

OFRN Round 5 Bidders Conference and Proposal Training

January 20, 2021

Agenda

Welcome – Introductions

Parallax/OFRN Briefing

OFRN Round 5 briefing

Proposal Training

Match Making

Q&A

Conclusion



Advancing the Science of Intelligent Teaming™

Parallax Intro-brief

January 2021

Visit us online!
<https://parallaxresearch.org/>

WSARC

WRIGHT STATE APPLIED RESEARCH CORPORATION

Started in 2011 to support
711th HPW BRAC move



Originally created as an asset for
all Ohio universities

Change enhances that mission

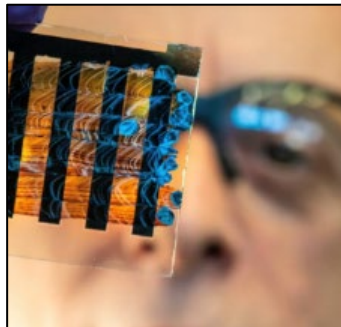

Parallax
ADVANCED RESEARCH

Nonprofit, independent in 2020

Enhanced to benefit all
academic institutions and small
businesses to better support
AFRL, NASIC, NAMRU-D,
WPAFB, and NASA Glenn

Mission Overview:

- Deliver innovative research & technology solutions
- Increase innovation through the Science of Intelligent Teaming™
- Accelerate collaboration between government, industry, and **academia**



S&T Enhancement Programs

Academia | Industry | Government

2014



Ohio Federal Research Network
Driving Innovation Through Strategic Partnerships

Statewide Support

2015



Support Region's Entrepreneurs

Focus Areas

- Local → State → National
- Academic Outreach & Collaboration
- Connecting to other Federal Labs
- Small Business Education
- Entrepreneurial Support
- Tech Demonstrations for Users
- Transition Connections
- Identifying Capabilities for AFRL
- Workforce Development

2017



Support Small Business Test & Demos

2019



National Engagement

Ohio Federal Research Network

Academia | Industry | Government
+++++



Mission:

Leverage state resources and federal partners to make Ohio the nexus for unmanned air systems, personal air vehicles, and logistics delivery air vehicles testing, integration, and manufacturing



- \$40M invested + 1:1 Cost Share
- \$200+M in follow-on funding
- 28 projects funded

Partners

- AFRL
- NASIC
- Naval Medical Research Unit-Dayton (NAMRU-D)
- NASA Glenn
- Ohio's Adjutant General (TAG)
- Ohio Department of Transportation (ODOT)
- 15 universities
- 4 community colleges
- 90 businesses
- 8 spinout organizations



Ohio
Federal
Research
Network

Driving Innovation Through Strategic Partnerships

The Ohio Federal Research Network (OFRN) has the mission to stimulate Ohio's innovation economy by building vibrant, statewide university and industry research collaborations that meet the requirements of Ohio's four federal laboratories and create leading-edge technologies that drive economic development in Ohio.

The OFRN partners include:

- 15 research universities
- 4 community colleges
- 90 businesses
- 8 spinout organizations
- \$40M invested + 1:1 Cost Share
- \$200M+ in follow-on funding
- 28 projects funded

If you are an academic or industry innovator with promising ideas or intellectual property you'd like to commercialize, are interested in collaborating with our network on research projects or need assistance and/or academic or industry partners in pursuit of federal funding opportunities, then we want to hear from you! Contact us today at ohiofrn.org/

Funding Round

Rd.1 - The OFRN Centers of Excellence Round 1 projects
Rd.2 - The OFRN Centers of Excellence Round 2 projects
Rd.3 - The OFRN SOARING Initiative Round 3 projects
Rd.4 - The OFRN SOARING Initiative Round 4 projects

CONTROL

Rd.1 - Ohio State University
"Intelligent Control Architecture"
Rd.2 - Ohio State University
"Effects of Motion Sickness on
Military Health"

Rd.2 - Wright State University
"Automated Test, Evaluation, Verification and Validation Tools"
Rd.3 - Persistent Surveillance Systems
"Automated Cines GP22 for Surveillance or Personnel Transport"
Rd.4 - Asymmetric Technologies
"IronClad Secure Flight Controller"

