Section 9: Research Opportunities

MEDICAL STUDENT RESEARCH PROGRAM

An essential component of the Ohio State University Medical Center’s mission is to facilitate the education and training of the future leaders of biomedical research. Medical students who participate in research gain firsthand experience and skills in biomedical discovery which complements their clinical training and may impact their career direction. The medical student research program under the direction of Ginny L. Bumgardner, MD, PhD, Associate Dean for Research Education in the College of Medicine sponsors a number of research-related informational sessions and workshops designed to prepare students for a safe and successful research experience, alerts students to prestigious extramural funding opportunities, and assists students with preparation of competitive research fellowship applications. A number of activities to enhance the quality of each research experience, including tips for a successful research experience are provided by the MDSR office. The medical student research program also administers a limited number of competitive internal research scholarships (details below) which are available to support medical student research. The program manager for the medical student research program can be contacted at research.education@osumc.edu.

Medical Student Research Scholarships

INTRAMURAL OPPORTUNITIES

Medical student research scholarships are awarded through an annual competitive application process. Details about these scholarships, a list of prospective mentors, and available research projects can be accessed on the medical student research website at: http://go.osu.edu/MDSR

Medical student research scholarships support medical research to be performed at this institution under the mentorship of COM appointed faculty. Students may pursue full-time research (40 hours per week) or part-time, year-long research (10 or 20 hours per week) during their curriculum as approved by their Academic Program Director. They may also apply to the Associate Dean for Medical Education or the Associate Dean for Student Life for a leave of absence to pursue research for up to one year.

The Samuel J. Roessler Memorial Medical Scholarship Fund was established by Anna J. Roessler in memory of her son. Awards are made to students at the College of Medicine for medical research performed at this institution and mentored by COM appointed faculty.

The Barnes and Bennett Memorial Scholarships support medical students performing biomedical research in diverse scientific disciplines.

The Watts Mount Medical Research Scholarship supports medical students pursuing community research projects. This scholarship encourages exploration of health-related problems in Ohio’s communities in order to enhance awareness of and develop solutions for those problems through community research.

The Pelotonia Medical Student Research Fellowship Program provides one-year research fellowships for up to two OSU medical students who want to help cure cancer. For more information click the following link: Pelotonia Fellowship Program.
EXTRAMURAL OPPORTUNITIES
Medical students are highly encouraged to consider applying for extramural research scholarship opportunities. The COM Medical Student Research Scholarship Application is designed to prepare students for applications to prestigious extramural sponsors such as the Howard Hughes Medical Institute, the Sarnoff Cardiovascular Research Foundation, the Doris Duke Clinical Research Fellowship Program, and the Fogarty International Clinical Research Scholars Program.

HHMI Research Opportunities for Medical Students at U.S. Schools  In order to encourage more medical students to pursue academic and research careers, the Howard Hughes Medical Institute (HHMI) offers outstanding “year-out” and summer research training programs for students enrolled in schools in the U.S. Women and under-represented minorities are particularly encouraged to apply. Students enrolled in MD/PhD programs are not eligible to apply.

HHMI Medical Research Fellows Program: The Medical Research Fellows Program gives students the opportunity to immerse themselves in a year of basic, translational, or applied biomedical research. Medical Fellows experience the excitement and intellectual rewards of research before making plans for residency or postgraduate training. The students select their own mentor at any academic or nonprofit research institution in the United States (excluding the National Institutes of Health) or abroad, provided the proposed mentor is affiliated with a US fellowship institution, and work with the mentor to develop a research proposal. Mentor selection and the research project proposal are key components of the application. Working with an HHMI investigator or early career scientist is encouraged but not required. Medical Fellows conducting research in the following areas may be supported by organizations partnering with HHMI:

- Epilepsy research (Partner: Citizens United for Research in Epilepsy);
- Inherited retinal degenerative disease research (Partner: Foundation Fighting Blindness);
- Duchenne muscular dystrophy research (Partner: Duchenne Research Fund);
- Preclinical research in interventional radiology (Partner: Society of Interventional Radiology Foundation)


The Medical Research Fellows Program at Janelia Farm offers students with an interest in neuronal networking and/or imaging at the cellular and molecular level an intense year-long research training experience, living and working at the HHMI Janelia Farm Research Campus, a world-class research center in Ashburn, Virginia in the Washington, D.C., area. Students must submit a prescreening application and comply with specific eligibility and application requirements. http://www.hhmi.org/grants/individuals/medical-fellows/

