Supporting Professional and Career Development in Graduate School

Talline Martins, PhD
Director, Office of Graduate Professional Development
University of Florida Graduate School
Need for Professional Development : Career Trajectories
Where will a biology PhD take you?

Arrows represent annual fluxes. Circles are total current workforce numbers.

86,000 current US biology PhD students

7 years average time to degree

9,000 Receive PhDs

30% do more than one postdoc

1,900 to 3,900 foreign-trained PhDs start postdocs

15% of postdocs get tenure-track faculty jobs within 6 years post PhD.

720 Leave the US

37-68,000 current postdocs

70% (5,800) Postdoc

29,000 current tenured and tenure track faculty

20% get non-tenure track academic jobs within 6 years post PhD.

7 years US PhDs spend an average of 4 years, but others must spend longer to account for number of postdocs.

30% (2,500) Don’t postdoc

25,000 current non-tenure track academic positions

24,000 current non-research, science related jobs

22,500 current industry researchers

17,000 current bio PhDs doing non-science jobs

7,000 current gov’t researchers

A faculty job is an “alternative” career.

At this rate, <8% of entering PhD students will become tenure-track faculty. Yet, 53% rank research professorships as their most desired career.¹

10% of former postdocs (up from 2% in 2010) consider themselves unemployed.¹

Sources:
2. doi:10.1038/nature12366

Unless otherwise noted, NIH Biomedical Workforce Working Group (2012)
History – US PhDs

Source: historians.org
## UF History PhDs 2004-2008

<table>
<thead>
<tr>
<th>Employment Category</th>
<th>2004-2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Year Non-Tenure-Track</td>
<td>8%</td>
</tr>
<tr>
<td>2 Year Tenure-Track</td>
<td>4%</td>
</tr>
<tr>
<td>4 Year Non-Tenure-Track</td>
<td>4%</td>
</tr>
<tr>
<td>4 Year Tenure-Track</td>
<td>56%</td>
</tr>
<tr>
<td>Higher Ed Admin/Staff</td>
<td>8%</td>
</tr>
<tr>
<td>Non-profit</td>
<td>4%</td>
</tr>
<tr>
<td>Government</td>
<td>4%</td>
</tr>
<tr>
<td>Private Sector</td>
<td>8%</td>
</tr>
<tr>
<td>Not Found</td>
<td>4%</td>
</tr>
</tbody>
</table>

## UF History PhDs 2009-2014

<table>
<thead>
<tr>
<th>Employment Category</th>
<th>2009-2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Year Non-Tenure-Track</td>
<td>5%</td>
</tr>
<tr>
<td>2 Year Tenure-Track</td>
<td>16%</td>
</tr>
<tr>
<td>4 Year Non-Tenure-Track</td>
<td>22%</td>
</tr>
<tr>
<td>4 Year Tenure-Track</td>
<td>22%</td>
</tr>
<tr>
<td>Higher Ed Admin/Staff</td>
<td>3%</td>
</tr>
<tr>
<td>Non-profit</td>
<td>11%</td>
</tr>
<tr>
<td>Government</td>
<td>3%</td>
</tr>
<tr>
<td>Private Sector</td>
<td>11%</td>
</tr>
<tr>
<td>Not Found</td>
<td>5%</td>
</tr>
<tr>
<td>Retired &amp; Unemployed</td>
<td>3%</td>
</tr>
</tbody>
</table>

Percentages for individual programs, especially small programs, should be used with caution and may not be statistically significant.

Source: historians.org
Federal Initiatives
National Calls to Support Professional Development & Career Diversity

- NIH’s “Broadening Experience in Scientific Training” (BEST) Program
  - $4 million effort across 17 institutions
  - IDP requirement, training grant standards

- NSF “Innovations in Graduate Education” Program
  - $4 million/year, 6-10 awardees/year
  - Postdoc mentoring plans

- NEH Next Generation Humanities PhD Consortium
  - $1.7 million effort across 28 institutions
Council of Graduate Schools

• Understanding PhD Career Pathways for Program Improvement (2015)

• Professional Development: Shaping Effective Programs for STEM Graduate Students (2017)

Need for Professional Development: More Effective Graduate Training
Succeeding in Graduate School

A successful graduate experience will equip students with the *skills* and *credentials* to get a job in their career of interest.

