

CURRICULUM VITAE

Katharina Wollenberg Valero

Citizenship: Dual US-American & German

Associate Professor
University College Dublin
School of Biology and Environmental
Science
Belfield, Dublin 4, Ireland
katharina.wollenbergvalero@ucd.ie

Employment

- 2022-present Associate Professor, School of Biological and Environmental Sciences; Senior Fellow, Conway Institute, University College Dublin
- 2021-2022 Senior Lecturer in Ecology and the Environment at the University of Hull (UK)
- 2017-2020 Lecturer (Assistant Professor) in Ecology and the Environment at the University of Hull (UK)
- 2013-2016 Assistant Professor of Genetics at Bethune-Cookman University (USA).
Teaching-focused appointment at PUI / HBCU
- 2012-2013 Parenting leave
- 2009-2012 Research fellow at Harvard University, Department of Organismic and Evolutionary Biology, Museum of Comparative Zoology, and Trier University, Department Biogeography
- 2005-2009 Scientific employee at TU Braunschweig. Supervision of Laboratory Technical Staff and lab work, undergraduate teaching assistant.

Educational qualifications

- 2005- 2008 Doctorate (Dr.rer.nat / DSc.) "*Systematics, diversity patterns and diversification modes of the endemic Malagasy amphibian radiations*" Awarded with highest honors, *Summa cum laude*. Advisor: Prof. M. Vences, Braunschweig, Germany.
- 2005 Diploma degree (Dipl. Biol. / BSc cum MSc) Major in Molecular Genetics (1.7), Zoology (1.0). Minor in Paleontology (1.0), Johannes Gutenberg University Mainz, Germany. Thesis "*Evolution of colour-pattern polymorphism in the poison frog Dendrobates tinctorius (Amphibia-Dendrobatidae)*" (1.0). Johannes Gutenberg University Mainz, Germany, Mentor: Prof. M. Veith, Trier, Germany

Research Funding (in USD)

Active projects	Amount	Role/grant
2023	\$325,000	PI, Science Foundation Ireland Supplement grant to ERC Consolidator award.
2022-2026	\$110,000	Co-I, UKRI NERC "Panorama" Centre for Doctoral training PhD studentship "Climate Change meets life's crunch point – how do heat waves affect the basic functions of life?" P.I. Francisco Rivero, Hull York Medical School.
2023-2028	\$2,208,789	PI, ERC-Consolidator award "MolStressH2O - Molecular mechanisms and consequences of thermal stress rippling through changing aquatic environments"
2021-2024	\$110,000	PI, UKRI NERC "Panorama" Centre for Doctoral training PhD studentship "Predictability of plastic and adaptive genomic responses to recent climate-forced extinction gradients".
2020-2023	\$350,313	Co-I, "Implications of intraspecific trait variability across different environmental conditions for projections of marine ecosystem futures" (UK National Environment Research Council NERC, total grant volume £800,000, PI Jasmin Godbold, University of Southampton).
Completed projects	Amount	Role/grant
2021	\$4,000	Collaborator, "RAPID: Educational Interventions for Undergraduate Students and Informal Learners for Robust Learning of COVID-19 Knowledge" (US National Science Foundation grant #2029363, PI Raphael Isokpehi).
2019-2022	\$219,780	Co-PI, research cluster "Marine Microplastics Source to Sink MarMicS2S" (The University of Hull, PI Cath Waller).
2018-2022	\$110,000	Co-PI, research cluster "Endothelial Cells in chronic disease" (The University of Hull, PI Leonid Nikitenko).
2018-2022	\$317,560	PI, research cluster "MolStress H2O - Molecular Stress in Changing Aquatic Environments". (The University of Hull).
2014-2018	\$637,973	Co-PI Targeted Infusion Project: Developing Quantitative Expertise in the Undergraduate Biology Curriculum (QEUBiC, Bethune-Cookman University PI Raphael Isokpehi)
2018	\$24,420	PI, "Towards Forecasting Ebola Spillovers" (Global Challenges Research Fund GCRF)
2013	\$2,500	Seed grant (Bethune-Cookman University)
2013	\$8,000	Co P.I. "GCAT Workshop Mini-grant for Synthetic Biology" (US National Science Foundation, PI Ainsley Davis)
2009	\$6,400	10. R. J. H. Hintelmann Scientific Award for Zoological Systematics (State Natural History Collection, Munich)
2009	\$300,000	P.I. 2yr Postdoctoral research fellowship (German Academic Exchange Service -- Awarded but not accepted)
2009-2012	\$350,000	P.I. 3yr Postdoctoral research fellowship "A multidimensional approach to infer the role of landscape in lineage diversification" (Volkswagen Foundation).
2008	\$2,500	P.I. SYNTHESYS grant for systematic research (European Union)
2008	\$1,000	P.I. Systematics Research Fund (Systematics Association and the Linnean Society of London)
2008	\$4,000	Traveling fellowship of the Journal of Experimental Biology and the Company of Biologists
2007	\$1,500	Short-term traveling fellowship of German Academic Exchange service DAAD

Publication list

* Undergraduate student author, ** Graduate student author, at time of publication

