Dr. Ashley Otter

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About

Highly motivated and determined individual, passionate for microbiology, with particular focus on molecular microbiology and diagnostics of rare/emerging pathogens. Technically competent in a range of molecular laboratory methods gained through research scientist position within the Rare & Imported Pathogen Laboratory of PHE. Expertise in RT-qPCR and serology assay research, development and verification.

Possess excellent organisational skills with a proven ability to prioritise work and meet deadlines. Excellent communication and presentation skills developed through participation at laboratory meetings and numerous national and international conferences.

Education

Royal Veterinary College, University of London
Centre for Emerging, Endemic & Exotic Diseases — **Oct 2015 – Aug 2018**
PhD thesis entitled: "Understanding the role of *Rv1255c*, a TetR regulator within the RD13 region" under the supervision of Dr. Sharon Kendall. Skills gained include molecular microbiology, transcriptomics, proteomics, molecular biology and working under containment level 3 conditions with *M. tuberculosis* and *M. bovis*.

Cardiff University
School of Biosciences & Medicine — **Oct. 2011 – July 2015**
Awarded with a 1st Class Honours B.Sc. in Microbiology with a placement year. Dissertation project under the supervision of Prof. Eshwar Mahenthiralingam entitled: "Establishment of a *G. mellonella* model for phage therapy against *Burkholderia dolosa*".

Crosskeys College
Advanced Levels — **Oct. 2009 – July 2011**
Subjects studied included Biology (A), Chemistry (B) and ICT (B)

Scientific skills

Containment level 3:
- *M. tuberculosis*
- *B. anthracis*
- SARS-CoV-2
- Arboviruses

Diagnostic Platforms:
- Roche Cobas e 801/8000
- Roche Cobas 6800/8800
- Beckman Coulter Access 2
- OrthoClinical ViTROS
- QuantStudio 7
- Roche LightCycler 480

Automated Platforms:
- Tecan Freedom Evo
- Dynex DS2
- Stratec Gemini
- Qiagen Qiagility
- Opentron OT-2

Molecular:
- PCR, RT-PCR, qPCR
- RNA-Seq
- EMSAs

Proteomics:
- Protein purification
- ELISA/ECL/CLIA
- Western blotting
- SDS-PAGE

Other:
- Molecular biology
- Cloning
- Flow cytometry
- Fluorescent microscopy
- Cell culture
- Working to GLP, ISO and UKAS standards

Employment

Research Scientist — **March 2019 – Present**
Public Health England, Porton Down
Diagnostic Support (DSP) for Rare & Imported Pathogens Laboratory

Research scientist involved in research, evaluation and validation of new molecular diagnostics for a wide range of ACDP 2, 3 and 4 pathogens including viral haemorrhagic fevers (Pan-filovirus, CCHF, Lassa), arboviruses (Zika, Rift Valley Fever, WNV) and high pathogenicity bacteria (*B. anthracis, Y. pestis, Brucella*). Routine work at CL3 to culture wide range of ACDP 3 pathogens, as well as a member of the on-call viral haemorrhagic fever diagnostic service.

As of February 2020, integral part of the laboratory team involved in research, evaluation and implementation of commercial serological assays supporting SARS-CoV-2 mass-population testing, convalescent plasma screening and sero-epidemiology studies. Evaluation and training lead for lateral flow and commercial assays including Roche, OrthoClinical and Beckman Coulter platforms. Additionally, involved in serology data analysis, training and staff management as well as provision of reagents/consumables.

Research Scientist — **August 2018 – March 2019**
Microgenetics Ltd.
Research and Development

Research position involved in research of new diagnostic areas for the SwiftDetect test, including water, biodefense and food. Directly involved in automation of the SwiftDetect test using open source automatic pipettors and adapted labware. Additionally, involved liaising with collaborative partners as well as attendance at molecular and diagnostic conferences to generate new collaborative links and support grant proposal applications.

PhD Student — **October 2015 – August 2018**
Royal Veterinary College, University of London
Kendall Lab, Centre for Emerging, Endemic and Exotic Diseases

PhD focussing on determining the role of an uncharacterised TetR regulator in *M. tuberculosis*. Involved routine culture of *M. tuberculosis* & *M. bovis* at CL3, conforming to SAPO safety regulations. Wide experience in molecular biology techniques such as recombination-based mutagenesis, qPCR, EMSAs, cloning, protein expression/purification & GFP reporter assays. Additional work including bioinformatic analysis of >5,000 *M. tuberculosis* strains to identify modern & ancient specific SNPs in regulatory elements.

