UNIVERSITY OF COLORADO, COLORADO SPRINGS

PHYSICS & ENERGY SCIENCE

Colorado Springs, Colorado 80918
http://www.uccs.edu/~physics/

General University Information
Chancellor: Venkateshwar K. Reddy
Dean of Graduate School: Kelli Klebe
University website: http://www.uccs.edu
School Type: Public
Setting: Urban
Total Faculty: 828
Total number of Students: 12,435
Total number of Graduate Students: 1,832

Department Information
Department Chairman: Prof. Robert Camley, Chair
Department Contact: Kristina Woods, Program Assistant
Department Address
1420 Austin Bluffs Pkwy
Colorado Springs, CO 80918
Phone: 719-255-3164
Fax: 719-262-3013
E-mail: kwoods@uccs.edu
Website: http://www.uccs.edu/~physics/

ADMISSIONS

Admission Contact Information
Address admission inquiries to: Professor Anatoliy Pinchuk, Department of Physics, University of Colorado, Colorado Springs, 1420 Austin Bluffs Parkway, Colorado Springs, CO 80918, USA
Phone: 719-255-3556
E-mail: apinchuk@uccs.edu
Admissions website: http://www.uccs.edu/graduateschool/prospective-students/admissions.html

Application deadlines
Fall admission:
U.S. students: July 1
Int’l. students: July 1
Spring admission:
U.S. students: December 1
Int’l. students: December 1

Application fee
U.S. students: $60
Int’l. students: $100
Rolling admissions. Students may start in Fall, Spring or Summer semesters. However, to be eligible for certain teaching assistant positions, students should apply by April 1. Also, students must apply for financial aid by March 1. Many university scholarships require that you are accepted and complete scholarship applications before the March 1 university scholarship deadline.

Admissions information
For Fall of 2017:
Number of applicants: 7
Number admitted: 7
Number enrolled: 5

Admission requirements
Bachelor’s degree requirements: A Bachelors degree in Physics or in a closely related field, from an accredited college or university.
Minimum undergraduate GPA: 3.0
GRE Required in some cases

Subjective GRE requirements
The Subjective GRE is not required.

TOEFL requirements
The TOEFL exam is required for students from non-English-speaking countries.
PBT score: 560
iBT score: 83

Other admissions information
Additional requirements: Students who have not completed all the undergraduate core Physics classes with a grade of B- or better may be accepted provisionally and asked to take these undergraduate classes.
Undergraduate preparation assumed: Modern Physics; Statistical Mechanics; Electricity and Magnetism (2 semesters); Quantum Mechanics; Classical Mechanics; Mathematical Methods; Some math classes beyond the Calculus series (Linear Algebra, Differential Equations, etc).

TUITION

Tuition year 2018–19:
Tuition for in-state residents
Full-time students: $3,671 per semester
Part-time students: $2,026 per semester
Tuition for out-of-state residents
Full-time students: $7,307 per semester
Part-time students: $3,671 per semester
Full-time tuition cost provided is for 6 credit hours per semester. Part-time tuition provided is for 3 credit hours per semester.
Credit hours per semester to be considered full-time: 5
Deferred tuition plan: No
Health insurance: Not available.
Other academic fees: Fees vary with class selection, academic level, and academic load. Please see the UCCS Bursar’s website for current cost estimates: https://www.uccs.edu/bursar/
Academic term: Semester
Number of first-year students who received full tuition waivers: 3
Number of first-year students who received partial tuition waivers: 3

Teaching Assistants, Research Assistants, and Fellowships
Number of first-year
Teaching Assistants: 5
Research Assistants: 2
Fellowship students: 2
Average stipend per academic year
Teaching Assistant: $8,000
Research Assistant: $8,000
Fellowship student: $5,000
Colorado

UCCS also has a variety of internal graduate fellowships that are based on merit. If you receive one of these fellowships, the support typically ranges from $5,000 to $25,000.

FINANCIAL AID

Application deadlines
Fall admission:
  U.S. students: March 1
  Int’l. students: March 1
Spring admission:
  U.S. students: March 1
  Int’l. students: March 1
Loans
Loans are available for U.S. students.
Loans are not available for international students.
GAPSFAS application required: Yes
FAFSA application required: Yes

For further information
Address financial aid inquiries to: Office of Financial Aid/Student Employment, University of Colorado at Colorado Springs, 1420 Austin Bluffs Parkway, Colorado Springs, CO 80918-3733.
Phone: (719) 255-3460
E-mail: finaidse@uccs.edu
Financial aid website: https://www.uccs.edu/finaid/

HOUSING

Availability of on-campus housing
Single students: Yes
Married students: No
Childcare Assistance: No

For further information
Address housing inquiries to: UCCS Office of Residence Life and Housing, University of Colorado at Colorado Springs, 1420 Austin Bluffs Parkway, Colorado Springs, CO 80918, USA.
Phone: (719) 255-4326
E-mail: housing@uccs.edu
Housing aid website: https://www.uccs.edu/residence/

