Adam **Kirosingh**

PHD CANDIDATE

Stanford University, California

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Education

Stanford University   *Stanford, CA*

PHD MICROBIOLOGY & IMMUNOLOGY   *2022*

- Dissertation - Malaria susceptibility: genetic factors and immune adaptation during pregnancy

University of Nevada, Reno   *Reno, NV*

BSC MOLECULAR MICROBIOLOGY & IMMUNOLOGY WITH MINORS IN MATHEMATICS & CHEMISTRY   *2017*

- Honors Thesis - In vivo distribution and clearance of purified capsular polysaccharide from Burkholderia pseudomallei in a Murine Model

Research

Graduate Student Researcher   *Stanford University*

JAGANNATHAN LAB - DEPARTMENT OF MEDICINE   *October 2020 - Present*

- Investigate cellular correlates for acquired immunity against placental malaria in pregnant mothers from Uganda.
    - Culture VAR2CSA expressing *Plasmodium falciparum*.
    - Fluorescent activated cell-sorting and bulk RNA sequencing.
    - Developed Jagtools to streamline flow cytometry analysis.

Graduate Student Researcher   *Stanford University*

SCHNEIDER LAB - DEPARTMENT OF MICROBIOLOGY & IMMUNOLOGY   *July 2018 - September 2020*

- Identify new genetic loci associated with resistance to malaria infection in a *Plasmodium chabaudi* diversity outbred model.
    - Genetic loci mapping with multiparent populations with qtl2 package.
    - Handle Mice using *Plasmodium chabaudi* infection model.

Undergraduate Researcher   *University of Nevada, Reno*

HURTADO GROUP - DEPARTMENT OF MATHEMATICS & STATISTICS   *October 2016 - August 2018*

- Generalized the linear chain trick using properties of erlang distributions to translate stochastic integrodifferential equations into simpler ordinary differential equations for modelers.

Undergraduate Researcher   *University of Nevada, Reno*

AUCOIN LAB - DEPARTMENT OF MICROBIOLOGY & IMMUNOLOGY   *February 2014 - May 2017*

- Verified *Burkholderia pseudomallei* capsular polysaccharide as a viable biomarker in a murine model. Cultured Leptospirosis interrogans. Subclass switched antibodies decrease limit of detection of a lateral flow immunoassay.
    - Culturing Hybridoma cell lines in bioreactors for antibodies.
    - Measuring clearance kinetics of capsular polysaccharide.
    - Optimized Ig subclass for lateral flow immunoassay using ELISAs.

Teaching

Graduate Writing Tutor   *Stanford University*

HUME CENTER FOR WRITING AND SPEAKING   *June 2020 - Present*

- Tutor undergraduates and graduate students virtualy one-on-one at all stages of the writing process ranging from scholarship applications to written class assignments.
    - Winter 2021 Testimonials - I most appreciated his enthusiasm and encouraging attitude, since it made me less nervous about sharing my writing and getting feedback on it!
    - Fall 2020 Testimonials - Adam made the session really comfortable and low stress which helped me get through the material and feel comfortable asking questions!

Teaching Assistant   *Remote Learning*

MICROBIAL PATHOGENESIS   *April 2020 - June 2020*

- Held weekly office hours, guest lectured, developed and graded research proposals

Leadership

Data Analyst

KARUNA INITIATIVE

Tormabum, Sierra Leone

June 2019 - September 2019

- Lead community reports for summer pilot
    - Summarize timeseries data of 60 students wellbeing.
    - Identify trends in community responses to advise graduate student policy.

Social Entrepeneurship Team Member

WARC

Tormabum, Sierra Leone

July 2019 - September 2019

- Establishing a low-cost drying machine in rural Sierra Leone for subsistence farmers.
    - Prototyping, testing and manufacturing a half-ton scale maize-drying machine.
    - Partnering with WARC (West African Rice Company) and FINIC Industries to build and implement maize dryer.

Design Consultant

NOORA HEALTH

Bangalore, India

February 2019 - June 2019

- Designed a newborn health education kit to encourage kangaroo care in mothers of low birthweight babies in India.
    - Prototyping education material using Adobe Illustrator.
    - User-testing with new mothers in hospitals and home visits.

