



Air Force Basic Research

Senior Procurement Analyst

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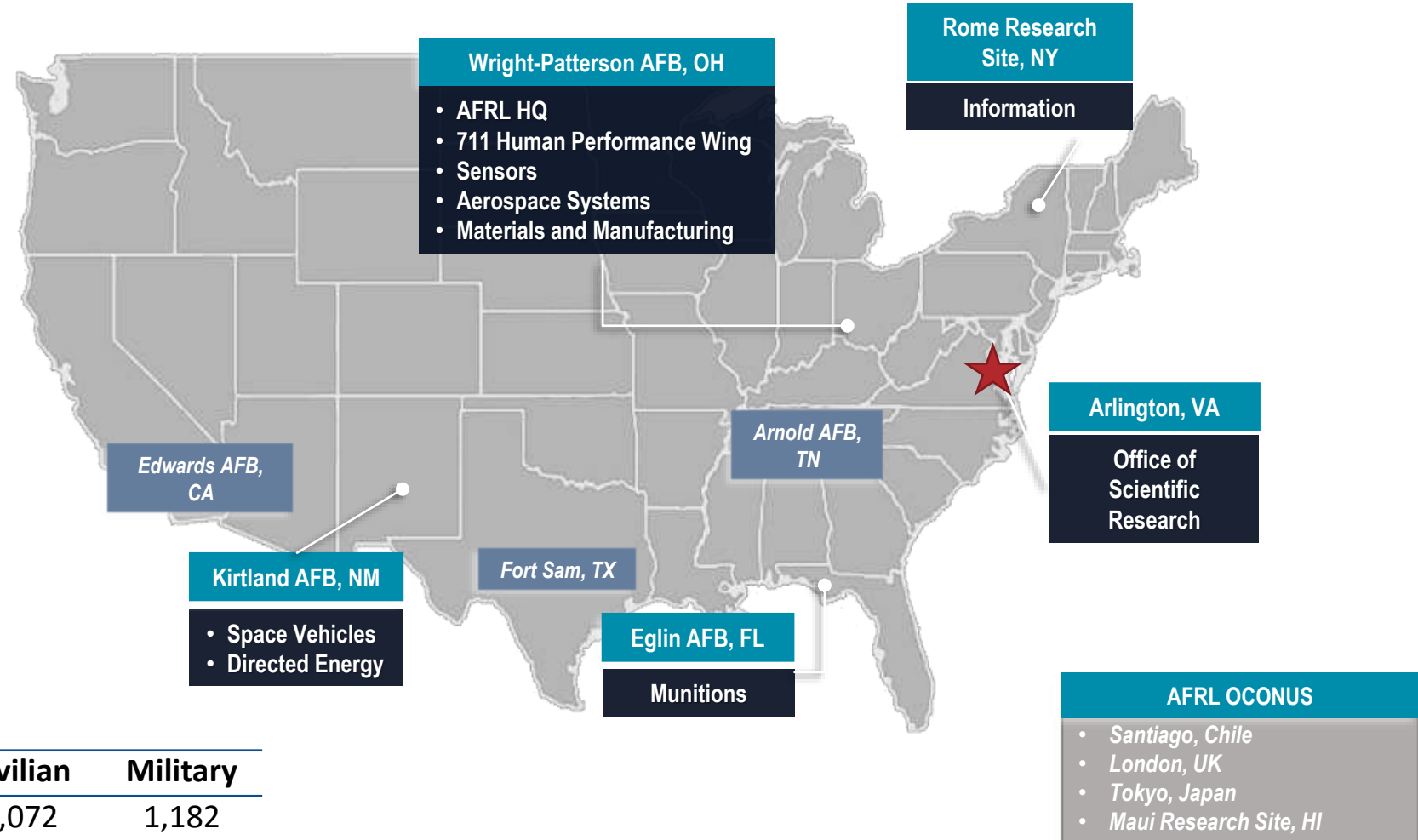
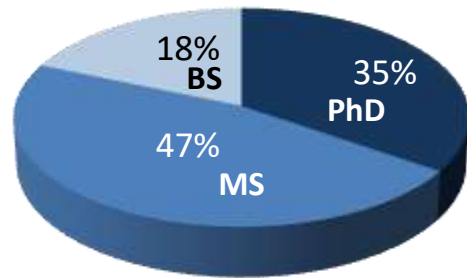
Agenda