Table A—Faculty, Enrollments, and Degrees Granted

<table>
<thead>
<tr>
<th>Research Specialty</th>
<th>Enrollment Fall 2017</th>
<th>Number of Degrees Granted 2017–18 (2013–18)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Faculty</td>
<td>Master’s Thesis</td>
</tr>
<tr>
<td>Condensed Matter, Magnetism, Liquid crystals, thin films, plasmonics, radon, microwave, nanotechnology, biophysics</td>
<td>13</td>
<td>31</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>31</td>
</tr>
<tr>
<td>Full-time Grad. Stud.</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>First-year Grad. Stud.</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

GRADUATE DEGREE REQUIREMENTS

Master’s: MASTERS NON-THESIS OPTION. - 30 hours of coursework. - Regular degree students must maintain at least a 3.0 grade point average each semester or summer term on all work taken, whether or not it is to be applied toward the advanced degree intended. - The Master’s Comprehensive Exam is an exit oral exam that must be passed by all students. Students in the non-thesis option are required to write a short (15 page, double-spaced) typed paper summarizing either some original research or summarizing a research topic in current physics. The paper should be at a graduate physics level. The exam consists of a 30-40 minute presentation of the paper with questions on the topic from the faculty.

Doctorate: The student must complete a minimum of 66 hours of coursework and dissertation. This includes: 1) A minimum of 36 hours of course work with GPA above 3.0. - 21 hours of Core courses. - 15 hours of Specialization, Elective or Interdisciplinary courses. 2) A minimum of 30 hours of dissertation work, pass the comprehensive exam/proposal, and complete and successfully defend the dissertation.

Thesis: MASTERS THESIS OPTION. - 24 hours of course work, plus 6 credit hours of thesis. - Regular degree students must maintain at least a 3.0 grade point average each semester or summer term on all work taken, whether or not it is to be applied toward the advanced degree intended. - Submission of an original thesis to the Thesis Committee. - The Master’s Comprehensive Exam is an exit oral exam that must be passed by all students. The exam consists of a 30-40 minute defense of the thesis, followed by questions from the faculty.

SPECIAL EQUIPMENT, FACILITIES, OR PROGRAMS

Physics and BioFrontiers labs include:
- liquid crystal lab
- ultrafast optics lab
- Brillouin light scattering
- microwave lab (50 MHz - 110 GHz)
- clean room (photolithography & etching)
- scanning electron microscope with EDX and electron beam lithography
- total internal reflection microscope (TIRF)
- confocal microscope
- atomic force microscope (AFM, STM, MFM)
- scanning near-field optical microscope
- cell-culturing facilities
- flow cytometer
- IBM computer cluster
- SQUID, MOKE and FMR magnetometry
- molecular beam epitaxy
- sputtering & electron beam thin film deposition
- x-ray diffraction system
- Raman scattering
- NSOM
- IBM computer cluster
- SQUID, MOKE and FMR magnetometry
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- x-ray diffraction system
- Raman scattering
- NSOM

Table B—Separately Budgeted Research Expenditures by Source of Support

<table>
<thead>
<tr>
<th>Source of Support</th>
<th>Departmental Research</th>
<th>Physics-related Research Outside Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal government</td>
<td>$844,949</td>
<td></td>
</tr>
<tr>
<td>State/local government</td>
<td>$13,732</td>
<td></td>
</tr>
<tr>
<td>Non-profit organizations</td>
<td>$529,743</td>
<td>$111,030</td>
</tr>
<tr>
<td>Business and industry</td>
<td>$21,466</td>
<td>$969,711</td>
</tr>
<tr>
<td>Total</td>
<td>$551,209</td>
<td>$969,711</td>
</tr>
</tbody>
</table>
FACULTY

Distinguished University Professor


Professor


Associate Professor

Grabowski, Marek, Ph.D., University of Kentucky, 1981. Nonlinear Dynamics and Complex Systems, Polymer Physics/Science, Theoretical Physics. Theoretical solid state physics, Chaos, Nonlinear physics, Solitons, One and two dimensional systems, Polymers, Complex systems.


Assistant Professor


DEPARTMENTAL RESEARCH SPECIALTIES AND STAFF

Theoretical

Condensed Matter Physics. The three theorists in our department specialize in the study of magnetic and low-dimensional electronic systems, plus nonlinear physics. There is additional theoretical work in biophysics, nanoparticles, microwave devices, and electromagnetism. There are strong collaborations with the experimentalists in the department and world-wide. Projects are both very applied (bio-engineering and device applications) plus purely theoretical in nature. Camley, Grabowski, Livesey.

Experimental

Biophysics. Biophysics research in the department is centered on the application of nano-materials to image, diagnose and treat disease. The interaction of nanoparticles with cells and mucus is studied using a variety of techniques and using equipment shared by Physics and the UCCS Biofrontiers Center. Pinchuk, Spendier.

Condensed Matter Physics. Experimental condensed matter physics expertise in our department includes the areas of liquid crystals, soft matter, plasmonics, nanotechnology, magnetism, microwave, infrared and interface physics. The department has state-of-the-art equipment totaling several millions of dollars to make, characterize, image, test, and apply nano-materials for many exciting applications. Celinski, Christensen, Glushchenko, Pinchuk.

View additional information about this department at www.gradschoolshopper.com. Check out the “Why Choose Us?” section, find out more about the department's culture and get links to social media networks.