Sarnoff Cardiovascular Research Foundation offers research opportunities for outstanding medical students to explore careers in cardiovascular research. Applicants must be enrolled in accredited US medical schools. Sarnoff Fellows conduct intensive work in a research facility, located in the United States, for one year. Prior research experience is not a prerequisite. More information can be found at http://www.sarnofffoundation.org

The Doris Duke Clinical Research Fellowship for Medical Students provides support to individuals for one year of full-time clinical research training. The main goal of the program is to encourage medical students to pursue careers in clinical research. Applicants must be willing to...
take a year out from medical school and conduct fellowship research and training at one of twelve hosting medical schools. Each fellowship consists of structured clinical research and coursework. Fellows also attend an annual meeting at the end of the fellowship to present their research. [http://www.ddcf.org/what-we-fund/medical-research/](http://www.ddcf.org/what-we-fund/medical-research/).

**Fogarty International Clinical Research Scholars Program (FICRS)**
The Global Health Program for Fellows and Scholars provides supportive mentorship, research opportunities and a collaborative research environment for early stage investigators from the U.S. and low- and middle-income countries (LMICs), as defined by the World Bank, to enhance their global health research expertise and their careers. The Global Health Program is conducted via five support centers based within consortia of US and LMIC universities and institutions. All five programs include eleven months of mentored research training support at an LMIC training site and a one-week orientation and workshop on NIH Campus in Bethesda. However, each program is unique and each consortium provides a different set of research and training opportunities. Medical students must have completed their basic science courses and one year of clinical clerkships to apply. For details visit: [https://www.fic.nih.gov/programs/pages/scholars-fellows.aspx](https://www.fic.nih.gov/programs/pages/scholars-fellows.aspx)

**Advanced Research Education Opportunities**

**LSI-Advanced Competency Track for Clinical and Translational Science Research**
The purpose of these advanced competencies is to provide experiences for medical students that can be interdisciplinary and encompass activities that offer more depth, organization, and knowledge than previously designated electives but are specific in their breadth and can establish expertise in order to establish “competence” in a specific area. Achieving an advanced certificate or a similar recognition is encouraged. To provide medical students with advanced training opportunities in biomedical research as an extension of the LSI Evidenced Based Inquiry and Research (EBIR), each student will identify a specific biomedical research topic and focused area of research. At the completion of the Advanced Competency in Clinical and Translational Research, the student will have gained an advanced comprehension of the foundational and clinical science underlying a particular topic relevant to human health and disease as well as the research skills necessary to directly engage in discovery. For more information, contact the Medical Student Research Program at Research.Education@osumc.edu.

**Team Science Pilot Projects**
The MDSRP Team Science Project is an opportunity for selected medical students to work as a team of three students with a team of three PIs over the summer on a thematically related area of research. Each student will have a separate project which may be laboratory-based (translational), clinical research, community-based or health services related population health. Students will work with their individual mentors but also will interact with all of the team members during the summer to learn about the purpose, approaches, progress and outcomes on all 3 projects.

Student Eligibility: This opportunity is for first year medical students, interested in performing research full-time during the summer and considering longitudinal research experiences such as continuation of research on a part-time basis during the second year of medical school, pursuing a year-long research leave of absence between Med 2 and Med 3 or between Med 3 and Med 4 years and/or pursuing an LSI Advanced Competency in Research. Interested students can apply
individually; student teams will be formed based on PI student selection. http://go.osu.edu/MDSRteamscience

Recognition of Medical Student Research Accomplishments

MDSR Newsletter
The Medical Student Research Program, in conjunction with the College of Medicine and the Landacre Research Honor Society strive to host a variety of events that initiate and enhance quality research experiences. During each academic year, events, student publications, researcher highlights, research funding opportunities and educational trainings will be announced through the newsletters. http://go.osu.edu/MDSRnews

LANDACRE RESEARCH HONOR SOCIETY
The Landacre Research Honor Society, the College’s medical student research honor society, encourages medical students to pursue excellence in academic achievement and individual research. Activities include the welcome and informational session at orientation for first-year medical students, a biomedical research opportunities information session for medical students, a Landacre-sponsored Research Opportunities Fair, other research related workshops and participation in the organization of the annual OSUWMC Trainee Research Day activities. Students are invited to present the results of their medical school research at the annual OSUWMC Trainee Research Day held each spring. The faculty liaison for the Landacre Research Honor Society is Ginny L. Bumgardner, MD, PhD, Associate Dean for Research Education in the College of Medicine. More information can be found on the Landacre website: http://go.osu.edu/Landacre

Membership is open to all medical students at the College who have demonstrated excellence in medical research, as evidenced by fulfilling the following criteria and completing the attached application. All applicants who fulfill the induction criteria and complete the application will be considered for induction into the Landacre Honor Society.

