Orientation for New Grad Students

- **Introductions and General Information (~60 minutes)**
  - Lance Cooper/Wendy Wimmer/Denise Donnelly…..Welcome
  - Jerry Cook……………Information on Facilities/Keys/Inventory
  - Rebecca Wiltfong………….Information on My Physics/Website
  - Celia Elliott……..Information on Graduate Fellowships
  - Mary Schlembach……..Information on Library
  - Brian Wolin……..Physics Grad Student Association
  - Garrett Vanacore/Bill Rose….Graduate Employees Organization

- **Break (15 minutes)**

- **Grad Program Information (~30 minutes)**
  - Lance Cooper….Overview of the Illinois Physics Grad Program

- **Welcome Luncheon: ~12:00 noon, Interaction Room, Loomis Lab**

- **TA Training Session: 2:00 – 5:00 p.m. (Elaine Schulte and others)**
New Grad Student Orientation

- What you should have already done: New student checklist
- Your first few years at UIUC: What you’ll be doing and where to get information
- Other advice: Things to do outside of physics and upcoming events
New Grad Student Checklist

☐ By now, you should have done the following:

☑ Filled out your paperwork with Wendy Wimmer

☑ Met with me for course and teaching assistantship advising

☑ Registered for classes on-line!
  -- You must maintain at least 8 credit hours each semester to be a full-time student and keep an assistantship

☑ Registered for the qualifying exam (if applicable)
  https://my.physics.illinois.edu/grad/qual-signup

☑ Received and accepted your teaching/research assistantship
  -- Sign up for mandatory campus TA training next week!

If you haven’t done all this yet, please see me early next week!
Life as a UIUC Physics Grad Student

How grad school is just like kindergarten:
- All day napping is acceptable
- There is constant adult supervision
- You get cookies for lunch
- Most common activity: cutting and pasting
- There are no grades (you just have to play well with others)
- Crying for your mommy is normal

www.phdcomics.com
First Year Courses at UIUC

- There are few course requirements
  - Biophysics
  - Nuclear and Particle
  - Astrophysics
  - Quantum Optics & Information or Atomic Physics
  - Condensed Matter or Emergent States of Matter

Pick 2!

- But it’s likely you will start with
  - Quantum Mechanics I and II (580,581)
  - Mathematical Methods 1 and 2 (508, 509)
  - Electricity and Magnetism (505), Statistical Mechanics (504)
  - Undergraduate Quantum 2 (487), E&M 2 (436), Classical Mech 2 (326), Stat Mech (427)

- And everyone takes 596 (Physics Orientation)
Bookmark the Grad Student Blog!

Graduate Student Blog

Welcome to the Physics Illinois Grad Student Blog, which will provide information from the Grad Programs Office about academic deadlines, Grad College posts, fellowship and job opportunities, and other information you may find useful. Bookmark this site and return often to keep informed.

Filter blog posts: View latest 15 posts

8/3/2015
2 Data Science Courses Offered by Robert Brunner in Fall 2015
Prof. Robert Brunner will offer two courses on Data Science in Fall 2015

8/2/2015
Workshop on Scientific Proposal Writing by Celia Elliott on August 6
Our own Celia Elliott will give a one-hour workshop on scientific proposal writing on Thursday, Aug. 6.

7/31/2015
Last Call To Make Fall 2015 Appointments
A reminder that Friday, August 7 is the deadline for requesting Fall 2015 TA appointments.

7/28/2015
CyberGIS Center Offers Summer School on Big Data
The CyberGIS Center is offering a Summer School on Big Data Landscapes to provide hands-on training with cutting-edge CyberGIS applications.

Current Grad Info

- Curriculum Requirements
- Prelim Exam Info
- Thesis Info
- MS Degree Requirements
- CSE Certificate Program
- PHYS 596
- PGSA
- Qual Exam Info
- New Student Info
- Ethics Training/Info
- Safety Training/Info
- Grad Research Openings
- Grad Travel Award
- Grad Student Evaluations
- Grad College Calendar
- COE Grad Handbook
- International Student Orientation Videos
- Useful Forms
- Useful Links
- MRL Safety Brochure
- Important Physics Dates
- Important Phone Numbers
Course Requirements

COURSE REQUIREMENTS
The Graduate College requires 96 hours (formerly 24 units) of course work for the PhD, including research units in Physics 597 and Physics 599. Most physics students having half-time assistantships take 8 hours per semester plus 4 to 8 hours in the summer, so the total credit requirement may be fulfilled in approximately four years. Note that at least 6 hours of PHYS 599 Thesis Research is required; most students have many more.

