Designing and Assessing Career and Professional Development Programs for Master’s and Doctoral Students: A Case Study

Council of Graduate Schools Annual Meeting, December 2009

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Professional Development Inventory of Participants

What professional development programs does your institution provide for graduate students?

What does your institution hope to achieve with these programs?
Goals

Empower students to proactively manage their graduate career and accomplish their goals.

Expose students to a new model for Graduate Career and Professional Development that breaks down the PhD into manageable steps.

Discuss the challenges of graduate school.

Help students understand the reality of career preparation.

Raise awareness of campus resources that support graduate students.

Help students understand the expectations of employers, both academic and non-academic.

Identify strategies for career preparation and planning.
What the Research Tells Us: The Scholarship of PREP

- ~75% of Ph.D.s will work in environments where other competencies are more important than research.

- 50% of doctoral recipients will find employment as tenure track faculty in a college or university. Most will be in a non-research institution.

- Students complete doctoral degrees without understanding the missions, faculty roles and rewards, and academic culture of various institutions.

- Studies of doctoral education and early career faculty show that students need information about career choices, teaching, mentoring, and more congruence between doctoral education and the realities of faculty life.

- Ph.D.s struggle to crossover to industry, government, and non-profit sectors.

- At MSU in 2003, 64% (n=304) of Ph.D. students were very-fairly interested in teaching positions after graduation.
Professional Development

The process of socialization and integration into a professional context, and the continued process of learning and growth throughout a career

Transferable Skills

Practical abilities that are fundamental to success in graduate school and in a range of professional contexts, from academia to industry, corporations, agencies and government
Important Transferable Skills

Research, Scholarship, and Creative Activities

Leadership

Ethics and Integrity

Collaboration

Communication

Balance and Resilience
Becoming Your Own Manager

5 strategies for a productive graduate career

1. Take responsibility and ownership for your success
2. Know available resources
3. Think ahead
4. Have a plan
5. Identify (and deal with) obstacles
Graduate student tasks & responsibilities?
PLANNING for career and professional goals-entry to exit

Planning during graduate school helps you identify and achieve your professional and career goals.
RESILIENCE and tenacity through multiple career and life stages

Resilience: the ability to adapt effectively to adversity or change

Wellness: The integration and balance of mental, physical, emotional, and spiritual well-being through taking responsibility for one’s own health
ENGAGEMENT in decision-making and skill development

Engagement in your discipline and in your personal and professional development is critical for enhancing transferable skills, expanding professional networks, and creating partnerships and collaborations.
Professionalism: how you reflect on what you do in your discipline and the types of attitudes, standards, and behaviors you demonstrate throughout your career.
Three Stage Model of Graduate Student Development*

1. Early Stage

2. Mid Stage

3. Late Stage

This model responds to some of the commonly encountered challenges facing graduate students.

*Adapted from materials MIT model

<table>
<thead>
<tr>
<th><strong>EARLY STAGE</strong></th>
<th><strong>MID STAGE</strong></th>
<th><strong>LATE STAGE</strong></th>
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<tbody>
<tr>
<td>Financial planning</td>
<td>Preparing for comprehensive exams</td>
<td>Writing the dissertation</td>
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<tr>
<td>Setting expectations</td>
<td>Preparing for the job search or postdoc</td>
<td>Conducting the job search</td>
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<tr>
<td>Identifying career goals</td>
<td>Developing professional standards for integrity in research</td>
<td>Finding a postdoc position</td>
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<tr>
<td>Developing support systems</td>
<td>Conflict resolution</td>
<td>Managing the research program</td>
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<tr>
<td>Creating a wellness plan</td>
<td>Stress management</td>
<td>Sustaining support networks</td>
</tr>
<tr>
<td>Professional networking</td>
<td>Funding your research</td>
<td>Choosing the academic path</td>
</tr>
<tr>
<td>Choosing an advisor</td>
<td>Working with committees</td>
<td>Choosing the nonacademic path</td>
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<tr>
<td>Identifying transferable skills</td>
<td>Acquiring transferable skills</td>
<td>Writing a postdoc grant</td>
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<tr>
<td>Developing teaching skills</td>
<td>Project planning</td>
<td>Negotiating the job search</td>
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<tr>
<td>Research ethics training</td>
<td>Creating your teaching portfolio</td>
<td>Translating transferable skills for the next career stage</td>
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<tr>
<td>Early Stage</td>
<td>Mid Stage</td>
<td>Late Stage</td>
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<tr>
<td>Planning</td>
<td>Resilience</td>
<td>Engagement</td>
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<tr>
<td>Professionalism</td>
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</table>
### Completed by a finishing STEM Ph.D. Student

