

Opportunity Title: Neural Pathways and Neuroplasticity in Geospatial
Expertise Acquisition

Opportunity Reference Code: ICPD-2021-07



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:**

Advances in geospatial analysis are forcing rapid expertise development across a spectrum of technologies and analytical methods. However, the unique neural pathways associated with this expertise development across the geospatial domain call for exploration. While the generic construct of expertise has been investigated in a wide array of disciplines (e.g., medical imaging, aviation, chess), it has gone relatively unstudied in the field of geospatial intelligence (GEOINT). The acquisition, development and assessment of expertise in remotely sensed image analysis (e.g., photogrammetry or raster analysis), geospatial analysis (e.g., cartographic or vector analysis), and data literacy (e.g., data structures and algorithms) are of prime interest.

Example Approaches:

- Visual expertise in medical image analysis;
- Novice and expert performance on radiologic diagnosis

Relevance to the Intelligence Community:

Understanding the unique neural pathways will facilitate further exploration of training, tools, and techniques that could increase the Intelligence Community's ability to identify optimal environments for rapid training and retraining of analysts in emerging novel geospatial analytical methodologies. A deeper understanding of the neural correlates associated with GEOINT expertise may also lead to improvements in human performance.

Key Words: Expertise Acquisition; Neural Expertise Assessment; Perception and Cognition, Imagery Analysis, Geospatial Analysis, Data Literacy

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

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**Eligibility
Requirements**

- **Citizenship:** U.S. Citizen Only
- **Degree:** Doctoral Degree.
- **Discipline(s):**
 - **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-S&E** (2 )
 - **Other Physical Sciences** (12 )
 - **Other S&E-Related** (1 )
 - **Physics** (16 )
 - **Social and Behavioral Sciences** (27 )