

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

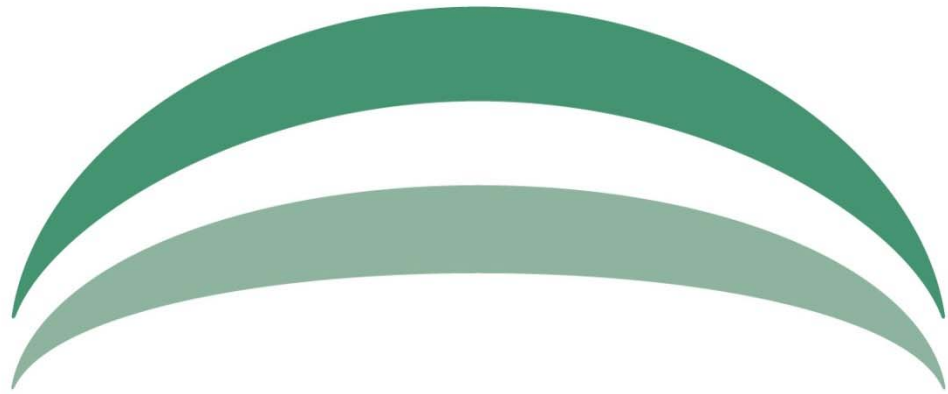
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Professional Development Inventory of Participants

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

What does your institution hope to achieve with these programs?



PREP

The Graduate School • Michigan State University

Making the most of your graduate school experience.

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

PREP

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?

PREP

PLANNING for career and professional goals-entry to exit

Planning during graduate school helps you identify and achieve your professional and career goals.

PREP

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

PREP

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.

PREP

PROFESSIONALISM in research,
teaching, and service

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

* Adapted from Stewart, Donald W. (1995). Developmental Considerations in Counselling Graduate Students. *Guidance & Counseling*, 10, 3, 21-24.

P PLANNING

R RESILIENCE

E ENGAGEMENT

P PROFESSIONALISM

	P PLANNING	R RESILIENCE	E ENGAGEMENT	P PROFESSIONALISM
EARLY STAGE	<ul style="list-style-type: none"> Financial planning Setting expectations Identifying career goals 	<ul style="list-style-type: none"> Developing support systems Creating a wellness plan 	<ul style="list-style-type: none"> Professional networking Choosing an advisor Identifying transferable skills 	<ul style="list-style-type: none"> Developing teaching skills Research ethics training
MID STAGE	<ul style="list-style-type: none"> Preparing for comprehensive exams Preparing for the job search or postdoc Developing professional standards for integrity in research 	<ul style="list-style-type: none"> Conflict resolution Stress management 	<ul style="list-style-type: none"> Funding your research Working with committees Acquiring transferable skills 	<ul style="list-style-type: none"> Project planning Creating your teaching portfolio
LATE STAGE	<ul style="list-style-type: none"> Writing the dissertation Conducting the job search Finding a postdoc position 	<ul style="list-style-type: none"> Managing the research program Sustaining support networks 	<ul style="list-style-type: none"> Choosing the academic path Choosing the nonacademic path Writing a postdoc grant 	<ul style="list-style-type: none"> Negotiating the job search Translating transferable skills for the next career stage

Professional Development Matrix

	P LANNING	R ESILIENCE	E NGAGEMENT	P ROFESSIONALISM
EARLY STAGE				
MID STAGE				
LATE STAGE				

Completed by a finishing STEM Ph.D. Student

Professional Development Matrix

	P LANNING	R ESILIENCE	E NGAGEMENT	P ROFESSIONALISM
EARLY STAGE	<ul style="list-style-type: none"> •Preliminary research and writing research proposal •Developing research skills 	?	<ul style="list-style-type: none"> •Developing relationships with mentors •Networking 	<ul style="list-style-type: none"> •Research ethics training •Teaching skills development •Developing professional speaking and writing skills
MID STAGE	<ul style="list-style-type: none"> •Project time & resource mgt. skills; Skills for academic positions •Understand expectations for prelims and comps 	?	<ul style="list-style-type: none"> •Working w/ collaborators in- and out of discipline •Attend/present at confer. •Publish research •Participation/leadership in dept/college I committees 	<ul style="list-style-type: none"> •Teaching portfolio & philosophy development •Further teaching skill development through courses and research projects
LATE STAGE	<ul style="list-style-type: none"> •Dissertation writing •Find postdoc •Preparing written materials for apps. •Coordinate spouse's career 	<ul style="list-style-type: none"> •Maintaining mentor and network contact relationships •Time management •Stress management 	<ul style="list-style-type: none"> •Publishing research •Grantsmanship skills 	<ul style="list-style-type: none"> •Negotiation •Interviewing skills •Coordination of spouse's career