- About us
- Our Granting Process
- Research Areas
- Improving Competitiveness
- Opportunities



About Us

LOCATIONS AND WORKFORCE



	Employees	Civilian	Military
Total	6,254	5,072	1,182
S&Es	3,611	3,041	570

About Us

AFRL TECHNOLOGY DIRECTORATES

AF Office of Scientific Research

- Physics and Electronics
- Aerospace, Chemical and Materials Sciences
- Mathematics, Information, and Life Sciences



Aerospace Systems

- Aerospace Vehicles
- Control, Power and Thermal Management
- High Speed Systems
- Space and Missile Propulsion
- Turbine Engines



Directed Energy

- High Power Electromagnetics (HPEM)
- Laser Systems (LS)
- Directed Energy
- Electro-Optics for Space Superiority
- Weapons Modeling & Simulation (WM&S)



Information

- Autonomy, Command and Control, and Decision Support
- Processing & Exploitation
- Cyber Science and Technology
- Connectivity and Dissemination



Human Performance

- Decision Making
- Bioeffects
- Human Centered ISR



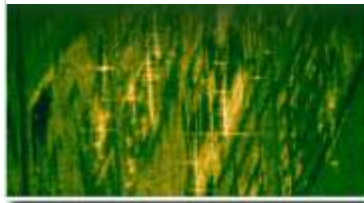
Munitions

- Ordnance Sciences
- Fuze Technology
- Terminal Seeker Sciences
- Munitions Airframe, Guidance, Navigation & Control
- Munitions System Effects Sciences



Sensors

- Spectrum Warfare
- Layered Sensing Exploitation
- Enabling Devices and Components
- RF Sensing
- EO Sensing



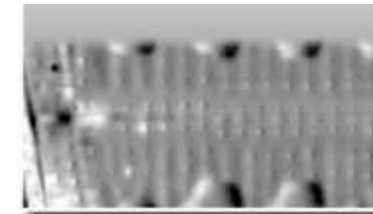
Space Vehicles

- Space Electronics
- Space Remote Sensing
- Space Environment Impacts & Mitigation
- Space Experiments
- Space Platforms



Materials and Manufacturing

- Structural Materials
- Functional Materials
- Manufacturing Technologies
- Support for Operations



About Us

HOW AFOSR WORKS

FIND

36 Program Officers reaching scientists & engineers globally

FORM

Shape emerging science into high-performing teams and portfolios that address long-term basic science barriers to future AF capabilities

