

OCTOBER  
2022

INSIDE THIS

From the MDSR  
Program  
Director

MDSRS Awards

Why Research"

Annual Medical  
Student Research  
Symposium

OSU COM Trainee  
Research Day

The Landacre  
Research  
Honor Society

Contact Us

MDSR  
Calendar

Volume 6,

# Medical Student Research Newsletter

## From the Director of Medical Student Research

Welcome class of 2026, and greetings to our many existing medical students. I am incredibly honored to be able to write this section and lead the OSU College of Medicine Medical Student Research Program (MDSR). To introduce myself, I am a graduate of OSU College of Medicine, although I doubt that anyone in my graduating class would have expected me to be in this position a little over a decade later. At my graduation, I had fewer publications than some of you have coming into the class! I stayed at Ohio State to complete both my intern year and dermatology residency and I have been a faculty member at Ohio State since 2014. I have mentored multiple medical students every year since then and I believe that my students have inspired me to expand the rigor of my research.

Throughout my time here, I have been fortunate to have amazing and inspiring mentors at every step of my career, from my first summer of medical school, to my various interests that changed and developed during medical school, to the physicians who so inspired me to consider changing specialties as an intern (I didn't), and finally to those who have established my research interests and program as a faculty member. The number of mentors that I need to thank are immense and I am afraid impossible for me to do so in a short section, but certainly, I must thank Dr. Bumgardner, who after leading and expanding this program so effectively and for so long is now mentoring my journey to fill a small part of her shoes and mentoring me through my first journey in research education.

I believe my journey goes to show that interest and passion for research is not a static process, but depends strongly on your mentors, your patients, and the resources available. We are fortunate that the resources at Ohio State are tremendous as are the access to mentors. There is research that is happening here that occurs nowhere else in the world, and you have the opportunity to be part of it. And know that our resources do not end at the completion of the M1 summer, and in fact we continue to fund students for MDSR scholarships later in medical school and offer the advanced competency in research to allow our students to bring projects, ideas, and plans to fruition.

Please take the time to read through the newsletter. We couldn't be any prouder of our students and are honored to feature them in this newsletter both in our winners of travel grants for the Medical Student Research Symposium (see pages XX), our students who have been accepted to prestigious nationally funded fellowships (see page XX), and our numerous students who have recently published (see pages XX). As always, please keep us updated with any research accomplishments including publications, fellowships, leave-of-absences, or travel awards.

I am excited to take this journey with you and I hope you know that myself, Dr. Bumgardner, and Ms. Bianca McArrell-Grant are available to help guide your journey. We hope to see you at the Medical Student opportunities fair in the fall as we aim to be your one-stop shop for resources available throughout your time here.

Yours,  
Ben Kaffenberger MD MS FAAD  
Associate Professor of Dermatology  
Director, Medical Student Research Program  
Director, Academic Affairs for the Division of Dermatology



## From the Associate Dean for Physician Scientist Education &

Hello and welcome to all! Congratulations to the medical students who completed their summer research and Thank You to all of the research mentors who are critical to the success of our medical students research education and training! It takes a lot of work, guidance and perseverance to bring a research project to fruition, prepare a poster or oral presentation and/or successfully publish the results of the work. A mutually rewarding mentor/mentee relationship is integral for success.

I am delighted to share information about my new role as the Associate Dean for Physician Scientist Education and Training (PSET) that will promote the College of Medicine's Physician Scientist Initiative (PSI). This initiative provides new infrastructure and cohesiveness that will support further growth and success of the physician scientist community at the Ohio State University. As Dr. Kaffenberger shared in his message, I led the COM MDSR program for fifteen years and thus have firm commitment to its continued success under Dr. Kaffenberger's leadership. Under the umbrella of the Office of Physician Scientist Education & Training, we intend to address the full breadth of research education and training from physician scientist pipeline programs to medical students, residents, fellows and early career faculty. Rob Baiocchi, MD, PhD who directs the Internal Medicine Physician Scientist Training Program (PSTP), has been recruited to lead the development of a broader and centralized physician scientist development program (PSDP) to support residents and fellows in all specialties at the OSU Wexner Medical Center. I am assisted by Casey Henceroth, Ed.D, MBA, who has been recruited to serve as the administrative director of the Office Physician Scientist Education & Training and will oversee the continuum of these opportunities. In addition, she will be integral to the development of a new early career Physician Scientist Scholars Program (PSSP). Ms. Angela Butler is the newest PSET program manager and will support PSDP and institutional physician scientist training grant administration. These new staff members and faculty directors join existing faculty directors and staff who lead the ASPIRE undergraduate pipeline program (Tamar Gur MD PhD, Aaron Thomas), the NIH supported Medical Scientist Training Program (Ginny Bumgardner MD PhD, Rama Mallampalli MD; Ashley Bertran; Erin Wrael). Please visit the PSET website for physician scientist news, information and funding opportunities. This new organization aims to create synergy and streamline opportunities for students and physicians at multiple training and career levels.

