

Tips for working with national laboratories to accelerate your business growth

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Overview

- Brief introduction to Oak Ridge National Laboratory
- Partnering Programs
- Success Story
- Small Business Opportunities at ORNL



The national laboratories of the U.S. Department of Energy constitute a network for discovery and innovation





Oak Ridge National Laboratory evolved from the Manhattan Project

Chemical processing techniques were developed to separate plutonium from irradiated fuel

The Clinton Pile was the world's

first continuously operated nuclear reactor

CAK RIDGE

Today, ORNL is a leading science and energy laboratory





ORNL's distinctive facilities bring thousands of R&D partners to Tennessee each year







There are a variety of mechanisms for working with the National Laboratories







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Technology Transfer Mechanisms at DOE Facilities

Agreement	Use	Funding	Subject Inventions	Generated Data	U.S. Competitiveness	Cost	Highlights	
Cooperative Research and Development Agreement (CRADA)	Collaborative research between DOE Labs and public and/or private entities for the mutual benefit of the parties	Private and/or Federal funds	Lab and Participant may elect their own inventions and Participant has right to negotiate exclusive license to Lab inventions	Protected for up to 5 years	Products embodying IP resulting from CRADA shall be manufactured substantially in the U.S.	Lab and Participant may share costs or Participant pays 100% funds-in	 ✓ Collaborative research ✓ 5 year data protection ✓ Designed for multiparty collaborative research 	
Strategic Partnership Project (WFO)	Work for businesses and other non-federal entities using highly specialized or unique DOE facilities, services or technical expertise	Private funds	Sponsor may elect title to Subject Inventions ¹	Protected as Sponsor's proprietary data w/limited exceptions ^{1,2,3}	U.S. Preference: Sponsor agrees not to grant any party exclusive right to use or sell products embodying Subject Inventions in the U.S. unless products are manufactured substantially in the U.S.	Sponsor pays full cost recovery	 ✓ Sponsor typically retains right to elect title to subject inventions ✓ Generated data treated as proprietary ✓ Option for limited Gov. R&D license³ 	
		Federal funds (e.g. grantee)	Lab may elect title to Subject Inventions of the Lab	Unlimited Gov. rights	U.S. Preference (see above)	Sponsor pays full cost recovery	 ✓ Access to unique facilities and expertise using federal funds 	
Agreements for Commercializing Technology (ACT)	Work for businesses and other non-federal entities using highly specialized or unique DOE facilities, services or technical expertise	Private funds	Initial title to the designated IP Lead. (ACT Participant or Lab Contractor)	Protected as proprietary data w/limited exceptions ^{1,2,3}	U.S. Preference (see above)	Participant pays full cost recovery <u>plus</u> additional negotiated compensation to the Contractor	 ✓ Flexible terms for IP, indemnity, adv. payment ✓ Optional performance guarantee ✓ Negotiable IP terms ✓ Option for limited Gov. R&D license³ 	
Proprietary User Agreement	User may access designated facilities to conduct its own proprietary research	Private funds	User may elect title to its Subject Inventions	User may protect as proprietary	n/a	User pays approved user rate	 ✓ Generated data treated as proprietary ✓ Merit based access to unique facilities 	
Non-Proprietary User Agreement	Non-proprietary research at designated facilities	n/a	Lab and User may elect their own Subject Inventions	Unlimited Gov. Rights	U.S. Preference (see above)	Each party covers own cost	 ✓ Merit based access to unique facilities 	



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¹ Certain exceptions or restrictions may apply (e.g. foreign WFO Sponsors may be granted the right to elect title to inventions and receive proprietary data protection but only after the approval of DOE field patent counsel and concurrence from the cognizant DOE program office).² Proprietary data protection may not be available at all facilities. ³ If the limited Gov. R&D license is utilized, data protection will be limited to 5 years.

Tips for working with the labs

- If at all possible accept standard agreement terms
 - Deviations require DOE approval
- When including a DOE lab on an SBIR proposal, DOE must approve the lab portion of the SOW
 - Please provide adequate time (~60 days) for the review/approval process
- Fully define and agree upon the final Statement of Work before beginning the CRADA/SPP/ACT approval process
 - Modifications may require a process re-start
- DOE STTRs require an IP Management Plan as part of the pre-award process - work cannot start without it
- Ask the lab PI and contracting office for periodic status updates



ORNL Technology Innovation Program (TIP)



- Competitively select 4-5 promising technologies with near-term potential for commercial impact
- Invest ~\$1M in R&D to de-risk those technologies
 - Bench top demonstration
 - First steps toward scale-up
 - Data generation to enable prospective partners to make informed licensing decisions
- Aggressively identify and engage with a pool of high quality prospective licensees
- Execute licenses
- Projects that result in licenses are eligible to compete for Year 2 funding to ensure a clean "hand off"



The objectives for TIP are to mature promising technologies; to facilitate license agreements with high quality, motivated commercial partners; and help those partners succeed



CROSSROADS

COHORT 3 APPLICATIONS OPENING SEPTEMBER 6th TO LEARN MORE, PLEASE VISIT: INNOVATIONCROSSROADS.ORNL.GOV

Program

An early stage entrepreneurial fellowship program at Oak Ridge National Laboratory sponsored by the Department of Energy's Advanced Manufacturing Office