FUND

1098 extramural research projects at **174** US universities

208 intramural research projects at AFRL Technical Directorates

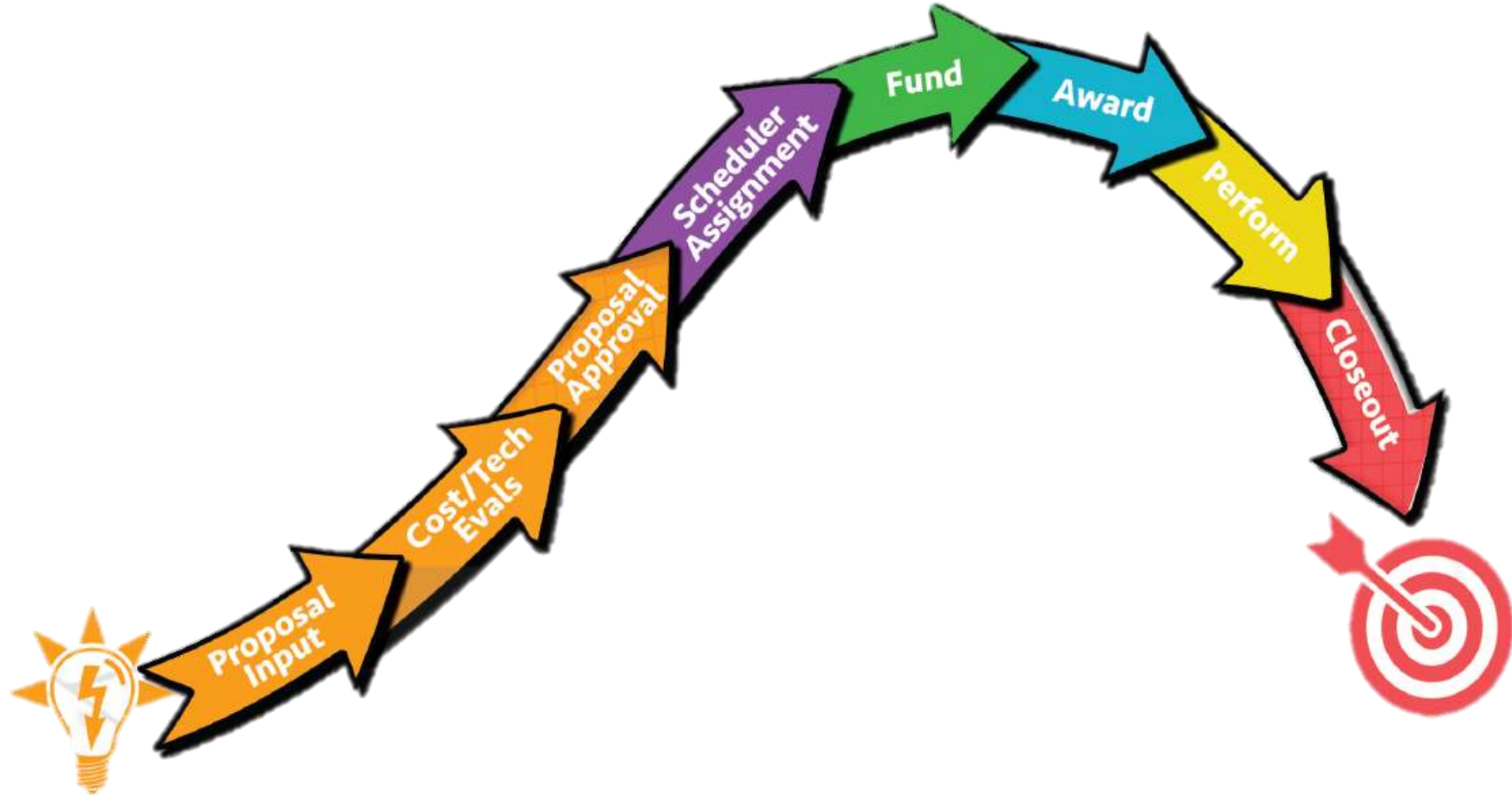
268 international efforts in **39** countries

* FY18 Figures a/o 28 May 19

FORWARD

Transition through AFRL TDs, Small Business Innovation Research & Small Business Technology Transfer (SBIR/STTR)

AFOSR Granting Process



AFOSR Research Areas

AFOSR GENERAL BAA

- Outlines research areas of interest
- FA9550-19-S-0003 can be found on www.grants.gov
<https://www.grants.gov/web/grants/view-opportunity.html?oppld=314753>

Engineering and Complex Systems	Information and Networks	Physical Sciences	Chemistry and Biological Sciences
Dynamic Materials and Interactions	Computational Cognition and Machine Intelligence	Materials with Extreme Properties	Biophysics
GHz-THz Electronics and Materials	Computational Mathematics	Atomic and Molecular Physics	Human Performance and Biosystems
Energy, Combustion, and Non-Equilibrium Thermodynamics	Dynamics and Control	Electromagnetics	Mechanics of Multifunctional Materials and Microsystems
Unsteady Aerodynamics and Turbulent Flows	Dynamic Data and Information Processing	Laser and Optical Physics	Molecular Dynamics and Theoretical Chemistry
High-Speed Aerodynamics	Information Assurance and Cybersecurity	Optoelectronics and Photonics	Natural Materials, Systems, and Extremophiles
Low Density Materials	Optimization and Discrete Mathematics	Plasma and Electro-Energetic Physics	Organic Materials Chemistry
Multiscale Structural Mechanics and Prognosis	Science of Information, Computation, Learning, and Fusion	Quantum Information Sciences	
Space Propulsion and Power	Trust and Influence	Remote Sensing	
Agile Science of Test and Evaluation (T&E)	Complex Networks	Space Science	
	Cognitive and Computational Neurosciences	Ultrashort Pulse Laser-Matter Interactions	
		Condensed Matter Physics	

