

Philipp Hanno Boersch-Supan MRes PhD

Quantitative Ecologist

British Trust for Ornithology
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I am a quantitative ecologist with a background in marine ecology and an active interest in data analysis and Bayesian and frequentist inference approaches for mechanistic models of biological systems. I am particularly interested in the interplay between dynamic environments and the foraging and life-history strategies of animals. I develop open-source research software that generalizes solutions from my own work for the use in other fields. While my current work is exclusively computational, I have organized and conducted fieldwork in marine habitats from the tropics to the polar zones, and I enjoy working at the interface between science, policy, and society.

EDUCATION

| | |
|------|--|
| 2014 | PhD in Marine Biology Pelagic Ecology Research Group, University of St Andrews Ocean Research and Conservation Group, University of Oxford |
| 2011 | Certificate in Oceanography Open University, Milton Keynes, United Kingdom |
| 2010 | Master of Research in Environmental Biology (Distinction) Universities of St Andrews and Dundee, United Kingdom |
| 2008 | Vordiplom in Chemistry (Distinction), Certificates in Biochemistry and Zoology Philipps-Universität Marburg, Germany |

EMPLOYMENT & ACADEMIC APPOINTMENTS

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|-------------|---|
| 2018 – | Ecological Statistician British Trust for Ornithology, Thetford, UK |
| 2017 – | Courtesy Research Faculty Department of Geography, University of Florida, Gainesville, FL |
| 2016 – 2018 | Postdoctoral Associate Department of Geography, University of Florida, Gainesville, FL |
| 2017 | Adjunct Instructor Integrative Biology, University of South Florida |
| 2014 – 2016 | Postdoctoral Research Scholar Integrative Biology, University of South Florida, Tampa, FL |
| 2013 – 2014 | Zoological Analyst Predator Group, Ecosystems Programme, British Antarctic Survey, Cambridge |
| 2013 | Freelance Consultant (Science Communication) Client: Global Ocean Commission, Oxford |
| 2005 | Field Ornithologist/Park Warden Wadden Sea National Park of Lower Saxony, Germany |

SKILLS

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| Software | Data analysis, visualisation, statistical modelling and package development in R, Stan, JAGS, custom samplers; spatial analysis with ArcGIS, GRASS, R; shell scripting; databases (Oracle, PostgreSQL); version control (git); \LaTeX ; basic knowledge of Python, MATLAB, C, and C++. |
| Field/Labwork | > 9 months of ornithological surveys; assisted in banding, tagging efforts; >100 days at-sea: fisheries acoustics, net & trawl sampling, remotely operated submersible surveys, stomach & otolith sampling of fish; DNA preparation, DNA barcoding. |
| Languages | English, German |

