



Air Force Research Laboratory (AFRL) Wright-Patterson Air Force Base (WPAFB) OH FACTSHEET

Overview and Mission of AFRL: The Air Force Research Laboratory (AFRL) is headquartered at WPAFB with operating locations in New York, New Mexico, Florida, Virginia, California and Hawaii. AFRL's mission is leading the discovery, development, and integration of warfighting technologies for our air, space, and cyberspace forces. The AFRL is made up of a diverse team of incredible people dedicated to turning the impossible into reality. The workforce comprises a wealth of talented individuals who lead AFRL science and technology (S&T) development through in-house and contractual programs. The laboratory outsources approximately 75% of its budget to industry, academia and the international community - leveraging the world's knowledge to provide the most innovative S&T to the Air Force (AF). AFRL maintains a diverse S&T portfolio, ranging from basic and applied research to advanced technology development that focuses on three specific products: targeted research to shape the future battlespace, integrated technology options to satisfy identified AF requirements, and rapid technology solutions to meet urgent operational needs. Further, through its management of the laboratory, it also plays an important role in ensuring timely, reliable, and economical production and sustainment of AF systems. It is responsible for the Air Force's S&T budget of over \$2 billion including: basic research, applied research, advanced technology development, and an additional \$1.7 billion from AFRL customers.

AFRL Technical Directorates (TD): AFRL accomplishes its mission through nine Technology Directorates and a central staff. The directorates are the [711th Human Performance Wing \(711HPW\)](#) (WPAFB and Fort Sam Houston, TX), [Aerospace Systems Directorate](#) (WPAFB and Edwards AFB), [Air Force Office of Scientific Research \(AFOSR\)](#) (Arlington, VA), [Directed Energy Directorate](#) (Kirtland AFB, NM and Maui, HI), [Information Directorate](#) (Rome, NY), [Materials and Manufacturing Directorate](#) (WPAFB), [Munitions Directorate](#) (Eglin AFB, FL), [Sensors Directorate](#) (WPAFB), and [Space Vehicles Directorate](#) (Kirtland Air Force Base, NM). The description of each directorate is as follows.

The 711 Human Performance Wing (HPW) is the first human-centric warfare Wing to consolidate research, education, and consultation under a single organization. The Wing's primary mission areas are aerospace medicine science and technology, and human systems integration.

The Aerospace Systems Directorate (AFRL/RQ) leads the effort to develop and transition superior technology solutions that enable dominant military aerospace vehicles. Focus areas include vehicle aerodynamics, flight control, aerospace propulsion, power, rocket propulsion, aerospace structures, and turbine engines. Aerospace Systems Directorate programs advance a variety of aerospace technologies, including unmanned vehicles, space access, advanced fuels, hypersonic vehicles, future strike, and energy management.

The AFOSR is the basic research manager for the AFRL. AFOSR invests in long-term, broad-based research into aerospace-related science and engineering. AFOSR distributes its basic research program investment to approximately 300 academic institutions, 145 industry-based contracts, and more than 150 internal AFRL research efforts.

The Directed Energy Directorate (AFRL/RD) is the AF's Center of Expertise for directed energy and optical technologies. The directorate's focus is in four core technical competencies: Laser Systems, High-Power Electromagnetics, Weapons Modeling and Simulation, and Directed Energy and Electro-Optics for Space Superiority. The lab is transitioning game changing counter-electronics weapon technologies that can degrade, damage, or destroy electronic systems with minimum collateral damage.

The Information Directorate (AFRL/RI) develops information technologies for aerospace command and control, overseeing their transition to air, space, and ground systems. Its focus areas cover a broad spectrum of technologies, including information fusion and exploitation, communications and networking, collaborative environments, modeling and simulation, defensive information warfare, and intelligent information systems technologies, with the goal to successfully meet the challenges of the information age.

