



AFRL

Taking the Pentagon to the People Howard University

Mr. Edward J. Lee
Program Coordinator
26 March 2021



AF Research Laboratory Locations

OHIO

- HEADQUARTERS
- MATERIALS & MANUFACTURING
- SENSORS
- AEROSPACE SYSTEMS

CALIFORNIA

- AEROSPACE SYSTEMS WEST

NEW MEXICO

- SPACE VEHICLES
- DIRECTED ENERGY

HAWAII

- Maui Research Site

TEXAS

- *Airman Systems

OHIO

- HUMAN PERFORMANCE
- USAF School of Aerospace Medicine
- Human Systems Integration
- Airman Systems

NEW YORK

- INFORMATION

VIRGINIA

- AF OFFICE OF SCIENTIFIC RESEARCH
- London, UK
- Tokyo, Japan
- Santiago, Chile

FLORIDA

- MUNITIONS

TENNESSEE

- *AEROSPACE SYSTEMS

AFRL
THE AIR FORCE RESEARCH LABORATORY
LEAD | DISCOVER | DEVELOP | DELIVER

Map locations: Edwards AFB, Kirtland AFB, *Ft. Sam Houston, Egin AFB, Arnold AFB, Wright-Patterson AFB, Arlington, Rome

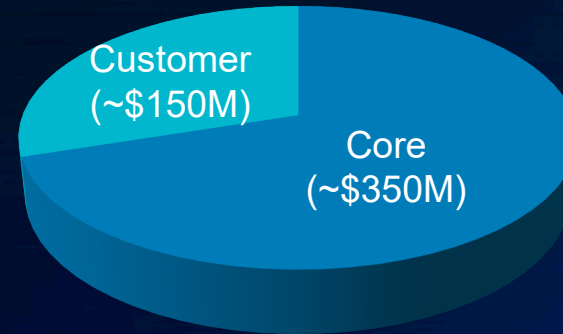
Air Force Office of Scientific Research



Mission

Discover, shape, and champion **BASIC RESEARCH** that profoundly impacts the future Air and Space Forces

Annual Budget (~\$500M)



Basic Research Funding Process

FIND

36 Program Officers (POs), **18** International Program Officers (IPOs) and **7** Program Coordinators (PCs) 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

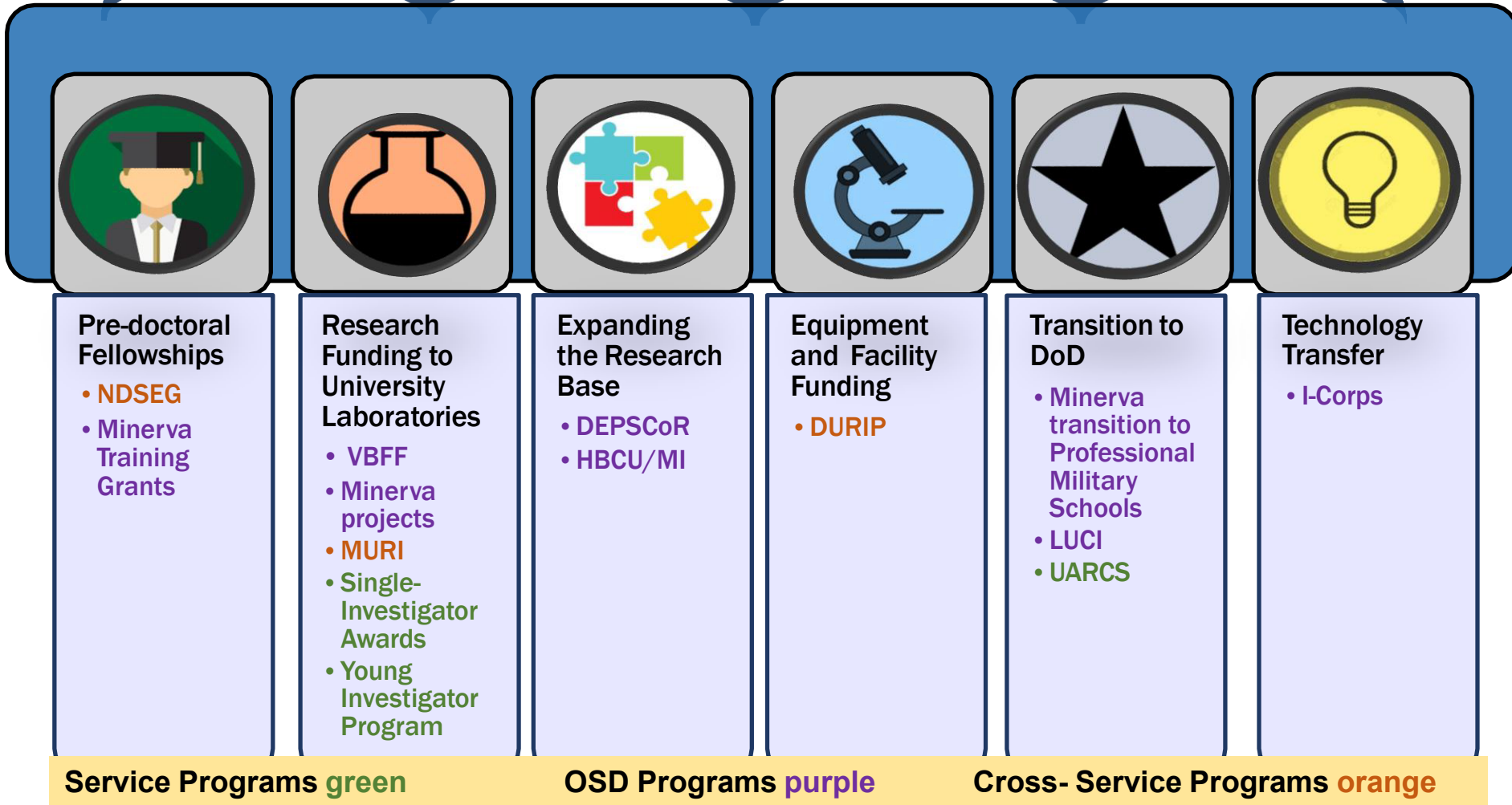
1215 extramural research projects at **209** US universities in **46** states
325 intramural research projects at AFRL Technical Directorates & Air Force Institute of Technology
348 international efforts in **43** countries on **5** continents

