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Greetings! It is wonderful to share this issue of the Medical Student Research Program Newsletter with you to recognize medical student research accomplishments over the past year! The enthusiasm for biomedical research among OSU medical students is palpable, and this enthusiasm is in part a result of the excellent work by The Landacre Honor Society. Landacre has a rich tradition of initiative and leadership by OSU medical students. In fact the origin of the society derives from work of the Freshman Medical Class of 1955 to honor the memory of Francis L. Landacre, Ph.D., first Chair and Professor of Anatomy. The important goal of creating a culture of inquiry and investigation among our medical students is very much facilitated, if not dependent, upon the energy and talent of the student leaders and members of the Landacre Honor Society. This year’s president, [Benjamin Wendt](#), and his extensive Executive Board are to be congratulated for their success in generating enthusiasm for engaging in research, serving as a peer resource especially for Med I students, organizing research related educational and informational events, conveying the inextricable link between research and clinical medicine and collaborating with AOA and Gold Humanism Society as part of the Honors Consortium.



This year 76 new members (13 Med I, 40 Med II, 16 Med III, 4 Med IV, and 3 MD/PhD students) were inducted into the Landacre Honor Society on April 26, 2012. Dean Lockwood, Clay Marsh MD, Robert Ruberg MD, Quinn Capers MD, Joanne Lynn MD, Sheryl Pfeil MD, and Larry Schlesinger MD were among the many leaders in the College of Medicine who attended the event. The research achievements of the 2012 inductees reflected very well the mottos on the Landacre Honor Society insignia, “Erudito” from the Latin derivatives meaning well-instructed, learned and “Investigatio” meaning formal inquiry or systematic study. Students were admitted into the Landacre Honor Society based on work performed as a student of the OSU College of Medicine. Seventy percent of the inductees were admitted on the basis of a first authorship on a competitively reviewed abstract accepted for presentation at a national conference, nineteen percent were accepted on the basis of a peer-reviewed publication, and eleven percent were admitted based on receipt of a nationally competitive grant (such as research fellowships offered by AOA, Gold Foundation for Humanism in Medicine, AMA, American Society of Hematology, Fulbright Award and the American Brain Tumor Association). In the midst of all of the society activities and schoolwork this year, Ben and his colleagues have worked hard to ensure that the purpose of the Landacre Honor Society, “to promote interest and excellence in research”, will be sustained by training new student leaders and retaining prior leaders on the Executive Board.

Finally, I call your attention to the stories about students who elected to take a leave of absence from medical school to hone their research skills and training. These students uniformly have had wonderful and productive experiences which will significantly influence their future career direction. There are many prestigious research fellowships which support summer or year long medical student research training such as those offered by the Howard Hughes Medical Fellows program (www.hhmi.org/grants/individuals/medical-fellows/index.html), the Sarnoff Foundation (www.sarnofffoundation.org), the National Institutes of Health Medical Research Fellows Program (www.cc.nih.gov/training/mrsp/index.html). If you visit the HHMI website you will find two OSU medical students, **David Clever** and **Stanley Park**, listed as part of the 2011-2012 group of HHMI Medical Research Scholars. This year you will find that Ohio State University medical student **Rohit Mital** is listed on the Sarnoff Foundation website as a newly accepted Sarnoff Scholar (2012-2013); he will be pursuing a year long research fellowship between the third and fourth year of medical school. **Samer Salamekh** will be pursuing a year long research fellowship sponsored by the prestigious Max Planck Institute between Med II and Med III year (2012-2013). For more information about how to become involved in research during medical school visit our website at <http://medicine.osu.edu/go/mdsr> and please don’t hesitate to contact me ginny.bumgardner@osumc.edu, Bianca McArrell Bianca.mcarrell@osumc.edu (Medical Student Research Program Manager) or one of the newly elected leaders of the Landacre Honor Society and [Landacre Research Interest Group](#).



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, 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 our graduates to directly influence the future course of medicine.



"It is a very exciting time to be in medicine"

- Joel Palko



Timothy Voorhees is a second-year medical student at The Ohio State University. His interest in research began as an undergraduate at the University of Michigan, where he worked for 3 years in a basic immunology lab studying the effects of infectious stimuli on the signaling pathways of Dendritic Cells. When he made the move to OSU, he brought with him a desire to expand upon his previous experiences, and continue along a similar field of research. This second time around, though, he found his research interest to be in line with clinical infectious diseases.