Relevant Courses

STANFORD UNIVERSITY

- BIOS 221: Modern Statistics for Modern Biology
- CME 193: Introduction to Scientific Python

UNIVERSITY OF NEVADA, RENO

- MATH 420: Mathmatical Modeling
- MATH 461: Probability Theory
- MATH 462: Introduction to Stochastic Processes
- STAT 467: Statistical Theory

Honors

Cellular Molecular Biology Trainee

NIH TRAINING PROGRAM FOR STANFORD BIOSCIENCE PHD STUDENTS

Stanford, CA

2019

Honors Undergraduate Research Award

GRANTED TO HONORS STUDENTS WITH EXCEPTIONAL THESES

University of Nevada, Reno

2016

- Honors Thesis: In vivo distribution of B. pseudomallei capsular polysaccharide

Poster Award for SACNAS Diversity Conference

AWARDED BY SACNAS TO LESS THAN 5% OF POSTER PRESENTERS AT ANNUAL CONFERENCE

Long Beach, CA

2016

- Poster: Probability distributions of system average interruption frequency index

Barry M. Goldwater Scholarship Honorable Mention

AWARDED FOR EXCELLENT APPLICATIONS TO THE GOLDWATER SCHOLARSHIP

Saint Peter, MN

2016

- Proposal on Immunoglobulin G Subclass Switching Impacts Sensitivity of an Immunoassay Targeting Francisella Tularensis Lipopolysaccharide

Nevada Undergraduate Research Award

GIVEN TO UNDERGRADUATE STUDENTS WITH PROMISING RESEARCH PROPOSALS

University of Nevada, Reno

2014

- Awarded 3 consecutive years

American Society for Microbiology Undergraduate Research Fellow

COMPETITIVE NATIONAL FELLOWSHIP FOR RESEARCH IN MICROBIOLOGY

Washington, DC

2016

- Led to a poster presentation at ASM Microbe 2017

Nevada INBRE Undergraduate Research Opportunity Program

FUNDING FOR UNDERGRADUATE RESEARCH IN BIOSCIENCES

University of Nevada, Reno

2015

Ronald E. McNair Post-Baccalaureate Achievement Program Scholar

SCHOLARS PROGRAM FOR FIRST-GENERATION COLLEGE STUDENTS PURSUING HIGHER EDUCATION

University of Nevada, Reno

2014

Technical Skills

Markup Languages: CSS, HTML, LaTeX, RMarkdown, Bootstrap

Programming Languages: R, Python, Mathematica, MATLAB

Software Development: GIT, SLURM, High-Performance Computing

Text Editors: RStudio, VIM, Visual Studio Code

Publications

Manuscripts in Preparation

- **Kirosingh, A.S.**, De La Parte, L., Ty, M., Kakuru, A., Muhindo, M. K., Thulin, N., Kamya, M., Feeney, M., Dorsey, G., Wang, T.T., Jagannathan P., Cellular correlates for protection against malaria acquired across multiple pregnancies (manuscript in preparation)

- **Kirosingh, A.S.**, Gupta, A.S., Chevee, V., Davis, N., Cumnock, K., Lissner, M., Schneider, D.S. Malaria Susceptibility Loci Identified in the Diversity Outbred Mouse Population (manuscript in preparation)

Papers

- Hurtado, P.J., **Kirosingh, A.S.**, 2019. Generalizations of the 'Linear Chain Trick': incorporating more flexible dwell time distributions into mean field ODE models. J. Math. Biol. 79, 1831–1883. `https://doi.org/10.1007/s00285-019-01412-w`

- Nualnoi, T., **Kirosingh, A.S.**, Pandit, S.G., Thorkildson, P., Brett, P.J., Burtnick, M.N., AuCoin, D.P., 2016. In vivo Distribution and Clearance of Purified Capsular Polysaccharide from Burkholderia pseudomallei in a Murine Model. PLOS Neglected Tropical Diseases 10, e0005217. `https://doi.org/10.1371/journal.pntd.0005217`

- Nualnoi, T., **Kirosingh, A.S.**, Basallo, K., Hau, D., Gates-Hollingsworth, M.A., Thorkildson, P., Crump, R.B., Reed, D.E., Pandit, S., AuCoin, D.P., 2018. Immunoglobulin G subclass switching impacts sensitivity of an immunoassay targeting Francisella tularensis lipopolysaccharide. PLOS ONE 13, e0195308. `https://doi.org/10.1371/journal.pone.0195308`

Published Abstracts

- Hurtado, P., **Kirosingh, A.S.**, 2018. The Generalized Linear Chain Trick: A new tool to build ODE models with more flexible dwell-time distributions. Presented at the 2018 ESA Annual Meeting (August 5 – 10), ESA.

- **Kirosingh, A.S.**, 2017. PROBABILITY DISTRIBUTIONS OF SYSTEM AVERAGE INTERRUPTION FREQUENCY INDEX. Presented at the 2017 AAAS Annual Meeting (February 16-20, 2017), AAAS.