

Testimony for Senate Finance Committee on The Ohio Federal Research Network (OFRN) Round 7 – May 2025

(Slide 1) Chair Cirino, Vice-Chair Chavez, Ranking Member Hicks-Hudson and members of the Senate Finance Committee I am honored to be in this hearing room to present testimony on the Federal Research Network line item (GRF ALI #235578) in the Ohio Department of Higher Education (ODHE) budget for SFY 2026-2027. The current funding request is for \$5.099M per year in the budget for a total of \$10.198M.

(Slide 2) OFRN was codified in HB 64 (ORC 193.03-09) of the 131st GA, SFY 2015-2016 as outlined in the Ohio Federal Military Jobs Commission Report. Our federal partners are NASA-Glenn, the Air Force Research Lab (AFRL), Naval Medical Research Unit - Dayton, the National Air & Space Intelligence Center (NASIC), and the Ohio National Guard. The proposal teams that come together for funding are comprised of a minimum of two universities, an industry partner with a physical location in the state, and one of the federal partners mentioned previously.

(Slide 3) The Ohio Federal Research Network (OFRN - <https://ohiofrn.org>) is a program administered by Parallax Advanced Research Corporation, a non-profit research organization, in collaboration with The Ohio State University and funded by the Ohio Department of Higher Education. Our Technical Review Council and Executive Review Board insure independent ranking and selection of the most qualified proposals for each round of funding.

(Slide 4) The **goals of the OFRN** are listed in this slide. We work to increase the amount of Federal Funding that flows to Ohio for R&D, support the types of technology on which Ohio's federal partners are focused, increase the extent for enhanced collaboration among institutions & industry, and develop lasting and sustainable knowledge that allows our academic institutions & industry to improve their ability to compete for federal resources over time.

(Slide 5) The outcomes highlighted on this slide and listed below from the first 6 Rounds highlights the capability of this program to be transformational in supporting the growth of Ohio's industry sector.

Focusing on the bottom line, the OFRN programs results to date are:

- ✓ \$61.8M State of Ohio Investment
- ✓ \$390M+ Follow-on Federal Funding Awarded
- ✓ \$40.3M Cost-share from the participants

This would equate to approximately a 7:1 ROI.

Improvement in State Research & Development Efficiency for Ohio:

- ✓ 41 R&D Projects Funded
- ✓ 384+ Direct Jobs Created
- ✓ 106 Industry Companies
- ✓ 23 Academic Institutions

(Slide 6) Diving deeper into the Return of Investment for this program we can see the real advantage to continuing it in the next bi-annual budget.

- ✓ 16 Spinout companies created
- ✓ 29/41 projects (71%) have a positive ROI
- ✓ 31/41 projects (76%) had follow-on funding > \$1M
- ✓ 11/41 projects (27%) had follow-on funding > \$10M

While there's no single definitive statistic, it's estimated that **less than 5% of all technology startups** reach an ROI of \$1 million or more within three years. The majority take longer to achieve profitability or fail entirely. Thus, this program proves its metal.

(Slide 7) In addition to the above metrics and starting in Round 5 (FY22-23), we incorporated a unique requirement for the project teams to be focused on a student workforce development aspect. This part of the program, called the Student Experiential Engagement (SEE), required the teams to incorporate students into both the research and technology development as well as the business aspects of the project. The aim of the program is keeping these talented individuals in the State of Ohio after graduation. Even though this part of the OFRN program only started in early 2022, we have already witnessed successes where the industry partner on the project has hired a student as a full-time employee after graduation. Additionally, more than 175 students have been engaged in the 13 projects since its inception.

(Slide 8) This State budget proposal will focus on the research and development of the Areas of Interest listed on the slide. These match up well with the new technology and industry being developed in Ohio. The OFRN will provide opportunities for two- and four-year institutions and small businesses to compete on project awards ranging from \$800K to \$1.25M. The solicitation for OFRN Round 7 (FY26-27) which closed out on April 28th received 47 proposals totaling more than \$56M. Proposed funding will only allow us to award 7 projects for this next period of performance.

