

The Air Force Research Lab (AFRL) is headquartered at Wright-Patterson AFB, Ohio, and has branches across the U.S. It pays corporations, including academic institutions, to carry out the bulk of its research and development.

Air Force Research Lab, Kirtland Air Force Base (AFB) – FY2020

A-Tech Corp. (Albuquerque, NM)

- a communication system with two-way time transfer operating within W/V-bands and incorporating Free Space Optical links; model Heterogeneous Optical W/V-band Demonstration, evaluate and develop its components, and demonstrate its potential at meeting these objectives; issued 29 July 2020
 - o contracting activity = AFRL, Kirtland AFB, NM (FA9453-20-C-0024)
- Surveillance, Intelligence, and Reconnaissance Enhanced Network (SIREN) program; 2 Sep 2020
 - o SIREN aims to provide an “autonomous, multi-modal, space-based sensing capabilities for persistent tactical intelligence, surveillance, and reconnaissance.”
 - o AFRL, Kirtland AFB, NM (FA9453-20-C-0023)
- Space Logistics Assembly Disassembly Experiment with Swarms program: works on on-orbit spacecraft assembly, servicing, and swarm operations; 24 Sep 2020
 - o AFRL, Kirtland AFB, NM (FA9453-20-C-0031)
- advance software technologies developed in previous Phase I and II Small Business Innovation Research contracts; aims to increase space situational awareness, battle management command & control, and defensive counter space → work in Colorado Springs, CO; Kirtland AFB, NM; 30 Sep 2020
 - o AFRL, Kirtland AFB, Albuquerque (FA9453-20-C-0021)

Ball Aerospace & Technologies Corp. (Beavercreek, OH)

- Infrared Radiation Effects Laboratory (IRREL) operation and improvements: aims to develop techniques to advance characterization of infrared and visible FPAs and associated devices; includes developing characterization & analytical techniques, test hardware and operational & test procedures that advance the experimental capabilities of IRREL → work in Albuquerque, NM; 9 July 2020
 - o AFRL Kirtland AFB, NM (FA9453-20-C-0015)

Canyon Consulting (Los Angeles, CA)

- wideband global positioning system digital payload and architecture; 25 Nov 2019
 - o AFRL Geospace Technologies Branch, Kirtland AFB, NM

The Applied Research Laboratory at University of Hawaii (Honolulu, HI)

- establish or maintain an essential engineering, research, or development capability to be provided by an educational or other nonprofit institution or a federally funded research and development center (FFRDC) under the authority 10 U.S. Code 2304(c)(3)(B) → work in Maui; 1 May 2020
 - o see Academia FY2020 doc for more information
 - o AFRL Kirtland AFB, NM (FA9451-20-D-0004)

Honeywell

- *common strategic grade gyroscope; see Honeywell FY2020 doc*

Johns Hopkins University, Applied Physics Laboratory (Laurel, MD)

- technical and programmatic support of Tactical Space and Small Satellite Portfolio’s core competencies and mission lifecycle; includes support of the mission phases from concept through design, implementation, operations and transition of space assets; FA9453-18-D-0018; 10 July 2020
 - o AFRL Kirtland AFB, NM

Roccor LLC (Longmont, CO)

- satellites; advance the technology readiness level of components for use in a modular, advanced space power system, involving batteries and power management and distribution systems directly integrated onto the solar array, for use on spacecraft of interest to government and industry; 23 Dec 2019
 - o AFRL, Kirtland AFB, NM (FA9453-20-C-0017)
- structurally combined aperture and reticulated locking expandable truss; develop, build and test a flight quality demonstration unit for AFRL; 3 Aug 2020
 - o AFRL, Kirtland AFB, NM

Toyon Research Corp. (Goleta, CA)

- algorithm development for resilient on-orbit image processing; 19 Aug 2020
 - o AFRL, Kirtland AFB, NM (FA9453-20-C-0040)

Air Force Research Lab, Rome, NY

Apogee Research LLC (Arlington, VA)

