From the Program Director

This is an exciting time for the Professional Science Master’s Program in Engineering Physics here at Appalachian. In 2008, we officially launched the program with a single student. Now in our second year, we have 6, with an outstanding prospect of continued growth. The success of our program has relied heavily on many people, but primarily our Advisory Board, our emerging internship partners, our Dean of Research and Graduate Studies, Dr. Edelma Huntley and our Interim Dean of the College of Arts and Sciences, Dr. Anthony Calamai. Most importantly, however, are our students. They have persevered through the program growing pains while maintaining excellence in the classroom, the labs, and the workplace. We plan to showcase our students at the next Advisory Board meeting in May, 2009.

I hope that you find this newsletter informative. If you have any questions or comments regarding the newsletter or our program, please feel free to contact me directly at (828)262-6836 [thaxtoncs@appstate.edu].

Best Regards!
Chris Thaxton, Ph.D.
Program Director, PSM in Engineering Physics

Meet Our Students!

This year, we will be graduating two students from our PSM program in May, Richard Norris and Andy Cooper. Four other students began the PSM program this year – their internships are still being developed.

Richard Norris
Internship: Brite Engineering & Consultants

Richard Norris worked with Brite Engineering & Consultants of Pilot Mountain, NC over December 2007 and again in the Summer of 2008. He designed and assessed new construction power system layouts on various projects for cost efficiency. Richard says that “The PSM courses made it easier to talk about proposals and time-line evolutions of the jobs without having to learn it on the fly,” Richard hopes to continue his employment with Brite after graduation.

Andrew Cooper
Internship: Dr. James Sherman, ASU

Andy Cooper worked with Dr. Jim Sherman, who received a NASA NC Space grant to design and develop a laser cavity ring-down spectrometer (CRDS) to measure the light extinction of atmospheric aerosols near the peak of the solar emission spectrum. The CRDS will be combined with other instruments at the Appalachian Atmospheric Interdisciplinary Research (AppalAIR) field site in April to obtain a better understanding of the effects of aerosols’ trace gases on the regional solar radiation budget.

Joseph Moebus

Joe is a first year student with a specialty in electronics and instrumentation. Joe worked with Dr. Thaxton last summer on robotics and interface development for the graduate microprocessors course. Joe will be applying for a Lord Corp. internship this summer.

Eric Huffman & Jama Greene

Eric and Jama are first year students specializing in astronomy instrumentation. Both plan to work with Dr. Joe Pollock using photometry to analyze binary asteroids. They may continue this work as their internships, although both show interest in working with PARi or elsewhere this Summer.

Paul Tyma

Paul is also a first year student currently working with Corning Inc. in Hickory, NC. He is beginning his program this Spring and will join the department full time in the Fall 2009.

Physics Dept. Awarded $380,000 from NSF for Nanoscience Research

Dr. Tonya Coffey and Distinguished Professor Dr. Phillip Russell have received more than $380,000 from the National Science Foundation to purchase two atomic force microscopes (AFM) that will facilitate nanoscience education, research and outreach at Appalachian State University. This will also serve as a platform for graduate research and PSM internship opportunities, as well as collaborations on campus and with NC industry. “It has been estimated that there will be about 10 million jobs in nanotechnology related fields by 2014,” Coffey said. “We need to prepare our students for this new job market. That means making the tools used to study nanotechnology available to our students, and training them to use them.”

Mayur Savla [left] and Dr. Tonya Coffey [right] install the Veeco Dimension V scanning probe microscope in Dr. Coffey’s lab.

