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From the Associate Dean for Research Education

Welcome to the OSU COM Class of 2023! This is a very exciting time in your medical education. The knowledge and perspectives you acquire and experiences you have will greatly influence your career direction and opportunities. The Office of Research Education is here to assist you with engaging in medical research whether you are a novice or seasoned researcher. Immersion in an exciting research project during the summer between your Med I and Med II years will undoubtedly enhance the breadth and depth of engagement in biomedical inquiry and develop your critical thinking and problem solving skills. You will have an opportunity to develop important professional relationships with your research mentor(s) and teammates. It may pave the foundation for continued research as an important member of a research team throughout your subsequent medical school training. The importance of biomedical research education and training during medical school is evident in the Lead.Serve.Inspire curriculum which incorporates content in all years of your medical education. In the **Med I/II** year, you will be introduced to Evidence Based Inquiry and Research (EBIR) principles in the context of medically relevant topics. During **Med III**, while on your clinical rotations, you will have the opportunity during small group meetings to showcase your analysis of relevant literature, share information about research on novel therapies and availability of clinical trials, etc. As a **Med IV** you have the opportunity to pursue an **Advanced Competency (AC) in Research**. The AC in Research offers students who have successfully completed an introductory research project during medical school the opportunity to further develop nationally established clinical and translational research competencies.

Several upcoming opportunities will assist you in learning about the breadth of research opportunities available to you. The **Annual Medical Student Research Symposium** will be held in room 115 of the Biomedical Research Tower on Friday November 8th from 12:00 to 2:30pm. Med II students will be presenting posters reporting research results from summer 2019 research projects funded by COM research scholarships. On October 17th the **Research Opportunities Fair** will be held in the BRT October 17th from 4:00 to 6:00pm. At this event you will be able to meet many faculty and their research representatives to discuss in person and to gather prepared materials about the research opportunities available for medical students.

To make the most of these opportunities, I recommend that you start early and prepare yourself for a productive summer research experience. This preparation should include the following 1) prepare a resume outlining your educational background, achievements and research experience, 2) acquire information from multiple sources (website, other students, events) which describe faculty research to help you narrow down a list of faculty with whom you would like to correspond and/or meet to discuss potential research opportunities, 3) interview multiple faculty so you can select the project which most interests you, 4) work with your mentor to prepare a **COM research scholarship application** (*Phase I application due Dec. 2, 2019, Phase II application due Jan. 6, 2020*) and 5) work with your mentor to identify extramural sponsors which fund medical student research and then format the same materials you prepared for the COM research scholarship to apply for an extramural research scholarship offered by many professional medical foundations. This way you will gain experience with research grant funding applications and diversify your options for funding your research training.

As always Bianca McArrell, MDSR program manager and I are available to meet with you personally to discuss research education and training in more detail. As you will see in reading the MDSR Newsletter, OSU COM medical students are involved in all types of research and those who have had successful and rewarding experiences are those who have made the most of the opportunities available!

Sincerely,

Ginny L. Bumgardner MD PhD FACS
Associate Dean for Research Education



Why Research?

Research as part of the medical student training incorporates discovery through critical thinking, innovation and experimentation. Medical student researchers learn how to communicate new knowledge and how to apply discoveries to enhance patient care. Our students' participation in research gives them firsthand experience and skills in biomedical discovery, increases the depth of understanding of medicine and prepares them to directly influence the future course of medicine.



I came to medical school with a limited research background, as I had volunteered for only 6 months in an ADHD clinical research lab. But I knew that I wanted to grow my research experience, which is why I planned to do a research project after the M1 year. I built upon the experiences of my research summer by doing a Master of Public Health (MPH) in epidemiology at the OSU College of Public Health between my M2 and M3 years.

Why Research: To put it most simply, doing research has made me a better medical student and will make me, I am convinced, a better doctor. The research process involves a variety of skills—such as learning how to understand data, finding background information in the biomedical literature, and learning how to comfortably work with a team of other people—which directly benefit and complement my medical education.

More fundamentally, I love research because it is about hope. I do research because I believe that if I ask the right questions, and put in the required work, I can find new answers that will translate into better patient care and lead to new ways of thinking about old problems.

Tips for Research Success: Don't stress-out about trying to find the perfect project or the perfect research question. No matter what you research, you will be gaining skills that will follow you wherever you go with your medical career. Know your resources, in particular, become thoroughly familiar with our college's web page for medical student research. And if you don't know where to start, that's ok; but do ask for help. Recognize that research is a team sport. I would not have gotten published without the mentorship and support provided by an amazing research team. Apply for a medical student research (MDSR) scholarship. The truth is that it's a lot of work, but it prepares you for success.

