MYTH-BUSTING DEPT. OF DEFENSE FUNDING OPPORTUNITIES

RESEARCH AND FACULTY DEVELOPMENT FACULTY SUCCESS SEMINAR SERIES

Carly Cummings, PhD, CPRA
Director, Office of Research and Faculty Development

Expert Guest: John Russell, PhD
Associate Director, Center for Advanced Energy Studies (CAES)

Please note that this session is being recorded

FACULTY SUCCESS SEMINARS

University *of* Idaho

Please keep your microphone muted until the Q&A session

HOUSEKEEPING ITEMS

This seminar is being recorded

- Please stay muted until the Q&A portion at the end of the seminar

- Type questions into the chat box and these will be addressed during the Q&A portion

OFFICE OF RESEARCH AND FACULTY DEVELOPMENT

- We provide proposal development assistance across the spectrum*

- Meet goals in the UI strategic plan – grow research and creative efforts across <u>all</u> disciplines

- Reach out to discuss ideas with us and request service – uidaho.edu/orfd

*Not including budget preparation

All services are <u>optional</u> and are granted on a <u>first come, first served</u> basis

OBJECTIVES

IN THIS SESSION, WE WILL DISCUSS:

- Overview of *some* U.S. Department of Defense funding agencies

  - Air Force Office of Scientific Research (AFOSR)

  - Army Research Office (ARO)

  - Office of Naval Research (ONR)

OBJECTIVES

IN THIS SESSION, WE WILL DISCUSS:

- New funding opportunities for your research program

- Hear from the expert– Dr. John Russell

- How to work with and get funding from DoD agencies

AIR FORCE OFFICE OF SCIENTIFIC RESEARCH (AFOSR)

- <u>Mission</u>: Leading the discovery, development, and delivery of warfighting technologies for our air, space, and cyberspace force

  - Discover, shape, and champion *basic research* that impacts the Department of the Air Force

  - Partner with universities and industry ($150M annually)

    - 70% of AFOSR's total budget is spent on funding *basic research grants* with academia

    - <u>Video</u>: How to engage

AIR FORCE OFFICE OF SCIENTIFIC RESEARCH (AFOSR)

Research thrusts

- Aerodynamics & propulsion

- Structural science & materials performance

- Mathematical, data & control sciences

- Artificial intelligence, computer & neuro sciences

AIR FORCE OFFICE OF SCIENTIFIC RESEARCH (AFOSR)

Research thrusts (cont'd)

- Physical sciences

- Electromagnetics, plasmas & lasers

- Chemistry & materials sciences

- Biosciences

AIR FORCE OFFICE OF SCIENTIFIC RESEARCH (AFOSR)

- Notable outcomes & successes

  - Stealth technology

  - GPS

  - Human-computer interface

  - 82 Nobel laureates

  - 1,600 patents

  - 74 spin-off companies

AIR FORCE OFFICE OF SCIENTIFIC RESEARCH (AFOSR)

Improving proposal competitiveness

- 3 simple steps ([website](#))

  1. Review Broad Agency Announcements* (BAAs) and scope idea based on listed needs

  2. Draft and submit a short idea statement to the Program Officer listed in the BAA and discuss research

     - How to contact a PO [video](#) (35")

  3. Submit a full proposal

     - Strong technical merit, Air Force relevance, solid budget justification

BROAD AGENCY ANNOUNCEMENTS (BAA)

- As the name suggests...broad

  - Across the *entire agency* (86 pg. for AFOSR)

    - Research areas of interest are outlined – it is up to the PI to find the match

- Often open for 1+ years

- Deadlines can vary with specific program – *read the BAA carefully*!

AIR FORCE OFFICE OF SCIENTIFIC RESEARCH (AFOSR) BAA

- Open April 30, 2020

- No expiration date noted (open until new BAA released)

  - "You are highly encouraged to contact the Program Officer, preferably by email, prior to developing a full proposal, to briefly discuss the current state-of-the-art, how your research would advance it, the approximate cost, and if there are any specific submission target dates."