(Slide 9) The historical funding for this program has been consistent, and we thank the Governor and the Chancellor for their continued support. As mentioned in this slide, any additional funding to this program will allow us to fund additional project teams.

(Slide 10) As I mentioned in the beginning, we are honored and pleased that the Governor and the Chancellor are willing to continue this program into the next budget cycle and feel strongly that Ohio should continue its support of research, innovation, and technological development to deepen the linkages between academia, industry, and government.

Chair Cirino, Vice-Chair Chavez, Ranking Member Hicks-Hudson and members of the Senate Finance Committee thank you for your time today, and I stand ready to answer any questions you may have on the Ohio Federal Research Network.

(Slide 11) Back-up Slides

(Slide 12) OFRN Round 7 Key Dates & link to the solicitation information

(Slide 13) Celebrate Ohio! Success Metrics from Feb 19th event at the Statehouse

(Slide 14) Benchmarking Comments on OFRN from Project Teams

(Slide 15) Map of Ohio and engagement of the OFRN program since 2015

(Slide 16) OFRN Opportunity Days Webinars & Purpose

(Slide 17) OFRN Round 1 Summary

(Slide 18) OFRN Round 2 Summary

(Slide 19) OFRN Round 3 Summary

(Slide 20) OFRN Round 4 Summary

(Slide 21) OFRN Round 5 Summary

(Slide 22) OFRN Round 6 Summary



**Ohio
Federal
Research
Network**

Driving Innovation Through Strategic Partnerships

May 2025

Visit us online! www.ohiofrn.org

OVERVIEW

Ohio Senate Finance Committee

Administered by:



THE OHIO STATE UNIVERSITY

Funded by:

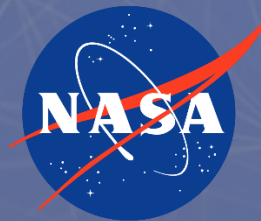


**Department of
Higher Education**

OFRN Partners



- Federal Partners
 - AFRL
 - NASIC
 - Naval Medical Research Unit-Dayton (NAMRU-D)
 - NASA Glenn
 - Ohio National Guard



OFRN Construct



**NASA Glenn
Research Ctr
(GRC) Priorities**



**Air Force
Research Lab
(AFRL) Priorities**



**National Air
& Space
Intelligence Ctr
(NASIC)
Priorities**



State of Ohio



**Naval Medical
Research Unit
(NAMRU)
Priorities**



**Ohio National
Guard
Priorities**

Industry Needs

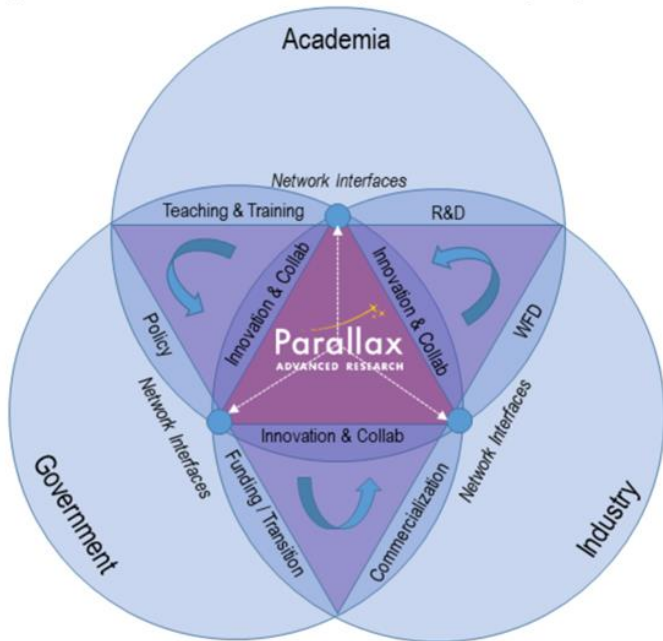
**Executive Review
Board**

**PARALLAX
& The Ohio State
University**

**Technical Review
Council**

OFRN Goals

Triple Helix Model of Innovation, Hybrid / Boundary Organizations



- Increase the amount of Federal Funding that flows to Ohio
- Support the types of Federal projects on which Ohio's federal partners are focused
- Increase the extent to which OFRN produces enhanced collaboration among institutions/industry
- Develop lasting and sustainable knowledge that allows academic institutions/industry to improve their ability to compete for federal resources over time

