"Having the opportunity to spend two years at a national lab is phenomenal—but getting to do so while working on a startup company is a truly unique experience."

Anna Douglas,
Co-founder, SkyNano

Innovation Crossroads

Starting new energy-related technology companies is a real challenge, and the number of new energy startups has declined significantly over the past decade. Innovation Crossroads is a new program supported by the US Department of Energy's (DOE's) Advanced Manufacturing Office that leverages Oak Ridge National Laboratory's (ORNL's) unique scientific resources and capabilities and connects the nation's top innovators with experts, mentors, and networks in technology-related fields to take world-changing ideas from research and development (R&D) to the marketplace.

INNOVATION CROSSROADS

OAK RIDGE NATIONAL LABORATORY

Empowering Aspiring Energy Entrepreneurs

Through an annual national call, up to five entrepreneurs are selected to join the program each year. Participants receive a fellowship that covers living costs and benefits, a travel stipend for up to 2 years, a substantial grant to use on collaborative R&D at ORNL, and comprehensive mentoring assistance to build a sustainable business model.

By embedding the next generation of top technical talent within ORNL, Innovation Crossroads positions entrepreneurial researchers to address fundamental energy and manufacturing challenges identified by industry.

National Lab Expertise—ORNL is DOE's largest science and energy laboratory and home to some of the nation's most significant user facilities. Because Innovation Crossroads innovators work within ORNL, they have access to essential tools and resources immediately. This access reduces cost, risk, and R&D time, allowing researchers to focus on creating the next generation of game-changing energy technologies.

Multidisciplinary Collaboration—Innovation Crossroads participants work with ORNL's renowned scientists and engineers across many disciplines, including biological and environmental sciences, advanced materials, neutron sciences, nuclear science and engineering, and high-performance computing, providing a platform for collaborative research.

- Up to two-year stipend with health and travel benefits
- Substantial R&D funding provided by DOE and ORNL
- Comprehensive business mentoring services
- Nine innovators in Cohort 1 and 2

Business Mentoring Assistance—Through partnerships with Launch Tennessee, innovators have opportunities to participate in the Tennessee Energy Mentor Network. They are also supported by interns from the University of Tennessee's Bredesen Center, who assist with market research and customer discovery. Finally, each innovator establishes his/her own advisory board and is introduced regularly by Innovation Crossroads staff to potential customers and investors.

Empowering Leaders, Launching Businesses

The first cohort of Innovation Crossroads fellows formed in May 2017.

Anna Douglas | *Carbon-Negative Manufacturing of Nanotubes*

Anna Douglas is developing a process that uses carbon dioxide, potentially from captured greenhouse gases, as a feedstock to produce carbon nanotubes at significantly lower cost.

Matthew Ellis and Samuel Shaner | *Advanced Nuclear Reactor Technology*

Matthew Ellis and Samuel Shaner are working to develop an advanced nuclear reactor using licensed low-enriched uranium with liquid metal as a coolant, resulting in a safer, more efficient reactor with the potential for faster licensing and installation.

Mitchell Ishmael | *Active Energy Storage*

Mitchell Ishmael's novel solution for energy storage recycles 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.

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