Dr. John Davis, from the Division of Infectious Diseases became Tim's research advisor in the fall of 2010. After agreeing upon a research topic proposed by Dr. Davis regarding the clinical significance of unreported Cytomegalovirus Polymerase Chain Reaction values, Tim began work on the project. After applying for an IRB, Tim went on to secure an MDSR scholarship for the summer of 2011, working with Dr. Davis. Following the completion of the research, Tim submitted an abstract to the Annual Scientific Exchange presented by the American Society of Transplantation in San Antonio, TX. He was fortunate enough to be accepted for the conference's poster presentation session, where he presented his research to faculty from across the country in both infectious diseases and transplantation. Additionally, he presented his work at the 11th Annual OSUWMC Trainee Research Day on April 19th.

Joel grew up near Pittsburgh and obtained his bachelor's degree in chemical and biomedical engineering from Carnegie Mellon University in 2009. Near the beginning of his studies, he interned as an engineer in the petroleum industry, and originally intended to make this type of work his career. However, in his junior year, he enrolled in biomedical engineering courses and began doing research in a biomechanics laboratory. It was these initial experiences that sparked his passion for research and medicine.

At Ohio State, he started pursuing research in the small field of ocular mechanics with Dr. Jun Liu in the Department of Biomedical Engineering. His projects focused on the biomechanics of the cornea and sclera in relation to ocular diseases such as glaucoma and keratoconus. Joel became involved in several projects in Dr. Liu's lab over the course of his first two years of medical school, which led to his decision to take a year off from medical school to focus on this work through funding from a MDSR grant.

As engineers apply their skills to medical problems, the need for physicians to guide the development of and also adapt to innovation is more important than ever. Joel's research experience has expanded his knowledge base of multiple disciplines, heightening his aptitude for integrating technology, engineering, and medicine. He is convinced that his generation is going to be the one to optimize the convergence of technology and medicine. Joel plans on contributing to this revolution in some small way by practicing clinical medicine with an open and active mind towards advancing medical technology.

Stanley Park received his bachelor's degree in biochemistry from the University of California, San Diego (UCSD) and is now in his fourth year of medical school at The Ohio State University College of Medicine. He found his passion for research during his post-baccalaureate year at UCSD, where he worked with his mentor Dr. Toshitaka Yajima in generating a cardiac specific knockout mouse model of mitochondrial antiviral signaling (MAVS) protein. During that time, he also studied the protective role of MAVS from oxidative stress in embryonic cardiac myocytes. As a medical student at OSU Stanley became interested in the field of ophthalmology as he took on a project studying the long-term survival of patients with uveal melanoma. He then took a leave of absence in 2011 to work at the National Eye Institute as a Howard Hughes fellow to study ocular von Hippel-Lindau (VHL) disease. The funding for this project came from the [Howard Hughes Medical Institute](#), specifically the NIH-HHMI Research Scholars Program. During this year he wrote a review on the current VHL null animal models, and then characterized a novel xenograft model for ocular VHL disease. Stanley will graduate in 2013 and plans to pursue a career as a physician-scientist in the field of ophthalmology. He is looking forward to a fulfilled career as a physician-scientist and a humanitarian in the field of ophthalmology and he feels very fortunate that his interests were not at odds but actually complemented his interest in vision care.



2012 Landacre Research Opportunities Fair

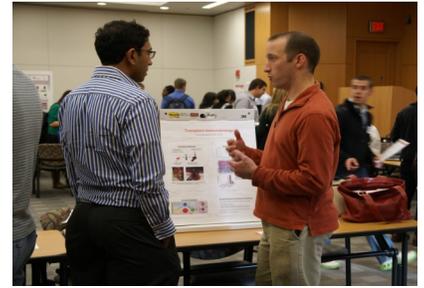


The OSU College of Medicine's Landacre Honor Society hosted its annual Medical Student Research Opportunities Fair on Monday October 17th from 5-6:30 p.m. in the Biomedical Research Tower.

The Landacre Research fair is an effort to promote student research by making our outstanding OSUWMC investigators easily accessible to students that share the same research interests.

