



U.S. AIR FORCE



AFRL







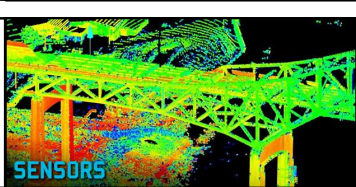

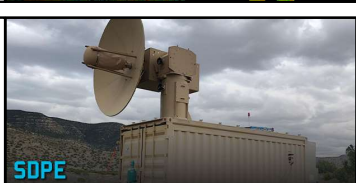

How to Work with the Air Force Office of Scientific Research

Dr. Kimberly Jacoby Morris

AIR FORCE OFFICE OF SCIENTIFIC RESEARCH | 2 April 2022



Air Force Research Laboratory At-a-Glance

<p>AEROSPACE SYSTEMS</p>	<p>Aerospace Vehicles, Control, Power & Thermal Management, High Speed Systems, Rocket Propulsion, Turbine Engines</p>	 <p>AEROSPACE SYSTEMS</p>	 <p>DIRECTED ENERGY</p>	<p>Laser Systems, Weapons Modeling, Simulation & Analysis, High Power Electromagnetics (HPEM), Directed Energy and Electro Optics for Space Superiority</p>	<p>DIRECTED ENERGY</p>
<p>HUMAN PERFORMANCE</p>	<p>Training, Adaptive Warfighter Interfaces, Bioeffects, Bioengineering, Aerospace & Operational Medicine</p>	 <p>HUMAN PERFORMANCE</p>	 <p>SPACE VEHICLES</p>	<p>Advanced Space Resilience Technologies, Space Communication & Navigation Technologies, Space Awareness and Command & Control, Space Environment</p>	<p>SPACE VEHICLES</p>
<p>MATERIALS & MANUFACTURING</p>	<p>Structural Materials, Functional Materials, Manufacturing Technology, Support of Operations</p>	 <p>MATERIALS & MANUFACTURING</p>	 <p>INFORMATION</p>	<p>Processing & Exploitation, Connectivity & Dissemination, Autonomy, Command & Control and Decision Support, Cyber Science and Technology</p>	<p>INFORMATION</p>
<p>SENSORS</p>	<p>Radio Frequency (RF) Sensing, Electro Optical (EO) Sensing, Spectrum Warfare, Trusted & Resilient Mission Systems, Multi-domain Sensing Autonomy, Enabling Sensor Devices & Components</p>	 <p>SENSORS</p>	 <p>MUNITIONS</p>	<p>Munitions Airframe, Guidance, Navigation & Control, Terminal Seeker Sciences, Modeling & Simulation Evaluation Sciences, Ordnance Sciences</p>	<p>MUNITIONS</p>
<p>EXPERIMENTATION</p>	<p>Capability & Technology Prototyping</p>	 <p>SDPE</p>	 <p>AFOSR</p>	<p>Engineering & Information Sciences, Physical & Biological Sciences</p>	<p>BASIC RESEARCH</p>



Who we are



A small organization with a big mission ...

to Discover, Shape, and Champion Bold, High Risk, High Reward Basic Research to profoundly impact the United States Air Force and Space Force



200 personnel – Scientists & Engineers and Business Professionals

- Active duty Air Force and Space Force
- All-service veterans
- Renowned academics
- Passionate civil servants



A global network of talent

We partner, grow and discover with a global network of the greatest scientific minds in the world, pulling them into our ecosystem, launching career trajectories, and strengthening their contributions to national defense.

We are the Air Force Research Laboratory/Air Force Office of Scientific Research!



