WSRI/WSARC
Faculty Senate Annual Report

Dennis Andersh
WSRI Executive Director
WSARC CEO

Wright State Research Institute

As a department of Wright State University, Wright State Research Institute (WSRI) provides innovative, customer-focused applied research solutions in the human performance and health sciences, by leveraging our university affiliation and community partnerships to facilitate technology development, job creation, and the economic revitalization of the region & state.

Wright State Applied Research Corporation

Wright State Applied Research Corporation (WSARC) was established in 2011 as a separate 501(c)(3) nonprofit organization and was designed to provide applied research contracting, security, and research administration services for Wright State Research Institute (WSRI), Wright State University (WSU), and the State of Ohio.

The major reasons for a separate entity are the abilities to perform classified contracts in classified facilities, contracts that required ITAR infrastructure, to perform applied research at the speed of business, and contracts that require FAR compliant total time accounting. Applied Research Corporations are set up to do total cost recovery following OMB Circular 230. That was one of the reasons the WSARC was set up in a similar vein to Georgia Tech Applied Research Corporation (GTARC).

- The WSRI Executive Advisory Council (EAC) and Research Advisory Council (RAC) are fully operational.

- WSRI/WSARC released a campus wide call for a pilot Independent Research and Development (IRAD) effort to promote collaboration and growth of the WSU research portfolio.
  - Received 12 proposals on January 4th and awarded 6 IRAD proposals across campus on February 1, 2019.
  - The RAC plans to evaluate lessons learned from the pilot program before the FY20 program is launched.

- WSRI has hired a new Chief Scientist from DARPA and DTRA, Viktoria Greanya, PhD.

- WSRI/WSARC met the expectations of the Third Frontier 2010 Research and Development Capitalization (RDCAP) grant and WSU will be able to realize the full $5M.
  - This will provide $1.6M of cash for WSU.

- WSRI has started new programs to create a positive and inclusive environment that values diversity, equity and inclusion throughout the workplace, across all roles, functions and operations.
  - Released a code of professional conduct, diversity, and ethics across WSRI January 7, 2019 (Required by the FAR).
  - OEI has been providing guidance, as well as training and education for WSRI leadership. They review all positions and candidates.
  - Dr. Stephanie Goodwin has been supporting WSRI the past 6 months to provide further leadership development at WSRI.

- WSRI has improved teaming with faculty and students on multiple new programs over the past two years. A key focus of WSRI going forward.
  - ONR $7.0M MURI PHITE Program with the Boonshoft School of Medicine.
  - ONR $0.75M Predicting Lapses of Attention (LAPSES).
  - DARPA $7M Learning through the Electrical Augmentation of Plasticity Program (LEAP).
  - DARPA $1M Goal-driven Agile Teams and Environments (GATE) Seedling.
  - OFRN $1.2M HBCD Bid Data Analytics Efforts.
  - AFRL/RH $2.0M Human Machine Teaming Task Order (HMT).
  - AFOSR, ONR, ARO, NSF $1.1M Goal Driven Autonomy Research .
  - AFRL/RH $3.4M Mission Directed Learning Environment (MIDLE).
  - IARPA $1.1M Human Forecasting (HFC).
  - AFRL / HMT Contract increased ceiling from $42M to $62M.
  - NCMR $2.8M TechWarrior Contract for technology demonstrations for small businesses.
  - NCMR supports The College of Nursing and Health and the Boonshoft School of Medicine for training and exercises.
  - WSARC over the past 3 years, through subcontracts to WSU, has also funded 26 GRAs on campus.
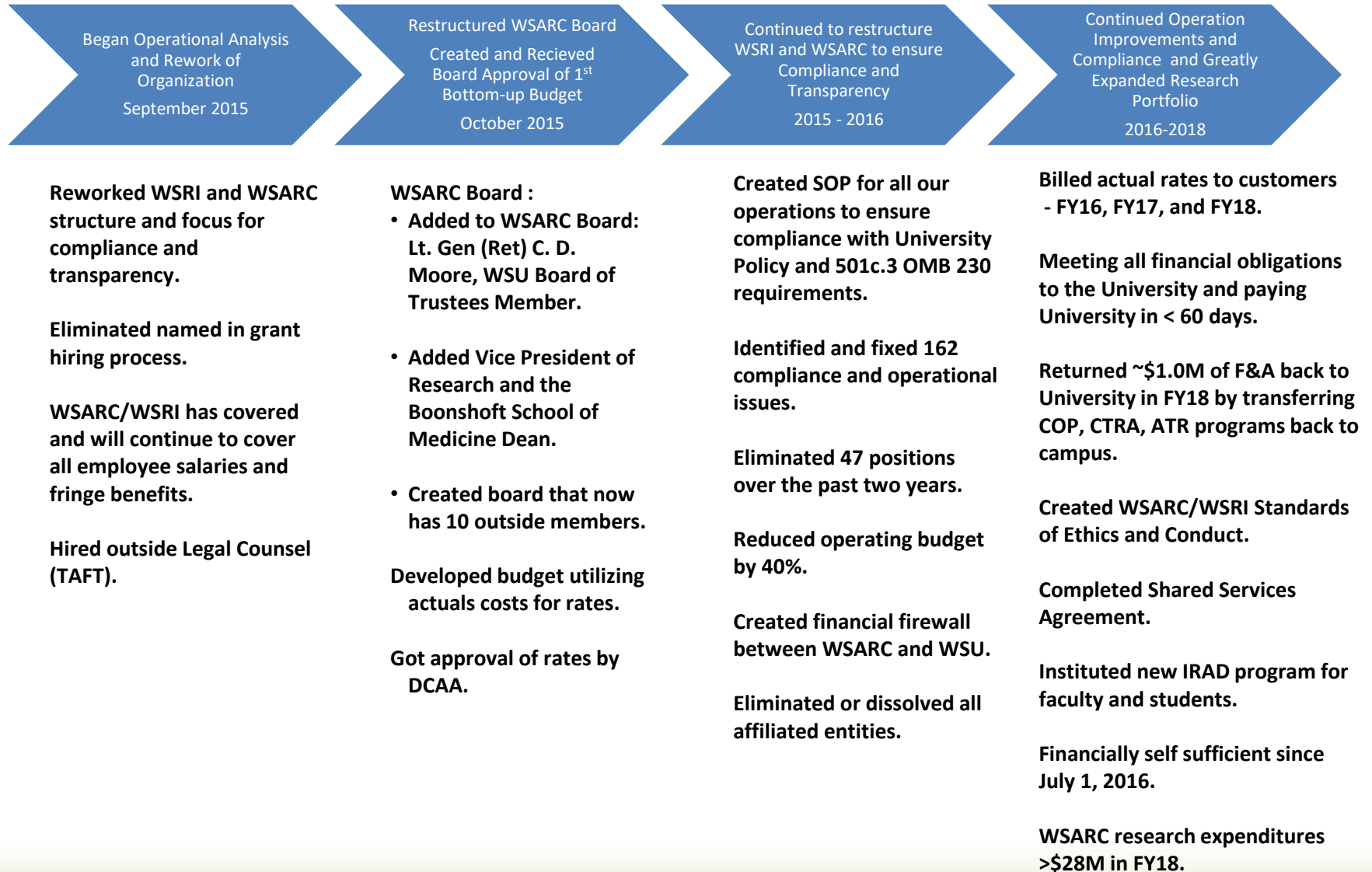 - WSRI currently directly supports 4 GRAs and 7 interns.

- WSARC is self sufficient today and will continue to be financially self sufficient going forward.
  - The WSARC Board, WSU Board of Trustee Affiliated Entity Reports and Reviews, WSRI Executive Advisory Committee, and the outside auditors will oversee all activities going forward to ensure self sufficiency.

- All WSARC affiliated entities have been terminated or dissolved.

- WSARC now subcontracts all faculty and student research to WSU so that WSU keeps all related F/A. This also creates a financial firewall between WSARC and WSU.

- WSARC as of December 31, 2018 owes WSU $530K related to ATIC related labor costs.
  - WSARC will use cash from operations to pay this due bill ASAP, potentially this year.
  - Currently paying $200K per year. Payments will be accelerated as other funds become available.

- WSARC had positive cash flow in FY18 and this is continuing through FY19.

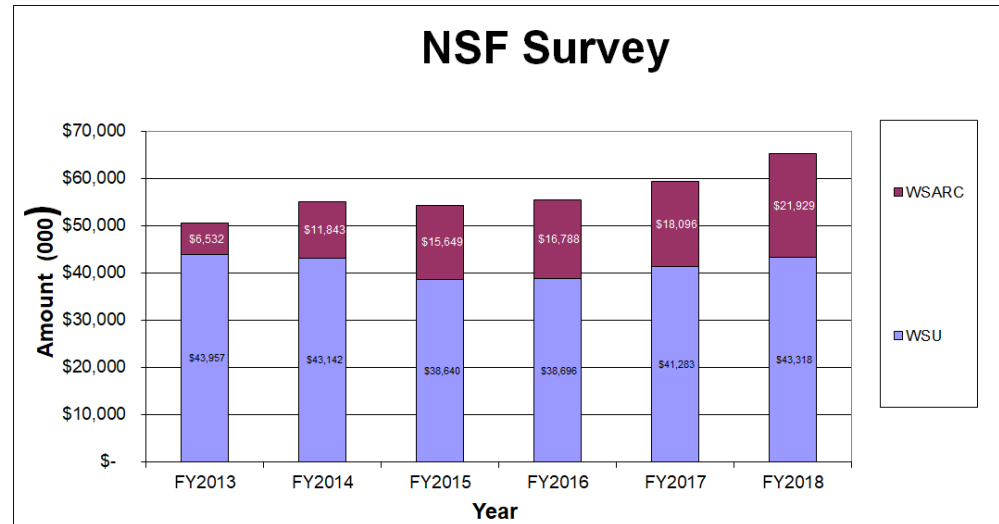- FY18 overall operational performance metrics were positive.