Investigators (who generously give their time) are given the opportunity to prepare presentations, posters or other materials explaining their

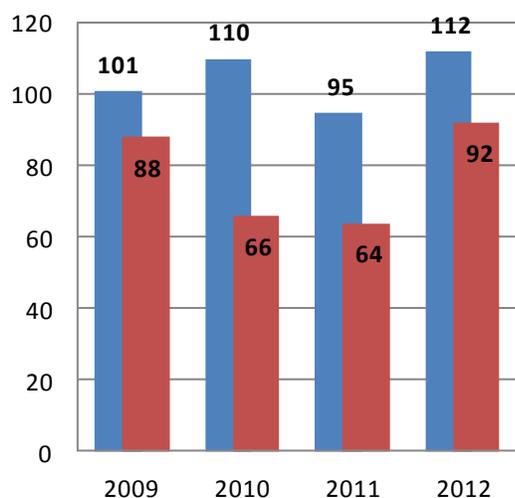
research and to present this to students in an informal setting. Many students at the OSU College of Medicine start career-long mentorship relationships and launch their scientific research endeavors at the annual Landacre Research Fair. With more than 150 medical students attending, it proves to be a great opportunity for faculty to meet and recruit medical students to participate in research projects during the academic year and for summer projects.



The Samuel J. Roessler Memorial Medical Scholarship Fund

The Samuel J. Roessler Memorial Medical Scholarship Fund was established by Anna J. Roessler in memory of her son. The scholarship provides an opportunity for medical students interested in pursuing excellence in medical research. Hundreds of medical students have had the opportunity to participate in research because of Roessler Scholarship support. Awards are made to medical students at the College of Medicine for research at the institution with an OSU appointed faculty. Students are able to pursue full-time research during the summer between their first and second year of medical school or take a leave of absence to pursue a year long research project. Students are required to submit a proposal, written in their own words, along with a letter from the OSU faculty member supporting their project. The proposals are then evaluated by a faculty review committee, and those deemed meritorious receive funding through the Roessler scholarship. Upon the completion of their research, students must turn in a final report detailing their work and present their findings at the annual OSUWMC Trainee Research Day. This year the Samuel J. Roessler Memorial Medical Scholarship Funded 28 summer research scholarships. Numerous students and faculty have benefited from the Roessler experience. The results generated by the students can eventually lead to major nationally funded research projects. The Samuel J. Roessler Memorial Scholarship is providing an opportunity for students to see firsthand how research might benefit patients. The MDSR office anticipates that many of our awardees will become the great physician scientists of the future.

2012 Medical Student Research Scholarships



The Office of Medical Student Research (MDSR) works with PIs and administrators in an effort to notify medical students of available research opportunities and scholarships. These awards are available to medical students for research performed under the guidance of faculty in the COM. The goal is to engage medical students in biomedical discovery and to encourage students to consider a future career in biomedical research. The MDSR Scholarship Program received 112 Phase I Applications in January of 2012 and through the generous contributions from the College of Medicine and numerous Department Chairs, the medical student research office was able to fund 91 summer research projects and 1 year long research project.

To find more information about MDSR and available scholarships check out our website. <http://medicine.osu.edu/go/mdsr>

Figure Left: MDSRS Application and Award Rates from 2009 to 2012

2012 OSUWMC Trainee Research Day

The 11th Annual OSUWMC Trainee Research Day, April 18 & 19, 2012

Research Day provides an opportunity for researchers in training at the OSU Wexner Medical Center to present their biomedical research in a public forum and to compete for travel awards given for outstanding work. This group includes trainees at all levels of programming, including undergraduate, graduate, medical and MD/PhD students, as well as postdoctoral fellows and researchers and clinical residents and fellows. Research Day also presents an opportunity for colleagues and visitors to learn about the cutting edge research occurring at Ohio State.

This year's events began with a Kickoff hosted by the OSU Center for Clinical and Translational Science on April 18th, featuring a workshop on innovation led by [Michael Bills](#) from the OSU Fisher College of Business. And on April 19th more than 360 posters representing a wide array of research topics were displayed in the Biomedical Research Tower. Presenters were on hand to discuss their projects and research findings with visitors, guests and faculty judges. Research Day also featured a keynote address by [Louis Ptacek, MD](#), a leader in the field of human neurogenetics. Dr. Ptacek is the John C. Coleman Distinguished Professor of Neurology at the University of California, San Francisco, a Howard Hughes Medical Institute Investigator and a member of the Institute of Medicine.