PEER-REVIEWED PUBLICATIONS

1. **Boersch-Supan PH**, Johnson LR (2018): *Two case studies detailing Bayesian parameter inference for dynamic energy budget models*. Journal of Sea Research. [10.1016/j.seares.2018.07.014](https://doi.org/10.1016/j.seares.2018.07.014)
2. Youker-Smith E, **Boersch-Supan PH**, Gibbs J, Ryan SJ (2018): *Environmental drivers of Frog Virus 3 in free living amphibians in constructed ponds*. EcoHealth. [10.1007/s10393-018-1350-5](https://doi.org/10.1007/s10393-018-1350-5)
3. **Boersch-Supan PH**, Johnson LR, Phillips RA, Ryan SJ (2017): *Surface temperatures of albatross eggs and nests*. Emu - Austral Ornithology. [10.1080/01584197.2017.1406311](https://doi.org/10.1080/01584197.2017.1406311)
4. Ryan SJ, Lippi CA, **Boersch-Supan PH**, Heydari N, Silva N, Adrian J, Noblecilla LF, Ayala EB, Encalada M, Larsen DA, Krisher JT, Krisher L, Fregosi L, Stewart-Ibarra AM (2017): *Quantifying Seasonal and Diel Variation in Anopheline and Culex Human Biting Rates in Southern Ecuador*. Malaria Journal 16:479. [10.1186/s12936-017-2121-4](https://doi.org/10.1186/s12936-017-2121-4)
5. Johnson LR, **Boersch-Supan PH**, Phillips RA, Ryan SJ (2017): *Changing measurements or changing movements? Sampling scale and movement model identifiability across multiple generations of biologging technology*. Ecology and Evolution. [10.1002/ece3.3461](https://doi.org/10.1002/ece3.3461)
6. Sydeman WJ, Thompson SA, Anker-Nilssen T, Arimitsu M, Bennison A, **Boersch-Supan PH**, Bransome N, Boyd C, Crawford RJM, Daunt F, Furness R, Gianuca D, Gladics A, Koehn L, Lang J, Logerwell E, Morris T, Phillips EM, Provencher J, Punt A, Saraux C, Shannon L, Sherley R, Simeone A, Wanless R, Wanless S, Zador S (2017): *Best Practices for Assessing Forage Fish Fisheries - Seabird Resource Competition*. Fisheries Research 194:209-221 [10.1016/j.fishres.2017.05.018](https://doi.org/10.1016/j.fishres.2017.05.018)
7. Djurhuus A, **Boersch-Supan PH**, Mikalsen S, Rogers AD (2017): *Microbial biogeography traces water-mass features of a dynamic oceanic frontal system*. Royal Society Open Science 4:170033 [10.1098/rsos.170033](https://doi.org/10.1098/rsos.170033)
8. **Boersch-Supan PH**, Ryan SJ, Johnson LR (2016): *deBInfer: Bayesian inference for dynamic models in R*. Methods in Ecology and Evolution. [10.1111/2041-210X.12679](https://doi.org/10.1111/2041-210X.12679)
9. Borrelle SB, **Boersch-Supan PH**, Gaskin CP, Towns DR (2016): *Influences on seabird recolonization to offshore islands following predator eradication*. Oryx. [10.1017/S0030605316000880](https://doi.org/10.1017/S0030605316000880)
10. Rogers A, Alvheim O, Bemanaja E, Benivary D, **Boersch-Supan PH**, Bornman T, Cedras R, Du Plessis N, Gotheil S, Høines A, Kemp K, Kristiansen J, Letessier T, Mangar V, Mazungula N, Mørk T, Pinet P, Pollard R, Read J, Sonnekus T (2016) *Pelagic communities of the South West Indian Ocean seamounts: R/V Dr Fridtjof Nansen Cruise 2009-410*. Deep Sea Research II [10.1016/j.dsr2.2016.12.010](https://doi.org/10.1016/j.dsr2.2016.12.010)
11. **Boersch-Supan PH** (2016): *rucrdtw: Fast time series subsequence search in R*. The Journal of Open Source Software 1(7):1-2 [10.21105/joss.00100](https://doi.org/10.21105/joss.00100)
12. Letessier TB, Meeuwij JJ, Cox MJ, **Boersch-Supan PH**, Brierley AS (2016): *Enhanced pelagic biomass around coral atolls*. Marine Ecology Progress Series 546:271–276 [10.3354/meps11675](https://doi.org/10.3354/meps11675)
13. **Boersch-Supan PH**, Rogers AD, Brierley AS (2015): *The distribution of pelagic scattering layers in the south-west Indian Ocean*. Deep Sea Research II [10.1016/j.dsr2.2015.06.023](https://doi.org/10.1016/j.dsr2.2015.06.023)
14. Letessier TB, De Grave S, **Boersch-Supan PH**, Kemp KM, Brierley AS, Rogers AD (2015): *Seamount influences on mid-water shrimps (Decapoda) and gnathophausiids (Lophogastridea) of the South-West Indian Ridge*. Deep Sea Research II [10.1016/j.dsr2.2015.05.009](https://doi.org/10.1016/j.dsr2.2015.05.009)
15. Laptikovskiy V, **Boersch-Supan PH**, Kemp KM, Letessier TB, Rogers AD (2015): *Cephalopods of the Southwest Indian Ocean Ridge: a hotspot of extreme biological diversity and absence of endemism*. Deep Sea Research II [10.1016/j.dsr2.2015.07.002](https://doi.org/10.1016/j.dsr2.2015.07.002)
16. **Boersch-Supan PH**, Boehme L, Read JF, Rogers AD, Brierley AS (2012): *Elephant seal foraging dives track prey distribution, not temperature: Comment on McIntyre et al. (2011)*. Marine Ecology Progress Series 461:293–298 [10.3354/meps09890](https://doi.org/10.3354/meps09890)

