

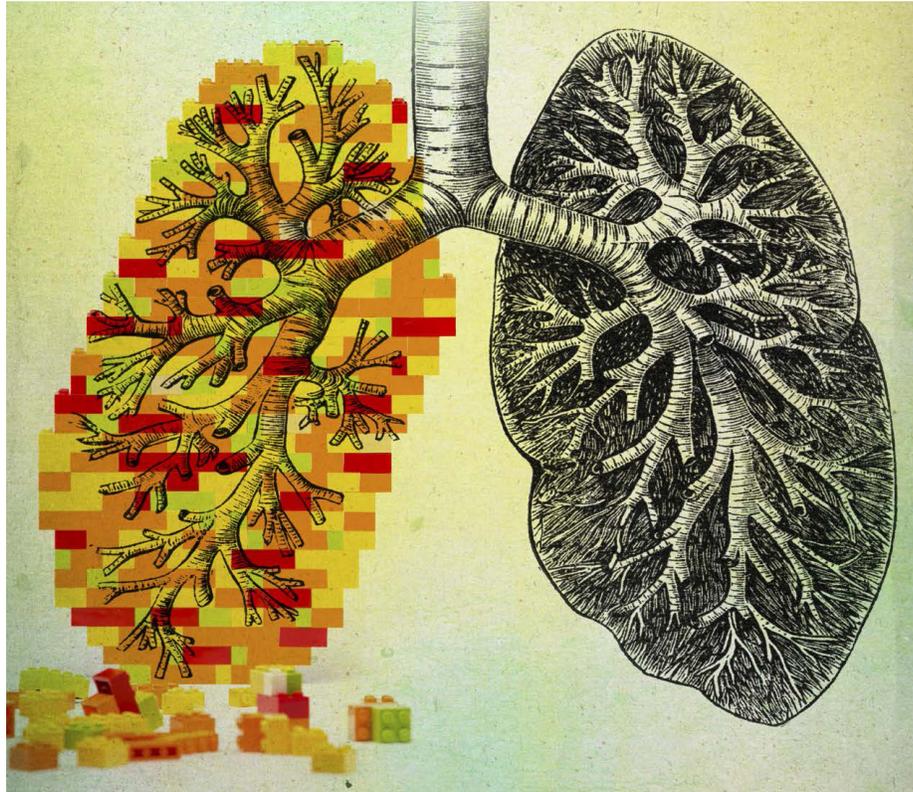


Respiratory and Infectious Diseases

Building and sustaining a research and training center in respiratory and infectious diseases

Respiratory infections have a greater global burden of disease than any other condition, including well known and intensely studied diseases such as AIDS and cancers. Influenza infections are recognized as an important public health priority in the U.S. responsible for 200,000 hospitalizations and 36,000 deaths each year. Furthermore, respiratory syncytial virus is responsible for the hospitalization of more than 80,000 children each year.

Through an \$11.3 million CoBRE grant from the National Institutes of Health, the Oklahoma Center for Respiratory and Infectious Diseases (OCRID) was established in 2013 to help address these national health issues. OCRID is a major instrument for expanding respiratory and infectious disease research in Oklahoma. This multi-institutional center has administrative offices housed in the Center for Veterinary Health Sciences at Oklahoma State University.



An illustration used in the OSU research magazine Vanguard accompanying an article about the Oklahoma Center for Respiratory and Infectious Diseases.

The investigators within OCRID come from major research institutions across the state of Oklahoma including four colleges on the OSU Stillwater campus, one college at the OSU-Tulsa campus, three colleges within the University of Oklahoma Health Sciences Center in Oklahoma City, one college at the University of Oklahoma Norman campus, and an independent research institute, the Oklahoma Medical Research Foundation in Oklahoma City.

OCRID investigators actively engage in critical research on infectious diseases of the respiratory

system with a focus on influenza virus, respiratory syncytial virus and bacterial infections. The interdisciplinary projects in OCRID cover disease pathogenesis, therapeutics, molecular mechanisms and bioengineering.

The Need

OCRID investigators' research laboratories are dispersed across the state on different campuses, which creates a significant geographical barrier

for collaborative research. There is a critical need for an interdisciplinary research building in order to bring more OCRID investigators under one roof in an open laboratory format that fosters collaborative interactions from different disciplines. Initial funding from the NIH helped establish OCRID. Sustaining this Center will require additional funding to:

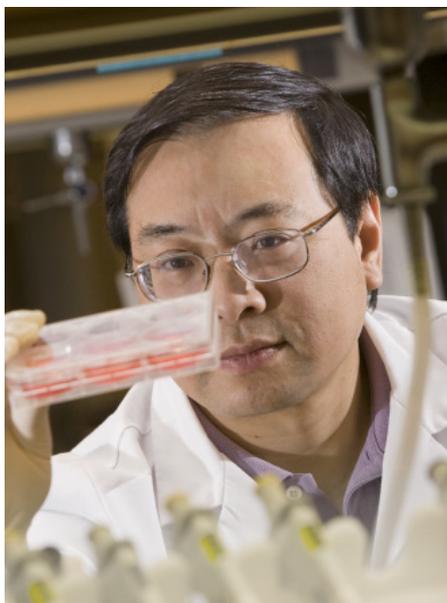
- Build an interdisciplinary research building
- Improve research infrastructure and gather state-of-the-art

research instrumentation

- Support research projects with novel high risk, high impact ideas that would unlikely be funded through traditional funding mechanisms
- Provide training for the next generation of scientists in respiratory and infectious disease research, including postdoctoral fellows, graduate students and undergraduate students

Goals

OCRID is unified by a commitment to respiratory and infectious diseases research and training. Our mission is to cultivate excellence through deliberate faculty mentorship, robust interdisciplinary collaboration, innovative research, and a dynamic bench-to bedside-to-marketplace approach. The specific goals of OCRID are:



Lin Liu, Ph.D.

OCRID Program Director

Center for Veterinary Health Sciences

Oklahoma State University

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- Create a critical mass of multi-disciplinary investigators in respiratory and infectious diseases by developing a mentoring program to guide promising junior investigators in becoming independent extramurally funded investigators, recruiting new faculty members into the Center, and administering a Pilot Project Grant program to attract additional investigators into the Center's thematic area of research.
- Build infrastructure to support research efforts of Center investigators by developing scientific research core facilities.
- Foster inter-institutional collaborations in Oklahoma by promoting scientific interactions through seminar series, work-in-progress meetings, journal club meetings and an annual retreat.

Our ultimate goal is to develop OCRID as a national and international leader in respiratory and infectious disease research.

For More Information

The Oklahoma Center for Respiratory and Infectious Diseases: <https://ocrid.okstate.edu/>

Innovative research making a difference

Lung infection from influenza is a leading cause of disease and death worldwide, says the World Health Organization. One OCRID researcher is helping understand the respiratory disease by creating a lung model.

“The goal of my project is to create a tissue-engineered lung model that can be used to investigate how one's immune system responds to infectious agents,” says Dr. Heather Fahlenkamp, an OSU professor of chemical engineering.

“The results of this project will have an important impact because the new information on the immune response to influenza has great potential to provide new targets for preventive and therapeutic interventions,” she says.

(courtesy *Impact* magazine, OSU College of Engineering, Architecture and Technology)