OFRN Program Impact – through 11/30/2024

23

Universities &
colleges engaged

4+1

Government
Partners

106

Business partners
engaged

41

R&D projects funded

384

Direct jobs created

16

Spin out
companies
created

\$61.8M

State of Ohio
Investment - ODHE

\$390+M

Follow-on Funding
Awarded

\$40.3M

Cost Share

OFRN ROI & Spin-out Highlights

ROI: Six Round 6 projects will not finish until May 2025

29/41 (71%) have a positive ROI

31/41 (76%) had follow on funding > \$1M

11/41 (27%) had follow on funding > \$10M

Spin-outs:

- ✓ Akron Poly Energy – Round 1
- ✓ Tangram Flex – Round 2
- ✓ Kairos Research - Round 2
- ✓ RegenFix – Round 2
- ✓ HydroLabs – Round 2
- ✓ 3Dnol – Round 2
- ✓ PCG LLC – Round 4
- ✓ Verilock – Round 4
- ✓ Power Converters Future, LLC – Round 5
- ✓ Max Power Solutions – Round 5
- ✓ Fuse-X – Round 6
- ✓ Star Phase Technologies – Round 6

Round 6 SEE Results to Date

Ph.D.	Masters	Undergraduate
13	15	43

71 student interns (undergrad to Ph.D.)

Student interns from:

- Case Western Reserve University
- Central State University
- Miami University
- Ohio University
- The Ohio State University
- Sinclair Community College
- University of Akron
- University of Dayton
- University of Toledo
- Wright State University

Student Experiential Engagement (SEE)

Round 5 – First Round to Include this Requirement

Intended Purpose

- ✓ Future Talent Pipeline
- ✓ Experiential Learning
- ✓ Ohio-Centric
- ✓ Win/Win Proposition

Components Required in Proposal

- ✓ Scope
- ✓ Purpose
- ✓ Opportunities
- ✓ Interaction
- ✓ Administration

Requirements, After Project Selected

- ✓ Work Plan
- ✓ Description of Interactions
- ✓ Feedback (Pre, During, and Post)
- ✓ Professional Development (e.g. Org mentoring, etc.)

Round 7 Areas of Interest

AOI	AOI Name	Subtopic 1	Subtopic 2
1	Hypersonics	Materials and Technology to Enable Variable Geometry of Aerodynamic Surfaces	High Speed Aircraft Thermal Management and Heat Rejection Technology
2	Health and Human Performance	AI supported medical decision making for triage and stabilization by non-specialists	AI supported logistics planning for operational commanders
3	Aerospace Power Management, Materials, and Distribution	Aerospace Electrification – Relevant, HV/HP, Fault-Smart Switch Gear	Safe Partial Discharge Corona aware high voltage cable for aerospace (description needed)
4	Commercial Space - LEO	Low Leakage Cryogenic Valves	Space-Based Space Situational Awareness
5	Quantum Technologies	Sensing and timing systems with reduced bias error or increased sensitivity	System component or integration technologies to enable miniaturization, increased function, or operation in mission relevant or extreme environments.
6	Autonomy	Autonomous systems operations	Operator defined metrics for trusted autonomy
7	Advanced Materials Technology - Critical Materials Supply for Aerospace	Methods for Production, Joining, and Modeling of Oxide Dispersion Strengthened (ODS) Alloys	Thermally Conductive, Electrically Insulating Materials

