

Opportunity Title: High-Fidelity Computations of Advanced Air Mobility Vehicle Concepts

Opportunity Reference Code: 0085-NPP-NOV23-ARC-AeroEng

Organization National Aeronautics and Space Administration (NASA)

Reference Code 0085-NPP-NOV23-ARC-AeroEng

Application Deadline 11/1/2023 6:00:59 PM Eastern Time Zone

Description Current design tools for Urban Air Mobility (UAM) vehicle use empirical models that are based on historical data that is biased toward traditional VTOL vehicle configurations. This results in inadequate models for design tools since most UAM vehicles have very non-traditional VTOL configurations. High-fidelity Computational Fluid Dynamics (CFD) simulations in support of NASA's Revolutionary Vertical Lift Technology (RVLT) project will be conducted. The candidate will carry out research into improving the current design tools, as well as developing new models for performance and acoustic analysis of new VTOL multi-rotor vehicle concepts. Areas of interest include high-fidelity CFD, acoustics, meshing, complex geometries, turbulence modeling and wake interactions.

References:

"High-Fidelity Computational Aerodynamics of Multi-Rotor Unmanned Aerial Vehicles," P Ventura Diaz, S Yoon, 2018 AIAA Aerospace Sciences Meeting, 1266

"The Side-by-Side Urban Air Taxi Concept," P Ventura Diaz, W Johnson, J Ahmad, S Yoon, AIAA Aviation 2019 Forum, 2828

Location:

Ames Research Center
Moffet Field, California

Field of Science: Aeronautics, Aeronautical or Other Engineering

Advisors:

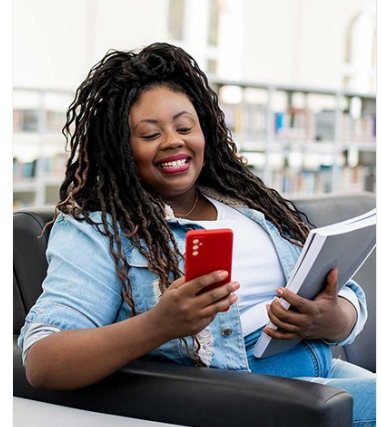
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Applications with citizens from Designated Countries will not be accepted at this time, unless they are Legal Permanent Residents of the United States. A complete list of Designated Countries can be found at: <https://www.nasa.gov/oiiir/export-control>.

Eligibility is currently open to:

- U.S. Citizens;
- U.S. Lawful Permanent Residents (LPR);



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Concepts

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- Foreign Nationals eligible for an Exchange Visitor J-1 visa status; and,
- Applicants for LPR, asylees, or refugees in the U.S. at the time of application with 1) a valid EAD card and 2) I-485 or I-589 forms in pending status

Eligibility Requirements

- **Degree:** Doctoral Degree.