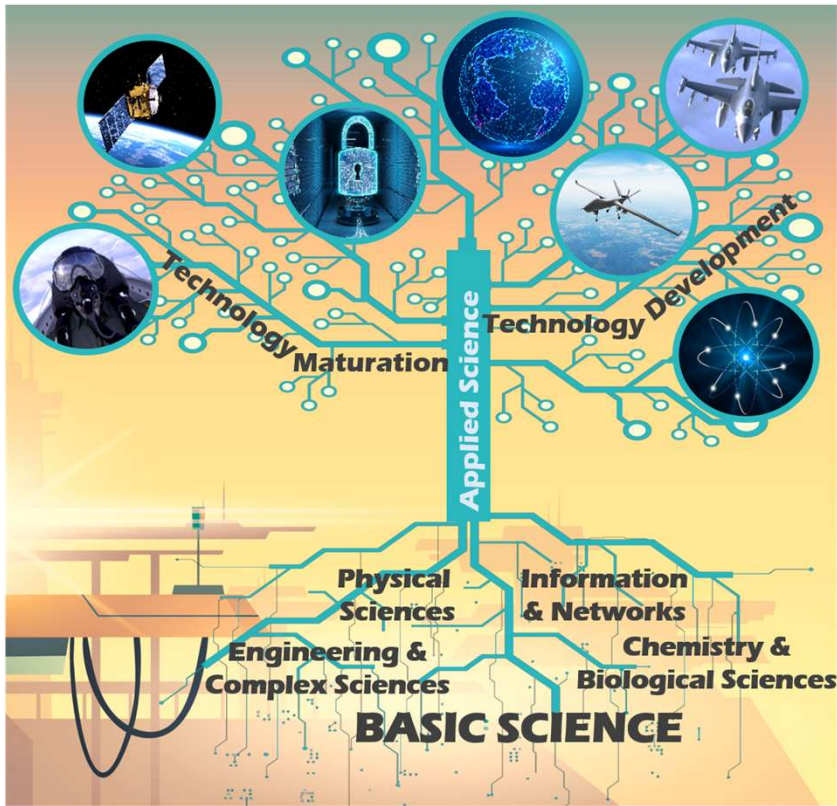
AFOSR Science Portfolios

Engineering and Complex Systems	Information and Networks	Physical Sciences	Chemistry and Biological Sciences	International Office
Dynamic Materials and Interactions	Computational Cognition and Machine Intelligence	Aerospace Materials for Extreme Environments	Biophysics	Asian Office of Aerospace R&D Tokyo
GHz-THz Electronics	Computational Mathematics	Atomic and Molecular Physics	Human Performance and Biosystems	European Office of Aerospace R&D London
Energy, Combustion, and Non-Equilibrium Thermodynamics	Dynamical Systems and Control Theory	Electromagnetics	Mechanics of Multifunctional Materials and Microsystems	Southern Office of Aerospace R&D Santiago
Unsteady Aerodynamics and Turbulent Flows	Dynamic Data and Information Processing	Laser and Optical Physics	Molecular Dynamics and Theoretical Chemistry	North America - Arlington
High-Speed Aerodynamics	Information Assurance and Cybersecurity	Optoelectronics and Photonics	Natural Materials and Systems	
Aerospace Composite Materials	Mathematical Optimization	Plasma and Electro-Energetic Physics	Organic Materials Chemistry	
Multiscale Structural Mechanics and Prognosis	Science of Information, Computation, Learning, and Fusion	Quantum Information Sciences		
Propulsion and Power	Trust and Influence	Physics of Remote Sensing		
Agile Science of Test and Evaluation (T&E)	Complex Networks	Space Science		
	Cognitive and Computational Neuroscience	Ultrashort Pulse Laser-Matter Interactions		
		Condensed Matter Physics		





Why we do what we do



"BASIC RESEARCH LEADS TO NEW KNOWLEDGE. IT PROVIDES THE SCIENTIFIC CAPITAL. IT CREATES THE FUND FROM WHICH THE PRACTICAL APPLICATIONS OF KNOWLEDGE MUST BE DRAWN.

NEW PRODUCTS AND NEW PROCESSES DO NOT APPEAR FULL-GROWN. THEY ARE FOUNDED ON NEW PRINCIPLES AND NEW CONCEPTIONS, WHICH IN TURN ARE PAINSTAKINGLY DEVELOPED BY RESEARCH IN THE PUREST REALMS OF SCIENCE."

— SCIENCE, THE ENDLESS FRONTIER

Unleashing Science Against Our Adversaries



S&T 2030 Strategy

OBJECTIVE III; Deepen and Expand the Scientific and Technical Enterprise

AFOSR is looking to enhance the recruitment of national and global talent, advancing workforce development, creating a stronger pipeline of technology-proficient military airmen and guardians, and implementing agile workforce practices will significantly strengthen Air Force and Space Force scientific and technical expertise.

