1. **PERSONAL DATA**

|  |  |
| --- | --- |
| Office Address**:** | Division of Allergy & Infectious Diseases 750 Republican Street Room F871, Box 358061Seattle, WA 98109 |
| Phone:  | (206) 543-6709 |
| Email:  | seshadri@uw.edu |
| Fax:  | (206) 616-4898 |

|  |  |
| --- | --- |
| Place of Birth:  | New York City, NY, USA |

 **2. EDUCATION**

|  |  |  |
| --- | --- | --- |
|   | 1993-1996 | B.S. (Applied Sciences in Engineering - Biomedical Engineering), *summa cum laude*, Rutgers University College of Engineering, Piscataway, NJ |
|   | 1996-2001 | M.D. (Medicine), *Alpha Omega Alpha*, UMDNJ - New Jersey Medical School, Newark, NJ |

 **3. POSTGRADUATE TRAINING**

|  |  |
| --- | --- |
| 1997 | NIH Summer Research Fellowship Program, Bethesda, MD |
| 1998-1999 | HHMI-NIH Research Scholars Program, Bethesda, MD |
| 2001-2004 | Internship and Residency, Internal Medicine, Duke University Medical Center, Durham NC |
| 2005-2006 | Clinical Fellow, Infectious Diseases, Massachusetts General Hospital, Boston, MA |
| 2006-2009 | Postdoctoral Research Fellow, Infectious Diseases, Brigham & Women’s Hospital, Boston MA |
| 2009-2010 | Senior Fellow, Infectious Diseases, University of Washington, Seattle WA |

1. **FACULTY POSITIONS HELD**

|  |  |  |
| --- | --- | --- |
|   | 2008-2009 | Instructor in Medicine, Harvard Medical School, Boston, MA |
|   | 2010-2011 | Acting Instructor/Senior Fellow, University of Washington, Seattle, WA |
|  | 2011-2013 | Acting Instructor, University of Washington, Seattle, WA |
|  | 2013-2019 | Assistant Professor, Department of Medicine, University of Washington, Seattle, WA |
|  | 2013- | Member, Center for Emerging and Re-emerging Infectious Diseases (CERID), University of Washington, Seattle, WA |
|  | 2014- | Affiliate Investigator, Vaccine and Infectious Disease Division, Fred Hutchinson Cancer Research Center, Seattle WA |
|  | 2017- | Adjunct Associate Professor, Department of Pathology, University of Washington, Seattle, WA |
|  | 2019- | Adjunct Associate Professor, Department of Global Health, University of Washington, Seattle, WA |
|  | 2019- | Associate Professor, Department of Medicine, University of Washington, Seattle, WA |

1. **HOSPITAL POSITIONS HELD**

|  |  |  |
| --- | --- | --- |
|   | 2008-2009 | Attending Physician, Massachusetts General Hospital, Boston, MA |
|  | 2010- | Attending Physician, University of Washington Medical Center, Seattle, WA |
|  | 2010- | Attending Physician, Harborview Medical Center, Seattle, WA |

**6. HONORS**

|  |  |  |
| --- | --- | --- |
|   | 1993-1996 | Rutgers College of Engineering Scholarship and Honors Program (Partial Tuition), Rutgers University College of Engineering |
|   | 1996-2001 | UMDNJ Dean's Academic Excellence Scholarship (Full Tuition), UMDNJ - New Jersey Medical School |
|   | 2000 | *Alpha Omega Alpha* (AOA) Medical Honors Society, UMDNJ - New Jersey Medical School |
|   | 2001 | Stanley S. Bergen, Jr., MD Medal of Excellence for Research and Academic Achievement, UMDNJ - New Jersey Medical School |
|   | 2003-2004 | Assistant Chief Resident, Durham VA Medical Center |
|   | 2008 | ICAAC ID Fellows Grant Program, Interscience Conference on Antimicrobial Agents and Chemotherapy |
|  | 2010 | Infectious Disease Society of Washington Fellow Research Award and Presentation |
|  | 2013 | University of Washington Chair of Medicine Scholars Award |
|  | 2014 | American Society of Clinical Investigation – Young Physician Scientist Award |
|  | 2016-2019 | Doris Duke Charitable Foundation – Clinical Scientist Development Award |

 **7. BOARD CERTIFICATION**

|  |  |  |
| --- | --- | --- |
|   | 2004-2014 | Diplomate, American Board of Internal Medicine – Internal Medicine |
|   | 2007- | Diplomate, American Board of Internal Medicine - Infectious Diseases (recertified 2017) |

 **8. LICENSURE**

|  |  |  |
| --- | --- | --- |
|   | 2005-2009 | Massachusetts Registered Certification |
|   | 2009- | Washington State Medical License |

**9. DIVERSITY, EQUITY, AND INCLUSION**

|  |  |  |
| --- | --- | --- |
|   | 2017- | Participating Lab, STEMPREP: A highly competitive, selective national program run by the Distance Learning Center (DLC) that aims to increase diversity in science, technology, engineering, math and medicine higher education programs and careers. My former mentees were admitted to competitive four-year universities (Caltech, UPitt, etc.) |
|  | 2020- | Founding Member, Tuberculosis (TB) Scholars Program: With seed funding from BMGF, I helped established the TB Scholars Program to provide a mentored research experience to under-represented minority students at UW. To date, the program has supported more than 20 students. In 2021, I obtained funding from the Firland Foundation to expand the program to local community colleges in Seattle as well as post-baccalaureates. My lab hosts students for each cycle of the program. My first scholar, Elizabeth Ramirez, was recently accepted to the incoming class of UW School of Medicine  |
|  | 2022- | Participating Lab, NIH PREP Program – The goal of this program is to bring underrepresented and disadvantaged students to UW to work in a lab for one year and facilitate their subsequent enrollment into graduate school in the biomedical sciences. My current mentee is planning to apply to MD PhD programs. |
|  | 2022- | Participating Lab, Rainier’s Scholar’s Program – cultivates the academic and leadership potential of underrepresented high school students of color through rigorous, transformative opportunities that increase college graduation rates and empower new generations of leaders. |

**10. PROFESSIONAL ORGANIZATIONS**

|  |  |  |
| --- | --- | --- |
|   | 2007- | Infectious Disease Society of America, Member |
|  | 2015- | Collaboration for TB Vaccine Discovery (CTVD), Bill and Melinda Gates Foundation, Member |
|  | 2018- | American Association of Immunology, Regular Member |

