

Dr William P. Kay | Lecturer in Statistics

 @willpkay  willpkay.weebly.com

Academic Qualifications

- 2021 PhD (Biological Sciences) "Seal movements in tidally energetic environments" Swansea University.
- 2015 MSc Res (Animal Movement Science) "Harbour seal foraging ecology" No corrections. Swansea University
- 2013 City and Guilds Professional Development Award (in *Wildlife and Conservation*)
- 2013 BSc Hons (Marine Biology) First Class. Swansea University

Employment History

- May 2023-present Lecturer in Statistics, School of Biosciences, Cardiff University (by named appointment)
- July 2021-May 2023 Tutor in Data Analysis and Statistics, School of Biosciences, Cardiff University
- July 2020-July 2021 Research Technician, Seagrass Ocean Rescue (SOR), Biosciences Dept., Swansea Uni
- Dec 2019-Apr 2020 Grant Development Officer, SOR, Department of Biosciences, Swansea University, UK
- Jun 2019-Sep 2019 Research Assistant, SEACAMS2, Department of Biosciences, Swansea University, UK
- Jan 2019-Jun 2019 Teaching Lecturer (HE Level 6), Department of Biosciences, Swansea University, UK
- Apr 2017-Sep 2017 Science Policy Intern, The Royal Society, 6-9 Carlton House Terrace, London, SW1Y 5AG
- Aug 2016-Aug 2017 Postgraduate Research Rep, College of Science, Swansea University, UK
- Jan 2016-present Doctoral Researcher, Department of Biosciences, Swansea University, UK
- Sep 2013-present Student Demonstrator, Department of Biosciences, Swansea University, UK

Profile

I am a Lecturer in Statistics in the School of Biosciences, Cardiff University, with a background in marine ecology. I am passionate about statistical education and my main area of scholarship is in "Statistics Anxiety". My biological research interests lie in quantifying the individual- and population-level drivers of animal movements, and predicting the impact of anthropogenic disturbance and environmental change on animals. My main asset is my combination of proficiency in high level research and analytical skills, field methods (including in remote locations), and pedagogical expertise, complemented by professional experience and commercial qualifications (such as seamanship and HSE SCUBA diving, including instructional techniques).

Academic Roles

- April 2023-Present Biological Sciences Degree Scheme Coordinator, Cardiff University
- Nov 2022-Present BI1002 Assessment Lead, School of Biosciences, Cardiff University
- Nov 2022-Present SWBio GW4+ DTP Statistics Week Lead, Cardiff University
- May 2022-Present Mentor and Assessor for the Cardiff University Education Fellowships Programme
- Sept 2022-Present Deputy for MSc Global Ecology and Conservation, Cardiff University

Supervision and Tutoring

- PhD student Tutoring 1 student from Wildlife Institute of India in advanced hidden Markov statistical analysis
- MSc student Co-supervising 1 student project: Movements and behaviour of harbour seals (*Phoca vitulina*)
- MRes students Tutored 2 MRes students in telemetry device design (both successful MRes defence).
- BEng students Co-supervised 2 BEng students in co-author publication (Kay et al. 2019; see Publications)
- BSc student 2019; Supervised 1 BSc student in spatial data project (resubmitting co-author publication).
2022; Supervised 4 BSc students to completion in literature review projects. Of these, 1 won prize for best dissertation (from >300 students).
- Other 20 undergraduates tutored in dissertation projects at British Ecological Society Summer School (2017 & 2018); numerous undergraduates tutored at Statistics Help Desk, Dept. Biosciences.
- Private Tutoring A-level and GCSE student in Mathematics, Science, English, and History.