Michigan State University Graduate School Team and Partners

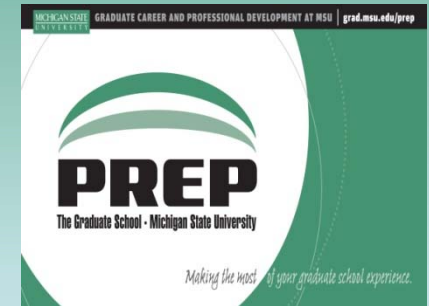
K. Klomparens, Dean GS;
Plant Biology

Program Partners

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



PREP Professional Themes

Transferable Skills

How to: MSU Workshops & Activities

Planning

Communication Skills
Job Search Strategies

Writing CV & Cover Letters
Securing Academic Positions at 2-, 4-yr Institutions
The Academic Job Search

Resilience

Balance and Resilience

Navigating the PhD
Conflict Resolution
Healthy U Program
Stress Workshops

Engagement

Collaboration
Leadership

Networking for PhDs
FAST Fellows Program
CASTL Fellows Program
COGS/Grad. Student Org.

Professionalism

Research
Scholarship
Creative Activities
Ethics and Integrity

Responsible Conduct for Research
Certification in College Teaching
From Graduate Student to Professional
Lilly Workshops

PREP Professional Themes

Transferable Skills

How to: Affiliated Partners

Planning

Communication
Job Search Strategies

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

Resilience

Balance and Resilience

Writing Center
Olin Health Center
The Counseling Center
Employee Assistance Prog

Engagement

Collaboration
Leadership

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

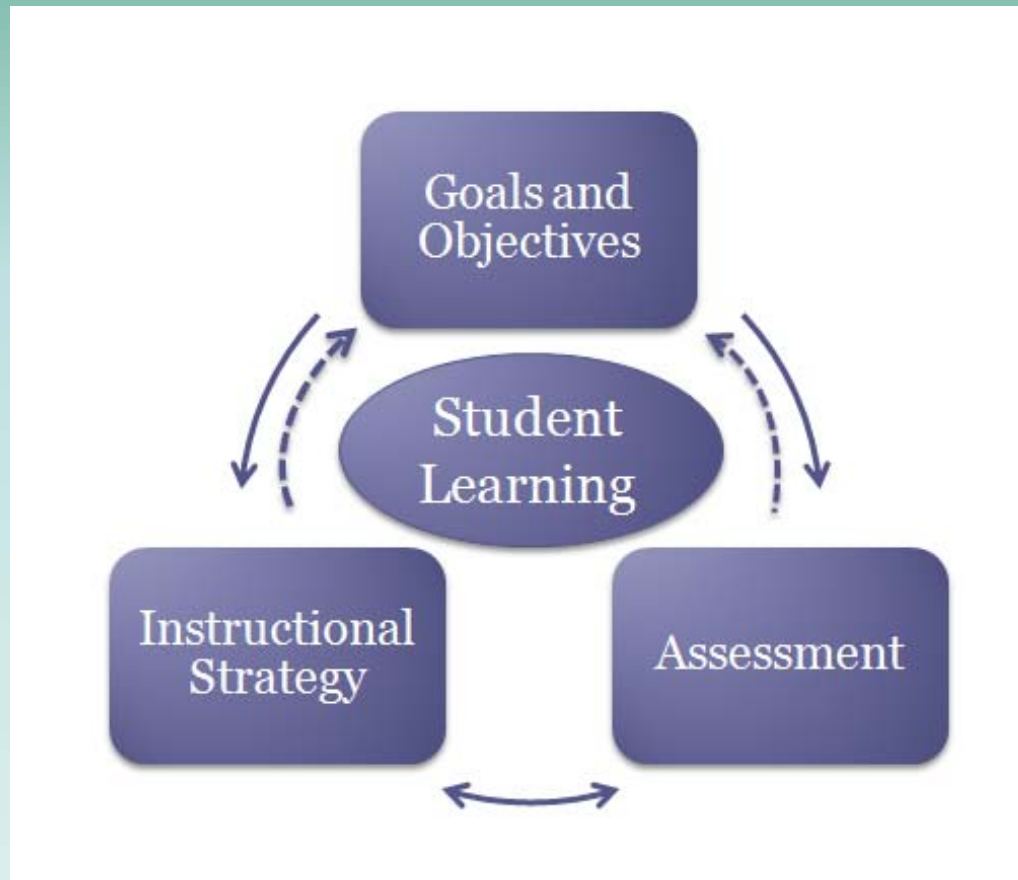
Professionalism

Research
Scholarship
Creative Activity
Ethics and Integrity

Vice President for Research
Teaching Assistant Program
Faculty Development Office
CGS RCR Grant
Certification in College
Teaching
The Graduate School

Designing Programs The Backward Design

- **Start with goals—How do you know you are meeting them?**



Modified from Wiggins and McTighe 1998 by T. Long

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.

