

# OCRID NEWS

Summer 2019

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## A Message from the Director

Welcome back! This issue is dedicated to a year end wrap-up for last year, the announcement of some new items, and recognizing the achievements of our members.

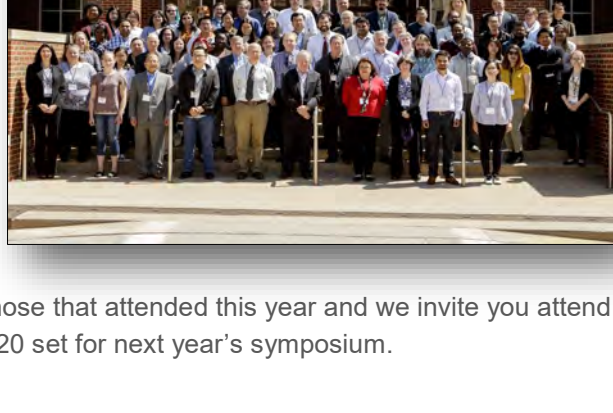
The first year of the Phase II CoBRE funding was an exciting year. OCRID investigators have secured near \$13 million new awards and published 140 papers. Particularly impressive is our project/pilot project leaders who received over 6 million new grants including three NIH R01 grants. In addition, OCRID mentor Dr. Mark Coggeshall just received an 12 million NIH U19 grant. We also had a record high attendance of this year's annual research symposium (>90) with 17 oral scientific presentations and 42 poster presentations.

As we move forward with our recharged commitment to research excellence, I wish everyone has another productive year!

Lin Liu, Ph.D.  
OCRID Director

## 6th Annual OCRID Research Symposium:

We had such a great turnout for our Symposium this year! Over 90 people came to share their research and discuss the ever evolving field of respiratory and infectious diseases. The keynote speakers this year were Dr. Rodney Tweten and Dr. Bruce Stanton. We had 4 outstanding poster winners: Biraj Kayastha OSU—Overall, Kaylea Bixler OSU—Best Undergraduate Student, Samuel Pushparaj Jeysingh OSU—Best Graduate Student, and Hang Zhao OU—Best Postdoctoral Fellow.



We would like to take this opportunity to thank all those that attended this year and we invite you attend next year! We have a tentative date of April 7th, 2020 set for next year's symposium.

For more photos click → [Here](#)

## 2019-2020 OCRID Pilot Projects:

We are excited to announce the new pilot project leaders this year. We were impressed by the diversity of applications this year and the four selected represent a vast range of focus and disciplines.

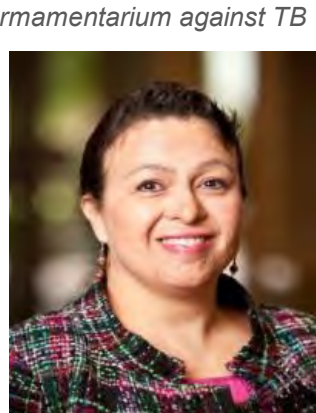
- **Earl Blewett, Ph.D.**—Department of Biochemistry and Microbiology, Center for Health Sciences—OSU Tulsa  
*Investigation & Potential Drug Targeting of Oxyester-Binding Protein (OSBP) in Viral Respiratory Disease*
- **Matthew Cabeen, Ph.D.**—Department of Microbiology and Molecular Genetics, College of Arts and Sciences—OSU Stillwater  
*Functional characterization of a lysophospholipase that influences P. aeruginosa biofilm formation*

- **Susan Kovats, Ph.D.**—Department of Arthritis and Clinical Immunology—OMRF, OKC  
*Sex differences in human group 2 innate lymphocytes in response to influenza virus*
- **Laura-Isobel McCall**—Department of Chemistry and Biochemistry, College of Arts and Sciences—OU Norman  
*Chemical cartography: a novel approach to study respiratory infections*

## 2019 Replacement Project:

As many of you know Dr. William McShan has retired this year. After an intensive review of all applications submitted for the replacement Project by External and Internal Advisory Committees, we are pleased to announce that Dr. Lucia Garcia-Contreras will be the new project leader, pending NIH review of JIT information. Dr. Garcia-Contreras will be mentored by Dr. Mark Coggeshall (OMRF) and Dr. Eric Nuernberger (John Hopkins University).

Her project entitled, *Preclinical assessment of OHet72 as a new drug in the armamentarium against TB and MOR-TB*, will focus on developing a treatment for tuberculosis (TB). The global control of TB is threatened by an increased number of multi-drug resistant TB (MDR-TB) cases and the low rates of cure achieved with current treatments. Thus, potentially useful new drugs and alternative drug delivery strategies are urgently needed. SHetA2 and OHet72 are novel anti-cancer drugs that also have significant activity against Mycobacterium tuberculosis (MTB). As an alternative administration strategy, Dr. Garcia-Contreras has developed inhalable nanocrystal formulations of SHetA2 and OHet72 for delivery to the alveolar region of the lung, the main place of MTB residence. In this project, Dr. Garcia-Contreras will use a guinea pig model of TB to test the pharmacokinetics, safety and efficacy of the inhaled treatment of OHet72.