#### Professional Development Matrix

<table>
<thead>
<tr>
<th></th>
<th><strong>PLANNING</strong></th>
<th><strong>RESILIENCE</strong></th>
<th><strong>ENGAGEMENT</strong></th>
<th><strong>PROFESSIONALISM</strong></th>
</tr>
</thead>
</table>
| **EARLY STAGE**  | • Preliminary research and writing research proposal  
• Developing research skills | ?                                              | • Developing relationships with mentors  
• Networking                                             | • Research ethics training  
• Teaching skills development  
• Developing professional speaking and writing skills |
| **MID STAGE**    | • Project time & resource mgmt. skills; Skills for academic positions  
• Understand expectations for prelims and comps | ?                                              | • Working w/ collaborators in- and out of discipline  
• Attend/present at confer.  
• Publish research  
• Participation/leadership in dept/college l committees | • Teaching portfolio & philosophy development  
• Further teaching skill development through courses and research projects |
| **LATE STAGE**   | • Dissertation writing  
• Find postdoc  
• Preparing written materials for apps.  
• Coordinate spouse's career | • Maintaining mentor and network contact relationships  
• Time management  
• Stress management | • Publishing research  
• Grantsmanship skills | • Negotiation  
• Interviewing skills  
• Coordination of spouse’s career |
Michigan State University Graduate School
Team and Partners

K. Klomparens, Dean GS;
Plant Biology

GS Evaluation Team

J. Stoddart, Asst. Dean GS;
English
R. Campa, Asst. Dean GS;
Wildlife Ecology
M. Helm, Career Services; GS
T. Nunez, Assoc. Dean GS;
Neuroscience
J. Brockman, CR Coordinator GS;
Labor and Industrial Relations
K. Johnston, Director, TAP
J. Jackson, Assoc. Dean GS;
Microbiology

PREP Concept Development

VP for Research & Graduate Studies-
T. May
FOD, Provost’s Office

Counseling Center
Writing Center

Program Partners

[Image of PREP logo]
PREP Professional Themes

Planning

Resilience

Engagement

Professionalism

Transferable Skills

Communication

Job Search Strategies

Balance and Resilience

Collaboration

Leadership

Research

Scholarship

Creative Activity

Ethics and Integrity

How to: Affiliated Partners

Office of Career Services
AGEP Grant
The Graduate School
Local colleges and universities
NSF I-cubed Grant

Writing Center
Olin Health Center
The Counseling Center
Employee Assistance Program

CIRTL NSF Grant
CGS PhD Completion Grant
COGS/Grad. Student Org.
The Graduate School

Vice President for Research
Teaching Assistant Program
Faculty Development Office
CGS RCR Grant
Certification in College Teaching
The Graduate School
Start with goals—How do you know you are meeting them?
Program Goal and Objectives

Goal: The overarching end state or desired outcome

Objective: A specific, quantifiable statement of program achievement

- **SMART**: specific, measurable, attainable, realistic, tangible
- Cognitive, Behavioral, Affective
  (Knowledge, Skills, and Attitudes)
Establishing Professional Development Goals and Objectives

- Revisit previous question and your responses:
  
  What does your institution hope to achieve with these programs?

