ANDREW JAMES HELMSTETTER

Date of Birth: 03/03/1989
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Objectives

I wish to pursue a career in scientific research in the field of tropical plant evolutionary biology, specifically using genomics to improve conservation and sustainable development in the face of anthropogenic global change. I aim to work with, and in, the scientific communities of developing countries to form partnerships and help with their scientific development.

Education & Academic Qualifications

2011-2015 NERC-funded PhD Studentship, Department of Life Sciences, Silwood Park, Imperial College London
Title: The evolution of diversity and life history traits in annual killifish (*Austrolebias*) and other Cyprinodontiformes
Supervisors: Prof. Vincent Savolainen, Dr. Tom Van Dooren, Prof. Armand Leroi

2007-2011 Masters of Biological Sciences - Upper Second-Class Honours, Department of Animal & Plant Sciences, University of Sheffield

2000-2007 King Edward VI Grammar School, Chelmsford, Essex

Employment

2020-Present Postdoctoral researcher at CESAB (Centre for the Synthesis and Analysis of Biodiversity), FRB, Montpellier. Understanding the origins of angiosperm diversity in a collaborative research network (DiveRS).

2018-2020 Postdoctoral researcher at L'Institut de recherche pour le développement (IRD) Montpellier, UMR DIADE. Comparative phylogeography and evolutionary dynamics of central African rain forest trees.

2016-2018 Postdoctoral Research Fellow (Plant Genomics) at Royal Botanic Gardens, Kew. Development of Primary Genomic Resources for Securing Sustainable Hazelnut Production in Turkey.

2015-2016 Research Intern at Royal Botanic Gardens, Kew. Performing and analysing high-throughput sequencing to understand the demographic history of the sea campion, *Silene uniflora.*

2011-2015 Demonstrator at Imperial College London. Topics include; statistics in R, phylogenetic inference, genome assembly, linkage mapping, gene expression, dissection, cycle sequencing and paper discussions.

2011 Laboratory Support Worker for the University of Sheffield Dyslexia and Disabilities Support Service.

Grants, Awards & Memberships

2014 Awarded Best Presentation Prize at the 16th Young Systematists' Forum at the Natural History Museum, London

2011 NERC-funded PhD Studentship

2010 Awarded Research Bursary of £1,330 by the Sheffield Undergraduate Research Education scheme. Designed and carried out a project entitled *"Sexual Conflict and Immunity."* Supervisor - Prof. Michael T. Siva-Jothy.

2010 Given research bursary in order to conduct fieldwork on *Chorthippus parallelus* in the Peak District. Supervisor - Prof. Roger Butlin.

Member of the European Society for Evolutionary Biology
Member of Phylosynth
Reviews editor for Frontiers in Plant Science: Plant Systematics and Evolution
Reviewer for: Evolution, BMC Evolutionary Biology, Peer community in Evolutionary Biology, Plant, Systematics and Evolution, Forests, Annals of Botany

Presentations

2019 Dating the dynamics of central African rain forests (Poster + Oral presentation). 23rd Evolutionary Biology Meeting Marseilles, 2019.

2019 Evolutionary dynamics of central African rain forest palms (Oral presentation). European Network of Palm Scientists, 2019.

2018 Comparative phylogeography and evolutionary dynamics of central African rain forest trees (Poster). Evolution 2018, Montpellier.

2018 Using phylogenetics and population genetics to understand the origins of diversity: annual fish to rainforest trees, IRD seminar, Montpellier.

2017 Development of Primary Genomic Resources for Securing Sustainable Hazelnut Production in Turkey (Poster + Oral Presentation). New Phytologist Next Generation Scientists 2017 & Plant Health: Challenges and Solutions, Antalya, Turkey.

2016 Investigating the Role of Human Colonisation on Population Decline in Madagascar's Highland Flora (Poster). UK Plant Evolution 2016, Cambridge.

2015 Co-occurrence, growth and morphology in Austrolebias - There's always a bigger fish – Departmental Seminar Université Pierre et Marie Cure

2014 Reproductive Strategy Evolution Stimulates Diversification in an Order of Fish, 16th Young Systematists Forum, NHM, London. *** Won best conference presentation prize

2013 Phylogeography and morphology of the South American Annual Killifish Genus, Austrolebias. Congress of the European Society of Evolutionary Biology, Lisbon.

