



**THE OHIO STATE UNIVERSITY**

CENTER FOR CLINICAL AND  
TRANSLATIONAL SCIENCE



**2017 - 2018**

Turning the scientific discoveries of today into life-changing disease prevention strategies and the health diagnostics and treatments of tomorrow.

**CTSA** Clinical & Translational  
Science Awards Program





Furthering the mission of translating scientific discoveries into clinical therapies to improve human health.

Nearly 2,800 faculty and researchers at Ohio State participate in the CCTS. Research funded by the CCTS has been published more than 1,400 times and cited on more than 55,000 occasions.

CCTS researchers have completed more than 18 patent filings and disclosed 25 inventions.

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Dedicated to turning the scientific discoveries of today into life-changing disease prevention strategies and the health diagnostics and treatments of tomorrow.

# About the CCTS

The Ohio State University Center for Clinical and Translational Science is a collaboration between The Ohio State University College of Medicine, other colleges at Ohio State and Nationwide Children's Hospital.

The CCTS provides financial, organizational and educational support to biomedical researchers, as well as opportunities for community members to participate in valuable research.



In 2006, The Ohio State University Board of Trustees voted to create a new entity, The Ohio State University Center for Clinical and Translational Science, to speed the translation of scientific discoveries into clinical therapies to improve human health.

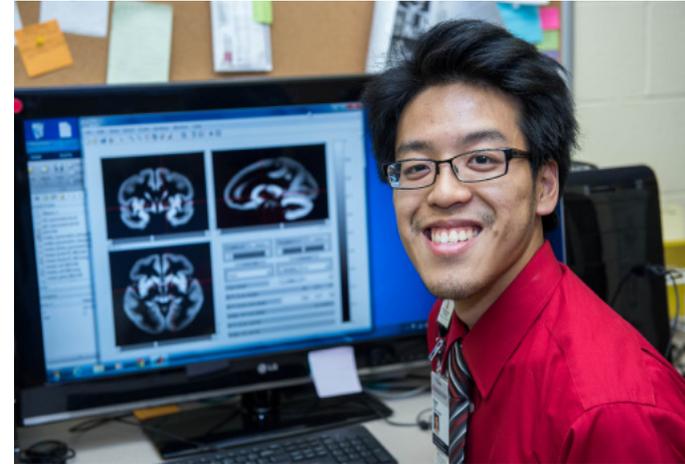
Dr. Rebecca Jackson, MD, was named to lead the new enterprise based on her international recognition and outstanding leadership of numerous multicenter re-

search collaborations. Her first task was to develop the application for a National Institutes of Health (NIH) Clinical and Translational Science Award (CTSA) grant to fund the new endeavor.

In 2008, the NIH awarded a \$34-million, five-year CTSA grant to The Ohio State University – along with Nationwide Children's Hospital (NCH) – to fund the CCTS. Among the largest research grants in the University's history, the CTSA award was

a team effort based on the clinical and translational research enterprise, training programs, informatics capabilities, trans-disciplinary collaborations, and partnerships with private and public organizations.

In 2013, the NIH renewed the CTSA grant for The Ohio State University to execute a second five-year funding cycle with NCH continuing as the pediatric institutional partner.





CTSA funded a U54 specialized center, TL1 trainee program and KL2 scholar program which combined with significant local resources helped to establish essential mentoring, training and other opportunities to develop innovative approaches and technologies designed to re-engineer existing capabilities.

Program support also fosters collaborations to improve the quality, safety, efficiency and speed of clinical

and translational research.

In 2018, the NIH once again renewed the CTSA grant for The Ohio State University to the tune of \$25-million for a five-year funding cycle.

The renewed grant will continue to support team science initiatives, workforce development and partnerships with private and public organizations.

The renewed grant will also allow researchers from The Ohio State University to ex-



tend their programs beyond Central Ohio to Appalachia as well as all 88 Ohio counties.

“This award highlights Ohio State’s position as one of the nation’s top academic institutions, further enhancing our ability to produce high-impact research,” said Ohio State President Michael V. Drake.

“Our collaborative approach facilitates cross-institutional research among our 15 col-

leges, NCH and other community stakeholders, with the ultimate goal of transforming patient care.”

# NIH & NCATS

The National Institutes of Health supports the National Center for Advancing Translational Sciences (NCATS) to transform the translational process so that new treatments and cures for diseases can be delivered to patients faster.

OSU CCTS is funded through a grant from NCATS to pursue translational and clinical science discoveries to achieve better health outcomes.