FORWARD

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



Basic Research Investments Across DoD



Basic Research Portfolios

| Engineering and Complex Systems | Information and Networks | Physical Sciences | Chemistry and Biological Sciences | International Office |
|--|---|--|---|---|
| Dynamic Materials and Interactions | Computational Cognition and Machine Intelligence | Materials with Extreme Properties | Biophysics | Asian Office of Aerospace R&D Tokyo |
| GHz-THz Electronics and Materials | Computational Mathematics | Atomic and Molecular Physics | Human Performance and Biosystems | European Office of Aerospace R&D London |
| Energy, Combustion, and Non-Equilibrium Thermodynamics | Dynamics and Control | Electromagnetics | Mechanics of Multifunctional Materials and Microsystems | Southern Office of Aerospace R&D Santiago |
| Unsteady Aerodynamics and Turbulent Flows | Dynamic Data and Information Processing | Laser and Optical Physics | Molecular Dynamics and Theoretical Chemistry | North America - Arlington |
| High-Speed Aerodynamics | Information Assurance and Cybersecurity | Optoelectronics and Photonics | Natural Materials and Systems | |
| 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 | | |

HBCU Focus Areas

HBCU is under 10 USC 2362 with the objective of the program to:

enhance the research and educational capabilities of such institutions

encourage the participation of such institutions in the research, development, testing and evaluation of programs of the DoD

increase the number of graduates from such institutions

encourage research and educational collaborations

Eligibility

- Open to institutions of higher education eligible for assistance under Title III and V of the Higher Education Act of 1965
- Accredited post-secondary minority institutions

Stakeholders

- Every AFOSR portfolio
- AFRL
- USD(R&E) / DoD
- ARO
- ONR
- Scientific Community

Budget

61102F

| FY21 | FY22 | FY23 | FY24 | FY25 |
|--------|--------|--------|--------|--------|
| \$4.5M | \$4.5M | \$4.5M | \$4.5M | \$4.5M |

FY20

- 34 winners
- 20 winners under the USD(R&E)
- Approximately \$9M

(USDR&E) HBCU/MI Program Execution

- **DoD Research and Education Program**
 - **Solicitation open to all HBCU/MI's, closed on 28 August 2020**
 - **Equipment range from \$100,000 to \$600,000**
 - **DoD intends to award approximately \$25M**
 - **Three applications per institution**
 - ***Managed by the Army Research Office (ARO)**
 - ***Content of the solicitation changes every year**

