Department Faculty and Staff

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Physical Oceanography
BA Amherst College
MS Caltech
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Cosmology
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Acoustics
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High Energy Astrophysics
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Galaxy Formation and evolution
BS William & Mary
MS, PhD University of Michigan
Harvard-Smithsonian Center for Astrophysics
The University of Pittsburg, Duquesne

Javier Perez-Moreno
Nonlinear Optics
BS U. Leeds, U. Valencia
MS, PhD Washington State (Physics)
PhD U. Leuven (Chemistry)
A typical path through the Physics Major

Note that there are other ways of completing the major! For example, you might have started PY 207 during your sophomore year, or you might study abroad as a junior. Also, there are lots of useful electives you could add to this if you have the time.

<table>
<thead>
<tr>
<th>Fall</th>
<th>Spring</th>
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<tbody>
<tr>
<td>1st year</td>
<td></td>
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<tr>
<td>PY 207 General Physics I (Forces &amp; Motion)</td>
<td>PY 208 General Physics II (Intro to Electricity &amp; Magnetism)</td>
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<tr>
<td>MA 111 Calculus I</td>
<td>MA 113 Calculus II</td>
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<tr>
<td>2nd year</td>
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<tr>
<td>PY 209 Modern Physics Lab</td>
<td>PY 211 Thermodynamics and Statistical Mechanics</td>
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<td>PY 210 Modern Physics Lecture</td>
<td>PY 213 Electronics</td>
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<tr>
<td>MA 200 Linear Algebra</td>
<td>MA 270 Differential Equations</td>
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<tr>
<td>3rd year</td>
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<tr>
<td>PY 345 Classical Mechanics</td>
<td>PY 331 Mathematical and Computational Methods</td>
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<tr>
<td>MA 202 Calculus III</td>
<td>PY Elective</td>
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<tr>
<td>4th year</td>
<td>PY 261 1-credit Physics Seminar</td>
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<tr>
<td>PY 348 Quantum Mechanics</td>
<td>PY 346 Electricity and Magnetism</td>
</tr>
<tr>
<td>PY 373 Senior Research</td>
<td>PY 373 Senior Research</td>
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Typical Electives include Astronomy, Sound & Music, Geodynamics, Optics, Galaxies & Cosmology, Acoustics

Other strongly recommended courses: Introduction to Computer Science, Mathematical Reasoning and Discrete Structures
First Year

**Fall**: If you’re considering a physics major or minor, stop by and talk with a member of the department about your interests, and to make sure you’re on track.

**Spring**: Registration for the fall semester begins in March. This is a good time to check in with physics faculty again to make sure you’re on track.

Although students do not usually do research or independent during their first year or the following summer, you should talk with faculty in the department if you are interested in pursuing this.

Sophomore Year

**Fall**: Registration (usually in early November) is a good time to check in with a physics faculty member to discuss courses and possibly applying for summer research. Deadlines for research are typically in the winter or spring, but you should think about it and line up letters of recommendation in the fall. This might also be a good time to declare your major or minor, if you haven’t already.

**Spring**: By March you are required to have declared a major! While it is possible to change your major, the idea is to ensure that you’re on track to complete one.
Junior Year

Fall: You should have an official physics advisor by now, along with other physics faculty and students that you have gotten to know. Keep in touch regularly with them about your interests and plans. Also, the summer after your junior year is your best change of getting an undergraduate summer research experience. Deadlines for research are typically in the winter or spring, but you should think about it and line up letters of recommendation in the fall.

Spring: Every physics major takes at least one semester of senior research. You should talk to members of the department about possible projects.

Summer: It’s not too soon to think about what you might do when you graduate! For example, if you’re expecting to apply to graduate schools, you could start taking practice versions of the general and Physics GRE.

Senior Year!

September/October: If you’re considering applying to grad school, you should sign up for the GRE now, so that your scores will be ready to send scores along with your grad school applications. Most grad schools in the US require the General Test, and most grad schools in Physics (but not necessarily engineering, etc.) require the Physics subject test. Note on the GRE website that the subject test must be taken at specific locations that include Albany and Troy. The Subject tests are available only on a few dates; in order to be ready for applications deadlines in winter, you should take it this fall. There is a date is in mid-October; you can find it on the web site. Note also that when you take the test, you can sign up to send the scores for free to a limited number of schools (5, I think). This is a good reason to think of 5 places you might want to apply, even before the application deadlines.

