Opportunity Title: Novel Techniques for Remote Sensing of Chemicals
Opportunity Reference Code: ICPD-2023-30

Organization

Office of the Director of National Intelligence (ODNI)

Reference Code

ICPD-2023-30

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

2/28/2023 6:00:00 PM Eastern Time Zone

Description

Research Topic Description, including Problem Statement:

Remote sensing of chemicals is an important capability for greenhouse gas monitoring, soldier and facility protection, explosives/narcotics detection, and atmospheric modeling. Due to the broad nature of needs for remote sensing, the intelligence community is interested in novel technology development. Technologies to be considered could address: space-based greenhouse gas monitoring, remote sensing through cloud cover or in low light conditions, long distance observation of radioactivity, fuel source attribution, or remote analysis of complex chemical mixtures.

Example Approaches:

This project is looking for novel approaches to remote sensing to improve the quantity and quality of information available. Approaches may include active spectroscopic techniques such as LIDAR, cavity ring down spectroscopy, or hyperspectral imaging as well as passive or non-spectroscopic methods (such as photo-acoustics).

Relevance to the Intelligence Community (IC):

Develop/enhance capabilities to detect and identify chemical agents, and associated delivery systems. Develop/enhance methods to identify and evaluate game-changing emerging technologies with dual-use potential. Develop/enhance detection and monitoring of chemical weapon program activities, including Schedule 1 chemicals or precursors. Develop/enhance capabilities to rapidly characterize the release of chemical, biological, radiological, nuclear, and/or related hazardous materials.

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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Key Words: Remote Sensing, CBRNE, Optics, Mirrors, Space, Spectroscopy, Spectrometry, LIDAR, Geometric Optics, Cavity Ring Down Spectroscopy, Chemistry, Physics, Optical Diagnostics, Lasers, Satellite, Acousto-optics, IPSS, Photo-acoustics
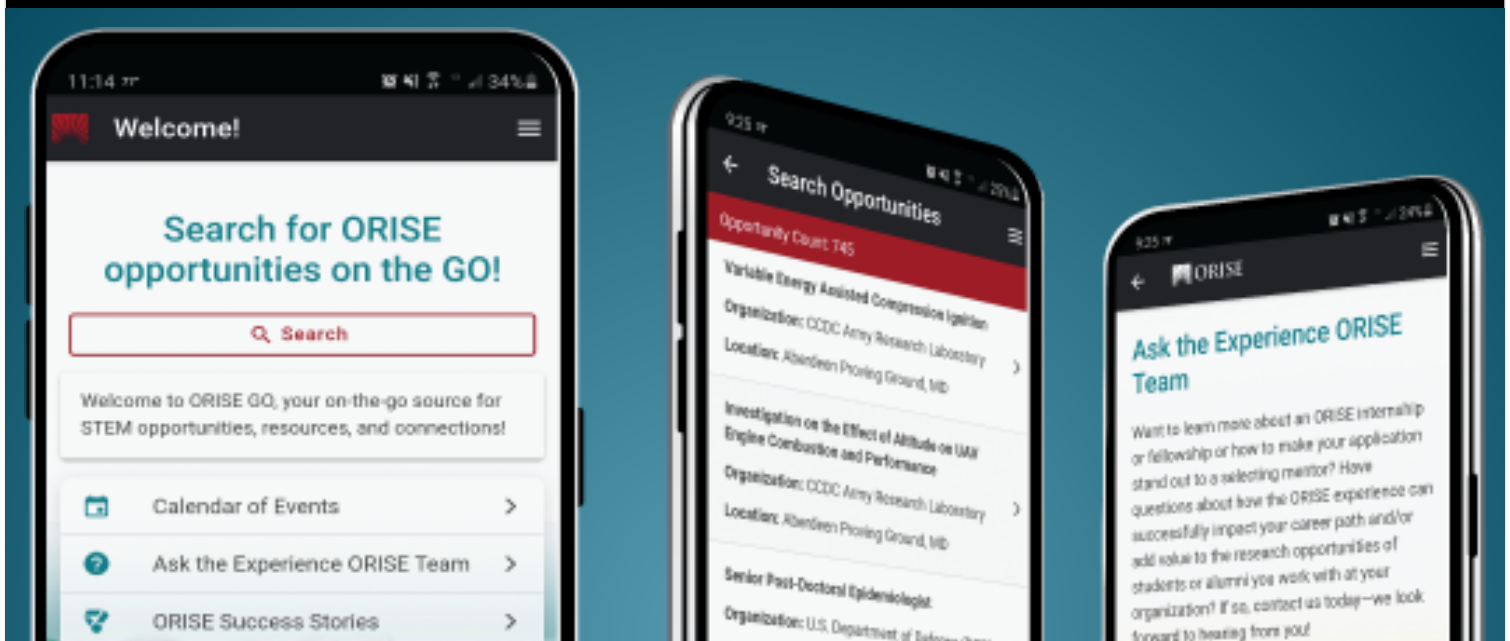
Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Doctoral Degree.
- **Discipline(s):**
  - **Chemistry and Materials Sciences** (12 👁)
  - **Communications and Graphics Design** (6 👁)
  - **Computer, Information, and Data Sciences** (17 👁)
  - **Earth and Geosciences** (21 👁)
  - **Engineering** (27 👁)
  - **Environmental and Marine Sciences** (14 👁)
  - **Life Health and Medical Sciences** (48 👁)
  - **Mathematics and Statistics** (11 👁)
  - **Other Non-Science & Engineering** (2 👁)
  - **Physics** (16 👁)
  - **Science & Engineering-related** (1 👁)
  - **Social and Behavioral Sciences** (29 👁)