**11. TEACHING RESPONSIBILITIES**

|  |  |
| --- | --- |
|  | Guest Lectures |
|   | 2007-2008 | Patient-Doctor Year II - Introduction to Clinical Medicine |
|   | 2007-2008 | Immunology, Microbiology and Infectious Disease |
|  | 2014-2018 | Tuberculosis Diagnostics lecture to Lab Medicine residents |
|  | 2015 | HuBio 523 – Clinical Case Management Session 1 (Infection) |
|  | 2015 | Community Acquired Pneumonia – Harborview Resident Noon Conference |
|  | 2016-2018 | Invaders and Defenders – Small Group Session Leader |
|  | 2016-2018 | Tropical Medicine (GH 561) |
|  | 2017 | Department of Immunology Seminar Series (IMM 573) |
|  | 2018 | Department of Pathobiology Seminar Series (PABIO 580) |
|  | 2018-2019 | TB/HIV Symposium, TB Research and Training Center |
|  | 2020 | UW-Hutch Rigor, Reproducibility, and Transparency Series |
|  | 2021 | Immune Correlates of Protection Against COVID-19 (ID Conference) |
|  | 2021 | Novel Vaccine Strategies for HIV, TB, and Malaria (CONJ539) |
|  | 2021- | Back to the Future with BCG - Advanced TB Research Training Course, TB Research and Training Center (annual) |
|  | Mentorship |  |
|  |   | Clinical Fellows and Post-Doctoral Fellows in the Laboratory |
|  | 2011 | Emily Ford, MD, Internal Medicine Resident (research rotation) |
|  | 2014 | Jason Simmons, MD PhD, Internal Medicine Resident (research rotation) |
|  | 2017- | Angela X. Zhou, MD PhD, Internal Medicine, Post-Doctoral Fellow  |
|  | 2018-2019 | Soumik Barman, PhD, Post-Doctoral Fellow |
|  | 2020- | Mohau Steven Makatsa, PhD, Post-Doctoral Fellow |
|  | 2021- | Nathan Kieswetter, PhD, Post-Doctoral Fellow |
|  | 2021- | Deborah Cross, PhD, Post-Doctoral Fellow, **2023 AAI Intersect Fellowship** |
|  | 2022- | Megan Files, PhD, Post-Doctoral Fellow |
|  |  |  |
|  |  | Graduate (PhD) Students in the Laboratory |
|  | 2016-2020 | Charlotte James, UW Molecular Medicine & Mechanisms of Disease PhD Program, Department of Pathology (PhD dissertation advisor). **ITHS TL1 Recipient** |
|  | 2018 | Harman Mahli, UW Molecular Medicine & Mechanisms of Disease PhD Program, Department of Pathology (rotation) |
|  | 2019 | Natasha Bourgeois, UW Pathobiology Program, Department of Global Health (rotation) |
|  | 2019-2021 | Anna M. Furuta, UW Pathobiology Program, Department of Global Health (rotation) |
|  | 2020- | Megan D. Maerz, UW Molecular Medicine & Mechanisms of Disease PhD Program, Department of Pathology (PhD dissertation advisor) |
|  | 2021- | Cassandra Rose Winter, UW Molecular Medicine & Mechanisms of Disease PhD Program, Department of Pathology (PhD dissertation advisor) |
|  | 2022- | Victoria Tappen, UW Molecular Medicine & Mechanisms of Disease PhD Program, Department of Pathology (PhD dissertation advisor) |
|  |  |  |
|  |  | Medical Students in the Laboratory |
|  | 2014 | Gregory Olson, University of Washington MD/PhD Program (rotation) |
|  | 2018 | Paula Marsland, MS2 (UW Medical Student Research Training Program) |
|  |  |  |
|  |  | Undergraduates in the Laboratory |
|  | 2011-2013 | Meera Shenoy, University of Washington, **Mary Gates Research Scholar** |
|  | 2013-2015 | Tiffany Truong, University of Washington |
|  | 2014-2017 | Lalita Narayanan, University of Washington |
|  | 2018 | Jiaqi Liu, University of Washington |
|  | 2019-2020 | Natalie Nicole Erjavec, University of Washington |
|  | 2020-2021 | Teresa Rodriguez, University of Washington, **Mary Gates Research Scholar** |
|  | 2020-2022 | Elizabeth Ramirez, University of Washington, **Mary Gates Research Scholar** |
|  | 2021-2022 | Quang Thong, Seattle Central College, TB Scholars Program |
|  | 2022-2023 | Patzy Villagrana, University of Washington – Tacoma (PREP Program) |
|  |  |  |
|  |  | High School Students in the Laboratory |
|  | 2017-2018 | Toussaint Pegues, STEM-PREP Summer Program |
|  | 2019 | Gloria Kehinde, STEM-PREP Summer Program |
|  | 2022 | Samuel Dagwami, Rainier’s Scholars Summer Program |
|  |  |  |
|  |  | Other Mentoring Roles |
|  | 2015-2017 | Pulmonary Fellow Mentorship Committee, Andrew Graustein MD, Division of Pulmonary & Critical Care Medicine |
|  | 2018-2022 | PhD Thesis Committee and Reading Committee Member. Graduate Student Representative (GSR), Justin Ulrich-Lewis – Department of Microbiology |
|  | 2019- | ID Fellow Mentorship Committee, Karolina Maciag MD PhD, Division of Allergy & Infectious Diseases |
|  | 2019-2020 | PhD Thesis Committee and Graduate Student Representative (GSR), Sam Berry – Department of Chemistry |
|  | 2019-2020 | PhD Thesis Committee and Reading Committee Member, Blair Armistead – Department of Pathobiology |
|  | 2019-2020 | PhD Reading Committee, Agano Kiravu – University of Cape Town, South Africa |
|  | 2020 | PhD Thesis Committee Member and Graduate Student Representative (GSR), Branden Olson – Department of Statistics |
|  | 2020-2021 | MS Thesis Committee and Reading Committee Member, Anna Furuta – Department of Pathobiology |
|  | 2020-2021 | PhD Thesis Committee and Reading Committee Member, Brianna Traxinger – Department of Pathobiology |
|  | 2021 | PhD Reading Committee, Eloise Kroon – Stellenbosch University, South Africa |
|  | 2021- | PhD Thesis Committee Member, Felicia Watson – Department of Pathobiology |
|  | 2021- | PhD Thesis Committee Member and Graduate Student Representative (GSR), Elya Shamskou – Department of Immunology |
|  | 2022- | PhD Reading Committee, Rofhiwa Nesamari – University of Cape Town, South Africa |
|  | 2022- | PhD Thesis Committee Member, Kim Foster – Department of Immunology |
|  | 2022- | PhD Thesis Committee Member, Irene Cruz Talavera, Department of Pathobiology |
|  | 2022- | PhD Thesis Committee Member, Eleanor Lamont, Department of Microbiology |
|  | 2022- | ID Fellow Mentorship Committee, Sarah (Sally) Baker, Department of Medicine |
|  | 2022- | ID Fellow Mentorship Committee, Talia Himmelfarb, Department of Medicine |
|  | 2023 | Visiting Scientist, Naomi Okugbeni (Stellenbosch University, South Africa) |

**12. EDITORIAL RESPONSIBILITIES**

|  |  |  |
| --- | --- | --- |
|  | 2020-2021 | Editor, Frontiers in Immunology Research Topic – “Exploring Immune Variability in Susceptibility to Tuberculosis Infection in Humans”  |
|   | Ad hoc - Journals | Ad hoc reviewer for several journals (e.g. Nature Immunology, Nature Communications, PNAS, PLoS Pathogens, Journal of Clinical Investigation, Journal of Infectious Diseases, etc.) Full list available from https://www.webofscience.com/wos/author/record/AFL-0960-2022 |
|  | Ad hoc - Grants | Ad hoc reviewer for U.K. Wellcome Trust and Medical Research Council, South African Medical Research Council, UW Royalty Research and ITHS Pilot Grants |

