

RePORT International Newsletter April 2025

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FOSTERING THE NEXT GENERATION OF TB RESEARCHERS

Introducing the New RICC Post-Doctoral Fellows & Future Leader

The RePORT International Coordinating Center has two capacity-building programs to develop the skills of promising early-stage and middle-stage TB researchers. The Post-Doctoral Fellows and Future Leaders Programs are competitive in nature based on proposed research, skills development plans, and mentor recommendations. We are excited to share the next class of both programs.

Future Leader: Simon Mendelsohn



Dr. Simon Mendelsohn is a physician-scientist and Senior Researcher at the South African Tuberculosis Vaccine Initiative (SATVI), University of Cape Town. Prior to joining SATVI, he gained clinical experience managing TB and HIV in South Africa's public health sector and implemented HIV and TB programs in Malawian prisons with Médecins Sans Frontières. As a clinical investigator, he has contributed to over 30 TB vaccine and therapeutic trials and diagnostic observational studies, advancing our understanding of TB

treatment and prevention strategies.

Dr. Mendelsohn's broader goal is to advance TB diagnostic, preventive, and treatment strategies that are scalable in low- and middle-income countries. His research focuses on the development and clinical validation of novel diagnostics and biomarker-guided strategies for detecting and treating TB in high-burden settings. He is particularly interested in non-sputum-based approaches for diagnosing persistent *Mycobacterium tuberculosis* infection and asymptomatic TB, integrating blood-based transcriptomic signatures and novel molecular techniques to guide targeted interventions. He is also

interested in implementing biomarker-guided, pragmatic clinical trials of TB therapeutics, prevention, and vaccines—enrolling individuals at greatest risk of disease to reduce study population size and follow-up time, thereby delivering results faster and more cost-effectively.

Through the Future Leaders Program, Simon hopes to strengthen his ability to identify, prioritize, and secure future funding, particularly through complex grant writing for multi-PI and multi-center projects. He also seeks to develop skills for translating research into policy and practice, to learn how to engage policymakers effectively, communicate research findings across sectors, and position research programs to influence global health guidelines, implementation, and funding decisions.

Post-Doctoral Fellow: Rodrigo Carvalho de Menezes



Dr. Menezes is a physician-scientist with a PhD in Human Pathology and specialized training in clinical research at Harvard Medical School. He studies the intersection of infectious diseases, epidemiology, and planetary health. His research focuses on public health challenges, particularly in the social and environmental determinants of treatment outcomes, the integration of climate data into disease modeling, and precision medicine approaches. Dr. Menezes has led and

collaborated on multiple cohort studies within the RePORT-Brazil network. He currently coordinates the Planetary Health and Science Ensemble (PHASE), an initiative dedicated to advancing global health through interdisciplinary and data-driven responses to climate-sensitive diseases.

As a RICC fellow, Dr. Menezes aims to investigate the impact of climate variables on TB infection and outcomes using RePORT-Brazil data, develop spatiotemporal models integrating remote sensing and patient-level data, and strengthen his skills in climate data analysis and machine learning. He also seeks to mentor early-career researchers, publish high-impact findings, inform climate-adaptive TB strategies, and secure funding to expand this research across other RePORT cohorts and national public health datasets.

Post-Doctoral Fellow: Dessa Jean Casalme



Dr. Casalme is a young investigator who earned her Medical Doctor (MD) degree from the De La Salle Medical and Health Sciences Institute (DLSMHSI) in 2017 and received her MD license in 2018. She is currently taking a Diploma Program in Clinical Epidemiology at the University of the Philippines, Manila. She has been a sub-investigator in various clinical trials focusing on preventive and treatment studies for multidrug-resistant TB (MDR-TB) in both adults and children since 2019. Her involvement in these TB projects has inspired and sparked her interest in childhood and maternal TB. She

looks forward to the RICC Post-doctoral fellowship as it will help develop her capacity on epidemiological TB research. Dr. Leonardo Martinez, a leading expert in epidemiology from Boston University, will mentor her. The fellowship program, through its robust mentoring program, will provide her with vast opportunities for academic and professional growth.