Teaching and Workshops

- HE Level 8 Cardiff University – Lecturer: SWBio DTP Statistics Week – led organisation and delivery of week-long intensive statistics week (co-designed course content).
- HE Level 7 Cardiff University – Lecturer: BIT010 Data Handling and Statistics; BIT050 Field Skills for Ecology and Conservation; BIT052 Assessing Biodiversity and Ecosystems; BIT053 Data Science; BIT054 Research Project; BIT055 Field Research and Placement; MS0100 Maths Support; Swansea University – Demonstrator: BIOM25B Skills and Statistics, BIOM33B Movement Ecology

Teaching and Workshops

HE Level 6	Cardiff University – Lecturer: BI3001 Final Year Project; BI3153 Evolution and Adaptation. Swansea University – Lecturer: BIO318 Ecology of Marine Animals – designed and delivered lecture material, set exam questions, marked exams. Overall module feedback score: 4.3/5. Demonstrator - BIO334 Advanced Data Analysis, BIZ300 Collective Animal Behaviour
HE Level 5	Cardiff University – Lecturer: BI2XXX Biosciences Year 2 Core; BI2431 Brain and Behaviour; BI2136 Ecology Part A; BI2136 Ecology Part B; Swansea University – Demonstrator: BIO252 Ecological Data Analysis, BIO228 Parasitology
HE Level 4	Cardiff University – Lecturer: BI1XXX Year 1 Core; BI1051 Genetics and Evolution; BI1013 Biological Chemistry; BI1004 The Dynamic Cell; BI1003 Organisms and Environment; BI1002 Structure and Function of Living Organisms; BI1001 Skills for Science; Swansea University – Demonstrator: BIO109 Core Skills for Biological Sciences, BIO106 Ecology and Animal Behaviour, BIO105 Animal Diversity, Form and Function
HE Level 3	Swansea University – Demonstrator: BIO14 Research Skills for Biologists.
Workshops	Teaching Study Design and Analysis: A workshop based on UK-wide, cross-disciplinary survey of teaching practices for life sciences (UKCOTS 2024), Best Practice in Tagging Cetaceans and Pinnipeds (WMMC), Policymaking for Ecologists, Ecological Ethograms, Designing a Research Project (BES Summer School 2017, 2018); International Movement Ecology Workshop (PR Statistics, Margam, 2018), Intro into R (Swansea)

Grants, Bursaries and Scholarships (Total: ~£76.3k)

2024	Biochemical Society Early Career Member Bursary (£100)
2024	Cardiff University On-Campus Internship Placement Student Grant (£2,392)
2023	Pobl Trust Grant (£1,000)
2023	Erasmus Mobility Funding (€500)
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2022	Erasmus Mobility Funding (€500)
2021	SMM Student Travel Grant (\$700)
2021	The Worshipful Livery Company of Wales Travel Scholarship (£340)
2020	SPIN: Swansea Paid Internship Network (£1,343)
2020	UKIRSC Travel Grant (£200)
2019	Erasmus Mobility Funding (€500)
2019	World Marine Mammal Conference Student Travel Grant (€55)
2019	UKIRSC Conference Grant (Swansea University; £1,000)
2019	Erasmus Mobility Funding (€650)
2018	KESS II Training and Travel Grant (£350)
2018	European Cetacean Society Travel Grant (€150)
2018	UKIRSC Travel Grant (£80)
2017	Royal Society of Biology (RSB) Travel Grant (£500)
2017	KESS II Equipment Grant (£950)
2017	UKIRSC Travel Grant (£80)
2016	BES Policy Workshop Travel Bursary (£60)
2016	KESS II Training and Travel Grant (£900)
2016	ESF Travel Scholarship (£1,000)
2016	KESS II Training and Travel Grant (£900)
2016	KESS Equipment Grant (£1,600)
2016	UKIRSC Travel Grant (£100)
2016	KESS II Knowledge Economy Skills Scholarship (Swansea University; £45,800)
2014	Swansea University College of Science Postgraduate Scholarship (£2,900)
2012	Employability Academy Travel Scholarship (Swansea University; £1,500)
2011	Excellence Scholarship for Academic Attainment (Swansea University; £1,000)
2010	Excellence Scholarship for Undergraduate Study (Bangor University; £9,000)

Awards and Nominations

2024	Nominated for Enriching Student Life Award (ESLA) 2024: Champion of Welsh Education
2024	Nominated for Enriching Student Life Award (ESLA) 2024: Most Outstanding Learning Experience
2024	Nominated for Enriching Student Life Award (ESLA) 2024: Personal Tutor of the Year
2023	Outstanding Contribution Award (Cardiff University) (£750)
2023	UK and Ireland Mathematics and Statistics Support Network Award for Excellence 2023