Google scholar <https://scholar.google.com/citations?user=odiWkYUAAA&hl=en>

Lab webpage <https://www.odysyslab.org/>

Preprints, in review and in press

- 60 Gilbert, E.**; Zagar, A.M., Lopez-Darias, M., Megia-Palma, R., Lister, K.A., Dolton Jones, M., Carretero, M.A., Seren, N., Beltran-Alvarez, P., and K. C. Wollenberg Valero. Environmental factors influence cross-talk between a heat shock protein and an oxidative stress protein modification in the lizard *Gallotia galloti*. **In Review**.
- 59 Wollenberg Valero, K. C. The predictable network topology of evolutionary constraint. **In Review**.
- 58 Roggatz, C.C., Loetters, S., Benoit, D.M., Hardege, J., and Wollenberg Valero, K.C. Perspective: Could toxic amphibians like it tangy? **In Review**.
- 57 Kosch, T.A., Crawford, A.J., Mueller, R. L., Wollenberg Valero, K.C., Power, M., Rodriguez, A., O'Connell, L., Young, N. D., and Skerratt, L. F. Comparative analysis of amphibian genomes: an emerging resource for basic and applied research. **In Review**. Preprint available at: <https://www.biorxiv.org/content/10.1101/2023.02.27.530355v2>
55. Feugere, L.**, Silva De Freitas, C*, Bates, A.**, Storey, K. B., Beltran-Alvarez, P., and K. C. Wollenberg Valero. Consequences of directly- and indirectly-experienced heat stress in a mutagenic environment. **In Revision**.
- 54 O'Connell, L.A., Rodriguez, A., Kosch, T.A., Kwon, T., Bolsoni Lourenço L., Ortega-Andrade, M., Selechnik, D., Wollenberg Valero, K.C., Crawford, A.J., and J. Measey. **In Press**. Genomics. In: 2022 Global Amphibian Conservation Action Plan. IUCN SSC Amphibian Specialist Group. Draft document: <https://www.iucn-amphibians.org/wp-content/uploads/2022/07/Draft-ACAP-status-review-for-open-consultation-16th-July-2022-watermark.pdf>

Publications 2021-

53. Feugere, L.**, Bates, A.**, Emagbetere, T.**, Chapman, E. C., Malcolm, L., Bulmer, K., Hardege, J., Beltran-Alvarez, P., and K. C. Wollenberg Valero. Heat induces multiomic and phenotypic stress propagation in zebrafish embryos. **PNAS Nexus**. Volume 2, Issue 5, May 2023, pgad137
- 52 Barry, A., Samuel, S.F., Hosni, I., Moursi, A., Feugere, L.**, Sennett, C. J., Deepak, S., Achawal, S., Rajaraman, C., Iles, A., Wollenberg Valero, K. C., Scott, I. S., Green, V., Stead, L. F., Greenman, J., Wade, M. A., and Pedro Beltran-Alvarez. Investigating the effects of arginine methylation inhibitors on brain tumours maintained on-chip. **Lab on a Chip**. 2023 May 30;23(11):2664-2682. doi: 10.1039/d3lc00204g.
51. Miralles, A., Köhler, J., Glaw, F., Wollenberg Valero, K. C., Crottini, A., Rosa, G. M., du Preez, L., Gehring, P.-S., Vieites, D. R., Ratsoavina, F. M., & Miguel Vences. An endless harvest: integrative revision of the *Gephyromantis boulengeri* and *G. blanci* complexes reveals six new species of mantellid frogs from Madagascar. **Salamandra**, 59(1): 1-41 .
- 50 Mincarelli, L. F.**, Chapman, E. C., Rotchell, J. M., Turner, A. P., and Wollenberg Valero, K. C. Sex and gametogenesis stage are strong drivers of gene expression in *Mytilus edulis* exposed to environmentally relevant plasticiser levels and pH 7.7. 2022., **Environmental Science and Pollution Research**. <https://doi.org/10.1007/s11356-022-23801-3>.
- 49 Vences, M., Andreone, F., Brown, J.L., Crottini, A., Gardner, C.J., Raselimanana, A.P., Vieites, D.R., and Wollenberg Valero, K.C. 2022. Species inventories, biogeography, phylogeography and species formation of amphibians in Madagascar. November 2022. In: Goodman, S.J., **The Natural History of Madagascar**, 2nd Edition, Princeton Univ. Press.

- 48 Carpenter, A.I., Rabemananjara, F., Behra, O., Raselimanana, A. P., Ratsovaina, F.M., Wollenberg Valero, K.C., D'Cruze, N.D., and M. Vences. November 2022. In: Goodman, S.J., **The Natural History of Madagascar**, 2nd Edition, Princeton Univ. Press.
- 47 Wollenberg Valero, K. C., Garcia-Porta, J., Irisarri, I., Feugere, L.**, Bates, A.**, Kirchhof, S.**, Jovanović Glavaš, O., Pafilis, P., Samuel, S. F.**, Müller, J., Vences, M., Turner, A.P., Beltran-Alvarez, P. Storey, K. B. 2021. Functional genomics of abiotic environmental adaptation in lacertid lizards and other vertebrates. **Journal of Animal Ecology** Special Issue: Climate Change in the age of Genomics. doi: 10.1111/1365-2656.13617.
- 46 Feugere L.**, Angell L*, Fagents J*, Nightingale R*, Rowland K*, Skinner S*, Hardege J, Bartels-Hardege H, and Wollenberg Valero, K.C. 2021. Behavioural stress feedback loops in benthic invertebrates caused by low pH-induced metabolites. **Frontiers in Marine Science**, 8: 773870.
- 45 Feugere L.**, Scott V.*, Rodriguez-Barucg, Q.*, Beltran-Alvarez P., and Wollenberg Valero K.C. 2021. Thermal stress induces a positive phenotypic and molecular feedback loop in zebrafish embryos. **Journal of Thermal Biology** 102, p.103114.
- 44 Turner, A.P., and Wollenberg Valero, K.C. 2021. Evolving evolvability through the addition of stochasticity in artificial gene regulatory networks. 1409, p.550ff. **Advances in Computational Intelligence Systems**. Contributions Presented at the 20th UK Workshop on Computational Intelligence, September 8-10, 2021, Aberystwyth, Wales, UK.
- 43 Mincarelli, L.F.**, Rotchell, J.M., Chapman, E.C., Turner, A.P., and Wollenberg Valero, K.C. 2021. Consequences of exposure to combined thermal stress and the plasticiser DEHP in *Mytilus spp.* differ by sex. **Marine Pollution Bulletin / Special Issue Multiple Stressors in Marine Ecosystems** 170: 112624.

