

FINLAY MAGUIRE

ACADEMIC ADDRESS

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EDUCATION

Doctor of Philosophy (To be completed)
Natural History Museum
University College London

October 2011 - Present

Joint institution PhD in Molecular Evolution/Bioinformatics between Professor Max Telford at University College London and Dr. Thomas Richards at the Natural History Museum. Project is investigating the deep branching relationships within the Eukaryotes and the metabolic basis of photosynthetic endosymbioses in ciliates via a combination of molecular and bioinformatic techniques.

Bachelor of Arts (Honours) Biological Sciences
Oxford University

October 2008 - June 2011

Honours schools: Cellular and Developmental Biology and Biology of Plant and Animal Disease
Undergraduate research:

- The evolution of the folate biosynthesis gene fusions in the eukaryotes (supervised by Dr Thomas Richards).
- Explaining the functional diversity of leucine rich repeats (supervised by Dr Adrian Smith).
- A proposal to investigate the exchange of proteins between *Ignioccocus hospitalis* and *Nanoarchaeum equitans* (supervised by: Professor Ian Moore).

SHORT TERM PROJECTS

American Epilepsy Society Seizure Prediction Challenge

August - October 2014

Participated in a Kaggle Machine Learning competition as part of team composed of PhD students from University of Edinburgh, University College London and University of Oxford

NASA Planetary Biology Program

July - October 2013

Short term research project with Dr. David J. Smith
at the Space Life Science Laboratories of NASA's John F. Kennedy Space Centre
working on the MIST project. This project involved investigating transcriptomic adaptations of *Bacillus* species to stratospheric conditions
as well as sampling microbes in the stratosphere

BBC Cloud Lab Documentary

October 2013

Acted as NASA representative and scientific advisor for the British Broadcasting Company Cloud Lab documentary on atmospheric science.
Prepared microbial sampling and exposure protocols and materials as well as advised on correct means to conduct these experiments.

Society for General Microbiology Harry Smith Vacation Studentship June - August 2010

Summer research project with Dr. Thomas Richards
at Exeter University on the evolution of folate biosynthesis gene fusions in the eukaryotes.

BioMAP Egypt

July - August 2008

Research assistant on BioMAP GIS project monitoring biodiversity in the Sinai desert in association with the University of Nottingham and the Suez Canal University.

AWARDS AND GRANTS

NASA Planetary Biology Program

July - October 2013
John F. Kennedy Space Center

Funded a research project with Dr. David J. Smith
at NASA KSC SLSL on bacterial adaptations to extreme conditions (£3500).

FEMS Young Scientist Meeting Grant

5th-20th October 2013
Sant Feliu de Guixols, Spain

Federation of European Microbiological Societies grant to attend
and present at European Molecular Biology Organisation: Comparative
Genomics of Eukaryotic Microorganisms (£350).

FEMS Young Scientist Meeting Grant

5th-20th October 2011
Sant Feliu de Guixols, Spain

Federation of European Microbiological Societies grant to attend
and present at European Molecular Biology Organisation: Comparative
Genomics of Eukaryotic Microorganisms (£350).

Society for General Microbiology Undergraduate Student Grant

5th-7th September 2011
University of York

Grant for travel and accommodation to attend and present at the
Society for General Microbiology summer conference at the University
of York (£170).

Dukinfield Exhibition in Biological Sciences

October 2009-July 2011
Somerville College, Oxford

Awarded for academic excellence (£300).

Society for General Microbiology Harry Smith Vacation Studentship

June 2010-August 2010
University of Exeter

Funded a summer research project with Dr. Thomas Richards
at Exeter University on the evolution of folate biosynthesis gene
fusions in the eukaryotes (£1890).

PUBLICATIONS

“Complex patterns of gene fission in the eukaryotic folate biosynthesis pathway.”