- Develop one or two goals for professional development programs.
Goals

► Broaden awareness of professional expectations in graduate education
► Prepare students to plan and manage their own careers
► Promote graduate student retention and completion
► Provide students with a competitive edge in securing professional positions
**Focus Goal for 2008-2009**

**Prepare students to plan and manage their own careers:** Develop students’ transferable skills across a range of programs

**Objectives**
- Facilitators: Describe transferable skills using common language across programs
- Students: Acquire and explain the applications of transferable skills presented in workshops
- Students: Develop strategies for implementing skills in numerous contexts after workshops

**Measures**
- Content analysis of curriculum
- Common questions for pre- and post-workshop surveys
- Common 2 month follow-up e-mail survey about skill application
Common PREP Slides For Partners

PREP: MSU Career and Professional Development Model

- **Stages of professional development**
  - the process of socialization and integration into a professional context, and the continued process of learning and growth throughout a career
- **Development of transferable skills**
  - practical abilities that are fundamental to success in graduate school and in a range of professional contexts, from academia to industry, corporations, agencies and government

**PREP SKILLS**

- **PLANNING** for career and professional goals-entry to exit
- **RESILIENCE** and tenacity through multiple career and life stages
- **ENGAGEMENT** in decision-making and skill development
- **PROFESSIONALISM** in research, teaching, and service

Professional Development Matrix

<table>
<thead>
<tr>
<th>Stages</th>
<th>Planning</th>
<th>Resilience</th>
<th>Engagement</th>
<th>Professionalism</th>
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<td>Early</td>
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Essential Transferable Skills-What do students need?

introduction

Finding and landing a professional position is more than simply completing a degree or completing a postdoc, internship, or temporary job. It is a complex process that varies by discipline and requires development of and confidence in your abilities, an ability to effectively network within and across disciplinary fields, and the capacity to analyze your skills, knowledge, and strengths.

If you are earning or have a Ph.D., you already have advanced transferable skills that will allow you to excel in a variety of environments. What you need is a way to develop and effectively describe these skills and competencies. That is what this guidebook is all about.

Plan Your Work & Work Your Plan highlights key transferable skills that are important for the career and professional development of those aiming or holding a Ph.D. degree. Our goal for this guidebook is to help you:

- Recognize the skills you are acquiring that complement and go beyond your disciplinary specialization
- Understand the broad uses of these skills during graduate school, the postdoc experience, and your future career
- Identify ways to strengthen and consolidate those skills while you are a graduate student or postdoc

using this guide

Six broad skill areas are defined and exemplified through interviews with doctoral degree recipients who talk about how those skills have been important in their professional lives.

A section called “Fitting It to Work” is included in each chapter. This section identifies specific suggestions on how to develop and improve each skill, as well as the resources available to assist you both within and outside your department.

In addition, a “PREP Spotlight” box features workshops and programs associated with the Graduate School. PREP is the NSU Graduate School’s career and professional development model designed to help you with a successful transition into your future role in academia, government, industry, corporations, or agencies. For more on PREP programs, see the back of this guide, and visit http://grad.nova.edu/prep.

Becoming a competent and effective professional who will be competitive for a variety of careers will require dedication and effort on your part. The framework you make in your professional development today will serve you well throughout your graduate and postdoc experience and beyond.

Several research studies have focused on identifying the transferable skills that academic and non-academic employers are seeking from those with a Ph.D., including those conducted by:

- Center for Innovation and Research in Graduate Education
  https://cigr.nova.edu/
- Re-Envisioning the Ph.D. Project
  https://www.re-envisioning-the-phd.org/
- National Postdoctoral Association
  https://www.npad.org/