**13. SPECIAL NATIONAL RESPONSIBILITIES:**

|  |  |  |
| --- | --- | --- |
|   | 2018-2021 | Co-chair, Donor-unrestricted T cells (DURT) Working Group, Collaboration for TB Vaccine Discovery (CTVD), Bill & Melinda Gates Foundation. |
|  |  | * Assembled leading academics to consider how DURTs could be leveraged to develop new TB vaccines.
* Coordinated quarterly Zoom meetings as well as annual in-person meeting at BMGF.
 |
|  | 2020- | Ad hoc Member, Doris Duke Charitable Foundation Study Section: Physician Scientist Fellowship (annual) |
|  | 2021 | Ad hoc Member, Doris Duke Charitable Foundation Study Section: Clinical Scientist Development Award |
|  | 2021- | Ad hoc Member, NIH Study Section: Host Interactions with Bacterial Pathogens (typically 1-2 cycles/year. Application for Standing Membership in process) |
|  | 2022- | Cross-Network (ACGT, HVTN, IMPAACT) TB Vaccine Working Group Steering Committee |
|  |  | * Coordinate solicitation, review, and approval of concept proposals focused on new vaccines for TB across NIH HIV networks (AIDS Clinical Trials Group – ACTG, HIV Vaccine Trials Network – HVTN, and International Maternal Pediatric Adolescent AIDS Clinical Trials - IMPAACT)
 |

**14. SPECIAL LOCAL RESPONSIBILITIES**

|  |  |  |
| --- | --- | --- |
|   | 2006 | Infectious Disease Fellowship Review Committee, Massachusetts General Hospital |
|  | 2007-2008 | Antibiotic PocketCard Review Committee, Brigham & Women’s Hospital |
|  | 2014-2019 | Lead Contact and Coordinator, CERID Lunch & Learn Seminar Series |
|  |  | * Scheduled biweekly seminar series that included core and affiliate faculty as well as trainees and external speakers with the goal of increasing communication and collaboration.
 |
|  | 2015 | Member, Allergy and Infectious Diseases Website Task Group |
|  | 2015 | Member, Allergy and Infectious Diseases Faculty Search Committee  |
|  |  | * Reviewed applications for Assistant Professor, interviewed candidates, and made recommendations to Dept. Chair
 |
|  | 2015-2017 | Planning Committee, Mycobacterial Interest Group (Monthly Seminar) and TB Symposium (Annual) |
|  |  | * Scheduled monthly seminar series that included core TB faculty as well as trainees with the goal of increasing communication and collaboration.
* Planned an annual in-person symposium that included an external speaker, trainee awards and presentation, as well as invited talks from local faculty.
* These activities provided the foundation for establishing the TRTC in 2017 and expanding to SEATRAC in 2022 (details below)
 |
|  | 2016-2017 | Member, Allergy and Infectious Diseases Division Chief Search Committee |
|  |  | * Reviewed applications for Division Chief, interviewed candidates, and made recommendations to the Dean
 |
|  | 2017-2019 | Member, Harborview Endocarditis Working Group |
|  |  | * Facilitated a new clinical care pathway for timely evaluation of patients with endocarditis at Harborview Medical Center that might require emergent surgical evaluation at University of Washington Medical Center.
* Contributed to a retrospective evaluation of mortality among people who do and do not inject drugs at our institution ([PMID: 35493129](https://academic.oup.com/ofid/article/9/5/ofac150/6555679?login=true))
 |
|  | 2017-2019 | Member, Molecular Medicine and Mechanisms of Disease (M3D) PhD Program Admissions Committee |
|  |  | * Reviewed applications, interviewed candidates, and helped make final selections for acceptance, waitlist, or rejection.
 |
|  | 2018 | Member, Fred Hutchinson Cancer Research Center Physician Scientist Faculty Search Committee |
|  |  | * Reviewed applications for Assistant Member, interviewed candidates, and made recommendations to the President
 |
|  | 2017-2022 | Associate Director, Tuberculosis Research and Training Center (TRTC) |
|  |  | * Initiation and oversight of key programs to foster collaboration among TB faculty as well as career development of trainees (monthly seminar series, annual symposium, travel awards, visiting faculty, etc)
* Represent activities to Scientific Advisory Board and funders (UW, BMGF, Firland Foundation)
 |
|  | 2022 | Chair, Allergy and Infectious Diseases Faculty Search Committee |
|  |  | * Oversee a national search for Assistant Professor in TB transmission and modeling. Solicit and review applications, arrange meetings with committee members, interview candidates, and make final recommendations to the Division Chief.
 |
|  | 2022- | Director, Seattle TB Research Advancement Center (SEATRAC) |
|  |  | * Leverage NIH funding to expand activities beyond TRTC to catalyze new avenues of TB research and support new and early-stage investigators in TB.
* Assume primary responsibility for strategic planning, managing operational cores, and reporting to NIH and SAB.
* Fiscal management of $5.3 million in NIH direct costs as well as nearly $1 million in institutional commitments from UW, Seattle Children’s Hospital, and Fred Hutch Cancer Center.
 |

**15. RESEARCH FUNDING** (Total Costs are listed unless stated otherwise)

Current

No Grant Number (Seshadri) 3/1/2023 – 2/28/2026

Open Philanthropy

**A Tonsil Organoid Model of Human Tuberculosis**

The goal of this project is to develop a tonsil organoid model of human tuberculosis granulomas.

Role: Principal Investigator

75N93019C00071 (Fortune) 9/30/2019 - 3/28/2026

NIH/NIAID

**Immune Mechanisms of Protection Against *Mycobacterium tuberculosis***

The goal of this multi-institution program is to mechanistically dissect immune control of M.tb infection through iterative studies of human cohorts, non-human primates (NHPs), and small animal models.

Role: PI of sub-contract

R01 AI146072 (Seshadri) 6/1/2020 – 5/31/2025

NIH/NIAID

**The Role of Lipid-specific T cells in Mediating Protection Against *M. tuberculosis*.**

The goal of this project is to develop tools to study lipid-specific T cells in small and large animal models and test the hypothesis that these T cells provide protective immunity against M.tb.

Role: Principal Investigator

R01 AI142670  (Powis) 12/01/2021 – 01/30/2024

NIH/NIAID

**Immune correlates of tuberculosis and non-tuberculosis infectious morbidity in Southern African HIV-exposed, uninfected infants**

The goal of this project is to elucidate BCG vaccine-induced immune correlates of protection against TB and non-TB infectious morbidity in HIV-exposed uninfected (HEU) and HIV-unexposed uninfected infants.

Role: PI of sub-contract

P30 AI168034 (Seshadri) 03/01/2022 – 02/28/2027

NIH/NIAID

**Seattle Tuberculosis Research Advancement Center (SEATRAC)**

This center grant aims to facilitate a decrease in the global TB burden by enhancing training and multi-disciplinary research among Seattle-based academic and non-profit institutions.

Role: Principal Investigator

20210009 (Seshadri) 07/01/2021 – 08/01/2023 (NCE)

Firland Foundation

**University of Washington Tuberculosis Research and Training Center TB Scholars Program (TBSP)**

The goal of this program is to provide a funded opportunity in biomedical research for undergraduate and post-

baccalaureate students from historically underrepresented backgrounds in the biomedical sciences.