PREP

MSU Career and Professional Development Programs (Planning, Resilience, Engagement, Professionalism)

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**

PREP

Focus Goal for 2008-2009

Prepare students to plan and manage their own careers:

Develop students' transferable skills across a range of programs

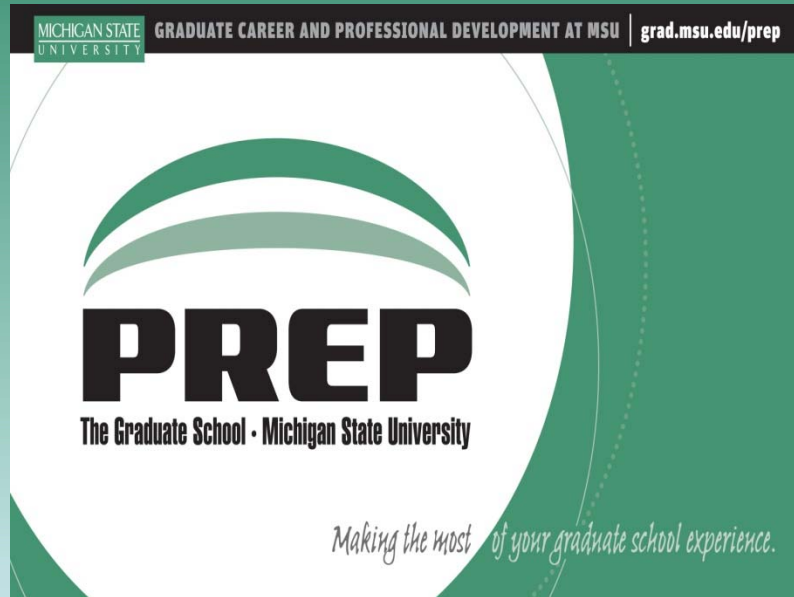
Objectives

- ▶ 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 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

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

Professional Development Matrix

	P LANNING	R ESILIENCE	E NGAGEMENT	P ROFESSIONALISM
EARLY STAGE				
MID STAGE				
LATE STAGE				

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 aptitude 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 earning 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 those 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

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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 "Putting It to Work" is included in each chapter. This section identifies specific suggestions on how to develop and improve each skill now, and 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 MSU Graduate School career and professional development model designed to help you plan for a successful doctoral experience and a smooth transition into your future role in academia, government, industry, corporations, or agencies. For more on PREP programs, see the end of this guide, and visit <http://grad.msu.edu/prep>.

Becoming a competent and effective professional who will be competitive for a variety of careers will require dedicated time and effort on your part. The investments 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
<http://depts.washington.edu/cirgaweb/c/>
- Re-Envisioning the Ph.D. Project
<http://www.grad.washington.edu/envision/>
- National Postdoctoral Association
<http://www.nationalpostdoc.org/>

Essential Transferable Skills-What employers want?

research

learn

balance & resilience

A newly hired Ph.D. will be challenged to balance multiple tasks simultaneously. Integrating the products of your work with those of others to meet the multiple needs of your organization, and maintain a satisfying personal life. Finding a way to balance your professional and personal responsibilities and interests is essential if you hope to finish your degree and sustain a long-term, satisfying career. Studying and maintaining balance and becoming resilient will require you to:

- Set reasonable goals for work, personal, and family life
- Prioritize tasks and organize your schedule
- Understand the multiple missions and expectations of your employer, organization, or institution
- Understand your own expectations and role within the organization or institution
- Communicate frequently with your supervisor(s) regarding expectations, job responsibilities, priorities, and personal responsibilities
- Learn from colleagues who successfully balance personal and professional responsibilities
- Be resilient and flexible to the challenges that will arise in your professional and personal life
- Negotiate and resolve conflicts between yourself and others, as well as between the various demands on your time and personal resources
- Maintain a balanced health and wellness program that includes exercise, good nutrition, recreation, stress reduction, sleep, and healthy personal relationships
- Engage in short- and long-term financial planning.



modeling balance

Robert Brown, Ph.D., (University) earned a B.S. in Chemistry from U.C. Santa Barbara in 1980. He is currently a senior research scientist at the University of California, Santa Barbara. He has been a faculty member at the University of California, Santa Barbara for over 20 years. He is currently a senior research scientist at the University of California, Santa Barbara. He has been a faculty member at the University of California, Santa Barbara for over 20 years.