The graduate program will provide them with the necessary technical and theoretical skills.

*But students must also address the “soft skills” necessary for their success.*
Maslow’s Hierarchy of Needs

Physiological: breathing, food, water, sex, sleep, homeostasis, excretion

Safety: security of body, of employment, of resources, of morality, of the family, of health, of property

Love/Belonging: friendship, family, sexual intimacy

Esteem: self-esteem, confidence, achievement, respect of others, respect by others

Self-actualization: morality, creativity, spontaneity, problem solving, lack of prejudice, acceptance of facts
Hierarchy of graduate student needs

- **Professional development**:
  - Mental health, networking, awards, fellowships, internships, experience, skills, extra-curriculars, challenges, competitions, opportunities for growth

- **Dissemination**:
  - Publishing, conferences, presentations

- **Mentoring**:
  - Supportive lab group, feedback, mentors, advisor with best interest, co-advisor

- **Degree requirements**:
  - Classes, research/experiments, quals, proposal, exams

- **Resources**:
  - Institution, advisor, lab, funding, project, equipment
Professional Development and Career Planning

YES

Strengthen and complement academic rigor

NO

Negatively affect preparation in academic research and scholarship
The Individual Development Plan

Structured Planning Tool

Set short-term goals
- Productive and intentional training

Set long-term goals
- Build professional skills, meet interests & values

Mentoring tool
- Establish mentor/mentee expectations, have difficult conversations

