Oliver John Watson

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EMPLOYMENT

Imperial College London (Apr 2020– Present)
Post-doctorate Researcher in infectious disease modelling and mortality estimation.

Brown University (Oct 2019 – Mar 2020)
Post-doctorate Researcher in computational genetics, bioinformatics and infectious disease modelling.

EDUCATION

Imperial College London (Oct 2015 – Sept 2019)

PhD Student (October 2016 – Present. Submission Date 28th September 2019):

- Project Title: "Integrating genetic information into malaria transmission modelling"
- Supervisors: Prof Azra Ghani, Dr Lucy Okell and Dr Robert Verity

MRes Biomedical Research (2015 – 2016): Dissertation

- Dean's Prize Awardee for top overall mark within MRes
- Research project published in eLife and cited in World Health Organisation guidance

Pembroke College, University of Cambridge (Oct 2011 - Jun 2015)

- MSc Systems Biology (2014 – 2015): 1st Class – Top bioinformatics research project mark
- BA Natural Sciences (2011 – 2014): 1st Class – Top overall research project mark
- Foundation and College Scholarships for outstanding undergraduate examination results

Marlborough College (Sep 2005 – Jun 2010)

- A Levels (2010): 4A*s Mathematics, Further Mathematics, Biology, Chemistry
- GCSEs (2006 – 2008): 12A*s, 2As | Additional Mathematics (2008) – Advanced Level, Grade A

RESEARCH EXPERIENCE

Publications:

1. Walker, P. G. T., Whittaker, C. Watson, O. J., et al. The impact of COVID-19 and strategies for mitigation and suppression in low- and middle-income countries. Science (2020). 369, 402: 413-422

2. Brazeau, N. F., Mitchell, C. L., Morgan, A. P., Deutsch-Feldman, M., Watson, O. J. et al. The Epidemiology of Plasmodium vivax Among Adults in the Democratic Republic of the Congo: A Nationally-Representative, Cross-Sectional Survey. medRxiv (2020). doi:10.1101/2020.02.17.20024190

3. Witmer, K., Dahar F. A., Devles M., Yahiya S., Watson, O. J. et al. Transmission of artemisinin-resistant malaria parasites to mosquitoes under antimalarial drug pressure. Antimicrobial agents and chemotherapy (2020). 65 (1). doi:10.1128/aac.00898-20

4. Slater, H. C., Foy, B. D., Kobylinski, K., Chaccour, C., Watson, O. J., et al. Ivermectin as a novel complementary malaria control tool to reduce incidence and prevalence: a modelling study. The Lancet Infectious Diseases. (2020). doi.org/10.1016/S1473-3099(19)30633-4

5. Hossain, M. B., Rahman, Md. S.; Watson, O. J., et al. Epidemiology and genotypes of group A rotaviruses in cattle and goats of Bangladesh, 2009-2010. Infection, Genetics and Evolution. 79, 104710 (2020)

6. Akala, H., Watson O. J., et al. Longitudinal Characterization of Plasmodium Inter-Species Interactions During a Period of Increasing Prevalence of Plasmodium Ovale. MedRxiv (2020). doi.org/10.1101/2019.12.28.19015941

7. Watson, O. J., et al. Evaluating the performance of malaria genomics for inferring changes in transmission intensity using transmission modelling. Molecular biology and evolution (2020). 38 (1), 274-289. doi:10.1093/molbev/msaa225

8. Watson, O. J., Sumner K. M. et al. False-negative malaria rapid diagnostic test results and their impact on community-based malaria surveys in sub-Saharan Africa. BMJ Global Health. 4, (2019).

9. Watson, O. J. et al. Impact of seasonal variations in Plasmodium falciparum malaria transmission on the surveillance of pfhrp2 gene deletions. eLife. 8, e40339 (2019).

10. Watson, O. J., FitzJohn, R. & Eaton, J. W. rdhs: an R package to interact with The Demographic and Health Surveys (DHS) Program datasets [version 1; peer review: awaiting peer review]. Wellcome Open Res. (2019). doi:10.12688/wellcomeopenres.15311.1

11. Verity, R. J. et al. The Impact of Antimalarial Resistance on the Genetic Structure of Plasmodium falciparum in the DRC. Nature Communications. (2019). 11(1), 1-10. doi:10.1038/s41467-020-15779-8

12. Watson, O. J., Routledge, I., Griffin, J. T. & Ghani, A. C. Predictive Malaria Epidemiology, Models of Malaria Control Interventions and Elimination. in Encyclopedia of Malaria (eds. Kremsner, P. G. & Krishna, S.) 1–7 (Springer New York, 2018).

