

TITLE

Postdoctoral Scholar Position at UC San Diego, Division of Pulmonary, Critical Care, Sleep Medicine, and Physiology - Transforming Targeted NGS for Drug-Resistant Tuberculosis

POSITION DESCRIPTION

The University of California, San Diego, Division of Pulmonary, Critical Care, Sleep Medicine, and Physiology in the Department of Medicine is recruiting a Postdoctoral Researcher to join the Rodwell/Colman Laboratory. The selected candidate will work on an NIH funded project to advance a novel targeted NGS assay aimed at making culture-free drug-resistance profiling faster, simpler, and more scalable on Illumina benchtop platforms.

As a Postdoctoral Scholar, working primarily on-site in La Jolla, San Diego, you will lead the process of designing and executing hypothesis-driven experiments that move the assay from promising prototype to rigorously characterized, automation-ready method. The role is embedded in an academic BSL-2 wet lab with close collaboration with clinical, engineering/automation and bioinformatics partners.

This position provides an opportunity to contribute to translational research with immediate relevance to global tuberculosis and antimicrobial resistance (AMR) control efforts at the interface of assay development, clinical application, and laboratory automation. You will be co-mentored by experienced investigators and thought leaders in diagnostic assay development and clinical studies, with opportunities to engage in World Health Organization-aligned initiatives.

In year one, the postdoctoral scholar will lead optimization of a multiplex amplicon panel through empirical primer-pool balancing and targeted redesign within approved frameworks, and transition defined assay steps from bench to laboratory automation integrated with established sample-preparation/normalization workflows. Work will include evaluation of manual and automated workflows on an Illumina iSeq100 platform, partnership with bioinformatics colleagues on run-level metrics, and rigorous laboratory and digital documentation, with contributions to methods publications and internal and external academic presentations.

QUALIFICATIONS

Qualifications (Required at Time of Application)

Applicants must have a PhD, MD/PhD, or equivalent degree in molecular biology, bioengineering, microbiology, or a related field at the time of application.

A successful applicant will demonstrate creativity, productivity, and strong interest in scientific method development through prior research experience.

Minimum Qualifications

- Hands-on expertise with multiplex PCR and NGS library preparation; strong documentation discipline.
- Demonstrated ability to plan, run, and interpret wet-lab optimization experiments (e.g. fluorometric quantification, fragment analysis, Illumina benchtop operation).
- Independent but collaborative mindset across wet-lab and computational teams.
- Clear written and verbal communications.

Preferred Qualifications

The following experience is preferred but not required:

- Prior work balancing multiplex panels or migrating assays onto lab automation.
- Familiarity with primer design/assessment tools (Primer3, BLAST, OligoAnalyzer) and spreadsheet/scripting-level handling of metrics.
- Experience in BSL-2 workflows with human-derived materials; strict adherence to Environment, Health & Safety (EH&S) practices.
- Background in tuberculosis, antimicrobial resistance, or clinical genomics.

APPLICATION REQUIREMENTS

Document requirements

- Curriculum Vitae – Most recently updated C.V.
- Cover Letter including a 4-6 sentence description of a multiplex panel or PCR primer design effort you led, the iterative parameter(s) you changed, and how you measured improvement.
- Statement of Research
- Statement of Contributions to Diversity – Applicants should summarize their past or potential contributions to diversity

Reference requirements

- 3 required (contact information only)
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CAMPUS INFORMATION

The University of California, San Diego is an Equal Opportunity/Affirmative Action Employer advancing inclusive excellence. All qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, disability, age, covered veteran status, or other protected categories covered by the UC nondiscrimination policy.

As a University employee, you will be required to comply with all applicable University policies and/or collective bargaining agreements, as may be amended from time to time. Federal, state, or local government directives may impose additional requirements.

The University of California prohibits smoking and tobacco use at all University controlled properties.

The UC San Diego Annual Security & Fire Safety Report is available online at: <https://www.police.ucsd.edu/docs/annualclery.pdf>. Contact the UC San Diego Police Department at (858) 534-4361 if you want to obtain paper copies of this report.

Application Process: Interested applicants should submit a copy of their CV, the contact information (email address and phone number) of three references, and a statement of research skills and interests to Laura Myhovich (lmhovich@health.ucsd.edu).