## The Start of NCATS

The National Center for Advancing Translational Sciences (NCATS) at the National Institutes of Health (NIH) was officially established in fiscal year 2012 to transform the translational science process so that new treatments and cures for disease can be delivered faster.

NCATS, strives to develop innovations to reduce, remove or bypass costly

and time-consuming bottlenecks in the translational research pipeline in an effort to speed the delivery of new drugs, diagnostics and medical devices to patients.

## Translation and Translational Science

Translation is the process of turning observations in the laboratory, clinic and community into interventions that improve the health of individuals and the public — from diagnostics and

therapeutics to medical procedures and behavioral changes.

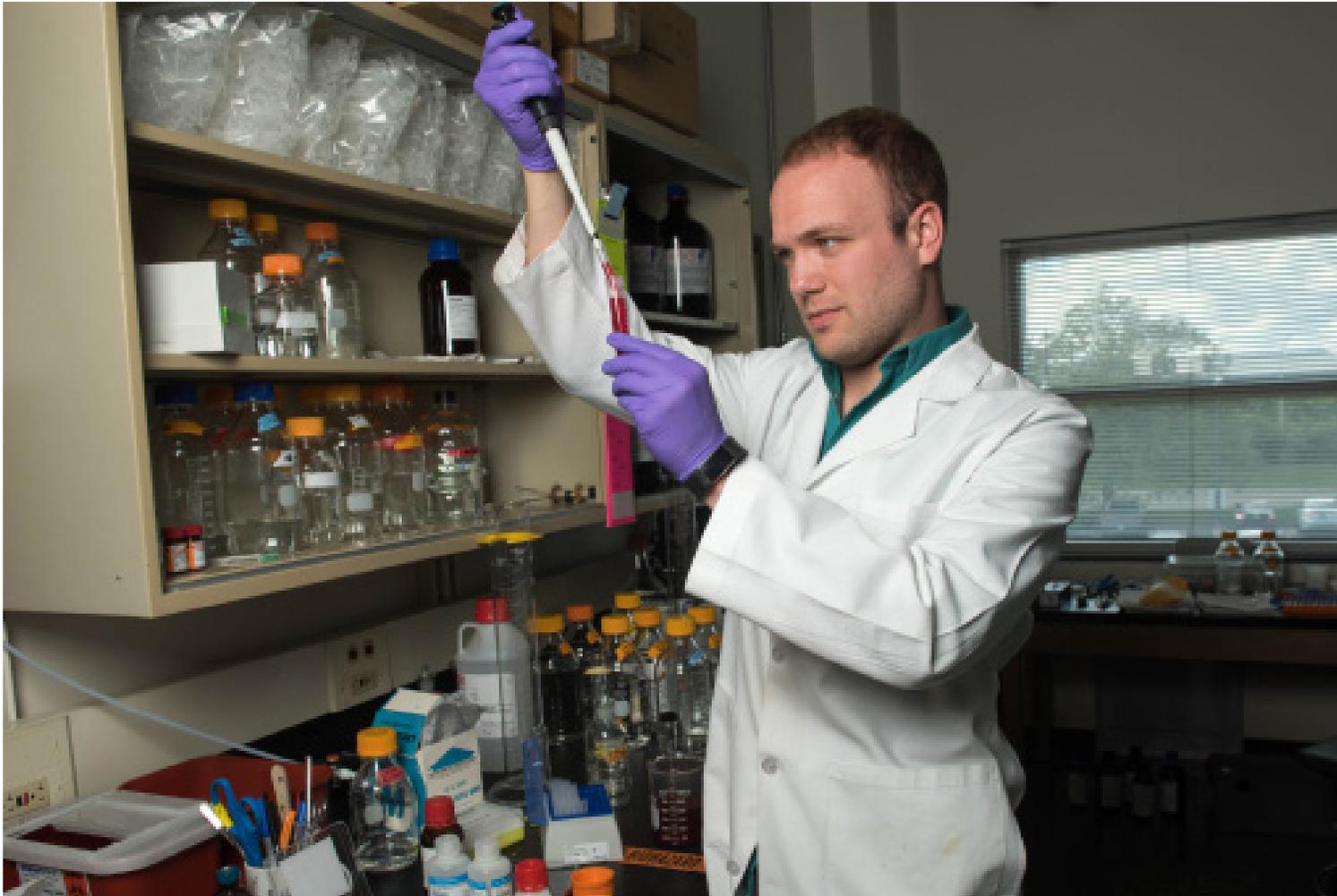
Translational science is the field of investigation focused on understanding the scientific and operational principles underlying each step of the translational process.

