

Montana State University Graduate Council Symposium

Enhancing Career Path Opportunities

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Montana State University Assets

- Respected Graduate School
- Dean Hoo's Graduate Leadership
- Engaged Graduate Faculty Council
- Engaged Graduate Student Council
- Presidential Planning for Graduate Study
 - Investments to expand doctoral study
 - Investments to enhance research profile
 - Investments to enhance compensation & funding



Impressive Strategic Achievements

- *Science*
- *Applied and Environmental Microbiology*
- *Journal of the American Society for Mass Spectrometry*
- *Journal of Neuroscience*
- *Organic and Biomolecular Chemistry*
- Leopold Leadership Fellow
- Young Scientist Prize of the International Society on General Relativity
- Gravitation and the Marcel Grossmann Prize

Perspectives from Current Candidates....

- Pushing Forward
 - What are the next steps I should take?
- Research Fatigue
 - How do I get past multiple personal/professional demands and finish?
- Career Development
 - We don't yet have “graduate communities” or formal professional development.
- Choices
 - How do I know which direction to take: academic vs. non-academic?

Work that Remains....Graduate Council Areas of Symposium Focus

- Planning + Leadership + Communication
 - How do I stay focused and finish?
- Resilience Resources
 - How do I balance personal/professional needs?
- Academic Career Development
 - How do I get there?
- Leadership: Broadening Career Pathways
 - How do I consider all career options?



Planning Leadership Communication

How do I stay
focused and
finish?

Models to Guide the Symposium

- Michigan State University
 - <http://www.grad.msu.edu/>
 - PREP Program
- Cornell University
 - <http://gradschool.cornell.edu/>
 - Competencies Program
- University of Pennsylvania
 - <http://www.upenn.edu/>
 - Online Career Services Program
- University of California Davis
 - <https://gradstudies.ucdavis.edu/>
 - Mentoring at Critical Transitions Program
- Virginia Polytechnic Institute & State University
 - <http://graduateschool.vt.edu/>
 - Graduate Life Program

Essential Skills

Finishing: Guidance from Key Partners

Cornell	Michigan State	Virginia Tech
Research Mentoring	Ethics, Integrity, Research, Scholarship	Professional Development
Leadership & Management	Leadership	Leadership
Communication	Collaboration	Communication
Teaching	Professionalism	Professional Development
Personal Development	Resilience	Health & Wellness
Career Development	Planning	Professional Development

The PHD Completion Challenge: Ten Year Completion Rates (CGS)

Area	% Women	% Men	% Total
Overall	55	58	57
Engineering	56	65	64
Life Science	56	64	63
Math & Physical Sciences	52	59	56
Social Sciences	57	53	55
Humanities	52	47	49

Finishing Issues: Successfully Navigating Critical Transitions

1. Transition from Career or Undergraduate Study to Graduate Study
2. Transition from Graduate Coursework to Qualifying Examinations
3. Transition from Examinations to Dissertation/Networking
4. *Transition from Dissertation/Networking to Post-Graduate Launch*

Key Factors that Contribute to Finishing PHD Completion Project, CGS 2009

- 80% Financial Support
- 65% Mentoring/Advising
- 57% Family/Non-financial Support
- 40% Social/Peer Group Support
- 36% Program Quality
- 29% Professional/Career Guidance
- 22% Clear Program Requirements
- 18% Personal Circumstances
- 11% Other Support Circumstances

Planning = Setting Expectations

- Dissertation
 - Establish expectations/time table and directions for future with your mentor.
- Research
 - Establish potential direction including disciplinary, interdisciplinary, and networking needed and include committee members.
- Other Publications/Related Work
 - Establish separate expectations/time table for any other work with your mentor.
- Portfolio
 - Review expectations for work to be included in your portfolio, understand first author, multiple authors, etc.
- Entrepreneurship
 - Discuss patents, books or other opportunities after the dissertation and know how institutional policies on intellectual property work.

Leadership = Maintaining Momentum toward Finishing

- Mentoring Sessions
 - Create and maintain a written agenda for every meeting and use every session to advance.
- Calibration
 - Ensure regular calibration and expectations/time table are always on that agenda.
- Early Identification
 - Seek resolution to conflict/concerns immediately.
- Early Intervention
 - Establish a conflict resolution plan when conflicts arise.