I would like to highlight funding opportunities for early career faculty such as the Doris Duke Charitable Foundation Covid-19 Fund for Physician Scientist Retention in Research made possible through an institutional grant to OSU (PIs: Ginny L. Bumgardner MD PhD and Rebecca Jackson MD). The purpose of this grant is to support physician scientists whose research has been impacted by the Covid-19 pandemic. These funds have been competitively awarded to 4 early career faculty members, Dr. Beatriz Hanaoka (Rheumatology), Dr. Kerry-Ann Mitchell (Plastic Surgery), Dr. Joanna Tsai (Pulmonary), and Dr. Yin Ren (Otolaryngology). In cycle 2, Dr. Erin Stevens (Palliative Medicine) was awarded a COM Physician Scientist Retention in Research award.

This year, the College of Medicine inaugural "Research Innovation Career Development Award Program" awarded grants to five recipients including Dr. Priya Dedhia (Surgical Oncology), Dr. Michelle Humeidan (Anesthesiology), Dr. Peter Lee (Gastroenterology), Dr. Aubrey Moe (Psychiatry) and Dr. Kerry-Ann Mitchell (Plastic Surgery). Congratulations to all!

I hope this news provides a glimpse into the diversity of physician scientists pursuing biomedical research and the exciting physician scientist training and career opportunities available at OSU. I wish great success to all of our medical students starting, continuing or completing research projects in the coming academic year. Please don't hesitate to reach out for information, advice or to contribute ideas.

Sincerely  
Ginny L. Bumgardner MD PhD  
Associate Dean for Physician Scientist Education & Training



# The MDSRS Research Scholarship

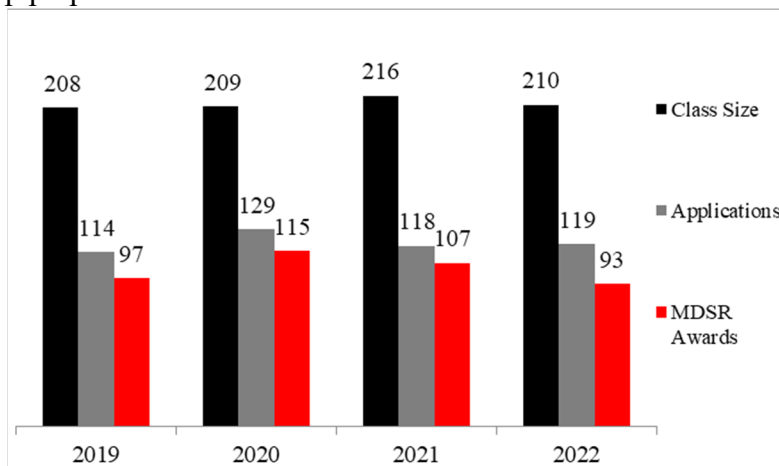
The Medical Student Research Office strives to connect interested medical students with quality basic, clinical, or translational research experiences with a College of Medicine faculty member. Our office assists current medical students in the application process for extramural and intramural scholarships 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.

The MDSR award funded 93 medical students in 2022, applications for the 2023 OSU COM Medical Student Research Scholarship open on October 3 2022. Phase I documents are due December 2, 2022 and Phase II documents are due January 6, 2023.

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>

Pictured right: MDSR historical funding data



## 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.



### Brendan Sieber, Third Year Medical Student

Brendan grew up in Pittsburgh, Pennsylvania, and attended John Carroll University in Cleveland, Ohio, graduating with a B.S. in Biochemistry and Cellular and Molecular Biology. He entered directly into OSUCOM in 2020. Between his M1 and M2 years, through the support of the MDSR program, he was able to begin research under the mentorship of Dr. Margaret Gatti-Mays, MD, MPH. The research is a retrospective chart review analyzing the effects of concomitant medication on immune checkpoint inhibitor (ICI) therapy for the treatment of solid tumors. To date, he is the lead author of a systematic review analyzing the effects of concomitant medication on ICI therapy published in the journal, *Frontiers in Oncology*. The chart review project is still ongoing and is incorporating AI software to improve the speed and accuracy of retrospective chart reviewing.