- WSARC Board of Directors consists of 3 internal WSU employees, 1 WSU Board of Trustees member, and 9 outside directors from across the U.S.

- WSARC's FY18 Audit had no material findings.

- WSARC and WSU have completed a shared services agreement and it is effective July 1, 2018 and supports all of FY19.

  - WSARC/WSRI has covered and will continue to cover all employee salary and fringe benefits.

  - WSARC is now paying interest on monies owed to WSU.

- WSARC with OSU are the co-leads for executing the Ohio Federal Research Network (OFRN) program for the State of Ohio.

  - 12 Ohio universities and 2 community colleges received funding.
    - Competitively awarded $28M through three funding rounds.
      - WSU has won $2.65M over the past 3 years. 2nd highest amount across Ohio.
      - Top research and commercialization programs are from WSU, Dr. Wu and Dr. Raymer
  - Universities have won $139M+ in new awards from DARPA, ONR, AFRL, NASA, and IARPA.
  - OFRN helped create 7 new companies across Ohio.
  - Garnered $20M of industry funded research statewide.

WSRI and WSARC Corrective Actions Timeline

Began Operational Analysis and Rework of Organization
September 2015

Restructured WSARC Board
Created and Recieved Board Approval of 1st Bottom-up Budget
October 2015

Continued to restructure WSRI and WSARC to ensure Compliance and Transparency
2015 - 2016

Continued Operation Improvements and Compliance and Greatly Expanded Research Portfolio
2016-2018

Reworked WSRI and WSARC structure and focus for compliance and transparency.

Eliminated named in grant hiring process.

WSARC/WSRI has covered and will continue to cover all employee salaries and fringe benefits.

Hired outside Legal Counsel (TAFT).

WSARC Board :
- **Added to WSARC Board: Lt. Gen (Ret) C. D. Moore, WSU Board of Trustees Member.**

- **Added Vice President of Research and the Boonshoft School of Medicine Dean.**

- **Created board that now has 10 outside members.**

Developed budget utilizing actuals costs for rates.

Got approval of rates by DCAA.

Created SOP for all our operations to ensure compliance with University Policy and 501c.3 OMB 230 requirements.

Identified and fixed 162 compliance and operational issues.

Eliminated 47 positions over the past two years.

Reduced operating budget by 40%.

Created financial firewall between WSARC and WSU.

Eliminated or dissolved all affiliated entities.

Billed actual rates to customers - FY16, FY17, and FY18.

Meeting all financial obligations to the University and paying University in < 60 days.

Returned ~$1.0M of F&A back to University in FY18 by transferring COP, CTRA, ATR programs back to campus.

Created WSARC/WSRI Standards of Ethics and Conduct.

Completed Shared Services Agreement.

Instituted new IRAD program for faculty and students.

Financially self sufficient since July 1, 2016.

WSARC research expenditures >$28M in FY18.

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- WSARC subcontracts to WSU over past 3 years have resulted in:

  - Funding for 26 GRAs
  - $5.9M in Funding for WSU Faculty, Students and F/A

- WSARC currently funds 4 GRAs for WSRI research and 7 interns from multiple colleges.

- WSARC funded effort to garner funding for Trust in Flexible Electronics that resulted in a $1.8M contract for CECS.

- WSARC funded the effort to secure from the State Capital $1M in funding for the current Dayton Regional STEM School expansion and the movement of the AFRL Grill to the STEM School.

- WSARC funded all the efforts to ensure WSU got the full $5M back on RDCAP.

- Returned ~$1.0M of F&A back to University in FY18 by transferring COP, CTRA, ATR programs back to campus.

- WSARC with OSU are the leads for very successful OFRN programs. WSU is the second highest funded University across Ohio.

NSF Survey — stacked bar chart of Amount (000) by Year (FY2013–FY2018), with WSARC and WSU components.

Year	WSARC	WSU
FY2013	$6,532	$43,957
FY2014	$11,843	$43,142
FY2015	$15,649	$38,640
FY2016	$16,788	$38,696
FY2017	$18,096	$41,283
FY2018	$21,929	$43,318

- WSARC contracts are now 1/3 of all WSU research expenditures for multiple new clients.

- If WSARC PhD's staff had been included in HERD survey data in 2015, WSU would have retained its HERD R2 Ranking.

- Through WSARC we have added 13 new prime contracts across DOD. Largest is $62M (AFRL/HMT), prestigious ONR $7M MURI and DARPA $7M LEAP programs.

- WSARC is funding 6 WSU faculty led IRAD projects to expand WSU and WSRI research areas.

- New WSRI Chief Scientist Dr. Viktoria Greanya's key role is to expand the collaboration and teaming across WSU and to pursue new clients and research thrusts leveraging the RAC and IRAD efforts.

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Our Vision:

WSARC is supporting WSRI, WSU and the State of Ohio to be national leaders in transformational applied research.

Our Mission:

WSARC is supporting WSRI, WSU, and the State of Ohio to deliver high-impact solutions for government, and industry sponsors through research, education and training.

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WSARC Support to WSRI Strategic View:

WSARC supports WSU's mission to transform the lives of students and the communities we serve, and to support that mission by working with faculty, staff, students and external partners to enhance the research enterprise at WSU and the State of Ohio.

WSRI, through the WSARC, works with faculty and other campus units to catalyze strategic research and scholarly activities that lead to innovation and problem-solving to address critical challenges facing the nation. WSRI through WSARC aids in the expansion of the local talent pool to address the applied research challenges faced by industry, government, and the University.

WSARC's contracts support and enhance commercialization programs at the University and the State of Ohio and support economic development throughout the region and state, improve human performance research regionally, and are a reliable and productive partner of key government and industry research sponsors.

WSARC Guiding Principles:

All activities will be performed in a manner that:
- Promotes transparency.
- Ensures compliance with University, state and federal regulations and policies.
- Supports research collaboration across our University and the State of Ohio.
- Engages and cultivates our people as our greatest asset.
- Supports innovation across all technical, administrative and business divisions of WSU and WSRI.
- Promotes integrity and stewardship to ensure that all personnel act ethically at all times.
- Ensures financial self-sufficiency.

President, Provost, Board of Trustees

WSU Director of Compliance

Ellen Reinsch Friese
Interim Vice President for Research

WSARC
Board of Directors

Dennis Andersh

WSARC CEO

WSRI Ex. Dir.

Executive Advisory Council (EAC)

Research Advisory Council (RAC)

Mike Pearsall
Director of Operations

Viktoria Greanya, PhD
Chief Scientist

Directors of Research Thrusts

Paul Jackson
Director of OFRN and Commercialization

WSRI/WSARC Compliance

WSARC   WSRI   WSU

- *GOAL 1: Accelerate basic scientific research into innovative solutions that address critical challenges.*

- *GOAL 2: Enhance commercialization programs to expand University research.*

- *GOAL 3: Provide a responsive, customer-focused, compliant, and transparent R for D process as the Ohio Federal Research Network Executive Agent.*

- *GOAL 4: Act in the best interest by providing contracting services to federal and state research programs at Wright State University, Wright State Research Institute, and related entities.*

- *GOAL 5: Create a positive and inclusive environment that values diversity, equity and inclusion throughout the workplace, across all roles, functions and operations.*

- **WSARC Board of Directors**
  - The Board of Directors shall have general supervision and charge of the property, affairs, and finances of the Corporation. Without limiting the generality of the foregoing, the Directors shall elect the officers of the Corporation.

- **WSRI Executive Advisory Council**
  - Ensure there is continuous focus and improvement in the working relationships between WSRI and the WSU Research Enterprise (RE) including review of business performance and processes;
  - Align WSRI and WSU RE efforts to become a world class research capability, with innovative ways of capturing research opportunities that meet the shared mission and are in full compliance with applicable state and federal regulations;
  - Help to share and provide a consistent message in communicating with customers, particularly the government research mission at Wright Patterson Air Force Base (WPAFB), other stakeholders across Ohio, and the RE notably the faculty, staff and students of WSU; and
  - Ensure that WSRI is working in accordance with the affiliation agreement between WSU and WSARC.

- **WSRI Research Advisory Council**
  - The RAC will operate and function as an advisory committee serving the needs of the WSU Research Enterprise (RE) by providing input and recommendations for joint WSU/WSRI research.
  - The RAC team will work with the WSRI Chief Science Officer and the WSRI Executive Director (ED) to provide guidance regarding research opportunities within federal agencies, state organizations, and industry.
  - The RAC will review and recommend the pursuit of funding, the commercialization of developed technologies and the engagement of Wright State University (WSU) faculty, staff and students within the framework of the affiliation agreement between WSU and WSARC.

Note: The WSU Research Enterprise is defined as the faculty and staff that support the increase of externally funded research, scholarly activities, and other sponsored programs.

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Current Customers

Air Force Research Laboratory

Air Force Office of Scientific Research

National Air and Space Intel Center

National Science Foundation

Office of Naval Research

DARPA

Army Research Office

Office of the Secretary of Defense

IARPA

Air Force Special Operations Command

Classified Customers

Research Focus Areas

Human Performance

Cognitive & Social Sciences

Autonomy/HMT

Live, Virtual and Constructive

Embedded Systems

By expanding and diversifying our research portfolio through customer engagement, focused research proposals & partnering with faculty and students, we can attract talent to the region and University.

PHITE Hypothesis: Epigenetics are a primary mechanism by which PT protocols transduce *warfighter genotype* into *warfighting phenotype*.

PHITE is the largest (n=150), most comprehensive study to date of the epigenetics of cardiorespiratory and neuromuscular fitness.

Untrained State—week 1, session 1:
- Baseline performance: VO_2Max, 1 RM leg press, 1 RM chest press, vertical jump, 400 m sprint, max knee extension power, anaerobic power (peak and relative peak power, anaerobic fatigue, anaerobic capacity).
- 15 mL blood collected: before, 15 mins, 3 hr, 24 hr post-training.
- 80 mg muscle biopsy of vastus lateralis: before, 3 hr, 24 hr post-training.