Awards and Nominations

2023	Finalist for Rising Star – Early Career Academic (Celebrating Excellence Award)
2023	Fellow of the Higher Education Academy, AdvanceHE (FHEA)
2023	Nominated for The ALDinHE Award 2023
2023	Nominated for Most Engaging Staff Member, Enriching Student Life Awards (ESLA)
2023	Nominated for Most Uplifting Staff Member, Enriching Student Life Awards (ESLA)
2019	Nominated for the British Ecological Society (BES) Robert May Prize
2019	Nominated for Swansea University Postgraduate Research and Innovation Rising Star
2019	Best Research Poster at UKIRSC XIII 13th Annual Conference (£25)
2018	Best Oral Presentation Prize at WEEN Annual Conference 2018 (£50)
2018	Best Research Poster Prize at BES Movement Ecology SIG Annual Meeting 2018 (£50)
2018	Third Place Prize for Research Poster at Swansea University PGR Poster Competition 2018
2018	Best Short Oral Presentation at ECS 32nd Annual Conference 2018 (€150)
2017	Ede and Ravenscroft Anniversary Student Prize 2017 for Outstanding Contribution (£250)
2017	Third Place Prize for Swansea University Research Institute of Ethics and Law Competition (£200)
2017	Research Poster Finalist at Swansea University PGR Competition 2017
2017	Honorary Lifetime Membership of Swansea University Students' Union (SUSU)
2016	Best Research Poster Prize at KESS II Transnational Graduate Training School
2016	Best Research Poster Prize at Swansea University PGR Poster Competition 2016
2013	Graham Ralston Memorial Prize for Marine Biology (£250)

Professional and Technical Qualifications

Animal Research	Animals (Scientific Procedures) Act 1986 – Home Office Personal License Holder
Seamanship	MCA Commercial Skipper SARA & RNLI Lifeboat Crew RYA Powerboat Instructor RYA Advanced Powerboat RYA Sea Survival RYA PPR & PB2 DSC VHF Radio Operator BSAC Boat Handling Instructor BSAC Diver Coxswain >2000hrs at sea
SCUBA Diving	Commercial HSE Diver (CMAS 3*) BSAC Advanced Instructor BSAC Advanced Diver (CMAS 3*) BSAC Open Water Instructor BSAC Mixed Gas Blender BSAC Oxygen Admin PADI Rescue Diver PADI Emergency First Responder
First Aid	RNLI Casualty Care ITC Outdoor First Aid REC Remote First Aid BDMLR Marine Mammal Medic HSE First Aid at Work RYA First Aid at Sea

Invited Talks and Workshops

2024	Application of R for Parametric Statistics	<i>University of Bristol</i>
2023	Promoting Participation with Statistics	<i>University of Bath</i>
2022	Seal Movements in Tidal Stream Locations	<i>Organisms and Environment Seminar Series, Cardiff</i>
2019	Policymaking for Ecologists Workshop	<i>UKIRSC XIII Annual Conference</i>
2018	Biologging and Policymaking	<i>Wallace Coffee Talks, Swansea University</i>
2018	Policymaking, QGIS, R Statistics	<i>BES Undergraduate Summer School</i>
2018	Grey Seal Collision Risk	<i>ECS 32nd Annual Conference Marine Renewable Session</i>
2017	Careers Outside Academia (Chair)	<i>BES Annual Meeting 2017</i>
2017	Introduction to Policymaking for Ecologists	<i>BioTalks@Swansea: Science Club</i>
2017	Academic Career Pathways for PhDs	<i>Enhancing Bioscience Student Employability Workshop</i>
2016	A Day in the Life of a PhD Student	<i>Swansea University Postgraduate Applicant Day</i>
2016	Grey Seals in Tidal Environments	<i>CIEEM Welsh Section Spring Seminar</i>

