

THE UNIVERSITY OF ALABAMA

DEPARTMENT OF PHYSICS AND ASTRONOMY

Tuscaloosa, Alabama 35487-0324

<http://physics.ua.edu>

General University Information

President: Stuart Bell
Dean of Graduate School: Susan Carvalho
University website: <http://www.ua.edu>
Control: Public
Setting: Suburban
Total Faculty: 1,290
Total Graduate Faculty: 916
Total number of Students: 37,100
Total number of Graduate Students: 5,140

Department Information

Department Chairman: Prof. Patrick R. LeClair, Chair
Department Contact: Nancy Pekera, Administrative Secretary
Total full-time faculty: 29
Total number of full-time equivalent positions: 31
Full-Time Graduate Students: 44
First-Year Graduate Students: 10
Female First-Year Students: 2
Total Post Doctorates: 11

Department Address

514 University Boulevard
Tuscaloosa, AL 35487-0324
Phone: (205) 348-5050
Fax: (205) 348-5051
E-mail: npekera@ua.edu
Website: <http://physics.ua.edu>

ADMISSIONS

Admission Contact Information

Address admission inquiries to: Graduate School Office, Box 870118, Tuscaloosa, AL 35487-0118.
Phone: (877) 824-7237
E-mail: graduate.school@ua.edu
Admissions website: <http://graduate.ua.edu/prospects/application/>

Application deadlines

Fall admission:
U.S. students: February 15 *Int'l. students:* February 15
Spring admission:
U.S. students: November 1 *Int'l. students:* June 1

Application fee

U.S. students: \$60 *Int'l. students:* \$75

Admissions information

For Fall of 2016:
Number of applicants: 120
Number admitted: 21
Number enrolled: 10

Admission requirements

Bachelor's degree requirements: Bachelor's degree in Physics is required.
Minimum undergraduate GPA: 3.0

GRE requirements

The GRE is required.
A score of at least 300 on revised GRE is required, or a score of at least 1000 on previous GRE general test.

Advanced GRE requirements

The Advanced GRE is not required.

TOEFL requirements

The TOEFL exam is required for students from non-English-speaking countries.

PBT score: 550

iBT score: 79

Other admissions information

Undergraduate preparation assumed: Halliday and Resnick, Fundamentals of Physics; Serway, Moses, and Moyer, Modern Physics; Symon, Mechanics; Reitz, Milford, Foundation of Electromagnetic Theory; Eisberg, Resnick, Quantum Physics of Atoms; etc.

TUITION

Tuition year 2015–16:

Tuition for in-state residents

Full-time students: \$5,085 per semester

Tuition for out-of-state residents

Full-time students: \$12,975 per semester

Credit hours per semester to be considered full-time: 9

Deferred tuition plan: Yes

Health insurance: Available at the cost of \$1200 per year.

Academic term: Semester

Number of first-year students who received full tuition waivers: 10

Teaching Assistants, Research Assistants, and Fellowships

Number of first-year

Teaching Assistants: 9

Average stipend per academic year

Teaching Assistant: \$18,747

Research Assistant: \$18,747

Fellowship student: \$18,747

FINANCIAL AID

Application deadlines

Fall admission:

U.S. students: February 15 *Int'l. students:* February 15

Loans

Loans are available for U.S. students.

Loans are available for international students.

GAPSFAS application required: No

FAFSA application required: No

For further information

Address financial aid inquiries to: Office of Student Financial Aid, Box 870162, 106 Student Services Center, The University of Alabama, Tuscaloosa, AL 35487.

Phone: (855) 469-2262

Financial aid website: <http://financialaid.ua.edu/>

HOUSING

Availability of on-campus housing

Single students: No

Married students: No

For further information

Address housing inquiries to: Julie Elmore, Assistant Director for Off-Campus Housing.
 Phone: 205-348-9647
 E-mail: offcampushousing@sa.ua.edu
 Housing aid website: <https://offcampushousing.ua.edu>

Table A—Faculty, Enrollments, and Degrees Granted

Research Specialty	2015–16 Faculty	Enrollment Fall 2015		Number of Degrees Granted 2015–16 (2011–16)		
		Mas-ter's	Doc-torate	Mas-ter's	Terminal Master's	Doc-torate
Astronomy	5	–	5	–(1)	1(4)	1(3)
Astrophysics	2	–	2	–(2)	–	–
Condensed Matter Physics	9	1	21	3(8)	1(7)	2(10)
High Energy Physics	4	1	9	1(7)	–(2)	–(3)
Particles and Fields	7	–	8	1(4)	–(1)	1(5)
Total	27	2	45	5(22)	2(14)	4(21)
Full-time Grad. Stud.	–	2	45	–	–	–
First-year Grad. Stud.	–	–	9	–	–	–

GRADUATE DEGREE REQUIREMENTS

Master's: Plan I: 24 graduate semester hours in an approved program with satisfactory performance required; "B" average; one semester in residence; master's examination required; thesis required; no language requirement. Plan II: 30 graduate semester hours in an approved program with satisfactory performance required; master's examination required; thesis not required; no language requirement.