Dr. Lucia Garcia-Contreras

## Center Achievements:

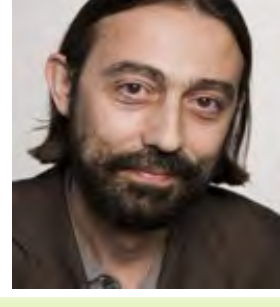
Below you find some selected achievements from our center investigators. We have made big strides this year and we wanted to call attention to just a few of the many achievements and success of our investigators.

## Adolfo Garcia-Sastre elected as a member of the National Academy of Sciences:

We would like to give a hearty congratulations to our External Advisory Committee (EAC) member Dr. Adolfo Garcia-Sastre for his election as a member of the National Academy of Sciences. Dr. Garcia-Sastre has served on the EAC since OCRID's inception.

The National Academy of Sciences recognizes achievement in science by election to membership, and—with the National Academy of Engineering and the National Academy of Medicine—provides science, engineering, and health policy advice to the federal government and other organizations.

<<[Read More Here](#)>>



Dr. Adolfo Garcia-Sastre

## OCRID Mentor Dr. Mark Coggeshall wins \$12 million for Anthrax Research

Dr. Coggeshall from OMRF and his team are trying to understand the body's response to an anthrax bacterium and find new ways to counter it. Dr. Coggeshall is the principal investigator of the U19 project that began in late 2001. His team has divined a novel way of looking at human susceptibility to not only the anthrax toxin but the outer cell wall of the bacteria.

<<[Read More Here](#)>>



Dr. Mark Coggeshall

## OCRID Director Dr. Lin Liu elected to Fellow for the APS—An effusive congratulation is

also in order for our esteemed director, Dr. Lin Liu. He was chosen to be elevated to the status of Fellow for the American Physiological Society!

<<[Read More Here](#)>>

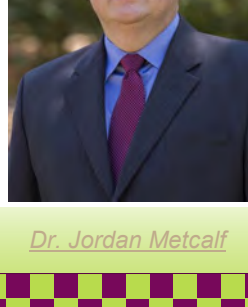


Dr. Lin Liu

## Dr. Jordan Metcalf receives Regents Award—Dr. Jordan Metcalf has received the

Regents Award from the University of Oklahoma Health Sciences center for Superior Research and Creative Activity. Dr. Metcalf serves as OCRID's Co-director. He is most deserving of this award!

<<[Read More Here](#)>>

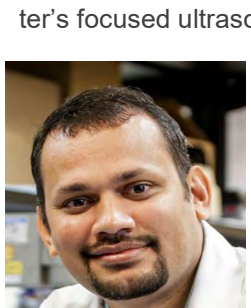


Dr. Jordan Metcalf

## Dr. Ashish Ranjan was appointed to the Focused Ultrasound Society Scientific Advisory Board—Dr. Ranjan (2014-2015 OCRID pilot project leader) leads the veterinary center's

focused ultrasound research and clinical studies. He and his colleagues have been conducting clinical trials using high intensity focused ultrasound to treat various types of cancers in dogs and cats.

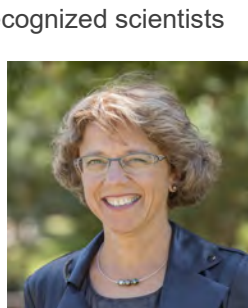
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Dr. Ashish Ranjan

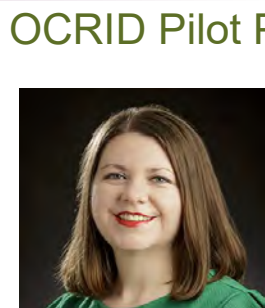
## Dr. Veronique Lacombe, Phase II project leader, Elected as a full member of the Board of the International Society of Heart and Vascular Metabolism—Among 5 Nominees; only internationally recognized scientists

in this research field are considered for this prestigious position. This three-year term will start next June in conjunction with the 17th Annual SHVM Scientific Sessions, which will be held in the Amsterdam.



Dr. Veronique Lacombe

## OCRID Pilot Project Leader Wins NSF CAREER Award



OCRID Pilot Project Leader (2016-2017), Ashlee Ford Versypt, assistant professor in Oklahoma State University's school of chemical engineering, has been awarded the National Science Foundation Faculty Early Career Development (CAREER) Program award, NSF's most prestigious award in support of early-career faculty. OSU's chemical engineering school now has five faculty members that have received this award in the past 14 years.