November/December: Most grad school deadlines are January-February, although some are earlier and some later. If you plan to apply to a really competitive school, the deadline is likely to be earlier. Either way, you should be in touch with faculty who can write letters of recommendation for you sufficiently in advance of the deadlines to ensure they have time to do it. (Keep in mind that it is often harder to get in touch with people during the winter break, so you might want to talk with faculty before that.)

Spring: If you’re applying for jobs instead of grad school, spring is the typical time to focus on these applications.

Don’t forget that there several sources online, at Career Services, and in the physics lounge that you might find useful.
Research Specialties among Skidmore Faculty

Physical Oceanography
Galaxy Formation
Musical Acoustics
X-ray Black Holes
Non-linear Optics
Summer research and internships

Skidmore faculty-student collaborative research grants (typically due in early February; talk with faculty in the fall semester about whether you might apply as a team for this program) Individual faculty may also have funding for summer research through other grants.

American Physical Society (APS) page on summer research and internships:
http://www.aps.org/careers/employment/internships.cfm

National Science Foundation page for Research Experience for Undergraduate (REU) sites (Most require US citizenship unless students have funding through another source; see details for each site.)
http://www.nsf.gov/crssprgm/reu/reu_search.cfm

Summer Undergraduate Research Experience (SURE) and Summer Undergraduate Research Fellowships (SURF) programs.

Many businesses advertise summer internships and job opportunities on their web sites: e.g. GlobalFoundries.

Skidmore funded internship awards: http://www.skidmore.edu/career/fundedinternshipawards.php Note in particular the SEE-Beyond summer support competition. Applications are due in March; students must write a proposal for how their summer activities fit their academic and professional path. Award is $4000.

Other resources and funding opportunities are available through Skidmore's Career Development Center.

Recent summer research and internships by Skidmore students include
- Skidmore Faculty-Student Collaborative research in oceanography, astrophysics, and non-linear optics
- Albany Nanotech
- Casper Electronics
- Sustainability Energy Partners/Solega
- CERN Laboratory, Switzerland
- REU research at various US Universities
- Teaching for CTY (the Center for Talented Youth)
You should be in touch with your advisor during your junior year about possible plans. Note that GRE exams for graduate school should be taken in the summer after your junior year or fall of your senior year.

Resources in Dana 215 include
Landing your First Job: A Guide for Physics Students
AIP Graduate Programs in Physics, Astronomy, and Related Fields
Peterson’s Graduate Programs guide


American Physical Society Careers Page http://www.aps.org/careers/

Society of Physics Students Jobs page: http://jobs.spsnational.org/

Physics Today Jobs http://www.physicstoday.org/jobs

There are many web sites with information about graduate programs, and the faculty in the department can give you specific advice on programs suited to your interests.

Other resources and funding opportunities are available through Skidmore’s Career Development Center.
After Skidmore: A few examples

Graduate programs
Note that graduate school positions are typically paid.

- MIT (Physical Oceanography)
- University of Virginia (Architecture)
- University of Washington, Seattle (Aeronautics)
- Northwestern University (Chemical Engineering)
- University of Washington, Seattle (Applied Math)
- Dartmouth College (Engineering)
- Georgia Tech (Chemical Engineering)
- University of Alaska (Systems Modeling)
- University of Vermont (Physics)
- Clemson University (Physics)
- University of West Virginia (Mathematics)
- Rochester Institute of Technology (Imaging Science)
- Stanford University (Civil Engineering)
- Johns Hopkins University (Physics)
- Tufts University (Mathematics)
- Brown University (Mathematics)
- Boston University (Electrical Engineering)
- Yale University (Physics)
- University of Leeds (Physics)
- Duke University (Environmental Engineering)
- Clemson University (Mechanical Engineering)

Employment
- Geothermal Engineering, Haley Aldrich
- Founder and CTO, Luminus Devices
- U.S. Patent Office Examiner
- Skidmore Teach in China Program
- Research Technician, Evocative Design
- Technical Writer, IBM Unica
- Software Engineer, EllisLab
- Product Engineer at Diamond Diagnostics
- Professor of Media Arts and Science, MIT
- Computer Programmer, US Navy
- Physics Teacher, The Brunswick School
- Physics and Math Teacher, Bard H.S. Early College
- Optimization Analyst at AppNexus
- Professor of Physics, Skidmore College
- Research Assistant at College of Nanoscale Science and Engineering of the University at Albany
- Administrator of Masters in Engineering Management Program, Dartmouth College
- Yacht Designer/Marine Engineer, Alpha-Design-Inc
- Electro-Optics Test Engineer at Raytheon Integrated Defense Systems