My corporate workplace is making an increasing emphasis on practices that promote employee well-being. For instance, the University of California, Santa Barbara has implemented a number of initiatives to support its employees' physical and mental health. These include providing access to fitness facilities, offering flexible work schedules, and providing access to mental health services. These initiatives are designed to help employees maintain a healthy work-life balance and reduce stress. By prioritizing employee well-being, the University of California, Santa Barbara is demonstrating its commitment to its employees and its recognition of the importance of a healthy workforce.

communication

and apply principles of active and listening to diverse audiences. Writing in small and large groups. Writing clearly for diverse audiences. Writing enthusiastically for your material. Giving criticism effectively for continuous effectiveness of your communication. Being a listener, and learn to hear other people's points of view. Communicate ideas.

collaboration

with diverse groups to pursue a common goal. Give and receive constructive feedback. Share responsibility for communicating, problem-solving, and completing tasks. Communicate across disciplines and audiences, academic and non-academic. Build and sustain networks of faculty and peers inside and outside your program or department. Be a mentor-mentee relationship with those in a mentor-mentee relationship with those who possess a depth of knowledge and experience.

ethics & integrity

Adhere to professional, moral, and ethical principles. Be respectful, and forthright. Communicate effectively. Respect research participants and their privacy. Report potential conflicts of interest. Acknowledge and respect the ownership of intellectual property. Follow and comply with the rules and policies of your discipline. Work well with others. Acknowledge and credit where credit is due. Conduct research with integrity. Adhere to your discipline's and institution's code of ethics.



	P LANNING	R ESILIENCE	E NGAGEMENT	P ROFESSIONALISM
EARLY STAGE	<p>The PREPed Graduate Student: A Model for Career and Professional Development</p> <p>Effective, Powerful, and Healthy Public Speaking and Presenting</p>	<p>Wellness Institute</p> <p>Be a Change Agent in Graduate School, Your Professional Life, and Beyond: Tapping and Using Your Emotional Intelligence</p>	<p>Navigating the Ph.D.</p>	<p>Investing in Responsibility and Integrity for a Productive Career</p> <p>Responsible Decision-Making in Academic Research: Ethical and Moral Perspectives</p> <p>Personal Responsibility in Conducting Research and Advancing Your Career</p>
MID STAGE	<p>What's Out There? Identifying Non-Academic Options in the Ph.D. Job Market</p> <p>Translating Academic Success into Expanded Career Opportunities</p> <p>Planning for a Sustainable Career: From Graduate Student to Professional</p> <p>Planning, Managing, and Funding the Research Project</p>	<p>Developing Communication and Conflict Management Skills to Save Time and Enhance Productivity</p> <p>Taking Charge: Strategies for Success in Academia</p>	<p>Leading Through Teamwork: How to be a Successful Professional</p> <p>Graduate Certificate in Community Engagement</p> <p>EF21U (Entrepreneurial Faculty for the 21st Century) fellowship program</p>	<p>Maintaining a Productive and Responsive Environment for Conducting Research</p> <p>Responsibility to the Subjects of Research: Animals</p> <p>Responsibility to the Subjects of Research: Humans</p> <p>Objectivity and Conflicting Interests in Academic Research</p> <p>Understanding and Handling Classroom Incivility</p> <p>Effective Test Making</p> <p>Teaching Across Cultures</p> <p>Discussions that Work: Engaging Students, and Getting Them to Engage One Another</p>
LATE STAGE	<p>Searching for an Academic Position: How to Be Successful</p> <p>Developing Your Written Credentials and Preparing Application Materials: CV's, Cover Letter, and More</p> <p>Talking About Teaching in the Interview</p> <p>Talking About Research in the Interview From CV to Resume: Developing Written Credentials for Non-Academic Positions</p> <p>Negotiating Job Offers</p>	<p>Counseling Center Dissertation Support Groups</p> <p>Writing Center Dissertation</p> <p>Writing Groups</p>	<p>University Graduate Certification in College Teaching</p> <p>University Graduate Certification in College Teaching May Institute</p> <p>FAST (Future Academic Scholars in Teaching) fellowship program</p> <p>CASTL (Carnegie Academy for Scholarship of Teaching and Learning) fellows program</p>	<p>Creating a Teaching Philosophy Part 1: Establishing the Basics</p> <p>Creating a Teaching Philosophy You Can Use, Part 2: Developing a Professional Praxis</p> <p>Teaching Philosophy Development: The BASICS!</p>

Levels of Program Evaluation

- ▶ **Participation**
- ▶ **Satisfaction**
- ▶ **Learning**
- ▶ **Application**
- ▶ **Overall Impact**

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

Connolly, M. and Millar, S. (2006) Using workshops to improve instruction in STEM courses. Metropolitan Universities, 17, 53-65.