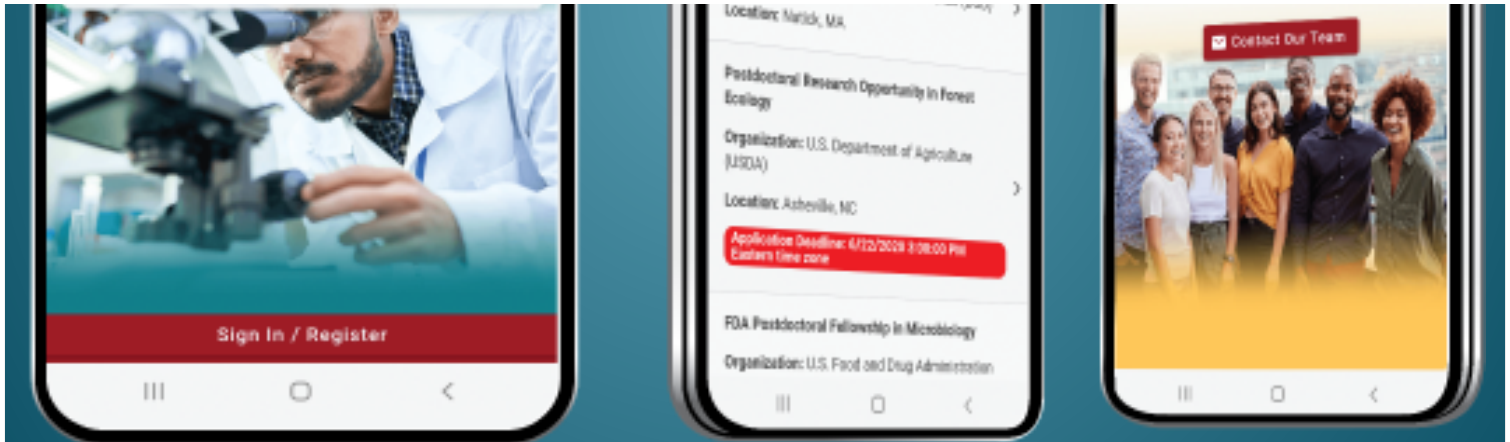**Opportunity Title:** Novel Techniques for Remote Sensing of Chemicals
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