17. Rogers AD, Tyler PA, Connelly DP, Copley JT, James R, Larter RD, Linse K, Mills RA, Naveira-Garabato A, Pancost RD, Pearce DA, Polunin NVC, German CR, Shank T, **Boersch-Supan PH**, Alker B, Aquilina A, Bennett SA, Clarke A, Dinley RJJ, Graham ACG, Green D, Hawkes JA, Hepburn L, Hilario A, Huvenne VAI, Marsh L, Ramirez-Llodra E, Reid WDK, Roterman CN, Sweeting CJ, Thatje S, Zwirgmaier K (2012): *The discovery of new deep-sea hydrothermal vent communities in the Southern Ocean and implications for biogeography*. PLoS Biology 10(1):e1001234 [10.1371/journal.pbio.1001234](https://doi.org/10.1371/journal.pbio.1001234)

FORTHCOMING PUBLICATIONS (MANUSCRIPTS AVAILABLE ON REQUEST)

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| Submitted | NJB Isaac, MA Jarzyna, P Keil, PH Boersch-Supan , E Browning, LI Dambly, SN Freeman, N Golding, G Guillera-Aroita, P Henrys, S Jarvis, J Lahoz-Monfort, J Pagel, OL Pescott, R Schmucki, E Simmonds, RB O'Hara: <i>Data Integration for Large Scale Ecological Models of Species Distributions</i> . Submitted to Trends in Ecology & Evolution |
| In prep | EM Humphries, GE Austin, T Frost, H Mellan, PH Boersch-Supan , NK Burton, DE Balmer: <i>Wader populations on the UK's open coast: results of the 2015/16 Non-Estuarine Waterbird Survey (NEWS-III) and a review of population trends</i> . In preparation for submission to Bird Study |

ONGOING ANALYSES

A portfolio showcasing selected data analysis and software projects can be found at pboesu.github.io/portfolio.

- Hierarchical parameter inference for dynamic energy budget models of seabirds
Lead: PH Boersch-Supan; with LR Johnson (VirginiaTech), SJ Ryan (UF), RA Phillips (British Antarctic Survey)
Approach: Bayesian inference for differential equation models with Stan and custom MCMC samplers.
- Foraging and migration phenology and provisioning strategies of macaroni penguins
Lead: PH Boersch-Supan; with PN Tratham and HJ Peat (British Antarctic Survey)
Approach: Supervised classification of massive dataset; Phenological curve fitting, hurdle models for repeated measures data, errors-in-variables GLMMs (Bayesian estimation with Stan)
- Effects of burrowing seabirds on plant communities and soil nutrient distributions on seabird islands
Lead: SB Borrelle (Auckland University of Technology/Northern New Zealand Seabird Trust)
Approach: Spatially explicit GLMs, model-based analysis of environment-trait associations (ML estimation)
- Temperature dependence of life-history traits in the human parasite *Schistosoma mansoni*
Lead: K Nguyen (University of South Florida)
Approach: Zero-inflated GLMMs for repeated measures data (ML estimation with glmmTMB)

