

# PHYSICS

## General Update

Again the summer has rushed by and the fall semester is well underway.

Last year saw a number of important developments for the department. It was the first year of our new faculty member, Dr. Mehmet Goksu. Dr. Goksu took responsibility for the fall and spring sequence of PHYS 231 and 232. This is our calculus-based, introductory sequence for the physical science majors and an important responsibility. By all accounts, Dr. Goksu handled the courses very well and has become a popular instructor. In addition to the introductory sequence, Dr. Goksu took over the PHYS 233 course – Modern Theories of Waves and Particles. In this course our majors are exposed for the first time to the “weirdness” of modern quantum mechanics and the strange behavior of matter at the atomic and subatomic levels.

During the fall 2007 semester, we offered a stand-alone optics course for the first time. The course consists of a weekly lecture and three hour laboratory. The course, team taught by Drs. Natalia Dushkina and Tariq Gilani, is now required for all the Physics B.S. majors. As you can imagine, purchasing the necessary equipment for such a course and getting the experiments up and running is a tremendous amount of work. But despite a glitch or two, the course was a big success.



*Students working on an experiment in the new optics lab course. It looks like things are going smoothly.*

Dr. Gilani also oversaw the completion of a state-of-the-art vacuum deposition system for the manufacture of structured thin films. Much of the work was done by one of our graduating seniors as part of his senior research. The apparatus will allow the deposition of thin films with a variety of geometries. Chiral and chevron structures are possible. Tilted columnar thin films are another possibility. The electrical and magnetic properties of such films are not well understood and have many potential practical applications. The apparatus will keep Dr. Gilani and many of our students busy for a long time.



*Dr. Dushkina and a student are fine tuning a laser assembly in the dark lab. Notice how the walls are painted black to minimize reflections.*

This year there are a number of very exciting senior research projects already in progress. Dr. Hendrick and a student are dealing with “Dark Matter and Mass in Galactic Clusters” while Dr. Goksu is pursuing the “Electrical Characteristics of Photovoltaic Cells”. Dr. Dooley, who is our most prolific sponsor of senior research, is looking at the “Normal Modes of a Truck Tire”. He is asking if the acoustic response of a tire can give warning of its imminent failure.

## How YOU Can Help

Like what you read about physics alumni, faculty, students and programs? Please keep our programs strong and support physics students. Give on-line @ [www.millersville.edu](http://www.millersville.edu). Click on the “Giving” tab OR send your gift to Millersville University, Development Office, P.O. Box 1002, Millersville, PA 17551-0302. Gifts can be restricted or unrestricted.

### HOMECOMING WEEKEND ACTIVITIES

**Saturday, November 1, 11:30 – 1:30 p.m.**

**Science and Mathematics Alumni Luncheon** (Steinman Courtyard, Argires Science Complex)

Science and Mathematics alumni are cordially invited to this luncheon. No charge with advanced reservations.

Please call the Alumni Office (800-681-1855) or register online at [www.villealumni.com](http://www.villealumni.com).

**Science and Mathematics Student Research Poster Display** (Caputo Hall Lobby)

Current undergraduate/graduate research poster papers will be displayed.

# H i g h l i g h t s

# PHYSICS

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There are a number of University activities that you should mark on your calendars.

## Homecoming

Homecoming is the weekend of October 31, and as usual, we have planned a luncheon in the Steinman Courtyard at the Argires Science Complex. This is an excellent opportunity to meet former classmates, chat with the current students, reminisce with the faculty, and tour the facilities. See the previous page for more information. In addition, there will be a Science and Mathematics Student Research Poster Display; this provides an excellent opportunity to catch up on the student research activities within the School.

## Brossman Science Lecture

The 24<sup>th</sup> Annual Brossman Science Lectureship is on Thursday, November 6<sup>th</sup>. This year the speaker is Dr. Margaret Lowman, also known as “Canopy Meg”, who climbs trees for a living. For many years she has solved mysteries in the tree tops and has designed new methods for exploration of the forest canopy. Dr. Lowman’s presentation, “Life in the Tree Tops: Exploration of Tropical Rainforests” is at 7:00 p.m. in Lyte Auditorium. This promises to be a very exciting and entertaining event. No tickets are required for admission to the evening lecture; just show up.

## Harlow Shapley Visiting Lectureship Program

The Harlow Shapley Lecture, devoted to the public understanding of modern astronomy and cosmology, will take place during the spring 2009 semester. Dr. Hendrick is currently working out the details. This lecture is devoted to the celebration of the “World Year of Astronomy” which takes place during 2009. This is the 400-year anniversary of Galileo’s first astronomical observations using a telescope. For updates and more details; check our web site: <http://www.millersville.edu/~physics/>.

As always, it’s going to be a busy year, but please take advantage of these opportunities and pay us a visit. Don’t forget our physics seminars on Wednesdays at 4:00 p.m. You are always welcome to join us any time and there are always refreshments just before the presentations. We look forward to seeing you.

*Michael J. Nolan*

Michael J. Nolan, Ph.D.  
Chair and Professor of Physics

## **Alums! We want to brag about you!**

Please update your contact information online at:  
<http://www.millersville.edu/~physics/>

Click on Alumni and then on Form to update your information;  
also click on Survey to tell us how well we served you while you were here.