Living document
- Revisit yearly to assess progress and revise goals

Productive and intentional training
<table>
<thead>
<tr>
<th>Research Skills and Knowledge</th>
<th>Middle Stage Doctor of Philosophy: 2-4 years</th>
<th>Final Stage Doctor of Philosophy: 4-6 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Develop broad-based knowledge of field</td>
<td>- Start writing articles for publication</td>
<td>- Practice preparing dissertation to peers and faculty</td>
</tr>
<tr>
<td>- Determine broader topic or your thesis</td>
<td>- Develop dissertation proposal or project proposal/prospectus</td>
<td>- Ensure appropriate stamps and access of data and protocols</td>
</tr>
<tr>
<td>- Identify and develop tools and skills needed for research</td>
<td>- Learn proper data management</td>
<td>- Write dissertation</td>
</tr>
<tr>
<td>- Complete safety and other required training</td>
<td>- Complete timely examination and skill assessments</td>
<td>- Publish research</td>
</tr>
<tr>
<td>- Learn about Responsible Conduct of Research (RCR)</td>
<td>- Engage in hands-on data gathering</td>
<td>- Publish independent research plan</td>
</tr>
<tr>
<td>- Learn how to use citation manager software</td>
<td>- Complete proposal writing training</td>
<td></td>
</tr>
<tr>
<td>- Identify dissertation supervisory committee members</td>
<td>- Complete data visualization training</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Management and Leadership</th>
<th>Middle Stage Doctor of Philosophy: 2-4 years</th>
<th>Final Stage Doctor of Philosophy: 4-6 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Join professional society in field</td>
<td>- Mentor undergraduate students</td>
<td>- Mentor early-stage graduate students</td>
</tr>
<tr>
<td>- Volunteer for organizations and conferences in field</td>
<td>- Serve in leadership role in professional society</td>
<td>- Engage in peer mentoring</td>
</tr>
<tr>
<td>- Develop funding plan and apply for fellowships and grants</td>
<td>- Seek out and lead collaborative efforts</td>
<td>- Apply for postdoctoral fellowships and grants</td>
</tr>
<tr>
<td>- Help organize events</td>
<td>- Attend leadership and management development training</td>
<td>- Develop entrepreneurial skills</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Effectiveness and Purpose</th>
<th>Middle Stage Doctor of Philosophy: 2-4 years</th>
<th>Final Stage Doctor of Philosophy: 4-6 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Become familiar with Gainesville</td>
<td>- Identify values and compatible career options</td>
<td>- Develop dissertation writing schedule</td>
</tr>
<tr>
<td>- Learn expectations of department and campus culture</td>
<td>- Enhance confidence</td>
<td>- Narrow down career options</td>
</tr>
<tr>
<td>- Create Individual Development Plan (IDP) degree timeline</td>
<td>- Evaluate skills and areas for improvement</td>
<td>- Practice self-care</td>
</tr>
<tr>
<td>- Become familiar with campus resources</td>
<td>- Devise and revise time management strategies</td>
<td></td>
</tr>
<tr>
<td>- Devise time management strategies</td>
<td>- Practice self-care</td>
<td></td>
</tr>
<tr>
<td>- Devise wellness strategies</td>
<td>- Identify purpose and goals of graduate education</td>
<td></td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Professionalism</th>
<th>Middle Stage Doctor of Philosophy: 2-4 years</th>
<th>Final Stage Doctor of Philosophy: 4-6 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Identify and build relationships with mentors</td>
<td>- Strengthen and expand network</td>
<td>- Present at conferences</td>
</tr>
<tr>
<td>- Establish mutual expectations with advisor</td>
<td>- Find out about local and international funding</td>
<td>- Network for diverse career options</td>
</tr>
<tr>
<td>- Learn proper conference etiquette</td>
<td>- Seek out and lead collaborative efforts</td>
<td>- Be a positive representative of school and field</td>
</tr>
<tr>
<td>- Participate in conferences, seminars, and department events</td>
<td>- Engage in student organizations and community outreach</td>
<td>- Promote accomplishments in social media</td>
</tr>
<tr>
<td>- Identify and address different leadership and work styles</td>
<td>- Present at conferences</td>
<td>- Create a portfolio</td>
</tr>
<tr>
<td>- Identify international opportunities</td>
<td>- Engage students and community</td>
<td></td>
</tr>
<tr>
<td>- Practice cultural awareness and inclusion</td>
<td>- Engage in community service</td>
<td></td>
</tr>
<tr>
<td>- Identify and adhere to norms or professional conduct</td>
<td>- Engage in community service</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Communication</th>
<th>Middle Stage Doctor of Philosophy: 2-4 years</th>
<th>Final Stage Doctor of Philosophy: 4-6 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Attend teaching assistant workshops</td>
<td>- Serve as a teaching assistant or teach course</td>
<td>- Develop and teach course</td>
</tr>
<tr>
<td>- Visit the Oral Center for Written and Oral Communication</td>
<td>- Present at Graduate Student Research Day</td>
<td>- Complete at Three-Minute Thesis (3MT) contest</td>
</tr>
<tr>
<td>- Take a proposal writing course</td>
<td>- Attend communication workshops</td>
<td>- Form or join writing group and engage in peer editing</td>
</tr>
<tr>
<td>- Learn your field’s publications, submission standards, and writing styles</td>
<td>- Present at conferences specifically to your field</td>
<td>- Attend Dissertation Bootcamp</td>
</tr>
<tr>
<td>- Develop “elevator pitch”</td>
<td>- Present to “lay” audiences and engage in outreach</td>
<td>- Write early career proposals/fellowship application</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Career Advancement</th>
<th>Middle Stage Doctor of Philosophy: 2-4 years</th>
<th>Final Stage Doctor of Philosophy: 4-6 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Create Individual Development Plan (IDP)</td>
<td>- Revisit and revise Individual Development Plan (IDP)</td>
<td>- Revise and revisit Individual Development Plan (IDP)</td>
</tr>
<tr>
<td>- Research career options inside and outside of academia</td>
<td>- Attend networking events and workshops</td>
<td>- Review curriculum vitae or resume with mentors and colleagues</td>
</tr>
<tr>
<td>- Meet with career center/Advisor</td>
<td>- Update career plans and resources</td>
<td>- Attend career fairs and interview negotiations workshops</td>
</tr>
<tr>
<td>- Explore career options</td>
<td>- Contact potential collaborators and employers</td>
<td>- Contact informational interviews</td>
</tr>
<tr>
<td>- Contact potential collaborators and employers</td>
<td>- Do internships or externships</td>
<td>- Refine LinkedIn profiles</td>
</tr>
<tr>
<td>- Start to build intentional network</td>
<td>- Post job application materials and practice “job talk”</td>
<td>- Prepare for job application materials and practice “job talk”</td>
</tr>
<tr>
<td>- Research internships</td>
<td>- Apply for any necessary visas</td>
<td></td>
</tr>
</tbody>
</table>
The Office of Graduate Professional Development (OGPD) promotes and coordinates professional development activities for a variety of career opportunities within and outside academe. Students are offered opportunities to
<table>
<thead>
<tr>
<th>Date, Time and Location</th>
<th>Session Title</th>
<th>Speaker</th>
<th>Description</th>
<th>Core Skill</th>
</tr>
</thead>
<tbody>
<tr>
<td>September 11, 3:30 p.m. - 4:30 p.m. Bartram Hall 211</td>
<td>Expert Scholarly Information Search: Finding the Sources You Need in the Library and on the Web</td>
<td>Dr. David Schwieder</td>
<td>Finding scholarly sources like books, journal articles and “gray literature” is a key academic skill. This workshop outlines the key dimensions of scholarly information search, discusses major search tools, and provides a set of strategies for finding these core scholarly sources. Participants will emerge with the ability to pursue efficient, effective search in academic libraries and on the internet.</td>
<td>Research Skills and Knowledge</td>
</tr>
<tr>
<td>September 25, 3:30 p.m. - 4:30 p.m. Bartram Hall 211</td>
<td>Oral Presentations</td>
<td>Dr. Diana Nagy</td>
<td>Learn some ways to give effective oral presentations and get some tips on overcoming the anxiety you might feel when thinking of or giving an oral presentation.</td>
<td>Communication</td>
</tr>
<tr>
<td>October 2, 3:30 p.m. - 4:30 p.m. McKnight Brain Institute DeWeese Auditorium, LG101A</td>
<td>Electronic Thesis and Dissertation Submission</td>
<td>Stacy Wallace</td>
<td>Submission time is here again, and we want to help you graduate! Stacy Wallace, Associate Director of the Graduate Editorial Office will help you walk through exactly what you need to do to make sure that your submissions pass through our office as smoothly as possible.</td>
<td>Effectiveness and Purpose</td>
</tr>
</tbody>
</table>

