

# AFRL/AFOSR Programs

**CONDUCT**

**BOLD**

**HIGH RISK**

**HIGH REWARD**

**RESEARCH**



AIR FORCE RESEARCH LABORATORY

**AFRL**

AIR FORCE OFFICE OF SCIENTIFIC RESEARCH



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## AFRL/AFOSR Program Overview

**Basic Research Opportunities:** The Air Force Research Laboratory, Air Force Office of Scientific Research (AFRL/AFOSR) is the basic research arm of the Department of the Air Force (DAF). AFOSR is one of the Technological Directorates (TD) within AFRL and is the only TD that operates primarily as a funding organization. AFOSR executes one hundred per cent of the DAF core budget in basic research as well as the DAF portion of the basic research budget of the Office of the Secretary of Defense (OSD). AFOSR funds over 1,200 projects a year at 209 US universities, over 300 intramural research projects at AFRL TDs, and 375 international projects spanning over 30 countries on 5 different continents.

1. **Traditional Research Grants:** AFOSR's primary strength is its program officers' (POs) abilities to identify cutting edge science with the potential to dramatically improve and/or revolutionize Air Force and Space Force operations. The traditional research grant category represents funds set aside for POs to engage the scientific community and discover, shape, and champion basic science research. Please visit our community web page to learn more: <https://community.afosr.org/wg/afosr/>
2. **International Research Grants:** AFOSR maintains a global presence to discover, engage, and fund leading edge scientists and researchers, wherever they happen to be. The International Research category supports AFOSR's overseas offices in these efforts. <https://community.afosr.org/wg/afosr/w/researchareas/8324/international-division-research-areas---international-office/>
3. **Young Investigators Program (YIP):** This program supports young scientists and engineers showing exceptional ability and promise for conducting basic research with 3-year grants. It aims to foster creative basic research, enhance early career development, and increase opportunities for young investigators to recognize DAF missions and challenges in science and engineering. <https://community.afosr.org/wg/afosr/w/researchareas/12792/young-investigator-program-yip/>
4. **Historically Black College and University / Minority Serving Institutions (HBCU/MSI):** HBCUs and MSIs are important sources of research advancement and human capital development for building and fostering diversity throughout the Department of Defense. AFOSR is committed to greater partnership, providing support to help grow research capacity, talent, and capability in these institutions, and leveraging their abilities to advance basic science for the DAF. This program sets aside funds to target research performed at HBCU/MSIs. <https://www.afrl.af.mil/About-Us/Fact-Sheets/Fact-Sheet-Display/Article/2282106/afosr-funding-opportunities-special-programs/#anchor1>
5. **Space University Research Initiative (SURI):** DOD's SURI program is focused on directing basic research toward applications that meet US Space Force (USSF) needs and challenges. The SURI program is intended to support basic and applied research in Space-related science and engineering at U.S. universities and institutions, with potential transition to critical applications of DoD interest. SURI is co-funded by applied research dollars, and thus expands the scope of work to include science and technology development. The SURI program supports multidisciplinary research efforts, ideally creating synergies to speed DoD-relevant research and development. SURI differs from the Multidisciplinary University Research Initiative (MURI) that is funded by DoD basic research funds for basic research products. <https://www.grants.gov/web/grants/view-opportunity.html?oppld=332151>