Publications 2016-2020

- 42 Wollenberg Valero, K. C. 2020. Aligning functional constraint to evolutionary outcomes. **BMC Evolutionary Biology**, 20 (58), 1-14
- 41 Sanchez, E.**, Rodriguez, A., Grau, J., Loetters, S., Kuenzel, S., Wollenberg Valero, K. C., Schulz, S., and Vences, M. 2019. Transcriptomic signatures of experimental alkaloid consumption in a poison frog. **GENES**, 10(10): 733.
- 40 Roggatz, C. C., Fletcher, N., Benoit, D. M., Algar, A. C., Doroff, A., Wright, B., Wollenberg Valero, K. C., and Hardege, J. D. 2019. Saxitoxin and Tetrodotoxin bioavailability increases in future oceans. **Nature Climate Change** 9, 840-844(2019).
- 39 Garcia-Porta, J.**, Irisarri, I., Kirchner, M., Rodríguez, A., Kirchhof, S.**, Brown, J. L., MacLeod, A., Turner, A. P., Ahmadzadeh, F., Albaladejo, G., Crnobrnja-Isailovic, J., de la Riva, I., Fawzi, A., Galán, P., Göçmen, B., Harris, D. J., Jiménez-Robles, O., Joger, U., Jovanović Glavaš, O., Kariş, M., Koziel, G., Künzel, S., Lyra, M., Miles, D., Nogales Hidalgo, M. J., Oğuz, M. A., Pafilis, P., Rancilhac, L., Rodríguez, N., Rodríguez Concepción, B., Sanchez, E., Salvi, D., Slimani, T., S'khifa, A., Qashqaei, A. T., Žagar, A., Lemmon, A., Moriarty Lemmon, E., Carretero, M.-A., Carranza, S., Philippe, H., Sinervo, B., Müller, J., Vences, M., and Wollenberg Valero, K. C. 2019. Environmental temperatures shape thermal physiology as well as diversification and genome-wide substitution rates in lizards. **Nature Communications**, 10:4077(2019).
- 38 Wollenberg Valero, K. C., Marshall J., Bastiaans, E., Cacccone, G., Morando, M., Niemiller, M., Pabijan, M., Russello, M., Sinervo, B., Sites, J. W. Jr., Wiens, J. J., Warneck, F., and S. Steinfarz. Patterns, Mechanisms and Genetics of Speciation in Reptiles and Amphibians. 2019. **GENES** 10(9):646.
- 37 Wollenberg Valero, K. C., R. D. Isokpehi, N. E. Douglas*, S. Sivasundaram, B. Johnson*, K. Wootson*, and A. McGill*. 2018. Plant phenology supports the multi-emergence hypothesis for Ebola spillover events. **EcoHealth** 15:497-508.
- 36 Kahrl, A. F.**, Ivanov, B. M., Wollenberg Valero, K. C., and M. A. Johnson. 2018. Ecomorphological variation in three species of cybotoid anoles. **Herpetologica** 74: 29-37.
- 35 Rodriguez, A., Rusciano, T.**, Hamilton R. S.*, Holmes, L.*, Jordan, D.*, & K. C. Wollenberg Valero. 2017. Genomic and phenotypic signatures of climate adaptation in an *Anolis* lizard. **Ecology and Evolution** 10.1002/ece3.2985.

- 34 Wollenberg Valero, K. C., J. Garcia-Porta. A. Rodriguez, M. M. Arias Villarraga**, A. Shah., R. D. Randrianiaina**, J. L. Brown, F. Glaw, F. Amat, S. Kunzel, R. D. Isokpehi, D. Metzler, and M. Vences. 2017. Phenotypic evolution is uncoupled among frog life history phases. **Nature Communications**, DOI:10.1038/NCOMMS15213.
- 33 Ceriaco, L. M. P., Gutiérrez, E. E., Dubois, A. et al. [493 co-authors]. 2016. Photography-based taxonomy is inadequate, unnecessary, and potentially harmful for biological sciences. **Zootaxa** 4196(3):435-445.
- 32 Strauß, A., Guilhaumon, F., Randrianiaina, R.-D., Wollenberg Valero, K. C., Vences, M., and J. Glos. 2016. Opposing effects of seasonal changes on functional and phylogenetic diversity of tadpole assemblages. **PLoSone**, DOI: 10.1371/journal.pone.0151744.