PEER-REVIEWED RESEARCH SOFTWARE

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| deBIInfer | Bayesian inference for differential equation models in R (with SJ Ryan, LR Johnson) https://cran.r-project.org/package=deBIInfer [R, C] |
| rucrdtw | Fast dynamic time warping algorithms for time-series data mining in R https://cran.r-project.org/package=rucrdtw [R, C++] |

OTHER SOFTWARE

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| seabirdeb | Compiled bioenergetics models for seabirds (Work in progress) https://github.com/pboesu/seabirdeb [R, C] |
| DEButilities | Utility functions for dynamic energy budget models (Work in progress) https://github.com/pboesu/DEButilities [R] |
| microclimloggers | Data parsing functions for microclimate loggers such as iButtons (Work in progress) https://github.com/RyanLab/microclimloggers [R] |
| penguinwb | Interface and analysis framework for a large database of penguin body mass records Closed-source package for internal use at the British Antarctic Survey [R, SQL] |
| cowsay | Allows printing of character strings as messages/warnings/etc. with ASCII animals Contributor. Lead developer: Scott Chamberlain https://cran.r-project.org/package=cowsay [R] |

REPORTS AND THESES

- 2013 **Boersch-Supan PH**
The ecology of scattering layer biota around Indian Ocean seamounts and islands. PhD Thesis, University of St Andrews, United Kingdom, 219pp. <http://hdl.handle.net/10023/11440>
- 2012 **Boersch-Supan PH**, Webster CN: *Net sampling and acoustic surveys of deep-scattering layers and their interactions with seamounts* in Rogers AD, Taylor, MT (Eds.) Benthic biodiversity of seamounts in the southwest Indian Ocean Cruise report – R/V James Cook 066 – Southwest Indian Ocean Seamounts expedition – November 7th – December 21st, 2011 University of Oxford / NERC, 235pp.
- 2009 Rogers AD, Alvheim O, Bemanaja E, Benivary D, **Boersch-Supan PH**, Bornman T, Cedras R, Du Plessis N, Gotheil S, Hoines A, Kemp K, Kristiansen J, Letessier T, Mangar V, Mazungula N, Mørk T, Pinet P, Read J, Sonnekus T *Cruise Report "Dr. Fridtjof Nansen" Southern Indian Ocean Seamounts (IUCN/ UNDP/ ASCLME/ NERC /EAF Nansen Project 2009 Cruise 410) 12th November – 19th December, 2009.* International Union for the Conservation of Nature, Gland, Switzerland, 188pp.
- 2009 **Boersch-Supan PH**
Gelatinous zooplankton distribution along the western Irish shelf-edge. MRes Thesis, University of St Andrews, United Kingdom, 67pp.

AWARDS AND SCHOLARSHIPS

- 2016 Enderby Trust Scholarship (\$5000, Travel to sub-Antarctic islands of New Zealand)
- 2010 – 2013 Doctoral Fellowship of the Cusanuswerk (€41,400)
- 2010 – 2013 Doctoral Fellowship of the German National Academic Foundation (non-stipendiary)
- 10/2011 Visiting Researcher Award, Rehbock Fund, Scripps Institution of Oceanography Archives (\$ 2,100)
- 2009 – 2012 Hilton-Brown Scholarship (Fees), University of St Andrews (£ 10,500)
- 2009 – 2010 Scholarship to Study Abroad, German National Academic Foundation (€ 4,450)
- 2008 – 2009 Hölderlin-Scholarship, SAP AG and German National Academic Foundation (€ 5,000)
- 2008 – 2009 MRes Studentship (Fees), UK Natural Environment Research Council (£ 3,500)
- 2007 – 2010 Undergraduate Fellowship of the Cusanuswerk (non-stipendiary)
- 2006 – 2010 Undergraduate Fellowship of the German National Academic Foundation (€ 4800)