- SymLang: aims to develop novel software systems that enable automated adaptation of the resulting software system to radical changes in requirements and computational environments; SymLang, new programming language, and its associated toolchain “will allow for the rapid development and adaption of code that is efficient at run-time over a wide range of operating conditions” → work in Arlington, VA; Menlo Park, CA; Medford, MA; 26 June 2020
 - o AFRL Rome, NY (FA8750-20-C-0520)
- development and testing of technologies to enable the transition of system technology integration tool chain for heterogeneous electronic systems; this “will allow capabilities to rapidly integrate into new mission capabilities for interoperability” within and across DOD platforms → Arlington, VA; Menlo Park, CA; Woburn, MA; Malden, MA; FA8750-20-C-1510; 7 Aug 2020
 - o AFRL, Rome, NY

Black River Systems Co. Inc. (Utica, NY)

- counter-small unmanned aircraft system (C-sUAS) open systems architecture: aims to rapidly enhance & commercialize the technology and approach developed under the previous Small Business Innovation Research Phase II in order to support rapid research, development, prototyping, demonstration, evaluation, and transition of C-sUAS; FA8750-19-C-0040; 10 Aug 2020
 - o AFRL, Rome, NY

Booz Allen Hamilton (McLean, VA)

- Operational Resilient Cyber Advancements: so the performer can design & develop Microservice Architectures for defensive cyber operations technology and utilize a cloud-based orchestration engine to automate processes and develop AI/Machine Learning technology thrusts; 30 Jan 2020
 - o AFRL Rome, NY

Cromulence LLC (Melbourne, FL)

- research, design, development, testing, demonstration, integration and delivery of integrated software and hardware cyber capabilities that will raise awareness of cyber risks of space systems; a “Space Security Challenge 2020: Hack-a-Sat” competition will be held to bridge the security knowledge gap between space and cyber security communities”; 14 Aug 2020
 - o AFRL, Rome, NY (FA8750-20-C-1528)

First RF Corp. (Boulder, CO)

- radio frequency electronic antenna cancellation/beamforming technology software/hardware prototypes: advanced radio frequency (RF) systems, which may support any of the various RF functions such as radar, communications, electronic warfare, signals intelligence, direction finding, etc.; 13 Aug 2020
 - o AFRL, Rome, NY (FA8750-20-D-0500)

General Electric Research (Niskayuna, NY)

- research, development, and demonstration of Rapid Assurance Curation Kit (RACK) software to enable certifiers to rapidly determine system risk acceptability; effort will provide a common evidence representation and efficient ingestion Application Programming Interface, automatic feedback to evidence providers, automatic decomposition of evidence, a polystore that organizes diverse evidence items, the ability to accept and store provenance metadata and an efficient query interface; 2 Mar 2020
 - o AFRL Rome, NY (FA8750-20-C-0203)

George Mason University

- see *Academia FY2020* doc

GrammaTech Inc. (Ithaca, NY)

- research, design, development, demonstration, test, integration and delivery of the Artemis Framework that aims to enable rapid adaptation of software to changes in requirements, platforms, and computational resources “at a scale and speed appropriate for the complex software ecosystem”; 26 June 2020
 - o AFRL Rome, NY (FA8750-20-C-0208)

Honeywell International Inc. (Phoenix, AZ)

- research, develop, integrate, validate and demonstrate Consistent Logical Automated Reasoning for Integrated System Software Assurance (CLARISSA) for development and assessment of assurance cases; R&D of technology to automate generation of assurance cases from curated evidence; 13 May 2020
 - o AFRL Rome, NY (FA8750-20-C-0512)

Kryptowire LLC (Tysons Corner, VA)

- software, hardware and reports; to design, develop, implement, evaluate and deliver software that is capable of collecting sensor information from Android and iOS smartphones and software that is capable of managing users, devices and applications to help manage and maintain the sensor collection process; FA8750-18-C-0054; 1 June 2020
 - o AFRL Rome, NY

Lockheed Martin Advanced Technology Laboratories (Cherry Hill, NJ)

- research, development, test and demonstration of Certification from Generation of Automated Test Evidence (CertGATE) software & hardware, the “extensible evidence generation workbench”; 21 Feb 2020
 - o AFRL Rome, NY (FA8750-20-C-0507)
- R&D of a prototype semantic forensic system that automatically detects, attributes and characterizes falsified, multi-modal media assets to defend against large-scale, automated disinformation attacks; supports a variety of potential transition partners; 12 Aug 2020
 - o AFRL, Rome, NY (FA8750-20-C-1540)