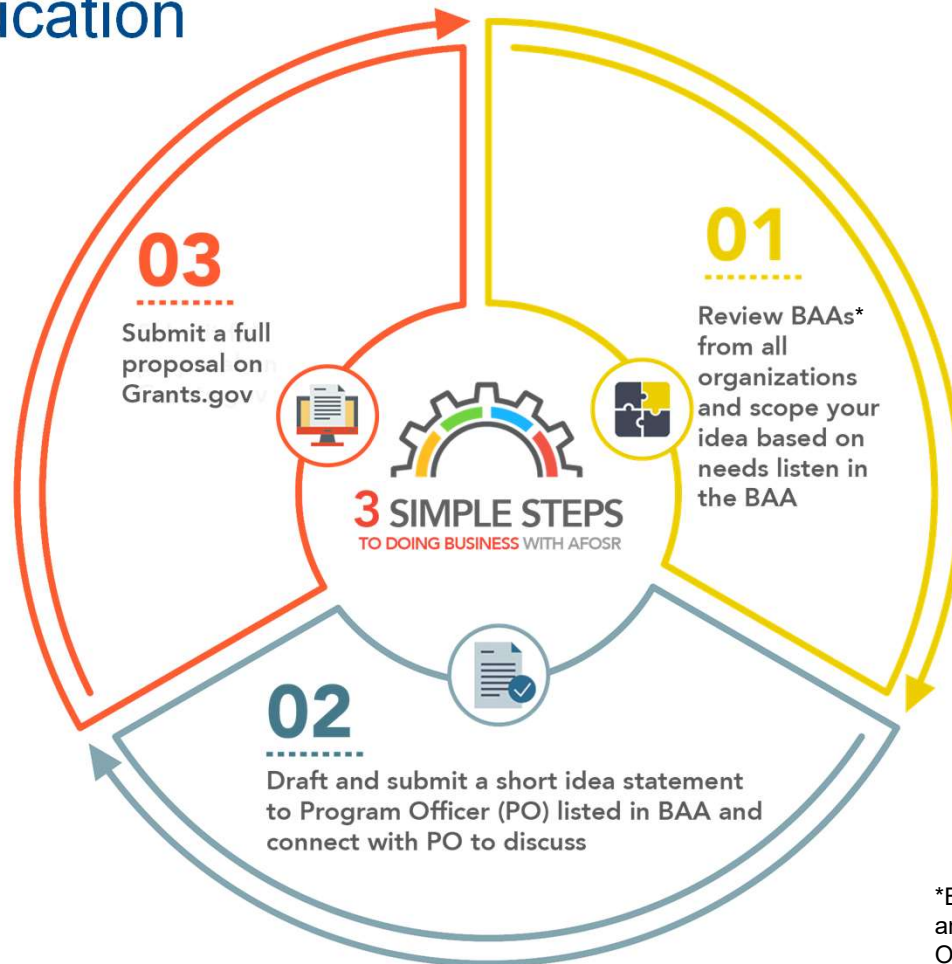




How to Work with Us



Higher Education



*Broad Agency Announcement. Some announcements may also be called Funding Opportunity Announcements (FOAs)



Review Broad Agency Announcements

- Researchers should visit www.grants.gov – the official source for finding and applying to Federal grants
- Find opportunities that match interests. Search by:
 - Keyword
 - Eligibility
 - Category
 - Agency etc.
- Study and keep current with BAAs
- Attend program reviews to understand the directions and needs of program

