience. This coming spring semester we also will experiment with Studio Physics (lecture + lab + discussion combined) in our calculus-based introductory physics sequence. At the graduate level, new courses cover lab techniques, nanotechnology, solar cells, optical properties of solids, and computational methods in solid state. Yet with all these exciting changes, we still remain true to our traditions, like having our students use Lagrangian mechanics to solve for the impact speed of a ball dropped from a height h!

Warm wishes for the holiday season,

Danny
FACULTY

Assistant Professor Adrian Feiguin comes to Uwyo after postdoctoral positions at Florida State, UC Irvine, and Microsoft Research. He obtained his Ph.D. in 2000 in his home country of Argentina. Feiguin’s work focuses on the exotic phases of matter of quantum origin that arise at nanometer scales, or from the interactions inside solids. His research has spanned high-temperature superconductivity, colossal magnetoresistance in manganites, transition metal oxides, Mott insulators for application to solar cells, and nanometer scale transistors for the next generation of electronic devices, including the design and construction of quantum computers based on fractional quantum Hall systems.

Associate Professor Mike Brotherton spent academic year 2008-2009 on sabbatical, working with international astronomers in Porto Alegre, Brazil and Tianjin, China. His astronomical research revolves around better understanding quasars—outrageously luminous objects lurking in the hearts of galaxies and powered by massive black holes—and how they interact with their environment. How they interact is often violent, leaving entire galaxies torn apart and reborn in different shapes and colors. Collaborators Rodrigo Nemmen, a specialist in understanding quasar jets and the spinning black holes that produce them, and Zhaouhi Shang, an expert on quasar energy production, will return the favor and visit Brotherton in Laramie this year to continue their work together.

STUDENTS IN THE NEWS

The students in Professor Paul Johnson’s senior undergraduate Rocket Science class saw their experiments rise to the sky at 5:30 a.m. on the morning of 26 June 2009 with the successful launch of a suborbital sounding rocket from NASA’s Wallops Flight Facility in Virginia. The purpose of the class is to teach students from multiple disciplines how to work together to develop an experiment that will successfully fly into space. The students led all design and fabrication phases of the project, and gained firsthand experience at the launch site integrating their payloads into the rocket. The two-stage Terrier-Orion rocket soared to an altitude of 73 miles, and the experiments and the resulting data were successfully recovered from the Atlantic Ocean. The department and the Wyoming NASA Space Grant Consortium were major supporters of this project. Adapted from UW News Services
The Society of Physics Students is sponsored by the department to go on field trips to local conferences, national science centers, and workplaces where the students can see physicists and astronomers at work. SPS advisor Rudy Michalak has found that this investment into the students increases their identification as majors and lowers attrition rates. The variety of places visited ranges from the yearly conference of the American Physical Society, to NREL in Golden and NIST in Boulder, to regional hospitals to speak with medical physicists. Relevant conferences are not always within a day trip’s reach and we hope to find ways to extend our funding so that we can sponsor overnight field trips. Goals to that end are visits at Fermilab in Chicago, attendance at the quadrennial national SPS conference in Cape Canaveral in 2012, and yearly attendance at the APS conference.

SUMMER INTERNSHIPS

Andrew Magstadt - Worked at JPL on modeling the heat transfer of the lunar subsurface.

Megan Bagley - Interned in astrobiology at the SETI Institute in Mountain View, CA.

Emily May - Studied at the Rochester Institute of Technology.

Kristy M. Katein-Taylor - electrical characterization of metal oxide nanowire field effect transistors - UW Physics & Astronomy

Clay Trevenen - development of instrumentation for thin film depositions - UW Physics & Astronomy.

Many of the opportunities our students receive are courtesy of generous donations from alumni and friends of UWyo Physics & Astronomy. We recently received a bequest of $300,000 from Mrs. Shirley Bessey in memory of Robert J. and John S. Bessey. These funds will be used to support our undergraduate and graduate students.

Name_______________________________________

Mailing Address _______________________________

City ___________________State ______ Zip _______

I would like to make a gift of $___________ to the UW Physics & Astronomy.

Please send donations to:

UW Foundation
1200 E. Ivinson
Laramie, WY 82071
ALUMNI UPDATES

Our alumni webpage (physics.uwyo.edu/Alumni/alumni.html) now goes back to 1939! We love hearing from you, and would be happy to post any brief updates you may have. Email us at physics@uwyo.edu. Below are a few excerpts from recent postings.

1970  Stuart Ahrens Ph.D. - I am a retired physics professor. I taught at NCA&T State University in Greensboro, NC. for 30 years. I was also the Director of the Student Space Shuttle Program. In 1994 we had a student payload aboard Shuttle Flight STS68.

1978  Steven LeLaughlin M.S. - I am employed by SSAI, as a contractor at NASA Goddard Space Flight Center, currently working on software and analysis support for ICESat.

1981 Dennis Thompson Ph.D. - I am currently a member of the Senior Technical Staff for ITT Space Systems Division in Rochester, NY. I also head the Space Environments Group in the Division.

1988  Felicia Reid B.S. - I am currently an asphalt research and technical consultant (21 years) specializing in rheology for both the paving and roofing industry; I am also a Laboratory Quality Control Coordinator for Mountain States Materials - Asphalt Paving Company - based in Cheyenne, Wy.

1989  Nancy Silbermann M.S. - I received my Ph.D. in Physics from Michigan State in 1994 and then post-doc’d at IPAC, the Infrared Processing and Analysis Center on the Caltech campus. since 1999 I have worked at the Spitzer Science Center, also at Caltech.

1990  Kevin Menges B.S. -- M.S. in Physics at the University of Missouri at Kansas City. I spent six years teaching in Malaysia, a couple of years teaching part time at Ottawa University and Johnson County Community College. one year as a full time instructor at Western Wyoming Community College. I am currently working as a full-time Instructor of Physics at Des Moines Area Community College at the main (Ankeny) campus.

Physics & Astronomy
Dept 3905
1000 E. University
Physical Science 204
Laramie, WY 82072