GRANTS

- 04/2015 Travel grant: Workshop on Seabird Fisheries Competition, Cape Town, South Africa
Farallon Institute (\$ 500)
- 04/2015 Travel grant: Workshop on Computational Frameworks in Ecology, Durham, NC
Statistical and Applied Mathematical Sciences Institute (\$ 1100)
- 07/2013 Conference travel grant: Deep-sea Fish Biology Symposium, Glasgow, UK
Marine Alliance for Science and Technology for Scotland (£ 250)
- 05/2013 Small grant: Microsatellite genotyping of the hatchetfish *Argyropelecus aculeatus*
Marine Alliance for Science and Technology for Scotland (£ 544)
- 12/2012 Small grant: Tuna-micronekton interactions in the Chagos Archipelago,
Fisheries Society of the British Isles (£ 2,940)
- 11/2012 Fieldwork travel grant: Echosounder surveys in the Chagos Archipelago,
Cusanuswerk (€ 2,369)
- 06/2010 Conference travel grant: Deep-sea Biology Symposium, Reykjavik, Iceland,
German National Academic Foundation (€ 250)

INVITED TALKS AND SEMINARS

- 01/2019 "Monitoring bird populations through volunteer-collected observations"
NERC Advanced Training Course "Statistical models for wildlife population assessment and conservation",
University of Kent
- 09/2017 "Measuring and modelling the lives of ocean wanderers"
Geography Colloquium, University of Florida
- 03/2017 "Understanding determinants of albatross growth with dynamic energy budget theory"
Mathematical Biology Seminar Series, Virginia Tech
- 03/2017 "Unravelling physiological and ecological determinants of albatross chick growth and survival"
Integrative Organismal Biology Seminar Series, Virginia Tech
- 07/2016 "Linking seabird energetics to population dynamics while propagating uncertainty across scales"
Gordon Research Seminar on Unifying Ecology Across Scales, Biddeford, ME
- 11/2014 "The Pelagic Ecology of Indian Ocean Seamounts and Islands"
Integrative Biology Seminar Series, University of South Florida, Tampa, FL
- 10/2011 "Pelagic sound scattering layers and trophic interactions around Indian Ocean seamounts"
NOAA Southwest Fisheries Science Center, La Jolla, CA, USA
- 06/2011 "Preliminary Results from *RV Nansen* Cruise 2009-410"
IUCN Indian Ocean Governance Workshop, Grahamstown, South Africa

CONTRIBUTED PRESENTATIONS

- 09/2018 **Boersch-Supan, PH**, Peat HJ, Trathan PN "Opportunistic central-place foraging in an otherwise rigid annual movement cycle" (Talk)
Seabird Group Conference 2018, Liverpool, UK
- 07/2018 **Boersch-Supan, PH**, Peat HJ, Trathan PN "Determining the phenology of marked and unmarked seabirds from a very large force sensor data set" (Talk)
International Statistical Ecology Conference, St Andrews, UK
- 07/2018 **Boersch-Supan, PH** "Bayesian inference for bioenergetic models" (Poster)
British Ecological Society Quantitative Ecology SIG Meeting, St Andrews, UK
- 06/2018 **Boersch-Supan, PH** "Counting and weighing penguins really fast with Rcpp" (Talk)
satRday, Cardiff, UK
- 06/2017 **Boersch-Supan, PH**, Phillips, RA, Ryan, SJ, Johnson, LR "Bayesian parameter estimation for Dynamic Energy Budget models of albatross growth" (Talk)
5th Symposium on Dynamic Energy Budget Theory, Tromsø, Norway
- 09/2016 **Boersch-Supan PH**, Phillips RA, Ryan SJ, Johnson LR "Unravelling physiological and ecological determinants of albatross chick growth" (Talk)
6th International Albatross and Petrel Conference, Barcelona, Spain
- 09/2016 Borrelle SB, **Boersch-Supan PH**, Gaskin CP, Towns DR: "Influences on seabird recolonization to offshore islands following predator eradication" (Talk)
6th International Albatross and Petrel Conference, Barcelona, Spain
- 06/2016 **Boersch-Supan PH** and Johnson LR "deBInfer: Bayesian inference for dynamic models in R" (Talk)
International Statistical Ecology Conference, Seattle, WA
- 06/2016 Johnson LR, **Boersch-Supan PH**, Ryan SJ, Phillips RA "Changing measurements of changing movements? Detecting movement patterns across multiple generations of tracking technology" (Poster)
International Statistical Ecology Conference, Seattle, WA