NCATS studies translation on a system-wide level as a scientific and operational problem.





National Center  
for Advancing  
Translational Sciences



# Letter from our Director



DR. REBECCA  
JACKSON  
DIRECTOR

Rebecca Jackson, MD, Associate Dean for Clinical Research in the College of Medicine and Professor of Medicine at The Ohio State University, is a well-recognized clinical and translational scientist involved in collaborative team science with a focus on the epidemiology of chronic disease in women including osteoporosis and fracture, cardiovascular disease and osteoarthritis.

She has a national presence in translational science through her leadership roles in the national CTSA Consortium Steering Committee, Clinical Research Forum and NIH Advisory Board for Clinical Research.

She has more than 25 years of NIH funded clinical trials and observational cohort experience. She was vice-chair of the Women's Health Initiative (WHI) for more than a decade and currently is Principal Investigator of the WHI Midwest Regional Field Center.

Jackson was selected to be the first director of The Ohio State University Center for Clinical and Translational Science when the center received CTSA funding in 2008. Since that time she has led the programmatic functions, operations and strategic planning for the center in successful development and integration of clinical and translational research infrastructure at OSU.



Dear Reader,

Translational science has boundless promise to transform biomedical research and medicine. Translational scientists are innovative and collaborative explorers searching for ways to break down barriers in the translation process to ultimately deliver more treatments to more people more quickly.

Our mission is to understand the general scientific and operational principles

of translation--the process of turning observations into interventions that improve patients' lives.

The CCTS works to foster the recognition and growth of translational science as a scientific discipline with unique attributes, research goals, career paths, knowledge requirements, operational approaches and deliverables. The CCTS has the mission to support translational science across the spectrum by engaging

in open dialogue about the career development of a translational scientist, creating incentive structures that reward the pursuit of a career in translational science, catalyzing impactful research that improves human health and developing core competencies important for training programs in translational science.

The CCTS strives to exemplify collaboration, utility and exponential improvement in translational research.

I invite you to learn more about us in this report. If you would like to join me in these efforts, please email me [Rebecca.Jackson@os-umc.edu](mailto:Rebecca.Jackson@os-umc.edu).

# HEALing Ohio

Ohio State-led consortium aims to reduce opioid deaths by 40 percent, thanks to a \$65.9M federal grant addressing the opioid crisis in 19 hard-hit Ohio counties.



Through a newly awarded \$65.9 million federal research grant to address the opioid epidemic, The Ohio State University will lead a consortium of academic, state and community partners that aims to reduce overdose deaths by 40% over three years.

The Ohio initiative, announced as part of the federal HEALing Communities Study, will use real-time research to focus prevention, treatment and recovery programs in the state, which has been hit especially hard by opioid deaths. The study will focus efforts in 19 Ohio counties.

“This initiative will advance the most effective solutions to the opioid crisis and bring them to scale quickly,” said Ohio State President Michael V. Drake. “We are committed to doing everything we can to end this public health crisis in our state and, through our example, beyond.”

Health and Human Services Secretary Alex M. Azar II announced the Ohio grant as part of more than \$350 million committed to the HEALing Communities Study.

The study is funded and supported by the National Institute on Drug Abuse, part of the National Institutes of

Health, in partnership with the Substance Abuse and Mental Health Services Administration.

The Ohio consortium brings together experts from six universities — Ohio State, University of Cincinnati, Case Western Reserve University, Ohio University, University of Toledo and Wright State University.

“By applying interventions this initiative will save lives in Ohio communities and serve as a model for communities across the nation,” said lead investigator Dr. Rebecca Jackson, director of Ohio State’s Center for Clinical and Translational

for clinical research in the College of Medicine.

The administration of Gov. Mike DeWine is also part of the research consortium. After taking office, DeWine created the RecoveryOhio initiative to improve prevention, treatment and recovery support efforts that address mental health and substance use.

“By participating in the study, Ohio can expand its efforts to address the substance use crisis that is taking a toll on families across the state in a comprehensive, collaborative way,” said Ohio Gov. Mike DeWine.



“The study joins my RecoveryOhio initiative with several of our state’s universities to improve and evaluate our state’s community-level infrastructure with the goal of reducing overdose deaths, encouraging treatment and supporting recovery for all Ohioans.”

The state’s proposal was supported by the entire Ohio congressional delegation, led by interventions across a wide range of settings — including primary

care, behavioral health and criminal justice — to provide stakeholders on the front lines of the opioid crisis with real-time, actionable information about the most effective approaches.

