



Innovation Crossroads

Starting new energy-related technology companies can be challenging, and that's one reason the number of energy startups has declined significantly over the past decade. Innovation Crossroads is a program supported by the U.S. Department of Energy's (DOE) Advanced Materials and Manufacturing Technologies Office (AMMTO), Building Technologies Office (BTO), Office of Electricity, Office of Science Advanced Scientific Computing Research program, and the Tennessee Valley Authority (TVA) that leverages Oak Ridge National Laboratory's (ORNL) 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.

Empowering Aspiring Entrepreneurs

Through an annual national call, top entrepreneurial-minded innovators are selected to join this 2-year program. Participants receive a fellowship that covers living costs and benefits, a travel stipend, a substantial grant for collaborative R&D work at ORNL, and comprehensive 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, manufacturing, and grid challenges identified by industry.

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

Business mentoring assistance—Innovation Crossroads has a growing network of partners who offer a unique entrepreneurial and business mentoring experience. The program facilitates connections with industry executives, investors, entrepreneurs, and other experts from academia, government, and finance who can serve as advisors and mentors to help develop priorities, mature skills, provide guidance, and make connections to their broader networks.



“Working with Oak Ridge National Laboratory researchers is an amazing opportunity. They have helped us expand our additive manufacturing process’ capabilities, increase application use cases, and will ultimately lead to digital manufacturing without any iteration. The top-notch mentorship and training have helped us understand fundraising and clarify our pitch both to potential investors and customers.”

—Skuld Founder and CEO **Sarah Jordan**

Empowering Leaders, Igniting Innovation, Launching Businesses

Innovation Crossroads' impact is far reaching as it enters its seventh year of embedding entrepreneurs at ORNL. The program has supported 38 start-ups that have raised \$93.6 million in grants and awards, created over 239 jobs, raised \$106.6 million in venture funding, and have more than \$11.3 million in sales revenue.



Cohort 2023

Manas Pathak
EarthEn

Daniel Lee
Perseus Materials

Marouane Salhi
Qubit Engineering

Md "Arif" Arifuzzaman
Re-Du

Sarah Jordan
Skuld

Ryan Spencer
ThermaMatrix

Shantonio Birch
ThermoVerse

Cohort 2022

Bianca Bailey
Agriwater

Rajan Kumar
Ateios Systems

Kim Tutin
Captis Aire

Anca Timofte
Holocene Climate

Alex Stiles
Vitriform3D

Cohorts 2017-2021 Alumni

Joe Fortenbaugh
Actinic

Shuchi "SK" Khurana
Addiguru

William Fitzhugh
American Nanotechnologies

Thomas Foulkes
AquaQuant Laboratories

Justin Nussbaum
Ascend Manufacturing

Danielle Castley
Becq

Caleb Alexander
DayLyte Batteries

Alex Lewis
Electro-Active Technologies

Hicham Ghossein
Endeavor Composites

Donald DeRosa
Eonix

Philip Stuckey
FC Renew

Jesse Thornburg
Grid Fruit

Tommy Gibbons
Hempitecture

Shane McMahan
Lux Semiconductors

Jesse Claypoole
MantaPoole Technologies

Trevor McQueen
Neptune Fluid Flow Systems

Megan O'Connor
Nth Cycle

Renee Carder
PixelEXX Systems

Leila Safavi
Purist

Erica Grant
Quantal Security

Forrest Shriver
Sentinel Devices

Mitchell Ishmael
Shift Thermal

Anna Douglas
SkyNano Technologies

Matthew Smith
TCPoly

Sam Evans
Unbound Water Technologies

Matthew Ellis and Samuel Shaner
Yellowstone Energy



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