Role: Principal Investigator

Pending

R01 AI172912 (Seshadri) 07/01/2023 – 06/30/2028

NIH/NIAID

**T cell mechanisms of ‘resistance’ to *M. tuberculosis* infection in humans**

The goal of this project is to identify T cell antigens associated with ‘resistance’ to M.tb infection that can be

immediately leveraged into next generation vaccine candidates, including mRNA vaccines.

Role: Principal Investigator

Completed

R01 AI125189 (Seshadri) 07/07/2016 – 06/30/2022 (NCE)

NIH/NIAID $3,071,857

**Qualification of Assays to Measure Human T-cell Responses Against Mycobacterial Lipid Antigens**

The goal of this project is to optimize and qualify two assays to measure lipid-specific T-cell responses and use BCG as a model system to study the effect of vaccination on T-cell responses against mycobacterial lipids.

Role: Principal Investigator

2020040 (Seshadri) 5/1/2020 – 4/30/2021

Doris Duke Charitable Foundation $16,500

**Facilitating Reproducible Research in Flow Cytometry via Data Sharing**

The goal of this research data sharing award is to provide support for sharing flow cytometry files from published manusctipts to facilitate reproducible immunology research.

Role: Principal Investigator

OPP1190451 (Seshadri) 04/01/18 – 06/01/20 (NCE)

Bill and Melinda Gates Foundation $175,000

**Immune Monitoring of CD1-restricted T cell responses in NHP TB models**

The goal of this project is to develop and validate CD1 tetramers for non-human primates (NHP) and study T cell responses to mycobacterial lipids in NHP after vaccination or experimental infection with mycobacteria.

Role: Principal Investigator

2016103 (Seshadri) 07/01/2016 – 06/30/2020 (NCE)

Doris Duke Charitable Foundation $495,000

**T cell Memory to Mycobacterial Lipids**

The goal of this proposal is to determine the functional characteristics of lipid-specific T cells that express surface memory markers using blood samples from M.tb-infected and BCG-vaccinated subjects.

Role: Principal Investigator

R01 AI124348 (Boom, Hawn, Stein) 03/01/2016 – 02/28/2021

NIH/NIAID $11,065,881

**Resistance to MTB infection in HIV infected individuals in Uganda and S. Africa**

This goal of this project is to examine immune mechanisms of resistance to *Mycobacterium tuberculosis* infection among highly-exposed HIV-infected adults.

Role: Co-investigator

OPP1151836 (Hawn) 11/31/2016 – 10/31/2019 (NCE)

Bill and Melinda Gates Foundation $2,000,000

**Mechanistic Analysis of Determinants of Resistance to *M. tuberculosis* Infection**

The goal of this project is to determine the cellular and molecular mechanisms of resistance to M.tb infection in humans.

Role: Co-investigator

NIH UM1 AI068618 (McElrath) 12/1/2016 – 11/30/2017

**Title: HVTN 602** $103,764

The goal of this Phase I clinical trial is to evaluate the safety and immunogenicity of two novel TB vaccines (H4 and H56) in comparison to BCG.  We will develop and implement a flow cytometric method to evaluate whether lipid-specific T cells are induced by BCG vaccination.

Role: PI of sub-contract

5U01 AI115642 (Boom) 01/01/2015 – 12/31/2019

NIH/NIAID $1,044,004

**Natural Resistance to *Mycobacterium tuberculosis* infection**

This goal of this project is to examine how two genes (COLEC10 and ABL) regulate resistance to *Mycobacterium tuberculosis* infection.

Role: Co-investigator

A96803 (Seshadri) 3/1/2015 – 2/28/2016

UW Royalty Research Fund $39,996

**Glycolipid-specific T cells During Tuberculosis Treatment**

The goals of this project are to study glycolipid-specific T-cell responses in South African adults who undergo treatment for tuberculosis infection.

Role: Principal Investigator

OPP1109001 (Hawn) 10/15/2014 – 2/28/2016

Bill and Melinda Gates Foundation $956,049

**Host Determinants of Resistance to TB Infection**

The goal of this project is to identify individuals with long-term resistance to *Mycobacterium tuberculosis* infection and to collect blood samples from them for immunologic profiling.

Role: Co-investigator

No Grant Number (Seshadri) 7/1/2013 – 6/30/2014

The Firland Foundation $20,000

**Genetic Variation in Human MR1 and Tuberculosis**

The goals of this project are to study the genetics of MR1 expression and function and its association with tuberculosis.

Role: Principal Investigator

K08 AI089938 (Seshadri) 7/1/2010 - 6/30/2015

NIH/NIAID $635,514

**The Role of CD1a in Protecting Against Human Tuberculosis**

The goals of this project are to study how CD1a gene expression is controlled and how genetic variation in CD1a between people affects its function. We will also examine whether CD1a influences the immune response to vaccination and protection from tuberculosis.

Role: Principal Investigator

No Grant Number (Seshadri) 7/1/2010 – 6/30/2012 (NCE)

The Firland Foundation $20,000

**Immunity to Mycobacterial Lipids in BCG-Vaccinated South African Infants**

The goals of this project are to evaluate the association between polymorphisms in CD1 genes with clinical and immunologic outcomes after BCG vaccination. This grant does not overlap with K08 proposed research.

Role: Principal Investigator

The Irvington Institute Fellowship Program (Seshadri) 7/1/2007 – 6/30/2010

The Cancer Research Institute $135,000

**T-cell Responses to *M. tuberculosis* Associated Lipid Antigens**

The goals of this project are to evaluate T-cell responses to synthetic lipid antigens derived from *M. tuberculosis* in patients with active tuberculosis, history of BCG vaccination, history of positive PPD, or healthy controls.

Role: Principal Investigator

T32 AI007061 (Kasper) 7/1/2006 – 6/30/2007

NIH/NIAID $49,500

**Human T-Cell Responses to *M. tuberculosis* Associated Lipid Antigens**

The goals of this project are to evaluate in vitro T-cell responses to synthetic lipid antigens derived from *M. tuberculosis.*

Role: Post-doctoral fellow

No Grant Number (Seshadri) 7/1//2003 – 6/30/2004

American Foundation for AIDS Research $5000

**The Diagnosis of Tuberculosis in HIV Co-infected Patients**

The goals of this project are to evaluate in-vitro methods of tuberculosis diagnosis (e.g. QuantiFERON-TB GOLD®) among HIV co-infected patients in Tanzania, Africa.

