AFRL
NATIONAL SPONSORED PROGRAMS ADMINISTRATOR'S ALLIANCE FOR HBCU'S
HOW TO CREATE A WHITEPAPER SUBMISSION

EDWARD J LEE, AFRL/AFOSR/RTC

5 June 2025

Controlled by: Department of the Air Force, AFRL/AFOSR
CUI Category: CTI
Distribution/Dissemination Control: Distribution A
POC: Edward Lee, (703) 696-7318

AIR FORCE RESEARCH LABORATORY

AFRL

The definition and history of a white paper!

White papers are intended to provide the contracting agency with a <u>concise yet detailed </u>overview of an applicant's proposed research, allowing the agency to select the projects that are the best aligned with their mission and capability gaps.

The term originated when government **papers** were coded by color to indicate distribution, with **<u>white</u> <u>designated for public access</u>**. Thus, **white papers** are used in politics and business, as well as in technical fields, to educate readers and help people make decisions.

Essential Elements of an Effective White Paper

The white paper must be written with a specific goal in mind for the Program Officer. Think about the major question being asked in the BAA and write your response towards that goal.

Your white paper should match your universities strength.   Be knowledgeable of the research area of interest of the organization – Air Force.

Make sure you identify and address a particular problem.   The white paper can focus on issues or common problems, new trends or changing techniques but look to provide the solution or recommendation to fix the problem.

Preparation of the White Paper - Research

The topic must be researched. Do your homework and include references and documents if necessary.

Your white paper must be data focused and be supported by significant research. There is no specific format but include cited references or recent publications from reputable journals.

Become a peer reviewer within a DoD agency to be knowledgeable of gaps and opportunities within your university structure.   Your ability will increase on what is novel and what has been repeated.

AFRL

Writing the White Paper

There is no specific format but this is just a guide.

Start with an abstract of what problem you identified in the BAA. This will assure the Program Officer you are in the correct portfolio.

A problem statement will help set up the proper flow of what you propose to do if/when asked to write a full proposal. You may want to state explicitly what basic research questions you want to address and why they are important.
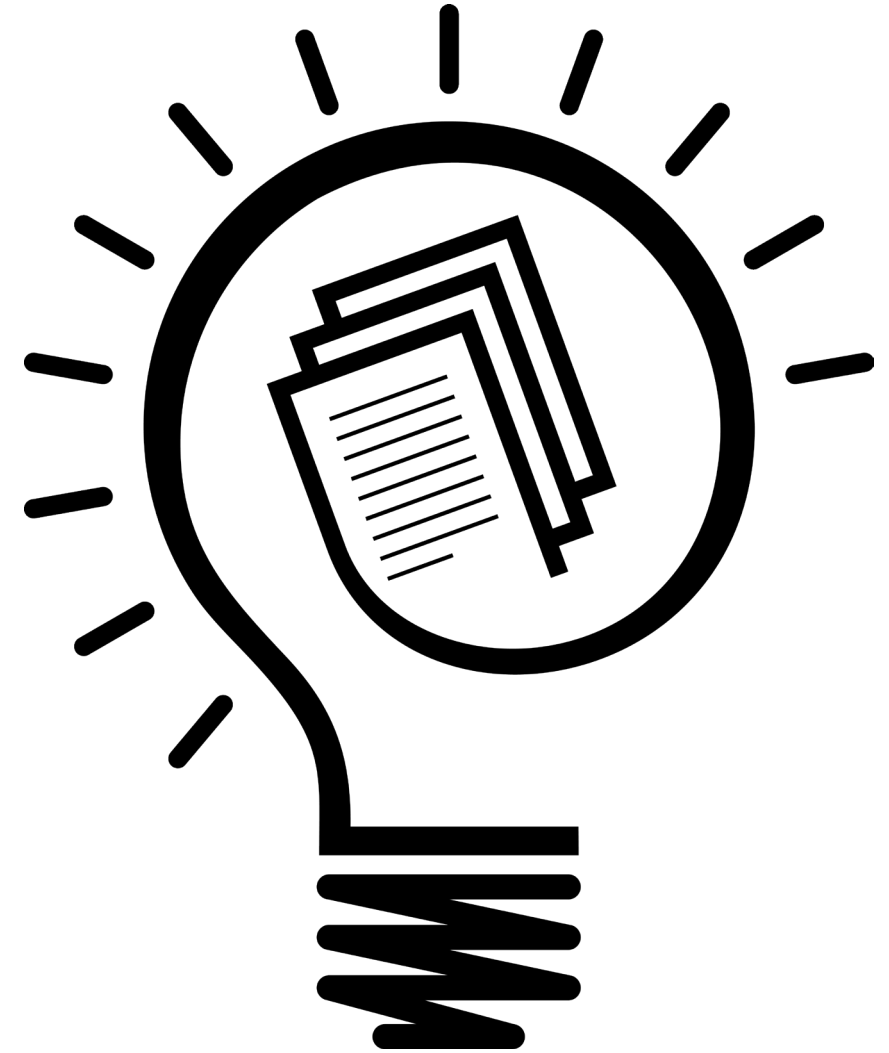
Many Program Officers want a white paper to contain a notional budget. Its presence can help them frame their thinking and responses.

Provide a background on your experience and what your specific experience levels bring to the table.

Present the solution based on gathered evidence and expertise in that particular research area and summarize your based on solutions to the problem stated earlier.

AFRL

- Statement doesn't have to be all-inclusive, but should address the unique value proposition of the research

- Statement needs to be specific enough that it catches the interest of the Program Officer

AFRLAFRL

Questions to Consider when Scoping Your Idea Statement

Is it basic research?

- What's the scientific questions?
- What foundational knowledge is not currently available about the subject?
- Is it within scope of the AF mission.

