AMMAR AZIZ

BRISBANE, QLD 4030 • AMMAR.AZIZ@MENZIES.EDU.AU • 0488 055 307

SUMMARY

Bioinformatics PhD candidate (submitted) at Menzies School of Health Research with four years experience as a Research Assistant in molecular microbiology. Proficient in NGS, bioinformatics, phylogenomics, transcriptomics and extensive experience programming (Python, R, Bash) and statistics.

EXPERIENCE

PhD Candidate (Full-Time)   **Jan 2016 – Jan 2020**
MENZIES SCHOOL HEALTH RESEARCH, CHARLES DARWIN UNIVERSITY   **Brisbane, QLD**

- Proficient in phylogenomic reconstruction and analysis (PAUP*, RAxML, FastTree).
- WGS and RNAseq to characterise the bacterial human pathogens *B. pseudomallei* and *H. influenzae*.
- MLST and genomics for point-source tracing and geographic attribution.
- Extensive knowledge of bacterial genetics and molecular microbiology.
- Proficient in CLI and HPC for analysis of large biological datasets.
- Extensive use and proficiency in Python, R and Bash.
- Developed in-house pipelines for bacterial mixture analysis, variant calling in polyploidy samples.
- Extensive use of current-generation aligners (Bowtie2, BWA-MEM, STAR and Kalisto) for analysis of prokaryotic (including viruses) and eukaryotic organisms.
- Extensive use of GATK toolkit for variant calling, VCF manipulation, processing and filtering.
- Experience in a broad range of bioinformatics tools for genomic data analysis and visualisation.
- Trained colleagues in NGS bioinformatics analysis using HPC environment.
- Authored three first-author peer-reviewed articles and collaborated on further two publications.

Research Assistant (Full-Time)   **Jan 2013 – Dec 2015**
MENZIES SCHOOL OF HEALTH RESEARCH, CHARLES DARWIN UNIVERSITY   **Darwin, NT**

- Performed high-throughput assays for detection, species determination, genotyping of Malaria samples
- High-throughput analysis of sanger sequencing using UGENE software suite.
- Designed and optimised in-house PCR assays for species-specific amplification of microsatellites and for human haplotype SNP detection using restriction length fragment polymorphism.
- Coordination and processing of high-throughput processing of plasma samples for HPLC analysis.
- Worked with clinicians, nurses to organise specimens for analysis and communicated results effectively
- Trained several international collaborators in specimen processing and malaria speciation assays
- Organised biobank for international shipping, long term storage, retrieval and tracking.
- Creation and management of databases in Microsoft Excel and Access.
- Fire Warden and OH&S member for the laboratory.

Research Assistant (Full-Time)   **Jan 2010 – Jun 2012**
JAMES COOK UNIVERSITY, QUEENSLAND TROPICAL HEALTH ALLIANCE   **Cairns, QLD**

- Operated and maintained a MALDI TOF/TOF and Shimadzu Prominence Nanoflow LC/Nano spotter for mass spectrometry protein analysis.
- Maintained and operated an applied Biosystems QSTAR Elite LCMS System.
- Prepared hundreds of in-house and external protein samples using mass spectrometry in support of Proteomic and Bioinformatics research in collaboration with internal and external Scientists
- Trained students and staff on the use of OFF-GEL fractionators and mass spectrometers, as well as iTRAQ, and SDS-PAGE electrophoresis.
- Assisted researchers in experiments, including intraperitoneal and subcutaneous injection of samples into laboratory mice strains and harvesting animal tissue.

AMMAR AZIZ

BRISBANE, QLD 4030 • AMMAR.AZIZ@MENZIES.EDU.AU • 0488 055 307

EDUCATION

Doctor of Philosophy Candidate   **Submitted: Jan 2020**
MENZIES SCHOOL HEALTH RESEARCH, CHARLES DARWIN UNIVERSITY   **Brisbane, QLD**
- **Thesis:** "Genomic and transcriptomic characterisation of the human pathogens *B. pseudomallei* and *H. influenzae*"

Bachelor of Science, Microbiology (Honours)   **Graduated: Jul 2012**
JAMES COOK UNIVERSITY   **Cairns, QLD**
- **Thesis:** "Proteomic characterisation of the hookworm secretome"

Bachelor of Science, Microbiology   **Graduated: Feb 2010**
UNIVERSITY OF QUEENSLAND   **Brisbane, QLD**

AWARDS & PRESENTATIONS

Awards
Microbe Conference Travel Award (2019)
ASM Tri-State Finalist (2017)
UQ Winter School Travel Bursary (2016)
ICHEAR CRE Top-up Scholarship (2016)
Australian Postgraduate Award (PhD) (2016)

Conferences
Microbe San Francisco Poster and Fire Talk (2019)
ASM Brisbane - Poster (2018)
ASM Hobart - Oral Presentation (2017)
UQ Winter School in Math. & Comp. Biology (2016)

SELECTED PUBLICATIONS

Full publication list available at www.ncbi.nlm.nih.gov/pubmed/?term=ammar+aziz
- **Aziz A,** Currie BJ, Mayo M, Sarovich DS, Price EP. *Comparative genomics confirms a rare melioidosis human-to-human transmission event and reveals incorrect phylogenomic reconstruction due to polyclonality* (2020) Microbial Genomics.
- **Aziz A**, Sarovich DS, Nosworthy E, Bleissbarth J, Chang AB, Smith-Vaughn H, Harris TM & Price EP. *Molecular Signatures of Non-typeable Haemophilus influenzae Lung Adaptation in Pediatric Chronic Lung Disease* (2019) Frontiers in Microbiology.
- Phillips S, Quigley BL, **Aziz A**, Bergen W, Booth R, Pyne M, Timms P. *Antibiotic treatment of Chlamydia-induced cystitis in the koala is linked to expression of key inflammatory genes in reactive oxygen pathways* (2019) PLoS One.
- **Aziz A**, Sarovich DS, Harris TM, Kaestli M, McRobb E, Mayo M, Currie BJ, Price EP. *Suspected cases of intracontinental Burkholderia pseudomallei sequence type homoplasy resolved using whole-genome sequencing* (2017) Microbial Genomics.
- Olagoke O, Quigley BL, **Aziz A**, Phillips S, Booth R, Timms P. *Transcriptome profile of koala peripheral blood mononuclear cells in response to vaccination against koala retrovirus.* (In press, 2019) Viruses

BIOINFORMATICS SKILLS AND SOFTWARE

- Short-Read Aligners: BWA-MEM, Bowtie2, STAR, Kallisto
- Phylogeny reconstruction: PAUP*, RAxML, FastTree
- NGS tools: SAMtools, bedtools, GATK4, BLAST+, MAFFT
- Assembly: metaSPAdes/SPAdes, Velvet
- Misc: BUSCO, fastp, edgeR, NextFlow, MetaPhlan2 suite
- Databases: NCBI, KEGG, Uniprot, GO, Ensembl Genomes, GISAID EpiFlu
- Extensive knowledge of Linux, Bash scripting, and schedulers
- Expert in data cleaning, scraping, processing, visualisation and statistical analysis in R

REFERENCES

Ass. Prof. Erin Price
SENIOR RESEARCH FELLOW
University of Sunshine Coast
E: eprice@usc.edu.au
P: 07 5456 5568

Dr. Tegan Harris
SENIOR RESEARCH OFFICER
Defence Science and Technology
Tegan.harris@dst.defence.gov.au
0410 695 394

Dr. Derek Sarovich
SENIOR RESEARCH FELLOW
University of Sunshine Coast
dsarovich@usc.edu.au
07 5456 3748