- 06/2016 Johnson LR and **Boersch-Supan PH** "deBInfer: Bayesian inference for dynamic models in R" (Poster)
International Society for Bayesian Analysis World Meeting, Sardinia, Italy
- 06/2016 Gajewski ZJ, Stevenson L, **Boersch-Supan PH**, Pike D, Roznik E, Johnson LR "Do strains of the amphibian chytrid fungus exhibit local adaptation?" (Poster)
14th Ecology and Evolution of Infectious Disease Meeting, Ithaca, NY
- 10/2015 **Boersch-Supan PH**, Peat HJ, Trathan PN "The timing of foraging, moult, and migration in breeding macaroni penguins" (Poster)
2nd World Seabird Conference, Cape Town, South Africa
- 10/2015 **Boersch-Supan PH**, Burgan S, Phillips RA, Ryan SJ, Johnson LR "Unravelling physiological and ecological determinants of albatross chick growth" (Talk)
2nd World Seabird Conference, Cape Town, South Africa
- 09/2015 Kemp KM, **Boersch-Supan PH**, Rogers AD "Pelagic fish community composition of the South West Indian Ocean ridge" (Talk)
14th Deep-sea Biology Symposium, Aveiro, Portugal
- 04/2015 **Boersch-Supan, PH**, Phillips, RA, Ryan, SJ, Johnson, LR "Modelling Albatross Bioenergetics and Foraging Behaviours" (Poster)
4th Symposium on Dynamic Energy Budget Theory, Marseille, France
- 04/2015 **Boersch-Supan, PH**, Phillips, RA, Ryan, SJ, Johnson, LR "Modelling Albatross Bioenergetics and Foraging Behaviours" (Poster)
SAMSI Workshop on Computational Frameworks in Ecology, Durham, NC
- 07/2013 **Boersch-Supan, PH**, Freer JJ, Brierley, AS, Rogers, AD "Topographic blockage contributes to the diet of Indian Ocean seamount fishes" (Talk)
FSBI Symposium 2013, Glasgow, UK
- 07/2013 Freer JJ, **Boersch-Supan, PH**, Rogers, AD "Population genetics of the hatchetfish *Argyropelecus aculeatus* in the southwest Indian Ocean" (Talk)
FSBI Symposium 2013, Glasgow, UK
- 10/2011 Bell C, **Boersch-Supan PH**, Rogers AD "Molecular Analysis of Larval Diversity in the Southwest Indian Ocean Ridge" (Talk)
World Conference on Marine Biodiversity, Aberdeen, UK
- 10/2011 Rogers AD, **Boersch-Supan PH**, Kemp KM "High Seas Deep-Sea Fisheries in an Ecosystem Context: The South West Indian Ocean Ridge Project" (Digital Poster)
World Conference on Marine Biodiversity, Aberdeen, UK
- 03/2011 Bell C, **Boersch-Supan PH**, Rogers AD "Molecular Analysis of Larval Diversity in the Southwest Indian Ocean Ridge" (Poster)
12th Student Conference on Conservation Science, Cambridge, UK
- 02/2011 Rogers AD, **Boersch-Supan PH**, Kemp KM "High Seas Deep-Sea Fisheries in an Ecosystem Context: The South West Indian Ocean Ridge Project" (Poster)
ZSL Symposium: Marine Protected Areas on the High Seas, London, UK
- 06/2010 **Boersch-Supan PH**, Read J, Brierley AS, Rogers AD "Distribution of epi- and mesopelagic scattering layers around Indian Ocean seamounts" (Talk)
12th Deep-sea Biology Symposium, Reykjavik, Iceland

