

# Michael Dacre

858-598-4153

mike@dacre.me

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## Teaching Experience

### Training Officer, Stanford Emergency Medical Service

Stanford, CA — June, 2018–June, 2019

- I plan and run BLS training courses for the EMTs in Stanford EMS I work with.

### Teaching Assistant, Wilderness Medicine, Stanford Medical School

Stanford, CA — February, 2016–June, 2016

- Helped with all practical sessions and logistics, answered student questions, and graded exams

### Wilderness Medicine Instructor, Stanford University Outdoor Education

Stanford, CA — February, 2014–January, 2016

- Taught an intensive 16-hour wilderness first aid (WFA) certificate course.

## Research Experience

### Research Assistant, Stanford University

Stanford, CA — September, 2018–Present

I am working on a project in the cardiology department exploring the association between coronary artery disease (CAD) and chromatin architecture in CAD cell lines.

### Research Professional, Stanford University

Stanford, CA — January, 2012–July, 2018

I worked in Hunter Fraser's lab on the intersection between gene expression and phenotype.

- Investigated the relationship between chromatin accessibility and a variety of disease traits in ten different human populations. This work is currently in preparation for publication.
- Explored how changes in gene splicing and allele specific expression affect major depressive disorder.
- Created a pipeline to predict mitochondrial abundance reliably using GWAS data and used this tool to do a meta-analysis of 65 GWAS studies (125,000 individuals) to identify SNPs associated with the varying levels of mitochondrial abundance in humans.
- I built a 22 machine (160 core) compute cluster, with 768 GB of RAM and more than 70 TB of hard drive space.
- I obtained a grant for \$48,990 giving us access to the San Diego Supercomputer Center.
- I also supported many of the labs computational projects, taught incoming graduate students, and mentored undergraduate and high school volunteers.

### Research Assistant, Salk Institute

San Diego, CA — May, 2008–December, 2011

I worked with Gerard Manning's group investigating the evolution of the kinases in eukaryotes. My particular interest lay in the evolution of multicellularity at the base of the metazoan lineage.

- I assisted in the development of an algorithm to create much more accurate gene models using conserved splice patterns in orthologs in highly divergent species.
- With the assistance of these gene models, I investigated evolutionary processes driving the emergence of multicellularity at the base of the metazoan lineage.
- I used these same gene models to investigate evolutionary rate and selection in the teleost fish.

- I also used this data to contribute extensively to the annotation of the kinase compliments of many eukaryotic species, including human, and to multiple genome projects.

## Additional Volunteer Experience

### County Liaison, Stanford EMS

Stanford, CA — June, 2017–June, 2018

- Created the new position of county liaison to continue the work I started during my one-year term as president.

### President, Stanford EMS

Stanford, CA — May, 2016–June, 2017

- Overhauled organizational policies, procedures and bylaws to improve accountability and volunteer competency.
- Worked with the county emergency medical authority to create new county policies to enable formal recognition of Stanford EMS (StEMS) as a volunteer county EMS provider.
- Worked with university officials to begin to expand the reach of StEMS from an event-only organization to a campus-wide 911 response organization.
- Worked with Palo Alto Fire Department chiefs to create a program allowing full StEMS members to do ride-alongs with the fire department paramedics and provide care to patients.
- Met frequently with the StEMS medical director to discuss changes in policy and future directions for the organization.
- Continued to work as a fully operational and very active crew chief throughout my presidency.

### Crew Chief, Stanford EMS

Stanford, CA — March, 2016–Present

- As crew chief, I run medical command of several large events, including multiple football games with 50,000 people in attendance
- Operate as the sole medical dispatcher for an annual concert of 7,500 people
- Provide hands on care as the first responder on scene for many patients, including critically ill unresponsive patients

### Volunteer EMT, Stanford EMS

Stanford, CA — May, 2014–May, 2016

### Member, Bay Area Mountain Rescue Unit

San Mateo, CA — May, 2013–Present

- Wilderness EMT, tracker, and type-1 ground searcher with BAMRU, a mountain rescue group
- I teach the group's annual tracking training, and assist in running the annual medical skills training.

### Emergency Department Volunteer, SCOPE

Santa Clara, CA — February, 2014–January, 2018

- Volunteer at Santa Clara Valley Medical Center's emergency department
- Assist attending physicians during their shifts
- Work directly with patients, bringing food, water, and blankets, and relaying information between less acute patients and the medical staff during busy periods

### Web Team Leader, SCOPE

Stanford, CA — March, 2015–January, 2018

In addition to volunteering at the ED I also ran the group's web team, during which time I completely rebuilt and replaced the organization's suite of aging websites.

## Publications

- Suga, H., **Dacre, M.**, de Mendoza, A., Shalchian-Tabrizi, K., Manning, G., & Ruiz-Trillo, I. (2012). Genomic survey of premetazoans shows deep conservation of cytoplasmic tyrosine kinases and multiple radiations of receptor tyrosine kinases. *Science Signaling*, 5(222)
- Manning, G., Reiner, D. S., Lauwaet, T., **Dacre, M.**, Smith, A., Zhai, Y., ... Gillin, F. D. (2011). The minimal kinome of *Giardia lamblia* illuminates early kinase evolution and unique parasite biology. *Genome Biology*, 12(7)
- Banks, J. A., et al. (2011). The *Selaginella* genome identifies genetic changes associated with the evolution of vascular plants. *Science*, 332(6032)
- Srivastava, M., et al. (2010). The *Amphimedon queenslandica* genome and the evolution of animal complexity. *Nature*, 466(7307)

## Education

### **MD, Stanford School of Medicine**

Stanford, CA — August, 2018–Present

### **BS. (Hons) Forensic Science, University of Central Lancashire, UK**

Preston, UK — September, 2003–June, 2006

Thesis title: The use of the auricular surface of the ilium in estimating adult age at death.