<<[Read More Here](#)>>

Dr. Ashlee Ford Versypt

## Special Recognition for service on Study Sections and Workshops from OCRID Project and Pilot Project Leaders in the past year:

Dr. Karen Wozniak (Microbiology and Molecular Genetics, CAS, OSU) served at the NIH NIAID SBIR/STTR Innovative Immunology Study Section

Dr. Marianna Patrauchan (Microbiology and Molecular Genetics, CAS, OSU) and Dr. Ashlee Ford Versypt (Chemical Engineering, CEAT, OSU) served on the National Science Foundation Review Panel

Dr. Veronique Lacombe (Physiological Sciences, CVHS, OSU) served as a Chair for the workshop session for the Mitochondrial Biology in Heart and Skeletal Muscle Keystone Symposia.

Dr. Kenneth Miller (Anatomy and Cell Biology, CHS-Tulsa, OSU) served on the NIH Sensory and Motor Neuroscience, Cognition and Perception Fellowship Study Section

## Grants and Publications:

We would like to recognize all the hard work our investigators put into gaining funding and producing work for publications this year.

This year our investigators obtained new awards totaling [\\$12.9 million](#) and published over [140 articles](#).

Project and Pilot Project leaders were awarded over \$6 million (Below are those granted by NIH)

- **Dr. Adam Duerfeldt (OU Norman)**, NIH P20GM103640, Structure, Function, and Therapeutic Potential of Clostridium Difficile Caseolytic Protease P - 06/01/2019-5/31/2020 \$1,050,835 (Subproject PI)
- **Dr. Heather Gappa-Fahlenkamp (OSU)**, NIH R01EB025596, A 3D Human Tissue-Engineered Lung Model to Study Immune Responses to Respiratory Syncytial Virus, 9/20/2018-6/30/2022 \$1,130,212 (Total \$2,260,424)
- **Dr. Shitao Li (OSU)**, NIH R01AI141399, Role of FIP200 in RIG-I-Mediated Innate Immunity, 11/15/2018-10/31/2023 \$1,647,220
- **Dr. Ashish Ranjan (OSU)**, NIH R37CA239150, Novel Focused Ultrasound Enhanced Calreticulin-Nanoparticle for Immune Primed Melanoma Immunotherapy, 06/04/2019-05/31/2026 \$1,497,360 (for the first 5 years)

## Upcoming OCRID Activities:

We are very excited to begin our OCRID activities once classes start back up again. The first of our seminars will be on September 18, 2019 with Dr. Andrew Mehle hosted by Dr. Lin Liu.

We have outstanding speakers lined up: Dr. Andrew Mehle, U Wisconsin-Madison, Dr. Jennifer Bomberger, U Pittsburgh, Dr. Ching-Long Lin, U Iowa, Dr. Carsten Ehrhardt, U Dublin, Dr. Navdeep Chandel from Northwestern, and Dr. Zea Barak, U Southern California.

## Upcoming Grant Deadlines:

NIH Standard Submissions <https://www.nlm.nih.gov/ep/Deadlines.html>

- ⇒ **R01: Oct 5, Feb 5, June 5**
- ⇒ **R21: Oct 16, March 16, June 16**
- ⇒ **R15: Oct 25, Feb 25, June 25**

Cystic Fibrosis Foundation Infection Research Initiative Award

Letter of intent (LOI): September 27, 2019; Full application: February 10, 2020

More information → [Here](#)

## Upcoming Grant Opportunities:

- ⇒ [Bioengineering Research Grants \(BRG\) \(R01 Clinical Trial Not Allowed\)](#) - **PAR-19-158**
- ⇒ [Novel RNAs in Virology \(including HIV\) and Immune Regulation: Basic Science and Therapeutic Discovery \(R21 Clinical Trial Not Allowed\)](#) - **PA-19-237**
- ⇒ [Research Projects to Improve the Predictive Value of Animal Models in Recapitulating Human Immunity to Influenza Infection and Vaccination \(R21 Clinical Trial Not Allowed\)](#) - **PAR-19-247**
- ⇒ [Research Projects to Improve the Predictive Value of Animal Models in Recapitulating Human Immunity to Influenza Infection and Vaccination \(R01 Clinical Trial Not Allowed\)](#) - **PAR-19-248**
- ⇒ [Microbial-based Cancer Therapy - Bugs as Drugs \(R21 Clinical Trial Not Allowed\)](#) - **PAR-19-194**
- ⇒ [Microbial-based Cancer Therapy -Bugs as Drugs \(R01 Clinical Trial Not Allowed\)](#) - **PAR-19-193**

## Postdoctoral Research Associate Training (PRAT) Program

The NIGMS Postdoctoral Research Associate Training (PRAT) Program's overarching goal is to provide high quality postdoctoral research training in the basic biomedical sciences to a diverse group of post-doctoral fellows in NIH Intramural research laboratories, and to prepare them for leadership positions in biomedical careers. Research projects proposed should focus on areas within the NIGMS mission, which include but are not limited to biological chemistry, biophysics, bioinformatics, cellular and molecular biology, computational biosciences, developmental biology, genetics, immunology, neuroscience, pharmacology, physiology, and technology development. In addition to the laboratory experience, the PRAT program provides a structured training environment with extensive career and professional development, mentoring, and networking opportunities planned and supported by the program.

More information → [Here](#)