13. Cremin, Í., Watson, O. J., et al. An infectious way to teach students about outbreaks. Epidemics 23, 42–48 (2018).

14. Okell, L. C. et al. Emerging implications of policies on malaria treatment: genetic changes in the Pfmdr-1 gene affecting susceptibility to artemether-lumefantrine and artesunate-amodiaquine in Africa. BMJ Glob. Heal. 3, e000999 (2018).

15. Routledge, I., Watson, O. J., Griffin, J. T. & Ghani, A. C. Predictive Malaria Epidemiology, Models of Malaria Transmission and Elimination. in Encyclopedia of Malaria (eds. Kremsner, P. G. & Krishna, S.) 1–7 (Springer New York, 2018).

16. Verity, R. et al. Plasmodium falciparum genetic variation of var2csa in the Democratic Republic of the Congo. Malar. J. 17, (2018).

17. Watson, O. J. et al. Modelling the drivers of the spread of Plasmodium falciparum hrp2 gene deletions in sub-Saharan Africa. eLife 6, e25008 (2017).

Presentations:

1. Watson, O. J. & Okell, L. Multiple first line therapies versus reducing overprescription of antimalarials to slow antimalarial resistance. Oral presentation at ASTMH. 99, 443 (2018).

2. Watson, O. J. et al. The impact of seasonal variation in the detection of clinically relevant plasmodium falciparum hrp2 gene deletions: a modelling study. Poster presentation at ASTMH. 99, 340 (2018).

3. Watson, O. J. & Eaton, J. rdhs: an R package to interact with the demographic and health surveys (DHS) program data sets. Oral presentation at ASTMH. 99, 661 (2018).

4. Watson, O. J. Okell, L. & Ghani, A., Verity, R. Evaluating the performance of malaria genomics for inferring changes in transmission intensity using transmission modelling. Poster presentation at Genomic Epidemiology of Malaria (2018).

5. Cremin, Í.,* Watson, O. J.,* et al. An infectious way to teach students about outbreaks. Poster presentation at Epidemics. (2017).

6. Watson, O. J., Verity, R., Okell, L. & Ghani, A. Characterizing the potential bias within genomic tools for inferring changes in plasmodium falciparum transmission intensities. Oral presentation at ASTMH. 97, 418 (2017).

7. Watson, O. J. et al. Drivers of the spread of "diagnostic resistant" *P. falciparum* malaria: a model-based evaluation of the spread of *pfhrp2* gene deletions in Africa. Oral late breaker presentation at ASTMH. (2016).

8. Watson, O. J. et al. Modelling the drivers of Plasmodium falciparum hrp2 deletions. Presentation as part of a WHO organised panel meeting on "Plasmodium falciparum hrp2/3 gene deletions: update, implications and response" at ASTMH 2016.

EDITORIAL RESPONSIBILITIES + AFFILIATIONS

Reviewer: PLoS Computational Biology
Reviewer: Genome Biology and Evolution
Reviewer: American Journal of Tropical Medicine & Hygiene
Reviewer: Evolutionary Applications
Reviewer: Malaria Journal

Member: Malaria Modelling Consortium – Bill and Melinda Gates Foundation funded consortium of mathematical modelling groups to provide consensus advice in support of global malaria policy.

Member: ROpsnSci – Community of software developers building open source and reproducible tools using the R programming language to further scientific research and lower the barrier to working scientific data sources.

TEACHING EXPERIENCE

Undergraduate Supervision

- Rebecca Kirby. Brown University. 2020 Spring Semester. Spatial Clustering of fever, diarrhoea and ARI at the household level in lower-middle income countries.
- Aris Paschialidis: Brown University. 2020 Spring Semester. Direct estimation of COI from whole genome sequence data.

Central London Data Science (Jun 2016 – Present)

- Organiser of meetup group teaching fundamentals of data science to over 3000 members.
- Awarded $500 in Kaggle Competition for demonstration of mixed-effect models

Teaching Assistant, Imperial College London (Oct 2016 – Oct 2019)

- Practical demonstration assistance on MSc in Epidemiology.
- SACA teaching award nominee (2019)

Brilliant Club Course Author (Jan 2018 – Jun 2018)

- Co-authored an 8-week Key Stage 2 UK (ages 7-11) curriculum entitled "Disease Detectives”

Infectious Disease Modelling Course Organiser (Jun 2016 – Sep 2018)

- Organised teaching material and demonstration assistance on Imperial College London 2-week short course on infectious disease modelling.