Leadership: Getting Finished

David Mumby

- *A PHD Student's Race Against Time—How to Win/Graduate Faster*
<http://thegradstudentway.com/blog/?p=1573>
- Daily Writing
 - Write every day, write drafts even if data is still in progress.
- Progress
 - Seek realistic expectations for the research not perfectionism.
- Use of Time
 - Stay focused on dissertation goals and meet them.
- Remind Mentor of Goal
 - Ensure that your mentor maintains the time-table and helps recalibrate if there are set-backs.
- Use Committee Assets
 - The committee members are additional assets, keep them updated and use their help.

Leadership: Overcoming Barriers: Conflict Resolution Essentials

- Interest Based Approach for Resolving Conflicts/The Basics
- Context
 - Identify the stakeholders and the situation (requirements, policies, supervision, teaching).
- Issue(s) Focus
 - Specify the issues or problems separate from the individuals involved
- Interests
 - Document the needs, desires, values, fears of each stakeholder.
- Options
 - Consider a range of solutions and how these impact the interests.
- Solutions/Discussion
 - Review the options selected + ongoing dialogue.

Setting Expectations and Resolving Conflicts in Graduate Education

- A Resource: <http://www.cgsnet.org/online-store>
- Provides a model for guiding graduate faculty, graduate students, graduate program directors, and graduate deans toward solutions to promote degree completion.
- The monograph is available to all CGS member institutions.

Communication = Support Networks Essential to Progress

- Professional Network
 - Create and nurture via communication and meetings a professional support network to guide research, degree completion, career launch.
 - Use initial network to identify essential networks and presentations essential for post-graduate launch.
 - Establish your own “Writing Boot Camp” to foster support if one does not exist.
- Personal Network
 - Create a personal “social network” to ensure weekly personal/social health.
 - Create a personal “health network” to engage in weekly physical activities for physical health.

Communication Resources

- Chronicle of Higher Education
 - The Completion Agenda
 - <http://chronicle.com/article/The-Completion-Agenda-Part-4-/232281/>
- Guidance for
 - Use of your dissertation and dissertation title to increase job competitiveness
 - Communicating your work successfully
 - Launching future work

Essential Skill

Responsible Conduct of Research

- Webinar: [Introduction to RCR](#)
Presenter: Dr. Rhonda Sutton
Description: *Need some quick information on one of the main RCR topics? (i.e., mentoring, conflicts of interest, authorship and peer review, data management and/or research misconduct?)*
- <http://pfl.grad.ncsu.edu/workshops/responsible-conduct-of-research/>

Key Action to Achieve Outcomes

- *Planning*
 - Ensure Daily Progress
- *Leadership*
 - Ensure Clear Expectations and Conflict Management
- *Communication*
 - Ensure Social and Emotional Health



Resilience Resources

How do I
balance
professional
and personal
agendas?

Professional Development: How to balance professional and personal agendas?

Cornell	Michigan State	Virginia Tech
Research Mentoring	Ethics, Integrity, Research, Scholarship	Professional Development
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Teaching	Professionalism	Professional Development
Personal Development	Resilience	Health & Wellness
Career Development	Planning	Professional Development

PHD Completion Insight

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Online Resource: The National Wellness Institute

- Tool Used by Michigan State University
- National Wellness Institute: Holistic Wellness for Success
<http://www.nationalwellness.org/>
- Resources to nurture holistic growth and success
 - Occupational: PhD Career Services, Financial Wellness
 - Physical: Rec Centers/Wellness Centers: Sleep, Fitness, Healthy Eating
 - Social: Local Social Outlets, Student Organizations, Women's Resources
 - Intellectual: Campus Workshops: Motivation, Ethical Research
 - Spiritual: Local Religious/Spiritual Option: Spirituality, Values, Acceptance
 - Emotional: Health/Counseling Options for Stress, Procrastination, Depression, Happiness

Online Resource: Grad Resources

- <http://gradresources.org/seminars/x>
- Tool Used by North Carolina State University
- Services to address personal, emotional and spiritual needs
- Online materials
- Meaningful connections, engaging speakers, supportive faith-based communities
- Services focused on enabling graduate students to flourish personally and professionally.
- Crisis Help Line