AS A BREADTH REQUIREMENT, TWO OF THE FOLLOWING SEVEN COURSES ARE REQUIRED

- Physics 540 Theoretical Astrophysics
- Physics 550 Biomolecular Physics
- Physics 560 Condensed Matter Physics I
- Physics 569 Emergent States of Matter
- Physics 570 Subatomic Physics
- Physics 513 Topics in Quantum Optics and Information or Physics 514 Modern Atomic Physics.

Note that only one of either the Physics 560 or Physics 569 courses counts toward the breadth requirement and only one of either Physics 513 or Physics 514 counts toward the breadth requirement.

In addition, all students are urged to take Quantum Mechanics I and II (Physics 580 and 581), Mathematical Methods A and B (Physics 508 (MMA) and Physics 509 (MBB)), Electricity and Magnetism (Physics 505), and Classical and Quantum Mechanical Systems (Physics 504). Students will find a number of advanced courses on more specialized topics indispensable in their preparation for research.

The department has no formal language requirement. Graduate students may find it advantageous, however, to be proficient in reading articles in a foreign language. For this reason, graduate students are allowed to enroll in language courses offered in the various language departments at UIUC.

To receive an appointment as a teaching assistant, an international graduate student is required to demonstrate proficiency in spoken English. This proficiency can be demonstrated in one of four ways: By having a score of 24 or above on the speaking sub-section of the Internet Based TOEFL, By having a score of 8 or above on the speaking sub-section of the IELTS academic exam, By having a score of 50 or above on the TSE, Or by having a score of 50 or above on the locally-administered UIUC Speak Test. A number of "English as a Second Language" (ESL) courses and helpful tips for English language improvement are provided by the University.
First Few Semesters at UIUC

- Advanced courses specialize
  - Condensed Matter Physics II
  - Quantum Field Theory I and II
  - Particle Physics
  - General Relativity
  - Nonequilibrium Statistical Physics
  - Special topics (Phys 598) courses – one benefit of a big department!!

After your first year or two, you will primarily take research credits:

Physics 597, Independent Study – Graded class, taken prior to prelim

Physics 599, Thesis Research – Taken once you pass your prelim

You will always need to register for at least 8 credit hours in the Fall and Spring terms to be full-time students!
First Few Semesters at UIUC

☐ Teaching
- This is important training, giving you an opportunity to make an impression on professors you might do research with, so take it seriously!
- A chance to learn how to be a good teacher: we have many award-winning T.A.’s! This looks good on your resume, especially if you’re applying for faculty positions!

☐ The Qual:
- Start of 2\textsuperscript{nd} year. FAQ:
  https://my.physics.illinois.edu/info/index.asp?id=6
- Archive of Problems:
  https://my.physics.illinois.edu/info/index.asp?id=7
Qual Exam Info on Blog

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Research !!

- **Picking an advisor** (there are many available)
  - Physics 596 Research Talks in Fall
  - Research opening advertisements on Grad Student Blog
  - Make your own one-on-one arrangements!
  - Start looking early, attend seminars, talk to faculty!

<table>
<thead>
<tr>
<th>Field</th>
<th>Experimentalists</th>
<th>Theorists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Condensed Matter Physics</td>
<td>12</td>
<td>10</td>
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<tr>
<td>High Energy Physics</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Atomic-Molecular-Optical Physics</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Medium Energy (Nuclear) Physics</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Biological Physics</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Astrophysics/Cosmology</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Cross-Cutting Research</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Physics Education Research</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>
Research opportunities in the department, finding advisors, etc.

Instruction/practice in scientific writing and presentation

Scientific publishing process, using on-line resources, etc., etc.

https://courses.physics.illinois.edu/phys596/fa2015/
Physics

Agenda for Phys 596
(Friday, 11:00-12:50, Rm. 144):

- Research opportunities in the department, finding advisors, etc.
- Instruction/practice in scientific writing and presentation
- Scientific publishing process, using on-line resources, etc., etc.

https://courses.physics.illinois.edu/phys596/fa2015/

Make sure you register for this course! It is required!
Research !!