Important Dates

- September 6, 2018 Applications Open
- October 29, 2018 Applications Close
- May 2019 Cohort 3 Begins

Information Sessions

- August 9, 2018 Informational Webinar
- September 6, 2018 Informational Webinar
- October 4, 2018 Informational Webinar



Anna Douglas SkyNano Technologies

OAK RIDGE



Samuel Shaner & Matthew Ellis Yellowstone Energy

Eligibility Requirements

- Must have PhD or equivalent experience
- Must be focused on energy or manufacturing innovation
- Must leverage ORNL R&D capabilities and have an impact on Department of Energy missions
- Must be willing to relocate to the Knoxville-Oak Ridge area
- Must be US citizen or lawful permanent resident at time of application

Benefits

- Fellowship stipend for up to two years, including travel and health benefits
- R&D funding support to be used in collaboration with ORNL researchers
- Business mentorship, entrepreneurial training, and introductions to potential customers, partners, and investors



Don DeRosa Eonix



Shane McMahon Lux Semiconductors



Justin Nussbaum Ascend Manufacturing



Nth Cycle



Matt Smith TCPoly



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Michell Ishmael Active Energy

Post-license support

- License signing ceremonies and press releases
- Hosted investor visits
- Access to technical team
- Technology Assistance Program funding
- Rapid response to due diligence requests
- Flexibility in renegotiating agreements
- R&D 100 and FLC Awards





Success Story: Solid Power

Recent News



December 18, 2017 Solid Power, BMW partner to develop next generation EV batteries



September 13, 2017 A123 Systems invests in solid-state battery technology with Solid Power

November 7, 2017



Solid Power Named 2017 Breakout Cleantech Company of the Year by Colorado Cleantech Industries Association

Collaboration with ORNL

Aug 2014 ORNL technology selected for inclusion in DOE SBIR call (Technology Transfer Opportunities: Basic Energy Sciences) 2015 DOE Phase I SBIR Grant Awarded to Solid Power Mar 2015 Option Agreement executed Mar 2015 Non-Federal SPP agreement to support SBIR project begins Oct 2015 Exclusive License Agreement executed 2016 DOE Phase II SBIR Grant Awarded to Solid Power



Solid Power: Other Details





- Established in 2012 as spinout company from the University of Colorado Boulder
- ARPA-E Project Jan 2015-June 2017
- Recently moved to a new 20,000 square foot facility in Louisville, CO







What can we learn?

- Aggressively pursue multiple funding opportunities (DOE, DoD, NSF, NASA)
- Leverage DOE Technology Transfer Opportunities in SBIR calls
 - Opportunity to leverage federal research projects to build IP portfolio
 - Follow-on collaboration opportunities likely
- NF-SPPs (and CRADAs and ACTs) allow companies to leverage DOE's investment in R&D infrastructure and expertise
- "Overnight" success stories generally take years to happen



ORNL Business Opportunities

<u>https://smallbusiness.ornl.go</u>



- R&D
- Laboratory equipment
- Engineering services



SMALL BUSINESS PROGRAMS OFFICE

	Details				
Construction: Task Order #8	ORNL's Strategic Partner Services (SPS) – McCarthy Building Companies, Inc. – Task Order to Construct the new Leadership Imaging Facility (LIF) at ORNL Details	No	<\$4.2M	Jul-18	Aug-18
Industrial Equipment	PHTS Filter Booster Pump Details	No	<\$500K	Dec-17	May-18
Construction: Task Order #9	ORNL's Strategic Partner Services (SPS) – McCarthy Building Companies, Inc. – Bldg. 4500N & 45005 Elevators Installations Details	No	<600K	Feb-18	Apr-18
Manufacturing	Pipe Supports: Custom Build with Modified Cuts Details	No	<\$2M	Jul 1-18	Dec 31- 18
Computer Equipment	Request for Information – DOE Office of Science (DOE SC) Distributed Archival Storage System (RFI–DASS–032818) Details	No	TBD	TBD	TBD
Professional and Staffing Services	CAD Technician Support Details	No	<\$1M	Apr-18	May-18



Small Business Outreach

DEPARTMENT OF ENERGY HUBZONE Small Business Outreach Event

at Oak Ridge National Laboratory

AUGUST 23, 2018 8:00 a.m. - 3:00 p.m.

ORNL Conference Center, Building 5200 • Oak Ridge, Tennessee

Registration is now open at https://smallbusiness.ornl.gov

- Hear HUBZone regulation updates and business opportunities from across the DOE complex, including the DOE Office of Small and Disadvantaged Business Utilization.
- · Get contracting advice and information from the GSA and other agencies.
- Procurement representatives will exhibit and participate in small business matchmaking sessions.

Businesses from all socioeconomic categories are welcome to attend.



Managed by UT-Battelle for the US Department of Energy



Cassandra McGee Stuart, MSM Manager, Small Business Program Acquisition Management Services Division

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Registration

ends

August 20,

Discussion