Program Funding to Date

Funding Sources

State Operating Funding for FY 16 and 17 = \$25,000,000	<i>(Rounds 1 & 2 – 18 Projects)</i>	\$ 25 M
State Operating Funding for FY 18 and 19 = \$6,900,000	<i>(Round 3 – 4 projects)</i>	\$ 6.9 M
State Operating Funding for FY 20 and 21 = \$9,600,000	<i>(Round 4 – 6 projects)</i>	\$ 9.65M
State Operating Funding for FY 22 and 23 = \$9,900,000	<i>(Round 5 – 7 projects)</i>	\$ 9.9M
State Operating Funding for FY 24 and 25 = \$10,300,000	<i>(Round 6 – 6 projects)</i>	\$10.35M
Total		\$ 61.7M

- Individual project funding has varied between \$750K to \$1.5M (Round 7 narrows to \$800K - \$1.25M)
- State Operating Funding for FY 26 and 27 **proposed** = \$5.099M per year (\$10.198M total)
 - ODHE Operating Budget Request for ALI 235578 – Federal Research Network
 - Every ~\$1M increase in budget will fund 1 additional project



Thank you

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<https://ohiofrn.org>



Back-up Slides

Round 7 Key Dates – TENTATIVE!

<https://ohiofrn.org/solicitations/ohio-federal-research-network-round-7-solicitation>

Event	Key Date
Opportunity Announcement Pre-Release	December 27, 2024
Opportunity Announcement Formal Release	January 27, 2025
Webinar: Informational Session and Q&A with AOI SMEs	February 10 & 25, 2025
<u>Celebrate Ohio! - Statehouse Event</u>	February 19, 2025
Bidders Conference and Proposal Training	March 6, 2025
Webinar: Informational Session and Q&A with AOI SMEs	March 20, 2025
Proposal Questions Accepted Through	April 18, 2025
Round 6 Solicitation Due date	April 28, 2025
Notification of Finalists	May 30, 2025
Finalists Sessions with TRC	June 16-20, 2025
Awards Announced	July/August 2025
Projects Start	October 2025

Celebrate Ohio! Success Metrics

The *Celebrate Ohio!* event, hosted by the OFRN at the OH Statehouse Atrium on February 19, showcased cutting-edge OFRN-funded research and innovation in Ohio. The event brought together key stakeholders from government, academia, and industry, and featured remarks from leaders such as Ohio Department of Higher Education Chancellor Mike Duffey, President Rodney Rogers from Bowling Green State University and AFRL Chief Technology Officer Dr. Timothy Bunning. Attendees engaged in networking and explored project tables highlighting advancements in aerospace, defense, and technology integration. The event reinforced Ohio's position as a hub for research and innovation, fostering collaboration and driving economic growth in the state.



99 Total Attendees

32 academia, 39 government, 27 industry, 15 students, 1 media



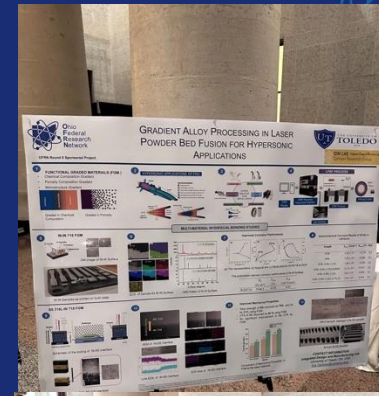
8 R&D Projects Presented

Representing a blend of OFRN Funded Research in Rounds 4, 5, and 6



6 Speakers

Representing ODHE, AFRL, BGSU, NASA-GRC, and Industry (GhostWave Inc. and Kairos Research)



