Research and Educational Capabilities

Dr. Mohan Aggarwal
Chairman
Department of Physics, Chemistry and Mathematics

Presented for Graduate School Open House
February 22, 2014
URL: www.physics.aamu.edu
Alabama A&M University
Department of Physics
Offers
B.S.  M.S.  Ph.D
Space Science  Materials Science  Optics / Lasers
Graduate Program in Applied physics

- **Career Opportunities:** AAMU graduates with M.S. and Ph.D. degrees in Applied Sciences are productively employed in High-Tech Industry, Federal Research and Administration Organizations as well as in Academia.

- **Length of Time to Complete the Program:** Completion of M.S. degree takes about 2 years while completion of Ph.D. takes on an average about 4 years.
Requirements for admission

- For admission to the M.S. Program, the applicant must have a B.S. degree in a STEM area. For admission to the Ph.D. Program, a Masters degree in a STEM area is required. For applicants from areas other than Physics, deficiency must be overcome with a few additional courses. Detailed application requirements including minimum scores in GRE and TOEFL tests are explained in the Graduate Catalog.
Scholarship Opportunities

- Currently, every graduate student is partially or fully supported by scholarships, research-assistantships, teaching-assistantships or fellowships. These include student research fellowships provided by federal organizations like NASA, NSF, U.S. Army and space grants. There are additional scholarships for our minority students from a Title III Grant.
Faculty in Physics Program

M. D. Aggarwal, Ph.D. (Crystal Growth, NLO)
R. Bommareddi, Ph.D. (Laser Spectroscopy)
*A.K. Batra, Ph.D. (Ferroelectric Materials & Devices)
*M. Curley, Ph.D. (Laser Spectroscopy)
M. Dokhanian, Ph.D. (Optics/Laser)
M. Edwards, Ph.D. (Laser optics, Condensed matter)
V. Edwards, Ph.D. (Optics/Lasers)
P. Guggilla, Ph.D. (Materials Science)
*N. Kukhtarev, Ph.D. (Optics, Photorefractivity)
R.B. Lal, Ph.D. (Crystal Growth, NLO) Emeritus
Faculty in Physics Program

** Paul Ruffin, Ph.D. (Fiber Optics)
M. Schamschula, Ph.D. (Optical Computing)
A. Sharma, Ph.D. (Optics, Fiber Optics)

** Shelia Nash Stevenson, Ph.D. (Optics/Laser)
A. Tan, Ph.D. (Atmospheric Physics) Emeritus
A. Wineberger, Ph.D. (Space Physics)
T.X. Zhang, Ph.D. (Space Physics)
R. Zimmerman, Ph.D. (Surface Physics)

• * Research Faculty      ** Adjunct Faculty
Our Faculty

- Have flown 2 experiments to grow crystals in NASA Spacelab-3 and IML-1 missions
We have hosted a yearly series of lectures by Nobel Laureates.
Our Graduate Students

Major Highlights
Department of Physics

- Space Flight Experiments/SpaceLab-3 and International Microgravity Lab-1
- First NSF-EPSCOR project funded in 1986
- NSF/CREST Center of excellence for nonlinear and Optical Materials
- Initiated Doctoral degree program in physics that was the 2nd among HBCU’s in USA.
- NSF awarded project for Alliance for Physics excellence APEX for 8 million dollars
First African American female Ph.D. in physics in Alabama who is serving NASA/Marshall Space Flight Center

Graduate students invited to Nobel Laureate meetings in Lindau Germany in 5 consecutive years

Undergraduate students achieved distinction in top 20 U.S.A. today scholars in 3 consecutive years

Doctoral Capacity Building program was awarded to one of the scientists
Graduate Programs
M.S. Degree in Applied Physics
- Optics/Lasers
- Materials Science
- Space Science
- Thesis and Non-thesis Options
- At least 12 hours of general courses, 18 hours (non-thesis option) and 12 hours (thesis option) of specialized courses (Materials Science/Optics)
Academic Programs in Physics

Ph.D. Degree in Applied Physics
  Materials Science
  Optics/Lasers
At least 15 hours of general courses,
45 hours of specialized courses (Materials Science/Optics)
12 hours credit for dissertation.
Graduate & Undergraduate Students Pool

✓ Eleven Ph. D level students
✓ Ten M.S. level students
✓ Twenty undergraduate students

✓ Research Budget Summary
✓ Research funding:
✓ Approximately $2.1 Million/Year