The 19 counties in the study represent a cross-section of urban and rural communities. They are: Allen, Ashtabula, Athens, Brown, Cuyahoga, Darke, Franklin, Guernsey, Greene, Hamilton, Huron, Jefferson, Lucas, Morrow, Ross, Scioto, Stark,

Williams and Wyandot counties.

In total, more than three dozen Ohio State faculty members are participating in the initiative. They represent the colleges of Medicine, Pharmacy, Public Health, Public Affairs, Social Work, Nursing, Education and Human Ecology, Engineering, Arts and Sciences, and Food, Agricultural and Environmental Sciences. The Ohio State University Wexner Medical Center and Ohio State Ex-

tension are also involved in the initiative.

“Ohio State is bringing our full capabilities as a comprehensive research institution to bear on this critical issue,” said Executive Vice President and Provost Bruce A. McPheron.

# Progress in Veterinary Research

Veterinary Clinical Trials Office develops online training programs, improved data capture, reporting practices and new best practice recommendations.



The Ohio State Center for Clinical and Translational Science (CCTS) has strong relationships with multiple programs across its partner campus of The Ohio State University. The long-standing relationship between the CCTS and the OSU Veterinary Medical Center, has a unique model that could be a model for other institutions.

With the only veterinary school in the state of Ohio, OSU and the CCTS have long recognized this as a resource that sets its program apart from other universities with Clinical Translational Science Award Programs. The collaborative efforts

between the CCTS and The Ohio State University Wexner Medical Center are wide-reaching and focus on how pet animals with naturally occurring diseases can be integrated into the treatment development process to improve outcomes for people with the same diseases. This collaborative approach is a win-win situation for both people and veterinary patients, as both stand to benefit from these new treatments.

In recent years, OSU's Vet Med has become involved in other nationwide, cross-colaborative programs that have assisted with their unique approach to learn-

ing. One such program is the CTSA One Health Alliance (COHA). Comprised of all of the CTSA affiliated veterinary schools in the United States, the 15 member institutions of the group are growing into an exciting resource for collaborative veterinary clinical research.

COHA is changing the landscape of veterinary clinical trials by working to harmonize and improve the rigor of trial methods and reporting across centers.

In addition, the team is working to create resources that can be shared both within and outside of the COHA network, while placing an

emphasis on veterinary education to better train the next generation of veterinarians involved in biomedical research.

COHA had several big achievements in 2017/2018. Of note, led by the OSU Comparative and Translational Medicine program, were the development of a veterinary-specific online GCP training program and getting all COHA institutions up and running on the RED-Cap platform to improve the development of guidelines for veterinary clinical trial consent forms and consent form templates that can be used across COHA institutions.



We also recently completed a study to assess the readability of veterinary clinical trial consent forms and used that data to develop some recommendations for best practices moving forward.

The group has also been working on significant improvements to the COHA website which include a “soon to go live” wiki-style database of natural animal models of disease that will be searchable to translational researchers both

within and outside of the veterinary space, as well as a master list of bio specimen repositories available across the US and how they can be accessed by translational studies.

OSU is also involved in the development of a One Health Datasets model that will facilitate data-sharing from veterinary electronic health records on a common platform across all COHA institutions to facilitate big data approaches to health

questions of translational significance.

Lastly, we are currently placing a substantial focus on general public education about clinical trials.

We have been working hard to raise awareness and understanding of veterinary clinical trials.

The team is currently in the process of developing a two-credit graduate level course called “Animal Models of Human Disease”, that

will focus on choosing a model, strengths and limitations of various animal model systems, unique ethical and regulatory requirements for various species, etc. Once developed, this course will be a resource for our trainees working in translational research across OSU Vet Med, OSU’s College of Medicine, and Nationwide Children’s Hospital.

# At a Glance

Since 2008, the staff at the CCTS has worked hard to ensure that researchers have access to our resources. Here's a glance at the impact our work has had on translational research at Ohio State.



**1,487**

publications since 2008



**10,218**

local volunteers registered  
on ResearchMatch.org



**1,490**

regulatory consults since  
2008



**48**

community partners



**490**

vouchers distributed



**28**

current and former KL2 scholars

# Fresh Faces

The CCTS welcomes two new distinguished program directors to the Pilot Studies program.



The CCTS is proud to welcome Vish Subramaniam, PhD and Henry Xiang, MD, MPH, PhD as new Co-Directors of the Translational and Clinical Studies Pilot Program.