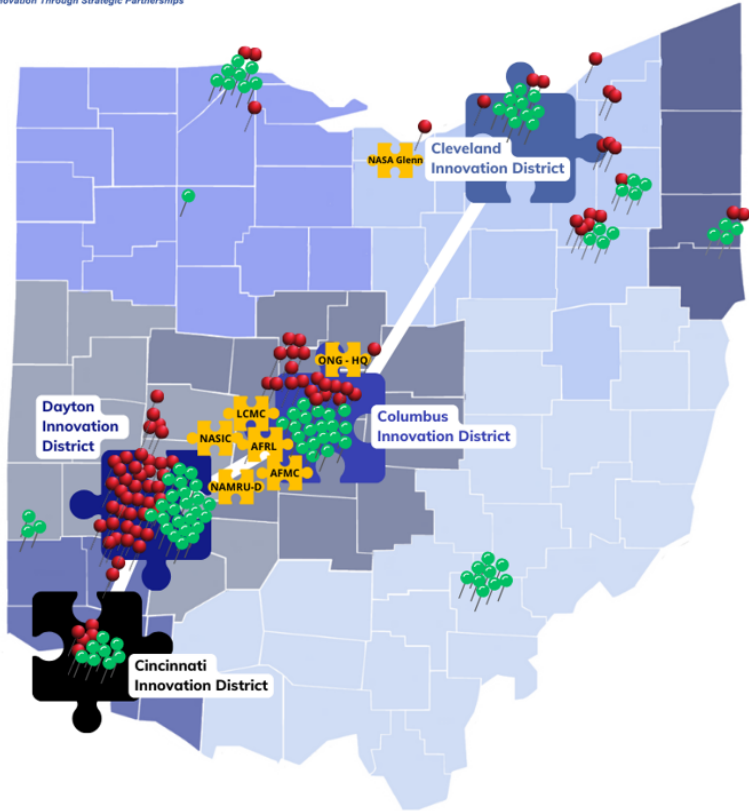
Benchmarking Comments on OFRN from Project Teams



- Research collaborations from OFRN projects enabled organization to obtain additional federal research funding for Ohio-based universities and companies.
- Collaboration with government entities and funding sources has been critical. Having the government resources to continue development, maturation and evaluations of the technology and determining how it supports operationalization before scaling is essential.
- Ability to advance manufacturing methods. Example: AMI has added 10 FTE over the course of the program in areas of manufacturing, QC, IT, and engineering.
- This is where OFRN plays a crucial role. They are willing to support our ambitious ideas, offering funding and valuable networking opportunities to connect with the right partners. It was highly effective for a small business to expand its presence in the commercial marketplace that might have otherwise been challenging to access.
- Fielding of a demonstrable product as a result of OFRN was the key to marketing efforts with potential clients.
- OFRN gave the unique opportunity to advance product designs helping drive innovation beyond current boundaries.
- Approach has been important in strengthening relationships among researchers in the state. It provided an excellent opportunity to build closer connections to the AFRL and NASA, with engineers from both institutions participating in onsite design reviews.
- The research described in this report simply would not have happened without OFRN support. It provided the opportunity to develop techniques and capabilities that are not readily supported by other funding sources but are crucial to staying at the forefront of the field.
- OFRN team matchmaking capabilities helped make connections to leverage each other's capabilities for project development.
- OFRN experts provided solicitation navigation support concerning state and federal follow-on funding opportunities.
- There are a lot of great collaborations happening via the OFRN that are supporting AAM related projects throughout the State of Ohio, and the DriveOhio initiative has certainly benefited from that.



Driving Innovation Through Strategic Partnerships



Government Partners

- Air Force Material Command (AFMC)
- Air Force Research Laboratory (AFRL)
- Air Force Life Cycle Management Center (LCMC)
- National Aeronautics and Space Administration Glenn Research Center (NASA GRC)
- National Air and Space Intelligence Center NASIC)
- Naval Medical Research Unit-Dayton (NAMRU-D)
- Ohio National Guard (ONG)