Trained State—week 12, session 5:
- Assess performance: VO_2Max, 1 RM leg press, 1 RM chest press, vertical jump, 400 m sprint, max knee extension power, anaerobic power (peak and relative peak power, anaerobic fatigue, anaerobic capacity).
- 15 mL blood collected: before, 15 mins, 3 hr, 24 hr post-training.
- 80 mg muscle biopsy of vastus lateralis: before, 3 hr, 24 hr post-training.

Detrained State—week 24, 12 wks. rest:
- Assess performance: VO_2Max, 1 RM leg press, 1 RM chest press, vertical jump, 400 m sprint, max knee extension power, anaerobic power (peak and relative peak power, anaerobic fatigue, anaerobic capacity).
- 15 mL blood collected.
- 80 mg muscle biopsy of vastus lateralis.

Group	Data Type	# of Subjects (Yrs 1-5)	Samples/ subject	Sample Type	Week 1 Prior	Week 1 0 hr	Week 1 3 hr	Week 1 24 hr	Week 12 Prior	Week 12 0 hr	Week 12 3 hr	Week 12 24 hr	Rest 12 wk
				Blood	fasted			fasted	fasted			fasted	fasted
				Muscle	fasted			fasted	fasted			fasted	fasted
I. Serum Profiles	Serum Cytokines	150	2	Blood									
	Serum growth factors	150	1	Blood									
	Anabolic Hormones	150	1	Blood									
I. Skeletal Muscle Phenotyping	Myofiber Type (I,IIa, IIx)	150	2	Muscle									
	Capillary Contacts per Myofiber	150	2	Muscle									
	Mitochondrial Enzyme Activity (I and IV)	150	6	Muscle									
I. Skeletal Muscle Signaling	Translation Initiation	150	6	Muscle									
	Ribosomal Biogenesis	150	6	Muscle									
	Proteolysis	150	6	Muscle									
	Inflammation	150	6	Muscle									
	Mitochondrial Biogenesis	150	6	Muscle									
II. Real-Time Biomarkers	SNP Panel	150	1	Blood									
	miRNA-seq	150	7	Blood									
	miRNA-seq	150	6	Muscle									
III. DNA methylation	Promoters-Enhancers Methyl Capture	50	4	Blood									
	Promoters-Enhancers Methyl Capture	50	4	Muscle									
IV. Transcriptomics	GRO-Seq	150	7	Muscle									
	RNA-Seq	150	7	Muscle									
V. Chromatin Remodelling	Histone Subunit Exchange	150	6	Muscle									
	Histone Acetylation	150	6	Muscle									
	Histone Methylation	150	6	Muscle									
	ChIP-Seq	50	4	Muscle									

PHITE will identify a minimal peripherally obtainable biosignature that can forecast peak performance, overtraining, and the retention period of performance gains.

Project: Predicting Lapses of Attention (LAPSES)
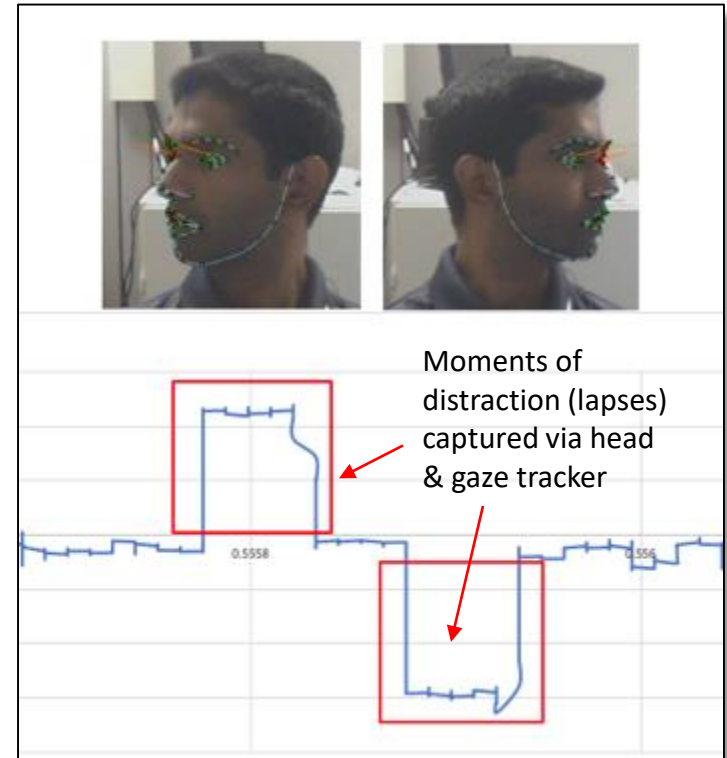**Collaborators:** Ion Juvina (Co-PI, Psych); Assaf Harel (Co-PI, Psych)
Sponsor: Office of Naval Research
Amount: $750K
Period of Performance: 11/15-11/18

Background: Attentional lapses can have devastating real-world consequences. Attention-related cognitive disorders cost the U.S. economy $143-266B/yr*
Goal: (1) Develop new measures for predicting individual differences in susceptibility to attentional lapses; **(2)** Develop new techniques for unobtrusively measuring attentional lapses in realistic task settings.

Moments of distraction (lapses) captured via head & gaze tracker

Learning through the Electrical Augmentation of Plasticity (LEAP)

DARPA DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Defense Need:

- Unmanned ISR missions in the Air Force alone increased 1200% over a 10-year period while the Air Force ISR analyst workforce increased only 33% (RAND 2014).

- Initial AF ISR analyst technical training spans 110 days at a cost of $40k per analyst, with a washout rate of up to 33.7% (Manacapelli, USAF, 2012)

- Vagal nerve stimulation (VNS) has been shown to improve performance on cognitive tasks in humans—but ***evidence for VNS-induced enhancement on complex DoD-relevant tasks such as ISR analysis is lacking***.

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Technical Approach:

- Elucidate the epigenetic mechanisms of VNS-enhanced plasticity and learning.

- Using a rat model, improve understanding of VNS mechanism and enhance plasticity by 40% and learning by 80%.

- Develop ISR analyst skill training that uses transcutaneous electrical VNS (tVNS) to enhance plasticity and learning.

- Demonstrate tVNS augmentation of USAF ISR SAR analyst learning by at least 40%.

Search task — Find the SA8 Targets — **Change detection task** — Find the Object that Changed

17
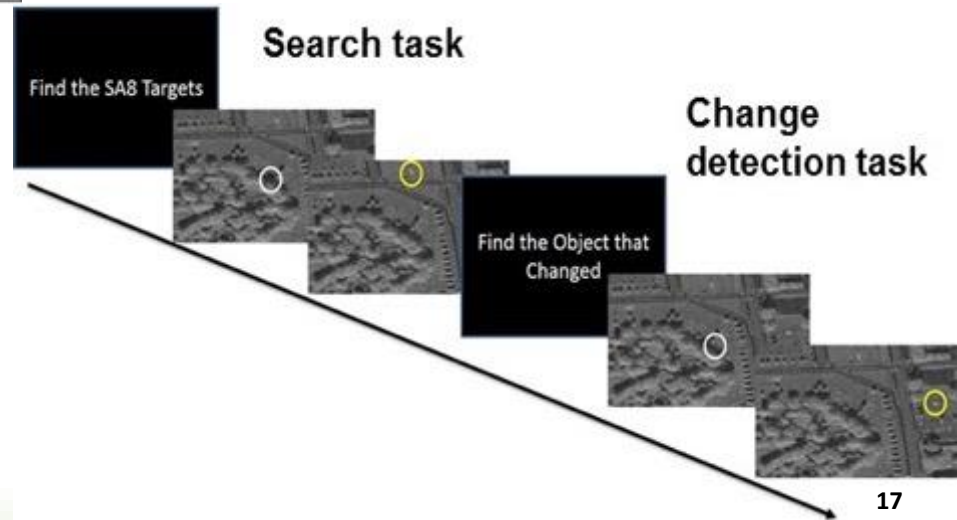
LEAP will demonstrate >40% improvement in ISR analyst training time, task performance, and skill retention

Project: Human-Centered Big Data (HCBD)
Collaborators: Michael Raymer (Co-PI, CSE); P. Hitzler, D. Doran, T. Wischgoll (Co-I's CSE)
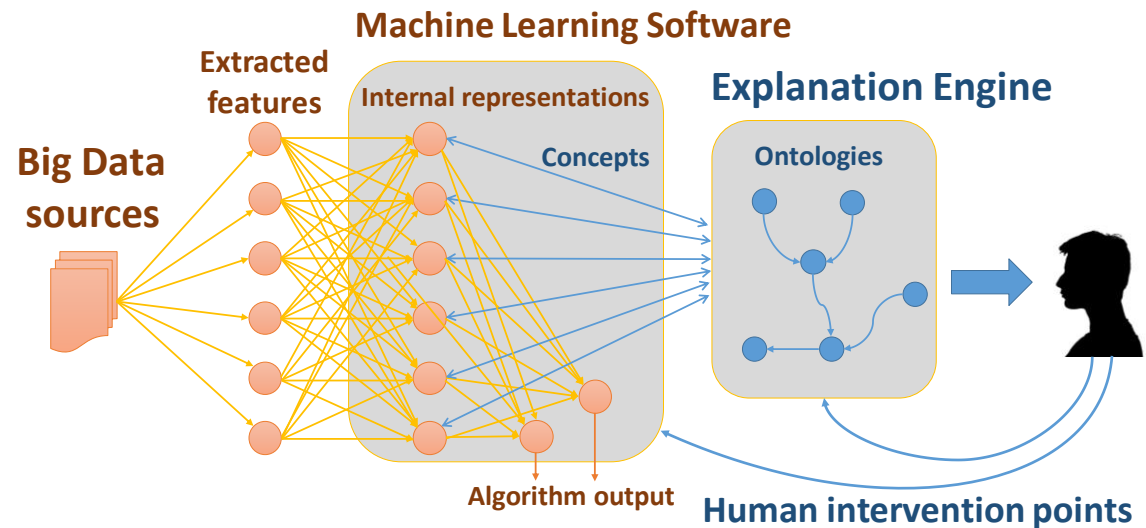**Sponsor:** Ohio Federal Research Network
Amount: $1.2M
Period of Performance: 9/16-1/19

Background: Despite increasingly impressive performance, many machine learning algorithms (such as deep neural networks) remain "black boxes" whose decision processes are opaque to human users.