STRUCTURAL

Rd.1 - University of Toledo
"Adaptive Bio-Inspired Aerospace Structures Actuated by Shape Memory Alloys"
Rd.1 - University of Akron
"High Performance Plastic Substrates for Flexible Electronics"
Rd.2 - University of Dayton Research Institute
"Cost Effective 3D Printed Complex Geometry Composites"
Rd.2 - Ohio State University
"Carbon Nanotube Electro-Thermal Ice Protection System for UAVs"

POWER

Rd.1 - Case Western Reserve University
"Multifunctional Structural Battery"
Rd.1 - University of Akron
"High Density Li-ion Battery with Silicon Anodes"
Rd.1 - University of Dayton Research Institute
"High-Energy Long-Life Li-S Battery"
Rd.4 - Kent State University
"A Hybrid Fuel Cell - Battery/Capacitor Power Source for UAVs"

COMMUNICATION

Rd.2 - Wright State University
"C2PNT Intelligent Channel Sensing"

SENSORS & AWARENESS

Rd.3 - GhostWave
"Optical-Radar Sensor Fusion for UAV Onboard Detect and Avoid"
Rd.4 - Youngstown Business Incubator
"Geometrically Complex 3D Printed Sensors"

PROPULSION

Rd.1 - Case Western Reserve University
"High Temperature Magnetic Materials"
Rd.1 - Ohio State University
"Hybrid Turbo-Electric Propulsion"
Rd.2 - Ohio State University
"Advanced Turbine Cooling"
Rd.3 - Ohio State University
"Super Conducting Brushless Motors"

COMMUNICATION

Rd.2 - Wright State University
"C2PNT Intelligent Channel Sensing"

COMMAND & CONTROL

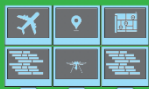
Rd.1 - Wright State University
"Augmented UAV Operator Human Machine Interface (HMI)"
Rd.2 - University of Cincinnati
"Advanced Cognitive and Physical Signal Processing for Operators"
Rd.4 - CAL Analytics
"Interconnectivity in the Modern UAS Traffic Management Architecture"
Rd.4 - Riverside Research
"Cognitive Human Interaction for Rapid Program Analysis through Cognitive Collaboration"

AEROSPACE AWARENESS

Rd.2 - Wright State University
"Human-Centered Big Data Trustworthiness"
Rd.3 - University of Cincinnati
"RouteClearer - A Collision Avoidance and Traffic Management Digital Infrastructure"
Rd.4 - GhostWave
"Integrated Optical-Radar Sensor Fusion System for Air Space Awareness"

PLANNING

Rd.1 - Wright State University
"Regional UAV Live/Real-Constructive Enterprise"



Visit our website to learn about each initiative and project round: <https://www.ohiofrn.org/>

The Ohio Federal Research Network is a program of Parallax Advanced Research.

4035 Colonel Glenn Hwy., Beavercreek, OH 45431



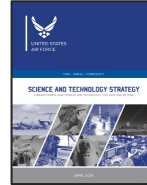
Round 5 OFRN RFP Released January 6, 2021

1. Vertical Take-Off & Landing (VTOL)
2. Situational Awareness & Proliferated Surveillance Systems
3. Patient care in austere and contested environments
4. Personal Exposure Devices
5. Acceleration effects
6. Enabling Human-Machine Teaming Using Brain-Machine Interfaces
7. Advanced Power Systems Applicable to Aviation Propulsion, Micro-Grids, and Lunar Surface Operations
8. Quantum Communications
9. Applications of commercial satellites to humanitarian, disaster, and defense topics
10. Large Data Set Triage
11. Journal Article Warning and Correlation
12. Other