At OSUCOM he has been passionate about addressing healthcare disparities. During a week in his M1 summer, he co-led the PODEMOS medical group on brigades in rural Honduras. That same summer, he was awarded a scholarship for an immersive experience at the Hazelden-Betty Ford Foundation inpatient rehabilitation services to learn about addiction medicine and treatment with a focus on those marginalized in society. Currently, an M3, he serves as the treasurer and chair of the Race in Medical Algorithms (RMA) program through the student chapter of Physicians for Human Rights. RMA focuses on race-based correction factors and other race related topics that negatively impact health outcomes. RMA's current efforts, in conjunction with the student council's diversity and inclusion committee, are to remove the race correction factor from pulmonary function tests. He has also volunteered through the student chapter of the Catholic Medical Association, which has served as a source of inspiration and fellowship throughout my medical education. His current career goals are either to become a medical oncologist or doctor of an infectious disease while integrating clinical research into his career.



## Why Research Continued

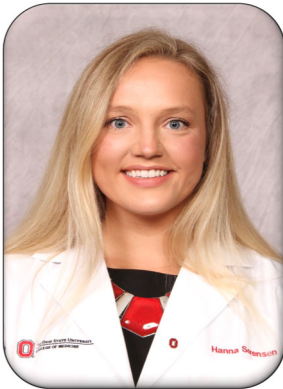


### **Haley Klimaszewski, Second Year Medical Student**

I originally wanted to be a scientist and study genetics but a powerful shadowing experience swayed me towards medicine. However, I still recognized how vital research is to the advancement of medicine and I knew I wanted it to be a big part of my career as a physician. That is why I did research during my undergraduate and during my gap year. I also sought out medical schools with a focus on research. OSUCOM has exceeded my expectations in this regard. Medical education is long and difficult enough without adding research to the mix. Despite my love for research, I don't think I would be as involved in research as I am now if not for the constant guidance and support from the Office of Research Education. Currently, I am taking a year off from school to conduct research that I am passionate about. I am looking into physician-scientist residency programs, and, as my mentor likes to say, I am on a non-traditional path to becoming a physician-scientist.

I knew I wanted to do research between M1 and M2 so I applied for an outside research program and MDSR as a backup plan. Ultimately, I am glad that the other program didn't work out because conducting summer research here at OSU allowed me to continue being involved in research throughout the school year. It has provided me with a longitudinal experience and a more meaningful mentorship that wouldn't have been possible at an outside institution. It also made it easier when I decided to take a year off from school to continue my research. The MDSR program did a great job preparing me for this year by educating me about funding options and teaching me how to write a research proposal, which was helpful when I began applying for funding. I received the American Society of Hematology Student Physician-Scientist Award and I am thankful to my mentor and to the MDSR program for making this possible.

I did my MDSR project in the Baiocchi lab which focuses on aggressive lymphoma with an emphasis on Epstein Barr Virus (EBV) driven lymphomas. Over the summer I worked on a project that used next generation sequencing to analyze the EBV genome in over 300 Burkitt's lymphoma samples from Malawi. We will compare these samples to genomes from other regions of the world to identify regional sequence variations. This data will inform the development of an EBV vaccine that will be effective for people all over the world. For my research year, I will be longitudinally analyzing immune cell subsets in kidney transplants where the recipient is EBV seronegative, and the donor is seropositive. These patients are at increased risk of post-transplant lymphoproliferative disorder (PTLD), and we believe that by studying these patients we can identify biomarkers that correlate with susceptibility to PTLD.



### **Hanna Sorensen, Third Year Medical Student,**

I am from Marysville Ohio and attended the University of Cincinnati where I received my bachelor's degree in chemistry. Coming into medical school I knew that research was something I wanted to continue doing from undergrad, but I still didn't feel as though I could do things on my own. I knew that I was interested in orthopedics and biomechanics, but I struggled feeling confident doing research in a field where I didn't know much other than a few bones and muscles.

The most important thing that I did for myself when looking for a mentor was to start early. I wanted to be able to have a flexible schedule with some additional hands-on mentorship given that I was unfamiliar with the subject at hand. Some projects may want you to do all the work yourself, which is great for those who require more autonomy or

who have more extensive research experience. For me, I wanted someone who was going to be patient with me as I learned the ropes of participating in more clinically based research. In the end, I made the decision to do a project that was more transitional in nature. This allowed me to use my strengths of basic science research that I had gained an undergrad with my weaknesses of clinical research that I had yet to understand. I was fortunate to end up working with two principal investigators, one who had an appointment in the department of orthopedics and the other in the department of microbial infection and immunity. My project specifically looked at the influence of staphylococcus epidermidis biofilm formation on human cadaver ACL tendons. The question we were trying to answer was if the biofilm created by the bacteria could weaken the integrity and mechanical properties of ACL reconstructed tendons. (continued next page)

## Why Research Continued

Through this experience I learned how to use several different cell culture techniques as well as microscopy that made it possible to visualize bacterial biofilm. Once I had mastered the microbial side of the project, I began to tap into the orthopedic side. This portion of the project included connections within the department of biomedical engineering. Through collaboration with biomedical engineering faculty we were able to do mechanical testing on the ACL tendons using high force specimen loading.

