Improving People's Lives Through Innovations in Personalized Health Care

Annual Medical Student Summer Research Kickoff

Ginny L. Bumgardner MD, PhD
Professor of Surgery
Associate Dean for Research Education

5.23.16

THE OHIO STATE UNIVERSITY
WEXNER MEDICAL CENTER
Welcome & Congratulations!
Objectives

- Provide **goals, expectations and context** for the summer research experience
- Emphasize the importance of **lab safety**
- Facilitate a **successful research experience**
- Increase awareness of **future research opportunities**
Research Experience Expectations

• Clinical Relevance of the Problem
• Novelty
• Hypothesis that is being tested
• Research design & alternative strategies
• How the results will be analyzed
• The future direction of this research

❖ Be an active participant in the lab’s research team!
How does research experience benefit physician training?

✓ Understanding of how science has contributed to what is currently known about disease prevention, diagnosis, prognosis or therapy.

✓ Awareness of current scientific approaches, animal models of disease etc and how they can be applied to make new discoveries.

✓ Develop critical thinking skills which can be applied to the research project and to future clinical problems.

✓ Establish a foundation/track record to increase your competitiveness for future Career Development Opportunities.
Potential Timing of Research Experiences

Med VI  Advanced Competency in Research

Leave of Absence for year long research experience (LOA)

Med III

• Leave of Absence for year long research experience or
• Year Long part time research project (LOA)

Med II

Summer Research Project 8-10 weeks

Med I
How Your Research Advisor Can Help

✓ Clarify learning objectives, your role, meeting frequency, timeline for completion, realistic outcomes
✓ Provide resources
✓ Identify important research seminars you can attend
✓ Guide your awareness of other research projects related to your project
✓ Get to know you as a person, research team member, research potential and interests
✓ Identify future extramural research funding opportunities
✓ Expectations for co-authorship
✓ Identify potential medical students who are promising candidates for a more extended research experience
Ask a lot of questions

- You should be proactive to ensure lab safety for yourself and others
- You should be aware of protocols that are active and risks within your environment within your workspace
- Ask you PI
- Ask personnel within the lab
- Ask collaborators
- College of Medicine MDSR Program Office
- College of Medicine Office of Research
- University Resources
2016 MDSR Award Packets

- Award letter
- COM Research Scholarship Requirements
- Research Compliance and Safety Information
  - Agenda
  - PPT

*All available on the MDSR website.
Scholarship Expectations & Requirements

✓ Orientation

○ Scholarship Checkpoint Survey – due July 1st

○ Final Research Report
  • Due **August 29th, 2016**
  • At [http://medicine.osu.edu/go/mdsr](http://medicine.osu.edu/go/mdsr)
  • Your **mentor** should help **guide** your preparation of the final report and should **review** the content prior to submission
  • No statistical analysis or editing will be done by MDSR Office
Scholarship Requirements (cont’d)

- MDSRS Research Symposium
  - Watch for calls for abstract (September)
  - Student is responsible for submitting their abstract
  - Student must present their poster
  - Must acknowledge MDSR and scholarship support in ALL posters, presentations and publications
  - Student is responsible for poster printing cost

- Evaluation
  - Student & Mentor
  - Faculty Leaders
Acknowledgements

Acknowledging medical student contributions & the OSU College of Medicine in publications:

Title: Cardiovascular Risks and Drug Interactions

Authors: First Author*, Your Name Medical Student†, Third Author*, and PI (research mentor)*

Footnote: * The Ohio State University Department of Internal Medicine, and †The OSU College of Medicine, the OSU Heart and Lung Research Institute, The Ohio State University Wexner Medical Center, Columbus, OH

How to reference COM financial (scholarship) support:

Support: This work was supported in part by the OSU College of Medicine (Barnes, Bennett or Roessler….) research scholarship (medical student initials), NIH grant (collaborator initials), NIH grant xxxx (PI initials) etc.
Relation of body mass index to frequency of recurrent preterm birth in women treated with 17-alpha hydroxyprogesterone caproate

Aila L. Co, BS\textsuperscript{c}, Hetty C. Walker, RNC-OB, CCRC\textsuperscript{a}, Erinn M. Hade, PhD\textsuperscript{b}, Jay D. Iams, MD\textsuperscript{a},