Publications 2011-2015

- 31 Isokpehi, R. D., Wollenberg Valero, K., Graham, B., Pacurari, M., Sims, J. N., Udensi, U. K., and K. Ndebele. 2015. Secondary Data Analytics of Aquaporin expression levels in Glioblastoma stem-like cells. **Cancer Informatics**, 2015:14 95-103.
- 30 Wollenberg Valero, K. C. 2015. Evidence for intrinsic factors promoting landscape diversification in Madagascan leaf-litter frogs. **Frontiers in Genetics/Special Research Topic: Evolutionary and Population Genetics**, 6:155.
- 29 Wollenberg Valero, K. C. Pathak, R.*, Prajapati, I.*, Bankston, S.*, Thompson, A.*, Usher, J.*, & R. D. Isokpehi. 2014. A candidate multimodal functional genetic network for thermal adaptation. **PeerJ** 2:e578; DOI 10.7717/peerj.578
- 28 Perl, R. G. B., Nagy, Z. T., Sonet, G., Glaw, F., Wollenberg, K. C., & M. Vences. 2014. DNA barcoding Madagascar's amphibian fauna. **Amphibia-Reptilia**, 35: 197-206.
- 27 Wollenberg, K. C., Veith, M. & S. Loetters. 2013. Expanding the understanding of local community assembly in adaptive radiations. **Ecology and Evolution** 4:174-185.
- 26 Amat, F., Wollenberg, K. C., & M. Vences. 2013. Ecological correlates of eye colour and pattern in mantellid frogs. **Salamandra** 49: 1-17.
- 25 Wollenberg, K. C., Wang, I., J., Glor, R. E., & J. B. Losos. 2013. Determinism in the diversification of Hispaniolan trunk-ground anoles. **Evolution** 67:3175-3190.
- 24 Pabijan, M., Wollenberg, K. C. & M. Vences. 2012. Small body size increases the regional differentiation of tropical anuran populations. **Journal of Evolutionary Biology** 25:2310-2324.
- 23 Wollenberg, K. C., Glaw, F. & M. Vences. 2012. Revision of the little brown frogs in the *Gephyromantis decaryi* complex with description of a new species. **Zootaxa** 3421: 32-60.
- 22 Poth, D.**Wollenberg, K. C., Vences, M. & S. Schulz. 2012. Volatile amphibian pheromones: Macrolides of mantellid frogs from Madagascar. **Angewandte Chemie International Edition**. 51:2187-2190.
- 21 Vieites, D., Wollenberg, K. C. & M. Vences. 2012. Not all little brown frogs are the same: a new species of secretive and cryptic *Gephyromantis* (Anura: Mantellidae) from Madagascar. **Zootaxa** 3344: 34-46.
- 20 Ohler, A., Wollenberg, K. C., Grosjean, S., Hendrix, R., Vences, M., Ziegler, T., & A. Dubois. 2011. Sorting out *Lalos*: taxonomic revision of a group of megophryid frogs from Northern Indochina (genus *Leptolalax*). **Zootaxa** 3147:1-83.
- 19 Randrianiaina, R. D., Wollenberg, K. C., Rasolonjatovo, H**. T., Strauss, A., Glos, J. & M. Vences. 2011. Nidiculous tadpoles rather than direct development in Malagasy frogs of the genus *Gephyromantis*. **Journal of Natural History** 45:2871-2900.
- 18 Kaffenberger, N.** Wollenberg, K. C., Köhler, J., Glaw, F., Vieites, D. R. & M. Vences. 2012. Molecular phylogeny and biogeography of Malagasy frogs of the genus *Gephyromantis*. **Molecular Phylogenetics and Evolution** 62:555-560.
- 17 Wollenberg, K. C., D. R. Vieites, F. Glaw & M. Vences. 2011. Speciation in little: the influence of small body and range sizes on diversification of mantellid frogs. **BMC Evolutionary Biology**. 11:217.
- 16 Wollenberg, K. C., R. K. B. Jenkins, R. Randrianelona**, R. Rampilimanana*, M. Ralisata*, A. Ramanandraibe**, O. Ramilijaona Ravoahangimalala & M. Vences. 2011. On the shoulders of lemurs: pinpointing the ecotouristic potential of Madagascar's unique herpetofauna. **Journal of Ecotourism** 10: 101-117.