Doctorate: A minimum of 48 graduate semester hours required in an approved program with satisfactory performance; one academic year in residence required; oral preliminary examination required; dissertation and dissertation examination required.

Thesis: Thesis may be written in absentia.

SPECIAL EQUIPMENT, FACILITIES, OR PROGRAMS

Facilities include well-equipped laboratories for research in condensed-matter physics, high-energy physics, and image processing. Supporting facilities include a machine shop, electronics shop, computer workstations, and direct access to the campus mainframe computer and the Alabama supercomputer. Faculty and students participate in the Center for Materials for Information Technology and the Tri-Campus Material Science Ph.D. Program. We are members of the SARA Telescope consortium, which operates a 0.9 meter telescope at Kitt Peak, Arizona and a 0.6 meter telescope at Cerro Tololo in Chile.

Table B—Separately Budgeted Research Expenditures by Source of Support

Source of Support	Departmental Research	Physics-related Research Outside Department
Federal government	\$4,000,000	
State/local government	\$500,000	
Non-profit organizations		
Business and industry		
Other		
Total	\$4,500,000	

Table C—Separately Budgeted Research Expenditures by Research Specialty

Research Specialty	No. of Grants	Expenditures (\$)
Astrophysics	–	\$880,000
Condensed Matter Physics	–	\$1,500,000
High Energy Physics	–	\$120,000
Particles and Fields	–	\$1,500,000
Physics and other Science Education	–	\$500,000
Total	–	\$4,500,000

FACULTY

Professor

- Busenitz, Jerome K.**, Ph.D., University of Illinois, 1985. *Particles and Fields*. Experimental elementary particle physics.
- Buta, Ronald J.**, Ph.D., University of Texas, Austin, 1984. *Astronomy*. Galaxy morphology and catalogs.
- Harms, Benjamin C.**, Ph.D., Florida State University, 1969. *Particles and Fields*. Theoretical particle physics.
- Keel, William C.**, Ph.D., University of California, Santa Cruz, 1982. *Astronomy*. Galactic nuclei, jets, and galaxy interactions.
- LeClair, Patrick R.**, Ph.D., Eindhoven University of Technology, 2002. *Condensed Matter Physics*. Experimental condensed matter physics.
- Mankey, Gary J.**, Ph.D., Pennsylvania State University, 1992. *Condensed Matter Physics*. Experimental condensed matter physics.
- Mewes, Tim**, Ph.D., University of Kaiserslautern, 2002. *Condensed Matter Physics*. Experimental condensed matter physics.
- Piepke, Andreas**, Ph.D., Heidelberg University, 1990. *Particles and Fields*. Experimental elementary particle physics.
- Sarker, S. K.**, Ph.D., Cornell University, 1980. *Condensed Matter Physics*. Theoretical condensed matter physics.
- Schad, Rainer**, Ph.D., University of Hannover, 1991. *Condensed Matter Physics*. Experimental condensed matter physics.
- Stancu, Ion**, Rice University, 1990. *Particles and Fields*. Experimental elementary particle physics.
- Stern, Allen**, Ph.D., Syracuse University, 1980. *Particles and Fields*. Theoretical particle physics.
- White, Raymond E.**, Ph.D., University of Virginia, 1986. *Astronomy, Astrophysics*. Dynamics and hydrodynamics in galaxies and galaxy clusters.

Associate Professor

- Henderson, Conor**, Ph.D., Massachusetts Institute of Technology, 2005. *Particles and Fields*. Experimental particle physics.
- Irwin, Jimmy**, Ph.D., University of Virginia, 1997. *Astronomy*. Accreting black holes and neutron stars.
- Mewes, Claudia K.A.**, Ph.D., University of Kaiserslautern, 2004. *Condensed Matter Physics*.
- Okada, Nobuchika**, Ph.D., Tokyo Metropolitan University, 1998. *Cosmology & String Theory, Particles and Fields*. Physics beyond the Standard Model.
- Rumerio, Paolo G.**, Ph.D., Northwestern University, 2003. *Particles and Fields*.
- Townsley, Dean M.**, Ph.D., University of California, Santa Barbara, 2004. *Astrophysics*. White dwarf supernovae.
- Williams, Dawn R.**, Ph.D., University of California, Los Angeles, 2004. *Particles and Fields*. Experimental particle astrophysics.