- Interested in applying for a grad fellowship?
  - 1st year and (most) 2nd year grad students are eligible
  - Celia and I will hold an NSF Fellowship Workshop the week of Sept. 22
  - We will hold an NSF Fellowship pre-competition in October
  - Stay tuned to the grad blog for more details!
Years 2-N: Research in Full Throttle

- You’ll join a group
  - By no later than the summer after your first year
  - Often supported by an RA but otherwise you can still be a TA

- Want to attend a conference/workshop not supported by your advisor?
  - Physics Grad Travel Award program
Physics Graduate Student Travel Award Fund

PURPOSE:
The purpose of the Department of Physics Graduate Student Travel Award Fund is to provide opportunities for graduate students to attend special conferences or workshops or to participate in professional development activities that are not funded by their advisers’ research grants. Travel Awards will typically be limited to a maximum of $500.

APPLICATION SCHEDULE:
The 2014-2015 Physics Grad Travel Award program will be divided into three time periods, and we anticipate making 5-7 awards during each period, pending the availability of funds. Applications must be submitted by the following dates:
- September 1, 2014, for September 1 – January 31, 2015 conference travel
- February 1, 2015, for February 1 – May 31, 2015 conference travel
- May 1, 2015, for June 1 – August 31, 2015 conference travel

Applications will not be accepted for post-travel reimbursement, and the application must be received at least 30 days before the requested travel commences. Questions about deadlines and submissions should be directed to Professor Lance Cooper (slcooper@illinois.edu), associate head for graduate programs.

APPLICATION EVALUATION PROCESS:
Applications will be reviewed by a graduate student committee appointed by the associate head for graduate programs, and final decisions will be made by the associate head for graduate programs. Applicants will be informed of the final decisions. All decisions of the associate head are final.

APPLICATION REVIEW CRITERIA:
Review criteria include:
1. An assessment of how the proposed travel will contribute to the student’s professional development.
2. The student’s past history of travel support by the department.
3. Time remaining to PhD degree.

APPLICATION MATERIALS:
A complete Graduate Travel Award application consists of the following items:
Years 2-N: Preliminary Exam

- The Prelim
  - 15 page paper, oral presentation
  - “Proposal” for your thesis research
  - Typically in 3rd or 4th year
Years 2-N: Thesis and Defense

- Thesis defense
  - Your own personal “book”: you’re the world’s expert!
  - Time to Ph.D. ~ 6 years on average (depends on field)
Life After UIUC Grad School

- Universities (post docs and faculty)
- Government Research Laboratories
  - Argonne, Fermilab, Jefferson Lab, NISTs, LANL, Livermore, LBL, Sandia, NRL, …
- Industry
  - Intel, IBM, AT&T, HP, Microsoft, AMD, Shell, Kodak, and hosts of high-tech start-ups
- Computing (hardware and software)
- Wall Street
- Management consulting
# Physics Careers Seminars

## Spring 2015 Schedule

<table>
<thead>
<tr>
<th>Event Title</th>
<th>Speaker</th>
<th>Date/Time</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physics Careers Seminar: &quot;The elusive 'Hiring Manager': Q&amp;A on how to get an offer&quot;</td>
<td>Dr. Richard Aburano, Cirrus Logic</td>
<td>2/3/2015 4:00 pm</td>
<td>204 Loomis Laboratory (Interaction Room)</td>
</tr>
<tr>
<td>Physics Careers Seminar: &quot;Physicists Can Code&quot;</td>
<td>Dr. Wah Kal (Daniel) Ngai, Bloomberg L.P.</td>
<td>2/25/2015 11:00 am</td>
<td>204 Loomis Laboratory (Interaction Room)</td>
</tr>
<tr>
<td>Physics Careers Seminar: &quot;Tales From the Postdoctoral Path&quot;</td>
<td>Dr. Braden Brinkman, Acting Assistant Professor, Dept. of Applied Mathematics, University of Washington</td>
<td>3/12/2015 11:00 am</td>
<td>204 Loomis Laboratory (Interaction Room)</td>
</tr>
<tr>
<td>Physics Careers Seminar: &quot;Career Development Resources for Illinois Graduate Students*&quot;</td>
<td>Dr. Alexis Thompson, Graduate College Career Development Office</td>
<td>4/2/2015 11:00 am</td>
<td>204 Loomis Laboratory (Interaction Room)</td>
</tr>
<tr>
<td>Physics Careers Seminar: &quot;Careers for Physicists in the Medical Device Industry&quot;</td>
<td>Dr. Patrick Mears, Abbott Laboratories, Chicago, IL</td>
<td>4/16/2015 11:00 am</td>
<td>204 Loomis Laboratory (Interaction Room)</td>
</tr>
<tr>
<td>Physics Careers Seminar: &quot;Insight Data Science: bridging the gap between academia and industry&quot;</td>
<td>Josiah Walton, Dept. of Physics, University of Illinois</td>
<td>4/23/2015 11:00 am</td>
<td>204 Loomis Laboratory (Interaction Room)</td>
</tr>
<tr>
<td>Physics Careers Seminar: &quot;An Introduction to Computational Lithography&quot;</td>
<td>Dr. Ka-Ho (Billy) Lo, Intel Corp., Portland, OR</td>
<td>5/1/2015 11:00 am</td>
<td>204 Loomis Laboratory (Interaction Room)</td>
</tr>
</tbody>
</table>
Final Pieces of Advice