After numerous drafts and revisions, we needed to decide on a manuscript to submit to. Fortunately, the paper was accepted! This was one of the most gratifying moments that I have had as a medical student. Not only was this my own project, but this was also my first publication in a medical journal. In the age of STEP1 becoming pass fail, I recognize there is a greater emphasis on research opportunities and number of publications. However, this project made me realize that quality in the end will be better than quantity. For me, I will be able to passionately speak about my project, what I learned, how it would make me a better physician, and how I overcame adversity. On that note, my advice to you, if you are going to dedicate your time to research - be passionate about what you're doing, learn as much as you can, and never be afraid to ask for help. You are responsible for your own success and that looks different for everyone. For some it may mean seven publications and for others it may mean one presentation at a national conference. Whatever it is, be the best version of yourself that you could be!



### **Thomas Goa, Fourth Year Medical Student**

I grew up in Columbus, Ohio and graduated from The Ohio State University with a Bachelor of Science in Biology. During my undergraduate career, I was involved in virology research under the mentorship of Dr. Jianrong Li in the College of Veterinary Medicine. I was primarily involved in studying the effects of N6-methyladenosine modification in human metapneumoviruses. I also assisted on projects involving creation of Zika virus vaccine candidates using VSV and Zika nonstructural protein 1, and a lactic acid bacterium-based vaccine candidate for norovirus. From these experiences, I was fortunate enough to co-author multiple publications in the field of virology, including one in Nature Microbiology. In medical school, I transitioned from basic science to clinical research. My interests were in sleep medicine and sleep surgery, and I was lucky enough to be awarded funding through an OSU College of Medicine Roessler Research

Scholarship to pursue research on patient characteristics that could predict drug-induced sleep endoscopy anatomy under the mentorship of Dr. Eugene Chio. This opportunity was incredibly valuable, as I was able to carry a project from its inception to its endpoint, in this case a first author journal publication in Otolaryngology-Head and Neck Surgery. Along the way, I was able to learn how to write IRBs, develop predictive statistical models in clinical research, give poster and podium presentations, and write publication-worthy manuscripts. Prior to journal publication, I presented this project twice as a poster locally, and once as a podium presentation at AAO-HNSF 2021.

This project set the stage for my interest in otolaryngology, as my appreciation for functional upper airway anatomy and otolaryngologic approaches to obstructive sleep apnea increased significantly after its completion. I'm currently working on multiple sleep surgery projects. One project is focused on outcomes of sleep apnea surgeries in morbidly obese patients which I will be presenting on at AAO-HNSF 2022. Another project is investigating the role of apnea- and hypopnea-predominance in upper airway stimulation outcomes. I personally have OSA and spoke with many OSA patients while creating our sleep surgery database, so I understand how frustrating both having OSA and trying to optimize treatment can be. This makes me that much more motivated to publish impactful studies in the field. I am also involved in other otolaryngology research, including a report on pediatric lingual leiomyomatous hamartomas and a retrospective review of surgical approaches to petroclival tumors. I will be applying to otolaryngology residency this year, and plan to continue otolaryngology research. I am very interested in research and strongly encourage junior medical students to take advantage of the research opportunities at OSU, particularly otolaryngology if interested. Get started early and on something you genuinely enjoy! I love my research and would love to talk further with anyone interested in pursuing clinical research or otolaryngology residency. You can reach me at [Thomas.gao@osumc.edu](mailto:Thomas.gao@osumc.edu).

We want to hear from you! To submit an item for the newsletter or to highlight medical student research accomplishments, Email: [research.education@osumc.edu](mailto:research.education@osumc.edu)

# The Annual Medical Student Research Symposium

The Annual Medical Student Research Symposium took place on November 30, 2021, the event was held virtually via zoom. The annual event is aimed at improving the scientific communication skills of medical students who receive funding through the College of Medicines Medical Student Research Program. The research grants are funded by the Roessler, Bennett, and Barnes Research Scholarship. Our 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 2022 event will take place on October 14th, in the Biomedical research tower. "In Person!"

Congratulations to all of our 2022 research scholars and their culmination of a successful summer!