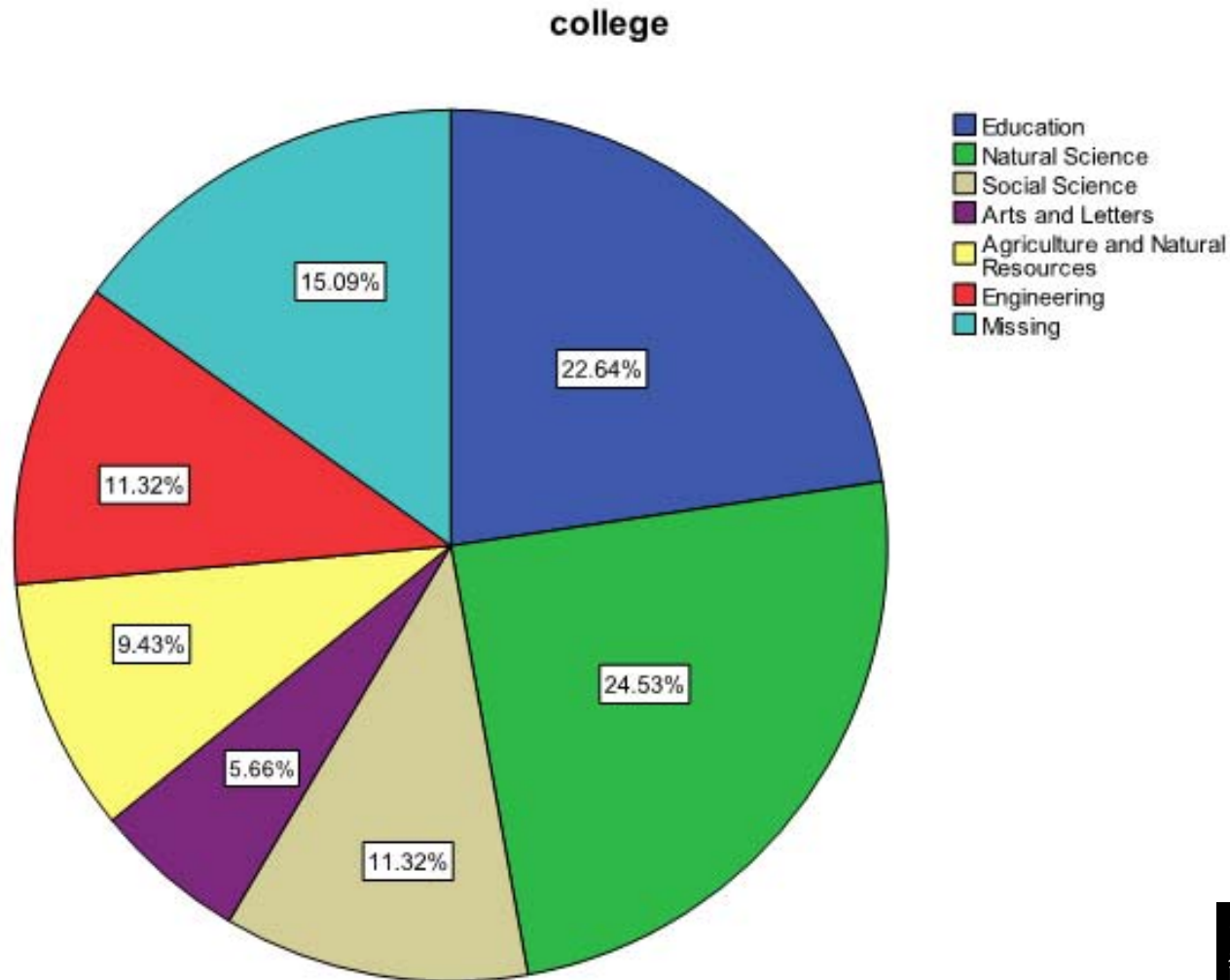
PREP Programs Offered and Attendance 2007-2008 & 2008-2009

	<u>'07-'08</u>	<u>'08-'09</u>
Conflict Resolution (faculty, graduate students-MSU, elsewhere)	1,082	826
Teaching Assistant Program	815	1,054
Responsible Conduct of Research	597	648
Ph.D. Job Search Series	391	460
Career Selection and Professional Development	<u>226</u>	<u>211</u>
	3,111	3,199

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



From Student to Professor: Stages of Professional Development

January, 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^a

"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."

