National Aeronautics and
Space Administration

INSPIRE - ENGAGE - EDUCATE - EMPLOY
The Next Generation of Explorers

NASA Fellowships Activity

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NASA Fellowships Activity

What is NASA Fellowship Activity?

- NASA Fellowship Activity solicits proposals from accredited U.S. institutions and is awarded as a research training grants to the selected awardees;
- It is designed to support independently conceived research projects by highly qualified graduate students, in disciplines needed to help advance NASA's mission;
- NASA strongly encourages the submission of applications from Minority-Serving Institutions (MSIs), historically underrepresented groups and underserved populations, such as women, minorities, persons with disabilities, LGBTQs and Veterans.

OSTEM Objectives

- Improve the nation's future STEM workforce by developing the skills and competencies of graduates pursuing STEM degrees;
- Provide opportunities for a diverse population to participate and contribute to NASA's mission and projects;
- Use NASA's unique mission content, workforce, and facilities in order to enhance and increase the capabilities, diversity, and size of the nation's next generation workforce needed to enable future NASA discoveries, including the Artemis Program (https://www.nasa.gov/specials/artemis/);
- Build an intellectual network between NASA and higher education institutions by allowing faculty greater access and knowledge of NASA's research opportunities.

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Candidate's Eligibility Criteria

- Be a U.S. citizen or national at the time of proposal submission;
- Hold a Bachelor’s degree in a STEM field earned before August 31 of each fiscal year;
- Have a minimum GPA of 3.0 on a 4.0 scale on your most recent transcript;
- Be enrolled in a Master's or Doctoral degree program no later than September 1 of the academic year for which the award is granted;
- Intend to pursue a research-based Master's or Doctoral program in a NASA STEM relevant field;
- Have a projected degree plan for continuous full-time enrollment up to the end of the Period of Performance;
- Be no later than in their first academic year of the Master’s degree program or no later than in their second academic year of the Doctoral degree program.

Period of Performance

The Period of Performance (P.O.P) for each award is annual and renewable for up to three to four years depending on availability of funds;

- Master's awards are for 2 years, with a possibility of a third-year extension;
- Doctoral awards are for 3 years, with a possibility of a fourth-year extension.

Budget Categories

TYPE OF FUNDING	FUNDING AMOUNT
Fellowship Stipend	$25,000 (Master's) $30,000 (Doctoral)
Tuition Offset and Fees	$8,000
Center Based Research Experience (CBRE) Allowance	$8,000
Health Insurance Allowance	$3,000
Faculty Adviser Allowance	$4,500
Fellow Professional Development Allowance	$1,500

Funding Sources

- Minority University Research Education Program (MUREP);
- Center Funding – NASA Technical Adviser's research funds;
- Mission Directorates;
- Others.

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Other Important Information:

- Identify a NASA Technical Adviser to provide letter of support;
- NASA T.A must be associated with the opportunity that you are applying for;
- Must have a faculty adviser and be enrolled in an accredited U.S institution;
- Pre-proposal teleconference dates and times will be posted on NSPIRES.

Solicitation Location on NSPIRES

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Solicitation Title	Solicitation #	Released	NOI Due	Proposal Due
NASA OSE Fellowship Activity 2020	NNH20ZHA001N	12/23/2019	--	02/21/2020

https://nspires.nasaprs.com/external/solicitations/summary!init.do?solId={FE34FF68-88DA-AE12-9C18-A309B190C3F5}&path=open

NASA Fellowship Opportunties

Opportunity Number	Opportunity Title	Opportunity Description/Objective (specific student assignment)	Desired Student Academic Level	Technical Adviser	Technical Adviser's email	Technical Adviser's Phone Number	Co-Technical Adviser's	Co-Technical Adviser's email	Co-Technical Adviser's Phone Number
ARC-000	Student Proposed with Concurrence of NASA Technical Mentor	The student can submit a NASA relevant, independently conceived research proposal with the concurrence of a university principal investigator and a NASA Technical Advisor.	Pursuing Master's Degree or Pursuing Doctoral Degree	Student idenified NASA Technical Advisor	Student idenified NASA Technical Advisor	Student idenified NASA Technical Advisor			
ARC-001	Developing an Intelligent Integrated Energy Management Control and Alarm System for Sustainability Base	The fellow will be responsible for developing a detailed model of Sustainability Base using Energy Plus or equivalent modeling framework. The fellow may alternatively investigate constructing a model empirically based upon data acquired from Sustainability Base by employing advanced data mining algorithms to learn how the building operates and then monitor how it is performing over time, or some combination of the two approaches. Specifically, algorithms will be used to detect changes in individual energy use via plug load monitoring, circuit-level disaggregation technologies, and DEMs (Direct Energy Meters). The fellow will also become familiarized with the building operations sequence and existing constraints to be imposed as part of an optimization of the overall objectives stated previously. The optimization will be conducted using Stochastic Model Predictive Control (SMPC) techniques, that yield control actuation and guidance strategies. These control sequences can be derived for various HVAC system components such as pumps and fans, and even for lighting and other plug loads. The integrated control and alarm system will minimize overall energy expenditure and performance objectives - such as response rate and actuator effectiveness in an uncertain environment while providing a robust constraint violation risk-management strategy via an optimal alarm system. Constraints to be imposed may include equipment and/or environmental limits, as well as thermal comfort limits. Near-optimal plans to roughly approximate the guidance strategies recommended by the MPC optimization will be developed by the fellow in the context and constraints established by the existing building operations sequence, through a combined utilization of available actuators. Additional information on Sustainability Base can be found here: http://www.nasa.gov/sustainability-base/.	Pursuing Master's Degree or Pursuing Doctoral Degree	Rodney Martin	rodney.martin@nasa.gov	650.604.1334			
ARC-002	Development of High-order Scale-resolving Methods for Complex Flows	This opportunity is in the area of developing novel methods for high-order scale-resolving (LES, DNS) simulations of complex flows and physics. Potential topics of interest include, but are not limited to, geometry representation and mesh generation, physical model development, e.g. wall-modeled LES or compressible LES models, high-order visualization and unsteady data processing, and novel numerical methods for high-order finite-element methods. The fellow will be expected to interact with the eddy group at NASA Ames Research Center.	Pursuing Doctoral Degree	Scott Murman	tt.murman@nasa.gov	650.604.4470	Nagi Mansour	n.mansour@nasa.gov	650.604.6420

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Proposal Review Process

Solicitation Location

NSPIRES (NASA Solicitation and Proposal Integrated Review and Evaluation System)

Open and Closed Solicitation

NASA OSE Fellowship Activity
https://nspires.nasaprs.com/external/solicitations/summary!init.do?solId={FE34FF68-88DA-AE12-9C18-A309B190C3F5}&path=open

FAQs – Other Documents

Email Contact – Vandhana.lal@nasa.gov

Questions

Thank you for attending today's presentation.

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