HBCU/MI Program Current Status

- FY20, 34 projects are being executed totaling \$4.5M (cost shared \$534,395)
 - TBD (solicitation open until August 2020 estimated to be around \$9M)
- FY19, 36 projects were awarded totaling \$4.5M (cost shared \$900,216)
 - 12 projects funded under the USDR&E program totaling \$7.8M
- FY18, 36 projects were awarded totaling \$4.5M (cost shared \$858,336)
 - 12 projects funded under the USDR&E program totaling \$6.8M
- FY17, 34 projects were awarded totaling \$4.5M (cost shared \$356,770)
 - 12 projects funded under the USDR&E program totaling \$4.9M
- FY16, 33 projects were awarded totaling \$4.5M
 - 22 projects funded under the USDR&E program totaling \$8.4M

SFFP Focus Areas

The Summer Faculty Fellowship Program was established to stimulate professional relationships among SFFP fellows, student researchers and the scientists and engineers in AFRL, USAFA, AFIT and the AF T&E Centers.

Eligibility

- Enhance the research interests and capabilities of faculty in the US academic community
- Encourages experienced and promising US scientists in areas that benefit the Air Force

Stakeholders

- Every AFOSR portfolio
- AFRL
- USAFA
- AFIT
- AF T&E Centers
- OUSD / DoD
- Scientific Community

Budget

61102F

| FY21 | FY22 | FY23 | FY24 | FY25 |
|--------|--------|--------|--------|--------|
| \$5.0M | \$5.1M | \$5.3M | \$5.4M | \$5.4M |

FY21

- 342 applicants

FY20

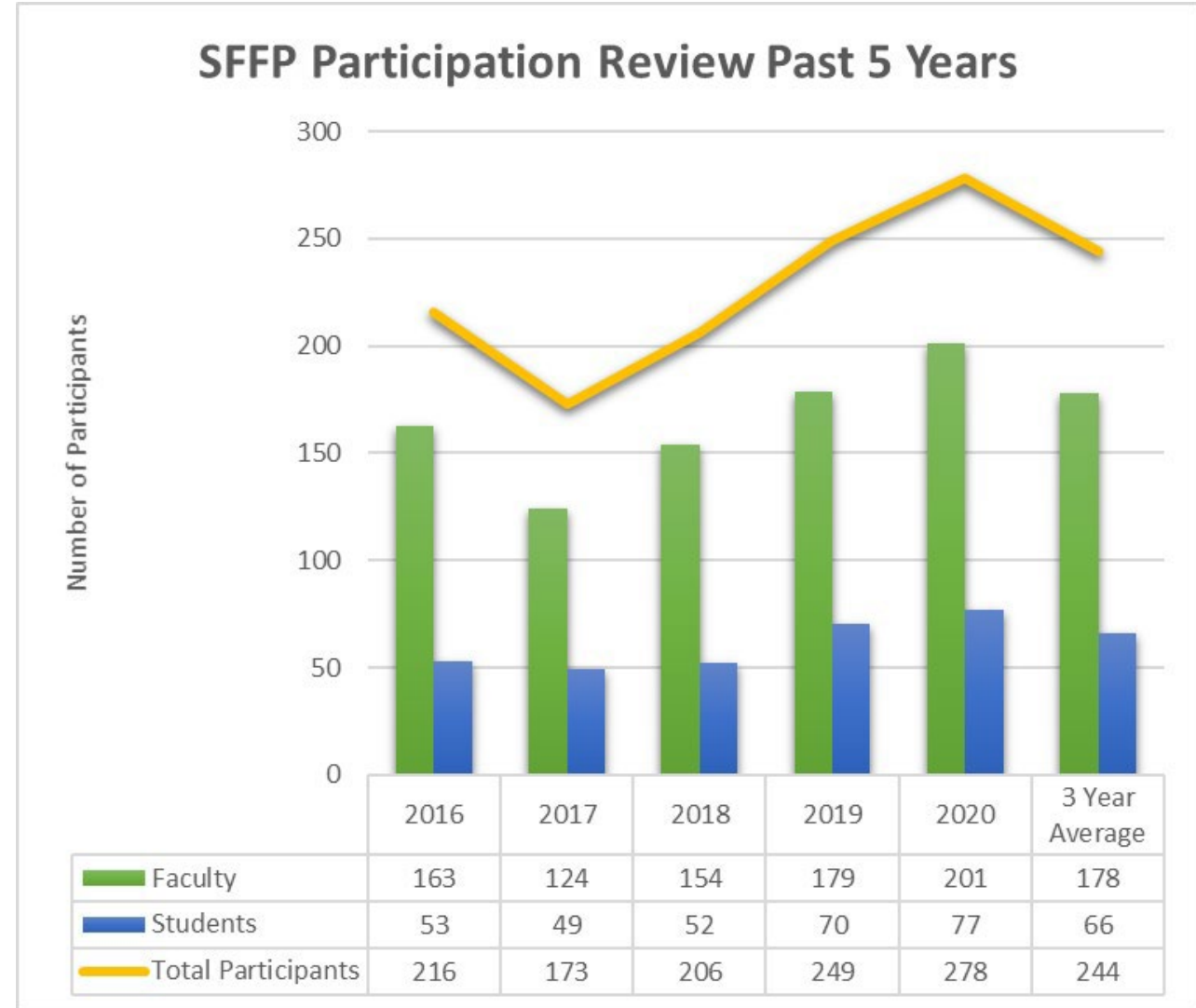
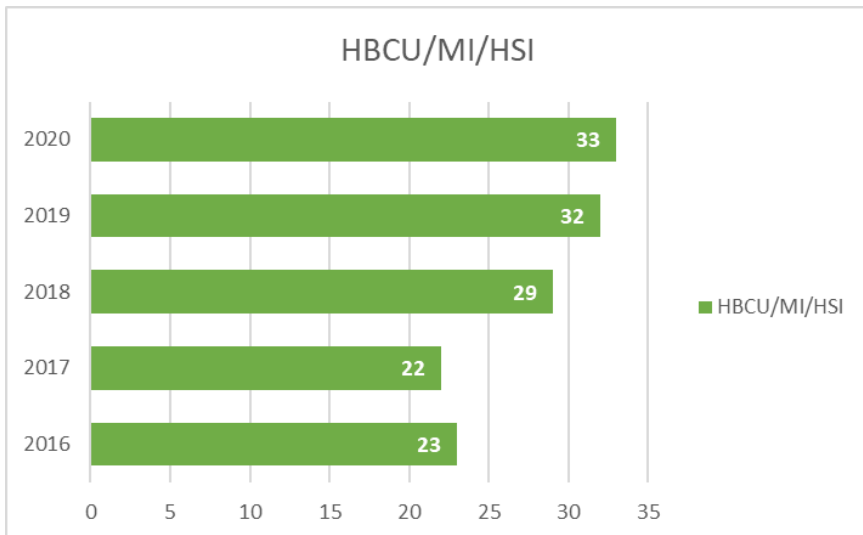
- 278 awards