Dr. Tonya Coffey [left] and Dr. Phil Russell (right)
PSM Advisory Board Members

Eric Buckland BioOptigen, Inc.
Don Cline Pisgah Astronomical Research Institute (PARI)
Richard Czerw NanoTechLabs, Inc.
Bruce Dillon Tivoli/IBM
Dean Glace SRC, Inc.
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Lane Miller Lord Corp.
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PSM ASU Affiliated Board Members

Anthony Calamai Interim Dean, College of Arts and Sciences
Sid Clements Professor, Graduate Coordinator Dept. of Physics & Astronomy
Dick Genberg Interim Chair, Dept. of Physics & Astronomy
Holly Hirst Associate Dean, Graduate Studies
Edelma Huntley Dean, Research & Graduate Studies
Bill Parrish Director, NC Small Business and Technology Development Center
Phillip Russell Distinguished Professor, Dept. of Physics & Astronomy
Jim Sherman Assistant Professor, Dept. of Physics & Astronomy
Chris Thaxton Assistant Professor, PSM Coordinator, Dept. of Physics & Astronomy

Calendar of Events:

December 17, 2008: ASU tuition due
January 4, 2009: ECU tuition due
January 11, 2009: First day of classes at ECU
January 12, 2009: First day of classes at ASU
January 2009: Students, go to:
http://www.ncspacegrant.org/fs/lor
for Lord Corp. internship program applications
May 9, 2009: Spring commencement
May 15, 2009: Annual Advisory Board Meeting – to be held at the Broyhill Inn and Conference Center, Boone, NC. More details forthcoming – save the date!

For more information on our programs:

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East Carolina University Provides +Plus Course Support

The East Carolina University College of Business has agreed to partner with us to provide the needed “plus” courses on-line to our PSM students from their AACSB-accredited curricula. The students can select from a range of courses based on input from academic and internship advisors. This was a key recommendation by the Advisory Board in May 2008. Thanks to Robin Armstrong at ECU for her hard work!

The National Scene – In Brief

The National PSM Association (NPSMA) Held Inaugural Meeting in Atlanta, Nov. 13-14, 2008

Our program was represented at the NPSMA conference this Fall in Atlanta. The next few years will be instrumental in the establishment of the PSM degree as a “household” name – an educational product that is wholly self-supporting and recognized as successfully satisfying the need for scientists trained for integration into industry. Critical to this success is the linkage between system schools on the state level. The California State University system was held up as a model for a successful state-wide initiative – one that has seamlessly integrated systems such as registration and records, tuition and fees, and other administrative databases between system schools. More importantly, the Cal State PSM programs enjoy visibility at the highest level of state government, which has enabled high-profile internships and corporate sponsorships. We are now working to link the North Carolina state-wide PSM programs in a similar way to take advantage of the benefits of a unified effort.

The Post-9/11 GI Bill Shows Great Promise for PSM Degree Programs

Under the “Post-9/11 Veterans Education Assistance Act of 2008”, as of August 1, 2009, benefits will be available for veterans for tuition and fees up to the highest level of the tuition at the state’s public institutions of higher education. Importantly, the benefits cover both graduate and undergraduate education. We believe that this new market is an opportunity to grow our PSM program here at Appalachian by assisting those who have served our country in developing their skills for jobs here at home. The Department of Veteran’s Affairs website for information on education and other benefits for Veterans is www.GIBILL.va.gov.

The PSM Initiative Continues Growth Nationwide

Currently, the NPSMA (National PSM Association, http://npsma.org) has quantified:

- 58 universities with PSM programs – projected 75 by 2010
- 117 PSM-designated degree programs – projected 140 by 2010

Students and alumni:
- 2100 PSM graduates to date (~85% currently employed; ~10% seeking Ph.D. degrees)
- 2500 students are currently enrolled in PSM programs (~48% are working professionals)

There are 9 physics-related programs (including ours) which makes up 8% of all current PSM programs. 2% of the current PSM graduates are from physics-related programs. 12% of all PSM graduates are Native American, Black, or Hispanic, and 48% are women.

When you wade through all the numbers, it becomes clear that the PSM degree is gaining value across the board. Also, opportunities exist to expand physics-related program offerings, especially to minorities and veterans. Namely, all signs point to a market need for expansion of a nanoscience-based workforce in NC – a PSM degree program in nanoscience here at Appalachian would likely thrive.