# Affiliations

Ph.D.  
Department of Molecular Biology & Biochemistry  
University of California, Irvine  
 Training Fellow  
The Institute for Genomics and Bioinformatics (IGB)  
University of California, Irvine

# Research Interests

vector biology, evolution, genomics, transcriptomics, bioinformatics, evolution of transcriptional regulation, mosquito bloodmeal regulated gene expression, synthetic transcriptional regulation, biological education/advocacy

# Biographical Information

Date of Birth: June 1st, 1979  
Citizenship: United States of America

# Education

Degree: Doctor of Philosophy in Biological Sciences  
University: University of California, Irvine Irvine, CA  
Graduation: March 2014  
Adviser: Dr. Anthony James  
Co-Adviser: Dr. Xiaohui Xie  
Topic: Comparative transcriptomics of blood-feeding in midguts of three disease-vector mosquito species.

Degree: Bachelor of Science  
University: University of Georgia Athens, GA  
Graduation: 2003  
Major: Biology

# Professional Experience

Period: Jan. 2009–Mar. 2009  
Employer: KDH Research & Communication Atlanta, GA  
Job Title: Master Consultant Reviewed, provided feedback and corrections on materials for “Genetics for Kids” modules, a supplement for public school curricula.

Period: Winter 2009  
Employer: School of Biological Sciences, UCI Irvine, CA  
Job Title: Graduate Teaching Assistant BIO SCI M137 — Microbial Genetics

Period: Winter 2009  
Employer: School of Biological Sciences, UCI Irvine, CA  
Job Title: Graduate Laboratory Assistant BIO SCI M118L — Experimental Microbiology Lab

Period: Sept. 2006–May 2007  
Employer: University of Southern California Los Angeles, CA Geomicrobiology Group  
Supervisor: Dr. Katrina Edwards  
Job Title: Research Laboratory Technician Studied microorganisms’ role in mediating the mechanisms of rock, mineral, and organic matter transformations.

Period: June 2003–Aug. 2006  
Employer: University of Georgia Athens, GA Dept. of Cellular Biology  
Supervisor: Dr. Judith Willis  
Job Titles: Laboratory Technician II to Research Professional I Characterization and annotation of the cuticular protein genes of Anopheles gambiae.

# Publications

[cv]

# Honors and Awards

The Pacific-Southwest Regional Center of Excellence for Biodefense and Emerging Infectious Diseases Annual Meeting Travel Award

President of UCI’s IGB Biomedical Informatics Training fellows

Biomedical Informatics Training fellow (NIH/NLM 5T15LM007443)

# Conferences and Presentations

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# Scientific Software

blacktie: An object oriented python pipeline that simplifies and streamlines the running of complex tophat/cufflinks-based RNA-seq experiments into a single command plus a configuration file: designed with repeatability and usability as priorities (repository: <https://github.com/xguse/blacktie>).  
gFunc: A Galaxy-integrated python-framework using network graphs to exploit multidimensional data from disparate “Omics” sources for creating/exploiting functional-genomic gene sets across multiple species.  
pyRSEQ: a personal python-framework for coordinating and augmenting existing RNA-Seq analysis programs with custom programs and interfacing with a Galaxy instance.  
 Society Memberships ===================

Arthropod Genomics Consortium

# Funding History

Biomedical Informatics Training fellow (NIH/NLM 5T15LM007443)

# Service

http://movingthelamppost.com (academic blog)  
http://scipher.wordpress.com/  
http://vlad.bio.uci.edu:8081 (the lab’s local Galaxy instance)

Python for Biologists (Designed and presented this workshop for the absolute beginner biologist.)

Organizer for the Orange County Science Club’s “Science and Suds” pub nights and host of occasional “Ask a Molecular Biologist” events

# Programming Skills

Python(w/ regular use of object oriented design), Bash, LaTeX, Galaxy tool design, R, Perl, SQL, XML, reStructuredText  
 scipy, numpy, matplotlib/pyplot/pylab, networkx, pybedtools, pysam

Git, Mercurial, Bazaar, Subversion

# Laboratory Skills

Quantitative Real Time PCR — RT-PCR — Designing, optimizing, and validating Real Time PCR primers — Bacterial cloning — Preparation of electro-competent cells — Electro and chemical transformation techniques — Aseptic technique — Maintenance of bacterial stocks — Gel electrophoresis — Restriction digestion — Nucleic acid isolation and quantification — Protein isolation — Solution preparation — Plasmid preps — Rearing of mosquitoes — Mosquito dissection

Growing crystals for X-ray crystallography — RNA in situ hybridization — Characterization of biochemical reactions using spectrophotometry

# References

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