Qualifying Research
- The data-gathering portion, at a minimum, of the qualifying research must be performed while the student is enrolled at OSUCOM.
- Research performed while a student is on a leave of absence (LOA) for the purpose of performing research is eligible.
- The qualifying research may be conducted at an outside institution, provided the student was enrolled at OSUCOM or on a leave of absence (LOA) for the purpose of performing research at the time the research was conducted.
- The qualifying research must be hypothesis driven and related to a biomedical topic.

Qualifying Student
- The qualifying student must have made a significant contribution to the qualifying research, as demonstrated by achievement of at least one (1) of the following:
  - Authorship of a peer-reviewed, published journal article
  - First authorship of a competitively reviewed abstract accepted for oral or poster presentation at a national conference
- If the qualifying student is not the first author, the student’s research mentor must write a letter of recommendation describing the student’s significant contribution to the qualifying research.
• Receipt of a nationally competitive grant for the qualifying research.
• The qualifying student must present the qualifying research at this year’s OSU COM Trainee Research Day.

Student Achievement Celebration, The Dean’s Research Scholarships
Each year medical students with outstanding research accomplishments are recognized during the Annual Student Achievement Celebration dinner. The students are nominated based on their work that resulted in publications national presentation, nationally competitive award/grants and/or research scholarship obtained during medical school. http://go.osu.edu/MDSRnews

MEDICAL SCIENTIST TRAINING PROGRAM (MSTP)
MSTP Director—Lawrence Kirschner, MD, PhD
MSTP Program Manager—Ashley Bertran, MLHR

The College of Medicine encourages individual research by qualified medical students and provides elective periods for such projects. For students wishing to take graduate school courses or to conduct research under the auspices of a graduate department, concurrent enrollment in both the College and the Graduate School is possible.

Typically, students seeking an MD and PhD in the MSTP complete all dual-degree program requirements in an average of eight years. This innovative curriculum includes fifteen months of preclinical course work followed by three to four years of research and research didactics. Clinical rotations and electives round out the last two years. This program is designed for students seeking a very rigorous academic career path that combines research and scholarly pursuit with patient care.

Students in the MSTP may pursue their graduate coursework in one of three graduate programs: Integrated Biomedical Science Graduate Program (IBGP), Neuroscience Graduate Studies Program (NGSP), or Biomedical Engineering (BME). Students in the IBGP or NGSP focus on medical school coursework for the first year in the program. The subsequent four months are spent pursuing both medical and graduate coursework. After completion of the USMLE Step 1, students rejoin their graduate programs to complete coursework and enter research labs. Following completion of the PhD, these students return to the last two years of medical school. Students in BME pursue a year of graduate coursework before beginning medical coursework. After completion of the first two years of medical coursework, these students enter into their research labs. The rest of the training structure mirrors that of IBGP and NGSP students.

The Medical Scientist Student Organization (MSSO) offers various activities for MSTP students. Students interested in MSTP training are also encouraged to attend. Sponsored by the Medical Scientist Training Program, the MSSO meets twice monthly year round. Students have the opportunity to share research with their fellow dual-degree peers.

Applicants to the College with high academic standing and an interest in joint MD/PhD degrees are encouraged to apply for the Medical Scientist Training Program Fellowship as part of the initial admissions application process. Awarded competitively, these fellowships support up to ten entering students each year. Sponsored by the College of Medicine and the Graduate School, the fellowship provides full tuition, fees, and stipend for the entire program. Students who develop research career interests while in medical school may elect to apply to the MSTP
Program as an Advanced Training Applicant (ATA) in order to pursue physician scientist dual-degree training. ATA applications may be obtained through the MSTP Office (1072 Graves Hall).

More information is available at the program’s website at:
https://medicine.osu.edu/mstp/pages/index.aspx

**MSTP Leadership and Academic Achievement Scholarship**

The purpose of the MSTP Leadership and Academic Achievement Scholarships is to recognize MSTP students who have performed exceptionally well academically and/or excelled with regard to leadership and service to their programs.

For more information, visit:
https://medicine.osu.edu/students/financial_services/scholarships/Pages/CollegeofMedicine.aspx