Publications 2005-2010

- 15 Wollenberg, K. C. & J. Harvey*. 2010. Territorial vocal behavior of a direct-developing Malagasy frog (*Gephyromantis thelenae*). **Herpetology Notes** 3:141-150.
- 14 Wollenberg, K. C., R. K. B. Jenkins, R. Randrianelona**, R. Rampilimanana*, M. Ralisata*, A. Ramanandraibe**, O. Ramilijaona Ravoahangimalala & M. Vences. 2010. Raising awareness of amphibian chytridiomycosis will not alienate Ecotourists in Madagascar. **EcoHealth** 7: 248-251.
- 13 Vences, M., F. Glaw, J. Köhler & K. C. Wollenberg. 2010. Five additional species of arboreal microhylid frogs from Madagascar, genus *Anodonthyla*, revealed by molecular phylogeny and bioacoustics. **Contributions to Zoology** 79: 1-32.
- 12 Randrianiaina, R. D., Navarro Antúnez, R.*, Canitz, J.*, Forth, F.*, Lemme, I.*, Rodríguez, B.*, Rinas, H.*, Thänert, R.*, Tröger, P.*, Westphal, N.*, Willim, A.*, Wollenberg, K. C., Strauss, A. & M. Vences. 2009. Vogue or adaptive character? A tadpole's goatee helps to distinguish two cryptic treefrog species of the genus *Boophis*. **Herpetology Notes** 2: 165-173.
- 11 Vences, M., K. C. Wollenberg, D. R. Vieites & D. C. Lees. 2009. Madagascar as a model region of species diversification. **Trends in Ecology & Evolution** 24: 456-465. Certified 15/25 Sciencedirect top downloaded articles in Environmental Science (7-9/2009)
- 10 Vieites, D. R., K. C. Wollenberg, F. Andreone, F. Glaw & M. Vences. 2009. Vast underestimation of Madagascar's biodiversity evidenced by an integrative amphibian inventory. **Proceedings of the National Academy of Sciences, USA** 106: 8267-8272. Covered in *Nature Research Highlights, Nature 2009 429:143. F1000 Prime recommended article.*
- 9 Wollenberg, K. C. & G. J. Measey. 2009. Why colour in subterranean vertebrates? Exploring the evolution of colour patterns in caecilian amphibians. **Journal of Evolutionary Biology** 22: 1046-1056. Covered in *National Geographic online magazine "Rainbow Hues of Amphibians"*.
- 8 Wollenberg K. C., D. R. Vieites & M. Vences. 2009. Annual temperature data for two Malagasy sites of high anuran diversity. In: Andreone, F. (ed.): **A Conservation Strategy for the Amphibians of Madagascar**. Monografie XLV. Museo Regionale di Scienze naturali, Torino. 452pp.
- 7 Wollenberg, K. C., D. R. Vieites, A. van der Meijden, F. Glaw, D. C. Cannatella & M. Vences. 2008. Patterns of endemism and species richness in Malagasy cophyline frogs support a key role of mountainous areas for speciation. **Evolution** 62: 1890-1907.
- 6 Wollenberg K. C., F. Andreone, F. Glaw & M. Vences. 2008. Pretty in pink: A new treefrog species of the genus *Boophis* from North-Eastern Madagascar. **Zootaxa** 1684: 58-68.
- 5 Muenchenberg T.*, K. C. Wollenberg, F. Glaw & M. Vences. 2008. Molecular phylogeny and geographic variation of Malagasy iguanas (*Oplurus* and *Chalarodon*). **Amphibia-Reptilia** 29: 319-327.
- 4 Wollenberg K. C., S. Lötters, C. Mora-Ferrer & M. Veith. 2008. Disentangling composite colour patterns in a poison frog species. **Biological Journal of the Linnean Society** 93: 433-444.
- 3 Wollenberg K. C., F. Glaw, A. Meyer & M. Vences. 2007. Molecular phylogeny of Malagasy reed frogs, *Heterixalus*, and the relative performance of bioacoustics and color-patterns for resolving their systematics. **Molecular Phylogenetics & Evolution** 45: 14-22.
- 2 Wollenberg K. C.*, M. Veith, B. P. Noonan & S. Lötters. 2006. Polymorphism versus species richness – Systematics of large *Dendrobates* from the eastern Guiana Shield (Amphibia-Dendrobatidae). **Copeia** 2006 (4): 623-629.
- 1 Mora-Ferrer C., S. Hausselt, R. Schmidt-Hoffmann, B. Ebisch, S. Schick, K. Wollenberg*, C. Schneider, P. Teege & K. Jurgens. 2005. Pharmacological properties of motion vision in goldfish measured with the optomotor response. **Brain Research** 1058: 17-29.

Teaching & Mentoring experience, Curriculum development

Currently teaching at UCD: GENE30020 Genome Function and Evolution; SCI10010 Scientific enquiry

Courses newly developed & taught (reworked for remote delivery): Computational Genomics, Genetic Analysis, Environmental Change in the Anthropocene

Courses newly developed & taught (delivered in person): Genetic Analysis, Msc Dissertation, Environmental Change in the Anthropocene, Field research course: Climate Change Ecology (in Portugal). Biomolecular Technologies. Infusion of quantitative skills in other courses; Principles of Biology II and III lecture and lab (Genetics, Evolution, Ecology, Systematics); Genetics, Senior Seminar in Research

Courses co-taught: Principles of Genetics, Cells and Organelles, Conservation Biology.

Director of Msc Programmes (2018-2019): Environmental Change, Monitoring and Management

Postdoctoral research supervision	2023-	Dr. Megan Power: ERC MolStressH2O project
	2023-	Kaylee Beine: ERC MolStressH2O project
	2021-	Co-advisor Dr. Nichola Fletcher: NERC functional traits project
	2021-	Advisory panel Dr. Victoria Moris, Marie Skłodowska Curie project
PhD research supervision	2024-2028	Jiao Li: Molecular mechanisms of stress propagation in larval aquatic ectotherms.
	2023-2027	Sofia Duarte Vamos: Investigating the Ripple Effect in larval aquatic ectotherms.
	2022-2026	Sarena Nagoor Pitchai: Effects of heatwaves on transitions from uni- to multicellularity (Co supervisor)
	2021-2025	Edward Gilbert: Spatiotemporal Climate change adaptation in lacertid lizards.
	2019-2023	Jessica Hurley: Effects of microplastics on Antarctic invertebrates (supervisory team member).
	2018-2023	Luana Mincarelli: sex-related responses of blue mussels to the plasticiser DEHP under climate change scenarios. Pending minor corrections
	2018-2023	Adam Bates: An investigation into the TRPV1-CGRP signaling pathway in vessel development Thesis submitted for evaluation
	2018-2022	Dr. Lauric Feugere: The language of Abiotic Stress in Aquatic Animals
Msc thesis supervision	2023-	Massimo Bonello: Distribution of and anthropogenic threats to the common lizard, <i>Zootoca vivipara</i> , in the Republic of Ireland
	2022	Timothy Emagbetere: Using LAMP to assess heat stress biomarkers in zebrafish
	2017	Victoria Scott: Physiological, behavioral and transcriptional changes in zebrafish embryos under fluctuating thermal stress
Bsc thesis supervision	2021-2022	Claudio Silva de Freitas: Effect of UV radiation on developing zebrafish embryos
		Jessica Robinson: Interactive effects of heat and plasticiser exposure on zebrafish embryo development
		Molly Moore: Transposable elements in amphibian genomes
		Aaron Furminger: Effect of pH change on <i>Hediste diversicolor</i>
	2018-2021	Sarah Marie da Silva: DNA barcoding of an invasive gecko population
		Hannah Drew, Lauren Angell, Kemi Edonmi, Saffiyah Skinner, James Fagents, Angus Monaghan, Kirsty Rowland, Rebecca