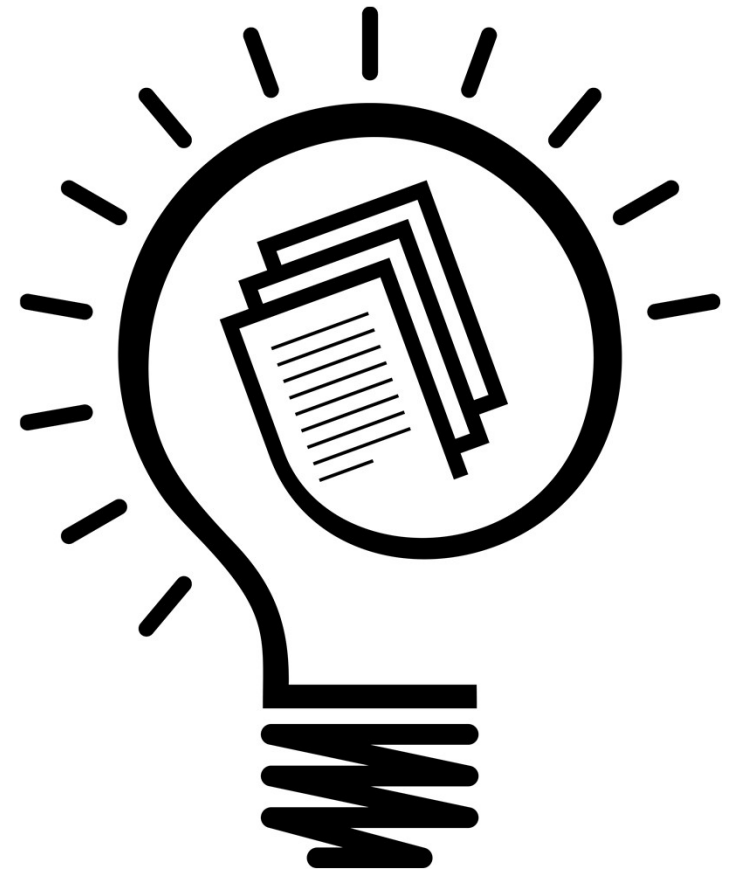
Opportunity Number	Opportunity Title	Agency	Opportunity Status	Posted Date	Close Date
FA-19-027	Brain Neurodevelopmental Biology of Circuits and Behavior (01 Clinical Trial Not Allowed)	NHHS	Posted	10/11/2018	12/04/2019
FA-19-028	Brain Neurodevelopmental Biology of Circuits and Behavior (01 Clinical Trial Not Allowed)	NHHS	Posted	10/11/2018	12/04/2019
FA-19-029	Innovation Corps (i-Corps) at NIH Programs for NIH and CDC Translational Research (Admin Stage Clinical Trial Not Allowed)	NIH	Posted	10/11/2018	11/20/2019
HRD-2019-ACF-OPRE-PD-1548	Human Services Interoperability Innovation	HRD-ACF	Forecasted	10/10/2019	
HRD-2019-ACF-EX-1547	Family Violence Prevention and Services Act Technical Assistance for Family Violence Prevention and Services Act	HRD-ACF	Forecasted	10/10/2019	
	Fish and Wildlife Management Assistance	DOI-FWS	Posted	10/10/2018	10/22/2018
	Lyell Institute in Health and Climate in the Digestive System (01 Clinical Trial Not Allowed)	NIH	Posted	10/10/2018	02/21/2019
	US Mission to War Non-Combatants Centers in MIDEU: Annual Program Statement of Public-Private Programs	DOE-VNM	Posted	10/10/2018	06/01/2019
	Family vs Family Health Information Centers - Midwest	HHS	Posted	10/10/2018	11/15/2019
	2019 Targeted Alcohol Grant Program	EPA	Posted	10/10/2018	11/04/2019
	Enhancing a Family Justice Center in Moldova	DOE-INE	Posted	10/10/2018	12/17/2019
	Legal Socialization in Middle East Schools	DOE-INE	Posted	10/10/2018	12/17/2019
	Coastal Wetlands Planning, Protection and Restoration	DOI-FWS	Posted	10/10/2018	10/13/2019
	U.S. Embassy Through FY2019 Annual Program Statement - Miscellaneous	DOE-BEL	Posted	10/10/2018	11/19/2019
	U.S. Embassy Through FY2019 Annual Program Statement - Organizational	DOE-BEL	Posted	10/10/2018	11/19/2019
	U.S. Mission to South Africa: Ambassadors Field for Cultural Preservation	DOE-ZAF	Posted	10/10/2018	11/08/2018
	U.S. Mission to South Africa: Ambassadors Field for Cultural Preservation	DOE-ZAF	Posted	10/10/2018	11/08/2018
	AFCP 2019 Small Grants Competition	DOE-MEA	Posted	10/10/2018	12/15/2018
	Ryan White HIV/AIDS Program Part D - Western, Eastern, Central and South (RWCY) Grants Supplemental Funding	HHS	Posted	10/10/2018	11/29/2019





Scope and Draft Idea Statement

- Statement doesn't have to be all-inclusive, but should address the unique value proposition of the research
- Statement needs to be specific enough that it catches the interest of the Program Officer





Connect with Program Officer

- At this point, some Program Officers will want a specifically formatted white paper
- Others will want to have a conversation
 - In person
 - Over the phone
 - Via email
- If the idea seems promising, Program Officer will initiate an ongoing dialogue setting expectations and explaining the process for full proposal submission.