Ohio Federal Research Network Industry Collaborations

- | | | |
|---|--|--|
| <ul style="list-style-type: none"> ABB Agile Ultrasonics LLC Akron Polymer Systems AlphaMicron, Inc. American Electric Power Amperand Arctos Technology Solutions Asymmetric Technologies LLC Autonodyne Battelle Memorial Institute BerrieHill Bertec Corporation Bosma Technology CAL Analytics CAR Technologies Caterpillar CFD Research Columbus Collaboratory Comsat Architects Converge Technologies CRG CSA America DataScience.com Demeter UAVs Design Knowledge Ecrrine Systems Event38 Unmanned Systems Fenix Magnetics Flightprofiler, LLC Ford Future Motors Galois GE Additive GE Aviation GE EPISCenter GhostWave Inc. GIRD Systems Inc GoHypersonic Gooch & Housego Ohio Hana Microdisplay Systems Heureka Software | <ul style="list-style-type: none"> Hewlett Packard Honeywell Hyphen Innovations IBM TJ Watson Research Ctr Illumination Works Inflection Innovative Scientific Solutions (ISSI) Ipsos Kairos Research LLC Kongsberg L3Harris Lexis Nexis Lockheed Martin Lockheed Martin Procerus Lucintech MacAir Aviation MacNaughtan Development MatchTx MaxPower Metro Health Nanoracks NEC Laboratories NONA Composites Norman Noble Nuance Orbita Orbital Research Inc. Orbital-ATK Organization PC Krause & Assoc. Perduco Persistent Surveillance Systems LLC PH Matter, LLC Powdermet Power Converters Future LLC Raytheon Technologies RegenFix RESILIENX, INC Riverside Research | <ul style="list-style-type: none"> Rubix Technology Safran Power USA Simlat, Ltd Sivers SK Infrared, LLC SpineDynX StreamDSP Tenet3 The Entrepreneurs' Center The Perduco Group TRUWEATHER SOLUTIONS, INC UES, Inc. Universal Technology Corp Unmanned Science Xerion Advanced Battery Corp. Youngstown Business Incubator |
|---|--|--|

Ohio Federal Research Network University Collaborations

- Air Force Institute of Technology
- University of Akron
- Bowling Green State University
- Case Western Reserve University
- Kent State University
- Miami University
- Ohio University
- Otterbein University
- Sinclair Community College
- The Ohio State University
- University of Cincinnati
- University of Toledo
- University of Cincinnati
- University of Dayton
- University of Dayton Research Institute
- University of Toledo
- Wright State University
- Youngstown State University



Opportunity Days (webinar)



Topics:

May 6th , 2025 – Human Machine Teaming

January 23rd, 2025 – Autonomy

September 2024 – Hypersonics

June 2024 – Quantum Sensing

March 2024 - Commercial Operation in Low Earth Orbit

November 2023 – Human Machine Teaming

August 2023 – Digital Engineering

Purpose:

Opportunity Days are geared towards government, academic , and industry innovators and researchers in Ohio, and anywhere, interested in collaborating on innovative ideas to solve wicked challenges.

<https://ohiofrn.org/events/ohio-federal-research-network-opportunity-days>

Round 1 Summary

Project Title	Awarded	Follow-On	Lead	Subs	Final Report Status
Regional LVC Enterprise	\$ 648,455	\$5,045,000	WSRI	WSU, UT, CWRU, UC, Orbita, Rubix, Metro Health	Complete
Sliding-Scale Autonomy Through Physiological Rhythm Evaluations (SAPHYRE)	\$ 850,467	\$20,270,000	WSU	UT, AFIT, Perduco	Complete
High Performance Plastic Substrates for Flexible Electronics	\$ 666,726	\$14,719,907	UA	UT, OU, Purdue (previously UA), Akron Polymers, Orbital Research, Lucintech, EMS Adhesives, UTC	Complete
Adaptive Bio-Inspired Aerospace Structures Actuated by Shape Memory Alloys	\$ 666,958	\$4,036,305	UT	OSU, CWRU, RegenFix, Noman Noble, GE Aviation, Lincoln Electric	Complete
High Temperature Magnetic Materials	\$ 666,312	\$3,255,000	CWRU	UC, UT, YSU, Inorganic Product Partners, Lakeshore Cryotronics, Fenix Magnetics, Powdermet, GE Aviation	Complete
Hybrid Electric Propulsion and Power	\$ 1,467,545	\$13,075,000	OSU	OSU, UA, GE Aviation	Complete
Control Architecture for Intelligent Aviation Electric Power Systems	\$ 535,455	\$10,714,000	OSU	OSU, UA, UDRI, Ford, ABB, Caterpillar, GE EPISCenter, AEP, GE Aviation, UTRC	Complete
High Energy Density Li-Ion Battery Based on Advanced Silicon Anodes	\$ 649,961	\$3,225,000	UA	OSU, UT, ph Matter, CAR Technologies, Akron Polymer	Complete
High Energy/Power, Long Cycle Life, Thermally Safe, Li-S Battery	\$ 499,990	\$5,133,363	UD	CWRU, CRG, UES, Xerion	Complete
Hi-Performance Multifunctional Structural Energy Storage	\$ 499,997	\$1,363,000	CWRU	CWRU, UDRI, Event38, CSA America, CRG	Complete
Total	\$ 7,151,866	\$80,986,575			

