Opportunity Title: Nocardia Genome Investigation Opportunity - CDC
Opportunity Reference Code: CDC-NCEZID-2017-0081

Organization Centers for Disease Control and Prevention (CDC)

Reference Code CDC-NCEZID-2017-0081

How to Apply A complete application consists of:

- An application
- Transcripts – Click here for detailed information about acceptable transcripts
- A current resume/CV, including academic history, employment history, relevant experiences, and publication list
- Two educational or professional references

All documents must be in English or include an official English translation.

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

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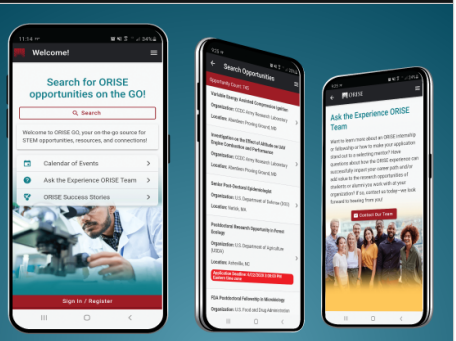

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Description The Nocardia Genome Investigation will be performed at the Special Bacteriology Reference Laboratory in the Bacteria Special Pathogens Branch, DHCPP/NCEZID at the Centers for Disease Control and Prevention (CDC) in Atlanta, Georgia.

This opportunity will focus on generating complete genome sequences of Nocardia clinical isolates previously shown to exist naturally as heterokaryons. The research participant will gain experience for de novo sequencing and assembly of complete Nocardia species genomes utilizing a combination of single cell genome analysis and Single Molecule, Real-Time (SMRT) sequencing methods. He/she will use those completed genome sequences to map RNA transcripts using RNA-Seq analysis to examine gene predictions and determine the patterns of gene expression. The participant will gain experience in growing isolates in the presence of triphenylmethane analogues which display antimicrobial activity to Gram-stain positive bacteria. He/she will then use the completed Nocardia genome to detect and analyze the molecular targets and genes required for sensitivity to triphenylmethane compounds, as well as determining the mode of action and differences in gene expression between sensitive and resistant isolates.

This program, administered by ORAU through its contract with the U.S. Department of Energy to manage the Oak Ridge Institute for Science and Education, was established through an interagency agreement between DOE and CDC. The initial appointment is for one year, but may be renewed upon recommendation of CDC contingent on the availability of funds. The participant will receive a monthly stipend commensurate

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with educational level and experience. Proof of health insurance is required for participation in this program. The appointment is full-time at CDC in the Atlanta, GA area. Participants do not become employees of CDC, DOE or the program administrator, and there are no employment-related benefits.

Qualifications

Must have completed a doctoral degree (PhD or MD) in one of the areas of Biological Sciences within the last five years. Fields of expertise may include programs specializing in Biochemistry, Biology, Cell and Molecular Biology, Evolutionary Biology and Microbiology. Degrees in Computational Biology/Bioinformatics will be valuable.

Knowledge in basic Microbiology including the isolation and culturing microbes and antimicrobial susceptibility testing.

Basic skills in Molecular Biology include DNA/RNA purification, PCR, genetic manipulations, single-cell isolation and analysis, and gene knockouts.

Experience in whole genome amplification and sequencing, assembly and analysis.

Knowledge in Computational Biology/Bioinformatics as well as skills in Linux/Unix operating systems and coding will be helpful as would Bioinformatic analysis of transcriptome data generated by high-performance methods.

Eligibility Requirements

- **Degree:** Doctoral Degree received within the last 60 month(s).
- **Academic Level(s):** Postdoctoral.
- **Discipline(s):**
  - **Computer, Information, and Data Sciences** (1 👁)
  - **Life Health and Medical Sciences** (6 👁)
  - **Mathematics and Statistics** (1 👁)