Program Manager Roles

- Topical / Program Expert
- Educator / Communicator
- Team Builder
- Advocate
- Evaluator
- Administrator
- Active Member of AFRL, DoD & Scientific Communities



Program Officers' empowerment is a key component of our success



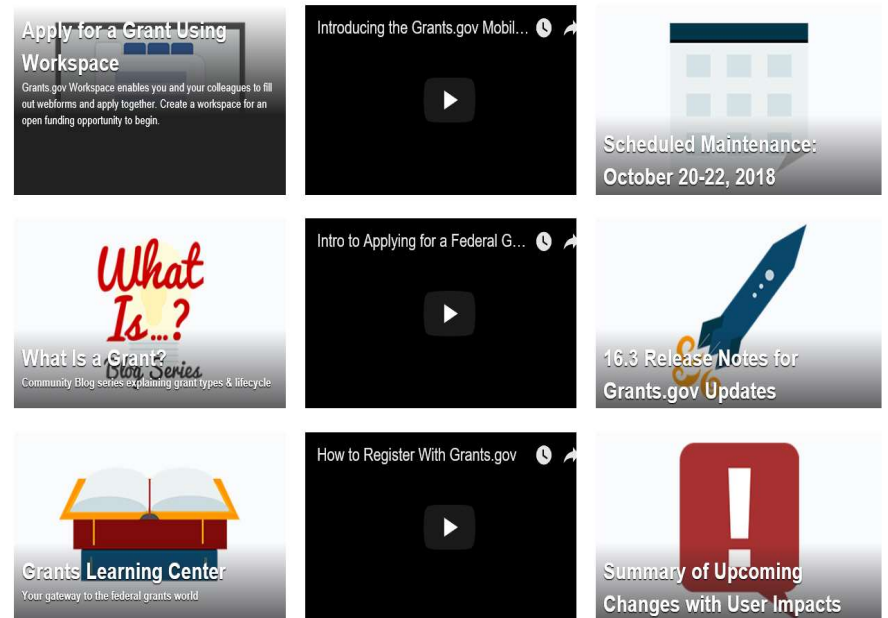
Determine the Correct Funding Mechanism

- There are many different mechanisms for universities to obtain basic research grant funding:
 - Traditional grants
 - University Research Initiatives (i.e. Multidisciplinary University Research Initiative (MURI), Defense University Research Instrumentation Program (DURIP))
 - Special Programs (i.e. HBCU/MSI, Young Investigator Program (YIP), Presidential Early Career Awards for Scientists and Engineers (PECASE))
- Traditional grants can be awarded year-round from the general Broad Agency Announcement
- Other opportunities have specific deadlines



Submit Full Proposal

- Full proposals should include
 - Strong technical merit
 - U.S. Air Force or U.S. Space Force relevance
 - Solid budget justifications
- Full details can be found in the Broad Agency Announcement
- Grants.gov also provides a number of tutorials for using the site





Peer Review

TECHNICAL:

- The impact of proposed program on K-16 education and outreach workforce development.
- The alignment of project topic area to AFOSR/DoD research areas of interest.
- The potential your proposed project offers to enhance your institution's ability to educate future scientists and engineers through skills and awareness-building instrumentation in disciplines important to DoD missions.
- Will the proposed approach produce the desired results? What are its strengths and weaknesses?
- Comment on the key personnel's qualifications, capabilities, related experience, and past performance.
- Additional comments and relevant issues?

OTHER CRITERIA:

- Comment of the adequacy and/or availability of the facilities, equipment, hardware, simulation tools and techniques integral to the objectives of the proposed research.
- Comment on the realism and reasonableness of the proposed project cost.



Budget Justification

- **For Personnel Management:**
Discuss realism and reasonableness of the (a) number of personnel, (b) labor mix, (c) level of effort etc.
- **Consumables and facility Chargers:**
Provide JUSTIFICATION and explanation with respect to proposed research. Provide quotations and/or links to the price structure of consumables, materials supplies, and facility charges.
- **Other Direct Costs**
Provide Justification for direct costs
- **Travel:**
For travel or quantity of trips, (a) rationale for travel, (b) the amount of travel or quantity of trips, and (a) the number of personnel traveling in terms of realism and reasonableness for the work