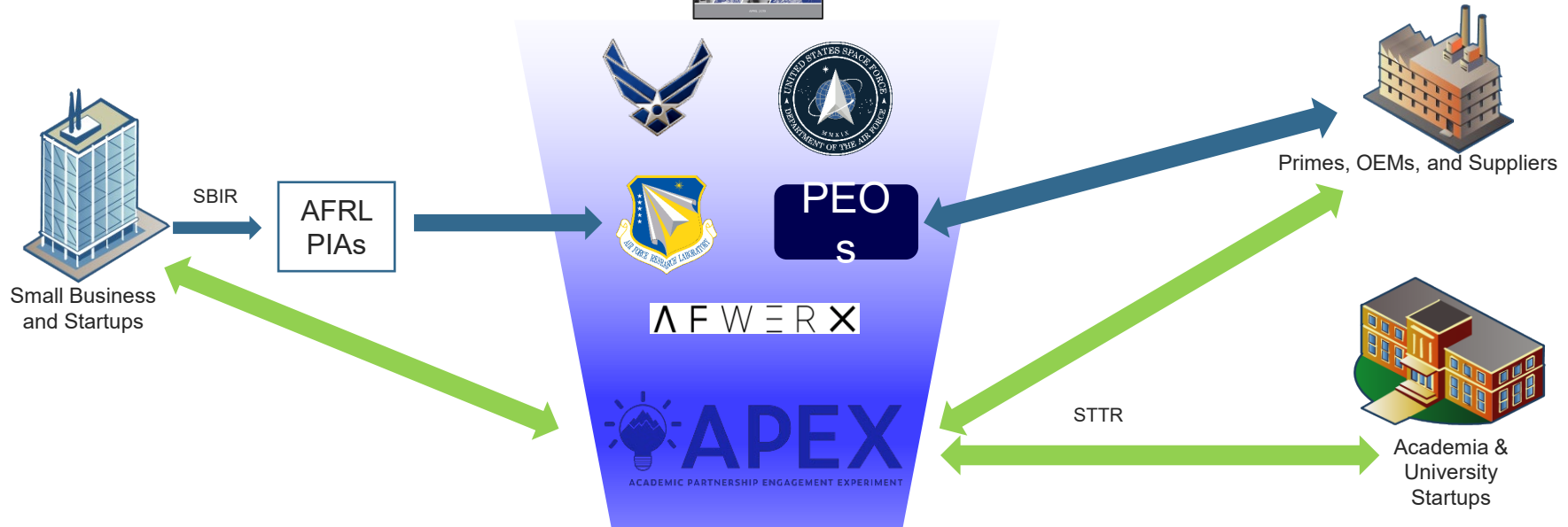
Parallax can Subcontract, but not be a Prime.

APEX Alignment

APEX is based on a Partnership Intermediary Agreement (PIA)
Contract Ceiling = \$49.9M



PIAs develop collaborative, technical relationships
and promote better communications between
the government and third parties

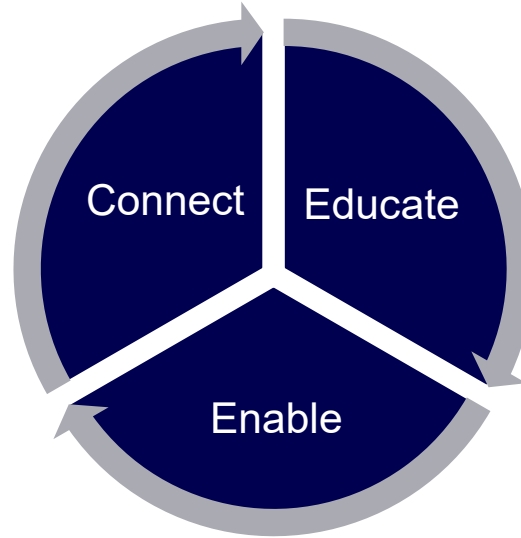


APEX is a DAF-wide asset, adding a focus on academia to the traditional engagement with small business and Primes/OEMs to facilitate technology acceleration & transition for S&T 2030

APEX Services

Get Connected

- National Outreach
- Navigation Services
- Team Matchmaking
- SBIR/STTR Webinars
- AF Tech Connect
- Marketing Communications
- Identify POCs within AFRL



Build Human Capital

- HC Management Plans
- Workforce Development
- Online Education Tools
- Personnel Exchanges

Analytics to ID Solutions

- Capabilities Discovery
- Research Strength Evaluation
- Horizon Scanning
- Mapping Innovation Ecosystems
- Match People to Problems

Enabling Innovation

- Human Element of Innovation
- Blue Sky Workshops
- Challenge Problems
- High Performance Teams

Cross the Valley of Death

- Requirements Translation
- Capabilities Identification
- End-to-End Follow Through
- Tech Showcases
- Matchmaking and Support