WORKSHOPS AND INFORMAL TRAINING

- 07/2018 "Data Integration for Large Scale Ecological Models"
Centre for Ecology and Hydrology, Wallingford, UK
- 08/2017 "Software Carpentry Instructor Training"

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| 06/2016 | "Bayesian Decision Theory and Model Selection" Workshop taught by M. Hooten, P. Williams, and T. Hefley, Seattle, WA |
| 11/2015 | "Guidelines and Best Practices to Determine Seabird-Fisheries Competition" Department of Environmental Affairs, Cape Town, South Africa |
| 08/2015 | "Bayesian Modeling for Socio-Environmental Data" National Socio-Environmental Synthesis Center, Annapolis, MD |
| 04/2015 | "Computational Frameworks for the Ecological Sciences" Workshop combining software carpentry training and scientific case studies Statistical and Applied Mathematical Sciences Institute, Research Triangle Park, NC |
| 02 – 04/2015 | "8 th International Course on Dynamic Energy Budget Theory" University of South Florida and Centre International de Rencontres Mathématiques, Marseille, France |
| 02/2014 | "Agent-based Modelling", Oxford, UK IT Learning Programme, University of Oxford |
| 07/2011 | "Applied Spatio-temporal Data Analysis with FOSS: R+OSGeo", Landau, Germany Summer school taught by various R and GIS developers |
| 06/2011 | "Introduction to Bayesian Analysis and MCMC" and "Hierarchical Modelling of Spatial and Temporal Data", Southampton, UK <i>Short courses taught by A. Gelfand (Duke University) and S. Sahu (University of Southampton)</i> |
| 11/2010 | Taxonomic Workshop at the South African Institute of Aquatic Biodiversity Identifying mesopelagic fishes and cephalopods and processing for curation. |
| 09/2009 | "Climate Modelling", Guidel, France <i>Summer School of the German National Academic Foundation</i> |

TEACHING

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| 2018 | Guest Lecturer: Seabird Ecology Undergraduate level course in Marine Biology, University of Essex |
| Fall 2017 | Helper: Data Carpentry Workshop Two day workshop on R, SQL, and OpenRefine for data management and analysis University of Florida Informatics Institute |
| Fall 2017 | Guest Lecturer: Data Management for Biologists Graduate level course in Biology, University of South Florida |
| Spring 2017 | Instructor of Record: Biometry Graduate level course in Biology, University of South Florida |
| Fall 2015 | Guest Lecturer: Data Analysis for Scientists Graduate level course in Biology, University of South Florida |
| Spring 2015 | Guest Lecturer: Mathematical Biology Graduate level course in Biology, University of South Florida |
| 2010 – 2014 | Tutor in Marine Ecology, Animal Adaptations and Statistics for Biologists This consisted of small group teaching (1-3 students per session) to cover lecture material in depth. Biological Sciences Undergraduate Programme, University of Oxford Oxford Overseas Studies Program, Stanford University |
| 2010 | Teaching Assistant: Statistics with R (Intensive Course for 1 st year PhD students) Department of Zoology, University of Oxford |