		Nightingale. Physiology and behavior of stress propagation in changing aquatic environments.
	2018	Thomas Lester: The response of antioxidant protein levels to fluctuating thermal stress in zebrafish embryos
	2017	Sian-Kerry Oben-Etchi: The response to environmental stress in humans with sickle-cell anemia. Richard King: The effect of Glutathione on zebrafish developing under thermal stress Nathan Hunter: The effects of ecological traits on cytochrome b divergence
	2016	Xzaviar Solone: The role of SOD2 in Amyotrophic Lateral Sclerosis
	2015	Jade Ferguson: Humidity predicts sickle-cell anemia related hospital admissions in Central Florida Calesha Shelley: X-linked hyperIgM syndrome
	2014	Marlyne Pierre-vil: SNPs of EDN1 and their role in sickle-cell anemia complications
PhD viva examiner		Dr. Noha Alsheikh (University of Hull) Dr. Freija Mendrik (University of Hull) Dr. Ashwini Mohan (Braunschweig University of Technology)
Public engagement/ Outreach	2014-2016	Led BCU College of Science's monthly Seminar series ("Coffee and Cupcakes") featuring national and international speakers.
	2019 -	Research is featured in "Changing Seas" permanent exhibition at The Deep Aquarium in Hull

Conference presentations

- July 2022: Evolution Meetings, Cleveland, USA. Katharina C. Wollenberg Valero "Functional genomics of climate adaptation in vertebrate ectotherms" (talk).
- June 2022: 14th International Congress on the Biology of Fish, Montpellier, France. Session "Sensing the Environment: Molecules to Populations (Sensing the Anthropocene)". Lauric Feugere, Adam Bates, Jorg D. Hardege, Katharina C. Wollenberg Valero. Molecular and phenotypic evidence that zebrafish embryos chemically propagate heat stress to each other.
- April 2021: European Geosciences Union (EGU) meeting, Virtual. Session ITS2.5/OS4.8 – Global plastic contamination: a journey towards scientifically informed policies and solutions. Jessica Hurley, Jorg Hardege, Katharina C. Wollenberg Valero & Simon Morley. In situ microplastics ingestion by Antarctic marine benthic invertebrates
- April 2021: European Geosciences Union (EGU) meeting, Virtual. Session ITS2.5/OS4.8 – Global plastic contamination: a journey towards scientifically informed policies and solutions. Victoria Scott, Jorg Hardege & Katharina C. Wollenberg Valero. "The effect of plastic leachates on respiration and foraging behaviour in hermit crabs" (talk)
- July 2020 (**meeting cancelled due to COVID**): Evolution Meetings, Cleveland, USA. Katharina C. Wollenberg Valero "Functional genomics of climate adaptation in vertebrate ectotherms" (talk).
- July 2020 (**meeting cancelled due to COVID**): Evolution Meetings, Cleveland, USA Feugere, Lauric and Katharina C. Wollenberg Valero : "Linking adaptation to stress response through chemical communication" (Poster).
- June 2019 Yorkshire Evolution Group meeting, University of York: Katharina C. Wollenberg Valero. "Functional genomics of climate adaptation in vertebrate ectotherms".
- September 2017 SEH European Congress of Herpetology. Eugenia Sanchez, Ariel Rodríguez, Jose Grau, Katharina C. Wollenberg Valero, Stefan Schulz, Miguel Vences. "Molecular basis of alkaloid metabolism in *Dendrobates tinctorius*".
- July 2017 XI Congreso Latinoamericano de Herpetología, Quito, Ecuador. Eugenia Sanchez, Ariel Rodríguez, Jose Grau, Katharina C. Wollenberg Valero, Stefan Schulz, Miguel Vences. "Molecular basis of alkaloid metabolism in *Dendrobates tinctorius*"

July 2017 4th annual meeting of the Human Placenta Project: Placental Structure and Function in Real Time, Current Progress and Future Directions, National Institutes of Health, Bethesda, MD, USA. Raphael D. Isokpehi, Jasmin Fryer, Antoinessa Hollman, Katharina C. Wollenberg Valero, Hung-Chung Huang, Paul B. Tchounwou, and Oyekanmi Nash. "Gestational-stage signatures of protein-coding gene families from interactive analytics of human placental transcriptomes".

June 2016 University of Hull, United Kingdom. Departmental Meeting, School of Ecology and the Environment, "Dynamics of vertebrate stress response networks".

February 2016; National Science Foundation PI/PD meeting, Washington DC, USA.

