

Opportunity Title: Evaluation of Commercially Available Flight Simulator Software

Opportunity Reference Code: ICPD-2021-32

Organization Office of the Director of National Intelligence (ODNI)

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How to Apply **Create and release your Profile on Zintellect** – Postdoctoral applicants must create an account and complete a profile in the on-line application system. **Please note: your resume/CV may not exceed 2 pages.**

Complete your application – Enter the rest of the information required for the IC Postdoc Program Research Opportunity. The application itself contains detailed instructions for each one of these components: availability, citizenship, transcripts, dissertation abstract, publication and presentation plan, and information about your Research Advisor co-applicant.

Additional information about the IC Postdoctoral Research Fellowship Program is available on the program website located at:
<https://orise.orau.gov/icpostdoc/index.html>.

If you have questions, send an email to ICPostdoc@orau.org. Please include the reference code for this opportunity in your email.

Application Deadline 2/26/2021 6:00:00 PM Eastern Time Zone

Description **Research Topic Description, including Problem Statement:**

Stakeholders within the Intelligence Community (IC) are interested in the potential for extremists to use of commercially available flight simulator software to train themselves to fly general aviation aircraft without fear of detection by U.S. government student pilot vetting programs. However, questions remain regarding the difficulty of learning basic flight proficiency using only flight simulation software. Knowledge of aviation psychology, flight training parameters, and the design of a test program are critical influences on the success of efforts to gain basic flight proficiency. Further research is needed to identify other critical areas influencing the development of basic flight proficiency and indicators correlating with effectiveness or difficulty in achieving this objective.

Example Approaches:

This project should leverage all available information to determine; what psychological limitations exist between flight simulation and actual flying that could prevent a student from achieving basic flight proficiency? What performance parameters are required in actual flight training and how reliably are these parameters mimicked in flight simulators? What design elements are necessary to improve learning in actual flight training, and how reliably are they replicated in software simulations? Using a variety of existing collected data on aviation psychology, which factors correlate with successful flight acumen and how are these factors replicated in flight simulators? Using a variety of existing collected data on flight test design, which factors are correlated with successful learning and how are these factors replicated in flight simulators? Using a variety of existing collected data on flight training parameters, which parameters are correlated with basic flight proficiency?



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Relevance to the Intelligence Community:

This research will improve the IC assessments of aviation threats potentially involving the use of flight simulation for training purposes. USNORTHCOM, FAA, TSA, and the National Counterterrorism Center, among others, will benefit from such a study and will apply this knowledge to evaluate and mitigate potential aviation threats that could arise from extremist attempts to use commercially available flight simulation software and hardware to develop basic airmanship skills for nefarious purposes.

Key Words: Flight Training, Pilot Training, Vetting, Extremists, Terrorists, Flight Simulator, Computer-Based Training, Aviation, Threats

Qualifications

Postdoc Eligibility

- U.S. citizens only
- Ph.D. in a relevant field must be completed before beginning the appointment and within five years of the application deadline
- Proposal must be associated with an accredited U.S. university, college, or U.S. government laboratory
- Eligible candidates may only receive one award from the IC Postdoctoral Research Fellowship Program

Research Advisor Eligibility

- Must be an employee of an accredited U.S. university, college or U.S. government laboratory
- Are not required to be U.S. citizens

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Doctoral Degree.
- **Academic Level(s):** Postdoctoral.
- **Discipline(s):**
 - **Chemistry and Materials Sciences** (12 )
 - **Communications and Graphics Design** (2 )
 - **Computer, Information, and Data Sciences** (17 )
 - **Earth and Geosciences** (21 )
 - **Engineering** (27 )
 - **Environmental and Marine Sciences** (14 )
 - **Life Health and Medical Sciences** (45 )
 - **Mathematics and Statistics** (10 )
 - **Other Non-Science & Engineering** (2 )
 - **Physics** (16 )
 - **Science & Engineering-related** (1 )
 - **Social and Behavioral Sciences** (27 )