Kevin Healy

Zoology PhD Candidate at Trinity College Dublin

Theoretical evolutionary ecologist with diverse quantitative skills focusing on using comparative analysis and energetic modelling approaches to understand trophic interactions at ecological and evolutionary scales.

Email: healyke@tcd.ie
Tel:+353 851557282
Address: Zoology Department,
School of Natural Sciences,
Trinity College Dublin, Ireland.

Website:healyke.github.io
Google Scholar:http://tinyurl.com/q2wsjsb
ORCID:0000-0002-3548-6253
ResearcherID:H-6512-2013
Twitter:@healyke

Academic Publications

Healy, K., Guillerme T., Finlay, S., Kane, A., Kelly, S.B.A., McClean, D., Kelly, D.J., Donohue, I., Jackson, A.L. and Cooper, N., 2014. Ecology and mode-of-life explain lifespan variation in birds and mammals. *Proceedings of the Royal Society B*, **281**(1784), 20140298. DOI: 10.1098/rspb.2014.0298. Journal Impact Factor:5.68

My second full peer-reviewed paper as lead author. I developed and carried out the main analysis and was heavily involved in the initial conception, data collection and writing of the manuscript. This publication has six google scholar citations placing it in the top 1 percentile of the Environment/Ecology category of papers published in 2014 (Incites).

Healy, K., McNally, L, Ruxton, G., Cooper, N. and Jackson, A.L. 2013. Metabolic rate and body size linked with perception of temporal information. *Animal Behaviour*. **86**, 685-696. DOI: 10.1016/j.anbehav.2013.06.018. Journal Impact Factor:3.4

My first full peer-reviewed paper as lead author. I carried out the data collection, statistical analysis and writing of the paper. It was extensively covered in the media, most notably in the New Yorker and the BBC. This article also has the highest ever alt-metric score for this journal and has eight google scholar citations placing it in the top 10 percentile of the Environment/Ecology category of papers published in 2013 (Incites).

Donohue, I., Petchey, O.L., Montoya, J.M., Jackson, A.L., McNally, L., Viana, M.,**Healy, K**., Lurgi, M., O'Connor, N.E. and Emmerson, M.C. 2013. On the dimensionality of ecological stability. *Ecology Letters*. **16**, 421-429. DOI: 10.1111/ele.12086. Journal Impact Factor:17.95

This was my first full peer-reviewed paper. I was involved in both the development of the conceptual framework during a three-day workshop and also in the development of the statistical analysis used to produce the multidimensional ellipsoids.This publication has seventeen google scholar citations placing it in the top 10 percentile of the Environment/Ecology category of papers published in 2013 (Incites).

Kane, A., Ruxton, G.D., Jackson, A.L., and **Healy, K**. 2015. Body size drives importance of scavenging in theropods. *In review Nature Communications*. Journal Impact Factor:10.7

My first full peer-reviewed paper as senior author. We show that theropod dinosaurs of intermediate body size are more efficient scavengers than individuals of extreme body sizes. I carried out the data collection, statistical analysis and writing of the paper.

Education

2011-Present: PhD in Zoology, Trinity College Dublin. Title:"General scaling of predator-prey interactions". Supervised by Dr. Andrew Jackson and Dr. Andrew Parnell.

I investigated how various ecological and physiological traits such as sensory perception, manoeuvrability and lifespan define the ability of individuals to interact with one another. I focused on traits associated with scaling relationships such as mass and metabolic rates and how these traits link towards more complex structures across levels, from individuals to ecosystem function.

2007-2011: B.A. Mod in Zoology, First class honours and Gold Medal, Trinity College Dublin
Thesis: "Fractal structure of intestinal parasite communities in the field mouse".
Reserch project showing that the distribution of intestinal parasite body sizes follows a distribution predicted from the fractal structure of the mouse intestine. (Overall mark of 82%).

2010: Ureka research position in SoMER (Summer of Molecular Evolution Research) program, National College of Ireland Maynooth.
Ten week program under the supervision of Dr. Christen Griffen investigating the evolutionary divergence of entomopathogenic nematodes. Used sequencing techniques, including AFLAP, to investigate the divergence of nematode morphs and their associated symbiotic bacteria strains.

Awards and Grants

2014: Gordon Research Seminar mentoring program position. Funded by Gordon Research Conferences and the National Science Foundation. (€1,300)
2014: Awarded runner up in both the School of Natural Sciences postgraduate lightning talks and at the Zoology and Botany postgraduate symposium.
2014: Named top contributer to TCD ecology and evolution discussion group "NERD club".
2011: Ph.D. TCD in Theoretical Ecology. Funded by the HEA through the PRTLI-5 and co-funded by the ERDF. (€90,000)
2011: Awarded Gold medal by TCD for “exceptional merit at degree examinations” in final year of B.A Mod. Zoology by coming first in class and achieving an overall final year mark of 77%.
2010: Ureka research position in SoMER (Summer of Molecular Evolution Research) program National College of Ireland Maynooth. Funded by Science Foundation Ireland. (€3000)