The Materials and Manufacturing Directorate (AFRL/RX) develops new materials, processes, and manufacturing technologies for use in aerospace applications. This includes aircraft, spacecraft, missiles, rockets, and ground-based systems, as well as their structural, electronic, and optical components. The directorate provides quick-reaction support and real-time solutions to AF weapon system acquisition offices, field organizations, and maintenance depots to address materials-related concerns and problems.

The Munitions Directorate (AFRL/RW) develops, demonstrates, and transitions science and technology for air-launched munitions for defeating ground-fixed, mobile/re-locatable, air, and space targets. The directorate works to assure preeminence of US air and space forces, conducting basic research, exploratory development, and advanced development and demonstrations.

The Sensors Directorate (AFRL/RV) leads the discovery, development, and integration of affordable sensor and countermeasure technologies for warfighters. In collaboration with other AFRL directorates and Department of Defense (DoD) organizations, the directorate develops sensors for air and space reconnaissance, surveillance, precision engagement, and electronic warfare systems. The directorate's vision is to provide robust sensor and adaptive countermeasures that guarantee complete freedom of air, space and cyber operations for the nation's forces, while denying these capabilities to adversaries.

The Space Vehicles Directorate (AFRL/RV) serves as the AF's Center of Excellence for space research and development. The directorate develops and transitions space technologies for more effective, more affordable warfighter missions. Primary mission thrusts include space-based surveillance (space-to-space and space-to-ground) and space capability protection (protecting space assets from man-made and natural effects). The directorate also leverages commercial, civil, and other government resources to ensure America's defense advantage.

Mission of AFRL Small Business Office: The mission of the AFRL Small Business Office (AFRL/SB) is to maximize opportunities for small businesses to deliver technology innovations and solutions to meet customer needs. AFRL/SB's duties include aiding, assisting and counseling small businesses, assisting in formulation of acquisition strategies, and to take the role of ombudsman for small business issues. The AFRL/SB team is dedicated to creating and delivering strategies that bring innovative, agile and efficient small business solutions to our customers in AFRL. The priority of AFRL/SB is to deliver the right small business options and solutions to our customers, increase awareness of small business capabilities and their contributions to the AFRL mission, and educate internal and external audiences on meeting AFRL's mission with small business solutions.

Small Business Innovation Research (SBIR) and Small Business Innovation Research (SBIR) Programs:

Included within the small business arena are the Small Business Innovation Research (SBIR) program and the Small Business Technology Transfer (STTR) program. Through a competitive award process, SBIR enables small businesses to explore their technological potential and provides the incentive to profit from commercialization. The STTR program expands funding opportunities in the federal innovation arena. Central to the program is the expansion of the public/private sector partnership to include joint venture opportunities between small businesses and nonprofit research institutions. Frequently asked questions and answers on the SBIR and STTR programs can be found at <http://www.sbir.gov/faq/general>.

AFRL Top 25 North American Industry Classification System (NAICS) Requirements in FY15:

	NAICS	NAICS DESCRIPTION	OTSB	SB	Grand Total
1	541712	RESEARCH AND DEVELOPMENT IN THE PHYSICAL, ENGINEERING, AND LIFE SCIENCES (EXCEPT BIOTECHNOLOGY)	\$1,272,034,173	\$925,748,798	\$2,197,782,971
2	334210	TELEPHONE APPARATUS MANUFACTURING	\$31,311,088	\$33,802,502	\$65,113,591
3	561110	OFFICE ADMINISTRATIVE SERVICES	\$46,304,167	\$8,912,932	\$55,217,099
4	541710	RESEARCH AND DEVELOPMENT IN THE PHYSICAL, ENGINEERING, AND LIFE SCIENCES	\$34,610,392	\$6,673,882	\$41,284,274
5	541330	ENGINEERING SERVICES	\$22,074,055	\$13,873,241	\$35,947,296
6	541990	ALL OTHER PROFESSIONAL, SCIENTIFIC, AND TECHNICAL SERVICES	\$19,629,726	\$11,005,439	\$30,635,165
7	541511	CUSTOM COMPUTER PROGRAMMING SERVICES	\$19,065,484	\$4,556,949	\$23,622,433
8	541512	COMPUTER SYSTEMS DESIGN SERVICES	\$13,555,809	\$7,913,441	\$21,469,250
9	334111	ELECTRONIC COMPUTER MANUFACTURING	\$393,847	\$12,817,876	\$13,211,723
10	336419	OTHER GUIDED MISSILE AND SPACE VEHICLE PARTS AND AUXILIARY EQUIPMENT MANUFACTURING	\$100,000	\$10,253,083	\$10,353,083
11	541711	RESEARCH AND DEVELOPMENT IN BIOTECHNOLOGY	\$686,519	\$7,533,295	\$8,219,814
12	511210	SOFTWARE PUBLISHERS	\$890,816	\$6,488,227	\$7,379,043
13	541513	COMPUTER FACILITIES MANAGEMENT SERVICES	\$5,538,152	\$731,800	\$6,269,952
14	541720	RESEARCH AND DEVELOPMENT IN THE SOCIAL SCIENCES AND HUMANITIES	\$0	\$6,044,669	\$6,044,669
15	541690	OTHER SCIENTIFIC AND TECHNICAL CONSULTING SERVICES	\$3,619,520	\$1,870,079	\$5,489,599
16	611512	FLIGHT TRAINING		\$5,062,621	\$5,062,621
17	236220	COMMERCIAL AND INSTITUTIONAL BUILDING CONSTRUCTION		\$4,241,885	\$4,241,885
18	315999	OTHER APPAREL ACCESSORIES AND OTHER APPAREL MANUFACTURING	\$6,850	\$2,827,890	\$2,834,740
19	423430	COMPUTER AND COMPUTER PERIPHERAL EQUIPMENT AND SOFTWARE MERCHANT WHOLESALERS		\$2,633,245	\$2,633,245
20	517110	WIRED TELECOMMUNICATIONS CARRIERS	\$2,330,000	\$6,300	\$2,336,300
21	561210	FACILITIES SUPPORT SERVICES	\$5,747	\$2,097,144	\$2,102,891
22	443120	COMPUTER AND SOFTWARE STORES	\$448,933	\$1,077,954	\$1,526,887
23	541611	ADMINISTRATIVE MANAGEMENT AND GENERAL MANAGEMENT CONSULTING SERVICES	\$1,262,750	\$213,068	\$1,475,819
24	488190	OTHER SUPPORT ACTIVITIES FOR AIR TRANSPORTATION	\$1,468,679		\$1,468,679
25	221330	STEAM AND AIR-CONDITIONING SUPPLY	\$1,462,607		\$1,462,607
		ALL OTHERS	\$1,192,472	\$9,682,683	\$10,875,155
		Grand Total	\$1,477,991,785	\$1,086,069,004	\$2,564,060,789

AFRL Top 25 Product and Service Codes (PSC) Requirements in FY15:

	PSC	PSC DESCRIPTION	OTSB	SB	Grand Total
1	AD92	R&D- DEFENSE OTHER: OTHER (APPLIED RESEARCH/EXPLORATORY DEVELOPMENT)	\$236,890,351	\$211,134,999	\$448,025,350
2	AC62	R&D- DEFENSE SYSTEM: ELECTRONICS/COMMUNICATION EQUIPMENT (APPLIED RESEARCH/EXPLORATORY DEVELOPMENT)	\$183,799,302	\$126,564,347	\$310,363,649
3	AC12	R&D- DEFENSE SYSTEM: AIRCRAFT (APPLIED RESEARCH/EXPLORATORY DEVELOPMENT)	\$187,402,154	\$119,048,885	\$306,451,039
4	AD93	R&D- DEFENSE OTHER: OTHER (ADVANCED DEVELOPMENT)	\$195,862,002	\$104,817,475	\$300,679,477
5	AC13	R&D- DEFENSE SYSTEM: AIRCRAFT (ADVANCED DEVELOPMENT)	\$99,864,699	\$20,489,941	\$120,354,640
6	AC52	R&D- DEFENSE SYSTEM: WEAPONS (APPLIED RESEARCH/EXPLORATORY DEVELOPMENT)	\$68,967,200	\$42,888,278	\$111,855,478
7	R499	SUPPORT- PROFESSIONAL: OTHER	\$81,752,138	\$22,245,569	\$103,997,707
8	AC11	R&D- DEFENSE SYSTEM: AIRCRAFT (BASIC RESEARCH)	\$27,230,777	\$67,358,282	\$94,589,059
9	AC22	R&D- DEFENSE SYSTEM: MISSILE/SPACE SYSTEMS (APPLIED RESEARCH/EXPLORATORY DEVELOPMENT)	\$19,147,911	\$58,647,645	\$77,795,557
10	AC61	ELECTRONICS/COMMUNICATION EQUIPMENT (BASIC RESEARCH)	\$49,873,736	\$11,037,949	\$60,911,685
11	R425	SUPPORT- PROFESSIONAL: ENGINEERING/TECHNICAL	\$44,044,989	\$13,544,059	\$57,589,048
12	AZ12	R&D- OTHER RESEARCH AND DEVELOPMENT (APPLIED RESEARCH/EXPLORATORY DEVELOPMENT)	\$42,947,326	\$12,803,341	\$55,750,667
13	7010	ADPE SYSTEM CONFIGURATION	\$29,533,439	\$25,353,934	\$54,887,373
14	AC63	R&D- DEFENSE SYSTEM: ELECTRONICS/COMMUNICATION EQUIPMENT	\$35,495,521	\$6,288,358	\$41,783,879
15	AC21	R&D- DEFENSE SYSTEM: MISSILE/SPACE SYSTEMS (BASIC RESEARCH)	\$21,655,567	\$19,938,137	\$41,593,704
16	AD91	R&D- DEFENSE OTHER: OTHER (BASIC RESEARCH)	\$19,538,410	\$20,775,541	\$40,313,951
17	AC53	R&D- DEFENSE SYSTEM: WEAPONS (ADVANCED DEVELOPMENT)	\$11,841,736	\$20,217,361	\$32,059,097
18	AZ11	R&D- OTHER RESEARCH AND DEVELOPMENT (BASIC RESEARCH)	\$15,807,433	\$12,073,446	\$27,880,879
19	5805	TELEPHONE AND TELEGRAPH EQUIPMENT	\$316,400	\$17,877,561	\$18,193,961
20	AC65	ELECTRONICS/COMMUNICATION EQUIPMENT (OPERATIONAL SYSTEMS DEVELOPMENT)		\$17,993,133	\$17,993,133
21	AD95	R&D- DEFENSE OTHER: OTHER (OPERATIONAL SYSTEMS DEVELOPMENT)	\$14,546,211	\$2,929,906	\$17,476,117
22	AC23	R&D- DEFENSE SYSTEM: MISSILE/SPACE SYSTEMS (ADVANCED DEVELOPMENT)	\$5,717,054	\$11,663,378	\$17,380,432
23	H270	EQUIPMENT AND MATERIALS TESTING- ADP EQUIPMENT/SOFTWARE/SUPPLIES/SUPPORT	\$15,668,179		\$15,668,179
24	AZ14	R&D- OTHER RESEARCH AND DEVELOPMENT (ENGINEERING DEVELOPMENT)	\$10,559,740	\$4,678,670	\$15,238,410
25	R699	SUPPORT- ADMINISTRATIVE: OTHER	\$8,250,970	\$5,956,041	\$14,207,011
		All Others	\$51,278,540	\$109,742,766	\$161,021,308
		Grand Total	\$1,477,991,785	\$1,086,069,004	\$2,564,060,789