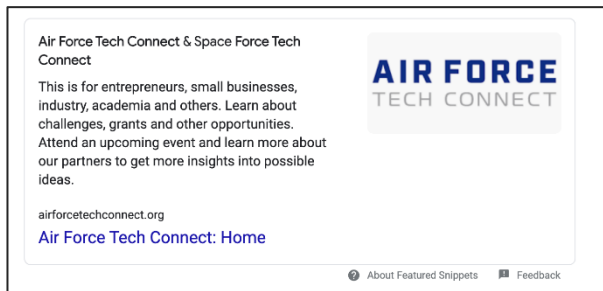
Get Connected

OBJECTIVE:

Provide innovators in academia, industry and government, who are interested in collaborating with the DAF on S&T R&D, an organized platform with DAF S&T resources, info and direct connection tools with DAF SMEs

MILESTONES:

- Deployed to 1000+ end users for feedback in 2020
- Average monthly visitors: 335
- Completed SEO and ranked for Google search snippets



NEXT STEPS:

- Actively updating the website
- Waiting for cue from DAF customer to launch marketing & communications strategy

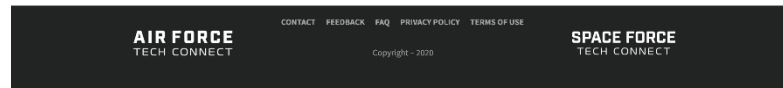


GET CONNECTED

THE AIR FORCE & SPACE FORCE NEEDS YOUR IDEAS!

Today, more than ever, we are looking for ideas to keep us on the cutting-edge of new and innovative technologies. To make it easier for idea generators to CONNECT with our Air Force and Space Force science and technology experts and opportunities, we have created this website. Simply click on the lightbulb icon to submit an idea, or peruse our links to find open opportunities in our science and technology ecosystem. How do you find the right opportunity, event or website – one that ticks all the boxes for you – by using our easy search and filter functions on each page. For more information, watch the [above video](#) and visit our [About Us](#) page.

[Share your idea](#) and GET CONNECTED to Air Force and Space Force science and technology!



Our Purpose

The Ohio Federal Research Network (OFRN) was established in 2015 to stimulate Ohio's innovation economy by building **vibrant, statewide, university-based research collaborations that meet the requirements of Ohio's federal laboratories, partnering with the commercial sector to create new products and build workforce in Ohio.**

OFRN engages a broad and active array of stakeholders, fortifying Ohio's high-tech research and workforce capabilities and expanding federal contracting opportunities in areas such as national defense, space exploration, and aeronautics.

Ultimately, OFRN builds partnerships among innovators in academia, industry and government in support of US defense and civil space missions.

Our Strategic Focus

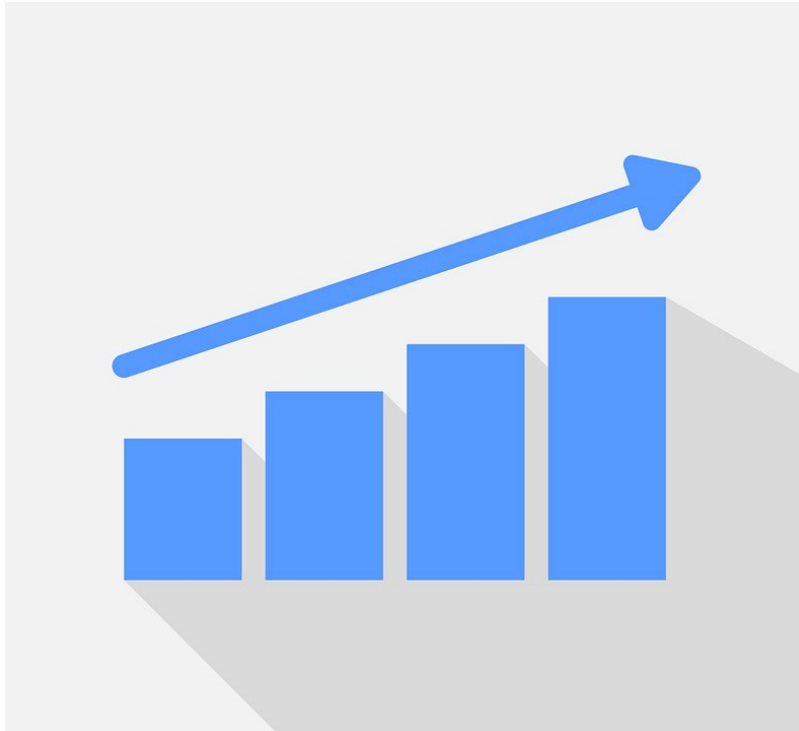
The OFRN strategic focus is to:

- Expand Ohio's R&D capabilities
- Integrate R&D among Ohio academic institutions and businesses
- Support Ohio-based federal partners
- Promote Ohio economic growth

OFRN's goal is to:

- Accelerate technology development and innovation
- Leverage Ohio's unique research capabilities and federal partners' expertise
- Increase collaboration across government, academia, and industry

Our Impact



- \$40M OFRN Funds invested
- 28 Projects Funded
- \$200+M in Project Follow-on Funding
- 905 Jobs Created and Impacted
- 12 IP Invention Disclosures
- 8 Spinout Organizations
- \$4.85M raised by project spinout organizations

Round 5 Key Dates

Event	Key Date
Opportunity Announcement Pre- Release	Oct. 29, 2020
Opportunity Announcement Informational Session and Q&A with Federal SMEs (2 virtual sessions)	Nov. 10, 2020 (10:00am– 12:00pm ET) Nov. 18, 2020 (1:00pm-3:00pm ET)
Regional Workshops / Information Sessions (virtual)	Dec. 10, 2021 Dec. 15, 2021
Opportunity Announcement Formal Release	Jan. 6, 2021
Bidders Conference and Proposal Training	Jan. 20, 2021
Proposal Questions Accepted Through	Feb. 11, 2021
Due date for Volume 1 (Technical) and 1A (Supplemental)	Feb. 25, 2021, by 5:00pm ET
Notification of Selection for Final Pitch Day	March 19, 2021
Pitch Deck and Pitch Presentation Training (<i>for those selected for final pitch day</i>)	March 22 or 23, 2021
Due date for Volume 2 (Business and Cost Proposal), and 2A (Slide Deck)	April 15, 2021
Pitch Day	April 20-21, 2021
Proposal Review	May 4, 2021
Awards Announced	May 7, 2021
Projects Start	May 24, 2021
Student Intern Orientation	May 31, 2021

Round 5 Process Overview

Project Teams Must Include:

- At least 1 Ohio industry member
 - Role can be as lead applicant or collaborator
- At least 2 Ohio colleges/universities
 - Role can be as lead applicant or collaborator
 - AFIT is eligible
- At least 1 federal partner/sponsor
 - AFRL, NASA-GRC, NAMRU-D, and/or NASIC
 - Financial commitment from federal partner is NOT necessary

Round 5 Process Overview

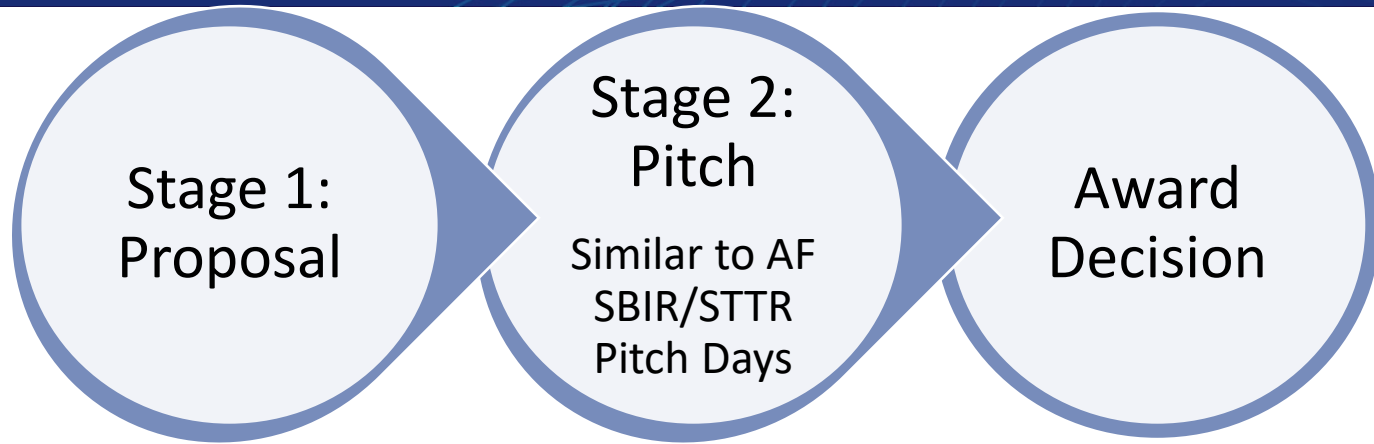
Proposals consist of:

- Technical Proposal (due Feb. 25, 2021):
 - Volume 1 (Technical) – 8 pages,
 - 1A (Supplemental) – 2 pages, and
- Cost proposal (Volume 2) & 2A Slide Deck – 15 slides(due Apr. 15, 2021)

Round 5 Process Overview

- Round 5 includes a requirement for a Student Experience and Engagement Initiative (SEE) which is to be designed by the proposing team based on the guidelines within the Appendix 1
- Team Matchmaking Assistance
- Training
 - Jan. 20th – Bidders Conference and Proposal training (mandatory)
 - Pitch deck and presentation training (for proposals selected to pitch) - Group session - 90 minutes (mandatory)
 - Pitch training – 1-1 sessions - 2 sessions, 1 hour each (optional)

Round 5 Project Review Process



1. Proposals are reviewed by the OFRN Technical Review Council (TRC). Most meritorious proposals are invited to pitch
2. Pitch Day: Selected teams pitch to the TRC w/Q&A (pitch audience is restricted to just TRC and OFRN staff)
3. TRC recommends award selection to the OFRN Executive Review Board (ERB) (~ 1 Week)

Federal Partner Areas of Interest AOIs

Partner	AOI
AFRL, NASA	1. Vertical Take-Off & Landing (VTOL)
AFRL, NASIC	2. Situational Awareness & Proliferated Surveillance Systems
AFRL, NAMRU-D	3. Patient care in austere and contested environments
AFRL, NAMRU-D	4. Personal Exposure Devices
AFRL, NAMRU-D	5. Acceleration effects
AFRL	6. Enabling Human-Machine Teaming Using Brain-Machine Interfaces
AFRL, NASA	7. Advanced Power Systems Applicable to Aviation Propulsion, Micro-Grids, and Lunar Surface Operations
NASA	8. Quantum Communications
NASIC	9. Applications of commercial satellites to humanitarian, disaster, and defense topics
NASIC	10. Large Data Set Triage
NASIC	11. Journal Article Warning and Correlation
	12. Other

Frequently Asked Questions

1. What are restrictions relating to U.S. citizenship and export controls;
2. How do we evidence Federal Partner alignment, a letter of support is not required;
3. What technology research level (TRL) is acceptable;
4. Are there more details regarding the SEE program;
5. Is there evaluation criteria around Cost Share;
6. How is economic impact and job creation explained;



Driving Innovation Through Strategic Partnerships

A yellow graphic element consisting of a curved line that starts from the left and ends with three small star-like shapes pointing upwards and to the right.

Parallax
ADVANCED RESEARCH

Round 5 Solicitation Training Workshop

Student Experiential Engagement (SEE)

January 20, 2021

Dr. Dave Rude

Director, Education & Training

Reference:

OFRN Solicitation

Appendix 1

Why SEE?

Appendix 1 (SEE) is Required for Proposal Submission (paragraph 2.6)



Future Talent Pipeline

SEE provides a vehicle for recruiting and retaining aspiring talent



Experiential Learning

People learn best by doing; the SEE provides hands-on applications



Ohio-Centric

SEE serves as a catalyst for growing and sustaining talent in Ohio




Win/Win Proposition

The SEE program can add tangible value to the students, academia, and employers

SEE Components

Source: Appendix 1





Scope

STEM-focused curriculum;
student recruitment limited
to Ohio universities and
community colleges

Purpose

Describe internship work,
benefits, and proposed
project outcome



Opportunities

Describe innovative
opportunities and how
participation enhances
learning and career growth

This will include
professional development
activities sponsored by
Parallax/OFRN

Interaction

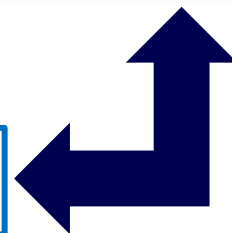
Describe student
interactions and promoting
an inclusive environment

Administration

Describe how the program
will be structured and
administered; use best
practices

The project team will be responsible for administering the
SEE program. See next slide for interacting with OFRN



SEE Requirements During Internship

Due to OFRN Within 30 Days After Each Internship Begins



Contact Information

Student name, degree program, start/end dates of internship, sponsor supervisor info