Outreach

2016 Kew Science Festival. Species identification, DNA extraction and real-time DNA sequencing.

2015 "Bugs Day" Festival Imperial College London. DNA extraction hands-on with children.

2011 Published an account of a collection expedition to Uruguay in the bi-monthly journal of the British Killifish Assosciation, *Killi-news*.

2011 Invited to write an article for the Society of Biology on adaptive radiations in cichlids, featured on their website.

Courses & Workshops

2018-Present Français langue étrangère, CIHEAM-IAMM, Montpellier

2019 *Advanced computer cluster use*, IRD Montpellier

2018 *Phylogenomics Software Symposium*. University of Montpellier.

2017 *Plant Health: Challenges and Solutions* Antalya, Turkey.

2012 *RAD-seq methodologies for ecological and evolutionary studies*. Lund, Sweden.

2012 *Generalised Linear Modelling*. Silwood Park, Imperial College London.

2011-2014 *Imperial College London Postgraduate Training Courses*

Personal Interests and Qualifications

Languages: English (native), French (niveau C1), Spanish (beginner)

2016-2018 Member of Kew Gardens Choir

2011-2014 Member of Silwood Park Choir

2009-2011 Secretary and Member of the Sheffield University Shodokan Aikido Sports Club

2008-2011 Member of the Sheffield University Singers Society

Qualified PADI Open Water Scuba Diver

Sporting interests include Golf, Squash and Fishing
Musical interest include piano, oboe, banjo, ukulele, trumpet, side drum, guitar and singing
Artistic interests include watercolour painting and photography

Selected Publications

Helmstetter, A. J., Kamga, S., Bethune, K., Lautenschläger, T., Zizka, A., Bacon, C., Wieringa, J., Stauffer, F., Antonelli, A., Sonké, B., & others (2020). Unraveling the Phylogenomic Relationships of the Most Diverse African Palm Genus Raphia (Calamoideae, Arecaceae). Plants, 9(4), 549. https://doi.org/10.3390/plants9040549

Helmstetter, A. J., Oztolan-Erol, N., Lucas, S., & Buggs, R. (2020). Genetic diversity and domestication of hazelnut (Corylus avellana) in Turkey. *In press*, Plants, People, Planet. https://doi.org/10.1002/ppp3.10078

Helmstetter, A. J., Cable, S., Rakotonasolo, F., Rabarijaona, R., Rakotoarinivo, M., Eiserhardt, W., Baker, W., & Papadopulos, A. (2020). The Demographic History of Micro-endemics: Have Rare Species Always Been Rare. bioRxiv. https://doi.org/10.1101/2020.03.10.985853

Couvreur, T.*, **Helmstetter, A. J.***, Koenen, E., Bethune, K., Brandao, R., Little, S., Sauquet, H., & Erkens, R. (2019). Phylogenomics of the major tropical plant family Annonaceae using targeted enrichment of nuclear genes. Frontiers in plant science, 9, 1941. https://doi.org/10.3389/fpls.2018.01941 * ***joint first author***

Helmstetter, A. J., Amoussou, B., Bethune, K., Kandem, N., Kakai, R., Sonke, B., & Couvreur, T. (2019). Phylogenomic data reveal how a climatic inversion and glacial refugia shape patterns of diversity in an African rain forest tree species. bioRxiv, 807727. https://doi.org/10.1101/807727 *recommended by PCI*

Helmstetter, A. J., Papadopulos, A., Igea, J., Van Dooren, T. Trait evolution and historical biogeography shape assemblages of annual killifish. *In press*, Journal of Biogeography. https://doi.org/10.1101/436808

Parker, J., **Helmstetter, A. J.**, Devey, D., Wilkinson, T., & Papadopulos, A. (2017). Field-based species identification of closely-related plants using real-time nanopore sequencing. Scientific reports, 7(1), 1–8. https://doi.org/10.1038/s41598-017-08461-5

Helmstetter, A. J., Papadopulos, A., Igea, J., Van Dooren, T., Leroi, A., & Savolainen, V. (2016). Viviparity stimulates diversification in an order of fish. Nature communications, 7, 11271. https://doi.org/10.1038/ncomms11271.