AFOSR BAA

https://apply07.grants.gov/apply/opportunities/instructions/PKG00261720-instructions.pdf

AFOSR BAA

Research Interests

CFDA	Competition ID	Competition Title	Opportunity Package ID	Opening Date	Closing Date	Actions
12.800	RTB1-11	Condensed Matter Physics	PKG00261720		04/20/2022	Preview | Apply
12.800	RTA2-3	Dynamical Systems and Control Theory	PKG00249935		04/20/2022	Preview | Apply
12.800	RTB1-4	Laser and Optical Physics	PKG00249998		04/20/2022	Preview | Apply
12.800	RTB2-4	Molecular Dynamics and Theoretical Chemistry	PKG00250004		04/20/2022	Preview | Apply
12.800	IOS	Southern Office of Aerospace Research and Development	PKG00250006		04/20/2022	Preview | Apply
12.800	RTA1-3	Energy, Combustion, and Non-Equilibrium Thermodynamics	PKG00249930		04/20/2022	Preview | Apply
12.800	RTA1-5	High-Speed Aerodynamics	PKG00249933		04/20/2022	Preview | Apply
12.800	RTB1-3	Electromagnetics	PKG00249937		04/20/2022	Preview | Apply
12.800	RTB2-1	Biophysics	PKG00250002		04/20/2022	Preview | Apply
12.800	RTB2-3	Mechanics of Multifunctional Materials and Microsystems	PKG00250003		04/20/2022	Preview | Apply
12.800	IOE	European Office of Aerospace Research and Development	PKG00250005		04/20/2022	Preview | Apply
12.800	RTB1-6	Plasma and Electro-Energetic Physics	PKG00250000		04/20/2022	Preview | Apply
12.800	RTB1-5	Optoelectronics and Photonics	PKG00249999		04/20/2022	Preview | Apply
12.800	RTA1-8	Space Propulsion and Power	PKG00249964		04/20/2022	Preview | Apply
12.800	RTA2-1	Computational Cognition and Machine Intelligence	PKG00249966		04/20/2022	Preview | Apply
12.800	RTA2-5	Information Assurance and Cybersecurity	PKG00249969		04/20/2022	Preview | Apply
12.800	RTA2-6	Mathematical Optimization	PKG00249970		04/20/2022	Preview | Apply
12.800	RTA2-10	Cognitive and Computational Neurosciences	PKG00249977		04/20/2022	Preview | Apply
12.800	RTB1-2	Atomic and Molecular Physics	PKG00249979		04/20/2022	Preview | Apply
12.800	RTB2-2	Human Performance and Biosystems	PKG00249985		04/20/2022	Preview | Apply
12.800	RTA2-2	Computational Mathematics	PKG00249967		04/20/2022	Preview | Apply
12.800	RTA2-9	Complex Networks	PKG00249976		04/20/2022	Preview | Apply
12.800	RTB1-7	Quantum Information Sciences	PKG00249980		04/20/2022	Preview | Apply
12.800	RTA1-4	Unsteady Aerodynamics and Turbulent Flows	PKG00249961		04/20/2022	Preview | Apply
12.800	RTA1-7	Multiscale Structural Mechanics and Prognosis	PKG00249963		04/20/2022	Preview | Apply
12.800	RTA2-8	Trust and Influence	PKG00249973		04/20/2022	Preview | Apply
12.800	OIRC	Other Innovative Research Concepts	PKG00249989		04/20/2022	Preview | Apply
12.800	RTB1-1	Materials with Extreme Properties	PKG00249978		04/20/2022	Preview | Apply
12.800	RTB1-10	Ultrashort Pulse Laser-Matter Interactions	PKG00249984		04/20/2022	Preview | Apply
12.800	IOA	Asian Office of Aerospace Research and Development	PKG00249988		04/20/2022	Preview | Apply
12.800	RTB1-8	Remote Sensing	PKG00249982		04/20/2022	Preview | Apply
12.800	RTB1-9	Space Science	PKG00249983		04/20/2022	Preview | Apply
12.800	RTB2-6	Organic Materials Chemistry	PKG00249987		04/20/2022	Preview | Apply
12.800	RTA1-9	Agile Science of Test and Evaluation (T&E)	PKG00249965		04/20/2022	Preview | Apply
12.800	RTA2-4	Dynamic Data and Information Processing	PKG00249968		04/20/2022	Preview | Apply
12.800	RTA2-7	Science of Information, Computation, Learning, and Fusion	PKG00249971		04/20/2022	Preview | Apply
12.800	RTB2-5	Natural Materials, Systems, and Extremophiles	PKG00249986		04/20/2022	Preview | Apply
12.800	RTA1-6	Aerospace Composite Materials	PKG00249962		04/20/2022	Preview | Apply
	RTA1-1	Dynamic Materials and Interactions	PKG00249959		04/20/2022	Preview | Apply
	RTA1-2	GHz-THz Electronics and Materials	PKG00249960		04/20/2022	Preview | Apply