Online Resource: National Association for Graduate and Professional Students

- <http://nagps.org/>
- Calendar System
 - Year Scale
 - Professional Transition Deadlines: Finances, Proposals, Requirements
 - Personal Transition Deadlines: Family Focus, Friend Focus, Individual Focus
 - Month Scale
 - Professional: Key Meetings/Decisions/Deadlines
 - Personal: Key appointments/obligations
 - Week Scale
 - Professional: Daily Focus Areas
 - Personal: Daily family, friend, individual needs

Management Resource: In Search of Balance: Keys to A Stable Life, Swenson, David, 2010

1. **Daily: Identify Productivity Time**
 - Best productivity time (early, mid, late) for priority work.
2. **Manage Interruptions**
 - No distractions (phone/email) during productivity time.
3. **Task Prioritization**
 - Cognitive/priority tasks first, small tasks second:
email/phone for social break.
4. **Information Triage**
 - Identify prime sources of information first.
5. **Organizational Balance**
 - Ensure planned personal flexibility/unscheduled time.

Management Resource: Crisis Intervention Plan

1. Triage Plan
 - Have a reorganizational plan ready.
2. Redefine Productivity Time That Day/Week
 - Identify one task for priority that day.
3. Manage Interruptions
 - Seek social network for help.
4. Organizational Balance
 - Use flexible times as replacement for lost productivity time that day/week.

Campus Resources: Services to Develop as Partners in Graduate Study

- Campus Wellness Centers
- Recreation Centers
- Counseling/Health Centers
- Financial Counseling Centers
- Non-degree Continuing Studies courses/workshops
- Faculty Resources/Expertise
- Community College Resources
- Law/Medical School Resources

Resilience Resources

- *Online*
 - Online resources available when needed
- *Management*
 - Overall wellness planned and included
 - Daily productivity planned and coordinated
 - Crisis intervention plan available
- *Campus*
 - Campus resources known and accessible



Academic Career Development

How do I get
there?

Professional Development: How do I consider all career options?

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PHD Career Options

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Good News

Bureau of Labor Statistics

- Demand for jobs requiring a PHD/professional degree will increase by 16% between 2012 and 2022
- Demand for jobs requiring the MS degree will increase 18.4%,
- Unemployment rates substantially lower for doctoral/masters

Planning: Career Goal Alignment

- Align goals with the dissertation
- Align goals with committee members to support dissertation & career goals
- Align goals with external network to support dissertation & career goals
- Align goals with experiences that support the dissertation and career launch

Readiness: Academic Career Preparation

- Research Readiness
- Teaching Readiness
- Service Readiness
- Administrative Readiness
- Contract Negotiations

Academic Readiness: Institutional Continuum

- Associate (Community) College-2Year
 - UM-Helena College of Technology
- Baccalaureate Colleges
 - Montana State University-Northern
- Master's Comprehensive Universities: S,M,L
 - Montana State University Billings (MS-L)
- Doctoral Research Universities
 - University of Nebraska at Omaha
- Doctoral Research High Universities
 - University of Montana
- Doctoral Very High Universities
 - Montana State University

Academic Readiness: Teaching Success

- (PFF) Preparing Future Faculty
 - Observe/experience teaching expectations at a variety of institutional types
 - Observe/experience teaching diverse populations
 - Experience with assessment/application of student learning outcomes
 - Experience with online learning/teaching
 - Experience with interdisciplinary/team teaching
 - Experience supervising assistants

Academic Readiness: Online Teaching

- Online Graduate Education
 - Experience with online teaching platforms
 - Experience with multiple online teaching formats: all online, hybrid, enhanced
 - Experience with discussion boards and online tools to foster learning communities
 - Experience with online security practices
 - Experience with synchronous online tools

Service & Administrative Readiness

- Service Preparation
 - Leading a Campus Committee/Board
 - Leading a Discipline Committee/Board
 - Leading a Community Committee/Board
- Administrative Preparation
 - Internship in an Administrative Office
 - Shadowing an Administrator
 - Serving on an Administrative Team

