Katherine Amberg-Johnson | Cell & Chemical Biologist

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My mission is to improve people's lives through revolutionary medicines. Towards this goal, I trained extensively in cell and chemical biology during my Ph.D. to identify and develop antimalarials targeting novel parasite pathways. While this work is extremely rewarding, knowledge of genomics and systems biology is essential to develop the next generation of therapeutics. An immersive research project will not only broaden my perspective, but also sharpen my computational and communication skills that will be necessary to lead teams of the future. I am highly motivated for this new challenge and opportunity to grow as a scientist.

RESEARCH EXPERIENCE

STANFORD UNIVERSITY
JULY 2014-PRESENT

Stanford Bio-X Fellow Ph.D. Student, Advisor: Ellen Yeh

- Performed phenotypic drug screening and identified an antimalarial compound with a novel mechanism-of-action.
- Analyzed whole-genome sequencing data of drug-resistant *T. gondii* strains to determine potential drug targets.
- Utilized CRISPR/Cas9 genome editing to validate drug targets in both *P. falciparum* and *T. gondii.*
- Coordinated collaboration with enzymologists at MIT to establish high-throughput *in vitro* drug assays for inhibition of enzymatic activity.
- Pioneered and optimized live video microscopy experiments of *T. gondii* to study defects in division in collaboration with *T. gondii* geneticists.

UNIVERSITY OF CALIFORNIA-BERKELEY
JULY 2010-MAY 2013

Undergraduate Research Assistant, Advisor: David Wemmer

- Performed NMR spectroscopy and optical tweezers experiments to understand the structure and function of the bacterial transcriptional regulatory factor, σ^{54}.

EDUCATION

STANFORD UNIVERSITY
Ph.D. in Microbiology and Immunology
Anticipated Fall/Winter 2017

UNIVERSITY OF CALIFORNIA, BERKELEY
B.S. in Microbial Biology, with honors
August 2009-May 2013

LEADERSHIP AND TEACHING

HUME CENTER FOR WRITING & SPEAKING
MARCH 2017-PRESENT

Oral Communications Tutor
Fostered supportive scientific communication through one-on-one mentoring at all stages of the oral presentation process

BIOCHEMISTRY DEPT.
FEB 2015-PRESENT

Flow Cytometry Manager
Provided both instrument training and technical support for 70+ flow cytometry users. Aided users with experimental design and data analysis.

Scientific Mentor
Directly mentored 3 first year Ph.D. students and 1 undergraduate researcher on diverse projects including synthetic biology, super-resolution microscopy, protein immunoprecipitation, and gene expression profiling.

MICROBIOLOGY & IMMUNOLOGY DEPT. JAN 2015-MARCH 2016	**Teaching Assistant** Techniques in Biotechnology (Jan 2015-March 2015) Innate Immunology (Jan 2016-March 2016)

RELEVANT TECHNICAL AND TRANSFERABLE SKILLS

Drug screening	Microscopy-live, IFA	Western blotting, ELISA
Drug characterization	NGS analysis	Protein expression & purification
SAR analysis	Data analysis- python	Protein structure modeling-
Tissue culture-primary cells	CRISPR/Cas9 genome engineering	PyMOL
Transfection-stable	Molecular cloning	Tableau- data analysis
FACs cell sorting and analysis	PCR, qPCR, dPCR	
Teamwork	Problem solving	Collaboration
Organizational skills	Publication, grant writing	Communication
Project management	Time management	Market knowledge

AWARDS AND HONORS

2018	Insight Data Science Fellowship
2016-2019	Bio-X Stanford Interdisciplinary Graduate Fellowship (Stanford University)
2016	Two-Photon and Super-Resolution Microscopy Pilot Grant (Stanford University)
2015, 2016	Biosciences Office of Graduate Education Travel Grant (Stanford University)
2013-2016	Cellular and Molecular Biology Training Grant (Stanford University)
2012	Amgen Scholars Program (UC Berkeley)
2012-2013	Barry Goldwater Scholarship (UC Berkeley)
2011	Science Undergraduate Laboratory Internship (LBNL)
2009-2010	Leadership Award (UC Berkeley)

PUBLICATIONS

- **Amberg-Johnson, K**., Hari, S.B., Ganesan, S.M., Lorenzi, H.A., Sauer, R.T., Niles, J.C., Yeh, E. Small molecule inhibition of apicomplexan FtsH1 disrupts plastid biogenesis in human pathogens. ***eLife.*** (2017).
- **Amberg-Johnson, K.** Yeh, E. Kinetics of *Toxoplasma gondii* Apicoplast Loss Upon Treatment with Apicoplast Inhibitors. (in preparation).
- Foe, I. **Amberg-Johnson, K.** Onguka, O., Bogyo, M. The *Toxoplasma gondii* protein Active Serine Hydrolase 4 (Ash4) is important for parasite growth and the formation of ordered vacuoles *in vitro.* (in preparation).

PRESENTATIONS

2017	Toxo-14 Meeting (Oral Presentation, Portugal)
2017	Bay Area Microbial Pathogenesis (Oral Presentation, UCSF)
2016	Biochemistry Postdoc Seminar (Oral Presentation, Stanford)
2016	Microbiology and Immunology Retreat Seminar (Oral Presentation, Stanford)
2015, 2016	Molecular Parasitology Meeting (Poster Presentation, Woods Hole)
2015	Bay Area Meeting on Organelle Biology (Oral Presentation, UCSF)
2013	Undergraduate Honors Thesis Research Symposium. (Oral Presentation, UC Berkeley)
2012	Amgen Symposium (Oral Presentation, UC Berkeley)