Maguire, F., Henriquez, F.L., Leonard, G., Dacks, J.B., Brown, M.W., Richards, T.A.
Genome Biology and Evolution, 2014

“Organelle Evolution: A Mosaic of ‘Mitochondrial’ Functions”

Maguire, F., Richards, T.A.
Current Biology 24(11), R518-R520, 2014

“Diverse molecular signatures for ‘active’ Perkinsea in marine sediments”

Chambouvet, A., Berney, C., Romac, S., Audic, S., Maguire, F., de Vargas, C., Richards, T.A.
BMC microbiology 14(1), 110, 2014

“Cryptic infection of Perkinsea protists of diverse and globally distributed tadpoles”

Chambouvet, A., Gower, D.J., Jirku, M., Yabsley, M.J., Leonard, G., Maguire, F., Bittencourt, G., Wilkinson, M., Richards, T.A.
Manuscript in preparation.

“A gene transfer event infers a recent microsporidian parasite radiation”

Campbell, S.E., Hamilton, P.B., Maguire, F., Richards, T.A., Williams, B.A.P.
Manuscript in preparation.

“A passenger blimp experiment measuring the survival of bacterial endospores in the atmosphere”

Smith, D.J.*, Maguire, F.*, Morford, M.A., Khodadad, C.L., Vasiampayan, P.A., Maloney, P.R., McQuaid, J.B., Venkateswaran, K.J..
Manuscript in preparation.

CONFERENCES AND WORKSHOPS

Molecular Evolution Workshop

Workshop participant.

22nd July - 1st August 2012
MBL, Woods Hole
MA, USA

Natural History Museum Student Conference

Poster presentation: “Complex pattern of gene fusion and fission in the Pterin folate biosynthesis pathway”.

27th-28th March 2012
Natural History Museum, UK

National Association for Research in Science Teaching

Oral presentation: “Working on the Public’s Perception and Understanding of Science and Scientists through a Popular, Open-access ‘AskScience’ Website”
de la Rubia, L.A., Marus, S., Maguire, F.
(*Presented in absentia*).

25th-28th March 2012
Indianapolis, IN, USA

Tennessee Maths and Science Education Research Conference

Oral presentation: “Online Conversations as a Way of Understanding the Public’s Views of the Nature of Science: Research on Reddit’s ‘AskScience’ ”
de la Rubia, L.A., Marus, S., Maguire, F.
(*Presented in absentia*)

2nd-3rd February 2012
Murfreesboro, TN, USA

Systematics Association: Young Systematists Forum

Poster presentation: “Folate Biosynthesis Gene Fusions Evolution in the Eukaryotes”.

1st December 2011
Natural History Museum

Society for General Microbiology Summer Conference

Poster presentation: “Evolution of Folate Biosynthesis Gene Fusions in the Eukaryotes”.

5th-7th September 2011
University of York, UK

EMBO: Comparative Genomics of Eukaryotic Microorganisms

Poster presentation: “Evolution of Folate Biosynthesis Gene Fusions in the Eukaryotes”.

15th-20th October 2011
Sant Feliu de Guixols, Spain

TEACHING AND SUPERVISION

- Unix and Perl Course (October 2014-July 2015)
- Image Processing with Python Workshop (18th-19th September 2014)
- Software Carpentry Exeter Bootcamp (14th-15th November 2013)
- Co-supervision of a visiting summer research student registered at the University of Oxford. The project involved bioinformatic analysis of arsenate resistance HGTs. (June-October 2013)

OUTREACH

Moderator of the “AskScience” science education outreach forum with over 15 million monthly views.

TECHNICAL SKILLS

- Experienced with UNIX/Linux, Zsh/Bash, Python, Awk, Perl, Git, L^AT_EX
- Familiarity with R, C++, linux sysadmin, big data
- Some rudimentary knowledge of CSS, Verilog, Prolog, Go
- Expert on several bioinformatics areas: transcriptomics, molecular evolution/phylogenetics, genomics, metabolomics, sequence analysis, annotation
- Experience with an array of basic molecular and microbiological techniques and methodologies: PCR, culturing, cloning, sequencing technologies, fluorescence microscopy.

OTHER INTERESTS

- PADI Open Water Diver
- St. John’s Ambulance First Aider
- RYA Level 3 Sailing
- Languages: German (intermediate), French (basic/intermediate)
- Musical instruments: French Horn and Bass Guitar