L3Harris (Greenville, TX)

- Foreign military sales (**unnamed**): aircraft engineering, procurement, and fabrication; 1 Oct 2019
 - o 645th Aeronautical Systems Group, Wright-Patterson AFB (FA8620-18-F-4802 P00006)
- Advanced Exploitation of Electronic Intelligence Signals software/hardware; provides improved detection, collection, characterization and reporting accuracy of emerging emitters, and improved reporting timeliness; improved classification of signal feature characteristics; research, development, demonstration of technologies and algorithms for automatic detection, measurement, processing and exploitation of radio frequency emissions; 8 Oct 2019
 - o AFRL Rome, NY (FA8750-20-C-1002)

L3Harris (Clifton, NJ)

- R&D and to provide the Integrated Demonstrations & Applications Lab simulation and testbed capabilities to rapidly develop, integrate, mature, insert and transition technologies/systems → Wright-Patterson AFB, OH; 17 Aug 2020
 - o AFRL Wright-Patterson AFB, OH (FA8650-20-D-1960)

Nalej Corp. (Arlington, VA, and New York, NY)

- a System of Systems Technology Integration Tool Chain for Heterogeneous Electronic Systems (STITCHES) Warfighter Applications Team (SWAT) development operations (DevOps) prototype: delivery of DevOps capabilities to the System of Systems Integration Technology and Experimentation (SoSITE) STITCHES platform managing DevOps toolchains “in addition to providing a team dedicated to the effort”; aims to eventually give DOD push-button deployment and management capabilities for SoSITE STITCHES that supports the further development and subsequent continued and expanded usage of the system as a whole; 18 Aug 2020
 - o AFRL, Rome NY (FA8750-20-C-1521)

Northrop Grumman (San Diego, CA)

- more design, development, testing of a communications waveform prototype to support ground-to-helicopter, helicopter-to-airborne platform, and helicopter-to-long range relay communication; FA870-18-C-0058; 15 Sep 2020
 - o AFRL, Rome, NY

PAR Government Systems Corp. (Rome, NY)

- directional airborne networks for contested environments, hardware and software; development of an interference emulation suite (IES) so links and networks can be stressed by a variety of interference types, from simple narrow band sources to protocol-aware interferers; 15 Sep 2020
 - o AFRL, Rome, NY (FA8750-20-C-1021)
- research, design, development, assembly, integration, demonstration, experimentation, analysis, testing, and further development of technologies, concepts, architectures, capabilities and a concept of operations using the AFRL Integrated Information Management System Cyber Technology Maturation Framework Form, Fit, and Function prototype environment and other relevant frameworks; 21 Sep 2020
 - o AFRL, Rome, NY (FA8750-20-C-1545)

Perspecta Labs Inc. (Basking Ridge, NJ)

- develop an Artificial Intelligence (AI) Co-Designer composed of design space construction, design composition, and design space exploration that will interoperate seamlessly to enable a tightly integrated design process"; 29 Sep 2020
 - o AFRL, Rome NY (FA8750-20-C-0025)

Raytheon Rockwell Collins (Cedar Rapids, IA)

- Software Programmable Agile Radio for Tactical Connected Ubiquitous Systems software/hardware system prototype: combining the Software Programmable Agile Radio next program's true Software Defined Radio approach with "low-cost, state-of-the-art, digital hardware and front-end modularity", to develop a low-cost, high-performance ground radio that supports multiple waveforms; 21 Sep 2020
 - o AFRL, Rome, NY (FA8750-20-C-1542)

Sierra Nevada Corp. (Sparks, NV)

- software engineering performance baseline for measuring Intent-Defined Adaptive Software (IDAS) improvement over the current software by attempting challenges with existing tools and techniques and measuring the learning curve required for traditional developers to adopt emerging IDAS capabilities → Herndon, VA; 27 Apr 2020
 - o AFRL, Rome, NY (FA8750-20-C-0518)

Southwest Research Institute (San Antonio, TX)