New this year was the State-of-the-Art faculty lectures, which was given by [Matthew During, MD, D.Sc.](#), Principal Investigator in the COM Department of Molecular Virology, Immunology and Medical Genetics, and [Brian Kaspar, PhD](#), Principal Investigator and member of the Center for Gene Therapy at the Research Institute at Nationwide Children's Hospital.

The OSUWMC Trainee Research Day wrapped up with a Social Hour and awards ceremony recognizing the outstanding research and mentorship at OSU. Travel awards were given to trainees with top scoring poster presentations at each training level. This year 29 awards in the amount of \$1000 each were awarded to trainees. This year, 95 Medical Students presented posters and 7 were awarded a \$1000 Travel Award. Andrew Campbell was selected to present his abstract at the Allan Yates Trainee Speaker Series.

The Distinguished Biomedical Research Mentor of the Year Award was established to recognize outstanding trainee mentorship by OSU College of Medicine faculty. This award recognizes faculty mentors who model a passion for biomedical research and help trainees to grow and succeed in their research training. The recipient of the 2012 Award was John Davis, MD, PhD, Assistant Professor in the Division of Infectious Diseases.

View all of the 2012 Travel Award Winners at the Research Day [website](#).



Students poster presentations .



The 7 Medical Students who received travel awards with Dr. Lockwood.

Trainee Name	Title	Mentor
Andrew Campbell	Preoperative MRI underestimates articular cartilage defect size compared to arthroscopy	Dr. David Flanigan
Danny Jandali	Superior outcome of immediate voice prosthesis placement in the setting of primary tracheoesophageal puncture in patients undergoing total laryngectomy	Dr. Amit Agrawal
Shelby Lundahl	Development of a valved ventriculocoronary shunt for myocardial revascularization	Dr. Arturo Cardounel
David Lustenberger	Periostitis secondary to prolonged voriconazole therapy in a lung transplant recipient	Dr. Thomas Scharschmidt
Joel Palko	Scleral viscoelastic properties in a canine POAG model with ADAMTS10 mutation	Dr. Jun Liu
Kristen Reeve	Comparative analysis of Salmonella enterica serovar Typhi isolates from acute and chronic infections	Dr. John Gunn
Eric Tsung	DDR1 as a drug target pilot study	Dr. Gunjan Agarwal

Landacre Honor Society Induction Ceremony and Annual Banquet

The Landacre Honor Society is the medical student research society at The Ohio State University College of Medicine which was 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 a variety of information about research opportunities at Ohio State, Landacre also holds research seminars, hosts speakers, participates in the organization of the annual OSUWMC 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, as evidenced by fulfilling membership criteria and successfully completing an application and essay. 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. The April 26th 2012 event was hosted at the Blackwell hotel and conference center. Certificates were presented to all 75 new members and each current board member was recognized for his/her dedication and service. This year's recipient of the Landacre Award of Distinction was Dr. Charles Lockwood, Dean of the OSU College of Medicine. The board selected Dr. Lockwood because of the leadership and support he has given to the Landacre Honor Society and his dedication to the support of research at the OSU College of Medicine. Landacre Faculty Awards were presented to Dr. Clay Marsh and Dr. Ginny Bumgardner for their work and service as Faculty Advisors to the Landacre Honor Society during the 2011-2012 academic year. The Landacre Executive Board also presented Dr. John A. Davis with the 2012 Mentor of the Year Award. Dr. Davis was selected as mentor of the year because of his commitment to teaching, advising, and mentoring the physicians of tomorrow.



Dr. Lockwood receives his award from Landacre President Benjamin Wendt.



Left: Landacre Students enjoying the evening.
Above: Dr. Bumgardner receives her faculty award from Landacre Vice President Eliza Beal.



MDSR Program Contact Information

Medical Student Research Program Websites:

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

[MDSR Newsletter and Events](#)

[Research Opportunities](#)

Attention research mentors, you can advertise your research opportunities on the MDSR website by completing a [Faculty Research Announcement Request](#).

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

We want to hear from you!
To submit an item for the newsletter
or to highlight medical student research
accomplishments e-mail:
research.education@osumc.edu



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