AFOSR BAA

PO Contact

AIR FORCE OFFICE OF SCIENTIFIC RESEARCH (AFOSR)

- Types of funding mechanisms

  - Traditional grants

  - University Research Initiatives*

    - Multidisciplinary University Research Initiative (MURI), Defense University Research Instrumentation Program (DURIP)

  - Special Programs*

    - Young Investigator Programs (YIP) ([video](#))

ARMY RESEARCH OFFICE (ARO)

- Founded in 1951

- Manage Army's extramural research program

- Generates the new knowledge required to maintain technological superiority (ARO in Review – 2019 report)

  - Increase fundamental knowledge and understanding in the chemical, life, physical, engineering, materials, mechanical, computing, information, network, mathematical, earth, and social sciences, related to long-term national security needs.

  - The research funded is conducted at 250 universities across the country and around the world, with more than 1,100 individual researchers

ARMY RESEARCH OFFICE (ARO)

Organizational structure similar to NSF – Directorates; description

- Physical Sciences Directorate

  - *Divisions*: Chemical Sciences, Life Sciences (including Social Science), Physics

- Engineering Sciences Directorate

  - *Divisions*: Electronics, Materials Sciences, Mechanical Sciences

- Information Sciences Directorate

  - *Divisions*: Computing Sciences, Network Sciences, Mathematical Sciences

ARMY RESEARCH OFFICE (ARO)

Current BAA (04/01/2017 – 03/31/2022): https://www.arl.army.mil/wp-content/uploads/2020/06/arl-baa-W911NF-17-S-0003_Amendment_9.pdf

OFFICE OF NAVAL RESEARCH (ONR)

- Science and Technology in support of the U.S. Navy and Marine Corps

- Organized into Departments (Code 31-35 for S&T)

  - Program officers manage specific research efforts, but unique to ONR, program officers can pursue an idea from discovery to deployment because they have access to all three phases of developmental funding: basic research (6.1), applied research (6.2) and advanced technology development (6.3).

- Naval Research and Development Framework (download here)

- ONR Technology Areas: A-Z list here

OFFICE OF NAVAL RESEARCH (ONR)

Corrosion Control Technologies

The objective of this Office of Naval Research program is to develop corrosion-resistant alloys and coatings, corrosion-control and -prevention technologies, and processes to mitigate corrosion and its effects under sea water and marine environments.

The primary focus is to explore science-based understanding of corrosion damage evolution mechanisms, corrosion-informed materials concepts, and surface protection and modification sciences.