Is it hard?

- If an "old" question, why haven't we found an answer yet?
- If a "new" question, where's the sticky part?

Why you? Why now?

- What's been done before? Why wasn't it successful?
- What's novel about your skills/abilities/approach that makes you think there's a shot at an answer?
- What new advance provides opportunity to make new progress?

So what? Who cares?

- What impact will the research make on the scientific community?
- What papers will be written because of your efforts?
- What are the potential implications for the future of technology?

Where's the risk?

- How confident are you that you're asking the right questions?
- How will you know when you have an answer? If you find a different answer, will you still learn something?

What will it take?

- What resources, time, money, infrastructure, personnel, collaborations, are required to pursue the research?

How to Work with Us
Connect with a Program Officer

- At this point, some Program Officers will want a specifically formatted white paper

- Others will want to have a conversation
  - In person
  - Over the phone
  - Via email

- If the idea seems promising, a Program Officer will initiate an ongoing dialogue setting expectations and explaining the process for full proposal submission.

AFRL/AFOSR Science & Engineering Portfolio Areas

Engineering and Complex Systems	Information and Networks	Physical Sciences	Chemistry and Biological Sciences	International Office
Dynamic Materials and Interactions	Computational Cognition and Machine Intelligence	Aerospace Materials for Extreme Environments	Biophysics	Asian Office of Aerospace R&D Tokyo, Melbourne
GHz-THz Electronics	Computational Mathematics	Atomic and Molecular Physics	Human Performance and Biosystems	European Office of Aerospace R&D London
Energy, Combustion, and Non-Equilibrium Thermodynamics	Dynamical Systems and Control Theory	Electromagnetics	Mechanics of Multifunctional Materials and Microsystems	Southern Office of Aerospace R&D Santiago, São Paulo
Unsteady Aerodynamics and Turbulent Flows	Dynamic Data and Information Processing	Condensed Matter Physics	Molecular Dynamics and Theoretical Chemistry	North America - Arlington
High-Speed Aerodynamics	Information Assurance and Cybersecurity	Optoelectronics and Photonics	Natural Materials and Systems	
Aerospace Composite Materials	Mathematical Optimization	High Energy Radiation-Matter Systems (HERMeS)	Organic Materials Chemistry	
Multiscale Structural Mechanics and Prognosis	Science of Information, Computation, Learning, and Fusion	Quantum Information Sciences	Life Sciences for Space	
Propulsion and Power	Trust and Influence	Physics of Remote Sensing		
Agile Science of Test and Evaluation (T&E)	Complex Networks	Space Science		
	Cognitive and Computational Neuroscience	Ultrashort Pulse Laser-Matter Interactions		
		Astrodynamics		

AFRL

Improving Your Competitiveness for Winning a Grant

Attend grant writing courses

- In general, a good proposal is one that includes:
  - **Strong technical merit**
  - **Air Force relevance**
  - **Solid budget justification**
  - **Consideration given to every requirement stated in the BAA**

Understand funding considerations

- **AFOSR receives far more good proposals than it is able to fund every year**

- **POs must factor many other considerations into funding decisions. Those include, but aren't limited to:**
  - **Overlap with program interests and connecting to DoD labs**
  - **Potential for scientific breakthroughs**
  - **Strategic directions**
  - **Budget realities**
  - **Peer review recommendations**

Improving Your Competitiveness for Winning a Grant

Look for opportunities to forge partnerships

- **Once funded, remain engaged and continue with the process by**
  - **Reviewing BAAs;**
  - **Attending program reviews, held annually**
  - **Collaborating with other PIs in the program**

- **Seek out Center of Excellence BAAs**
  - **University-led efforts, sponsored by 1+ AFRL Technology Directorate and AFOSR**
  - **Prime opportunity for academic engagement and student pipeline**
  - **Nominal three-year arrangement, with two-year renewal option**
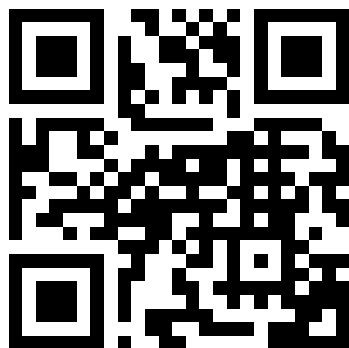 - **AFRL and University share costs (with AF investment up to $500K/year)**

> **AFOSR** ✔
> @AFOSR
>
> Get tips and resources from SMEs on applying for funding and building lasting relationships in the research ecosystem! Speakers incl. representatives from @vtarcBRICC, AFOSR, @DoD_STIx, #APEX, @DoolittleInst, and Adranos, Inc. #BasicResearch #AppliedResearch #FundingOpportunities
>
> 3:40 PM · 24 Nov 20 · Twitter Web App

Connect with AFRL

Student & Faculty Opportunities

Grants.Gov

 AFResearchLab

 AFResearchlab

 Air Force Research Laboratory - AFRL

 AFResearchLab

Connect with AFRL/AFOSR

Website
Doing Business with AFRL/AFOSR
Announcements and Highlights

Events
Find our BAA and Events Calendar
Learn about Program Reviews

- https://www.afrl.af.mil/AFOSR/

- https://community.apan.org/wg/afosr/
- https://www.grants.gov/web/grants/view-opportunity.html?oppId=345653

 Twitter
Follow us
Mention @AFOSR
#BasicResearch

 Facebook
Be Our Friend
Follow us
#BasicResearch

 LinkedIn
Connect With Us
Search: AFOSR

 Instagram
Follow us
Mention @_AFOSR_
#BasicResearch

THE AIR FORCE RESEARCH LABORATORY

Questions?

edward.lee@us.af.mil