Improving Competitiveness

DOING BUSINESS WITH AFOSR

- **Engage with AFOSR PO researchers** to discuss your idea statement
- Promising ideas may begin an ongoing dialogue leading to full proposal submission
- Throughout your working relationship with AFOSR, you can expect an AFOSR PO to take on a number of roles:
 - Topical / Program Expert
 - Educator / Communicator
 - Team Builder
 - Advocate
 - Evaluator
 - Administrator
 - Active Member of AFRL, DoD & Scientific Communities



Improving Competitiveness

DOING BUSINESS WITH AFOSR

- **Attend grant writing courses**
- In general, a good proposal is one that includes:
 - Strong technical merit
 - Air Force relevance
 - Solid budget justification
 - Consideration given to every requirement stated in the BAA

Improving Competitiveness

DOING BUSINESS WITH AFOSR

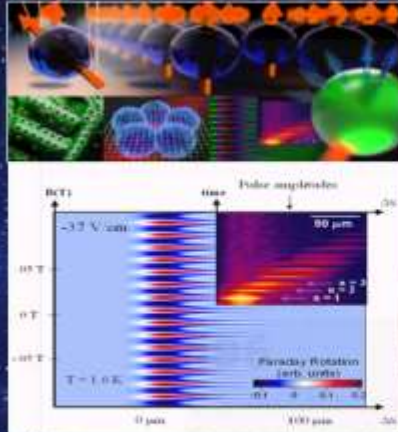
- **Understand funding considerations**
- AFOSR receives far more good proposals than it is able to fund every year
- POs must factor many other considerations into funding decisions. Those include, but aren't limited to:
 - Overlap with program interests and connecting to DoD labs
 - Potential for scientific breakthroughs
 - Strategic directions
 - Budget realities
 - Peer review recommendations

Improving Competitiveness

DOING BUSINESS WITH AFOSR

- **Look for opportunities to forge partnerships**
- Once funded, remain engaged and continue with the process by
 - Reviewing BAAs
 - Attending program reviews
 - Collaborating with other PIs in the program
- Seek out Center of Excellence BAAs
 - University-led efforts, sponsored by 1+ AFRL Technology Directorate and AFOSR
 - Prime opportunity for academic engagement and student pipeline
 - Nominal three-year arrangement, with two-year renewal option
 - AFRL and University share costs (with AF investment up to \$500K/year)

Professor David Awschalom, University of California Santa Barbara: Quantum Information Processing/Spintronics



"I am extremely grateful to the AFOSR for launching my career at the University of California, and for **having the courage to fund ambitious, high-risk research**. Without their **steadfast support** and thoughtful guidance, the field of quantum spintronics would almost certainly not be where it is today." - Dr. Awschalom

AFOSR Funding Opportunities

TRADITIONAL GRANTS

- Extramural Grants
- Lab Tasks
- Historically Black Colleges and University/Minority Serving Institution Grants
- Young Investigator Grants
- Center of Excellence Grants

ADD'L FUNDING OPPORTUNITIES

- [Multidisciplinary University Research Grants](#)
- [Instrumentation Grants](#)
- Small Business Tech Transfer Grants/Contracts
- [Defense Enterprise Science Initiative](#)
- Summer Faculty Fellowships
- Windows on Science
- [MINERVA](#)

WORKFORCE DEVELOPMENT

- Undergraduate Research Experiences
- [Graduate Fellowships](#)
- AFRL Internships
- Windows on World
- AFRL Science and Technology Fellowships
- [Lab Univ Collaboration Initiative](#)

- Core ~ \$350M, [OSD ~ \\$150M](#), Total Budget ~ \$500M
- 65% of core mission funds extramural, 30% intramural, 5% international

Questions?