Research Concentration Areas

Specific areas of interest include:

- Corrosion-resistant materials
- Environmentally benign, advanced marine coatings
- Fundamental understanding of corrosion mechanisms and processes
- Multi-scale, corrosion phenomena models to predict corrosion behavior that enable corrosion-informed materials selection and design
- Surface-modification technologies

Research Challenges and Opportunities

- Understand factors that control the effects of additively manufactured alloy (AMA) defects, including the role of porosity connectedness, defect density, impurity segregation, and solidification structure and anisotropy on corrosion behavior
- Quantify non-equilibrium segregation of liquid phases, local chemistry and the effect of present carbide, oxide and sulphide during processing of AMAs
- Study microstructural characteristics that enhance resistance of AMAs to localized corrosion, especially pitting and crevice corrosion, hydrogen embrittlement and stress corrosion cracking
- Explore the process-microstructure-chemical/electrochemical properties linkages leading to a fundamental understanding of corrosion mechanism in AMAs
- Explore the relation of processing to microstructure, and microstructure and compositional evolution, the thermodynamic and kinetic properties of compositionally complex crystalline phases, grain and phase boundaries, and surfaces, especially as they relate to corrosion properties of compositionally complex alloys (CCAs)
- Study the energetics and kinetics of electrochemical reactions of CCAs at multiple length scales, and the characterization of these materials in corrosive environments
- Study the roles of compositional and structural complexity in reactivity, passivation and repassivation, the development and evolution of cracks, and the synergistic effects of compositional complexity and corrosion on crack propagation in CCAs

Program Contact Information

Name: Dr. Airan Perez

Title: Program Officer

Department: Code 33

Email for Questions: airan.perez@navy.mil

OFFICE OF NAVAL RESEARCH (ONR)

- <u>Code 31</u>: Information, cyber, and spectrum superiority

  - Math; electronics; computer & information sciences and their applications in command & control; communication; cyber & electronic warfare; intelligence, surveillance; and reconnaissance

- <u>Code 32</u>: Ocean battlespace & expeditionary access

  - S&T in oceanographic and meteorological observations; modeling/prediction in the battlespace environment; submarine detection/classification; mine warfare

OFFICE OF NAVAL RESEARCH (ONR)

- <u>Code 33</u>: Mission capable, persistent & survivable naval platforms

  - Develops and delivers technologies that enable superior warfighting and energy capabilities for naval forces, platforms, and undersea weaponry

    - Material science, water desalination and purification

- <u>Code 34</u>: Warfighter performance

  - Enhances warfighter effectiveness and efficiency through bioengineered and biorobotic systems, medical technologies, improve manpower, personnel, training and system design

    - Human-robot interaction, neural computation, biorobotics

OFFICE OF NAVAL RESEARCH (ONR)

- Code 35: Aviation, force projection and integrated defense

  - Supports the Navy's power projection needs, fostering the technology development of naval aircraft, structures, propulsion, autonomy, energetics, directed energy and electric weapons

- ONR BAA: https://apply07.grants.gov/apply/opportunities/instructions/PKG00263730-instructions.pdf

  - Opening date: 10/08/2020; Closing date: 09/30/2021

OFFICE OF NAVAL RESEARCH (ONR)

https://www.onr.navy.mil/

DOD SPECIAL PROGRAMS

- Young Investigator Programs

- Summer Research Programs

YOUNG INVESTIGATOR PROGRAMS (YIPS)

Overview

- Supports the best and brightest early-career academic researchers whose scientific pursuits show outstanding promise for supporting the DoD agency, while promoting their professional development

  - ONR, AFOSR

  - $510,000 for 36-month period

  - ONR FY19 FOA here – click 'Expired' tab and scroll; AFOSR solicitation is on this page

  - Goal to publish FOA in Mar; proposals due in June

YOUNG INVESTIGATOR PROGRAMS (YIPS)

Eligibility

- PIs must be in their 1st or 2nd full-time tenure-track or tenure-track-equivalent academic appointment

- PIs must have received their PhD (or equivalent) on or after *Jan 1, 2013*

- PIs must be U.S. citizens, national, or permanent resident

YOUNG INVESTIGATOR PROGRAMS (YIPS)

Tips for success

- Become familiar with agency's terminology and where your technology fits

  - Review websites, attend national conferences, ask questions

- Research the Program's interests and portfolio

- Contact PO before submitting the proposal

SUMMER FACULTY RESEARCH PROGRAMS

ONR

- 10-week paid program providing faculty members an opportunity to participate in research of mutual interest to faculty members and peers at a naval laboratory or warfare center