Goal: Leverage the knowledge contained in ontologies (e.g. Semantic Web ontologies) to automatically generate *explanations* for *what* a machine learning algorithm has learned

Machine Learning Software

Extracted features

Internal representations

Explanation Engine

Concepts

Ontologies

Big Data sources

Algorithm output

Human intervention points

Joint effort with two other Ohio universities (OSU and Case Western) & multiple industry partners

Project: Maximizing Collective Intelligence through Socio-Cognitive Diversity
Collaborators: Amit Sheth, PhD (Co-PI, Kno.e.sis); Valerie Shalin (Co-I, Psych)
Sponsor: Army Research Office
Amount: $420K
**Period of Performance:** 4/16-4/19

Background: Research has shown that groups whose members possess diverse information & viewpoints tend to produce superior judgments compared to less diverse groups.
Goal: (1) Develop a method for *automatically computing a group's diversity* based on its communication content and social network structure; **(2)** Apply this method to *select wiser (more diverse) groups*

Streaming Twitter data
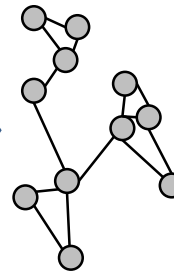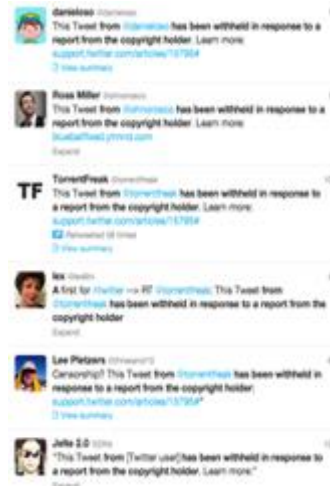
Model the crowd's socio-semantic graph
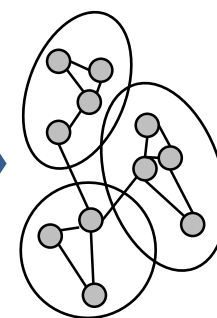
Identify clusters of similar individuals
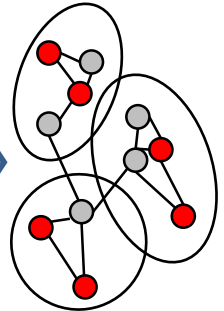
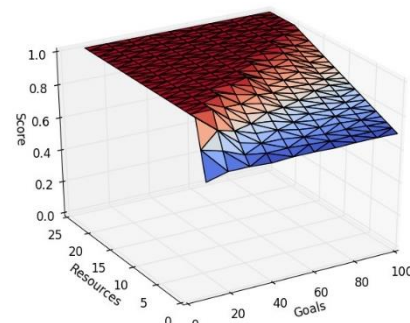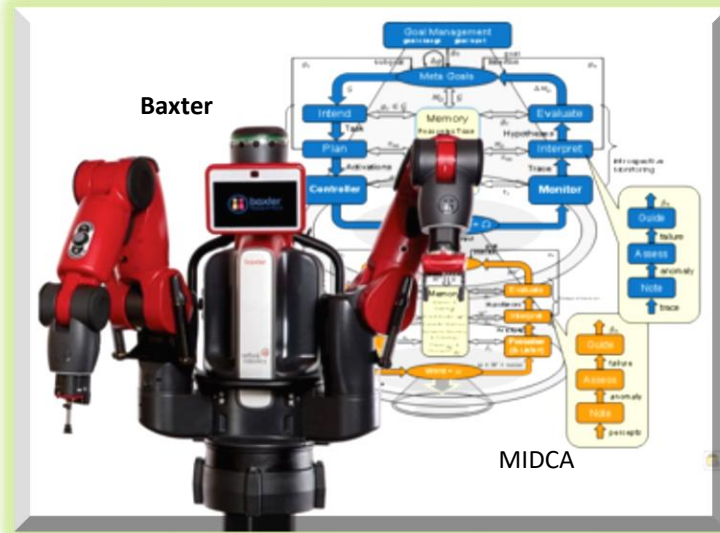Create diverse groups by sampling from multiple clusters

Paper recently accepted at 2017 IEEE/ACM International Conference on Web Intelligence
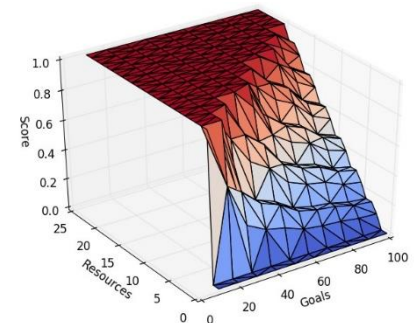
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Baxter

MIDCA

Technology Focus

- Leader in 6.1 research on autonomy foundations *and* applications
- Research includes robust autonomy, human-machine teaming, and computational cognitive architectures
- Applied to Baxter humanoid robot by Rethink Robotics
- Focus on problem recognition and independent goal generation **Results to Date**
- **Collaborators** – M. Cox (WSRI/WSU) & D. Perlis (UMD)
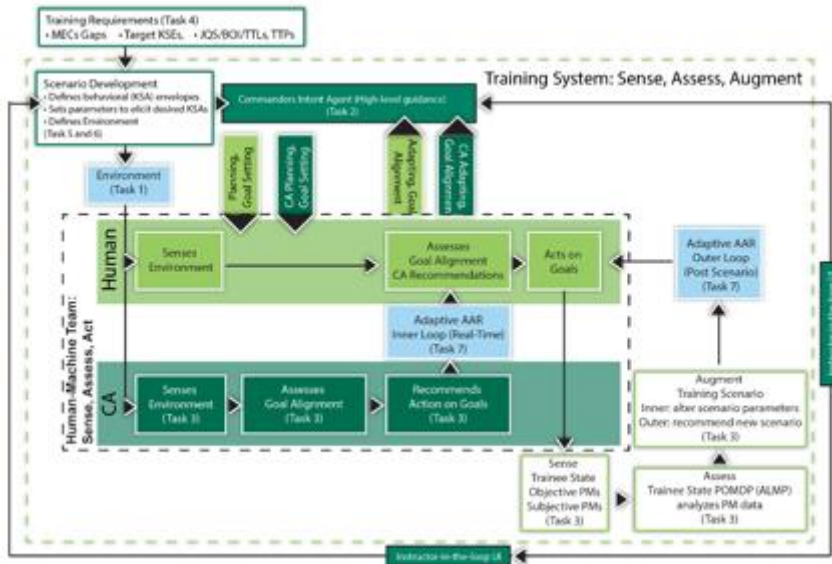- **Funding Sources** – AFOSR, ONR, and ARO

- Metacognitive Integrated Dual-Cycle Architecture (MIDCA) Version 1.4
- Goal-Driven Autonomy (GDA) approach to robust behavior under dynamic conditions and surprise
- Research objective is to operationalize method of (1) recognizing a mission problem; (2) explaining its cause; and (3) generating a goal to remove the cause

Performance with goal transformation   *Performance without goal transformation*
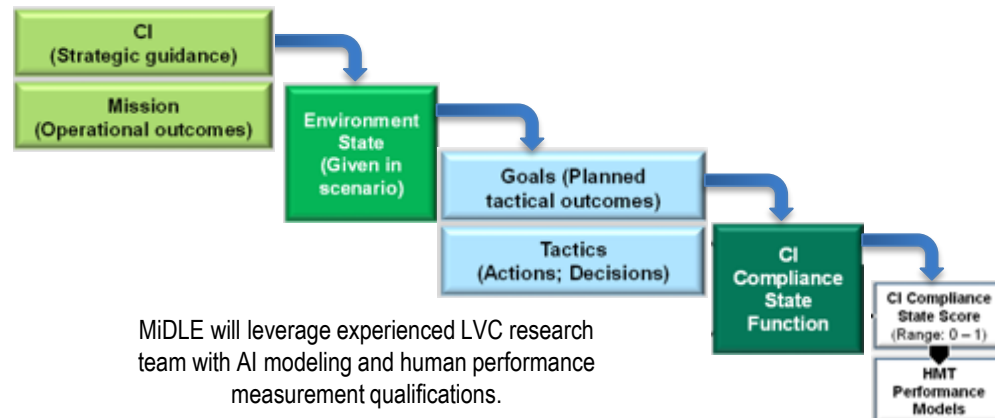
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Air Force Need:

- The USAF has a need for affordable, adaptive, and open solutions for personalized, persistent training.

- There is little to no research on how to improve training with autonomy (autonomous instructional management) or how to train operators to incorporate autonomous agents in their operations

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Technical Approach:

- Goal Driven autonomy algorithms to constrain training options and exercise decisions to reflect commander's intent.
  - Instantiated in Battlespace Sim / Mission Modelling Environment (MACE / NICE).
- Partially Observable Markov Decision Processes (POMDP) for training recommendation engines
- After Action and In Action Review tools with interfaces optimized to operator training needs.
- Instantiated in UAS simulation environments:
  - PRINCE: Predator Reaper Integrated Network Combat Environment
  - FUSION: Class 3 UAS and below R&D flight and control environment

MiDLE will leverage experienced LVC research team with AI modeling and human performance measurement qualifications.

MiDLE will develop a next-generation live, virtual, and constructive (LVC) training system aimed at addressing gaps in training with autonomous agents and improve training system personalization.

