Ohio Federal Research Network

Driving Innovation Through Strategic Partnerships

Administered by: Parallax Advanced Research | The Ohio State University

Funded by: Ohio Department of Higher Education

Ohio's Defense & Aerospace Innovation Economy

MISSION

OFRN investments are growing federal research spending in Ohio; advancing research initiatives aimed at emerging Department of Defense (DoD) and National Aeronautics and Space Administration (NASA) requirements; enhancing university collaborations/innovations with Ohio-based small and medium size companies; creating and retaining jobs in Ohio; and, most importantly, having a broad and significant impact on Ohio's economy.

WHY OFRN?

A statewide innovation network unmatched anywhere in the U.S.

Network/Collaborators/Partners

- **5** Government Agencies
  - Air Force Research Laboratories
  - National Air & Space Intelligence Center
  - NASA Glenn Research Center
  - Naval Medical Research Unit Dayton
  - Ohio National Guard
- **116** Industry Companies
- **25** Academic Institutions

OFRN's WORK GROWS THE ECONOMY

Every $1 invested returns ~$6 to Ohio.

OFRN's Impact to Ohio since 2015

- **$72M** State of Ohio Investment
- **$435M+** Follow-on Funding
- **$42.3M** Leveraged Cost-Share
- **48 R&D** Projects in Critical Defense/Aerospace
- **427** High Value Jobs Created

OFRN's WORK CREATES JOBS

Ohio companies launched through OFRN expand the state's innovation footprint and leads to new jobs.

Ohio Spinouts include:

Akron PolyEnergy Inc
Agilis Air
Fuse-X LLC
HydroLabs
Kairos Research LLC
Max Power Solutions
PCG LLC
Power Converters Future, LLC
RegenFix
Tangram Flex
Star Phase Technologies
Verilock

OFRN INNOVATION PIPELINE

Opportunity Discovery & Team Formation
- 1:1 PI support
- Matchmaking & events
- 100s of teams built

Proposal Development & Training
- Targeted proposal support
- Follow-on funding navigation
- Education & pitch coaching

Funding Ohio R&D
- Competitive statewide rounds
- Millions awarded annually
- Direct connections to federal customer needs

Technology Transition & Commercialization
- Market identification
- Tech transfer & transition support
- Connections to additional federal funding

Workforce & Startup Development
- Support for new companies
- High-skilled job creation
- Student Experiential Engagement (SEE program)

CONTACT US

If you are an Ohio-based academic or industry innovator with a promising idea or intellectual property for which you'd like to pursue federal funding, or are interested in collaborating on research projects or need assistance; or are an Ohio-based academic or small business, then we want to hear from you!

e-mail: ofrn@parallaxresearch.org **On the web:** ohiofrn.org

The Ohio Federal Research Network (OFRN) is a program administered by Parallax Advanced Research Corporation and funded by the Ohio Department of Higher Education.

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Ongoing or Completed Projects

CONTROL
R1 - Ohio State University: "Intelligent Control Architecture"
R2 - Ohio State University: "Effects of Motion Sickness on Military Health"
R2 - Wright State University: "Automated Test, Evaluation, Verification and Validation Tools"
R3 - Persistent Surveillance Systems: "Automated Cirrus SR22 for Surveillance or Personnel Transport"
R4 - Asymmetric Technologies: "IronClad Secure Flight Controller"

STRUCTURAL
R1 - University of Toledo: "Adaptive Bio-Inspired Aerospace Structures Actuated by Shape Memory Alloys"
R1 - University of Akron: "High Performance Plastic Substrates for Flexible Electronics"
R2 - University of Dayton Research Institute: "Cost Effective 3D Printed Complex Geometry Composites"
R2 - The Ohio State University: "Carbon Nanotube Electro-Thermal Ice Protection System for UAVs"
R6 - The Ohio State University: "Structural Materials Joining in Space"
R7 - Ohio State University: "Photonic Interfaces for Atom-based Quantum Processors"
R7 - Laser Fusion Solutions: "Joining of ODS Additive Materials"