Get Funded! Get started and stay involved

- POs weigh several factors in selecting proposals for funding:
 - Identify overlap with program interests, and connection to DOD's labs
 - Potential for scientific breakthroughs
 - Strategic directions
 - Budget realities
 - Peer review to gauge scientific merit
- Once funded, remain engaged and continue with the process.
 - Continue reviewing BAAs
 - Request invitations to program reviews of interest
 - Collaborate with other PIs in the program



Workshops and Reviews



Starfleet Academy: Workforce Development

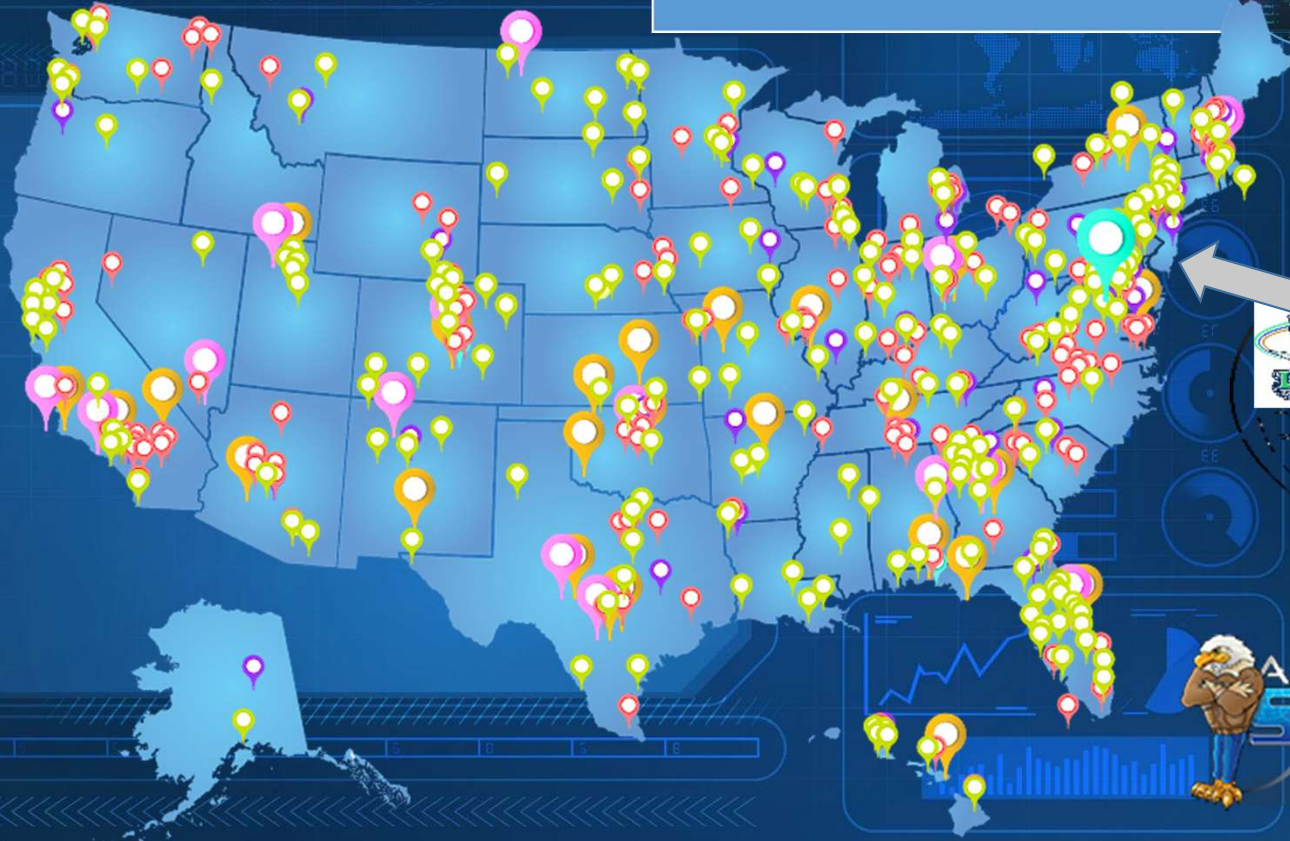
AFRL

K-12 STEM Map

K-12 STEM Outreach



30		Installations
5		Programs
15		Programs
45		Competitions
173		Competitions
319		Competitions
??		Competitions



AIR FORCE STEM K-12



We are AFOSR and
we science!



Questions?
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