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NSF Survey
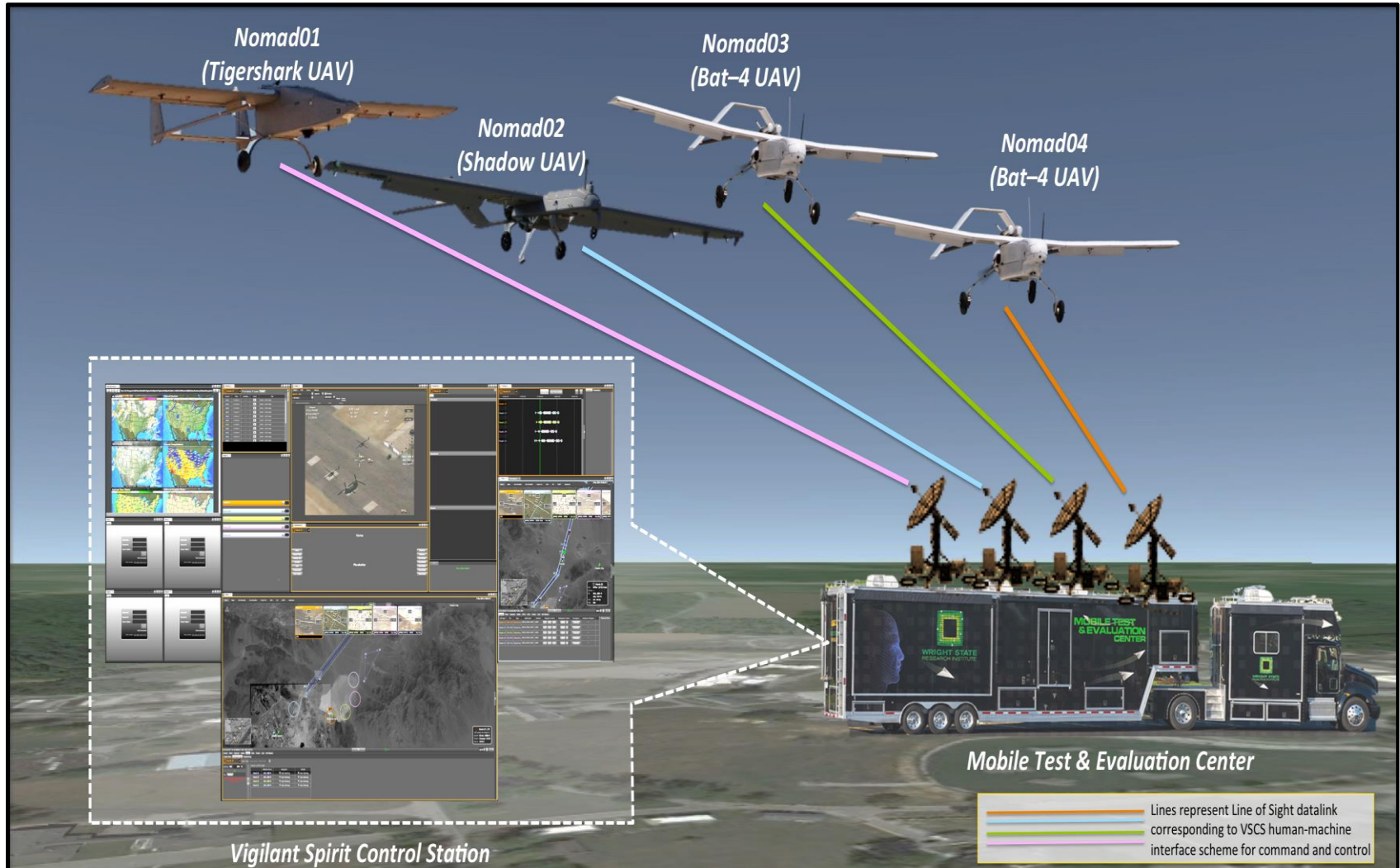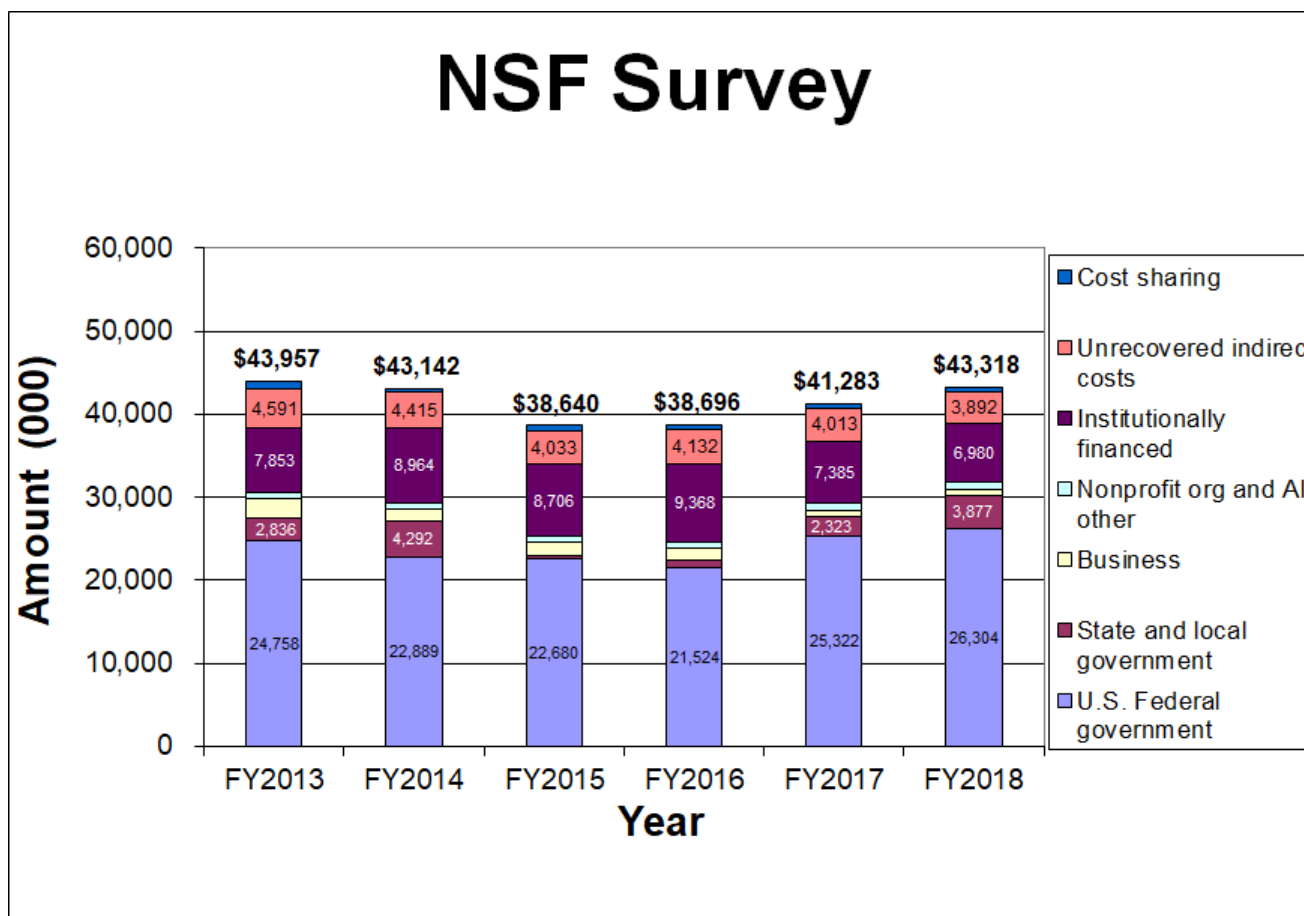
	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018
U.S. Federal government	24,758	22,889	22,680	21,524	25,322	26,304
State and local government	2,836	4,292	387	873	2,323	3,877
Business	2,185	1,356	1,547	1,561	810	721
Nonprofit org and All other	804	821	662	712	932	991
Institutionally financed	7,853	8,964	8,706	9,368	7,385	6,980
Unrecovered indirect costs	4,591	4,415	4,033	4,132	4,013	3,892
Cost sharing	930	405	625	526	498	553
Totals	$ 43,957	$ 43,142	$ 38,640	$ 38,696	$ 41,283	$ 43,318