Role: Principal Investigator

**16. BIBLIOGRAPHY** **(please asterisk (\*) the five most significant publications)**

 A. Publications in Peer-reviewed Journals

1. **Seshadri C**, Huckabee C, Simone N, Emmert-Buck MR, Liotta LA, Bonner RF. “Laser Capture Microdissection Facility Brings Molecular Pathology to the NIH Community.” NIH Catalyst : Hot Methods Clinic. 1997. Vol. 5, No. 6. [original work, peer reviewed]
2. **Seshadri C**., Uiso L.O., Ostermann J., Diefenthal H., Shao H.J., Chu H.Y., Asmuth D.A., Thielman N.M., Bartlett J.A., Crump J.A. “Low Sensitivity of T-Cell Based Detection of Tuberculosis Among HIV Co-Infected Tanzanian Inpatients” East African Medical Journal 2008;85(9):442-9. [original work, peer reviewed]
3. ter Horst B, **Seshadri C**, Feringa BL, Moody DB, Minnaard AJ. “Asymmetric Synthesis and Structure Elucidation of a Glycerophospholipid from M. tuberculosis” Journal of Lipid Research 2010 May;51(5):1017-22. [original work, peer reviewed]
4. Drage MG, Tsai HC, Pecora ND, Cheng TY, Arida AR, Rojas RE, **Seshadri C**, Moody DB, Boom WH, Sacchettini JC, Harding CV. *Mycobacterium tuberculosis* lipoprotein LprG (Rv1411c) is a glycolipid carrier and delivers triacylated glycolipids to Toll-like receptor 2. Nature Structural and Molecular Biology. 2010 Sep;17(9):1088-95. [original work, peer reviewed]
5. Kasmar AG, van Rhijn I, Cheng TY, Turner M, **Seshadri C**, Schiefner A, Kalathur RC, Annand JW, de Jong A, Shires J, Leon L, Brenner M, Wilson IA, Altman JD, Moody DB. CD1b tetramers bind αβ T cell receptors to identify a mycobacterial glycolipid-reactive T cell repertoire in humans. Journal of Experimental Medicine. 2011 Aug 29;208(9):1741-7. [original work, peer reviewed]
6. **Seshadri C**, Turner MT, Lewinsohn DM, Moody DB, Van Rhijn I. Lipoproteins are Major Targets of the Polyclonal Human T Cell Response to Mycobacterium tuberculosis. Journal of Immunology. 2013 Jan 1; 190(1):278-84. [original work, peer reviewed]
7. **\*Seshadri C**, Shenoy M, Wells RD, Hensley T, Nissen EA, McElrath MJ, Cheng TY, Moody DB, Hawn TR. Human CD1a-deficiency is Common and Genetically Regulated. Journal of Immunology. 2013 Aug 15;191(4):1586-93. PMCID: PMC3748949 [original work, peer reviewed]
8. **Seshadri C**, Nguyen TTH, Yen NTB, Bang ND, Chau TTH, Thwaites GE, Dunstan SJ, Hawn TR. A Polymorphism in Human CD1A is Associated with Susceptibility to Tuberculosis. Genes and Immunity. 2014 Apr;15(3):195-8. PMCID: PMC3998877 [original work, peer reviewed]
9. Lin L, Finak G, Ushey K, **Seshadri C**, Hawn TR, Frahm N, Scriba TJ, Mahomed H, Hanekom W, Bart PA, Pantaleo G, Tomaras G, Rerks-Hgarm S, Kaewkungwal J, Nitayanphan S, Pitisuttithum P, Michael NL, Kim JH, Robb ML, O’Connell RJ, Karasavvas N, Gilbert P, DeRosa S,13, McElrath MJ, Gottardo R. Combinatorial Polyfunctionality Analysis of Antigen-Specific T-cell Subsets Identifies Novel Cellular Subsets Correlated with Clinical Outcomes. Nature Biotechnology, 2015; 33(6):610-6. PMCID: PMC4569006. [original work, peer reviewed]
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12. **Seshadri C**, Lin L, Scriba TJ, Peterson G, Freidrich D, Frahm N, DeRosa SC, Moody DB, Prandi J, Gilleron M, Mahomed H, Jiang W, Finak G, Hanekom WA, Gottardo R, McElrath MJ, Hawn TR. T-cell responses against mycobacterial lipids and proteins are poorly correlated in South African adolescents. Journal of Immunology, 2015 Nov 15;195(10):4595-603. PMCID: PMC4637215 [original work, peer reviewed]
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14. **Seshadri C**, Sedaghat N, Campo M, Peterson G, Wells RD, Olson GS, Sherman DR, Stein CM, Mayanja-Kizza H, Shojaie A, Boom WH, Hawn TR; Tuberculosis Research Unit (TBRU). Transcriptional networks are associated with resistance to Mycobacterium tuberculosis infection. PLoS ONE. 2017 Apr 17;12(4):e0175844. PMCID: PMC5393882. [original work, peer reviewed]
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16. Layton ED, Yu KKQ, Smith MT, Scriba TJ, De Rosa SC, **Seshadri C.** Validation of a CD1b tetramer assay for tuberculosis vaccine and natural history studies. Journal of Immunological Methods 2018. Jul;458:44-52. [original work, peer reviewed]
17. Dewitt WS, Yu KKQ, Wilburn DB, Sherwood A, Vignali M, Day CL, Scriba TJ, Robins HS, Swanson W, Emerson RO, Bradley P, **Seshadri C.**.  A diverse lipid antigen-specific T-cell receptor repertoire is clonally expanded during active tuberculosis. Journal of Immunology Aug 1;201(3):888-896. PMCID: PMC6057832 [original work, peer reviewed]
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20. \*Lu LL, Smith MT, Yu KKQ, Luedemann C, Suscovich TJ, Grace PS, Cain A, Yu WH, McKitrick T, Lauffenburger D, Cummings RD, Mayanja-Kizza H, Hawn TR, Boom WH, Stein CM, Fortune SM, **Seshadri C**\*, Alter G\*. IFN-γ independent immune markers of *M. tuberculosis* exposure. Nature Medicine 2019 Jun;25(6):977-987. PMCID: PMC6559862 \*co-senior authors [original work, peer reviewed]
21. \*Joosten SA, Ottenhoff THM, Lewinsohn DM, Hoft D, Moody DB, **Seshadri C**. Harnessing Donor-Unrestricted T cells for New Vaccines Against Tuberculosis. Vaccine 2019 May 21;37(23):3022-3030. PMCID: PMC6525272 [original work, peer reviewed]
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23. Lalvani A, **Seshadri C**. Understanding How BCG Vaccine Protects Against *Mycobacterium* tuberculosis Infection: Lessons From Household Contact Studies. Journal of Infectious Diseases. 2019 Jul 12. PMID: 31298279 [editorial commentary]
24. Dropulic LK, Oestreich MC, Pietz HL, Laing KJ, Hunsberger S, Lumbard K, Garabedian D, Turk SP, Chen A, Hornung RL, Seshadri C, Smith MT, Hosken NA, Phogat S, Chang LJ, Koelle DM, Wang K, Cohen JI. A Randomized, Double-Blinded, Placebo-Controlled, Phase 1 Study of a Replication-Defective Herpes Simplex Virus (HSV) Type 2 Vaccine, HSV529, in Adults With or Without HSV Infection. Journal of Infectious Diseases. 2019 Aug 9;220(6):990-1000. PMCID: PMC6688060. [original work, peer reviewed]
25. James CA, **Seshadri C**. T cell responses to mycobacterial glycolipids: On the spectrum of “innateness” Frontiers in Immunology 2020 Feb 11;11:170; PMCID: PMC7026021 [original work, peer reviewer]
26. Berry SB, Gower MS, Su X, **Seshadri C**, Theberge AB. A Modular Microscale Granuloma Model for Immune-Microenvironment Signaling Studies *in vitro*. Frontiers in Bioengineering & Biotechnology. 2020 Aug 18;8:931; PMCID: PMC7461927 [original work, peer reviewed].
27. Yu KK, Fischinger S, Smith MT, Atyeo C, Cizmeci D, Wolf CR, Layton ED, Logue JK, Aguilar MS, Shuey K, Loos C, Yu J, Franko N, Choi RY, Wald A, Barouch DH, Koelle DM, Lauffenburger D, Chu HY, Alter G, **Seshadri C**. Comorbid illnesses are associated with altered adaptive immune responses to SARS-CoV-2. JCI Insight. 2021 Mar 22;6(6). PMCID: PMC8026190. [original work, peer reviewed]
28. \*Layton ED, Barman S, Wilburn DB, Yu KKQ, Smith MT, Altman JD, Scriba TJ, Tahiri N, Minnaard AJ, Roederer M, Seder RA, Darrah PA, **Seshadri C**. T Cells Specific for a Mycobacterial Glycolipid Expand after Intravenous Bacillus Calmette-Guérin Vaccination. Journal of Immunology. 2021 Mar 15;206(6):1240-1250. PMCID: PMC7939042. [original work, peer reviewed]
29. Simmons JD, Van PT, Stein CM, Chihota V, Ntshiqa T, Maenetje P, Peterson GJ, Reynolds A, Benchek P, Velen K, Fielding KL, Grant AD, Graustein AD, Nguyen FK, **Seshadri C**, Gottardo R, Mayanja-Kizza H, Wallis RS, Churchyard G, Boom WH, Hawn TR. Monocyte metabolic transcriptional programs associate with resistance to tuberculin skin test/interferon-γ release assay conversion. J Clin Invest. 2021 Jul 15;131(14). PMCID: PMC8279582. [original work, peer reviewed]
30. Zhou AX, Scriba TJ, Day CL, Hagge DA, **Seshadri C**. A simple assay to quantify mycobacterial lipid antigen-specific T cell receptors in human tissues and blood. PLoS Negl Trop Dis. 2021 Dec 16;15(12). PMCID: PMC8717985. [original work, peer reviewed]
31. \*James CA, Xu Y, Aguilar MS, Jing L, Layton ED, Gilleron M, Minnaard AJ, Scriba TJ, Day CL, Warren EH, Koelle DM, **Seshadri C**. CD4 and CD8 co-receptors modulate functional avidity of CD1b-restricted T cells. Nature Communications. 2022 Jan 10;13(1):78. PMCID: PMC8748927. [original work, peer reviewed]
32. **Seshadri C**, Sutherland JS, Lindestam Arlehamn CS, Burel JG. Editorial: Exploring Immune Variability in Susceptibility to Tuberculosis Infection in Humans. Frontiers in Immunology. 2022 Jan 7;12:830920. PMCID: PMC8777100. [editorial commentary]
33. Gela A, Murphy M, Rodo M, Hadley K, Hanekom WA, Boom WH, Johnson JL, Hoft DF, Joosten SA, Ottenhoff THM, Suliman S, Moody DB, Lewinsohn DM, Hatherill M, **Seshadri C**, Nemes E, Scriba TJ, Briel L, Veldtsman H, Khomba N, Pienaar B, Africa H, Steyn M; Delayed BCG Study Team. Effects of BCG vaccination on donor unrestricted T cells in two prospective cohort studies. EBioMedicine. 2022 Feb;76:103839. PMCID: PMC8842032 [original work, peer reviewed]
34. James CA, Yu KKQ, Mayer-Blackwell K, Fiore-Gartland A, Smith MT, Layton ED, Johnson JL, Hanekom WA, Scriba TJ, **Seshadri C**. “Durable expansion of TCR-δ meta-clonotypes after BCG revaccination in humans.” Frontiers in Immunology. 2022 Mar 30;13:834757. PMCID: PMC9005636 [original work, peer reviewed]
35. Corcorran MA, Stewart J, Lan K, Gupta A, Glick SN, **Seshadri C**, Koomalsingh KJ, Gibbons EF, Harrington RD, Dhanireddy S, Kim HN. Correlates of 90-Day Mortality Among People Who Do and Do Not Inject Drugs With Infective Endocarditis in Seattle, Washington. Open Forum Infect Dis. 2022 Mar 29;9(5):ofac150. PMCID: PMC9045945. [original work, peer reviewed]
36. Dawkins BA, Garman L, Cejda N, Pezant N, Rasmussen A, Rybicki BA, Levin AM, Benchek P, **Seshadri C**, Mayanja-Kizza H, Iannuzzi MC, Stein CM, Montgomery CG. Novel HLA associations with outcomes of Mycobacterium tuberculosis exposure and sarcoidosis in individuals of African ancestry using nearest-neighbor feature selection. Genetic Epidemiology. 2022 Jun 14. doi: 10.1002/gepi.22490. Online ahead of print. [original work, peer reviewed].
37. Phan J, Layton E, Yu KKQ, Aguilar M, Golez I, Franko N, Logue, J, Gale M, Chu HY\*, **Seshadri C**\* Cytotoxic T cells targeting spike glycoprotein are associated with hybrid immunity to SARS-CoV-2. \*co-senior authors. Journal of Immunology, in press. [original work, peer reviewed]

