

Air Force Research Lab

Strategies Sustaining Innovation

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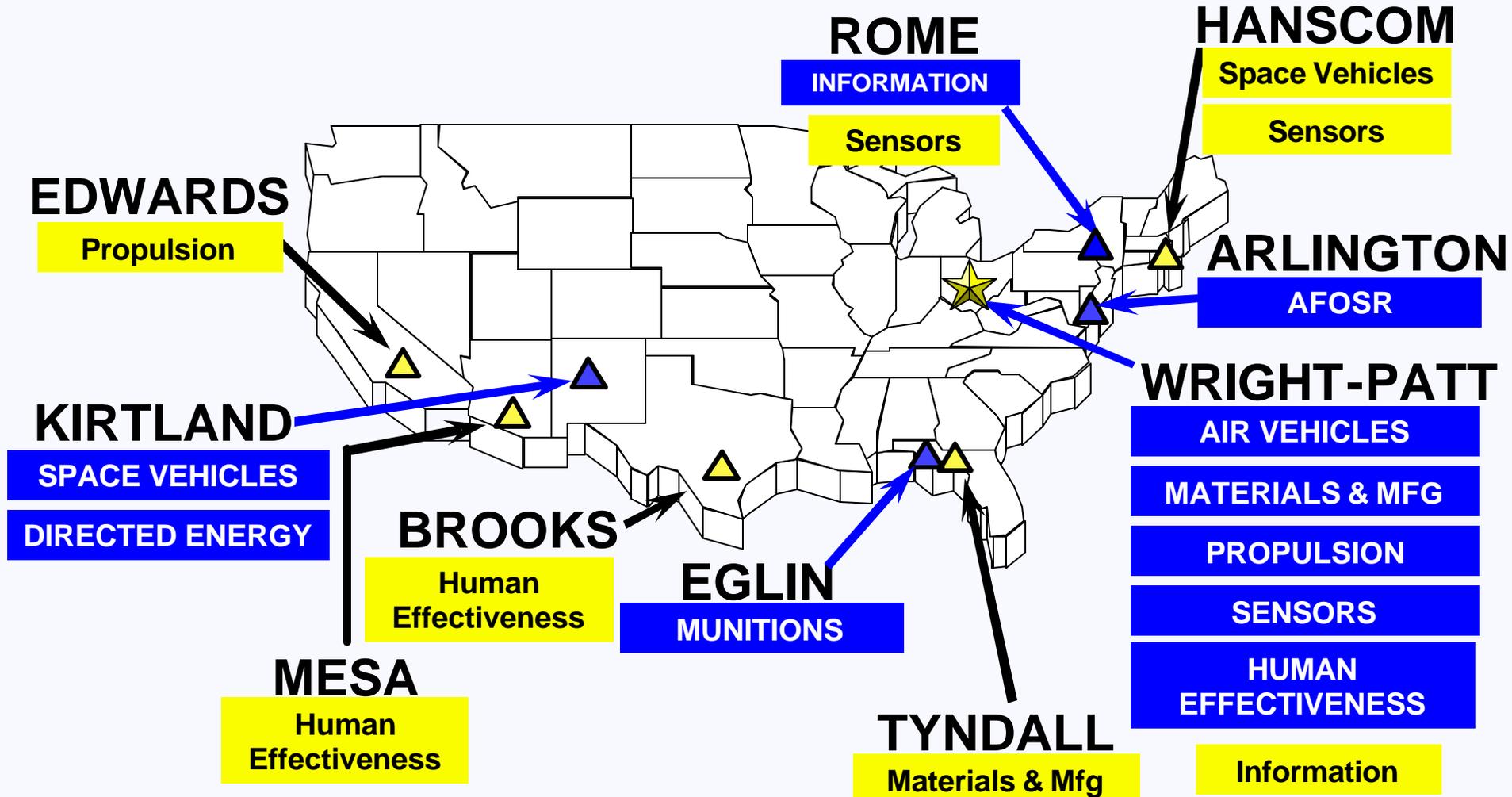
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AFRL Research Sites





Outline



- **State / Lab / University Centers**
- **Cooperative Research and Development Agreements and SBIRs**
- **Educational Outreach, Research Initiatives, and Agreements**
- **Questions?**



University Centers of Excellence



- **Co-Funded by AFOSR, TD and University**
- **Extends the capabilities and scope of AFRL**
- **Opens up opportunity for continued focus on AF needs to a new generation of scientists**
- **SIX CENTERS FUNDED:**
 - **Intelligent Information Systems Institute (IISI) - IF, Cornell U**
 - **Information Assurance Institute (IAI) - IF, Cornell U**
 - **Collaborative Center for Materials Design, - VA, Ohio State U**
 - **Metals Engineering—ML - Ohio State U**
 - **Collaborative Center in Polymer Photonics - ML, U Akron**
 - **Center for Agile Autonomous Flight – MN, U Florida**



Collaborative Center in Control Science

The Ohio State University – US Air Force Research Laboratory



Collaborative Center in Control Science is a Cooperative Agreement between AFRL Air Vehicles Directorate and The Ohio State University

Benefit: Develop innovative and practical solutions to control science and control technology problems of interest to the Air Force

Effort Scope: Basic and applied research

- Cooperative control of teams of autonomous UAVs
- Active feedback aerodynamic flow control
- Adaptive guidance and control of space access vehicles
- Theoretical development, hardware experiments