- Air Taxi (hybrid or electric) AeroNautical Simulation Hardware/Software Prototype: "development of challenge problems that serve as surrogate/proxy of DOD relevant design problems, development of systems specifications, requirements and evaluation metrics of challenge problems"; 24 Sep 2020
 - o AFRL, Rome, NY (FA8750-20-C-0541)

Systems and Technology Research (Woburn, MA)

- R&D of challenge problems to validate and evaluate the design technologies developed by the Technology Area (TA) 1 team and the symbiosis technologies developed by TA2 teams; focuses on Unmanned Underwater Vehicle (UUV) models and seed designs; effort brings two unique and differentiated design approaches to the Symbiotic Design for Cyber Physical Systems community from two pioneering UUV developers; 22 Sep 2020
 - o AFRL, Rome, NY (FA8750-20-C-0535)

Tangram Flex Inc. (Dayton, OH)

- software and reports; research, development, prototyping, enhancement, testing, evaluation, integration, transition and operational assessment to enhance and commercialize the Tangram Platform "resulting in flexible system engineering componentization that allows system integrators and maintainers to ease the difficulty in interface versioning and generation"; 10 Aug 2020
 - o AFRL, Rome NY (FA8750-20-D-1000)

Trident Systems Inc. (Fairfax, VA)

- Secure Collaborative Technology (SCTECH) software and hardware: research, adaptation, enhancement, and transition of technologies, to provide new capabilities and provide access between multiple levels of security domains and bridge different chat protocols → work in Fairfax, VA; Morrisville, NC; 5 June 2020
 - o AFRL Rome, NY (FA8750-20-D-0600)

Vanderbilt University (Nashville, TN)

- model-based intent-driven adaptive software (MIDAS): aims to develop a new approach to evolutionary software development & deployment that extends the results of model-based software engineering and provides an

integrated, end-to-end framework for building software that is focused on growth and adaptation; research, design, development, demonstration, testing, integration, and delivery of MIDAS software that enables rapid adaptation of software to changes in requirements, platforms and computational resources “at a scale and speed appropriate for the complex software ecosystem upon which the U.S. government, military and economy depend”; 26 May 2020

- AFRL Rome, NY (FA8750-20-C-0215)
- Design.R – artificial intelligence (AI)-assisted cyber physical systems design software prototype: develop an AI co-designer composed of design space construction, design composition and design space exploration that will interoperate seamlessly to enable a tightly integrated design process → Nashville, TN; Edmonton Alberta, Canada; Szeged, Hungary; 24 Sep 2020
 - AFRL, Rome, NY (FA8750-20-C-0537)

Air Force Research Lab HQ, Wright-Patterson AFB, OH

Anduril Industries Inc. (Irvine, CA)

- Advanced Battle Management System Sensing Network: an Advanced Battle Management System prototype to process vast quantities of data from thousands of sources to be accessible anywhere; 8 Nov 2019
 - AFRL, Wright Patterson AFB, OH (FA8650-20-C-9300)

Applied Research Associates Inc. (Dayton, OH)

- R&D of algorithms & tools to produce high-quality radio frequency modeling data at Wright-Patterson AFB; 22 May 2020
 - AFRL Wright-Patterson AFB, OH (FA8650-20-C-1132)

Applied Research Associates (Albuquerque, NM)

- the Lethality, Vulnerability and Survivability (LVS) 2020 effort: R&D of new LVS models and methodologies, “allowing analysts to assess concept weapons against existing and developing targets” → Eglin AFB, FL; 30 July 2020
 - AFRL Eglin AFB, FL (FA8651-20-D-0041)

Aptima Inc. (Woburn, MA)

- R&D of operational experimentation, technology refinement and operational alignment related to improving and personalizing individual, team and larger group instructional training methods and better blending of live, virtual and constructive environments in and across operational contexts; 3 Aug 2020
 - *Note on contracting trends: Corporations are increasingly researching how to better train/produce soldiers, sailors, airmen, Marines.*
 - AFRL, Wright-Patterson AFB, OH (FA8650-20-D-6243)

Ball Aerospace & Technologies Corp. (Beavercreek, OH)