- **Keep socially active!** -- staying involved in PGSA and other social activities helps relieve the stress of grad school.
Final Pieces of Advice

- **Stay Safe!** – Our campus is reasonably safe, but it’s important to be aware of your surroundings, particularly at night.
Final Pieces of Advice

- **Know who to contact if you need help!**
  
  **24-Hour Emergency Numbers**
  
  | Life-threatening fire, police, or medical emergency | 9-911 (on-campus) or 911 (off-campus) |
  | Emergency Dean (available 24/7 to assist students or their families in crisis) | 333-0050 |
  | Domestic Violence Hotline (A Woman’s Place) | 384-4390 |
  | Crisis Line (24-hour suicide prevention and crisis hotline) | 244-7911 or 356-4141 |
  | Faculty/Staff Assistance Program | 244-5312 |
  | National Capital Poison Center | 1-(800)-222-1222 |

- **Non-Emergency Numbers**
  
<table>
<thead>
<tr>
<th>Fire Departments</th>
<th>Police Departments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Champaign</td>
<td>University of Illinois</td>
</tr>
<tr>
<td>403-7200</td>
<td>333-1216</td>
</tr>
<tr>
<td>Urbana</td>
<td>Champaign</td>
</tr>
<tr>
<td>384-2420</td>
<td>351-8911</td>
</tr>
<tr>
<td>Savoy</td>
<td>Urbana</td>
</tr>
<tr>
<td>350-5814</td>
<td>384-2320</td>
</tr>
<tr>
<td>Champaign County Sheriff</td>
<td>Savoy</td>
</tr>
<tr>
<td>333-8911</td>
<td>333-8911</td>
</tr>
</tbody>
</table>

- **Hospitals and Medical Services**
  
  | Carle Hospital Emergency Room | 383-3313 |

Contact me and/or Wendy if you don’t know who to ask!
Final Pieces of Advice

- Be aware of upcoming events!

[Table]

<table>
<thead>
<tr>
<th>Date</th>
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<tbody>
<tr>
<td>Fri Aug. 14</td>
<td>New Graduate Student Orientation</td>
</tr>
<tr>
<td>Thurs Aug 20</td>
<td>Proficiency Exam, 7:00 pm - 10:00 pm Location TBA</td>
</tr>
<tr>
<td>Mon Aug. 24</td>
<td>First Day of Instruction</td>
</tr>
<tr>
<td>Mon &amp; Tues Aug. 24 &amp; 25</td>
<td>Qualifying Exams, 6:00 pm – 10:00 pm 141 Loomis Laboratory of Physics</td>
</tr>
<tr>
<td>Mon Sept. 7</td>
<td>Labor Day (Holiday, No Classes)</td>
</tr>
<tr>
<td>Fri Sept. 11</td>
<td>College of Engineering Faculty Meeting, 4:00 pm B02 Coordinated Science Laboratory</td>
</tr>
<tr>
<td>Sat Sept. 12</td>
<td>Physics Picnic, 4:00 pm – 7:00 pm Illini Grove, Lincoln Avenue, Urbana</td>
</tr>
</tbody>
</table>

[Image]
Final Pieces of Advice

- Get to know and enjoy the community!

Krannert Center for the Performing Arts

Virginia Theater

Westside and other parks

Downtown Champaign
Final Pieces of Advice

- Get to know and enjoy the community!

Upcoming Events

- Taste of Champaign, Aug. 21-22, Westside Park
- Urbana Sweetcorn Festival, Aug. 28-29, Downtown Urbana
- Departmental Picnic, Sept. 12, Illini Grove
- Ellnora Guitar Festival, Sept. 10-12, Krannert
Upcoming Events

- Departmental Picnic
  - Saturday, September 12, 4-7 PM, Illini Grove
Final Pieces of Advice

- And always feel free to e-mail or meet with me if you have problems or questions!