NSF Survey
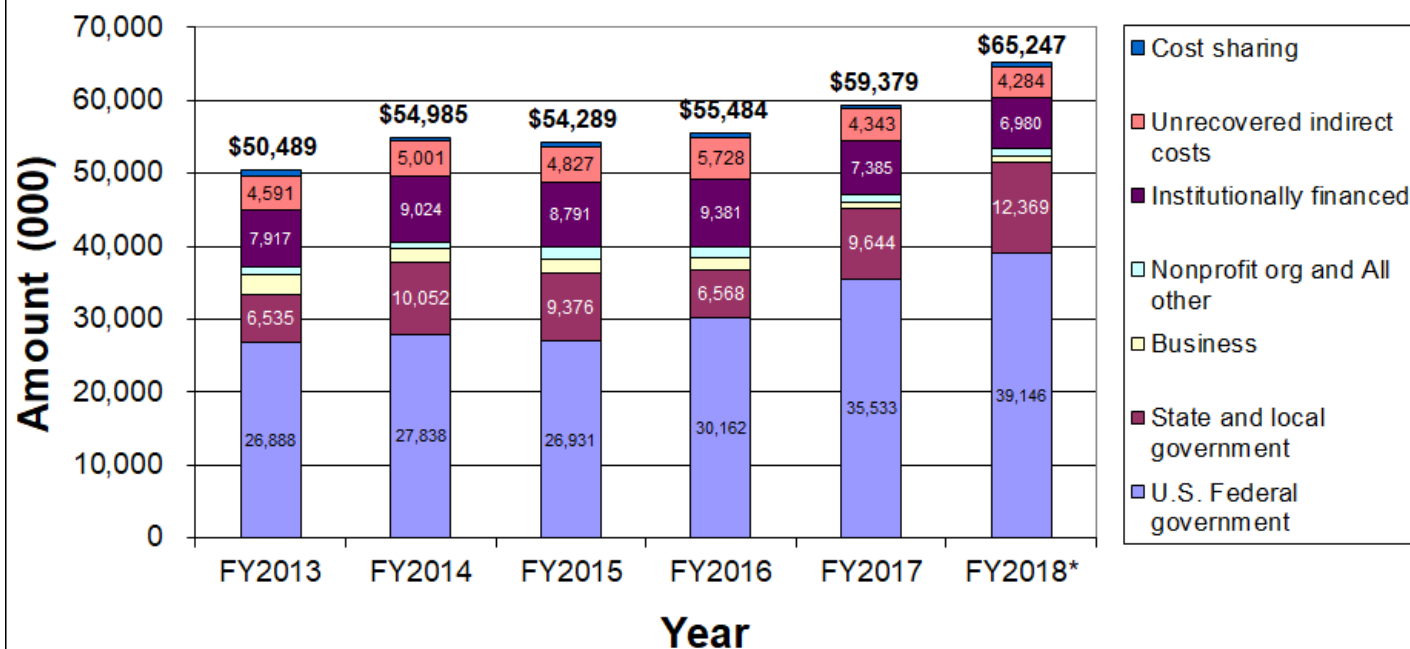
	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018*
U.S. Federal government	26,888	27,838	26,931	30,162	35,533	39,146
State and local government	6,535	10,052	9,376	6,568	9,644	12,369
Business	2,777	1,757	1,983	1,613	930	861
Nonprofit org and All other	851	830	1,656	1,506	1,011	1,027
Institutionally financed	7,917	9,024	8,791	9,381	7,385	6,980
Unrecovered indirect costs	4,591	5,001	4,827	5,728	4,343	4,284
Cost sharing	930	483	725	526	533	580
Totals	$ 50,489	$ 54,985	$ 54,289	$ 55,484	$ 59,379	$ 65,247

- **91** Students/GRAs Employed on various WSRI programs from 2011 to present.

- **11** Students/GRA currently employed by WSRI.

  - **3** GRAs

  - **8** Student Employees

- **3** Students hired into full time positions as extensions of these student employment positions.

- **4** student employees transitioned from student employment to GRA position upon entering WSU graduate programs.

In addition to the 90 WSRI students:

- WSRI hired/supported **101** Image Truthing employees from 2011 to 7/2017. At the time of transition back to CECS, there were **12** student employee truthers working the program.

- WSRI hired/supported **314** ATR Center summer interns from 2010 to 2017.

- WSRI hired/supported **47** summer interns for the Summer At the Edge program from 2011 to 2013.

- WSRI hired/supported **14** summer interns for the GRILL program in year 2014-2015.

- WSRI hired/supported **8** Wright Scholars program participants in 2013.

- In total there have been **574** students supported in student employment, graduate research assistantships, and summer internships through WSRI from 2011 to 2017.

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Graduate Research Assistants				
Name	Supervisor	Program	Program of Study	Advisor
Zohren Alavi	Dr. Mike Cox	Goal Driven Autonomy	CS & Engineering	Dr. Mike Cox
Venkat Gogineni	Dr. Mike Cox	Goal Driven Autonomy	Computer Science	Dr. Mike Cox
Sravya Kondrakunta	Dr. Mike Cox	Goal Driven Autonomy	Computer Science	Dr. Mike Cox
Pratyusha Yalamanchili	Dr. Mike Cox	SAMAURI	Computer Science	Dr. Mike Raymer

Student Employees Supported			
Name	Supervisor	Program	Program of Study
Kyle Min	John Owen	OEA	Finance
Olivia Kriel	Mike Pearsall	Operations	HR Management
Emma Neuss	Mike Pearsall	Operations	Social Work
Jordan Umphrey	Mike Pearsall	Operations	Rehabilitation Counseling
Victoria Underwood	John Owen	OEA	International & Comparative Politics
Danielle Brown	Dr. Mike Cox	R&D	Computer Science
Michaela Leach	Bill Harchick	NCMR	Social Work

Over the past 3 years WSARC, through subcontracts to
WSU, has also funded 26 GRAs on campus.

Audited Financial Results
as of June 30, 2018

Consolidated Income Statement			
FOR 2018 ENDING June 30, 2018			
DIVISION	CONSOLIDATED FINAL	CONSOLIDATED Pre ATIC Bldg Sale	FY18 Budget
Revenue			
Contract & Grant Revenue	34,244,405	34,268,108	28,309,655
Commercial Revenue	295,267	295,267	0
Rental Revenue	320,088	320,088	401,704
Interest Revenue	103,188	104,348	58,000
	34,962,948	**34,987,811**	**28,769,358**
Expenses-Prgrm Svcs			
Direct Labor	5,313,569	5,313,957	7,015,022.40
Travel	319,297	319,104	416,530.80
Subcontract Costs	22,250,501	22,262,109	15,125,779.20
Other Direct Cost	1,270,504	1,271,958	936,648.00
Total Prgm Svcs	**29,153,871**	**29,167,128**	**23,493,980**
Support Services			
Overhead	3,600,918	3,600,918	2,875,130.40
G&A	2,269,241	2,279,687	1,675,749.60
Rent Expense	425,747	425,747	409,201.20
Other	128,562	158,770	300,296.40
Bad Debt Expense (ATIC)	1,320,126	0	0
Total Support Svcs	**7,744,594**	**6,465,122**	**5,260,378**
Total Expenses	**36,898,465**	**35,632,250**	**28,754,358**
Change in Net Assets	**(1,935,517)**	**(644,439)**	**15,000**
Depreciation Expense	**903,692**	**903,692**	**765,311**
Change in Net Assets (Excluding Depreciation)	**(1,031,825)**	**259,253**	**780,311**

ATIC Bad Debt Taken in FY18 of $1.32M. After ATIC Condo Sale in Sept 2018

2018 Major Loss Contributors

WSU Rent Costs that were Waived by WSARC $205K
- WSU MKT – $68K
- WSRI/RSP – $137K

WSARC Project Losses due to Increased depreciation

WRIGHT STATE
RESEARCH INSTITUTE

Consolidation Balance Sheet –

6/30/2018	
Current Assets	
Cash	5,486,607
Billed Receivables	3,528,688
Unbilled Receivables	3,218,726
Long Term Receivables	0
Prepaid Expenses	60,352
Other Receivable	3,396
Property & Equipment	4,066,854
Other Assets	300,000
Total Assets	16,664,623
Current	
Accounts Payable	8,031,900
Accrued Salaries	0
Accrued Leave Payable	0
Other Current Liabilities	5,462,760
	14,980,779
Long-Term Liabilities	
Other LT Liabilities	91,518
	91,518
Retained Earning	
Prior Year Retained Earnings	3,078,445
Total Liabilities and Assets	16,664,623

FY19 Performance to Date

FY19 Budgeted WSRI Income Statement

FY2019 Proposed			
	WSARC	**WSRI**	**CONSOLIDATED**
CONTRACT REVENUE			
Contract & Grant Revenue	$30,453,588	$713,694	$31,167,282
	30,453,588	713,694	31,167,282
DIRECT COSTS			
Direct Labor	6,123,469	554,990	6,678,459
Travel	516,531	0	516,531
Subcontract Costs	17,425,778	0	17,425,778
Other Direct Cost	1,136,098	0	1,136,098
Service Centers	80,672	0	80,672
	25,282,548	554,990	25,837,537
COST OF OPERATIONS			
Overhead	2,931,048	0	2,931,048
General & Admin	2,239,992	158,704	2,398,697
	5,171,040	158,704	5,329,744
GROSS PROFIT FROM OPERATIONS	0	0	0
OTHER INCOME			
Other Income*	100,000	0	100,000
Intrest Income	40,616		
Fee for Athena	186,950		186,950
Other Expenses	(100,000)	0	(100,000)
	227,566	0	227,566
OTHER EXPENSES			
Other Unallowable Exp**	69,343	0	69,343
WSRI Expenses not coverd by WSU	158,704		158,704
	228,048	0	228,048
NET INCOME BEFORE TAXES	(482)	0	(482)
Depreciation	488,585		488,585
Income excluding Depreciation	488,103		488,103

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WSRI Consolidated Income Statement				
FOR 2019 PD6 ENDING Dec 31, 2018				
DIVISION	WSARC	WSU RSP	CONSOLIDATED	Budget
Revenue				
Contract & Grant Revenue	15,693,218	2,134,500	17,827,718	14,566,974
Commercial Revenue	104,751	0	104,751	0
Rental Revenue	26,515	0	26,515	40,000
Interest Revenue	19,657	0	19,657	30,308
	15,844,141	2,134,500	17,978,641	14,637,282
Expenses-Prgrm Svcs				
Direct Labor	2,290,203	381,136	2,671,339	2,536,212
Travel	138,657	23,582	162,239	208,265
Subcontract Costs	8,540,453	1,630,491	10,170,944	7,439,075
Other Direct Cost	1,604,892	8,117	1,613,009	639,688
Total Prgm Svcs	12,574,205	2,043,326	14,617,531	10,823,241
Support Services Expenses				
Overhead	1,870,056	0	1,870,056	1,921,829
G&A	1,014,105	91,175	1,105,280	1,512,283
Facility (Rental)	107,889	0	107,889	40,000
Other	194,503	0	194,503	339,928
Bad Debt Expense	(8,000)	0	(8,000)	0
Total Support Svcs	3,178,553	91,175	3,269,728	3,814,040
Total Expenses	15,752,759	2,134,500	17,887,259	14,637,282
Operating Income	91,382	0	91,382	(0)
Depreciation Expense	226,320	0	226,320	224,457
Change in Net Assets (Excluding Depreciation)	317,702	0	317,702	224,457