MENTORING

| | |
|----------|---|
| Graduate | Nicholas Dowhaniuk (PhD-track, UF, 2016), Sarah Burgan (MS-track, USF, 2014/2015), Jennifer Freer (MRes Oxford/Glasgow, 2012), Celia Bell (MSc, Oxford, 2011) |
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| Undergraduate | Kaleigh Nelson (USF, 2016), Luc Olivier (USF, 2015/2016), Chris Taylor (Oxford, 2012), Lauren Sumner-Roney (Oxford, 2011) |
| High-School | Owen Hallett (Waynflete Programme, Magdalen College School Oxford, 2014), Clara Kloecker (Work experience student, Oxford 2012) |
| 2004 – 2008 | Mentor at the Heidelberg Life-Science Lab (STEM Initiative of the German Cancer Centre) <i>Coorganisor of International Science Academy Estonia 2007 and the Ornithological Wadden Sea Excursion 2006; Mentoring of high-school students for research projects and lab courses 2004 – 2007</i> |

POLICY AND OUTREACH

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| 2009 – | Contribution of texts, photographs, and scientific visualisations to press releases and blogs Clients/media outlets included BBC Nature News, International Union for the Conservation of Nature, Global Ocean Commission and various expedition blogs. Selected posts at pboesu.github.io/blog |
| 12/2017 | Public Outreach Lecture on Polar Seabirds (Invited Talk) Tampa Audubon Society, Tampa FL |
| 07/2017 | Co-presenter "Bringing Polar Research to your Classroom" National Science Teachers Association, STEM Forum, Orlando, FL |
| 02/2016 | Polar-ICE Science Communication Workshop Audubon Aquarium, New Orleans, LA |
| 02/2013 | Curation of an exhibition showcasing deep-sea habitats and biodiversity Launch event of the Global Ocean Commission, London, UK |
| 04/2012 | Workshop on Integrated Solutions for Synergistic Ocean Stresses and Impacts (Member of organising team) International Programme on the State of the Oceans, Oxford, UK |
| 06/2011 | Indian Ocean Governance Workshop (Invited Speaker) International Union for the Conservation of Nature, Grahamstown, South Africa |
| 04/2011 | Workshop on Ocean Stresses and Impacts (Member of organising team) International Programme on the State of the Oceans, Oxford, UK |
| 01/2010 | Public Outreach Lecture on Deep-sea Research (Invited Talk) Symposium on the History of Exploration, Darmstadt, Germany |

FIELDWORK EXPERIENCE

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| 2014, 2015 | Assisted in capture of seabirds for biologger deployment and ring recoveries Faroe Islands, with Dr. J. Danielsen, 1 Week |
| 11 – 12/2012 | Research cruise in the central Indian Ocean <i>MV Pacific Marlin</i> , Chagos Archipelago, 3 Weeks |
| 11 – 12/2011 | Research cruise in the SW Indian Ocean <i>RRS James Cook</i> and <i>ROV KIEL6000</i> , Cruise JCO66/67, SW Indian Ocean, 7 Weeks |
| 2009 | Research cruises in the NE Atlantic and SW Indian Ocean <i>RV Celtic Explorer</i> , Cruise CE0911, Porcupine Seabight, 2 Weeks <i>RV Dr. Fridtjof Nansen</i> , Cruise 2009-410, SW Indian Ocean, 6 Weeks |
| 04 – 12/2005 | Ornithological Field Surveys on Langeoog Island Wadden Sea National Park of Lower Saxony, Germany Daily surveys of waterfowl, shorebirds, raptors and passerines during the breeding season; bi-monthly counts of roosting shorebirds in salt marsh, beach, and urban habitats; bi-monthly beached bird surveys. |

SERVICE AND PROFESSIONAL SOCIETIES

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| Editorial Boards | Associate Editor at Animal Conservation since 2018 |
| Journal Review | Acta Tropica, Animal Conservation, Biological Reviews, Deep-Sea Research I, Ecological Applications, Ibis, Journal of Open Research Software, Journal of Open Source Software, Marine Ecology Progress Series, Methods in Ecology and Evolution, PLoS ONE, Progress in Oceanography, ReScience |
| Grant Review | French National Polar Program, British Ecological Society Research and Outreach Grants |
| Member | The Seabird Group, British Ecological Society, Fisheries Society of the British Isles |