Academic Readiness: Retention, Promotion, Tenure, Advancement

- Culture/Philosophy of Teaching/Scholarship Balance
- Policies on Retention/Promotion/Tenure
- Service Experiences aligned with areas of potential interest/career development
- Administrative opportunities
- Support for Research and Research Collaborations

Contract Negotiation Resources

- Union/Non-Union
 - Union Contracts: Review Prior
 - Published Scale of Raises
 - Published Scale of Promotional Compensation
 - Non-Union
 - Determine Range Prior
- Library: Published Salary Data
- Clarity on Benefits
- Recent Practices
 - State funding support
 - Private institutional support

Writing Your Research Statement

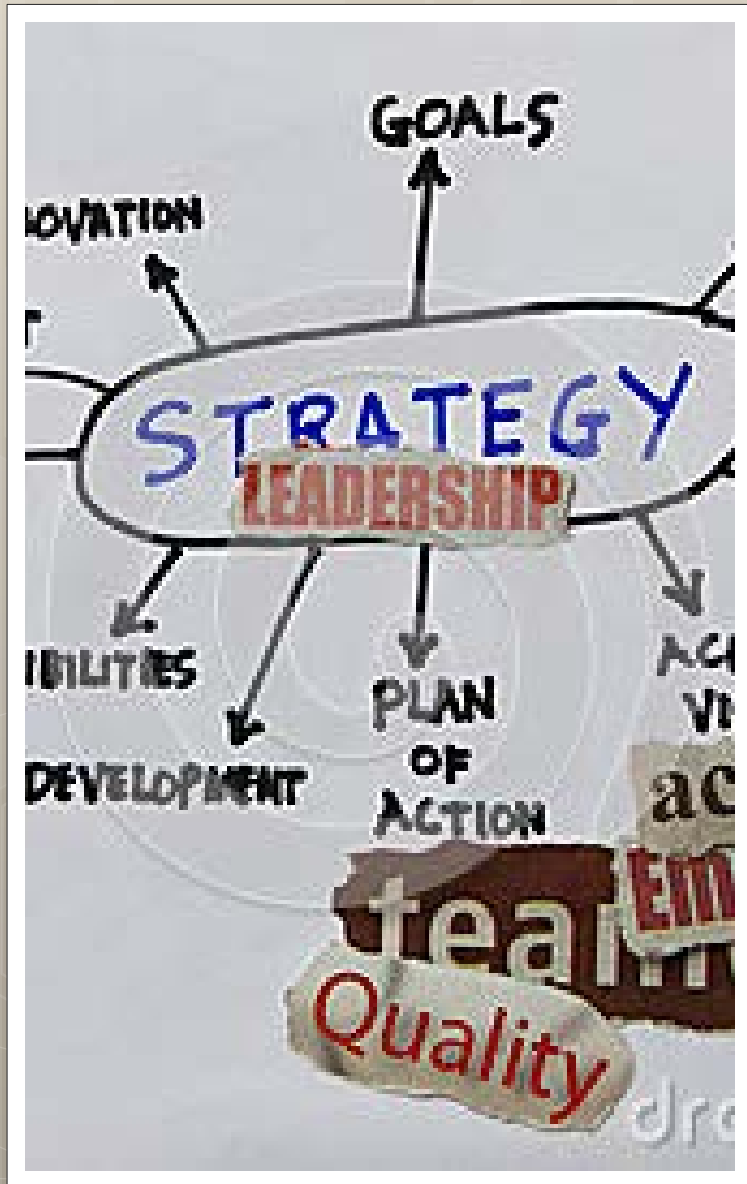
- University of Pennsylvania
- <http://www.vpul.upenn.edu/careerservices/writtenmaterials/researchstatements.php>
- Offer the evolution of your research
- Highlight your research accomplishments,
- Show where your research will be taking you next.
- Include
 - What got you interested in this research?
 - What was the burning question that you set out to answer?
 - What challenges did you encounter along the way, and how did you overcome these challenges?
 - How can your research be applied?
 - Why is your research important within your field?
 - In what direction will your research take you next, and what new questions do you have?

