

MEDIA CONTACT: Stephanie G. Seay
Communications
Oak Ridge National Laboratory
(865) 576-9894; seaysg@ornl.gov

ORNL welcomes Innovation Crossroads entrepreneurial research fellows

OAK RIDGE, Tenn., May 18, 2017—Oak Ridge National Laboratory today welcomed the first cohort of innovators to join Innovation Crossroads, the Southeast region's first entrepreneurial research and development program based at a U.S. Department of Energy national laboratory.

Innovation Crossroads, announced in the fall of 2016, is one of DOE's Lab-Embedded Entrepreneurship Programs that embed top technical talent within national labs as entrepreneurial research fellows with the express goal of subsequently launching businesses. The program's dual focus on early-stage R&D and entrepreneurial development enables the innovators, selected through an open merit-based process, to transform their breakthrough ideas into U.S.-based companies. The two-year fellowship provides a cost-of-living stipend, comprehensive business development plan assistance, and up to \$350,000 to use on collaborative R&D at ORNL, the nation's largest science and energy laboratory.

The Innovation Crossroads entrepreneurial research fellows will have access to world-class scientists and DOE facilities at ORNL, including the Manufacturing Demonstration Facility, the National Transportation Research Center, the Oak Ridge Leadership Computing Facility, and the Spallation Neutron Source. Through the program and partnerships with mentor organizations in the Southeast, fellows will also receive assistance with developing business strategies, conducting market research, and finding long-term financing and potential commercial partners.

The first cohort of Innovation Crossroads fellows include: *

Anna Douglas: Carbon-Negative Manufacturing of Nanotubes

Anna Douglas is developing a process that utilizes carbon dioxide, potentially from captured greenhouse gases, as feedstock to produce carbon nanotubes at significantly lower cost. She is a doctoral candidate in interdisciplinary materials science at Vanderbilt University and team lead for SkyNano LLC.

Matthew Ellis and Samuel Shaner: Advanced Nuclear Reactor Technology

Matthew Ellis and Samuel Shaner are working to develop an advanced nuclear power plant reactor using licensed, low-enriched uranium that relies on liquid metal as a coolant, resulting in a safer, more efficient reactor with the potential for faster licensing and installation. They are doctoral candidates in nuclear science and engineering at the Massachusetts Institute of Technology and co-founders of Yellowstone Energy.

Mitchell Ishmael: Active Energy Storage

Mitchell Ishmael's novel solution for energy storage aims to utilize low-grade waste heat by storing it as thermal energy in tanks, resulting in a cheaper alternative to providing backup power than standby generators or batteries. Ishmael is a materials science and engineering doctoral candidate at Cornell University.

Ming Qi: Hydrogen Peroxide Electrolyzer and Zinc Peroxide Battery

Ming Qi is developing a new onsite, modular production process for hydrogen peroxide that would replace expensive centralized chemical plants, benefiting industries such as paper and pulp, textiles, and water purification. The technology could be used in two more applications: improving the chlor-alkali process, and advancing the development of a high energy-density zinc peroxide battery. Qi holds a doctorate in chemical engineering from the University of Tennessee, Knoxville, and is co-founder and chief executive officer of Peroxygen Systems, Inc.

“We are delighted to welcome the first cohort of entrepreneurs to Innovation Crossroads,” said Thomas Zacharia, deputy for science and technology at ORNL. “We look forward to the new ideas and enthusiasm that they are bringing to the Laboratory, and we are committed to supporting them in realizing their goals for transforming the nation’s energy marketplace.”

Innovation Crossroads is one of three DOE Lab-Embedded Entrepreneurship Programs. These programs, funded by the Advanced Manufacturing Office (AMO) and co-managed with the Technology-to-Market program within DOE's Office of Energy Efficiency and Renewable Energy (EERE), address critical gaps in human capital by providing fellowships and two-year institutional homes where talented innovators become first-time entrepreneurs.

“Through Innovation Crossroads and our other Lab-Embedded-Entrepreneurship Programs, we are leveraging our investments in our national labs to help promising researchers turn their discoveries into viable products and American businesses,” said Mark Johnson, director of AMO. “We are working to ensure that advanced technology innovation will continue to drive economic growth and job creation in America.”

Innovation Crossroads has selected LaunchTN and the Tennessee Advanced Energy Business Council as ecosystem partners for the fellows. These organizations are currently launching the Tennessee Energy Mentors Network and will provide access to experienced energy professionals and other partners from across the state to help the Innovation Crossroads participants.

More details can be found at www.innovationcrossroads.ornl.gov.

UT-Battelle manages ORNL for the DOE's Office of Science. The DOE Office of Science is the single largest supporter of basic research in the physical sciences in the United States and is working to address some of the most pressing challenges of our time. For more information, visit science.energy.gov.

DOE's Office of Energy Efficiency and Renewable Energy accelerates research and development of energy efficiency and renewable energy technologies and market-based solutions that strengthen U.S. energy security, environmental quality, and economic vitality.

EERE's [Advanced Manufacturing Office \(AMO\)](#) supports early stage applied research and development of new materials, information, and processes that improve American manufacturing's energy efficiency, as well as platform technologies for manufacturing clean energy products. AMO works closely with EERE's [Technology-to-Market Program](#) on lowering barriers to market exploration of competitive clean energy technologies.



ORNL welcomed its first group of research fellows to join Innovation Crossroads, an entrepreneurial research and development program based at the lab. From left, Matthew Ellis and Samuel Shaner of Yellowstone Energy; Mark Johnson, director of DOE's Advanced Manufacturing Office; Johanna Wolfson, Technology-to-Market director in DOE's Office of Energy Efficiency and Renewable Energy; Ming Qi of Peroxygen Systems; and Mitchell Ishmael of Active Energy Systems. Not pictured: Anna Douglas of SkyNano Technologies.