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



## 2022 OSU COM Trainee Research Day

The 21st Annual Trainee Research Day took place on April 7th in the Biomedical Research Tower (BRT) and Davis Heart and Lung Research Institute. The Annual event 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 included Graduate, Undergraduate, Medical Students, MD/PhD trainees, Postdoctoral Researchers, Fellows and Clinical Residents. The COM Trainee Research Day provides an opportunity for colleagues and visitors to learn about research occurring at The Ohio State Wexner Medical Center. More than 200 trainees submitted narrated posters that were judged virtually by 190 faculty research mentors and 38 trainees were invited to showcase their posters in person on April 7th in the BRT. The keynote speaker for this years' event was [Andrés J. García](#), Dr. Garcia is the Executive Director of the Petit Institute for Bioengineering and Bioscience and Regents' Professor at the Georgia Institute of Technology. His research program integrates innovative engineering, materials science, and cell biology concepts and technologies to create cell-instructive biomaterials for regenerative medicine and generate new knowledge in mechanobiology. This cross-disciplinary effort has resulted in new biomaterial platforms that elicit targeted cellular responses and tissue repair in various biomedical applications, innovative technologies to study and exploit cell adhesive interactions, and new mechanistic insights into the interplay of mechanics and cell biology.

Pictured right are award winners from the 2022 event.

For a full list of awardees and to read more about the 2022 event on the website [ResearchDay.osu.edu](http://ResearchDay.osu.edu)





# 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. The Honor Society will welcome 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>  
Congratulations to our new inductees!

## MDSR Program Contact Information

**We want to hear from you!**  
**To submit an item for the newsletter**  
**or to highlight medical student research accomplishments, email:**  
[research.education@osumc.edu](mailto:research.education@osumc.edu)

### 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>

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



MDSR Program Manager:

Bianca McArrell

[Bianca.McArrell@osumc.edu](mailto:Bianca.McArrell@osumc.edu)

## Mark Your Calendar!

Date	Event	Location
August 9, 2022 10:40-11:10AM	COM Medical Student Orientation “Research Opportunities”	160 Meiling Hall
August 22, 2022 11:00-Noon	Career Development: Research in Medical Careers	160 Meiling Hall
August 30, 2022 10:00-11:00AM	Evidence Based Inquiry & Research Learning Objectives	160 Meiling Hall
September 27, 2022	Exploring Medical Research in the Summer Intro- duction to Medical Student Research Opportunities & How to Prepare a Competitive Research Proposal	LSI Module
Oct. 3, 2022	2023 COM Medical Student Research Scholarship <b>Application Process Opens, 9:00 AM</b>	<u>Medical Student Research Website</u> <a href="http://medicine.osu.edu/go/mdsr">http://medicine.osu.edu/go/mdsr</a>
Oct. 4, 2022 4:00-6:00 PM	Medical Student Research Opportunities Fair Meet faculty from OSU COM and NWCH	115 Biomedical Research Tower
TBD	2023 Dean’s Fall Scholarship Awards Ceremony (Presentation of Awards to Medical Students Rec- ognized for Research Accomplishments)	TBD
Oct. 21, 2022 Noon – 3:30PM	Medical Student Research Symposium <a href="https://go.osu.edu/mdsymposium">https://go.osu.edu/mdsymposium</a>	115 Biomedical Research Tower
Dec. 2, 2022 5:00PM	COM Medical Student Research Scholarship <b>Phase I Documents Due, 5:00 PM</b>	<u>Medical Student Research Website</u> <a href="http://medicine.osu.edu/go/mdsr">http://medicine.osu.edu/go/mdsr</a>
Jan. 6, 2023 5:00 PM	COM Medical Student Research Scholarship <b>Phase II Documents Due, 5:00 PM</b>	<u>Medical Student Research Website</u> <a href="http://medicine.osu.edu/go/mdsr">http://medicine.osu.edu/go/mdsr</a>
Jan. 23, 2023 – Feb. 3, 2023	Landacre Research Honor Society Application Process	<u>Landacre Website</u> <a href="http://go.osu.edu/LANDACRE">http://go.osu.edu/LANDACRE</a>
April 7, 2023	COM Medical Student Research 2019 Scholarship Award Notifications (MDSRS)	Email Notification
April, 2023	2023 OSU COM Trainee Research Day	Biomedical Research Tower
May 5, 2023 12:00-3:30 PM	Medical Student Summer Research Kickoff (Mandatory of all MDSR Scholarship Recipients)	Meiling 112 (Auditorium)
May 2023	Landacre Research Honor Society Induction	<a href="http://go.osu.edu/LANDACRE">http://go.osu.edu/LANDACRE</a>