Patience Pays Off

LIU WINS $11.3 MILLION GRANT TO ESTABLISH RESPIRATORY DISEASE CENTER

It was worth the wait for **Lin Liu**, Ph.D.

The Regents Professor, Lundberg-Kienlen Professor in Biomedical Research and director of the Lung Biology and Toxicology Lab in the Department of Physiological Sciences at OSU's Center for Veterinary Health Sciences, submitted an application to the National Institutes of Health's **Centers of Biomedical Research Excellence (CoBRE)** in early 2012 for a grant to set up a respiratory disease center.

And in June 2013, the answer came: NIH approved a five-year grant totaling $11.3 million. It is the first CoBRE grant for OSU.

"It was a long time coming and we are excited to be able to move forward," says Liu, who has a Ph.D. in biochemistry from the Shanghai Institute of Biochemistry, Chinese Academy of Sciences.

Institutions participating in the planned center include four colleges from Oklahoma State University (Arts and Sciences, Agricultural Sciences and Natural Resources, Center for Veterinary Health Sciences, and Engineering, Architecture and Technology), three colleges from the University of Oklahoma Health Sciences Center (Medicine, Pharmacy, and Arts and Sciences) and the Oklahoma Medical Research Foundation.

"The objective is to build up a critical mass of multidisciplinary investigators and research infrastructure to ultimately achieve research excellence in respiratory and infectious diseases," says Liu. **"Respiratory infectious disease is the top global burden of disease. It is a public health priority. The discoveries that we will be able to research with this funding will address this need."**

"Dr. Liu's leadership has shown what can be done when institutions in Oklahoma collaborate," says Stephen McKeever, OSU vice president for research and technology transfer. "The National Institutes of Health recognizes the excellence of the research into infectious diseases being conducted in Oklahoma and this award will promote significant advances in several areas."

"Each project has mentors, secondary mentors and external consultants," says Liu. "We have core groups of experts to handle administrative duties, immunopathology issues, and best practices for animal models and molecular biology. The investigators from the participating institutions are top in their fields. We finally have the NIH funding to do exciting and meaningful work that will have a big impact on respiratory infectious diseases research programs throughout Oklahoma, not just at the veterinary center."

The plan includes an internal advisory committee of five members and an external advisory committee, which is yet to be named. Reserve project leaders are ready to step in if needed to keep research projects moving forward.

In addition, Liu has won grants for two more studies.

An **"Interdisciplinary Program in Regenerative Medicine at OSU"** grant was approved by the OSU Planning Grants for Establishing Creative Interdisciplinary Programs review committee. The program involves 19 faculty members from 11 departments in five colleges. **William Picking** (head of the Department of Microbiology and Molecular Genetics, College of Arts and Sciences) and **Kenneth Miller** (chair of the Department of Anatomy and Cell Biology, Center for Health Sciences) serve as co-PIs. This grant represents an important step in building an externally funded interdisciplinary program on regenerative medicine.

Liu is also the recipient of a National Institutes of Health grant funded by the National Heart, Lung and Blood Institute. This $1.4 million project entitled, "miR-101 Control of Pulmonary Fibrosis," aims to understand the regulation of the signaling pathways involved in fibroblast proliferation and activation in idiopathic pulmonary fibrosis. The study will help advance the development of effective therapies for IPF patients. Currently, lung transplantation is the only effective therapy against this lethal disease.

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The four projects that fall under the umbrella of the Oklahoma Center for Respiratory and Infectious Diseases are:

- Development of a respiratory syncytial virus vaccine by molecular manipulation of the viral matrix protein under project leader Tom Oomens, Department of Veterinary Pathobiology, Center for Veterinary Health Sciences, OSU
- A novel tissue-equivalent respiratory model to study airway reactivity to infectious agents under project leader Heather Fahlenkamp, School of Chemical Engineering, College of Engineering, Architecture and Technology, OSU
- Control of lung inflammation by a TLR4-interacting SP-A-derived peptide under project leader Shanjana Awasthi, Department of Pharmaceutical Sciences, College of Pharmacy, OUHSC
- Neutrophil-mediated acute lung injury in influenza virus pneumonia under project leader Telugu Narasaraju, Department of Physiological Sciences, Center for Veterinary Health Sciences, OSU