Jordan Vajda ~ Class of 2021



Medical students attending The Ohio State University College of Medicine have a variety of research experience. Some students have several publications from their undergraduate career and/or gap year(s), whereas some have one or two poster presentations. Regardless of your research background, The Ohio State University Office of Research Education has ample resources to get students involved with research at their comfort level and the Medical Student Research (MDSR) Scholarship Program is a great way to achieve this. Personally, I had minimal research experience coming into medical school, but I wanted more exposure because being well versed in research practices will make me a better clinical physician. Through research fairs hosted by OSUCOM and exploring the Office of Research Education website, I met with several potential principal investigators. Each was willing to discuss their research plans and goals, and many of my peers met their future mentor during this time as well. Eventually, I discovered Dr. Ginny Bumgardner's lab in the Department of Transplant Surgery at The Ohio State University Wexner Medical Center. This was a great fit for me as immunology has always fascinated me and I wanted basic science and translational research experience. Through the MDSR scholarship, I received funding for research throughout the summer of my first and second year of medical school. Directly from this experience, I presented my research at several local, regional, and national conferences including the American Society of Transplant Surgeons Winter Symposium in Miami, Florida. During my third year of medical school, I became interested in dermatology and felt well prepared to reach out to physicians to discuss potential projects. Currently, I am performing clinical research with two dermatologists, Dr. Benjamin Kaffenberger at The Ohio State Wexner Medical Center and Dr. Patricia Witman at Nationwide Children's Hospital. Additionally, I am pursuing an advanced competency in research during my fourth year of medical school. Overall, I feel that the MDSR program is an excellent way for medical students to get involved and connected with research mentors at The Ohio State University, and it opens the door to future opportunities in research. I would recommend the MDSR program to any medical student who wants to further their research career.

Kalyn Hoffman ~ Class of 2020

2019 OSU COM Trainee Research Day



The 18th Annual Trainee Research Day took place on April 11th in the Biomedical Research Tower and Davis Heart and Lung Research Institute. Research Day provides an opportunity for research trainees at the OSU College of Medicine to present their biomedical research in a public forum and to compete for travel awards. The trainee groups include graduate, undergraduate, medical and MD/PhD students, as well as postdoctoral researchers and fellows and clinical residents and fellows. Research Day also presents an opportunity for colleagues and visitors to learn about research occurring at Ohio State. More than 270 trainees presented their posters, representing a wide

array of research topics, throughout the day on April 11th, 2019.

The 2019 Keynote Speaker was Paul Tang, MD, MS, Vice President, Chief Health Transformation Officer at IBM Watson Health. Dr. Tang has expertise in the application of health information technologies to improve the quality of health care and to inform health policy. At Watson Health, Dr. Tang is responsible for applying IBM's artificial intelligence technologies to improve the health and wellbeing of individuals and communities. His Keynote Lecture was entitled "Harnessing AI at the Point-of-Care."

The 2019 State of the Art talks were given by Lang Li, PhD, Professor and Chair of the Department of Biomedical Informatics and Deena Chisolm, PhD, Director, Center for Innovation in Pediatric Practice.

Three medical students won travel awards at the 2019 event. Zachary Hodosevich, mentored Dr. Henry Xiang, Nicholas Farrar, mentored by Dr. Paul Stoodley and Reena Underiner, mentored by Dr. Mohamed Abdel Baki.

To read more about OSUCOM Trainee Research Day please visit

<https://researchday.osu.edu>

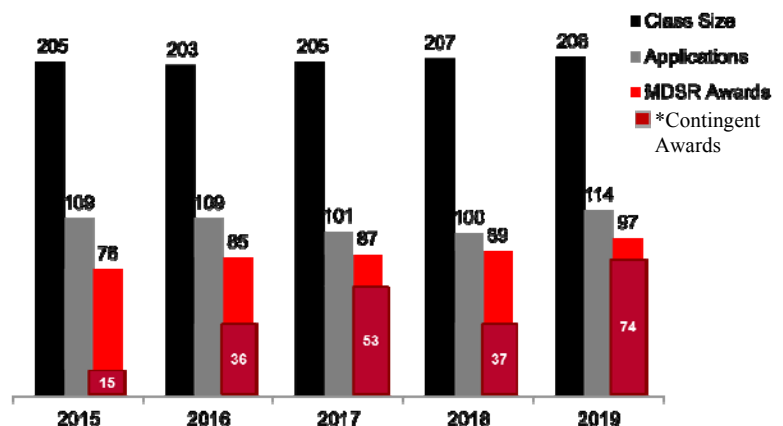


The MDSRS Experience

The Medical Student Research Office strives to connect interested medical students with quality basic, clinical, or translational research experiences with a College of Medicine faculty member. Our office assists current medical students in the application process for extramural and intramural scholarships and through the grant management process for extramural applications. In conjunction with the Landacre Research Honor Society our office hosts a variety of events that encourage, facilitate, and enhance quality research experiences for Medical Students at OSU and elsewhere. During each academic year, numerous events highlight research opportunities, funding sources, and tips on grant preparation to help prepare OSU medical students for a successful research experience.