Writing Your Teaching Philosophy Statement

- University of Pennsylvania
- Demonstrate readiness for teaching
- Describe meaningful teaching experiences
- Describe your mentoring philosophy
- Include your related commitment
 - Journal club coordinator
 - Tutoring experience
 - Contributions to professional societies

Key Outcomes for Academic Careers

- *Planning & Readiness*
 - Prepare for Research
 - Prepare for Teaching
 - Prepare for Online Teaching
 - Prepare for Service and Administrative Expectations
 - Prepare for Contract Negotiations



Leadership: Broader Career Pathways

How do I
consider all
career
options?

Academic or Business/Industry/ Government Careers?: Emory University

- Strong Interest Inventory
 - <http://www.becomewhoyouare.net/aboutStrong.html>
 - Assesses interests, guides pathways aligned with interests.
- The Birkman Method[®]
 - <https://www.birkman.com/services/the-birkman-method/>
 - Scientifically developed multi-dimensional assessment
 - Integrates behavioral, motivational and occupational data
 - Aligns roles/relationships for maximum productivity
- Career Breakfasts/Lunches
 - Exploration lunches with faculty and members of business and industry to explore careers and opportunities

Launching Careers in Business, Industry Government: An MSU Perspective

- The Versatile PHD
- <https://versatilephd.com/>
- Preparation for non-academic careers
- Network with PHDs in non-academic careers
- Access resumes and cover letters
- Access panel discussions
- Many institutions are members
- Individuals may become member and access resources

Bio Careers

- <http://biocareers.com/>
- Post Graduate Life Sciences
- Academic and non-academic career opportunities
- Job listings
- Webinars for many career pathways
- Bio Careers Blog
- Bio Careers articles

Chemistry Careers

- <http://www.acs.org/content/acs/en/careers/college-to-career/chemistry-careers.html>
- Careers in Industry, Government, Non-Profit Sector + Academic Careers
- Professional Development Seminars
- Networking
- Portfolio Preparation

Corporate Boards: Seek PHDs with *Transferrable* Skills

- Transferrable Skills
 - professionalism/work ethic
 - oral/written communication
 - teamwork/collaboration
 - critical thinking/problem solving
 - ethics/social responsibility
- Transferrable skills mastered during graduate study
- Transferrable skills cross academic disciplines

Gallagher 2014 Transferrable Skills Employers Find in Graduate Degree Holders

- Leadership
- Higher Level Communication Skills
- Critical Thinking/Problem Solving
- Employee Networks
- Potential for Advancement
- Engagement Potential
- Reputation of Institutional Credentials



Planning for Careers in Business, Industry, Government

- Discussion with Academic Mentor
- Proposed Career Launch Pathway
- Finding a Non-academic Mentor
 - Institutional Advisory Boards
 - Mentor's Non-academic Networks
 - Other Discipline Faculty
 - Program Alumni
- Coursework/Certifications
- Seeking Internship
- Collaborative Team Experience
- Leadership Experience
- Creating Networks
- Creating a Portfolio

Building Experiences for Careers in Business, Industry, Government

- Coursework/Certifications
 - Adding business/management courses
 - Considering Certificates
- Seeking Internships
 - Include Collaborative Team Experience
 - Include Leadership Experience
 - Including Networking Opportunities
- Creating a Portfolio



Building a Portfolio for Careers in Business, Industry, Government

- Creating a Portfolio
 - Research
 - Publications/related creative activity
 - Presentations
 - Leadership: Projects launched/completed
 - Collaboration: Teams guided/advanced
 - Communication: Advisory board presentations
 - Outreach: Community engagement
 - Achievement: Recognition/awards

Presentations to Non-academic Audiences

- The Three Minute Thesis (3MT®)
- <http://threeminutethesis.org/>
- Celebrates exciting research conducted by PhD students
- Developed by [The University of Queensland](#)
- Cultivates academic, presentation, and research communication skills
- Supports capacity to effectively explain research in three minutes
- Promotes language appropriate to a non-specialist audience

Failure Management

- Policies on Academic Issues
- Processes Used by Grant Authors
- Asking for Feedback
 - What were the factors
 - How can you cultivate future success
- Seeking guidance by asking about failures among your mentors and peers

Key Outcomes

- *Leadership*
 - Obtain key experiences
 - Obtain key transferrable skills
 - Networking
 - Portfolio of work
 - Communication development
 - Failure management

Courage.....PHDs are tasty!