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Acknowledgments

These graduates and many people were made possible. First and foremost, we thank all those who contributed. Whether or not the names were included, your inspirations, comments, and advice are greatly appreciated. We also thank the graduate students who, over many years, have asked for their stories to be included. The College of Graduate students who provided written comments, interviews, and suggestions helped improve this document. We are especially grateful to Dr. Lisa Leichterman, Dr. Magdalena Mael, and Dr. Jason Johnson, and the members of the PREP team.
<table>
<thead>
<tr>
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<th>PROFESSIONALISM</th>
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<tbody>
<tr>
<td>The PREPped Graduate Student: A Model for Career and Professional Development</td>
<td>Wellness Institute</td>
<td>Navigating the Ph.D.</td>
<td>Investing in Responsibility and Integrity for a Productive Career</td>
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<tr>
<td>Effective, Powerful, and Healthy Public Speaking and Presenting</td>
<td>Be a Change Agent in Graduate School, Your Professional Life, and Beyond: Tapping and Using Your Emotional Intelligence</td>
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<td>Responsible Decision-Making in Academic Research: Ethical and Moral Perspectives</td>
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<td>Personal Responsibility in Conducting Research and Advancing Your Career</td>
</tr>
<tr>
<td>MID STAGE</td>
<td>Developing Communication and Conflict Management Skills to Save Time and Enhance Productivity</td>
<td>Leading Through Teamwork: How to be a Successful Professional</td>
<td>Maintaining a Productive and Responsive Environment for Conducting Research</td>
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<tr>
<td>What’s Out There? Identifying Non-Academic Options in the Ph.D. Job Market</td>
<td>Graduate Certificate in Community Engagement</td>
<td>Professional Responsibility in Conducting Research and Advancing Your Career</td>
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<tr>
<td>Translating Academic Success into Expanded Career Opportunities</td>
<td>EF21U (Entrepreneurial Faculty for the 21st Century) fellowship program</td>
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<tr>
<td>Planning for a Sustainable Career: From Graduate Student to Professional</td>
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<tr>
<td>Planning, Managing, and Funding the Research Project</td>
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<tr>
<td>LATE STAGE</td>
<td>Counseling Center Dissertation Support Groups</td>
<td>University Graduate Certification in College Teaching</td>
<td>Creating a Teaching Philosophy Part 1: Establishing the Basics</td>
</tr>
<tr>
<td>Searching for an Academic Position: How to Be Successful</td>
<td>Writing Center Dissertation Writing Groups</td>
<td>University Graduate Certification in College Teaching May Institute</td>
<td>Creating a Teaching Philosophy You Can Use, Part 2: Developing a Professional Praxis</td>
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<tr>
<td>Developing Your Written Credentials and Preparing Application Materials: CV’s, Cover Letter, and More</td>
<td></td>
<td>FAST (Future Academic Scholars in Teaching) fellowship program</td>
<td>Teaching Philosophy Development: The BASICS!</td>
</tr>
<tr>
<td>Talking About Teaching in the Interview</td>
<td>Counseling Center Dissertation Support Groups</td>
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<td>From CV to Resume: Developing Written Credentials for Non-Academic Positions</td>
<td>University Graduate Certification in College Teaching May Institute</td>
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<tr>
<td>Negotiating Job Offers</td>
<td>University Graduate Certification in College Teaching May Institute</td>
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<td></td>
<td>University Graduate Certification in College Teaching May Institute</td>
<td>FAST (Future Academic Scholars in Teaching) fellowship program</td>
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<td></td>
<td>University Graduate Certification in College Teaching May Institute</td>
<td>CASTL (Carnegie Academy for Scholarship of Teaching and Learning) fellows program</td>
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</table>
Levels of Program Evaluation

► Participation
► Satisfaction
► Learning
► Application
► Overall Impact

Each can be measured in a variety of ways- qualitative/quantitative

<table>
<thead>
<tr>
<th>Program</th>
<th>‘07-’08</th>
<th>’08-’09</th>
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</thead>
<tbody>
<tr>
<td>Conflict Resolution</td>
<td>1,082</td>
<td>826</td>
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<tr>
<td>(faculty, graduate students-MSU, elsewhere)</td>
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<tr>
<td>Teaching Assistant Program</td>
<td>815</td>
<td>1,054</td>
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<tr>
<td>Responsible Conduct of Research</td>
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<td>648</td>
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<tr>
<td>Ph.D. Job Search Series</td>
<td>391</td>
<td>460</td>
</tr>
<tr>
<td>Career Selection and Professional Development</td>
<td>226</td>
<td>211</td>
</tr>
<tr>
<td></td>
<td>3,111</td>
<td>3,199</td>
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</tbody>
</table>

Graduate students, postdocs, faculty from more than 80 MSU graduate programs
Who attends our programs?