Round 2 Summary

Project Title	Awarded	Follow-On	Lead	Subs	Final Report Status
Intelligence Channel Sensing	\$800,002	\$4,500,690	WSU	OU, UT, AFIT, Comsat Architects, GIRD	Complete
Test & Evaluation of Autonomous Systems (TEAS)	\$1,300,000	\$162,405,168	WSU	OU, AFIT, Galois	Complete
Human-Centered Big Data (HCBD)	\$1,200,000	\$10,043,184	WSU	OSU, CWRU, DataScience.com, Kairos Research, NCR Labs, Tenet3, Design Knowledge, Illumination Works, Columbus Collaboratory, Amperand, MatchTx, Perduco, HP, Lexis Nexis, Ipsos, Nuance, Heureka Software, IBM TJ Watson Research Ctr	Complete
Advanced Cognitive and Physical Sweat Biosensing	\$915,001	\$1,165,000	UC	OSU, UT, WSU, Eccrine Systems	Complete
Motion Sickness Interactions with Spine Disorders (MOSSD)	\$1,200,000	\$13,704,000	OSU	UC, WSRI, Bertec Corp, SpineDynX	Complete
Low Cost Manufacturing for Limited Production Aircraft Composite Structures	\$1,097,197	\$13,494,941	UDRI	CWRU, UC, OU, WSU, YSU, NONA Composites, Orbital-ATK, GE Aerospace, Lockheed Martin	Complete
Advanced Turbine Cooling	\$999,838	\$10,392,000	OSU	UC, AFRI, Miami, Innovative Scientific Solutions (ISSI), Honeywell	Complete
UAV Icing Protection	\$1,000,000		OSU	UDRI, CWRU, Battelle Memorial Institute	Complete
Total	\$8,512,038	\$215,704,983			

Round 3 Summary

Project Title	Awarded	Follow-On	Lead	Subs	Final Report Status
UAS Detect and Avoid Sensor Fusion of Stealthy Radars and Vision	\$1,344,597	\$365,000	Ghostwave	OSU, Sindair, Converge Technologies, Event38, Lockheed Martin	Complete
Brushless Doubly-fed Machine and Drive System for Aviation Application	\$2,001,862	\$2,940,000	OSU	UDRI, Safran	Complete
Regional Unmanned Traffic Management System (RUTMS)	\$968,947	\$1,550,000	UC	Sindair, Demeter, Simlat	Complete
Autonomous/Remote Cirrus SR22 Aerial Surveillance Platform and Personnel Air Vehicle "Air Uber" System	\$1,998,349	\$29,811,000	PSS	Ohio University, WSU, Autonodyne, Bosma Tech, MacAir Aviation, MacNaughtan Development	Complete
Total	\$6,313,755	\$34,666,000			