\textsuperscript{a} Department of Obstetrics and Gynecology, The Ohio State University, Columbus, OH
\textsuperscript{b} Center for Biostatistics, The Ohio State University, Columbus, OH
\textsuperscript{c} College of Medicine, The Ohio State University, Columbus, OH
Epidemiology of Overuse Injuries among High-School Athletes in the United States

Allison N. Schroeder, BS¹, R. Dawn Comstock, PhD², Christy L. Collins, MA³, Joshua Everhart, MD⁴, David Flanigan, MD⁴, Thomas M. Best, MD, PhD⁵

¹ Ohio State University College of Medicine, Columbus, OH, ² Department of Epidemiology, Colorado School of Public Health and Emergency Medicine, Pediatrics, University of Colorado School of Medicine, Aurora, CO, ³ Center for Injury Research and Policy, Nationwide Children’s Hospital, Columbus, OH, ⁴ Department of Orthopedics, The Ohio State University, Columbus, OH, ⁵ Department of Family Medicine, The Ohio State University, Columbus, OH

“Funded by the Centers for Disease Control and Prevention (R49/CE000674-01 and R49/CE001172-01), National Federation of State High School Associations, National Operating Committee on Standards for Athletic Equipment, DonJoy Orthotics, and EyeBlack. A.S. has received funding from the OSU College of Medicine (Roessler) Research Scholarship. The content of this report is solely the responsibility of the authors and does not necessarily represent the official views of the Centers for Disease Control and Prevention. The authors declare no conflicts of interest.”
Distribution of Scholarship Funds

- Summer research awards will be disbursed in **3 allotments**.
  - 1\textsuperscript{st} allotment: week of June 10th
  - 2\textsuperscript{nd} allotment: week of July 8th
    - (Scholarship Checkpoint must be complete)
  - 3\textsuperscript{rd} allotment: after final report is submitted

**Consult with your tax advisor to determine how this award should be reported on your taxes**
Scholarship Checkpoint

- **Electronic survey:**
  - Will be sent **June 22nd** must be completed by **July 1st**
    - Mentor
    - Mentee

- **Survey Questions:**
  - I have all necessary equipment/materials to work on my project? (YES or NO)
  - I have met with my mentor or lab/project supervisor? (YES or NO)
  - Have you encountered any unexpected problems? (YES or NO)
  - My project has started (YES or NO)
  - My project is currently on target (YES or NO)
  - My project will end before classes start this fall (YES or NO)
  - My project will continue past the summer per agreement between me and my mentor (YES or NO)
  - Reminder: My final report will be submitted electronically to the Medical Student Research Office by 5 pm on **August 29, 2016**
Final Report
(3-4 pages)

• Due **August 29, 2016** (for short-term summer projects)
• **Abstract**: A brief description of background, methods, results & conclusions (≤250 words)
• **Introduction**: Brief background and significance of the research project. State the hypothesis tested. Important references should be cited.
• **Methods**: Brief description of the experimental methods including statistical methods
• **Results**: Report experimental data including results in tables and figures with appropriate legends and statistics.
• **Discussion and Conclusions**: Fully discuss the results and their implications. Compare and contrast your findings with the literature. Suggest the next series of studies.
• **References**: Full citations are required including all authors, title, journal, volume, and year.
Final Evaluation- Mentee

1. Fulfillment of research experience expectations
   Please describe the expectations of your research experience. How did your mentor meet them?

2. Research mentoring experience
   Please describe your mentor’s best practices, areas for possible improvement.

3. Exposure to diverse research personnel
   Who else did you work under or with during your research experience? How did this exposure enhance your experience?

4. Research education lab environment
   How has this research experienced contributed to your medical education training?

5. Research productivity
   Please comment on your productivity or opportunities to be productive? Do you plan to continue?

6. Opportunity to analyze and present research results
   Please comment on what opportunities you were given to actively participate, present, and analyze results.

7. Stimulation of critical thinking
   Please comment if you developed better critical thinking skills you will use during your medical education.

