XIONG Qiancheng
qiancheng.xiong@gmail.com
qcxiong@imcb.a-star.edu.sg
www.qcxiong.com

Education

University of Cambridge **October 2013 - June 2016**
Bachelor of Arts in Natural Sciences (Genetics)
Upper Second Class Honours

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

Languages
French (CEFRL A2 Level; University of Cambridge Language Centre)
Japanese (GCE O-Level Japanese; Singapore Ministry of Education Language Centre)
Chinese (GCE O-Level Higher Chinese; NUS High School)

Awards

A*STAR Graduate Scholarship **2017**
The scholarship fully funds up to four years of PhD studies in Singapore or partially finances one abroad. Upon graduation, the scholar will also be eligible for a 2-year post-doctoral fellowship overseas.

National Science Scholarship (BS) **2011**
The National Science Scholarship (BS) awarded by the Agency for Science, Technology and Research (A*STAR) is an undergraduate scholarship that grooms young talents for a PhD education.

Work Experience

Research Officer **August 2016 - Present**
Institute of Molecular and Cell Biology; Agency for Science, Technology and Research, Singapore
- Assisting Zeng Qi's lab in the study of the PRL-3 oncogene.

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

Detachment Commander / S4 Specialist **February 2011 - December 2012**
40th Battalion, Singapore Armoured Regiment
- 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 **August 2013 - Present**

People's Action Party (Tampines North Ward)

- 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 residents.
- Reviewed the appeal letters written by other petition writers.

Assistant HOD for Zone 6 IT / Staff Officer Grade 5 **September 2009 - 2013**

St. John Ambulance Brigade Singapore

- 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

Molecular Evolution of Rotaviruses **January - March 2016**

Department of Veterinary Medicine, University of Cambridge, Simon Frost's Lab

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 of 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 in 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.

Transcriptional Regulation by RNA Antiterminators (Attachment) **July - August 2015**

Institut de Génétique et de Biologie Moléculaire et Cellulaire, Albert Weixlbaumer's Lab

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.

Prevalence of *Wolbachia* & Phylogenetic Comparison of *Wolbachia* and Moths **September - October 2014**

Madingley Hall, Department of Zoology, University of Cambridge

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 **June - August 2014**

Singapore Immunology Network, Agency for Science, Technology and Research, Ren Ee Chee's Lab

In a co-localization study, I assisted the lab group by quantifying the relative amounts of NFκB nuclear translocation in cells that were overexpressing different variants of a viral protein using western blots. Also, 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.