Conference Presentations and Posters

2024	Oral Presentation	<i>Cardiff University Learning and Teaching Conference 2024</i>	<i>*upcoming</i>
2024	Oral Presentation	<i>CETL-MSOR 2024</i>	<i>*prize winning</i>
2024	Oral Presentation	<i>BES Summer School 2024</i>	
2024	Oral Presentation	<i>Bioscience Education Summit 2024</i>	
2024	Oral Presentation	<i>International Statistical Ecology Conference (ISEC) 2024</i>	
2024	Oral Presentation	<i>UK Conference on Teaching Statistics (UKCOTS)</i>	
2024	Oral Presentation	<i>UK Conference on Teaching Statistics (UKCOTS)</i>	
2023	Oral Presentation	<i>Bioscience Education Summit 2023</i>	
2023	Oral Presentation	<i>Bioscience Education Summit 2023</i>	
2023	Speed Talk	<i>CETL-MSOR 2023</i>	
2023	Oral Presentation	<i>Horizons in Bioscience, Cardiff University</i>	
2023	Oral Presentation	<i>Embedding Statistics, SIGMA Network</i>	

Conference Presentations and Posters

*upcoming *prize winning

2023	Oral Presentation	<i>Mathematics and Statistics Anxiety Workshop, SIGMA Network</i>
2022	Oral Presentation	<i>SMM2022: The Society of Marine Mammalogy 24th Biennial Conference</i>
2022	Oral Presentation	<i>Worshipful Livery Company of Wales</i>
2021	Oral Presentation	<i>BLS7: The 7th International Bio-logging Symposium</i>
2021	Research Poster	<i>UKIRSC XV Annual Conference</i>
2021	Oral Presentation	<i>Movement Ecology and Biodiversity Dynamics Laboratory</i>
2020	Research Poster	<i>UKIRSC XIV Annual Conference</i>
2019	Oral Presentation	<i>Environment Evidence 2019 - Marine Evidence</i>
2019	Speed Talk	<i>World Marine Mammal Conference (WMMC)</i>
2019	Research Poster	<i>UKIRSC XIII Annual Conference</i>
2018	Oral Presentation	<i>Wallace Coffee Talks</i>
2018	Oral Presentation	<i>Wales Ecology and Evolution Network Annual Meeting</i>
2018	Research Poster	<i>Swansea University Bay Campus Event Update</i>
2018	Research Poster	<i>Movement Ecology Special Interest Group Annual Meeting</i>
2018	Research Poster	<i>College of Science Postgraduate Student Conference</i>
2018	Research Poster	<i>Swansea University Postgraduate Research Competition</i>
2018	Oral Presentation	<i>Current Research and Evidence Gaps on Impacts on Marine Mammals</i>
2018	Speed Talk	<i>European Cetacean Society (ECS) 32nd Annual Conference</i>
2017	Research Poster	<i>UKIRSC XII Annual Conference</i>
2017	Research Poster	<i>British Ecological Society (BES) Annual Meeting</i>
2017	Research Poster	<i>EVENET Dispersal – connecting networks</i>
2017	Oral Presentation	<i>BioTalks@Swansea: Science Club</i>
2017	Oral Presentation	<i>Enhancing the Employability of Bioscience Students</i>
2017	Oral Presentation	<i>British Ecological Society Summer School</i>
2017	Oral Presentation	<i>Research Institute for Ethics and Law Annual Conference</i>
2017	Research Poster	<i>Swansea University Postgraduate Research Competition</i>
2017	Oral Presentation	<i>European Cetacean Society (ECS) 31st Annual Conference</i>
2017	Research Poster	<i>Dale Fort Marine Symposium</i>
2017	Research Poster	<i>Marine Energy Wales Inaugural Conference</i>
2017	Oral Presentation	<i>UKIRSC XI Annual Conference</i>
2016	Research Poster	<i>British Ecological Society (BES) Annual Meeting</i>
2016	Research Poster	<i>Dale Fort Marine Symposium</i>
2016	Research Poster	<i>Swansea University Postgraduate Research Competition</i>
2016	Research Poster	<i>KESS European Industrial Doctoral School (EIDS)</i>
2016	Research Poster	<i>Biotrack - Telemetry for Biologists Launch Event</i>
2016	Oral Presentation	<i>CIEEM Welsh Section Spring Seminar</i>
2016	Oral Presentation	<i>Super Science Sunday - British Science Festival 2016</i>
2016	Research Poster	<i>Marine Energy Pembrokeshire Annual Meeting 2016</i>
2015	Oral Presentation	<i>Technology and Medicine (DOTE) Annual Conference</i>
2014	Oral Presentation	<i>Biotalks@Swansea Seminar Series</i>
2013	Oral Presentation	<i>Swansea University Bioscience Dissertation Series</i>