6. **Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR):** These two programs are highly innovative programs that encourage domestic small businesses to engage in Federal Research/Research and Development with the potential for commercialization. Through a competitive awards-based program, SBIR and STTR enable small businesses to explore their potential and provide incentive to profit from technological commercialization. By including qualified small businesses in the nation's R&D arena, high-tech innovation is stimulated, and the United States gains entrepreneurial spirit as it meets its specific research and development needs. Central to the STTR program is the partnership between small businesses and nonprofit research institutions. The STTR program requires the small business to formally collaborate with a research institution in Phase I and Phase II. STTR's most important role is to bridge the gap between conducting basic science research and the commercialization of resulting technologies. AFWERX, a directorate within AFRL, is the innovation arm of the laboratory responsible for managing the SBIR/STTR programs. As a part of AFWERX, SpaceWERX plays a vital role in pursuing innovative technologies for the United States Space Force. <https://www.sbir.gov/about>
7. **Defense Established Programs to Stimulate Competitive Research (DEPSCoR):** This program's objectives are to: (1) increase the number of university researchers in eligible States/Territories capable of performing S&E research responsive to the needs of the DoD; and (2) enhance the capabilities of institutions of higher education in eligible States/Territories to develop, plan, and execute science and engineering (S&E) research that is relevant to the mission of the DoD, and competitive under the peer-review systems used for awarding Federal research assistance; (3) increase the probability of long-term growth in the competitively awarded financial assistance that IHE in eligible States receives from the Federal Government for S&E research. <https://www.grants.gov/web/grants/view-opportunity.html?oppld=333435>
8. **AFRL University Nanosat Program:** AFOSR funds the University Nanosat Program to support university students and programs to design, build, launch, and operate small satellites. Its primary goal is educate and train the next generation of space professionals. <https://universitynanosat.org/>
9. **Government-University-Industry Research Roundtable (GUIRR):** GUIRR convenes senior representatives from across the scientific research community to define, explore, and frame critical issues, related to science and technology, facing the nation. AFOSR provides financial support to GUIRR. <https://www.nationalacademies.org/guirr/government-university-industry-research-roundtable>
10. **Multidisciplinary University Research Initiative (MURI):** This program supports academic research teams in conducting ground-breaking, field-changing basic research addressing problems that span multiple disciplines. MURIs are highly competitive awards to fund exceptional, very high- risk, and innovative research that cannot be accomplished via single investigator grants. MURI promotes university research that aims to solve the "impossible" problems facing DOD today and in the future, hastens the transition of research findings to practical application, stimulates the growth of emerging technologies, and addresses critical research questions to meet the future needs of the Air Force, Space Force, and DOD. <https://www.grants.gov/web/grants/view-opportunity.html?oppId=337959>
11. **Defense University Research Instrumentation Program (DURIP):** This program is designed to improve the capabilities of accredited U.S. higher education institutions to conduct research



and educate scientists and engineers in areas important to national defense by providing funds for the acquisition of research equipment or instrumentation. DURIP gives institutions the ability to grow capabilities, recruit top talent, provide USAF and USSF with big-win research capabilities and invest in the future workforce. <https://www.grants.gov/web/grants/view-opportunity.html?oppld=337839>

12. **Minerva:** Funds social science research aimed at improving DOD's basic understanding of strategic and national-level security issues. All work is university-based with the intention of improving DOD's understanding of the social, cultural, behavioral, and political forces that shape regions to the world of strategic importance to the U.S. <https://minerva.defense.gov/About/>
13. **Presidential Early Career Award for Scientists and Engineers (PECASE):** This program is the highest honor bestowed by the United States government for outstanding scientists and engineers in the early stages of their independent research. Early career professors of higher education and national laboratory researchers are eligible for this award. <https://www.afrl.af.mil/About-Us/Fact-Sheets/Fact-Sheet-Display/Article/2282120/afosr-funding-opportunities-university-research-initiative-uri/#anchor4>
14. **National Defense Science and Engineering Graduate Fellowship Program (NDSEG):** This program is a Department of Defense-sponsored three-year fellowship designed to increase the number of U.S. citizens receiving doctorates in research discipline areas of DOD relevance at U.S. institutions. The NDSEG program serves as a pipeline for workforce development of future scientists researching military importance whether in Academia, Government, or Private Industry. [https:// www.ndseg.org](https://www.ndseg.org).
15. **AFRL Science and Technology Fellowship Program (STFP):** This program is the premiere AFRL research associateship program. This nationally competitive fellowship offers awards to postdoctoral and senior scientists to perform collaborative research at DAF and USSF research facilities across the country. <https://sites.nationalacademies.org/PGA/Fellowships/AFRL/index.htm>
16. **AFRL Summer Faculty Fellowship Program (SFFP):** This program offers full-time science, math, and engineering faculty at U.S. colleges and universities the opportunity to participate in research through 8- to 12-week residencies at DAF laboratories. <https://www.afrl.af.mil/About-Us/Fact-Sheets/Fact-Sheet-Display/Article/2282123/afosr-funding-opportunities-educational-programs/>
17. **AFRL Science, Technology, Engineering, and Math (STEM):** This program represents AFOSR's contribution to DAF efforts to grow STEM skills in K-16 students, interest them in DAF challenges and careers, and recruit them into DAF education and development programs. <https://www.grants.gov/web/grants/view-opportunity.html?oppld=337827> and <https://www.grants.gov/web/grants/view-opportunity.html?oppId=337849>.
18. **Visiting Scientist Program (VSP):** This program provides opportunities for DAF scientists and engineers to conduct full-time research at non-government laboratories within the U.S. It aims to provide access to unique facilities, transition skills and knowledge back to DAF labs, create and deepen relationships with other researchers and build enduring collaborations.



