Research Mentoring: Maximizing your research experience and training

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with special thanks to Hila Berger, MPH, CIP
MSU Research Compliance Administrator

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This session will provide you with an overview of the key aspects and advantages of a research mentoring relationship. This includes how to find your ideal mentor, assuring that both mentor and mentee expectations are met, benefits of working on faculty research and on conducting your own research project. The speaker will share her experiences in mentoring graduate students and provide guidance on how to enhance and maximize your research experience and training.
Think about mentors you have had in other aspects of your life….

- Who were they?
- What did you gain from them?
- How did they “happen” to become your mentor?

“Mentoring is a brain to pick, an ear to listen, and a push in the right direction”

John C. Crosby
One key difference for a research mentor is....

You may not have actually SOUGHT out your earlier mentors. Many of them simply happened.

We’re going to focus here on finding that mentor in a more purposeful way.
Hands on research experience makes a difference!

Graduate students who engage in research with faculty mentors during their graduate studies may:

- Seek research jobs more successfully
- Develop valuable skills that will aid employment outside of research environments
- Pursue doctoral studies (or post-docs) more readily
- Develop a network that will facilitate future research and professional connections
- Develop a record of publication earlier in their careers

You do not have to be a doctoral student to seek a meaningful research experience!
Planning for a Research Trainee

(Adopted from Columbia Center for New Media Teaching & Learning (CCNMTL))

- Identify your area of interest
- Locate prospective mentor
- Be clear about needs and expectation
- Continue revisiting needs and expectations
What skills do you need (or want)?
What skills do you have?
What skills can you learn?

✓ Data entry, data management, data analysis
✓ Interviewing, survey data collection
✓ IRB training- Montclair now requires CITI training
  (and once you have it, it applies to any other project)
✓ Literature reviews
✓ Manuscript organization and style
✓ Good writing skills
✓ Presentation/public speaking skills
✓ Strong organizational skills
✓ Project management
✓ Reliability and responsibility
✓ Others?
Ideal Research Mentor

- Can develop a capable researcher
- Opens doors for career and job market
- Impart knowledge of policies and regulations
- Developer of Talent
- Identify and resolve potential obstacles to trainees
- Assist trainee to develop professional networks
- Critic
- Advocate
Finding a Mentor

- Check the Faculty listing in your department of interest
- Don’t be afraid to look for a cross-disciplinary mentor in another department or college
- Check with your academic advisor or department leadership
- Search other departments for projects or subjects that interest you
# A Sample of MSU Faculty Research

<table>
<thead>
<tr>
<th>Department</th>
<th>Faculty Name</th>
<th>Research Topic / Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family and Child Studies</td>
<td>Jennifer Brown</td>
<td>Assessing and Improving STEM Education Evaluation</td>
</tr>
<tr>
<td>Urban</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health and Nutrition Sciences</td>
<td>Stephanie Silvera</td>
<td>Sociodemographic and Behavioral Factors underlying Racial/Ethnic Disparities in Cancer Prevention Behaviors in NJ National Institutes of Health</td>
</tr>
<tr>
<td>Earth and Environmental Studies</td>
<td>Mark Chopping</td>
<td>Terrestrial Ecology Program grant from NASA</td>
</tr>
<tr>
<td>Psychology</td>
<td>Jennifer Pardo</td>
<td>Understanding dialects and accents- National Science Foundation</td>
</tr>
<tr>
<td>Earth and Environmental Studies</td>
<td>Sandra Passchier</td>
<td>Expedition Objective Research: Early Pliocene Record Of Antarctic Ice Rafting And Paleoenvironmental Conditions, Wilkes Land Margin, Antarctica- National Science Foundation</td>
</tr>
<tr>
<td>Mathematical Sciences</td>
<td>Lora Billings</td>
<td>Multi-Scale modeling of infectious disease in fluctuating environments - NIH</td>
</tr>
<tr>
<td>Psychology</td>
<td>David Townsend</td>
<td>Eye-tracking analysis of temporal processing in Sentence Comprehension</td>
</tr>
<tr>
<td>Computer Science</td>
<td>Stefan Robila</td>
<td>Montclair REU Site in Imaging and Computer Vision - NSF</td>
</tr>
</tbody>
</table>
## MSU Faculty Research, cont’d.