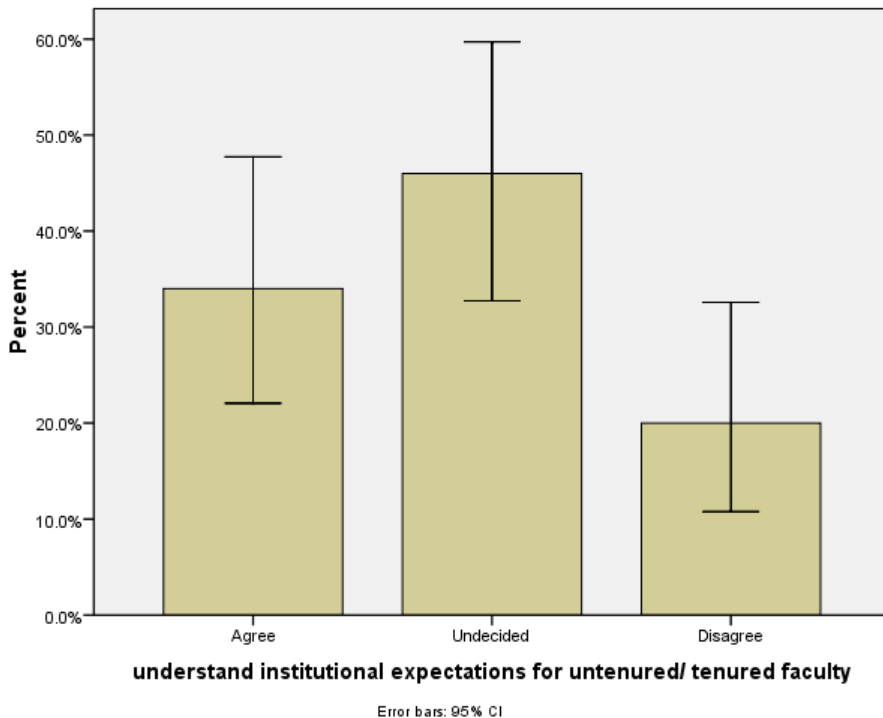
64% Agree
36% Undecided
0% Disagree

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

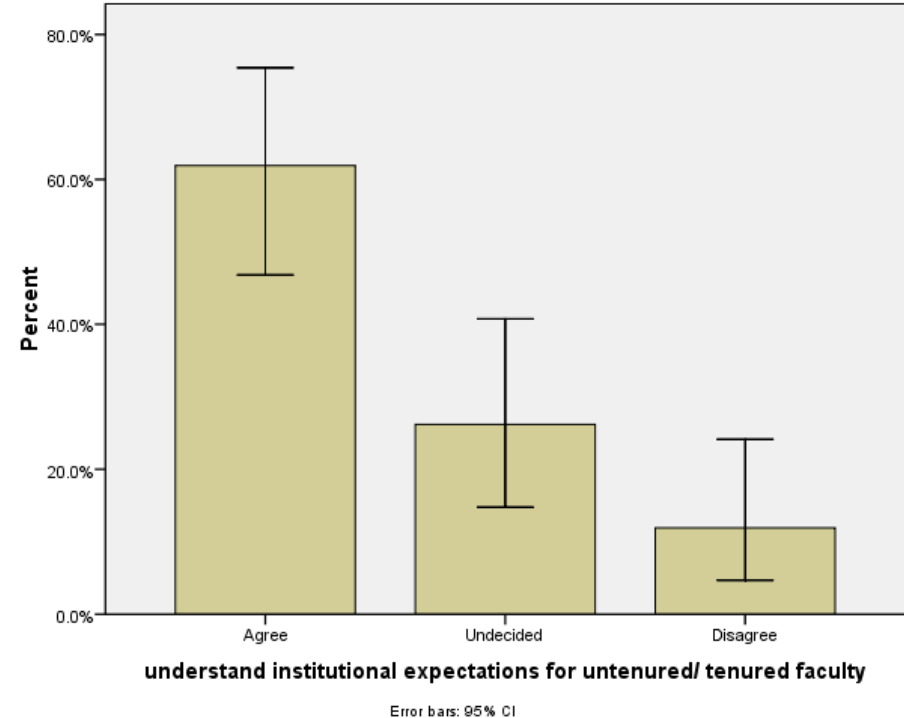
64% Agree
28% Undecided
8% Disagree

From Graduate Student to Professor January, 2008