1. Katharina Wollenberg Valero, Noah E. Douglas, Brianna Johnson, Ayana McGill, Kiara Wootson, Seenith Sivasundaram, and Raphael Isokpehi. Towards a Predictive Model of Spill-over Events in Zoonotic Disease.
2. Raphael D. Isokpehi, Katharina Wollenberg Valero, Tia Rusciano, Ahkinyala M. Cobb-Abdullah, Yungkul Kim, Irving Robinson, Christopher Davis, Shukdeb Sen, Elizabeth R. Congdon and Herbert Thompson. Impact of Targeted Infusion Project Funding on Equipment Infrastructure at Bethune-Cookman University
3. Raphael D. Isokpehi, Katharina Wollenberg Valero, Ahkinyala M. Cobb-Abdullah, Shukdeb Sen, and Elizabeth R. Congdon. Quantitative Expertise in the Undergraduate Biology Curriculum (QEUBiC) Framework at Bethune-Cookman University
4. Katharina Wollenberg Valero, Martine Levy Nelson, Franchelle Winder, Ada Harvey, Kelly Carey, Sulakshana Sen, Sarah Johnson, Thomas Roper, Hector Torres, Seenith Sivasundaram, Raphael D Isokpehi. Progress on a Biology and Mathematics Faculty Multidimensional Collaboration to Improve College Success of Undergraduates

February 2016; AAAS/National Science Foundation Emerging Researchers conference, Washington DC, USA. Pinnock, A.*, Rusciano, T.**, DeStefano, A*, Taylor, T*, Weeks, T.*, and K. C. Wollenberg Valero. "Expression of disease-relevant thermal adaptation genes in response to thermal stress in zebrafish. "

July 2015; First Annual Educational Justice Conference, Orlando, FL, USA. Wollenberg Valero, K. C. "Transforming the Undergraduate Biology Curriculum through Quantitative Expertise (Lead presenter on round-table discussion, Strand: Benefits of Curriculum Integration)"

October 2014; Annual meeting of the Diamondback Terrapin Working Group (Florida region). Tomoka State Park, Ormond Beach, FL, USA. Wollenberg Valero, K. C. "Launching Diamondback Terrapin Population Genetics in North-East Florida."

July 2014 (invited speaker) Symposium of the Volkswagen Foundation: "The Evolution of German Evolutionary Biology". Herrenhausen Palace, Hannover, Germany. Wollenberg Valero, K. C. "Explaining diversification within adaptive radiations: a synopsis."

January 2014; 3rd meeting of the Network for Neotropical Biogeography, Universidad de los Andes, Colombia. Wollenberg Valero, K. C., Veith, M., Loetters, S. "Environmental filters shaping local community assembly in *Anolis* lizards"

November 2012 (invited speaker); "Jueves de la Biodiversidad", Universidad Nacional, Colombia. Wollenberg, K. C., Lötters, S., Losos, J. B. „Explaining diversity within adaptive radiations on the example of Greater Antillean *Anolis* lizards “

August 2012; 7th World Congress of Herpetology, Vancouver, Canada. Wollenberg, K.C., Wang, I., Glor, R., Losos, J. B. "Diversification within adaptive radiations: the case of Hispaniolan trunk-ground Anoles “

August 2012; 7th World Congress of Herpetology, Vancouver, Canada. Wollenberg, K.C., Pabijan, M., Vences, M. "The influence of body size on diversification in anurans: a case study from Madagascar (I).

September 2011; 16th European Congress of Herpetology, Luxembourg. Wollenberg, K.C., Wang, I., Glor, R., Losos, J. B. "Recurrence and spatial convergence in axes of diversification in Hispaniolan trunk-ground anoles (*Anolis cybotes* species complex)"

May 2010; 2nd Status Symposium of the Volkswagen Foundation in Evolutionary Biology, Frauenchiemsee, Germany. Wollenberg, K.C., Losos, J.B. "Lineage diversification in a widespread species of *Anolis* – a progress report"

September 2009; Organismic and Evolutionary Biology Department seminar, Harvard University, USA. Wollenberg, K.C. „Systematics and evolution of the endemic Malagasy frog radiations – applying Ernst Mayr's basic tasks of the modern systematist“

November 2008; 9th Conference of the Herpetological Association of Africa, Sterkfontein, South Africa. Wollenberg K.C., Vieites D.R., Meyer, A., Andreone, F., Glaw F., van der

- Meijden, A., Cannatella, D. C., Vences M. "Diversity patterns and diversification modes of Malagasy amphibians"
 March 2008; Departement Systématique et Evolution, at the Museum national d'Histoire Naturelle, Paris, France. Wollenberg K.C., Vieites D.R., van der Meijden A., Glaw F., Vences M, Cannatella D.C.: "Explaining patterns of endemism and species richness in Malagasy cophyline frogs"
 September 2007; 14th European Congress of Herpetology, Porto, Portugal. Wollenberg K.C., Vieites D.R., van der Meijden A., Glaw F., Vences M, Cannatella D.C. "Explaining patterns of endemism and species richness in Malagasy cophyline frogs"
 May 2006; Department of Integrative Biology at the University of Texas, Austin, USA. Wollenberg K. C., S. Lötters, B. P. Noonan & M. Veith: "Evolution of color and pattern polymorphism in the Dyeing Poison Frog, *Dendrobates tinctorius* (Amphibia: Dendrobatidae)"
 April 2006; Museum of Vertebrate Zoology at the University of California, Berkeley, USA. Wollenberg K. C., S. Lötters, B. P. Noonan & M. Veith: "Evolution of color and pattern polymorphism in the Dyeing Poison Frog, *Dendrobates tinctorius* (Amphibia: Dendrobatidae)"
 September 2005; Annual meeting of DGHT working group Anura, Marktheidenfeld. Wollenberg K. C., S. Lötters & M. Veith: „Neues zur Systematik von *Dendrobates tinctorius* und *D. azureus*"
 June 2005; Fifth World Congress of Herpetology (WCH5), Stellenbosch, Republic of South Africa. Wollenberg K. C., S. Lötters, B. P. Noonan & M. Veith: "Evolution of color and pattern polymorphism in the Dyeing Poison Frog, *Dendrobates tinctorius* (Amphibia: Dendrobatidae).