Applications for the 2019 OSU COM Medical Student Research Scholarship opened on October 12, 2019. Phase I documents were due December 3, 2019 and Phase II documents were due January 7, 2019. The MDSR program received 114 applications for the 2019 academic year. The proposals were reviewed by 111 COM Faculty members, each reviewer was assigned 3-6 proposals in their research specialty and each provided critique on the Overall Research Project, Training Plan, Learning Objectives, and Student Quality of each proposal. Those proposals with favorable reviews were notified by April 1st and the MDSR Annual Kickoff took place on May 3, 2019.

To find out more about the application process, contact our office by email at Research.Education@osumc.edu or visit our website <http://medicine.osu.edu/go/mdsr>



The Medical Student Research Symposium

The Annual Medical Student Research Symposium took place on October 8th in the Ross Hospital Auditorium and Lobby. The annual event is aimed at improving the scientific communication skills of medical students who receive funding through the College of Medicine's Medical Student Research Program. The research grants are funded by the Roessler, Bennett, and Barnes Research Scholarship. Eighty-nine MDSR Scholars presented their work during a small group faculty led breakout session, and then collaborated on answering questions about methods and challenges for effective scientific communication.



Each group reported out and shared tips on how to be successful when presenting your research in diverse venues. The report out segment of the evening was followed by open poster viewing. The 2019 event will take place on November 8th in the Biomedical research tower.

Congratulations to all of our MDSR research scholars and their culmination of a successful summer!

Read more about the event here <http://go.osu.edu/mdsymposium>

The Landacre Research Honor Society

The Landacre Research Honor Society is the medical student research society at OSU COM, founded in 1956 in honor of Dr. Francis Leroy Landacre, professor and first chair of the Department of Anatomy. Dr. Landacre's exceptionally high standards in both academic achievement and research guide the society's promotion and support of medical student research activities. In addition to providing students with information about research opportunities at Ohio State, Landacre also holds research seminars, hosts speakers, participates in the organization of the annual OSU COM Trainee Research Day, and recognizes faculty members who have demonstrated a strong commitment to medical student research with the Landacre Faculty Award. Students inducted into the society have demonstrated exceptional achievement in research. Membership is open to all medical students at The OSU COM who have demonstrated excellence in medical research and fulfilled membership criteria. Students interested in joining Landacre can see a full list of requirements on the website. Each year new inductees are welcomed into the Society at the Annual Induction Ceremony and Awards Banquet.



This year's event was held on May 9, 2019 in the Biomedical Research Tower. The Honor Society welcomed 49 new members in May, for the full list of new inductees visit the News and Awards section of the MDSR website. <http://medicine.osu.edu/go/mdsr>

The 2019 keynote address was given by **K. Craig Kent, MD**. Dr. Kent is a researcher, educator and physician leader, and serves as dean of The Ohio State University College of Medicine, vice president for Health Sciences and the Leslie H. and Abigail S. Wexner Dean's Chair in Medicine. Dr. Kent is an internationally recognized leader in academic medicine. The Landacre Research Honor Society selected **Sakima Smith MD** as the 2019 Landacre Honor Society Researcher of the Year. Dr. Smith's research focuses on the role of cytoskeletal proteins in heart failure and molecular pathways of heart failure, ventricular recovery after mechanical support and outcomes based research in patients with advanced heart failure and he is also an Assistant Professor of Cardiovascular Medicine. The 2019 Landacre Research Mentor of The Year award was awarded to **Vibhor Krishna, MD, SM**, Dr. Krishna is as Assistant Professor in the Center for Neuromodulation, he investigates both the imaging-based therapies (specifically focused ultrasound and image-guided deep brain stimulation) and discovers neuroimaging correlates of efficacious neurostimulation. His imaging modalities of interest include diffusion tensor imaging (quantitative, deterministic and probabilistic tractography) and functional magnetic resonance imaging.

Congratulations to our new inductees and faculty awardees!

Medical Student Publications

January 2018 - December 2018

Fenn, J.D., Johnson, C.M., Peng, J., Jung, P., Brown, A. (2018 Jan). Kymograph analysis with high temporal resolution reveals new features of neurofilament transport kinetics. *Cytoskeleton*, 75(1), 22-41.

Ivancic, R., Iqbal, H., Desilva, B., Pan, Q., & Matrka, L. (2018 Jan 14). Current and future management of recurrent respiratory papillomatosis. *Laryngoscope Investigative Otolaryngology*, 3(1), 22-34.

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Victor, A.R., Weigel, C., Scoville, S.D., Chan, W.K., Chatman, K., **Nemer, M.M.**, Mao, C., Young, K.A., Zhang, J., Yu, J., Freud, A.G., Oakes, C.C., Caligirui, M.A. (2018 Jan 15). Epigenetic and Posttranscriptional Regulation of CD16 Expression during Human NK Cell Development. *Journal of Immunology*, 200(2), 565-572.