Round 4 Summary

Project Title	Awarded	Follow-On	Lead	Subs	Final Report Status
A Hybrid Fuel Cell–Battery–Capacitor Power Source for UAS	\$1,214,202	\$1,831,106	KSU	UD, WSU, CWRU, Event38	Complete
Computer-Human Interaction for Rapid Program Analysis through Cognitive Collaboration (CHIRP2C)	\$1,176,717	\$0	Riverside Research	UC, UD, Unmanned Science	Complete
Interoperability, Resiliency, and Contingency Management for Ohio UAS Operations	\$1,399,882	\$2,062,000	CAL Analytics	KSU, OSU, Resiliencx, TruWeather Solutions, Kongsberg	Complete
Resilient and Secure UAS Flight Control	\$1,450,071	\$5,725,000	Asymmetric	OSU, OU, Lockheed Martin	Complete
Geometrically-Complex 3D Printed Antennas for UAVs	\$972,877	\$150,000	YBI	KSU, YSU, Event38, Universal Technology Corp.	Complete
Multi-purpose Mast/Aerial 360O radar/optical fused sensors for Perimeter Monitoring and Aerial Detect & Avoid	\$1,262,622	\$1,203,133	Ghostwave	OSU, Sindair, AFIT, Converge Technologies, Sivers, Stream DSP	Complete
Total	\$7,476,371	\$10,971,239			

Round 5 Summary

Project Title	Awarded	Follow-On	Lead	Subs	Final Report Status
LAWN (Low Altitude Weather Network)	\$902,498	\$182,000	Flight Profiler	OSU, OU	Final report pending final demo.
ALTITUDE: Affordable LIDAR Technologies for IntegraTion and Unmanned Deployment	\$1,744,650	\$1,957,000	OSU	Sinclair, UD, SK Infrared, L3 Harris	Completed
Autonomous Capabilities for CASEVAC and Resupply in UrbanEnvironments (ACCRUE)	\$1,575,124	\$3,802,000	Asymmetric	OSU, OU, Lockheed Martin Procerus	Completed
Electronically Dimmable Protective Eyewear	\$849,999	\$2,700,000	AlphaMicron	BGSU, KSU, Miami	Completed
Thin-film Crystals for High-speed Optical Modulation	\$1,076,040	\$55,159	OSU	UD, Gooch & Housego Ohio	Completed
Advanced High Voltage DC Generator System for Aerospace with Rapid Dynamic Response	\$1,710,000	\$15,000,000	Safran	OSU, YSU, YBI	Completed
High Reliability, Low EMI, Wide Bandgap Power Conversion for Air & Space Applications	\$1,018,611	\$383,200	Miami University	OSU, GE Aviation, PC Kraus & Assoc., Power Converters Future	Completed
Total	\$8,876,923	\$24,079,359			

OFRN: Round 6 Projects

Proj #	Project Title	Awarded	Follow-On	AOI	Lead	Team	Government Partner
602	Quantum Sensor System using Rydberg Atoms	\$1,005,120	\$380,000	Quantum Sensing Technologies	GhostWave Inc.	OSU, UDRI, Converge Technologies, Inflection	AFRL
609	Structural Materials Joining in Space	\$1,193,345	\$920,999	Commercial Space in Low Earth Orbit	The Ohio State University	UD, Central State Univ., Agile Ultrasonics LCC, Lincoln Electric, Nanoracks	AFRL, NASA
619	High Bandwidth Light Weight Modular GaN Based Utility Interactive DC Emulator	\$1,128,607	\$426,006	High Power Energy Conversion	University of Akron	CWRU, PC Krause & Associates	AFRL
624	Ocular and Physio-Temporal Indicators of Cognitive State (OPTICS)	\$1,160,000	\$1,350,397	Human Performance	Kairos Research	WSU, Sinclair, The Entrepreneurs' Center	AFRL, NAMRU-D
625	Gradient Alloy Processing in Laser Powder Bed Fusion for Hypersonic Applications	\$1,164,566	\$1,000,000	Hypersonics	ARCTOS Technology Solutions	OU, UT, GoHypersonic, Hyphen Innovations	NASA
628	A Machine Learning Framework for Digital Engineering of Hypersonic Vehicles with Quantified Prediction Uncertainty (Hypersonic ML FW)	\$1,199,945	\$2,200,000	Digital Engineering Tools	CFD Research Corporation	AFIT, WSU	AFRL
	Total	\$6,851,584	\$6,277,402				