B. Collaborative Authorship – NONE

C. MedEDPortal or Other Peer-Reviewed Curricula - NONE

D. Book Chapters - NONE

E. Published Books, Video, Software, etc. – NONE

F. Other Publications

1. [“Speaking as a dad and a doctor, we should rethink coronavirus school closures.”](https://www.seattletimes.com/opinion/speaking-as-a-dad-and-a-doctor-we-should-rethink-coronavirus-school-closures/) Special Op-Ed to the Seattle Times. March 24th, 2020

G. Manuscripts Submitted

1. Cross DL, Layton ED, Yu KKQ, Smith MT, Aguilar MS, Li S, Mayanja-Kizza H, Stein CM, Boom WH, Hawn TR, Bradley P, Newell E, **Seshadri C**. MR1-restricted T cell clonotypes are associated with ‘resistance’ to *M. tuberculosis* infection. (in revision, Available on [bioRxiv](https://www.biorxiv.org/content/10.1101/2022.10.12.511825v1))
2. Davies LRL, Smith MT, Cizmeci D, Fischinger S, Lee JSL, Lu L, Layton ED, Stein CM, Boom WH, Hawn TR, Fortune SM, Wallis RS, Churchyard G, Alter G\*, **Seshadri C**\*. IFN-γ independent markers of *Mycobacterium tuberculosis* exposure among South African gold miners. \*co-senior authors (in revision)
3. Morgun E, Zhu J, Bobbala S, Aguilar MS, Almunif A, Yuk SA, Wang J, Conner K, Cao L, **Seshadri C**, Scott EA, Wang CR. Vaccination with mycobacterial lipid loaded nanoparticle leads to lipid antigen persistence and memory differentiation of antigen-specific T cells. (under review, Available on [bioRxiv](https://www.biorxiv.org/content/10.1101/2023.03.07.531489v1))
4. Iwase SC, Edlefsen PT, Bhebhe L, Mutsumi K, Moyo S, Happel AU, Shao D, Mmasa N, Schenkel S, Gasper MA, Dubois M, Files M, **Seshadri C**, Duffy F, Aitchison J, Netea MG, Jao J, Cameron DW, Gray CM, Jaspan HB, Powis KM. No difference in prevalence of TB infection among infants by in utero HIV exposure status in two Southern African cohorts. (in revision)
5. Chang M, Venkatasubramaniam S, Barrett H, Urdahl KB, Weigel KM, Cangelosi, GA, Smith N, Shah JA, **Seshadri C**, Kublin JG, Murphy SC. “Molecular detection of pre-ribosomal RNAs of *Mycobacterium bovis* Bacille Calmette-Guérin and *Mycobacterium tuberculosis* to enhance pre-clinical tuberculosis drug and vaccine development. (submitted)
6. Sun M, Phan JM, Kieswetter NS, Yu KKQ, Smith MT, Huang H, Gupta S, Obermoser G, Krishnan A, Gupta N, Acs P, Ghanizada M, Chiou S, Khatri P, Boom WH, Hawn TR, Stein CM, Mayanja-Kizza H, Davis MM, **Seshadri C**. T cell signatures of bacterial clearance among *M. tuberculosis* ‘resisters.’ (submitted)