Visiting Research experience

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| 2010 | Visiting researcher at Smithsonian Tropical Research Institute in Gamboa, Panama; field work with Dr. Anthony Herrel on <i>Anolis</i> lizards |
| 2008 - 2009 | Visiting researcher with Dr. John Measey and Dr. Krystal Tolley at SANBI (South African National Biodiversity Research Institute), Kirstenbosch, South Africa; comparative study of adaptive basis of colour variation in fossorial lizards |
| 2008 | Visiting researcher with Prof. Annemarie Ohler and Prof. Alain Dubois, Museum national d' Histoire Naturelle, Paris, France; systematic and taxonomic research of Asian frogs |
| 2006 | Visiting researcher with Prof. David C. Cannatella, University of Texas, Austin, USA; DNA-Sequencing of Malagasy microhylid frogs (funded by the AmphibiaTree Project) |

Institutional Responsibilities

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| 2022 | Biological and Marine Sciences Department: Director of Research, University of Hull, UK |
| 2021-2022 | Faculty of Science and Engineering representative on the University Research Committee, University of Hull, UK. |
| 2019-2021 | Deputy REF2021 lead, Assessment Unit C14, coordination of environment statement, impact case studies and outputs, University of Hull, UK. |
| 2018-2019 | Director of MSc Programme: Environmental Change, Monitoring and Management, University of Hull, UK |
| 2014-2016 | Service as Biology Program Representative in College of Science, Engineering and Mathematics Research Committee, Bethune-Cookman University, USA |

Other activities

Fieldwork	2005-2020	South Africa (two expeditions), Uganda, Kenya, Madagascar (three expeditions), Florida, STRI Panama, Dominican Republic (three expeditions), Portugal (two field research courses at Ramalhete Marine Station).
Conference Service	2011	Co-organized SEH (Societas Europea Herpetologica) European Congress of Herpetology, Trier and Luxembourg; Session Chair.
	2016	AAAS-ERN (Emerging Researchers) conference in Washington, DC. Judge for oral presentations / Section Genetics.
Memberships		On-and-off: DGHT German Herpetological Society SEH European Herpetological Society SSE Society for the Study of Evolution
Other synergistic activities	2020	Developed and taught "Computational Genomics of COVID-19" course remotely via the C2exchange platform of the Ohio Supercomputing center for international participants with students (undergraduate), academics, and data science professionals.
	2015-2016	Procured funding for and instated a Genomics Core Facility at Bethune-Cookman University (MiSeq, Agilent Bioanalyzer, eGel electrophoresis).
	2015	Led extracurricular Research workshop series on Mathematics and Data Science Research for Science majors at Bethune-Cookman University (NSF-funded).
	2008 2009	Design, coordination, and execution of a socioeconomic study on the relevance of herpetofauna for ecotourism conducted by the NGO "Madagasikara Voakajy" in five National Parks in Madagascar; funded by the Volkswagen Foundation and the UK Darwin Initiative, in cooperation with Dr. Richard Jenkins (Aberdeen) and Prof. Miguel Vences (Braunschweig)
	2004, 2005	Excavation of Miocene Mammals operated by the State Natural Collection Rhineland-Palatinate, and the Senckenberg Museum, Section Paleontology.
	2003-2011	Collection and preservation of ~1000 herpetological museum specimens, now deposited at the Museum Koenig, Bonn, at the University museum of Antananarivo, Madagascar, and the Harvard Museum of Comparative Zoology, Cambridge, MA.
CPD	2017	Think Write Grant writing workshop
	2015	Workshop: Faculty mentoring for Undergraduate Research
	2015	Visual Analytics Faculty Development workshop (organized by Purdue University VACCINE center)
	2014	Workshop organized by MindMolders, Inc.: "Lectures that promote interaction: tools to increase motivation, engagement and retention"
Service as Reviewer		PNAS, Molecular Ecology, Evolution, Nature Communications, Genes, Brain & Behaviour, PloS one, Global Ecology and Biogeography, Proceedings of the Royal Society B (Biological Sciences), Frontiers in Ecology and Evolution, Frontiers in Physiology, FEBS Letters, Biological Journal of the Linnean Society, Molecular Phylogenetics and Evolution, Ecotoxicology, PeerJ, Journal of Zoological Systematics and Evolutionary Research, Conservation Genetics, Journal of Natural History, Comptes Rendus

France, Zootaxa, International Journal of Zoology, Canadian Journal of Zoology, Amphibia-Reptilia, Journal of Zoology, Salamandra, Zoologica Scripta, African Journal of Herpetology, Bonn Zoological Bulletin, ZooKeys, Herpetology Notes, Madagascar Conservation & Development, Comparative Cytogenetics.

External grant reviewer	2017-	External grant reviewer for UKRI Biotechnology and Biological Sciences Research Council BBSRC, UKRI Medical Research Council MRC, US National Science Foundation Division of Ocean Sciences NSF/OCE-PRF.
Grant panels	2016	Panel Member, US National Science Foundation Division of Environmental Biology /DEB – Evolutionary Genetics
	2015	Panel Member, US National Science Foundation/DEB-DDIG
	2010 - 2016	Panel member for annual research award of the German Herpetological Society.
Service as editor	2017-2021-	Biodiversity Data Journal Editorial Board member PLoS Climate Editorial Board member
	2018-2019	Guest Editor for GENES special issue: Evolutionary Genetics of Reptiles and Amphibians. With Sebastian Steinfartz and Jonathon Marshall.
Other service appointments	2023 - 2020-22	Member of Amphibian Genome Consortium Contributor IUCN Amphibian Specialist Group (ASG) / Genome Resources Working Group