Professional and Society Memberships

AdvanceHE	Associate Fellow (AFHEA); Fellow (FHEA)
The British Sub Aqua Club (BSAC)	Advanced Instructor, Member
The Royal Yachting Association (RYA)	Accredited Member
Swansea University Sub Aqua Club (SUSAC)	Boating Officer, Instructor (ex. Dive Officer, Chair)
Swansea University Students' Union (SUSU)	Honorary Lifetime Member
The Marine Conservation Society (MCS)	Sea Champion
The Severn Area Rescue Association (SARA)	Helmsman
The Royal National Lifeboat Institution (RNLI)	Shoreline Member
The International Bio-logging Society (IBioLS)	Member
The Biochemical Society	Early Career Member
The British Ecological Society (BES)	Member, PhD Mentor, Education Committee Member
The European Cetacean Society (ECS)	Member
The Society of Marine Mammalogy (SMM)	Member
The BES Welsh Policy Group (WPG)	Early Career Representative
The BES Movement Ecology SIG	Communications & Online Resources Rep

Professional and Society Memberships

The Royal Society of Biology (RSB)

Member (MRSB)

The British Divers Marine Life Rescue (BDMLR)

Marine Mammal Medic

Fieldwork Experience

July 2021-2024	Intertidal rocky shore ecology, Dale, Coastal Ecology Field Course
September-November 2020	Seagrass planting, HSE diving, Dale, <i>Seagrass Ocean Rescue</i>
August-September 2020	Seagrass collection, Porthdinllaen, <i>Seagrass Ocean Rescue</i>
February-March 2020	Seagrass restoration, Dale Bay, <i>Seagrass Ocean Rescue</i>
Autumn 2017, 2018, Spring 2018	Harbour seal capture and handling, deployment of telemetry devices <i>Institute for Terrestrial and Aquatic Wildlife, Büsum, Germany</i>
Autumn 2016, Spring 2017, 2018, 2019	Grey and harbour seal capture and handling, deployment of biologists <i>Sea Mammal Research Unit, University of St Andrews, St Andrews</i>
June-July 2013	Seabird population monitoring <i>The National Trust for Scotland, Joint Nature Conservation Committee</i>
Nov-Dec 2012	Foraging ecology of magellanic penguins, tag deployments <i>Centro Nacional Patagónico (CENPAT), Argentina</i>

Publications

Peer-reviewed

- Evans, C., **Kay, W. P.**, ..., Rutherford, S. (2024) Developing a scale to explore self-regulatory approaches to assessment and feedback with academics in higher education. *Frontiers in Psychology*, 15, DOI: 10.3389/fpsyg.2024.1357939
- Williams, H. J. ..., **Kay, W. P.**, ..., Börger, L. (2020) Optimizing the use of biologists for movement ecology research. *Journal of Animal Ecology*. 89(1), 186-206
- Kay, W. P.**, Naumann, D. S., ..., Börger, L. (2019) Minimizing the impact of biologging devices: Using computational fluid dynamics for designing and positioning tags for minimal drag. *Methods in Ecology and Evolution*, 10(8), 1222-1233.
- Wilson, R. P., Liebsch, N., Gómez-Laich, A., **Kay, W. P.**, ..., Siebert, U. (2015) Options for modulating intra-specific competition in colonial pinnipeds: the case of harbour seals (*Phoca vitulina*) in the Wadden Sea. **PeerJ**, 3:e957.

In preparation

- Kay, W. P.**, Bull, J. C., Stringell, T., Lock, K., Mortlock, E., Börger, L. Sex-dependent environmental drivers of grey seal pup dispersal and overlap risk with marine energy installations. Target journal: *Scientific Reports: completed - awaiting co-author approval for submission*.
- Kay, W. P.**, Bull, J. C., Stringell, T., Lock, K., Börger, L. Historical ringing records of grey seal pups from Pembrokeshire, Wales, United Kingdom. Target journal: *Scientific Reports: resubmitting*.
- Kay, W. P.**, Börger, L., Stringell, T. B., Bull, J. C. Tidal drivers of pinniped movement and behaviour evaluated using Hidden Markov Models. Target journal: *Journal of Animal Ecology: In preparation*.