Post-Doctoral Fellow: Bih H. Chendi



Dr. Bih is a post-doctoral research fellow under the supervision of Professor Novel N. Chegou within the Immunology Research Group at Stellenbosch University, South. She obtained her PhD from the University of Oslo, Norway, in collaboration with Stellenbosch University, during which she evaluated host *Mycobacterium tuberculosis* blood biosignatures as diagnostic tools for TB in low and high-endemic settings. She has authored several peer-reviewed articles in accredited journals and worked across projects evaluating TB diagnostic and monitoring response biomarkers for pulmonary and other

forms of extrapulmonary TB for clinical application.

Dr. Bih 's research area for her postdoctoral fellowship focuses on validating published blood-based host biosignatures for tuberculosis disease in a multicohort analysis. She hopes to leverage her scientific leadership and understanding of biomarker approaches to advance biomarker research to enhance patient outcomes, ultimately transforming healthcare with personalised and effective interventions. In addition, Dr. Bih is also actively involved in supervising students and takes on leadership and project management duties to coordinate studies within her research group, foster communication with collaborators, and ensure smooth lab operations.

Post-Doctoral Fellow: Monika Looney



Dr. Looney is a Postdoctoral Research Fellow at the South African Tuberculosis Vaccine Initiative (SATVI). She received her PhD in Pathobiology from the Johns Hopkins School of Medicine where she investigated the role of small non-coding RNAs in the response to *Mycobacterium tuberculosis* infection.

Following her PhD, she joined SATVI at the University of Cape Town. Her postdoctoral work evaluates single-cell RNA

sequencing (RNA-Seq) to identify immune correlates of protection elicited by the M72:ASo1E vaccine. She will use scRNAseq to integrate insights from the M72 and RePORT-SA studies to compare immune features associated with natural control of TB disease vs. vaccine-mediated protection. Dr. Looney intends to complete her postdoctoral fellowship in single-cell immunology by the end of 2025. Ideally, she would like to remain in South Africa to keep her priority on the communities most affected by TB and scientific capacity building in endemic settings.

She is working towards eventually establishing a research group that specializes in the data-driven design and evaluation of novel TB vaccine candidates in an academic setting, such as SATVI, which specializes in TB clinical trials. Dr. Looney's immediate focus is applying for independent research funding, timely completion of research projects, and producing high-impact publications. Dr. Looney also intends to continue mentoring junior lab members as she progresses and take on new students and postdoctoral fellows whenever opportunities arise.



Tuberculosis Research Advancement Centers (TRACs)

In 2022, the National Institute of Allergy and Infectious Diseases (NIAID) launched six new Tuberculosis Research Advancement Centers (TRACs) to strengthen multidisciplinary TB research and provide outstanding mentorship for emerging investigators.

The primary objective of the TRACs has been to deliver scientific leadership and institutional infrastructure that supports and advances TB research. These Centers have been designed to foster collaboration across disciplines and institutions while nurturing the next generation of TB researchers through robust mentoring, training opportunities, and pilot funding support.

TRACs provide funding for both early-stage investigators beginning their careers in TB research and established researchers seeking to transition into the TB field. In addition to financial support, the Centers offer shared research resources, services, and training programs dedicated to TB while strengthening TB clinical research through domestic and international collaborations.

Current Locations

Emory University, Atlanta, GA **Principal investigators**: Neel Gandhi, MD; Jyothi Rengarajan, PhD

Johns Hopkins University,
Baltimore, MD
Principal Investigators: Petros
Karakousis, MD; Richard Chaisson, MD

Texas Biomedical Research Institute, San Antonio, TX Principal Investigator: Larry Schlesinger, MD <u>University of California</u>, San Francisco, CA

Principal Investigators: Payam Nahid, MD; Jeffrey Cox, PhD

<u>University of Washington</u>, Seattle, WA

Principal Investigators: Chetan Seshadri, MD; Rhea Coler, PhD; David Sherman, PhD

Weill Medical College of Cornell University, New York, NY Principal Investigators: Daniel Fitzgerald, MD; Kyu Rhee, MD

Summary of TRAC Accomplishments

Since its inception, the program has funded dozens of awards, ranging from 1- to 2-year pilot research awards to smaller grants to cover research-related needs such as travel, publication costs, or smaller sums of research support.