Conference and invited presentations

2014: Gordon Research Seminar "Unifying Ecology Across Scales".
Talk: "A tail of two extremes".
Poster: "Ecology and mode-of-life explain lifespan variation in birds and mammals".
2014: Keynote student talk at BES Macroecology meeting Nottingham.
Talk: "Ecology and mode-of-life explain lifespan variation in birds and mammals".
2014: Invited speaker for the Irish Longitudinal Study on Aging (TILDA).
Talk: "Ecology and mode-of-life explain lifespan variation in birds and mammals".
2014: Invited speaker to the Dublin Science Gallery Café DEAD BEATS event.
Talk: "Why so venomous?"
2014: University College Dublin Earth Institute Industry and enterprise showcase.
Poster: "Ecology and mode-of-life explain lifespan variation in birds and mammals".
2013: ESEB XIV Congress, Lisbon, Portugal
Talk: "Metabolic rate and body size linked with perception of temporal information"
Poster: "Ecology and mode-of-life explain lifespan variation in birds and mammals".
2013: British Ecological Society Macroecology SIG meeting.
Talk: "Metabolic rate and body size linked with perception of temporal information".
2013: University College Dublin Earth Institute Industry and enterprise showcase.
Poster: "Metabolic rate and body size linked with perception of temporal information".
2013: Trinity College Dublin Zoology and Botany Postgraduate Symposium.
Talk: "Metabolic rate and body size linked with perception of temporal information".
2012: IsoEcol: International Conference on Applications of Stable Isotope Techniques to Ecological Studies, Brest, France.
Talk: "Accounting for the process of foraging in source-level variation in isotopic mixing models".

Workshops

2014: Tansley Workshop: Collaborative meeting to develop metrics to measure ecosystem multistabilty, Silwood Park, Imperial College London.
2014: Software Carpentry Workshop covering Unix, Git repositories and creating R packages, University of Nottingham.
2014: Integral Projection Models for ecoogical demography, Rob Salguero-Gómez and Yvonne Buckley, Trinity College Dublin.
2013: Spatial Analysis in R Workshop, Barry Rowlingson, University of Sheffield.
2013: Introduction to Morphometrics Workshop, François Gould, Trinity College Dublin.
2013: IUCN Red List of Ecosystems Workshop, Edmund Barrow, Trinity College Dublin.
2012: Introduction to Bayesian analysis using WinBugs, David Lund, University of Cambridge.
2012: Innovation Academy Creative thinking workshop, Trinity College Dublin.
2012: Innovation Academy Film production workshop, Trinity College Dublin.
2012: Introduction to the website management software DreamWeaver, Trinity College Dublin.
2011: Introduction to Stable Isotope Mixing models, Andrew Jackson, Trinity College Dublin.
2009: Mayfly Identification workshop, Mary Kelly Quinn, National Biodiversity Data Centre.

Skills

Quantitative skills

- Modelling and Statistical analysis in R, for example phylogenetic comparative analysis using both likelihood (PGLS) and Bayesian (MCMCglmm) approaches.
- Bayesian modelling using BUGS software and High performance computing using UNIX based parallel computing in the Trinity Centre for High performance Clusters.
- Individual based modelling using Netlogo software.

Field, Communication and Laboratory skills

- Typesetting using LaTex.
- Version control and data sharing: GitHub and Figshare accounts.
- Graphics software; including Inkscape, GIMP and ImageJ.
- Public speaking; including radio, television and public events.
- Fieldwork experience in small mammal trapping, parasitic helminth identification and archaeological excavation.
- Molecular techniques including PCR and AFLAP gained during UREKA program.

Academic service and outreach

Outreach

- I have co-organised two Discover Research Night events in the TCD Zoology Museum aimed at communicating research in evolution and ecology to the general public. These events have attracted a combined attendance of over 450.
- I have partaken in several public talks including in the Dublin Science Gallery and I also regularly produce research Videos and Images aimed at both the scientific and the general public see website.
- I am a regular contributor to the colleges EcoEvo blog with one of my posts reaching the semifinal stages of the 3 quirks daily science blog awards.
- I have been involved in numerous outreach events including BioBlitz (public cataloging of biodiversity), GameJam (Welcome Trust), Soapbox Science and I was a finalist in I'm a scientist get me out of here.
- Postgraduate Representative for the Zoology Department 2014-15.

Professional society membership

- European Society for Evolutionary Biology (ESEB) and British Ecological Society (BES)

Reviewing

- I regularly act as a reviewer for several international academic journals including the Journal of Animal Ecology, the Journal of Biogeography and Proceedings of the Royal Society B.

Teaching Experience

Teaching and Toturials:	I have lectured on both Undergraduate (Evolution) and Masters (Statistics) level courses as well as running several statistics help workshops and research comprehension courses for Zoology Senior Sophisters.
Field Course Assistant:	Field course assistant for week long intensive course on ecology for Junior Sophister teaching field skills in small mammal trapping, insect and bird identification and general field skills
Project subervision:	Co-supervision of Senior Sophister Zoology student thesis project entitled “Fractal structure of intestinal parasite communities”.
Demonstrating:	Lab demonstrating in Data Handling, Fundamentals in ecology Physiology and Botany (Senior Freshman).

References

Contact for References