		07/01/18 12/31/18	Budget		Actual As A Percent of Revenue	Variance
Revenue						
	Contract & Grant	14,852,020	13,823,211			1,028,809
	Contract & Grant Affiliate	841,198	340,927			500,271
	Commercial	104,751	0			104,751
	Rental	26,515	40,000			-13,485
	Interest & Other	19,657	30,308			-10,651
Expense-Direct		15,844,141	14,234,446		100%	1,609,695
Program Services						
	Direct Labor	2,290,203	2,253,446		14.45%	36,757
	Travel	138,657	208,265		0.88%	-69,608
	Subcontractors	8,540,453	7,439,075		53.90%	1,101,378
	Other Direct Costs	1,604,892	639,688		10.13%	965,204
Expense-Indirect		12,574,205	10,540,475		79%	2,033,730
Support Services						
	Overhead	1,870,056	1,921,829		11.80%	-51,773
	G&A	1,014,105	1,392,214		6.40%	-378,109
	Facility (Rental)	107,889	40,000		0.68%	67,889
	Other	194,503	339,928		1.23%	-145,425
	Bad Debt Expense	-8,000	0		-0.05%	-8,000
Total Support		3,178,553	3,693,971		20%	-515,418
Total Expenses		15,752,759	14,234,446		99%	1,518,312
	Operating Income	91,382	0		1%	
Add Depreciation		226,320	224,457			
Operating Income After Deprectn Adj		317,702				

Consolidation Balance Sheet - 2019 YTD - PD06

12/31/2018

Current Assets		
Cash		5,126,387.00
Billed Receivables		5,560,268.00
Unbilled Receivables		496,503.00
Long Term Receivables		0.00
Prepaid Expenses		54,135.00
Other Receivable		7,078.00
Property & Equipment		3,885,998.00
Other Assets		300,000.00
Total Assets		15,430,369.00
Current Liabilities		
Accounts Payable		7,513,233.00
Accrued Salaries		60,222.00
Accrued Leave Payable		-128,435.00
Other Current Liabilities		4,816,029.00
Retained Earnings		3,169,320.00
Total Liabilities and Assets		15,430,369.00

$5M of State Capital Funds Used to Purchase RPA Trailer, ATB Equipment and WSARC Laboratory Facilities

State Approved adding the 6th Contract (HMT) to Grant on November 17, 2018

10/31/2018

Job#	Job Name	Domain	Client	POP	Ceiling	Funded	Sub Expenses	Total Expenses as of 31-Oct-18	Invoiced as of 31-Oct-18	Paid	Overspent (cost share)	Ceiling Increase in Works.	New Awards in Works
11035	Analyst Test Bed	Defense	AFRL	15-Sep-12 thru 14-Jan-17	$7,899,849	$7,898,849	$4,942,547	8,168,312	$7,898,849	$7,898,849	$269,463	$0	$0
11036	LVC Tech Support	Defense	AFRL-RHC	01-Sep-12 thru 31-Dec-15	$982,174	$982,174	$656,685	1,017,285	$982,174	$982,174	$35,111	$0	$0
17015	NMI all 668281	Defense	AFRL	20-Dec-10 thru 30-Dec-15	$5,247,129	$4,351,936	$2,007,892	4,473,749	$4,351,936	$4,351,936	$121,813	$0	$0
17018	RPA (668749)	Defense	AFRL	01-Jan-12 thru 14-Oct-19	$12,495,833	$9,396,252	$3,993,149	8,286,176	$8,286,176	$7,873,400		$500,000	$0
11076	HMT	Defense	AFRL	14-Aug-15 thru 14-Feb-22	$33,530,458	$25,233,946	$16,706,772	20,400,483	$19,666,684	$17,931,431	$9,027	$8,969,542	
17022	RIIT (668333)	Defense	AFRL	20-Dec-10 thru 27-Mar-20	$2,550,350	$2,550,350	$465,948	1,160,732	$1,160,732	$1,103,332		$0	$0
				TOTAL	$62,705,793	$50,413,507	$28,772,993	43,506,738	$42,346,551	$40,141,122	$435,414	$9,469,542	$0

Have exceeded $33M on these contracts and we are in position to fully recover $5M.

WSU will get ~$700K in Dec 2018. WSU will get an additional ~$900K in March 2019

WRIGHT STATE RESEARCH INSTITUTE

- **Agreement had to be drawn up from scratch and is in the process of review at WSU.**
  - Agreement is complete.

- **Statement of WSU Services Provided to WSARC.**
  - HR (Business partner, Analyst, Talent Management and Development, Employee In and Out Processing, Training, Employment Compensation).
  - Office of Equity and Inclusion.
  - Procurement.
  - CaTS Department Support for IT Services Provided at the National Center for Medical Readiness (NCMR) Budget Staff; Access to Software Purchases & Licenses; and Use of WSU Provided Network Drives.
  - Travel Support.
  - WSU Payroll.
  - Career Services.
  - Graduate School.
  - Insurance, General Liability in Support of NCMR and WSARC.
  - Police Security Support in response to Alarm Notices at NCMR.
  - Facilities Services for NEC Room 431.
  - Marketing and Communications.
  - Organizational Leadership and Staff Development Training and Workshops (Stephanie Goodwin).

- **Statement of WSARC Services provided to WSU**
  - Assist WSU FSO in the Maintenance of Facility Clearance and Personnel Security Clearance needs.
  - ISSM Services Provided to CaTS Team on NIST 800-171 Compliance.
  - WSU Emergency Operations Center (EOC) With the WSARC Building at 4035 Colonel Glenn Highway, Beavercreek, OH.
  - Hosting REDCAP Application Service Provided to The Boonshoft School of Medicine.
  - NCMR Services Provided to WSU Campus Police Training Activities.
  - NCMR Training Services Provided to the College of Nursing and Health.
  - Commercialization Services Provided.
  - Services Provided to Intelligence Analyst Training and Certification Courses.
  - General WSRI/WSARC Services Provided to WSU.

WSARC Due To/From WSU As of 06/30/2018	
WSARC due to WSU	2,992,679
WSARC Due to WSU for ATIC* Bills	1,225,774
WSARC paid to date to WSU for ATIC* Bills	(594,969)
ABC classes income to pay off balance over 5 years starting 2017	
Subtotal due to WSU	**3,623,484**
YTD18 WSU Marketing Rent	0
YTD18 WSRI Building/Shared Svs	10,964
Rent due from WSU	**10,964**
Subtotal due to WSU	**3,612,520**
WSU Contracts – Invoiced and due from WSU	**446,626**
Net due to WSU	**3,165,894**

WSARC Due To/From WSU As of 12/31/2018	
WSARC due to WSU - Salary/Travel/Fringe	2,299,699
WSARC due to WSU - Subcontracts	155,871
WSARC Due to WSU for ATIC* Bills	1,225,774
WSARC paid to date to WSU for ATIC* Bills	(694,969)
Subtotal due to WSU	**2,986,375**
Subtotal due to WSU	**2,986,375**
WSU Contracts – Invoiced and due from WSU	**373,928**
Net due to WSU	**2,612,447**

As of 1 July 2018
WSARC has agreed to pay 2% Interest on Funds due to WSU.

Ohio Federal and Military Jobs Commission (OFMJC) Support

Ohio Federal Research Network (OFRN)
Improving Ohio's Economy Through R&D

WSU - Dennis Andersh

OSU - Marty Kress

https://ohiofrn.org/

Ohio Federal Research Network (OFRN) $31.9M of State Funding Total for FY16-19
Growing Ohio's Economy by Leveraging Research and Development
$350 million in new federal research contracts over five years

WPAFB/NASA Glenn Priorities

AFRL
- Human Performance/ Health Sciences
- Hypersonics
- Directed Energy Weapons (Lasers)
- Autonomy
- C4ISR
- LVC
- Materials/ Manufacturing
- Propulsion

Naval Medical Research Unit
- Human performance
- Human physiology
- Manned /Unmanned Aeromedical Ops
- Toxicology
- Risk assessment
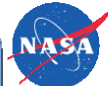
NASA Glenn
- Hybrid Electric Propulsion
- Air-breathing Propulsion
- Advanced Communications
- Solar Electric Propulsion
- Power and Energy Storage
- Materials and Manufacturing

NASIC
- Cyber
- Data analytics
- C4ISR
- Modeling/Simulation/Analysis
- Hypersonics
- Directed Energy
- Space Systems

FRN Funding Focus

	BASIC Research and Development	Applied Research and Development	Advanced Technology Development	Demonstration and Validation	Engineering and Manufacturing	RDT&E Management Support	Operational Systems Test and Validation
DOD RDT&E Level	6.1	6.2	6.3	6.4	6.5	6.6	6.7

AFOSR FOCUS

FRN COE Focus Mission Application Research for NASA, AFRL, NAMRU and NASIC

NASA	TRL1	TRL2	TRL3	TRL4	TRL5	TRL6	TRL7	TRL8	TRL9
	Basic Principles	Concepts Application Focus	Analysis and Experiments	Concept and Breadboard in Laboratory	Component and Breadboard Validation in Realistic Environments	System / Subsystem prototype demonstration in realistic Environment	System prototype demonstration in Operational Environment	Actual system completed and qualified through test and demonstration	Actual system proven through successful mission operations

Impact to Date

- **Collaboration and proposal quality is increasing dramatically.**
  - Projects required a lead university, one partner university, and at least one industry sponsor and federal sponsor.
- **12 Ohio universities & 3 community colleges received funding.**
  - Competitively awarded $28M through three funding rounds.
  - Working with universities to improve their success going forward.
- **60 business partners engaged across Ohio.**
  - Half are small businesses - $2.6M awarded to industry.
  - Industry Days and regional meetings held throughout the state.
- **Multiple universities across state pursuing joint DOD efforts.**
  - Proposals pipeline in excess of $350M+ across Ohio.
  - Universities have won **$139M+ in new awards** from DARPA, ONR, AFRL, NASA, and IARPA.
- **Created 7 new companies across Ohio.**
- **Garnered $20M of industry funded research statewide.**

Next Steps

- **Pursuing Ohio FY20-21 Budget $10M/ Yr for OFRN**
  - *Use to continue to drive collaboration and expand university, industry, and federal partnerships across Ohio.*

- **Seeking $10M federal funding in FY20 defense budget.**
  - Continue working with entire Ohio Federal House and Senate legislative delegation.
  - Used $10M in FY18 NDAA for AFRL Autonomy R&D Center in Ohio that funded 5 Ohio companies.
  - Using $10M in FY19 NDAA for AFRL to create an Air Force wide Academic Partnership and Engagement Experiment (APEX).