Pre-Workshop Survey



Post-Workshop Survey

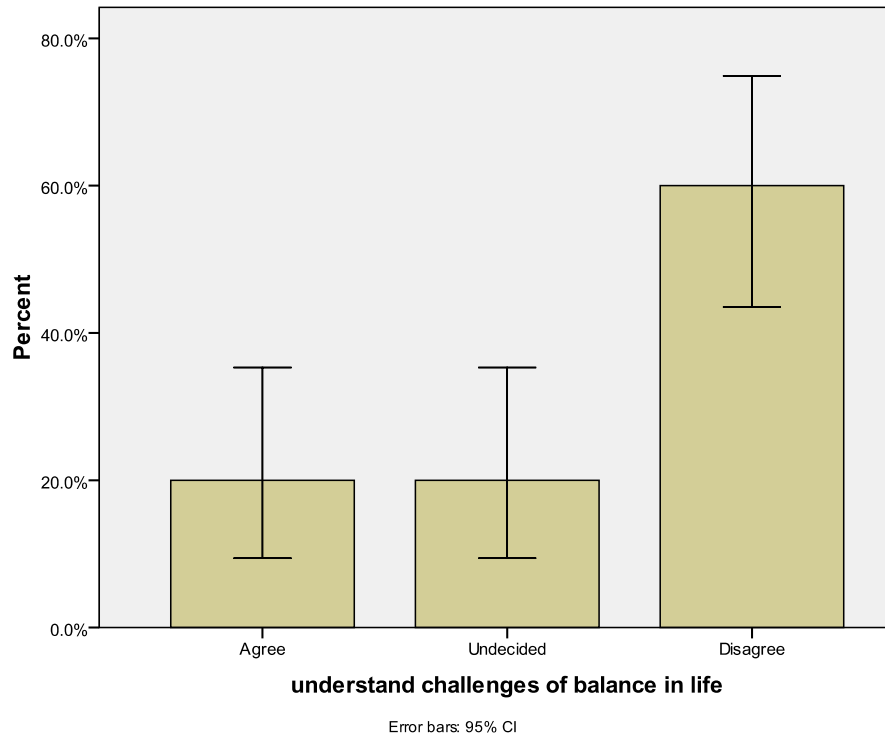


$n = 50$ (pre); 42 (post); $P < 0.05$ between pre- and post-workshop surveys

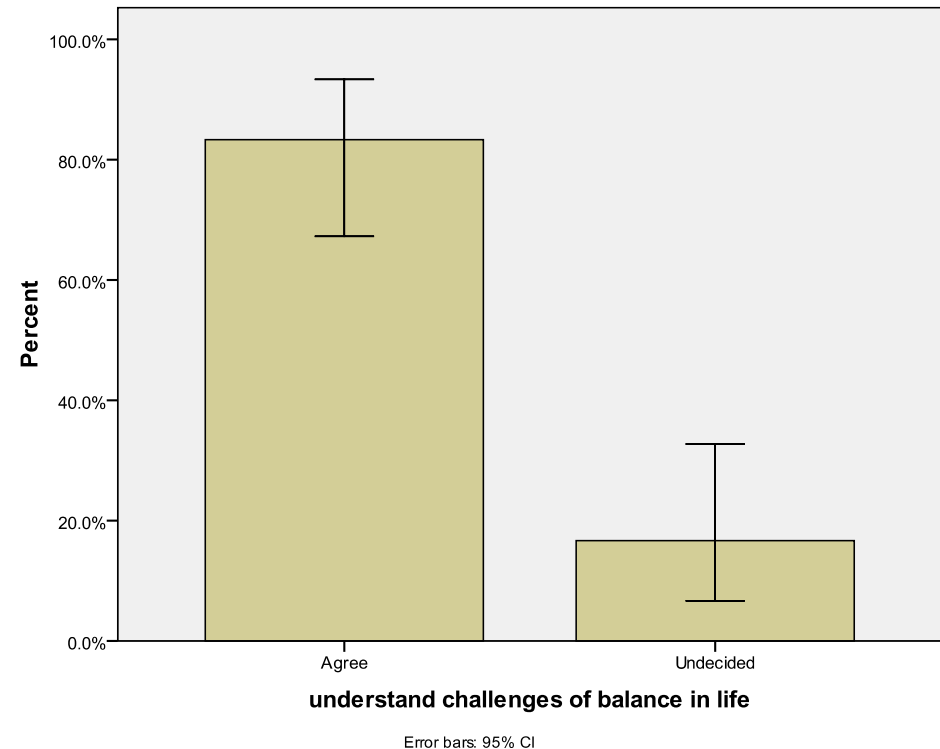
Planning for a Sustainable Career

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**