- develop, prototype, and demonstrate an integrated sensor suite capability for effective cockpit sensing, including pilot physiology and cockpit environments; final product will be a stand-alone prototype system ready for transition to platform program offices for acquisition → work in Dayton, OH; 19 June 2020
 - AFRL Wright-Patterson AFB, OH (FA8650-20-C-6231)
- for future efforts associated with the maturation, demonstration and proliferation of capability across platforms and domains, leveraging open systems design, modern software and algorithm development in order to enable Joint All Domain Command & Control (JADC2); part of major \$950M contract (w 17 others); 1 July 2020
 - AFLCMC Wright Patterson AFB, OH

Ball Aerospace & Technologies Corp. (Boulder, CO)

- the Defense Experimentation Using Commercial Space Internet (DEUCSI) Call 002 Vendor Flexibility effort, which seeks to establish the ability to communicate with Air Force platforms via multiple commercial space internet constellations using common user terminal hardware elements → Westminster, CO; 6 Aug 2020
 - AFRL, Wright-Patterson AFB, OH (FA8650-20-C-9320)

Battelle Memorial Institute (Columbus, OH)

- manufacturing of carbon-carbon (C-C) composites for hypersonic applications initiative to create a stronger, broader supply base for C-C composites positioned to meet current and future hypersonic systems’ requirements; 24 Sep 2020
 - AFRL, Wright-Patterson AFB, OH (FA8650-20-D-5703)

Boeing (St. Louis, MO)

- R&D of adaptive and robust control for hypersonic engagement research effort; comprehend and address impacts of complex flight environments on advanced weapon systems; 15 June 2020
 - o AFRL Eglin AFB, FL (FA8651-20-D-0036)

C. Martin Company Inc. (North Las Vegas, NV)

- additional facility and equipment support at Wright-Patterson AFB, OH; FA8601-18-D-0004; 20 Feb 2020
 - o Wright-Patterson AFB, OH

University of Dayton Research Institute (Dayton, OH)

- research on advanced behavior and life prediction of aerospace materials; explicitly seeks to develop and transition aerospace structural material discovery, processing, performance assessment, and prediction tools in effort to enable shortening of the material, component, and system design cycle; rapid qualification and insertion of improved materials and efficient components; rapid certification of aerospace structures; increases in efficiency and readiness of turbine engine components; structural protection against high-energy events; decreases in system sustainment costs → work at Wright Patterson AFB, OH; 15 Oct 2019
 - o AFRL, Wright Patterson AFB (FA8650-20-D-5211)
- develop, demonstrate, and transition technologies with applications in fuzes for air-delivered weapons; first task order will be for the Terminal Burst Point Control Sciences effort; 6 Apr 2020
 - o AFRL, Eglin AFB, FL (FA8651-20-D-0003)
- Air-Launched Small Unmanned Air Systems (SUAS) services development, including pre-launch, launch and post-launch command & control, system integration, capability development, and flight testing; FA8650-18-C-2808; 18 Sep 2020
 - o AFRL, Wright-Patterson AFB, OH
- research, development, test, evaluation, qualification, integration, and transition of advanced aerospace coatings technologies, with a focus on corrosion and erosion; 29 Sep 2020
 - o AFRL, Wright-Patterson AFB, OH (FA8650-20-C-5690)

Defense Engineering Corp. (Beavercreek, OH)

- R&D for the Laser Radar (LADAR) Innovative Development and Research (LIDR); R&D into electro-optical components and technology → Dayton, OH; 25 Oct 2019
 - o AFRL Wright-Patterson AFB, OH (FA8650-20-D-1013)

Edaptive Computing Inc. (Dayton, OH)

- R&D of the Joint Federated Assurance Center Trust Lab Enterprise effort; 13 Dec 2019
 - o seeks to enhance, deploy, transition, and support decision-aiding tools for AFRL Joint Federated Assurance Center trust lab R&D of analysis, design and verification tools to promote trusted systems engineering for integrated circuits electronics
 - o AFRL Wright-Patterson AFB (FA8650-20-F-1956)

Graf Research Corp. (Blacksburg, VA)

- applied and advanced research for the advancement of trusted and assured microelectronics technologies; trust assessment strategies in areas related to known and potential system vulnerabilities; development and implementation of mitigation strategies and methodologies to prevent vulnerabilities; development and implementation of mitigation strategies and methodologies to prevent vulnerabilities before mitigation is required; 24 Jan 2020
 - o AFRL Wright-Patterson AFB (FA8650-20-D-1879)

iCAMR Inc. (Kissimmee, FL)