Work Plan

Narrative or template describing the meaningful work assigned to the intern



Interactions & Inclusions

A description of how the sponsor supervisor and others will interact with the intern and to promote a sense of belonging

During & After Internship



Engagement & Feedback

Engage routinely with intern; monitor performance; provide constructive feedback; advise OFRN of any concerns



Professional Development

Enable intern to attend OFRN professional development workshops; provide other developmental opportunities (e.g., mentoring)



Post-Internship

Complete post-internship survey issued by OFRN; encourage interns to complete separate survey sent to them by OFRN

Crucial Success Factors Include Focusing On ...



The Person

Get to know the intern: what are their passions, talents, and motivations



The Relationship

Encourage, communicate, engage, interact



The Opportunity

Assign meaningful work that furthers the intern's knowledge and capability to apply prior and new learning

Helpful resources:

<https://www.ohiohighered.org/students/find-a-career/internships-and-co-ops>



Ohio
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Driving Innovation Through Strategic Partnerships



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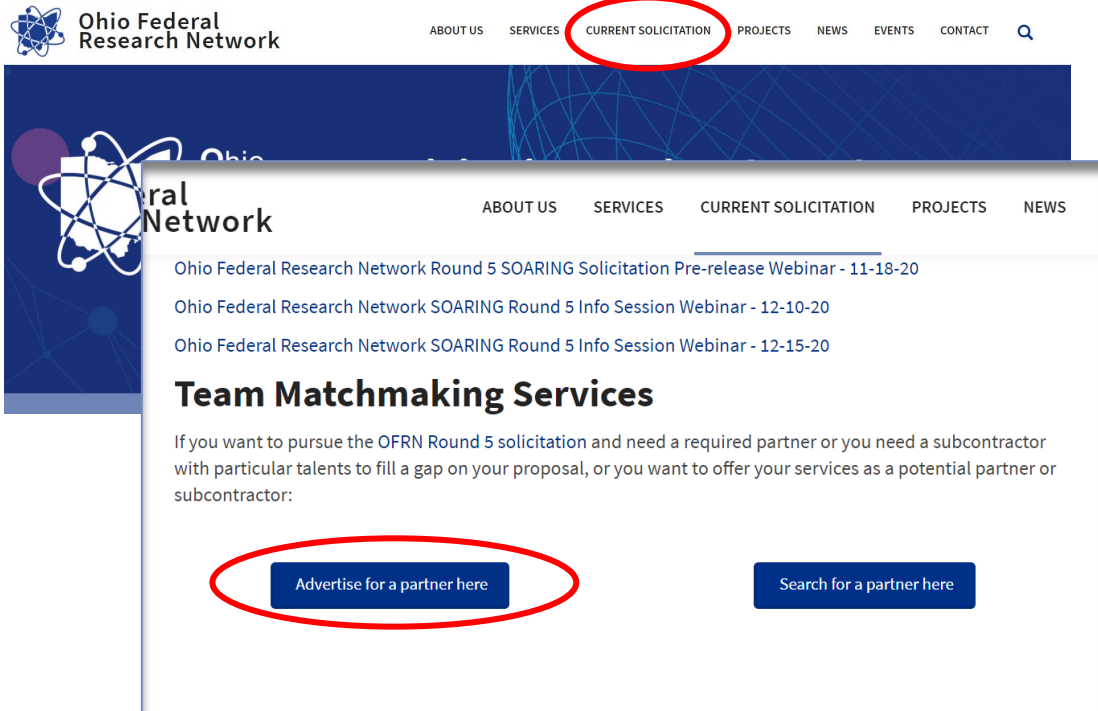
Round 5 Solicitation Training Workshop

Team Match Making

January 20, 2021

Dave Nestic

Round 5 Team Matchmaking



Ohio Federal Research Network

ABOUT US SERVICES **CURRENT SOLICITATION** PROJECTS NEWS EVENTS CONTACT

Ohio Federal Research Network Round 5 SOARING Solicitation Pre-release Webinar - 11-18-20

Ohio Federal Research Network SOARING Round 5 Info Session Webinar - 12-10-20

Ohio Federal Research Network SOARING Round 5 Info Session Webinar - 12-15-20

Team Matchmaking Services

If you want to pursue the [OFRN Round 5 solicitation](#) and need a required partner or you need a subcontractor with particular talents to fill a gap on your proposal, or you want to offer your services as a potential partner or subcontractor:

[Advertise for a partner here](#) [Search for a partner here](#)

Round 5 Requires

- Two Universities
- One Industry Partner
- A Federal Partner

IF YOU NEED A PARTNER

- To Satisfy Requirements
- To Fill a Technical Gap

GoTo [OhioFRN.org](#)

- Link to “Team Matchmaking” Form
- Advertise Your Need
- Automatically Populates Sheet
- PDF Updated, Searchable and Distributed to OFRN ListServ

Round 5 Team Matchmaking



Round 5 Matchmaking Service

OFRN is providing this partnering and matchmaking service to help those that need to find a required partner for a Round 5 Proposal Submission. To assist in providing introductions, we need to know more about you, your organization, and your requirements of a partner or sub. Please thoroughly complete the form below.

First Name *

Short answer text

Last Name *

Short answer text

Email Address *

Short answer text

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Round 5 Team Matchmaking



Please select the type of partner you are looking for: *

☐ Research partner from another Ohio university

☐ In ☐ Please provide a brief explanation of your technology and/or capabilities brought into the proposal (do not list company name): *

☐ B
Long answer text

☐ W

☐ O
Please provide a brief explanation of the technology and/or capabilities sought in a partner or subcontractor (again, do not list company name): *

Long answer text

To which Area of Interest are you planning to submit? Check all that apply: *

☐ AOI #1: Vertical Take-Off & Landing (VTOL)

☐ AOI #2: Situational Awareness and Proliferated Surveillance Systems

Brain-Machine Interface (BMI) Technologi...

on, Micro-Grids, and Lunar Surface Opera...

saster, and Defense Topics

Round 5 Team Matchmaking

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Round 5 Team Matchmaking



OFRN Round 5 Matchmaking Service classifieds 01-15-21.xlsx

1 / 11



OFRN Round 5 Matchmaking Service Classifieds

1/15/2021 9:55 AM

HOW THE PROCESS WORKS: OFRN has anonymized the information due to the competitive nature of the solicitation and proposal environment. If you find an entry of interest, please respond to becky.mescher@parallaxresearch.org with the OFRN Assigned Number or list of numbers to which you want to be introduced. The table columns designate whether the organization seeking a partner is a company or a university and the kind of organization sought for a partnership. The table also includes a technology description of what the advertising organization brings to the table (Technology Brought) and what the advertising organization seeks in a partner (Technology Sought) as well as the technical competencies of the desired partner. Once you respond with the OFRN Assigned Number(s) you would be interested in meeting, we will review the request with the researcher seeking a partner and get their approval to release additional information to both parties and connect the two of you to explore a collaboration. Once we connect parties, we leave it up to you to discuss if interests, objectives and capabilities are aligned.

OFRN Assigned Number	Organization Type	Seeking Partnership With	Area of Interest plan to submit	Technology Brought	Technology Sought
1	University	Both (Research partner from another Ohio university and Industry partner)	AOI #1: Vertical Take-Off & Landing (VTOL), AOI #3: Patient Care in Austere and Contested Environments, AOI #4: Personal Exposure Devices, AOI #6: Improving Human-Machine Teaming Performance Using Brain-Machine Interface (BMI) Technologies	Development of wearable/implantable biosensors for advanced healthcare	data analysis, signal processing, in vivo animal models
2	University	Both (Research partner from another Ohio university and Industry partner)	AOI #5: Acceleration Effects	1. Numerical modeling and simulations using finite element software; 2. Prototype testing lab capability with accelerometers, laser Doppler vibrometer and high-speed camera; 3. Design of metamaterials/metastuctures to absorb, attenuate and/or reflect wave/vibration caused by acceleration	1. Experiences with flight systems' designs and testing and 2. Prototype manufacturing;
3	Company	Research partner from another Ohio university	AOI #8: Quantum Communications	Expertise and deep background in quantum computing and machine learning, including several completed and on-going federal and state-funded projects.	We are looking for a second partner Research Institution with background in quantum computing or quantum communications.
		Both /Research		Provide customized power supply or battery charging station design capability for	looking for partners in battery manufactures for utilizing their existing battery technology



Contact



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Questions

Contact



<https://ohiofrn.org>