- Establish research relationships with R&D personnel of host lab

- Application process open! Deadline is Dec. 14, 2020

SUMMER FACULTY RESEARCH PROGRAMS

ONR

1. Find the labs that match your interest (2 maximum)

2. Reach out to the labs to access their suitability for your research.

3. Locate a mentor at the lab willing to host you (not required, but extremely helpful)

4. Develop a research statement that will align with the intended research the lab and your expertise

5. Create an applicant account and wait for verification email

6. Log-in to the online application and complete all applicable information

7. Provide the most recent (2-3 years) information from your CV in the spaces provided

8. Upload supplemental information

9. Submit your application

10. Reach out to the lab mentor and let them know that your application was submitted (only if you have been working with one)

FAQs

SUMMER FACULTY RESEARCH PROGRAMS

AFOSR

- 8- to 12-week research residencies at participating Air Force research facilities for full-time science, math, and engineering faculty members

- Tips for applying (here); apply here (instructions here)

- Nov. 30, 2020 deadline

DOD UNIVERSITY RESEARCH INITIATIVES

- Defense Established Program to Stimulate Competitive Research (DEPSCoR)

- Defense University Research Instrumentation Program (DURIP)

- Multidisciplinary University Research Initiative (MURI)

DEFENSE ESTABLISHED PROGRAM TO STIMULATE COMPETITIVE RESEARCH (DEPSCOR)

- Created by Congress in FY90 DoD appropriation and authorized in 1994

  - Reauthorized in 2017

- "States or territories that received <60% of 1/50th of the total DoD S&E research obligations to U.S. IHE are eligible…"

FY20 DEPSCoR

Objectives

- **Enhance the capabilities** of institutions of higher education in eligible jurisdictions to develop, plan, and execute science and engineering research that is relevant to the mission of DoD

- **Increase the number of university researchers** in eligible jurisdictions capable of performing S&E research responsive to the needs of DoD

- **Increase the probability of long-term growth** in the **competitively awarded** financial assistance that IHE eligible jurisdictions from the Federal Government for S&E research

FY20 DEPSCoR

- Solicitation Information
    - Tri-service program: AFOSR, ARO, ONR
    - Collaborative research grants
        - Mentee : mentor relationship*
    - One white paper per Applicant/PI
    - Strongly encouraged to talk with PO before submitting
    - Security clearance and U.S. citizenship are not required
    - ~12 proposals will be funded

FY20 DEPSCoR

- Solicitation Information

  - Applicant and Collaborator must be tenured or tenure-track faculty members at an IHE in an eligible jurisdiction

  - PI must be full-time faculty member who has never served as a PI on a prior DoD-funded award

