Annual Medical Student Summer Research Kickoff

Introductions

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Comprehensive Transplant Center
Associate Dean for Research Education
Director, Medical Student Research Program
Director, Masters of Medical Science Program
Director, Dept Surgery Research Training Program

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Program Manager
Medical Student Research Program
Masters of Medical Science Program
Objectives

- Provide resources for a successful research experience
- Emphasize the importance of safety & research compliance
- Provide goals, expectations and context for the summer research experience
- Increase awareness of future research opportunities

Research Resources
IHIS Access via Horizon

- Horizon Remote Desktop Access Tip Sheet
- Only for students accessing IHIS for their MDSR project
- Duo Mobile is required
- All MDSR scholars are required to use Horizon

https://go.osu.edu/mdsrresources

VMware Horizon

- You do not have to download the Horizon app if using a computer, you can connect via HTML Access
Work Computer Host Name

- We expect to be given full access by Wednesday May 13th
- Including how to select remote computer name

IHIS data security

- Horizon allows IHIS access from any device including your personal computer.
- Absolutely **NO** patient data can be saved on your personal device
- Discuss shared drive access with your mentor or lab manager/contact
Research Safety and Research Ethics

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

- Office of Research Compliance
  - orc.osu.edu

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

Office of Responsible Research Practices

- Includes:
  - IRB
  - IACUC
  - IBC

http://orrp.osu.edu
Office of Research Compliance

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](http://orc.osu.edu)

Office of Environmental Health and Safety

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](http://ehs.osu.edu)
How does research experience benefit physician training?

Benefits of research experience

- 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
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

What you can do:

- 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 your PI
- Ask personnel within the lab
- Ask collaborators
- College of Medicine MDSR Program Office
- College of Medicine Office of Research
- University Resources
Research Goals

- Clinical Relevance of the Problem
- Novelty
- Hypothesis that is being tested
- Research design & alternative strategies
- Data Analysis
- Critical Thinking
- Contribute Data/Graph to a Publication
- The future direction of this research

❖ Be an active participant in the lab’s research team!

Tips for a Successful Summer Research Experience

- Focus
- Organization
- Immersion
- Read
- Become Part of the Team (remotely)
- Ask Questions
- Learn
- Contribute
- Write
- Have Fun!
Scholarship Expectations & Requirements

MDSRS Award Documents

- COM Research Scholarship Requirements*
- Remote Research Education Plan*
- Award Letter (previously emailed)
- Horizon user guide*

*Available on the MDSRS website.
**Application submission process**
- Response to reviewer concerns (if applicable)

**Orientation**

**Remote Research Education Plan**
- Including longitudinal on-line learning modules
- Due June 5th, June 26th and July 10th

**Scholarship Checkpoint Surveys**
- Due May 24th, June 28th (mentor and mentee)

**Final Research Report**
- Due August 11th, 2019
- 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

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**Remote Research Education Plan**

- All MDSR scholars are required to complete:
  - Introduction to the Principles and Practice of Clinical Research 2019-2020
  - 6 of the 8 other options in Science Communication, Data Management, Clinical Research Ethics/Clinical Trials, Biostatistics, Grant Writing, and/or Science Literacy
  - 1-3 page summary of learning due June 5th, June 26th and July 10th,
  - Including proof of evaluation outcomes

[https://go.osu.edu/mdsrsresources](https://go.osu.edu/mdsrsresources)
Introduction to the Principles and Practice of Clinical Research 2019-2020

*create an account if you have not already done so

Enroll in required course
Submitting Evaluations

- Screenshots of your evaluations must be submitted with your summaries.

Submitted via MDSR website
MDSRS Research Symposium

- Annual Research Symposium
  - Watch for calls for abstract (Oct)
  - Student is responsible for submitting their abstract
  - Must **acknowledge MDSR and Awarded scholarship support** in ALL posters, presentations and publications (your resume)
  - 2020 Format **to be determined**

- Final Evaluations
  - By Student
  - By Mentor

**Distribution of Scholarship Funds**

- Summer research awards will be disbursed in **3 allotments**.
  - 1\(^{st}\) allotment: **week of May 4\(^{th}\)**
  - 2\(^{nd}\) allotment: **week of June 1st**
  - 3\(^{rd}\) allotment: **week of July 3rd**

*Remote research education plans must be submitted and Scholarship Checkpoints and completed by mentor and scholar*
Scholarship Checkpoint

- **Electronic survey:**
  - Will be sent week prior to due date
    - Mentor
    - Mentee

- **Survey Questions:**

<table>
<thead>
<tr>
<th>Question</th>
<th>YES or NO</th>
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<tbody>
<tr>
<td>I have all necessary equipment/materials to work on my project?</td>
<td></td>
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<tr>
<td>I have met with my mentor or lab/project supervisor?</td>
<td></td>
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<tr>
<td>Have you encountered any unexpected problems?</td>
<td></td>
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<tr>
<td>My project has started</td>
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<tr>
<td>My project is currently on target</td>
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<tr>
<td>My project will end before classes start this fall</td>
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<tr>
<td>My project will continue past the summer per agreement between me and my mentor</td>
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<tr>
<td>Reminder: My final report will be submitted electronically to the Medical Student Research Office by 5 pm on August 11, 2020</td>
<td></td>
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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 experience 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**
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.

Final Report

- Due **August 11, 2020** (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/Findings:** 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.
MDSR Scholarship Applications & Awards

<table>
<thead>
<tr>
<th>Year</th>
<th>Class Size</th>
<th>Applications</th>
<th>MDSR Awards</th>
</tr>
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<tbody>
<tr>
<td>2015</td>
<td>205</td>
<td>109</td>
<td>15</td>
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<tr>
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</tr>
<tr>
<td>2020</td>
<td>209</td>
<td>129</td>
<td>115</td>
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After Your Summer Research Experience
Publication/Presentation

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 number (collaborator initials), NIH grant number (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, BSc*, Hetty C. Walker, RNC-OB, CCRC*, Erinn M. Hade, PhD†, Jay D. Iams, MD‡.

* Department of Obstetrics and Gynecology, The Ohio State University, Columbus, OH
† Center for Biostatistics, The Ohio State University, Columbus, OH
‡ College of Medicine, The Ohio State University, Columbus, OH
Epidemiology of Overuse Injuries among High-School Athletes in the U.S.
Allison N. Schroeder, BS1, R. Dawn Comstock, PhD2, Christy L. Collins, MA3, Joshua Everhart, MD4, David Flanigan, MD5, 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."

Medical Student Research Productivity News

- 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
After the Research Project

• Stay in contact with mentor (future collaborations, letters of reference)
• Consider continuing to be involved with your “original” project
• Recommend your mentor or project to future medical students
• Work with your mentor to prepare a Trainee Research Day (April 16, 2020) poster, publications, etc.
• Share kudos and news with MDSR office*
• Consider membership to Landacre Research Honor Society

❖ Required: Prepare a poster presentation for the 2020 Fall Medical Student Research Symposium

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 10-13 weeks
  - Med I
The Continuum of the MDSR Research Program

M1: MDSR Information Sessions, Research Opportunities Fair, Application for Research Funding

M2: Publications & National Presentations = Induction in the Landacre Research Honor Society

M3: Research LoA or Part-time Year Long Research Project

M4: Advanced Competency in Research (AC)

Honor Cords at Graduation!

From Orientation to Graduation!

Please send ALL questions to Research.Education@osumc.edu