<table>
<thead>
<tr>
<th>Department</th>
<th>Faculty Member(s)</th>
<th>Project/Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family and Child Studies</td>
<td>Robert Reid</td>
<td>Project COPE, Center for Substance Abuse Prevention, SAMHSA</td>
</tr>
<tr>
<td>Health and Nutrition Sciences</td>
<td>Lisa Lieberman</td>
<td>Adolescent Family Life Demonstration Project-Program to evaluate the efficacy of Inwood House’s Continuum of Care for Pregnant and Parenting Teens</td>
</tr>
<tr>
<td>Biology and Molecular Biology</td>
<td>Meiyin Wu</td>
<td>Greenhouse Gas Balance of Urban Temperate Wetlands; National Science Foundation</td>
</tr>
<tr>
<td>Psychology</td>
<td>Ruth Propper</td>
<td>Predictors of Emotional State and Cognitive Processing Abilities- US Army Research Office</td>
</tr>
<tr>
<td>Earth and Environmental Studies</td>
<td>Stefanie Brachfeld</td>
<td>Static and shock pressure treatment of synthetic Mars basalts NASA</td>
</tr>
<tr>
<td>Curriculum and Teaching</td>
<td>Jennifer Goeke</td>
<td>Restructuring Preservice Preparation for Innovative Special Education - USDOE</td>
</tr>
<tr>
<td>School of Business</td>
<td>Nicole Bryan, Ross Malaga</td>
<td>Understanding the mindset vocabulary and search patterns used by “johns” when using networked technologies in procuring victims of sex trafficking- Microsoft</td>
</tr>
</tbody>
</table>
Academic Advisor (AA) vs. Research Mentor (RM)

**AA**
- Course management advice
- Advocate

**RM**
- Research project manager
- Career planning
- Potential referral
- Networking in the specific field
Faculty might expect that a good research trainee will:

- Participate in all activities/ make the time commitment
- Develop research survival skills through communications and interactions with mentor
- Identify procedures for submitting research for IRB or IACUC* review
- Successfully manage research objectives and activities
- Help set research priorities
- Identify strategies to avoid pitfalls in conducting research
- Identify the code of responsible research conduct specific to field of study
- Identify compromising situations that may lead to scientific misconduct or that might threaten a study
- Learn how to think on your feet in the field when necessary

*Institutional Animal Care and Use Committee.  
http://www.montclair.edu/ORSP/iacuc/
Identifying Needs and Parameters for working together

- Communication frequency and preference (email, face-to-face, phone etc.)
- Criteria for evaluation if there is a independent study component or grade
- In a larger lab or group, how will responsibilities be share or divided?
- Identify the publication and authorship practices
- Considerations for travel to conferences
- Consider documentation of expectations with a Memorandum of Understanding (MOU)
Beyond Research Skills...benefits of networking and mentorship

✓ Mentor knows leaders in their field
✓ Mentors know the trends in the job market
✓ Mentors can advise you on PhD or advanced certification programs

✓ And...
   ..... working and traveling with your mentor can be fun!
Hitting the Jackpot!

Mentors can provide opportunities to attend conferences, which offer students:

✓ professional development
✓ opportunities for networking
✓ a perspective on the political and economic forces within your field or research area
✓ experience doing presentations
✓ experience developing engaging and professional posters
✓ And sometimes it’s just good fun!
Campus and other Resources for Student Research

- Student research grants through NIH, NSF, others. For assistance visit MSU’s Office of Research and Sponsored Programs, [http://www.montclair.edu/ORSP](http://www.montclair.edu/ORSP)

- Student Faculty Scholarship Awards- Small grants from the University Usually due in early February, awarded in May [http://www.montclair.edu/orsp/internal-awards/](http://www.montclair.edu/orsp/internal-awards/)

- Annual MSU Student Research Symposium Takes place in April; Deadline for proposals usually in February [http://chss.montclair.edu/asrs/](http://chss.montclair.edu/asrs/)

- The Graduate Student Organization provides small grants to assist students who are traveling to present research [http://www.montclair.edu/graduate/services/gso/](http://www.montclair.edu/graduate/services/gso/)

- Departments and individual colleges may offer support

- Professional Associations generally offer opportunities for graduate students to present and/or student research awards. Don’t hesitate to ask a faculty member to nominate or sponsor you!
Other Suggestions for Enhancing Research Experience

- Manage and plan your time
- Don’t be hesitant to be honest with your mentor about evolving expectations
- Collaborations are encouraged; look for other faculty or experts in the field who might add to your research project
- If you are overwhelmed, say something and ask for help!