H. Abstracts (Excluding work that is now published)

1. Meng S, Yu KKQ, Smith MT, Huang H, Chiou SH, Boom WH, Hawn TR, Stein CM, Mayaja-Kizza H, Davis MM, **Seshadri C**. “T cell signatures of bacterial clearance among *M. tuberculosis* ‘resisters.’ Keystone Symposium: A Research Reboot of Tuberculosis, August 1-4, 2022. Breckenridge, CO USA.
2. Makatsa S, Kus A, Wiedeman A, Seder RA, Roederer M, Flynn J, Darrah PA, Long SA, **Seshadri C**. “Mass cytometry reveals diverse cellular and functional phenotypes in bronchoalveolar lavage after intravenous BCG vaccination.” Keystone Symposium: A Research Reboot of Tuberculosis, August 1-4, 2022. Breckenridge, CO USA.
3. Maerz MD, Bishop E, Scriba TJ, **Seshadri C**. “Vδ1 T cells show signatures of activation and cytotoxic function in BCG-vaccinated infants.” Keystone Symposium: A Research Reboot of Tuberculosis, August 1-4, 2022. Breckenridge, CO USA.
4. Cross DL, Layton ED, Yu KKQ, Smith MT, Aguilar MS, Li S, Mayanja-Kizza H, Stein CM, Boom WH, Hawn TR, Bradley P, Newell E, **Seshadri C**. “Donor-specific MR1-restricted T cells in Ugandan household TB contacts.” Keystone Symposium: A Research Reboot of Tuberculosis, August 1-4, 2022. Breckenridge, CO USA.
5. Chang M, Venkatasubramanian S, Weigel KM, Cangelosi GA, Smith N, Peterson GJ, Hawn TR, Shah JA, **Seshadri C**, Murphy SC. “Molecular viability testing accelerates detection of *Mycobacterium bovis* BCG strain –assay development ahead of a human challenge trial.” ASTMH Annual Meeting, Oct. 30 – Nov 3, 2022. Seattle, WA
6. Winter C, Scriba TJ, Zhou A, Tappen V, Ou H, **Seshadri C**. “The role of bystander activation among CD8ɑɑ T cells in controlling *Mycobacterium tuberculosis* infection.” American Association of Immunology Annual Meeting, May 11-15, 2023. Washington, DC (Selected for Oral Presentation)
7. Files MA, Kehoe L, Adler A, Englund J, **Seshadri C**. “SARS-CoV-2 seroreversion is associated with a decrease in T cell functionality in children.” American Association of Immunology Annual Meeting, May 11-15, 2023. Washington, DC
8. Phan J, Layton E, Yu KKQ, Aguilar M, Golez I, Franko N, Logue, J, Gale M, Chu HY\*, **Seshadri C**\* “Cytotoxic CD4 and CD8 T cells targeting spike glycoprotein are associated with hybrid immunity to SARS-CoV-2.” American Association of Immunology Annual Meeting, May 11-15, 2023. Washington, DC
9. Cross DL, Layton ED, Yu KKQ, Smith MT, Aguilar MS, Li S, Mayanja-Kizza H, Stein CM, Boom WH, Hawn TR, Bradley P, Newell E, **Seshadri C**. “MR1-restricted T cells clonotypes are associated with resistance to Mycobacterium tuberculosis infection.” American Association of Immunology Annual Meeting, May 11-15, 2023. Washington, DC (Selected for Oral Presentation)
10. Tappen V, Layton ED, Bishop E, James CA, Scriba TJ, **Seshadri C**. “Molecular requirements for αβ and γδ T cell receptor recognition of mycobacterial phosphomycoketide.” PacTB 2023, March 30-31, 2023. University of California, Berkeley, CA
11. Makatsa MS, Bishop E, Sutton M, Vilme M, Jus A, Wiedeman A, Long SA, Roederer M, Flynn JA, Shalek A, Seder RA, Darrah PA, **Seshadri C**. “Mass cytometry reveals diverse cellular and functional phenotypes of leukocytes in broncho alveolar lavage after intravenous BCG vaccination of rhesus macaques.” PacTB 2023, March 30-31, 2023. University of California, Berkeley, CA
12. Kieswetter N, Winter C, Tappen V, Zhou AX, Drain PK, Shapiro A, Prandi J, Gilleron M, **Seshadri C**. “Degree of acylation of *M. tuberculosis* cell wall glycolipids modulates anti-lipid antibodies in TB/HIV co-infected patients.”PacTB 2023, March 30-31, 2023. University of California, Berkeley, CA
13. Maerz MD, Bishop E, Makatsa S, Sutton M, Vilme M, Kus A, Wiedeman A, Long SA, Roederer M, Flynn JL, Shalek AK, Seder RA, Scriba TJ, Darrah PA, **Seshadri C**. “BCG vaccination induces clonal expansion, pro-inflammatory functions, and cytotoxicity in Vδ1 T cells.” 10th International Forum on γδ T cells, June 20-23, 2023. Lisbon, Portugal.