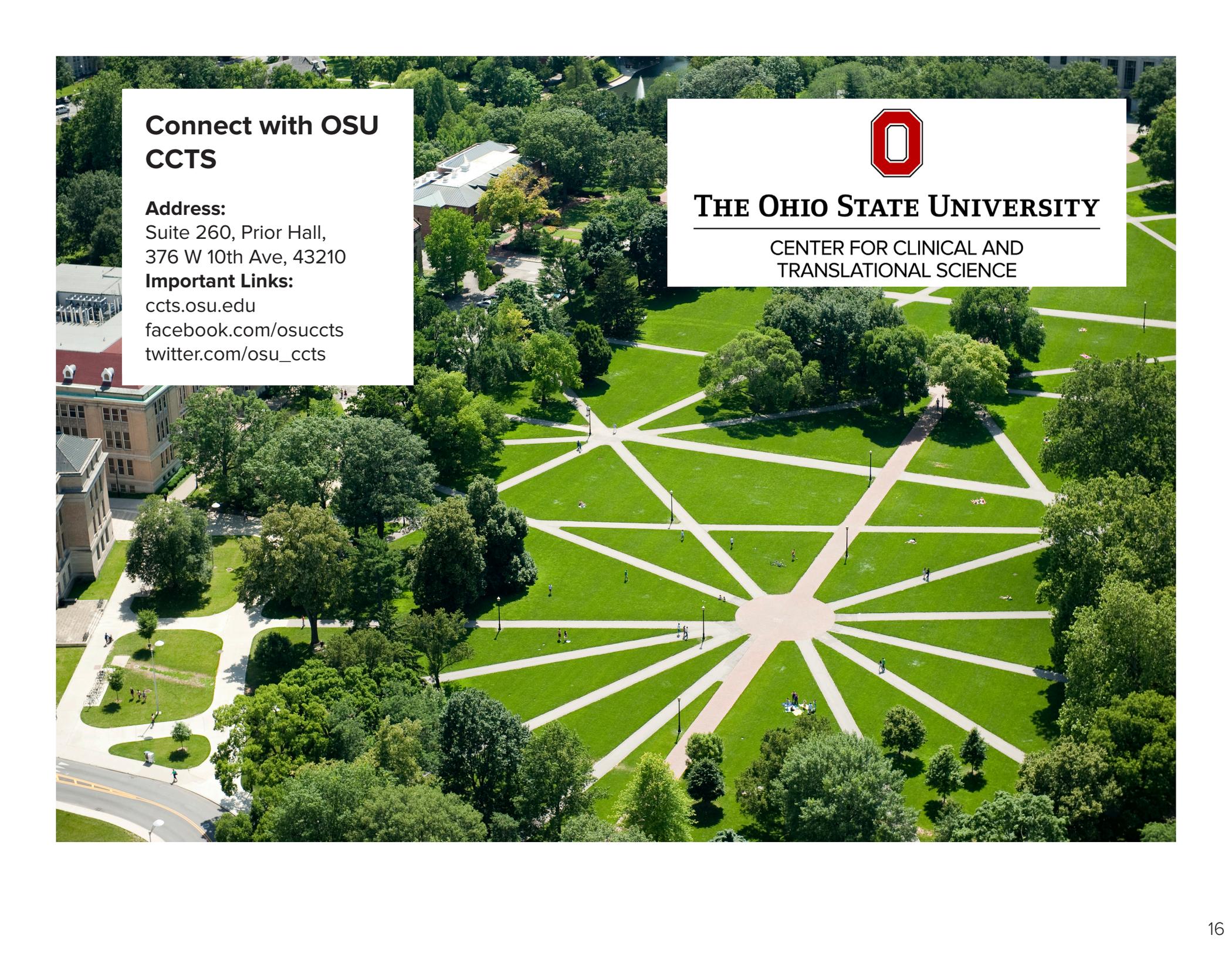
Vish Subramaniam, PhD, is a Professor and Chair of the Department of Mechanical and Aerospace Engineering and Chemical Physics Program at The Ohio State University. Dr. Subramaniam earned his B.S. and M.S. degrees from Columbia University and his PhD from Carnegie Mellon University.

Dr. Subramaniam's research is currently focused on the mechanisms of interaction between low-frequency electromagnetic

waves and tissues and cells, with applications in hindering cancer metastasis and cancer detection.

Henry Xiang, MD, MPH, PhD, is a Professor of Pediatrics at The Ohio State University College of Medicine. He is the founding Director of the Center for Pediatric Trauma Research and Research Core Director of the Center for Injury Research and Policy at Nationwide Children's Hospital.

Dr. Xiang earned an MD and a master's degree from Tongji Medical University, China. He earned a PhD from the College of Veterinary Medicine & Biomedical Sciences at Colorado State University.



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