Devine, R.A., **Diltz, Z.**, Hall, M.W., Thakkar, R.K. (2018 Feb 5). The systemic immune response to pediatric thermal injury. *International Journal of burns and Trauma*, 8(1), 6-16.

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Phillips, R., Martin, D., Eskander, A., Schord, J., Brown, N., Zhao, S., Brock, G., Kumar, B., Carrau, R., Ozer, E., Agrawal, A., Kang, S.Y., Rocco, J.W., Schuller, D., Ali, S., Blakaj, D., Bhatt, A., Grecula, J., Teknos, T., Diavolitsis, V., Old, M. (2018 Mar). Effect of adjuvant radiotherapy treatment center volume on overall survival. *Oral Oncology*, 78, 46-51.

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Armstrong, E.A., Beal, E.W., Chakedis, J., Paredes, A.Z., Moris, D., Pawlik, T.M., Schmidt, C.R., Dillhoff, M.E. (2018 Apr). Exosomes in Pancreatic Cancer: from Early Detection to Treatment. *Journal of Gastrointestinal Surgery*, 22(4), 737-750.

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MDSR Program Contact Information

Medical Student Research Program Websites:

<http://medicine.osu.edu/go/mdsr>

[MDSR Newsletter and Events](http://go.osu.edu/MDSRevents) <http://go.osu.edu/MDSRevents>

[Research Opportunities](http://go.osu.edu/mdsrresearchopportunities) <http://go.osu.edu/mdsrresearchopportunities>

Attention research mentors: you can advertise your research opportunities on the MDSR website by completing a [Faculty Research Announcement Request](http://go.osu.edu/MDSRmentors).

<http://go.osu.edu/MDSRmentors>

This provides medical students with an array of research opportunities in one easy location!

We want to hear from you!

**To submit an item for the newsletter
or to highlight medical student research
accomplishments, email:**

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Mark Your Calendar!

Date	Event	Location	Sponsor
August 8, 2019 8:00-8:30AM	COM Medical Student Orientation “Research Opportunities”	160 Meiling Hall	MDSR – LSI
August 19, 2019 10:00-11:00AM	Career Development: Research in Medical Careers	160 Meiling Hall	MDSR – LSI
August 29, 2019 9:00-10:00AM	Evidence Based Inquiry & Research Learning Objectives	160 Meiling Hall	MDSR – LSI
September 20, 2019	Exploring Medical Research in the Summer Introduction to Medical Student Research Opportunities & How to Prepare a Competitive Research Proposal	LSI Module	MDSR – LSI Module
TBD	2019 Dean’s Fall Scholarship Awards Ceremony (Presentation of Awards to Medical Students Recognized for Research Accomplishments)	TBD	OSU COM
Oct. 7, 2019 9:00 AM	2019 COM Medical Student Research Scholarship Application Process Opens, 9:00 AM	<u>Medical Student Research Website</u> http://medicine.osu.edu/go/mdsr	MDSR Program
Oct. 17, 2019 4:00-6:00 PM	Medical Student Research Opportunities Fair Meet faculty from OSU COM and NWCH	115 Biomedical Research Tower	MDSR Program
Nov. 8, 2019 12:00-2:30PM	Medical Student Research Symposium https://go.osu.edu/mdsymposium	115 Biomedical Research Tower	MDSR Program
Dec. 2, 2019 5:00PM	COM Medical Student Research Scholarship Phase I Documents Due, 5:00 PM	<u>Medical Student Research Website</u> http://medicine.osu.edu/go/mdsr	MDSR Program Roessler, Barnes, and Bennett
Jan. 6, 2020 5:00PM	COM Medical Student Research Scholarship Phase II Documents Due, 5:00 PM	<u>Medical Student Research Website</u> http://medicine.osu.edu/go/mdsr	MDSR Program Roessler, Barnes, and Bennett
Jan. 22, 2020 – Feb. 5, 2020	Landacre Research Honor Society Application Process	<u>Landacre Website</u> http://go.osu.edu/LANDACRE	Landacre Honor Society
April 1, 2020	COM Medical Student Research 2019 Scholarship Award Notifications (MDSRS)	Email Notification	MDSR Program
April 16, 2020	2019 OSU COM Trainee Research Day	Biomedical Research Tower	OSU COM
May 1, 2020 12:00-3:30 PM	Medical Student Summer Research Kickoff (Mandatory of all MDSR Scholarship Recipients)	Ross Heart Hospital Auditorium	MDSR Program
May 21, 2020 5:00 – 8:00 PM	2020 Landacre Honor Society Induction Ceremony	TBD	Landacre and MDSR Program