SFFP Participation Update Over Time

- **FY2020 Applicants:**
- **12% Increase from FY2019**

- **FY2020 Participant:**
- **12% Increase from FY2019**

- **Faculty HBCU/MI/HSI:**
- *(Student Total = Additional 24)*



Stipend amounts and definitions for faculty and students

SFFP Awardee Level Weekly Stipend

Professor \$1,957

Associate Professor \$ 1,751

Assistant Professor \$ 1,545

Master's Student \$ 1,210

Bachelor's Student \$ 911

- Professor is a tenured faculty member with 15 or more years' faculty experience.
- Associate Professor is a faculty member with five to 14 years' faculty experience.
- Assistant Professor is a faculty member with less than five years' faculty experience.
- Master's Student is a student who has completed his/her Master's degree and is enrolled in a PhD program.
- Bachelor's Student is a student who has completed their Bachelor's degree and is enrolled as a graduate student. The student has not completed their Master's degree.

S&T Funding Opportunities

TRADITIONAL GRANTS

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

ADD'L FUNDING OPPORTUNITIES

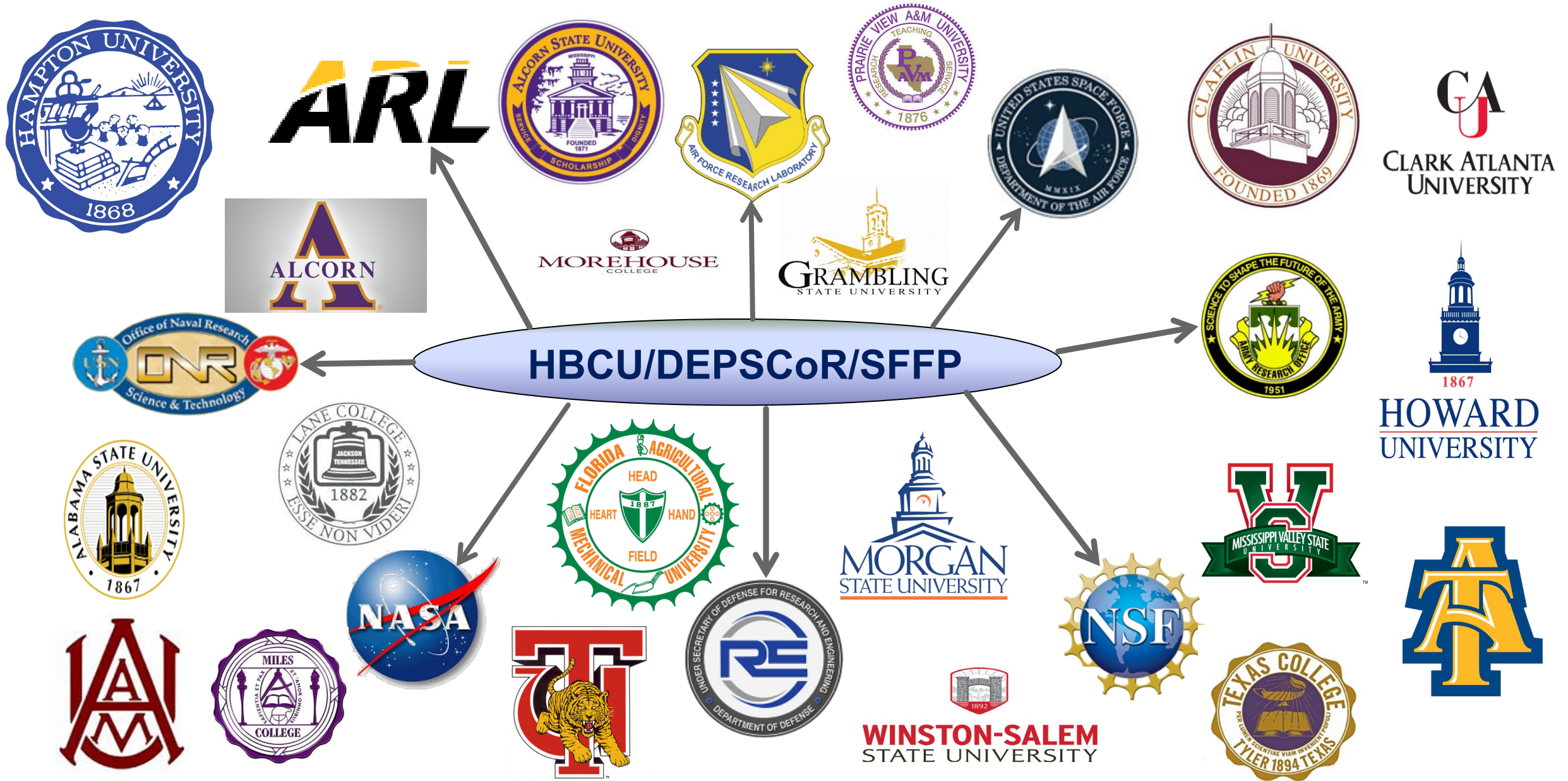
- Multidisciplinary University Research Initiative Grants
- Instrumentation Grants
- Presidential Early Career Award for Scientists and Engineers
- MINERVA Research Initiative
- Summer Faculty Fellowships
- Windows on Science
- Defense Enterprise Science Initiative
- Small Business Tech Transfer Grants/Contracts

WORKFORCE DEVELOPMENT

- Undergraduate Research Experiences
- Graduate Fellowships
- AFRL Internships
- AFRL Science and Technology Fellowships
- Windows on World
- Lab Univ Collaboration Initiative

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

Collaborations and Scientific Ecosystem



Find Us



Website

Doing Business with AFOSR
AFOSR Announcements and Highlights

AFOSR Events

Find our BAA and Events Calendar
Learn about Program Reviews

AFOSR on Twitter

Follow us
Mention @AFOSR
#BasicResearch

AFOSR on Facebook

Be Our Friend
Follow us
#BasicResearch

AFOSR on LinkedIn

Connect With Us
Search: AFOSR

<https://go.usa.gov/xVSR8>

<https://community.opan.org/wg/afosr/>
<https://www.grants.gov/web/grants/view-opportunity.html?oppld=314753>

<https://twitter.com/afosr>

<https://www.facebook.com/afosr/>

<https://www.linkedin.com/company/the-air-force-office-of-scientific-research-afosr->

Questions