Workshops throughout the semester

Livestreamed and recorded when possible

Addresses specific skills
Collaboration between the Graduate School, Career Connections Center, and the Center for Stress Resilient Agriculture

Designed to cover all aspects of the job search from beginning to end

Received over 100 applications in 2 days

The Graduate School, the Career Connections Center, and the Center for Stress Resistant Agriculture’s ExcelAGator program will host a seminar series in the Fall 2019 semester on entering the job market.

Designed for late-stage graduate students and postdocs, this series will focus primarily on non-academic careers, although some information will be applicable to the academic job search as well.

Participants who successfully complete the series will receive a certificate of completion. If elected, all participants are expected to attend each session on Wednesdays from 3 p.m. to 4:30 p.m., October 16-November 20. Applications to join open September 2. UPDATE - APPLICATIONS TO JOIN OPEN SEPTEMBER 9. There are limited seats available.

**Topics covered will include:**
- Elevator Pitch
- Networking and Building Connections
- The Non-Academic Job Search
- CV/Resume/Cover Letter
- Interviewing Skills
- Negotiating and Professional Skills
Collaboration between the Graduate School, Office of Postdoctoral Affairs, and Center for Teaching Excellence

Will cover faculty expectations, best teaching practices, diversity and inclusion, and mentoring

Received over 90 applications in less than 1 week

Preparation Future Faculty – Spring 2020

In the Spring of 2020, the Graduate School, the Office of Postdoctoral Affairs and the Center for Teaching Excellence will offer a Preparing Future Faculty program for graduate students and postdocs. The program will run over 13 weeks, beginning January 13 and ending April 20, and will meet on Mondays from 3:30pm – 5pm. It will consist of weekly in-person meetings on the UF main campus, assignments, and an independent mentoring component.