- R&D: Trusted Semiconductor Manufacturing Pilot Project involves developing a Secure Digital Twin for Semiconductors manufacturing methodology by applying block-chain trust and assurance security concepts and "digital twin" manufacturing concepts to the semiconductor manufacturing process; while the focus of this project is on security aspects, the "digital twin" concept provides the framework on which the security and provenance data will be collected and analyzed; 18 Nov 2019
 - o AFRL, Wright-Patterson AFB (FA8650-20-C-1911)

Innovative Scientific Solutions Inc. (Dayton, OH)

- advanced propulsion concepts and cycles R&D; FA8650-13-D-2343; 9 July 2020
 - o AFRL Wright-Patterson AFB, OH

Leidos (Arlington, VA)

- high speed attack munitions research; at Eglin AFB, explore impacts of complex flight environments on advanced weapon systems; FA8651-20-F-1011; 17 Jul 2020
 - o AFRL Eglin AFB, FL (FA8651-20-D-0011)

Leidos (Reston, VA)

- R&D: Database Optimization Sustainment program to advance the Compact Automatic Target Recognition and Sustainable Environment technology foundation to deliver air and ground target combat identification systems → Reston, VA; Wright-Patterson AFB, OH; 28 Sep 2020
 - o AFRL, Wright-Patterson, AFB, OH (FA8650-20-C-1143)

MultiBeam Corp., Santa Clara, CA

- R&D of mask-less full-wafer patterning of all interconnect layers at state-of-practice technology nodes, thereby protecting integrated circuit designs and intellectual property “critical to national security”; 20 Aug 2020
 - o AFRL, Wright-Patterson AFB, OH (FA8650-20-C-1958)

New Mexico Institute of Mining & Technology (Socorro, NM)

- Playas Electronic Attack & Cyber Environment R&D: define, develop, and deploy cyber electronic warfare (EW) capabilities for R&D, evaluation, test and training in support of employing cyber EW effects; provide a unique and enduring environment to support DOD assets for the employment of cyber and EW effects → Playas, NM; 7 Oct 2019
 - o AFRL, Wright-Patterson AFB, OH (FA8650-20-D-1888)

Raytheon (McKinney, TX)

- defense experimentation using commercial space internet (DEUCSI) Call 002 Vendor Flexibility effort; aims to establish the ability to communicate with Air Force platforms via multiple commercial space internet constellations using common user terminal hardware elements; 10 Sep 2020
 - o AFRL Wright-Patterson AFB, OH (FA8650-20-C-9321)

Riverside Research Institute (NY, NY)

- R&D of algorithms and tools to produce high-quality radio frequency modeling data at Wright-Patterson AFB, OH; 17 Sep 2020
 - o AFRL, Wright-Patterson AFB, OH (FA8650-20-C-1131)

Valiant Global Defense Services Inc., d.b.a. Valiant Integrated Services (San Diego, CA)

- research, development, testing and evaluation of joint and coalition requirements for tools and technologies that allow for joint and combined planning and data interchange with U.S. coalition partners “to maximize interoperability and mission effectiveness when combatting chemical, biological, radiological and nuclear threats” → Wright-Patterson AFB, OH, Camp H.M. Smith, HI; and the Undersea Warfare Development Center, San Diego, CA; 9 Mar 2020
 - o AFRL, Wright Research Site, Wright-Patterson AFB, OH (FA8650-20-D-6058)

Airman Decision Making and Interface Research: basic, R&D and demonstration to understand and deliver persistent situation awareness and improved warfighter decision making for integrated and synchronized Air Force operations in five technical areas: (1) Battlespace Acoustics; (2) Supervisory Control and Cognition; (3) Aerospace Physiology; (4) Battlespace Visualization; (5) Applied Neuroscience → work at Wright-Patterson AFB; 21 Nov 2019 via AFRL Wright Site, Wright-Patterson AFB

- Infoscitex Corp., Dayton, OH (FA8650-20-D-6207);
- Ball Aerospace & Technologies Corp., Beavercreek, OH (FA8650-20-D-6203);