  - Collaborator has served as a PI on a DoD-funded research award since Oct. 2013

    - Mentorship
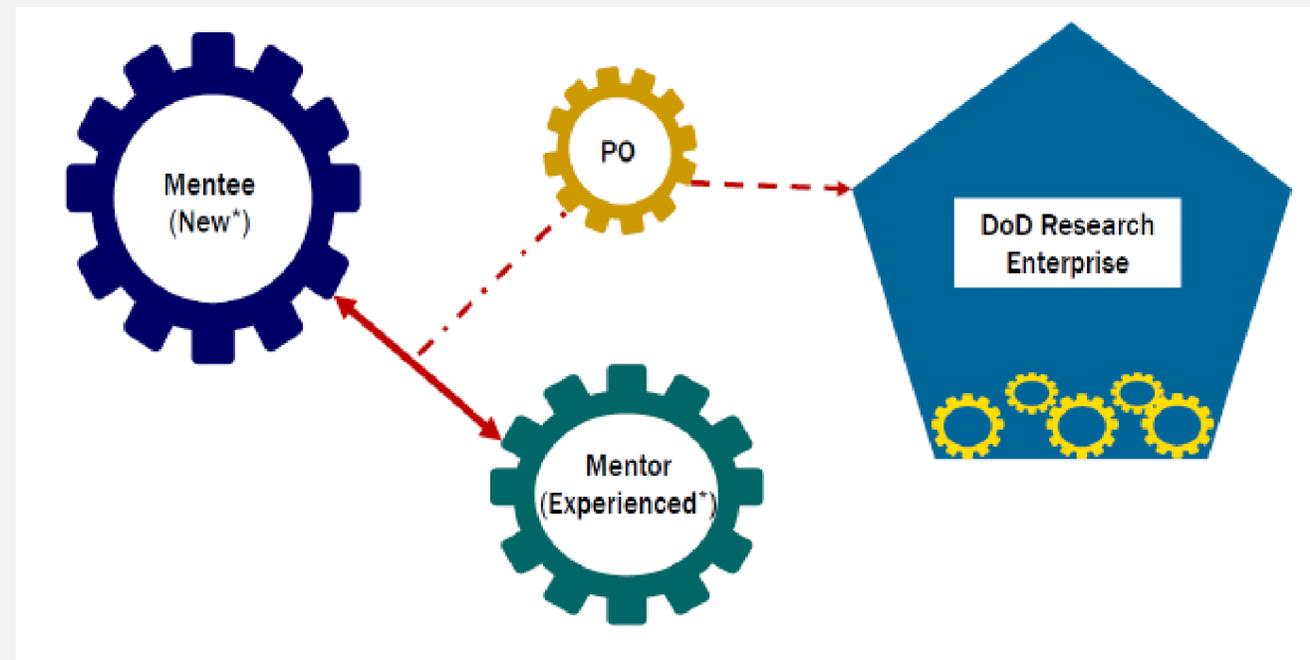
FY20 DEPSCoR

Topics in FY20 FOA

Topic Number	SERVICE	TOPIC AREA	PROGRAM OFFICER
1	AFOSR	Cognitive and Computational Neurosciences	Dr. Hal Greenwald
2	AFOSR	Space Science	Dr. Julie Moses
3	AFOSR	Agile Science of Test and Evaluation	Dr. Brett Pokines
4	AFOSR	Materials with Extreme Properties	Dr. Ali Sayir
5	ARO	Propulsion and Energetics	Dr. Ralph Anthenien
6	ARO	Computational Architectures and Visualization	Dr. Michael Coyle
7	ARO	Optoelectronics	Dr. Michal Gerhold
8	ARO	Probability and Statistics	Dr. Michael Lavine
9	ARO	Molecular Structure and Dynamics	Dr. James Parker
10	ARO	Social and Behavioral Science	Dr. Lisa Troyer
11	ARO	Biotronics	Dr. Albena Ivanisevic
12	ONR	Aerospace Structures and Materials	Dr. Anisur Rahman
13	ONR	Ocean Acoustics	Dr. Kyle Becker
14	ONR	Machine Learning, Reasoning, and Intelligence	Dr. Behzad Kamgar-Parsi
15	ONR	Power Electronics & Electromagnetism, Adaptive & Machinery Controls and Advanced Machinery Systems	Mr. Lynn Petersen

FY20 DEPSCoR

Important Dates for FY20 Competition

Schedule of Events		
Event	**Date**	**Eastern Standard Time**
AcquTrak website open for registration and submission (https://acqupass.noblis.org/ApplyDEPSCoR)	15 June 2020	NLT 11:59PM
Questions Regarding White Paper and Supporting Documentation (submitted by)	29 June 2020	NLT 11:59PM
AcquTrak Registration (required by)	14 September 2020	NLT 11:59PM
White Paper and Supporting Documentation submission on AcquTrak website (https://acqupass.noblis.org/ApplyDEPSCoR) (required by)	21 September 2020	NLT 11:59PM
Notification of White Paper Selection	20 November 2020	NLT 11:59PM
Request for written feedback on your white paper submission (required by) (Email request to: DEPSCoR-feedback@noblis.org)	27 November 2020	NLT 11:59PM
Full Proposal Submission (by invitation only) electronically on Grants.gov website (submitted by)	15 February 2021	NLT 11:59PM
Notification of Selection for Award	12 April 2021	NLT 11:59PM