Securing Academic Positions at 2- and 4-Year Institutions, October, 2008
Goal
Create awareness of the skills needed to successfully transition to a faculty position

Student learning objectives
► Name and describe the specific professional skills graduate students need to develop to be successful as a faculty member
► Describe the importance of each of the respective professional skills
► Describe where to acquire and how to develop the skills to be a successful faculty member

Measures
► Pre- and post-workshop questionnaires on cognitive outcomes
► Pre-workshop questionnaire and focus group follow up on behavioral outcomes
Student Perceptions
Pre-Workshop Survey

“I understand the institutional expectations for an untenured and tenured faculty member.”

- 34% Agree
- 46% Undecided
- 20% Disagree

“I feel I can define what is meant by the term professional development.”

- 63% Agree
- 29% Undecided
- 8% Disagree

“My current graduate education and training, inside and outside of my academic program, has helped me develop the diversity of skills that will be needed for my first academic position.”

- 64% Agree
- 36% Undecided
- 0% Disagree

“I understand the diversity of skills that will be required of me to be an effective teacher at a university or college.”

- 64% Agree
- 28% Undecided
- 8% Disagree

\( n = 50 \)
From Graduate Student to Professor
January, 2008

Pre-Workshop Survey  Post-Workshop Survey

understand institutional expectations for untenured/tenured faculty

$E \pm$ base 95% CI

$n = 50$ (pre); 42 (post); $P<0.05$ between pre- and post-workshop surveys
Planning for a Sustainable Career
September, 2008

Pre-Workshop Survey

Post-Workshop Survey

$n = 35$ (pre); $30$ (post); $P < 0.05$ between pre- and post-workshop surveys
Planning, Managing, and Funding a Research Project – April, 2009

What did participants say?  Examples

- **From recommendations of panelists in the morning & afternoon sessions will you change the way you prepare for a research position?**
  - Looking for more/diverse funding sources
    - “Plan further ahead and look at wider range of funding sources.”
  - Statement/Presentation/Organization of ideas in research proposal
    - “I will work more on presenting the idea in the proposal.”
  - Collaboration/Communication/Networking
    - “Foster good collaboration, expand networking, and build better teams.”

- **Most challenging aspect of developing & managing a research program:**
  - Writing the proposal
    - “Put the ideas on paper in a convincing manner, i.e., sell the idea.”
  - Finding and procuring funding
    - “Finding specific sources to submit to.”

- **Like most:**
  - Panel session (frank, practical advice, personal anecdotes)
    - “Panelists sharing their personal experience with grant-seeking was very helpful.”
Developing Measurable Objectives

- Select one of your goals and develop a cognitive and behavioral objective that can be used to assess whether you have met that goal.
Assessing Professional Development Workshops

- Pre-workshop Survey
  - IMPACTS-- Pre.- & Post-KNOWLEDGE, BEHAVIOR

- Post-workshop Survey
  - Satisfaction
  - Application
PREP PROGRAMS
EVALUATION PROCESS

Questions to address objectives

Pre-workshop survey

Workshop

Post-workshop survey

Use data from surveys to develop focus group protocol

Focus group interviews with workshop participants

Use information to alter future programs
Focus goal for 2009-2013

Promote graduate student retention and completion

Objectives
► Track relationships between participation in professional development workshops and completion
► Track relationships between participation in workshops and time to degree
► Track relationships between participation in workshops and placement outcomes
► Develop patterns in participation to see impact of clusters of experiences

Measures
► New registration database records participation and demographics
► Network analysis of graduate student outcomes (following MSU NRC faculty study model)
► Influential variables impacting career trajectories