**17. INVITED TALKS, PATENT APPLICATIONS**

 A. National and International Lectures

1. **“**Human CD1A Deficiency in Dendritic Cells is Associated with Susceptibility to Tuberculosis in Vietnam.” 6th International Symposium on CD1 and NKT cells, September 23-27, 2011. Chicago, IL.
2. “Human CD1A Deficiency is Associated with Susceptibility to Tuberculosis in Vietnam.” Human Immunity to Tuberculosis, April 13-14, 2012. Atlanta, GA.
3. “Characterizing Human T-cell Responses to Mycobacterial Cell Wall Glycolipids.” Human Immunology Project Consortium Meeting, September 10-11, 2013. Bethesda, MD.
4. “Deep sequencing of T-cell specific for a mycobacterial lipid antigen identifies canonical T-cell receptor motifs that can be used as biomarkers in population-based studies.” CD1-MR1 Conference, November 15-19, 2015 – Melbourne, Australia.
5. “CD1-restricted T cells: Research Priorities for TB Vaccines.” Collaboration for TB Vaccine Discovery - Donor Unrestricted T cells Working Group Meeting. Bill and Melinda Gates Foundation, April 25th, 2016 – Seattle, WA
6. “Studies focusing on novel immune responses elicited by whole cell vaccines.” HIV Vaccine Trials Network (HVTN) Full Group Meeting – TB Vaccine Breakout Session, May 19th 2016 – Washington D.C.
7. “T-cell Mechanisms of Resistance to M. tuberculosis.” Mechanisms of Immune Protection Programmatic Meeting – National Institutes of Health, November 21st, 2016 – Bethesda, MD
8. Bill and Melinda Gates Visiting Scholar, University of Cape Town, April 30th – May 14th, 2017- Cape Town, South Africa.
9. “T-cell Recognition of Lipid Antigens.” Stellenbosch University, May 8th 2017 - Stellenbosch, South Africa.
10. “T-cell Memory to Lipid Antigens.” epiCURE/AACORT Seminar, Department of Dermatology, October 25th, 2017 - Columbia University, NY.
11. “Development of a DURT Panel and Preliminary Studies of BCG Vaccination.” Collaboration for TB Vaccine Discovery – Donor Unrestricted T-cells Working Group Meeting. University of Cape Town, January 26th, 2018
12. “Tuberculosis Vaccine: The End of the Beginning.” Center for Vaccine Discovery & Global Health, University of Maryland, April 30th, 2018 – Baltimore, MD
13. “Understanding T-cell Mechanisms of Resistance to *M. tuberculosis* Infection.” Mechanisms of Immune Protection Programmatic Meeting – National Institutes of Health, November 29th, 2018 – Bethesda, MD
14. “Adaptive Resistance to *M. tuberculosis* Infection in Humans.” Institute for Immunity, Transplantation, and Infection, Stanford University, April 9th, 2019 – Palo Alto, CA
15. “Prevention of Mtb Infection: Challenging Paradigms of ‘uninfected’ and ‘infected.’” Collaboration for TB Vaccine Discovery (CTVD) Annual Meeting, Bill & Melinda Gates Foundation, June 19th 2019 – Seattle, WA
16. “T cell Mechanisms of ‘Resistance’ to *M. tuberculosis* Infection in Humans.” TB TCR Workshop, Bill & Melinda Gates Foundation, June 21st 2019 – Seattle, WA
17. “Progress with Vaccines Against Tuberculosis” IDWeek 2019, Session 194: Vaccines and Antimicrobial Resistance, October 4th, 2019 - Washington D.C.
18. “IFN-γ independent markers of M. *tuberculosis* exposure” Keystone Symposium on Tuberculosis: Immunity and Immune Evasion. January 17th, 2020 – Santa Fe, NM
19. “IFN-γ independent markers of M. *tuberculosis* exposure.” ID and Global Biothreats Seminar. University of Virginia. February 11th, 2020 – Charlottesville, VA
20. “M.tb-specific T cell responses in Uganda and South Africa.” Mechanisms of Immune Protection Programmatic Meeting – National Institutes of Health, May 4th, 2020 – Bethesda, MD (Virtual)
21. “Adaptive Resistance to *M. tuberculosis* Infection in Humans.” TB TCR Sequencing Meeting – Bill & Melinda Gates Foundation, June 19th, 2020 – Seattle, WA (Virtual)
22. “T cell and antibody functional correlates of severe COVID-19.” HIV/ID Conference – Brigham & Women’s Hospital, October 26th, 2020 – Boston, MA (Virtual)
23. “Clinical and Laboratory Integration Between IMPAc-TB Centers.” Immune Mechanisms of Protection Against Mycobacterium tuberculosis Centers (IMPAc-TB) First Annual Meeting – National Institutes of Health, November 18-19th, 2020 – Bethesda, MD (Virtual)
24. “Immunologic Characteristics of Highly TB-Exposed Persons Who Fail to Become Infected.” TB Union – North American Region Conference, February 27th, 2021 – Vancouver, Canada (Virtual)
25. “Comorbid illnesses are associated with altered adaptive immune responses to SARS-CoV-2” MGH COVID Here and Now Treatment (CHANT) Seminar, April 6th, 2021 – Boston, MA (Virtual)
26. “T cell signatures of bacterial clearance among *M. tuberculosis* resisters.” Mechanisms of Immune Protection Programmatic Meeting – National Institutes of Health, May 24th, 2022 – Bethesda, MD (Virtual)
27. “T cell signatures of bacterial clearance among *M. tuberculosis* resisters.” Institute of Infectious Disease and Molecular Medicine, University of Cape Town, August 15th, 2022 – Cape Town, South Africa
28. “T cell signatures of bacterial clearance among *M. tuberculosis* resisters.” Stellenbosch University, August 12th, 2022 – Cape Town, South Africa
29. “γδ T cells and BCG Vaccination” Cape Town HIV Vaccine Trials Network (HVTN) Immunology Labs, August 8th, 2022 – Cape Town, South Africa
30. “Donor-unrestricted T cells: Overhyped or Under-appreciated?” Collaboration for TB Vaccine Discovery (CTVD) Annual Meeting, Bill & Melinda Gates Foundation, October 11-13th 2022 – Seattle, WA
31. “T cell signatures of bacterial clearance among *M. tuberculosis* resisters.” 3rd Annual Human Immune Monitoring and Bioinformatics Conference at Stanford University, March 27-28, 2023 – Palo Alto, CA
32. “Resistance to M.tb infection: A Tale of Two Cohorts” Emory University. May 16th, 2023 – Atlanta, GA
33. “Resistance to M.tb infection: A Tale of Two Cohorts” Infectious Diseases Grand Rounds, University of California Los Angeles, May 24th, 2023 (Virtual).

B. Regional or Local Lectures

1. “Lipid-specific T-cell responses in Human Tuberculosis.” Global Infectious Disease Seminar – Center for Infectious Disease Research, June 22, 2015, Seattle, WA.
2. “The Shared T-cell Repertoire.” VIDD Seminar – Fred Hutchinson Cancer Research Center, May 3rd 2016 – Seattle, WA
3. “Adaptive Resistance to *M. tuberculosis* Infection in Humans.” VIDD Seminar – Fred Hutchinson Cancer Research Center, April 23rd 2019 – Seattle, WA
4. “IFN-γ independent markers of M. *tuberculosis* exposure” Tuberculosis Research & Training Center 4th Annual TB Symposium, University of Washington, September 16th, 2019 – Seattle, WA

C. Patent Applications

1. “Methods for Inferring Tuberculosis Status Using Immune Repertoire Sequencing and TCR Sequence Motifs” – Provisional Patent Application #128355 filed jointly between UW (Chetan Seshadri) and Adaptive Biotechnologies (Ryan Emerson) on November 13th, 2015.
2. “Compositions and Methods for T-cell Diagnosis of Tuberculosis Exposure” – Provisional Patent Application No. 62/793285 filed jointly between UW (Chetan Seshadri) and Massachusetts General Hospital (Galit Alter) on January 16th, 2019.

18. **OTHER EMPLOYMENT**

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| 2004-2005 | Field Doctor, *Médecins sans Frontières* (Doctors Without Borders), Malawi, Africa |