Assistant Professor

- Araujo**, Paulo T., Ph.D., Universidade Federal de Minas Gerais, 2010. *Condensed Matter Physics, Nano Science and Technology*. Experimental condensed matter physics.
- Bailin**, Jeremy, Ph.D., University of Arizona, 2004. *Astrophysics*. Galaxy formation and evolution.
- Hauser**, Adam, Ph.D., Ohio State University, 2010. Experimental condensed matter physics. *Condensed Matter Physics*.
- Kaminski**, Matthias, Ph.D., Ludwig-Maximilians University, 2008. *High Energy Physics, Particles and Fields*. string theory, AdS/CFT correspondence, numerical gravity, quantum field theory.
- Nair**, Preethi, Ph.D., University of Toronto, 2009. *Astronomy*. Galaxy formation and evolution, using large astronomical surveys.
- Ostrovskiy**, Igor, Ph.D., University of Alabama, 2011. *Particles and Fields*. Experimental particle physics.
- Schwiete**, Georg, Ph.D., University Bochum, 2004. *Condensed Matter Physics*. Theoretical condensed matter physics.
- Tse**, Wang-Kong, Ph.D., University of Maryland, 2008. *Condensed Matter Physics*. Theoretical condensed matter physics.

Professor Emeritus

- Alexander**, Chester, Ph.D., Duke University, 1968. *Condensed Matter Physics*. Experimental condensed matter and chemical physics.
- Butler**, William H., Ph.D., University of California, San Diego, 1969. *Condensed Matter Physics*. Theoretical condensed matter physics.
- Byrd**, Gene G., Ph.D., University of Texas, Austin, 1974. *Astrophysics*. Theoretical astrophysics.
- Clavelli**, Louis J., Ph.D., University of Chicago, 1967. *Particles and Fields*. Theoretical particle physics.
- Coulter**, Philip W., Ph.D., Stanford University, 1965. *Particles and Fields*. Theoretical particle physics.
- Fujiwara**, Hideo, Ph.D., University of Tokyo, 1969. *Condensed Matter Physics*. Experimental condensed matter physics.
- Hardee**, Philip E., Ph.D., University of Maryland, 1976. *Astrophysics*. Theoretical and observational astrophysics.
- Harrell**, J. W., Ph.D., University of North Carolina, Chapel Hill, 1969. *Condensed Matter Physics*. Experimental condensed matter physics.
- Jones**, Stanley T., Ph.D., University of Illinois, 1970. *Physics and other Science Education*. Physics education.

Sulentice, Jack W., Ph.D., SUNY, Albany, 1975. *Astronomy*. Observational astrophysics.

Tipping, Richard H., Ph.D., Pennsylvania State University, 1969. *Atomic, Molecular, & Optical Physics*. Theoretical physics; molecular spectroscopy.

Visscher, Pieter B., Ph.D., University of California, Berkeley, 1971. *Condensed Matter Physics*. Theoretical condensed matter physics; computer simulation.

Adjunct Professor

Biermann, Peter L., Ph.D., University of Gottingen, 1971. Theoretical astrophysics.

Crocker, Deborah A., Ph.D., University of Virginia, 1987. Observational astrophysics.

Gupta, Arunava, Ph.D., Stanford University, 1980. Experimental condensed-matter physics.

Pandey, Raghendra K., Ph.D., University of Cologne, 1967. Experimental condensed matter physics.

DEPARTMENTAL RESEARCH SPECIALTIES AND STAFF**Theoretical**

Astrophysics. Galactic dynamics; galaxy formation; galactic structure; extragalactic astronomy; high-energy astrophysics; stellar evolution; supernovae. Bailin, Biermann, Townsley.

Condensed Matter Physics. Electronic structure of solids; magnetic properties; hierarchical and renormalization-group methods; magnetic lattice models. Butler, Claudia Mewes, Sarker, Schwiete, Tse, Visscher.

High Energy Physics. Harms, Kaminski, Okada, Stern.

Particles and Fields. Supersymmetry phenomenology; field theory; quantum black holes; particle astrophysics. Biermann, Harms, Kaminski, Okada, Stern.

Experimental

Astronomy. Black holes; galaxy evolution; galaxy morphology; spectroscopy of AGN; galaxy clusters; globular clusters; X-ray astronomy; X-ray binaries. Buta, Irwin, Keel, Nair, White.

Condensed Matter Physics. Magnetic materials and thin films; nanoparticles spintronics. Araujo, Gupta, Harrell, Hauser, LeClair, Mankey, Tim Mewes, Pandey, Schad.

Particles and Fields. Detector research and development; neutrino physics; particle astrophysics. Busenitz, Henderson, Ostrovskiy, Piepke, Rumerio, Stancu, Williams.

View additional information about this department at
www.gradschoolshopper.com