Please comment (use next page if necessary) on your experience in the lab, with your mentor, and subject area:

* On A Scale of 1-5
Final Evaluation - Mentor

1. Fulfillment of research experience expectations
2. Research advisee work ethic
   Please describe your advisee’s best practices, areas for possible improvement.
3. Responsiveness of research advisee to advisor/supervisor direction
   Please comment (or have lab supervisor comment) on advisee’s best practices or areas for improvement.
4. Research advisee participation and contribution to laboratory team effort.
5. Please comment on the advantages/challenges of advising a medical student in your lab.
6. Advisee research experimental skills and productivity
   Please comment how your advisee met, exceeded, or fell short of your expectations.
7. Advisee skills in analyzing data.
   Please comment how your advisee met, exceeded, or fell short of your expectations.
8. Advisee skills in presenting data verbally.
   Please comment how your advisee met, exceeded, or fell short of your expectations.
9. Advisee skills in presenting data in written form.
   Please comment how your advisee met, exceeded, or fell short of your expectations.
10. Advisee mastery of critical thinking skills.
    Please comment how your advisee met, exceeded, or fell short of your expectations.
11. Advisee passion for research.
    Please comment how your advisee met, exceeded, or fell short of your expectations.

* On A Scale of 1-5
After the Research Project

• Stay in contact with mentor (future collaborations, letters of reference)
• Consider continuing to be involved with the project
• Recommend your mentor or project to future medical students
• Work with your mentor to prepare a Trainee Research Day (April 2017) poster, publications etc
• Share kudos and news with MDSR office*
• Consider membership to Landacre Research Honor Society

❖ Required: Prepare a poster presentation for the Fall Medical Student Research Symposium
Productivity Report

• Report Requests will be sent out quarterly

• Please complete with subsequent publications, ongoing support, new scholarship/fellowship support (e.g., HHMI, Pelotonia), or presentations.

• Write a story for the MDSR newsletter
Where to go for more info:

- Office of Responsible Research Practices
  - orrp.osu.edu
  - IRB
  - IACUC
  - IBC

- Environmental Health and Safety
  - ehs.ohio-state.edu

- Office of Research Compliance
  - orc.osu.edu
The mission of the Office of Research Compliance (ORC) is to support and promote ethical research practices at The Ohio State University. ORC serves the OSU research community by coordinating institution-wide research compliance policy and procedure development, and by partnering with researchers, so that the University is compliant with federal, state, and local laws and regulations as well as University policies.

http://orc.osu.edu
Office of Responsible Research Practices

- Includes:
  - IRB
  - IACUC
  - IBC

http://orrp.osu.edu
The Office of Environmental Health & Safety assists the university community in providing and maintaining a safe, healthful work environment for students, faculty, staff, contractors, and visitors. The EHS mission also encompasses responsibilities of protecting the local community and environment from potential hazards generated by university activities.

http://ehs.osu.edu/
Successful Research Experiences

- John Davis, MD, Ph.D.
  - Assistant Professor, Department of Internal Medicine
  - Associate Dean for Medical Education

- Larry Schlesinger, MD,
  - Samuel Saslaw Professor of Medicine
  - Chair, Department of Microbial Infection & Immunity
  - Director, Center for Microbial Interface Biology and the Medical Scientist Training Program
Medical Student Researchers

- Nathan Mahler, MSTP
- Lauren Mamer, PhD M3
- Greg Metzger, M4
- Colin Ryan, M4
- Samer Salamekh, M4
- Andrew Stiff, MSTP
- Peter Yu, M3
Breakout Sessions

1) Research Compliance

2) How to Navigate Bumps in the Road and Properly Citing Your Publication & Properly Acknowledging Your Funding Source

3) Maximizing the Mentor/Mentee Relationship

4) Research Resources

5) Research Hypothesis Development

6) 1 year Research LOA Funding Opportunities

7) Advanced Competency in Research
Breakout Session Report Out

- Table 1 Questions – Potential Research Compliance Issues and Solutions
- Table 2 Questions - IHIS Compliance for Clinical Research Projects
- Table 3 Questions - How to Navigate Bumps in the Road
- Table 4 Questions - Properly Citing Your Publication & Properly Acknowledging Your Funding Source
- Table 5 Question - Maximizing the Mentor/Mentee Relationship
- Table 6 Question - Research Resources
- Table 7 Question - 1 year Research LOA Funding Opportunities
- Table 8 Questions – Hypothesis Development –Clinical Research
- Table 9 Questions – Hypothesis Development—Translational Research
- Table 10 Questions – The Advanced Competency in Research
Thank you!

What questions do you have?