Research Assistant — **June 2015 – September 2015**
Training Year Student — **September 2013 – September 2014**
Cardiff University
Anthrax research group, School of Pharmacy & Pharmaceutical Sciences

Professional Training Year (Sept. 2013 – Sept. 2014) in which practical and working knowledge of techniques including cloning, PCR, proteomics and ELISAs. Involved with numerous internal and external collaborators including NATO, Dstl and Battelle. Returned for short employment (June 2015 – Sept. 2015) to complete phage decontamination work.

Other skills

Training

- Training senior biomedical scientists/research staff in newly implemented assays
- Demonstrating for undergraduate practicals
- Supervising various undergraduate and masters students

Teaching

- Lecturing and tutorials for undergraduates

Computer skills

- Mac OS X, Windows & Linux
- Microsoft Office

Statistical software

- R, Prism and MiniTab

Papers

A Novel Inducible Prophage from *Burkholderia Vietnamiensis* G4 is Widely Distributed across the Species and Has Lytic Activity against Pathogenic *Burkholderia*

Viruses 2020, 12(6), 601

R. Weiser, Z.L. Yap, **A. Otter**, B.V. Jones, J. Salvage, J. Parkhill, E. Mahenthiralingam.

Head-to-head benchmark evaluation of the sensitivity and specificity of five immunoassays for SARS-CoV-2 serology on >1500 samples

Lancet Infectious Diseases

The National SARS-CoV-2 Serology Assay Evaluation Group. Part of the consortium responsible for testing at PHE Porton.

Travel and Research Grants

Biology of Anthrax Conference Award (2014)	£300
SfAM Student Placement Scholarship (2014)	£2500
Microbiology Society Travel Grant (2016)	£300
EMBO Tuberculosis Travel Award (2017)	€250
Royal Veterinary College Conference Grant (2017)	£250
BSAC Attendance Award (2017)	£300

Other

Established 2 Twitterbots: @MycobactPapers (live and up-to date tweets of new papers on Mycobacteria) and @MicrobiologyJob (tweeting latest jobs in microbiology). Often write on blog about all things science, books and scientific methods.

Part of RVC team for 'Biotechnology YES' competition 2017.

Engaged in numerous outreach projects, through Universities as well as through STEM ambassador network, presenting scientific outreach activities and stands at places including The Royal Society, Royal Institution and Museum of Wales.

Professional Affiliations

Microbiology Society	Oct. 2013 - Present
Society for Applied Microbiology	Oct. 2013 - Present
STEM Ambassador	Sept. 2012 - Present

Oral Presentations

Understanding the role of *Rv1255c,* a TetR regulator absent from all *Mycobacterium bovis* strains.
Acid Fast Summer Conference – The Jenner Institute, Oxford University

CATs: controlling the hunger of *M. tuberculosis*?
SfAM Conference –Royal Society of Medicine, London

Investigating TetR transcriptional regulators in *M. tuberculosis*
Postgraduate Research Day – Royal Veterinary College, London

Poster Presentations

Understanding the role of a TetR regulator in econazole resistance in pathogenic mycobacteria. *British Society for Antimicrobial Chemotherapy (2017), Birmingham.*

It only takes one: Understanding nucleotide polymorphisms between human and bovine Tuberculosis. *Bioinformatics Early Career Conference (2017), University of Westminster, London.*

Understanding the role of selected TetR family of transcriptional regulators in mycobacteria. *EMBO Tuberculosis (2017), Pasteur Institute, France.*

The Enemy of My Enemy is My Friend: Anthrax Specific Bacteriophages. *Biology of Anthrax (2016), Tampa, Florida.*

Anthrax Environmental Decontamination Network. *NATO and EU Workshop on Anthrax Decontamination (2016), National Centre for Disease Control, Georgia.*

Development of a Protective Antigen Capture System Based on the N-terminal Domain of Lethal Factor. *Biology of Anthrax Conference (2014), Cardiff.*

Please see **ashleyotter.co.uk** for further details.

References

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