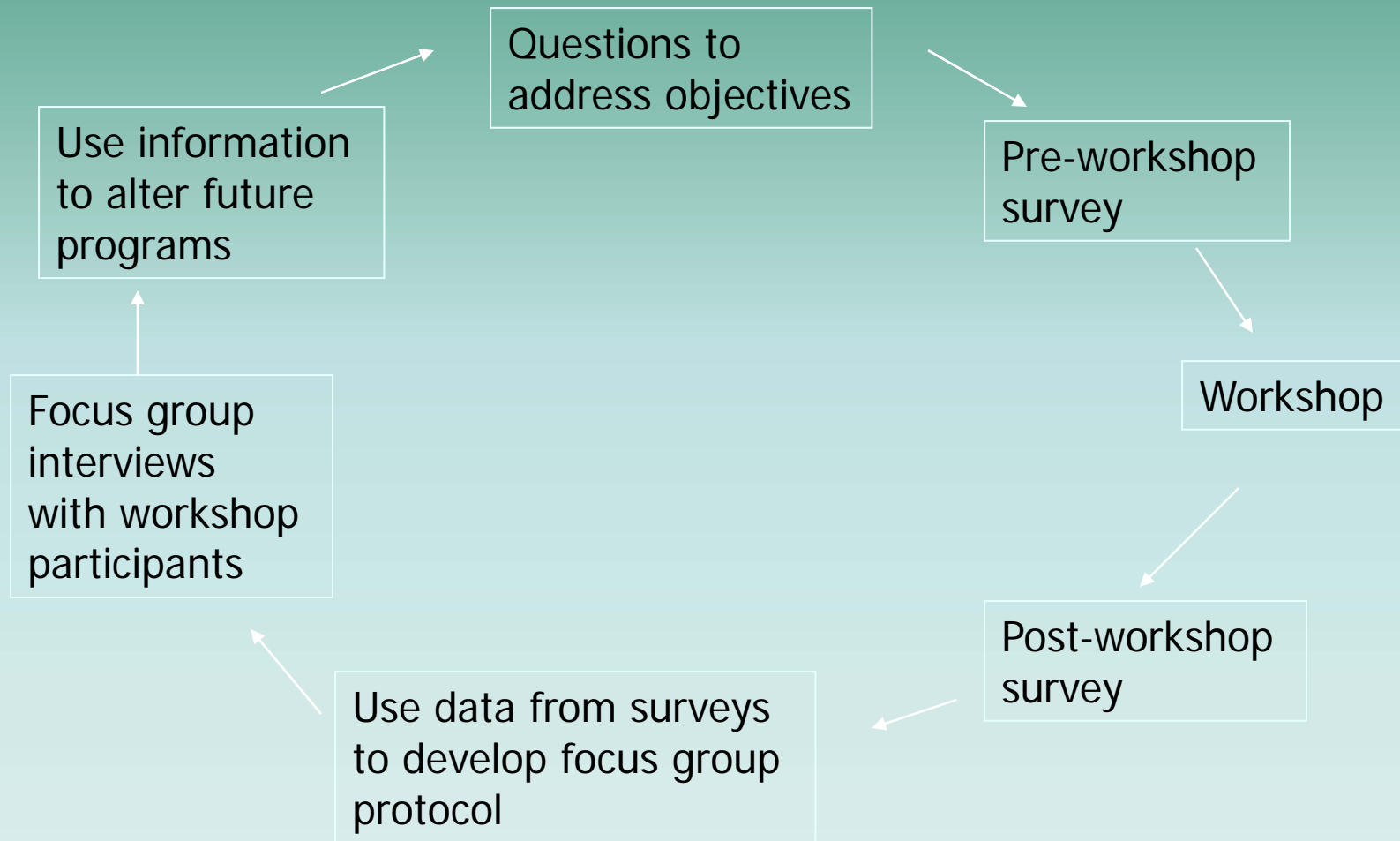
IMPACTS--  Pre.- & Post-KNOWLEDGE, BEHAVIOR

- **Post-workshop Survey**

-Satisfaction

-Application

PREP PROGRAMS EVALUATION PROCESS



PREP

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