PROPULSION
R1 - Case Western Reserve University: "High Temperature Magnetic Materials"
R1 - Ohio State University: "Hybrid Turbo-Electric Propulsion"
R2 - Ohio State University: "Advanced Turbine Cooling"
R3 - Ohio State University: "Brushless Doubly-fed Machine and Drive System for Aviation Application"

SENSORS & AWARENESS
R3 - GhostWave: "Optical-Radar Sensor Fusion for UAV Onboard Detect and Avoid"
R4 - Youngstown Business Incubator: "Geometrically Complex 3D Printed Sensors"
R5 - The Ohio State University: "Affordable LIDAR Technologies for Integration and Unmanned Deployment (ALTITUDE)"
R5 - Asymmetric Technologies: "Autonomous Capabilities for CASEVAC and Resupply in Urban Environments (ACCRUE)"
R6 - GhostWave: "Quantum Sensor System using Rydberg Atoms"

COMMUNICATION
R2 - Wright State University: "C2PNT Intelligent Channel Sensing"

POWER
R1 - Case Western Reserve University: "Multifunctional Structural Battery"
R1 - University of Akron: "High Density Li-ion Battery with Silicon Anodes"
R1 - University of Dayton Research Institute: "High-Energy Long-Life Li-S Battery"
R4 - Kent State University: "A Hybrid Fuel Cell – Battery/Capacitor Power Source for UASs"
R5 - Safran Power USA: "Advanced High Voltage DC Generator System for Aerospace with Rapid Dynamic Response"
R5 - Miami University: "High Reliability, Low EMI, Wide Bandgap Power Conversion for Air & Space Applications"
R6 - University of Akron: "High Bandwidth Light Weight Modular GaN Based Utility Interactive DC Generator"
R7 - Ohio State University: "Gas-insulated Cable with Integrated Partial Discharge Detection for Aerospace Systems"

AEROSPACE AWARENESS
R2 - Wright State University: "Human-Centered Big Data"
R3 - University of Cincinnati: "Regional Unmanned Traffic Management System (RUTMS)"
R4 - GhostWave: "Integrated Optical-Radar Sensor Fusion System for Air Space Awareness"
R5 - Flightprofiler: "Low Altitude Weather Network (LAWN)"
R7 - Ohio State University: "Space GUIDE: Spaceborne Gain-enabled Ultra-sensitive Infrared Detector with Event-based sensing"

COMMAND & CONTROL
R1 - Wright State University: "Sliding-Scale Autonomy through Physiological Rhythm Evaluations (SAPHYRE)"
R2 - University of Cincinnati: "Advanced Cognitive and Physical Sweat Biosensing for Operators"
R4 - CAL Analytics: "Interoperability in the Modern UAS Traffic Management Architectures"
R4 - Riverside Research: "Computer-Human Interaction for Rapid Program Analysis through Cognitive Collaboration"
R6 - Kairos Research: "Ocular and Physio-Temporal Indicators of Cognitive State (OPTICS)"
R7 - Mined XAI: "Resilient Explainable AI for Casualty Triage with Logistics Awareness Using Deep Topological Modeling (REACT-X)"
R7 - Kairos Research: "Validated Indicators for Selective Trust in Autonomy (VISTA)"

PLANNING
R1 - Wright State University: "Regional Live-Virtual-Constructive Enterprise (RLVC)"

HYPERSONICS
R6 - CFD Research Corporation: "A Machine Learning Framework for Digital Engineering of Hypersonic Vehicles with Quantified Prediction Uncertainty (Hypersonic ML FW)"
R6 - ARCTOS Technology Solutions: "Gradient Alloy Processing in Laser Powder Bed Fusion for Hypersonic Applications"
R7 - AsterTech: "Hypersonic Engineered Reusable Ceramic Ultra-Lightweight Enduring System (HERCULES)"

Funding Round Terms Key

R1 - The OFRN Centers of Excellence Round 1 projects
R2 - The OFRN Centers of Excellence Round 2 projects
R3 - The OFRN SOARING Initiative Round 3 projects
R4 - The OFRN SOARING Initiative Round 4 projects
R5 - The OFRN SOARING Initiative Round 5 projects
R6 - The OFRN Round 6 projects
R7 - The OFRN Round 7 projects



Visit our website to learn about each initiative and project round: www.ohiofrn.org/ohio-federal-research-network-rd