XIONG Qiancheng
qiancheng.xiong@gmail.com
+65-9079 7188
www.qcxiong.com

Education

University of Cambridge
Natural Sciences, Genetics
October, 2013 - June 2016
Upper Second Class Honours

NUS High School of Mathematics and Science
Diploma of High Distinction
AP Scholar with Distinction: Scored 5/5 in 6 Advanced Placement Subjects
January, 2005 - December, 2010
NUS High School Cumulative Average Point (CAP): 4.7/5.0

University of Cambridge Language Centre
French Language
October, 2014 - March, 2015

Singapore Ministry of Education Language Centre
Japanese Language
January, 2005 - July, 2009

Work Experience

Intern
Singapore Ministry of Defence
August, 2010 - September, 2010

- Reviewed the use of incentives in administering surveys.
- Provided recommendations on the optimal use of incentives in the Singapore Armed Forces (SAF).
- Formulated a procedure to verify the effectiveness of incentives in improving data quality in SAF surveys.

National Service

Mortar Tracked Carrier Detachment Commander / HQ Company Administrative Specialist
40th Battalion, Singapore Armoured Regiment
February, 2011 - December, 2012

- Led the detachment in executing timely and accurate fire missions during operations.
- Battalion Transport IC, Battalion Barrack Damages IC and HQ Company Quartermaster Sergeant; managed all transport indents and repair works in the Battalion, as well as logistical matters in the HQ Company.
- Responsible for the HQ Company's Nominal Roll, Parade State and Routine Order.
- Assisted with the Battalion's electronic procurements.

Volunteer Experience

Volunteer
People's Action Party (Tampines North Ward)
August 2013 - Present

- Assisted residents with a range of problems, including housing, financial, traffic, immigration and school admission issues.
- Wrote petition letters to the relevant ministries, statutory boards and other parties on behalf of the resident.
- Reviewed the appeal letters written by other petition writers.

Assistant HOD for Zone 6 IT / Staff Officer Grade 5
St. John Ambulance Brigade Singapore
September, 2009 - 2013

- Designer and manager of the Zone Website: www.stjohnzone6.com.
- Instructor in the Advanced NCO Course 2009.
- Certified Instructor for CPR and AED by the National Resuscitation Council (2010-2012).
- Initiated and conducted a series of workshops for primary school students.

Research Experience

Research Project: Molecular Evolution of Rotaviruses
Department of Veterinary Medicine, University of Cambridge, Simon Frost Lab
January - March 2016
Rotavirus is a major cause of acute gastroenteritis and child mortality worldwide. Through estimating selection pressures and mutation rates at both the gene level and the site-by-site level, I demonstrated evolutionary differences between rotavirus species, proteins and hosts. In particular, higher mutation rate and diversifying selection estimates for species B may facilitate its expansion to geographical regions outside Asia. Capsid protein VP6 was also found to be a possible vaccine target due to its low mutation rate and diversifying selection estimates. Separately, reconstructed effective population size and estimated mutation rates for species A showed no significant change in genetic variation after the introduction of modern vaccines in 2005, but new sites under diversifying selection were identified on its gene for the vaccine targeted protein VP4. Finally, reconstructed phylogenies showed ongoing zoonotic transmission in species A but not in species B and C.

Summer Attachment: Transcriptional Regulation by RNA Antiterminators
Institut de Génétique et de Biologie Moléculaire et Cellulaire, Albert Weixlbaumer Lab
July-August 2015
Transcripts of *put*RNAs from phage HK022 can fold into two stem-loops to inhibit RNA polymerase backtracking and facilitate antitermination. To assist the lab in understanding the molecular and structural details of this process, I cloned mutant *put in vivo* reporter constructs with sGFP and lacZα, and compared the effect of antitermination by wild type *put*RNA and their mutants using *in vivo* reporter assays. I also produced *put*RNA using *in vitro* transcription and purified it for the lab's later studies.

Research Project: Prevalence of *Wolbachia* in Moths & Phylogenetic Comparison of *Wolbachia* and Moths
Madingley Hall, Department of Zoology, University of Cambridge
September-October 2014
Wolbachia infection provides insect hosts with virus resistance but at the cost of hosts' fitness. To better understand the side effects of *Wolbachia* pest control measures, the relationship of *Wolbachia* with moth hosts was explored by my team using computational prevalence and phylogenetic analysis. This was performed with DNA extracted from moths caught at Madingley, as well as with sequence data from GenBank.

A*STAR Summer Research Attachment
Singapore Immunology Network, Agency for Science, Technology and Research, Ren Ee Chee Lab
June-August 2014
In a co-localization study, I assisted the lab group by quantifying the relative amounts of NFκB nuclear translocation in cells that were over-expressing different variants of a viral protein using western blots. In addition, I generated plasmid constructs to assist two separate projects: to investigate how residues in a viral protein affect its function; and to create CRISPR knock-out cell lines for studying viral replication.