- **Expanding OFRN to support the Air Force's 2030 implementation plans.**
  - Seeking $10M in FY20 budget to continue APEX

Ohio Federal Research Network (OFRN) $31.9M of State Funding Total for FY16-19
Growing Ohio's Economy by Leveraging Research and Development
$350 million in new federal research contracts over five years

NASA Glenn Research Center (GRC) Priorities

Air Force Research Laboratory (AFRL) Priorities

State of Ohio

National Air & Space Intelligence Center (NASIC) Priorities

Naval Medical Research Unit (NAMRU) Priorities

Wright State University & The Ohio State University

Executive Review Board

Technical Review Council

| Human Performance and Health Sciences Wright State Univ. | Power and Propulsion Ohio State Univ. | C4ISR & Data Analytics Wright State Univ. Ohio State Univ. | Energy Storage and Integration Case Western Reserve Univ. | Materials and Adv. Manufacturing Univ. of Dayton | C2PNT Ohio Univ. |

Outcomes: $20M in OFRN Funds leading to $139M in follow-on and $350M in process

Vision: Make Ohio the nexus for unmanned air systems (UASs), personal air vehicles (PAVs), and logistics delivery air vehicles (LDAVs) testing, integration, and manufacturing.

- Short-term Strategy: Create OFRN air demo with NASA-AFRL assets for disaster response demonstration

- Long-term Strategy: Use staggered challenge programs to demo Ohio-based personal aircraft in 2022
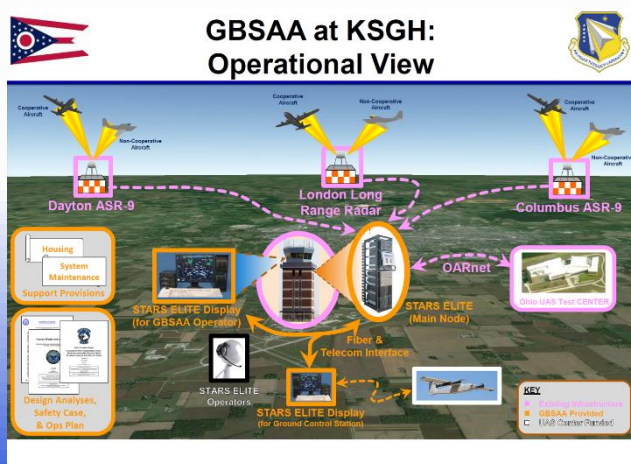
Transition over time to future PAV

All Funded at $16.7K

Period of Performance 1 Feb 2019 to 30 June 2019

- **Dr. Kuppuswamy Arumugam – COSM –** Functional Hybrid Metallopolymer Architectures for Nonlinear Optical Applications

- **Dr. E. Ashley Hall – COLA –** Sustainable Pathways: Transforming Educational Activities Through Media (TEAM)

- **Dr. Assaf Harel – COSM –** EEG-Based Neurocognitive Metrics of Situated Cognitive Human-Machine Interactions

- **Dr. Subhashini Ganapathy – CECS –** Human Machine Teaming for Collaborative Decision Making

- **Dr. Keke Chen – CECS –** Graph Mining Algorithms and Visualization Techniques for Analyzing Large-Scale Complex Provenance Data

- **Dr. Derek Doran – CECS –** Intelligent Aggregation of Geopolitical Event Forecasts from Limited Sized Crowds

IRAD Selections Completed by WSU/WSRI Research Advisory Council

- The WSRI Executive Advisory Council (EAC) and Research Advisory Council (RAC) are fully operational.

- WSRI/WSARC released a campus wide call for a pilot Independent Research and Development (IRAD) effort to promote collaboration and growth of WSU research portfolio.

- WSRI has hired a new chief scientist from DARPA and DTRA, Viktoria Greanya, PhD.

- WSRI/WSARC met the expectations of the Third Frontier 2010 Research and Development Capitalization (RDCAP) grant and WSU will be able to recover the full $5M.

- WSRI has improved teaming with faculty and students on multiple new programs over the past two years. A key focus of WSRI going forward.

WRIGHT STATE RESEARCH INSTITUTE

- WSARC is self sufficient today and we will continue to be financially self sufficient going forward.

- All WSARC affiliated entities have been terminated or dissolved.

- WSARC now subcontracts all faculty and student research to WSU so that WSU keeps all related F/A. This also creates a financial firewall between WSARC and WSU.

- WSARC as of December 31, 2018 owes WSU $530K related to ATIC funding

- WSARC had positive cash flow in FY18 and continuing through FY19.

- FY18 overall operational performance metrics were positive.

- WSARC Board of Directors consists of 3 internal WSU employees, 1 WSU Board of Trustees member, and 9 outside directors from across the US.

- WSARC's FY18 Audit had no material findings.

- WSARC and WSU have completed a shared services agreement and it is effective July 1, 2018 and supports all of FY19.

- WSARC with OSU are the co-leads for executing the Ohio Federal Research Network (OFRN) program for the State of Ohio.

•Backup materials

Board Members

Permanent Members
- Dr. Cheryl Schrader, President
  - Appointed by WSU and Board of Trustees
    - Ms. Ellen Reinsch Friese, Acting VP of Research
    - Dr. Margaret Dunn, Dean of Boonshoft School of Med
    - Board of Trustees
      - Lt. Gen. (Ret) C.D. Moore (Dayton Aerospace)

Elected Members
- External

• TBD	TBD
• Al Wofford	(CDO Technologies)
• Lloyd Fields	(Bastech)
• Mary Margret Evans	(Former DOD AT&L Executive)
• TBD	TBD
• Tawnya Darlington	(Former PricewaterhouseCooper LLP)
• Jorge Gonzalez	(former LCMC Engineering Director)
• Gayle Rominger	(Former YSI Executive)
• TBD	

Terms are 3 years.

Officers

- CEO & President: Dennis Andersh
- Chair: Lloyd Fields
- Vice Chair: Gayle Rominger
- Secretary: Mike Pearsall
- Treasurer: TBD

WRIGHT STATE
RESEARCH INSTITUTE

Committees

Executive Committee
- Mr. Lloyd Fields (Chair)
- Ms. Gayle Rominger (Vice Chair)
- TBD
- Lt. Gen. (Ret) C.D. Moore
  - Ms. Tawnya Darlington
- Mr. Dennis Andersh

- Ms. Suzanne Sumner (Outside Counsel)

Board Search and Governance Committee
- Lt. Gen. (Ret) C.D. Moore (Chair)
- Mr. Al Wofford
- Ms. Mary Margaret Evans
- Mr. Jorge Gonzalez
- Mr. Dennis Andersh

- Ms. Suzanne Sumner (Outside Counsel)

Finance Committee
- TBD (Chair)
- TBD
- TBD
- Mr. Al Wofford
- Dr. Margaret Dunn

- Ms. Suzanne Sumner (Outside Counsel)

Audit Committee
- Ms. Tawnya Darlington (Chair)
- Ms. Mary Margaret Evans
- TBD

- Ms. Suzanne Sumner (Outside Counsel)

The RAC will be comprised of 19 members with the Chair, including:

- Chief Science Office, WSRI (Chair): — Ms. Viktoria Greanya, PhD.

- WSU Vice President of Research: — Ms. Ellen Reinsch Friese

- Deans (3) — Dr. Joseph Keferl
  Dean Education & Human Services
  Dr. Brian Rigling
  Acting Dean Engineering & Computer Science
  Dr. Doug Leaman
  Dean, Science & Mathematics

- Chairs (4; no more than 1 from each college): — Dr. Jason Deibel
  COSM Chair of Physics
  Dr. Eric Bennett
  Chair & Professor, Cell Biology & Physiology
  Dr. Arijit Sengupta
  Associate Dean & Professor of MIS, RSCOB
  Dr. Jaime E Ramirez-Vick
  CECS Chair Biomedical, Industrial & Human Factors Engineering

- Faculty 6; no more than 1 from each college): — Dr. Valerie Stoker
  COLA Master of Humanities Program
  Dr. Jeremiah Schumm
  School of Professional Psychology
  Dr. Sherry Farra
  College of Nursing and Health
  Dr. Mike Raymer, *Computer Science & Engr*
  Dr. Ion Juvina , *Psychology*
  Dr. Hamed Attariani, *Lake Campus*
  Dept. of Mechanical & Materials Engr

- AFRL Chief Technology Office or their Designee: — TBD
- NASIC Chief Scientist or their Designee: — TBD
- NAMRU-D National Aerospace Medical Research Laboratory Director or their Designee: — Dr. Richard Arnold
- NASA Glenn Chief Innovation Officer or their Designee: — TBD

Composition

The Council will be comprised of up to 11 voting members who shall be:

- WSU President: Dr. Cheryl Schrader

- WSU Provost: Dr. Susan Edwards

- WSRI Executive Director: Mr. Dennis Andersh

- WSU Vice President of Research: Ms. Ellen Reinsch Friese

- WSU Vice President for Finance and Operations and Chief Business Officer (Chair):   Mr. Walt Branson

- WSU Faculty Senate President: Dr. Travis Doom

- WSU Director of Compliance: Ms. Kelli Tittle

- WSU / WSARC Board Member: Lt. Gen. (Ret) C.D. Moore

- WSRI Chief Science Officer: Ms. Viktoria Greanya, PhD

- AVP Human Resources: Ms. Shari Mickey-Boggs

- WSU Chief Information Officer (CIO):   Mr. Craig Woolley

- General Counsel's Office (as required).