DEFENSE UNIVERSITY RESEARCH INSTRUMENTATION PROGRAM (DURIP)

- Administered through the AFOSR, ARO, and ONR
  - *Choose agency based on a match with their research interests*
- Acquisition of major equipment to augment current or develop new research capabilities in support of DoD-relevant research
  - $50K - $1.5M (*no cost share*)
  - Purely instructional equipment are not eligible
  - General use computing equipment and construction costs are not allowable
- Expired FY21 RFP available here (goal to publish FY22 FOA in Feb; deadline in May)

DEFENSE UNIVERSITY RESEARCH INSTRUMENTATION PROGRAM (DURIP)

Review Criteria (of equal importance)

- Impact of the proposed equipment on research DoD funds, plans to fund and/or the likelihood your proposed equipment will enhance current research capabilities or establish new research capabilities relevant to DoD

- Importance and priority to DoD missions of research the proposed equipment will support

- Potential of the proposed equipment to enhance institution's ability to educate future scientists and engineers through research conducted with the proposed equipment in disciplines important to DoD

MULTIDISCIPLINARY UNIVERSITY RESEARCH INITIATIVE (MURI)

- Administered through the AFOSR, ARO, and ONR
  - *Choose agency based on a match with their research interests*
- Supports research teams who research efforts intersect more than one science and engineering discipline.
  - $1.25M/year for up to 5 years
  - Research topics described in the MURI announcement
    - Typically underpin dual use defense technologies that are critical to national defense and also good potential for commercial application
  - Expired FY21 BAA available here (goal to publish FY22 FOA in Mar.; white papers due in May; proposal due in Sep.)

INTERESTED? NEXT STEPS

- Explore websites, BAAs, talk with others

- Contact Program Officer

- RFD can assist you!

  - Email: ored-rfdteam@uidaho.edu

  - Url: https://www.uidaho.edu/research/about/orfd

REQUEST RFD SERVICES

Q&A: ASK THE EXPERT: JOHN RUSSELL

- How do DoD agencies differ from NSF?

- Advice for someone new to applying to DoD funding opportunities?

- Benefits from participating in a Summer Research Program?

Thank you for attending!

See you next time!

FACULTY SUCCESS SEMINARS

FALL 2020

Sept. 9 NSF Research Traineeship (NRT) Program: Tips for Writing a Competitive Proposal

Sept. 23 NSF CAREER All Year: Getting Ready to Apply

Sept. 30 NSF EPSCoR RII Track-2: Tips for Writing a Competitive Proposal

Oct. 7 Find Funding Opportunities: Introduction to Pivot

Oct. 21 NSF CAREER All Year: Getting Started on Your Proposal

Nov. 4 UPDATE: Mountain West Clinical and Translational Research-Infrastructure Network (MW CTR-IN) Funding Opportunities

Nov. 18 Myth-busting Department of Defense Funding Opportunities

Dec. 2 M. J. Murdock Trust's Commercialization Initiation Program: Tips for Writing a Competitive Proposal

SPRING 2021

Jan. 13 Find Funding Opportunities: Introduction to Pivot

Jan. 27 Funding Research and Scholarly Work in the Humanities

Feb. 3 Idaho is an EPSCoR State - What This Means for Supporting Your Research

Feb. 17 How to Develop and Deliver an Effective Pitch

Mar. 3 Assessing Your Grant Readiness

Mar. 24 Early Career Faculty Research - Grant Programs

Apr. 7 USDA NIFA AFRI: Tips for Getting Started with Your Next Proposal

Apr. 14 Developing Data Management Plans - Best Practices and Resources

Apr. 28 Equipment Grant Programs: An Overview

ZOOM ID
uidaho.zoom.us/j/95865360877

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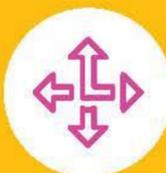
WE GUIDE THE DEVELOPMENT OF COMPETITIVE EXTERNAL GRANT PROPOSALS

Office of Research and Faculty Development

Email: ored-rfdteam@uidaho.edu
Website: uidaho.edu/orfd