In addition to funding, the program has developed a comprehensive ecosystem to support TB research. This includes organized grant writing and scientific workshops, structured mentorship, global fellowship training programs, and scientific seminars and lectures. It also hosts patient-oriented conferences and an annual TB Hack Day to foster innovation and collaboration.

Collectively, the program offers a robust variety of training courses covering key aspects of TB research, along with access to core consultation services for both clinical and basic research support.

The program brings together researchers during yearly annual meetings or symposia. These researchers, often in the early stages of their careers, have the opportunity to present their findings, engage in meaningful discussions, and receive feedback from seasoned experts. This focus not only accelerates their professional growth but also fosters innovation in TB research by amplifying fresh perspectives. Some of the symposia are paired with the commemoration of World TB Day, adding an essential layer of global awareness and solidarity in the fight against tuberculosis.

Some Centers have actively engaged with communities in TB-endemic regions through the establishment of Community Advisory Boards, ensuring community-centered input and guidance.

Contributed by Susana Mendez, DVM PhD, Program Officer, National Institute of Allergy and Infectious Disease

DATA HARMONIZATION WORKING GROUP ANNOUNCEMENT

Alex Benns Named Co-Chair



We are pleased to announce that Alex Benns of Frontier Science has been invited to serve as a Co-Chair of the Data Harmonization Working Group (DHWG) on behalf of the RePORT International Coordinating Center. This important leadership role recognizes Alex's extensive experience in data collection, data curation, and data harmonization.

In his new role, Alex will work alongside fellow co-chairs, Dr. Stephany Duda (Vanderbilt University Medical Center) and

David Hom (Rutgers New Jersey Medical School) to organize working group activities and lead harmonization efforts working closely with DHWG members and RePORT country data teams. He will help to ensure that data collection is consistent with the RePORT Common Protocol, data transfers adhere to the standard data template, and data are complete and of high-quality. His deep understanding combined with the collaborative spirit he brings to this group make him ideal for this role.

Please join us in congratulating Alex on this well-deserved appointment!

NEW PUBLICATIONS

Oxidative Battles in Tuberculosis: Walking the Ferroptotic Tightrope.

Araújo-Pereira M, et al. *Trends in Immunology*. April 2025.

Treatment Outcomes of Pulmonary TB in Adults in Indonesia.

Sugiyono RI, et al. *IJTLD Open*. Mar 2025.

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Association of Altered Baseline Hematological Parameters with Adverse Tuberculosis Treatment Outcomes.

Pandiarajan NA, et al. *Pathogens*. Feb 2025.

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Immune, Metabolic, Anatomical, and Functional Features of People After Successful Tuberculosis Treatment: an exploratory analysis.

Webber T, et al. *MedRXiv*. Feb 2025.

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Screening for Asymptomatic
Tuberculosis among Adults with
Household Exposure to a Patient with
Pulmonary Tuberculosis.

Mendelsohn SC, et al. *MedRXiv*. Jan 2025.

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Coexistent Anemia Modulates Systemic Inflammation and Exacerbates Disease Severity and Adverse Treatment Outcomes in Tuberculosis.

Dasan B, et al. Front Tuberc. Jan 2025.

READ MORE

Predictive Markers of Incident
Tuberculosis in Close Contacts in
Brazil and India for the RePORT Brazil
and RePORT India Consortia.

Nogueira BMF, et al. *J Infect Dis*. Jan 2025.

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Nationwide Economic Analysis of Pulmonary Tuberculosis in the Brazilian Healthcare System Over Seven Years (2015-2022): a population-based study.

Barreto-Duarte B, et al. *Lancet Reg Health Am*. Oct 2024.

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