<https://www.afrl.af.mil/About-Us/Fact-Sheets/Fact-Sheet-Display/Article/2282123/afosr-funding-opportunities-educational-programs/>

19. **Windows on the World (WOW):** This program provides opportunities for DAF scientists and engineers to conduct full-time research at non-government foreign laboratories. It aims to provide access to unique facilities, transition international skills and knowledge back to DAF labs, create and deepen relationships with international researchers, and build enduring collaborations. <https://www.afrl.af.mil/About-Us/Fact-Sheets/Fact-Sheet-Display/Article/2282123/afosr-funding-opportunities-educational-programs/>
20. **Awards to Stimulate and Support Undergraduate Research Experiences (ASSURE):** This program supports undergraduate research in DoD relevant disciplines and is designed to increase the number of high-quality science and engineering majors who ultimately decide to pursue advanced degrees in these fields. <https://www.afrl.af.mil/About-Us/Fact-Sheets/Fact-Sheet-Display/Article/2282123/afosr-funding-opportunities-educational-programs/>
21. **Engineer and Scientist Exchange Program (ESEP):** This program promotes international cooperation in military research, development, and acquisition through the exchange of defense scientists and engineers. It provides on-site, working assignments for US military and civilian engineers and scientists in allied and friendly governments' organizations and the reciprocal assignment of foreign engineers and scientists in US defense establishments. Establishing the program requires a formal international agreement, a Memorandum of Understanding, with each participant nation. Currently, DoD has signed agreements with Australia, Canada, the Czech Republic, Chile, France, Germany, Israel, Italy, Japan, Korea, the Netherlands, Norway, Poland, Singapore, Spain, and the United Kingdom. <https://www.afrl.af.mil/About-Us/Fact-Sheets/Fact-Sheet-Display/Article/2282123/afosr-funding-opportunities-educational-programs/>

**Department of the Air Force (DAF) Intramural Basic Research Opportunities:** The intramural investment builds an in-house understanding at the basic research level across many of the key research areas needed to facilitate the transitions of basic research into the core applied research and advanced technology development work of the laboratory and to operational capabilities. The ability to conduct basic research is also important in order for AFRL to recruit and mature the best and the brightest future workforce. The intramural program includes support for the following items:

22. **AFRL Lab Tasks:** AFOSR seeks to maintain collaborative partnerships with AFRL Technical Directorates (TDs) to address DoD, Air Force, and Space Force mission priorities. This work also builds basic research capacity and provides a network of transition paths from basic to applied research communities. <https://afresearchlab.com/technology/basic-research/>
23. **Centers of Excellence (COE):** COEs are joint efforts among AFRL/AFOSR, AFRL Technical Directorates (TDs), as well as a university or team of universities to perform high priority collaborative research. COEs aim to drive research critical to the Air Force, Space Force, and DoD, strengthen TD's in-house capabilities, and expose students to DAF challenges and recruiting opportunities. AFOSR currently funds 10 COEs, with an 11<sup>th</sup> planned for FY22. <https://community.apan.org/wg/afosr/w/researchareas/24446/centers-of-excellence/>
24. **Air Force Institute of Technology (AFIT):** AFOSR provides funding to support AFIT's research, development of technical talent, and connection to the DAF research enterprise. <https://www.afit.edu/>



25. **United States Air Force Academy (USafa):** AFOSR provides funding to support USAFA's research, development of technical talent, and connection to the DAF research enterprise.  
<https://www.usafa.edu/research/>
26. **AFRL Fellows Award:** This program recognizes AFRL's most outstanding scientist and engineers in the areas of research, technology development and transition, or program and organizational leadership. It funds grants to the awardees to continue their research.  
<https://afresearchlab.com/lab-life/afri-fellow/>
27. **AFRL Early Career Awards:** This program recognizes AFRL's most promising young scientists and engineers for exceptional leadership potential and significant research or engineering achievements early in their career. It funds grants to the awardees to continue their research.  
<https://afresearchlab.com/lab-life/afri-fellow/>

