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.
  - Flow cytometry and analysis of large datasets.

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 *Tormabum, Sierra Leone*

Karuna Initiative *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 *Tormabum, Sierra Leone*

WARC *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 *Bangalore, India*

Noora Health *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 *Stanford, CA*

NIH training program for Stanford Bioscience PhD Students *2019*

Honors Undergraduate Research Award *University of Nevada, Reno*

Granted to Honors students with exceptional theses *2016*

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

Poster Award for SACNAS Diversity Conference *Long Beach, CA*

Awarded by SACNAS to less than 5% of poster presenters at annual conference *2016*

- Poster: Probability distributions of system average interruption frequency index

Barry M. Goldwater Scholarship Honorable Mention *Saint Peter, MN*

Awarded for excellent applications to the Goldwater Scholarship *2016*

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

Nevada Undergraduate Research Award *University of Nevada, Reno*

Given to undergraduate students with promising research proposals *2014*

- Awarded 3 consecutive years

American Society for Microbiology Undergraduate Research Fellow *Washington, DC*

Competitive national fellowship for research in Microbiology *2016*

- Led to a poster presentation at ASM Microbe 2017

Nevada INBRE Undergraduate Research Opportunity Program *University of Nevada, Reno*

Funding for undergraduate research in biosciences *2015*

Ronald E. McNair Post-Baccalaureate Achievement Program Scholar *University of Nevada, Reno*

Scholars program for first-generation college students pursuing higher education *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.