Nature of collaboration

- AFRL, OSU, UC, UD researchers work on common projects
- Regular meetings at WPAFB and campuses
- Joint publications

Funding

- AFRL provides funding for thirteen faculty, thirteen graduate students
- Dayton Area Graduate Studies Institute provides support for eight graduate students
- OSU, UC and UD provide tuition for all graduate students



Collaborative Center of Control Science + AFRL Center of Excellence in Control Science = Team of world-class researchers developing innovative and practical solutions to challenging control science and technology problems of highest interest to the United States Air Force



AFRL/IF Federal/State Leveraged Partnerships



Information Assurance Institute: Grant, Cornell, Critical resource protection in Information Technology

Intelligent Information Systems Institute: Grant, Cornell, Embedded cognitive information systems for decision support

Information Fusion: Grant: SUNY Buffalo, Carnegie Mellon, Boston University researching information and data fusion

CITE: In House - Center in the Integrated Transmission and Exploitation Systems: supporting numerous collaborative efforts

ECI: CRADA, The Economic Crime Institute of Utica College supports education and research in economic crime and information security.



- Education Partnerships with 46 Universities
 - 14 in New York State
- Extended, on-site research at Rome and Wright Research Sites
 - Visiting Faculty Research Program
 - Summer Faculty Fellowship Program (AFOSR)
 - NRC Fellows Program (AFOSR)
 - IPAs
 - Students
 - National Defense Science and Engineering Graduate (NDSEG) Fellowships
- Seminars and Workshops
- Equipment loans and access to facilities
- Information Institute Research Program



Collaboration with NYS to establish Centers for Advanced Technology supporting university-industry collaborative research and technology transfer in commercially relevant information technologies.



GRIFFISS INSTITUTE – CRADA for the research and application of technology devoted to ensuring the security of information and information systems with emphasis on Homeland Security.



Department of Justice MOU

Objective:

Transfer C2 Technology to meet State & Local Law Enforcement and corrections requirements

Status:

- National Law Enforcement and Corrections Technology Center (NLECTC), Established at Rome June 96

Major Technology Thrusts:

- Cyberforensics
- Concealed Weapon Detection
- Audio Processing
- Timeline Analysis



Partnership Intermediary Agreement with Not-For-Profit Organization funded by NYS Science & Technology Foundation

- Objectives:
 - Assist in transferring technologies to non-Military markets
 - Support NYS Government as Smart Buyer/Advisor
- Major Target Application Markets
 - Information Technologies
 - Law Enforcement Applications
 - Transportation





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Materials and Manufacturing

Cooperative Research and Development Agreements



Name: Cooperative Research and Development Agreements (CRADAs)

Location: AFRL/ML and across AFRL

Resources: Generally resources are not monetary but defined collaborative research agreements involving personnel activities and research tasks

Brief Description

- CRADAs provide local companies access to AFRL in areas of mutually beneficial research areas.
- Goal is to advance the technology for application by the AF but also viability for commercial applications.
- Government may grant licenses under a CRADA for AF technologies
- Enables both partners to stretch their research budgets and optimize resources.

How Often: Continually. AFRL/ML has between 30-40 CRADAs active at any given time.



Small Business Innovation Research (SBIR)



Name: Small Business Innovation Research (SBIR)

Location: AFRL/ML and across AFRL

Resources: The AF SBIR Program is over \$300M this year

Brief Description:

- The AF publishes research topics for small businesses to propose against
- Goal is commercialize and transition technologies into AF systems
- Many Ohio based companies are funded through SBIR
- Last year AFRL/ML made 9 Phase I awards and 4 Phase II awards to Ohio based companies

How Often: AFRL manages research topics for many agencies and is involved in all four DoD SBIR solicitations each year.



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Materials and Manufacturing Tech Transfer Program



Name: Wright Brothers Institute (WBI) Partnership Intermediary Agreement for Technology Transfer Activities

Location: AFRL/ML

Resources: \$600K cost shared (State/AFRL) agreement to commercialize AFRL technologies primarily in the State of Ohio (signed 14 June)

Brief Description

- Edison Materials Technology Center (EMTEC) primary WBI agent
- EMTEC employee co-located within AFRL/ML for a year long pilot
- Goal is to enable a win-win situation by providing the AF commercial products from AFRL technologies & to provide the state with increased high tech job creation and economic development
- AFRL/ML is lead; however, the agreement extends to all Wright Site technical directorates.

How Often: One year pilot program agreement with option to continue.



WRIGHT SCHOLARS

? *PR Educational Outreach Program?*



- **Program designed to hire promising young scientists from the WPAFB commuting area**
- **Began in the summer of 2002 and is targeted for high school juniors and seniors who work during the summer after their junior and/or senior years**
- **Students are employed for 30-40 hours per week for 12 weeks under the guidance of a volunteer mentor who provides a research project to pursue**



WRIGHT SCHOLARS Some facts...



- **In three years, over 359 applications**
- **83 students selected**
- **Currently 30 students from 20 high schools**
- **7 seniors, 23 college freshmen**
- **Average GPA 3.8, class rank upper 5%**
- **22 valedictorians and 5 salutatorians**
- **Assigned to PR, VA, SN, IF, HE, AFIT & ASC**
- **13 “graduated” Wright Scholars converted to college interns and continue to work on the base**



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