

Opportunity Title: Improved Methods for Hybridization-Capture Enrichment Probe Panel Design Against Bacterial Genomes
Opportunity Reference Code: ICPD-2025-33

Organization Office of the Director of National Intelligence (ODNI)

Reference Code ICPD-2025-33

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 3 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 2/28/2025 6:00:00 PM Eastern Time Zone

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

Hybridization-based probe capture enrichment is an effective means to identify targeted low-abundance taxa within a bio-forensic sample that would otherwise be missed, even with deep sequencing. The design of nucleic acid probes is critical for the development of custom probe panels. A capability gap in which probe panel design against most bacterial phyla, including those containing biological select agents, is slow and laborious and results in panels of > 1 million probes. This project seeks to improve methods for large-scale probe design.

Example Approaches:

Development of this technology will support the ability of the community to target analysis of classes of biological signature (viral, bacterial, animals, plants) at trace levels from environmentally complex samples. This work could be performed on most well-appointed high-performance computing (HPC) systems.

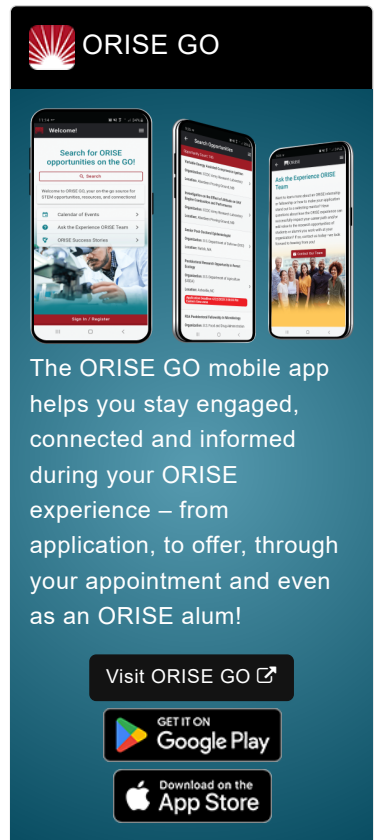
Key Words: Algorithm development, bioinformatics, computational biology, data structures, hybridization capture-based probe enrichment, metagenomics, microbiology, next-generation sequencing!

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 appointment start date
- 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


 **OAK RIDGE INSTITUTE**
FOR SCIENCE AND EDUCATION

ORISE GO

The ORISE GO mobile app helps you stay engaged, connected and informed during your ORISE experience – from application, to offer, through your appointment and even as an ORISE alum!

Visit ORISE GO 

GET IT ON
 **Google Play**

Download on the
 **App Store**

Opportunity Title: Improved Methods for Hybridization-Capture Enrichment Probe

Panel Design Against Bacterial Genomes

Opportunity Reference Code: ICPD-2025-33

- Are not required to be U.S. citizens

Point of Contact [Keri Tarwater](#)

Eligibility • **Citizenship:** U.S. Citizen Only

Requirements • **Degree:** Doctoral Degree.

• **Discipline(s):**

- **Chemistry and Materials Sciences** ([12](#))
- **Communications and Graphics Design** ([3](#))
- **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** ([11](#))
- **Other Non-Science & Engineering** ([2](#))
- **Physics** ([16](#))
- **Science & Engineering-related** ([1](#))
- **Social and Behavioral Sciences** ([30](#))