Questions? Please email Talline Martins at tmartins@ufl.edu

Learning Objectives
Weekly Meeting Schedule
Mentoring Requirement
Eligibility

Click Here to Apply

Due to the high level of interest in this program and the limited available seats, the application portal will close on October 21 at 8 a.m.
A RESOURCE AND OPPORTUNITY NEWSLETTER
UNIVERSITY OF FLORIDA GRADUATE SCHOOL OFFICE OF GRADUATE PROFESSIONAL DEVELOPMENT

OGPD Website | OGPD Calendar | Submit Your Event to OGPD

Biweekly newsletter

Highlights various professional development opportunities

Sent to all graduate students, grad coordinators, grad staff, and associate deans
CAMPUS RESOURCES FOR GRADUATE STUDENT SUCCESS

Career Connections Center  
1300 J Wayne Reitz Union (655 Museum Road)  
352 392 1601  
career.ufl.edu

Center for the Humanities and the Public Sphere  
200 Walker Hall (14898 Union Road)  
352 392 0786  
humanities.ufl.edu

Center for Teaching Excellence  
200 Bryant Hall (1772 Stadium Road)  
352 294 0811  
teach.ufl.edu

Counseling & Wellness Center  
3190 Radio Road  
352 392 1575  
counseling.ufl.edu

Dial Center for Written and Oral Communication  
402 Rollins Hall (341 Buckman Drive)  
352 392 5421  
cwoc.ufl.edu

GatorWell Health Promotion Services  
1100 J Wayne Reitz Union (655 Museum Road)  
352 273 4450  
gatorwell.ufl.edu

International Center  
170 The Hub (1765 Stadium Road)  
352 392 5323  
internationalcenter.ufl.edu

Office of Biomedical Research Career Development  
C672 Communicore Ground Floor  
352 294 8335  
gradev.uflhealth.org

Office of Graduate Diversity Initiatives  
123 Griner Hall (1523 Union Road)  
352 2392 6444  
gradareschool.ufl.edu/ogdi

Office of Graduate Professional Development  
129 Griner Hall (1523 Union Road)  
352 294 0488  
gradareschool.ufl.edu/ogpd

Office of the Ombuds  
31 Tigert Hall (300 SW 13th Street)  
352 392 1308  
www.ombuds.ufl.edu

Research Integrity at UF Office of Research  
460 Griner Hall (1523 Union Road)  
352 392 9174 or (toll-free) 1 877 556 5356  
research.ufl.edu/compliance/research-integrity.html

UF Innovate  
747 SW 2nd Avenue  
352 294 0885  
innovate.research.ufl.edu

UF Libraries  
352 273 2525  
Multiples locations across campus  
Online map: www.ufl.edu/liblocations.html

UF Training and Organizational Development  
1603 UF East Campus (2140 NE Waldo Road)  
352 392 4626  
learn-and-grow.hr.ufl.edu

Writing Studio  
339 Turlington Hall (330 Newell Drive)  
352 3846 1138  
writing.ufl.edu

UF THE GRADUATE SCHOOL

CHART YOUR COURSE

A STRATEGIC ROADMAP FOR DOCTORAL STUDENT SUCCESS AT THE UNIVERSITY OF FLORIDA
Graduate Program Initiatives at UF
Current Initiatives and Suggestions

In curriculum:
• Navigating PhD course
• Grant writing course
• Non-technical communication course
• Effective presentations
• Group/team projects
• Internships
• Career exploration seminars: connect with alumni
• Diverse committee members: industry/govt/non profit

Extracurricular:
• Serve on faculty search committees
• Organize dept seminars
• Service: complete department projects/assessment
• Creative graduate assistant positions
• Teach short modules in faculty courses
• Develop own special topics course: ex Uncommon reads
High-Impact Initiative

Enhance tracking of alumni!

• Useful for recruitment initiatives
• Clear picture of first jobs out of program
  – insights into how programs should/should not change
• Pool of possible donors
• Possible consultants/steering committee
• Connections and directions for current students
Questions?

Talline Martins
tmartins@ufl.edu