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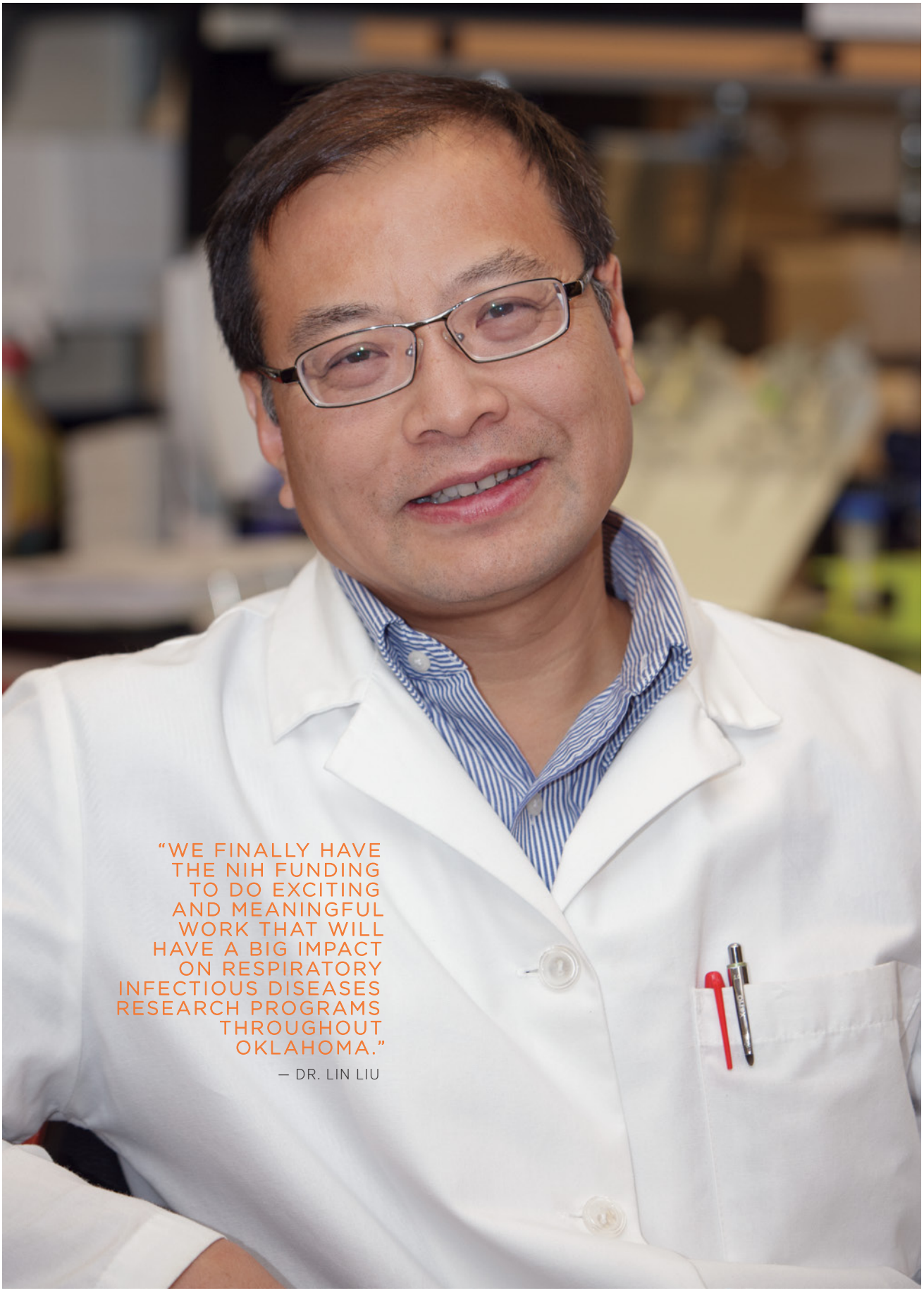

"WE FINALLY HAVE THE NIH FUNDING TO DO EXCITING AND MEANINGFUL WORK THAT WILL HAVE A BIG IMPACT ON RESPIRATORY INFECTIOUS DISEASES RESEARCH PROGRAMS THROUGHOUT OKLAHOMA."

— DR. LIN LIU