DR. JAN DIERKING

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Personal information: *8.1.1975, Münster, Germany; German nationality; Married, two children (*12.4.2012 *8.5.2014) who I raise in equal share with my wife, also a full-time scientist.

RESEARCH INTERESTS

My research focuses on questions related to both **marine ecology and evolution**. I am fascinated by the omnipresent variability in natural systems, which I aim to better understand using **integrated approaches**, e.g., of oceanographic, fisheries and biological data to explain long-term genetic or ecological changes in marine fishes. My work has included conservation genetics, migration-, feeding-, and food web ecology in temperate and tropical systems, often focusing on fishes. I have gathered extensive experience in **fisheries management and conservation**, and like to apply my datasets in these settings.

My toolkit includes **molecular analyses** (e.g., microsatellites, SNPs), **stable isotope analysis** (bulk CNS, compound specific), **fisheries biology** measures (e.g., otolith analysis, morphometry, maturity and condition indices), and the analysis of long-term data series.

ACADEMIC ACHIEVEMENTS

05/2007	PhD degree, University of Hawaii (UH), USA. Dissertation: "*Effects of the introduced predatory fish* Cephalopholis argus *on native reef fish populations in Hawaii.*" Advisor: Dr. Charles Birkeland.
08/2005	MSc degree, UH Specialization in Ecology, Evolution and Conservation Biology. Thesis: "*The economic value and the social structure of the aquarium fish industry in West Hawaii*."
08/2001 – 05/2007	Graduate student in the Department of Zoology, UH.
10/1997 - 07/2001	Study of Marine Science (major), Zoology, Business administration (minors) at the Christian-Albrechts-Universität (CAU) Kiel.
1987-1995	German High school diploma, HBG Celle; Class valedictorian.
1992-1993	Exchange student, Ohio, USA, with the American Field Service.

MILITARY SERVICE

07/1995 – 06/1997	Member of the permanent crew of the German navy sail training ship "Gorch Fock" during 20 country voyage around the world.

PROFESSIONAL EXPERIENCE

01/2018 –	Scientist in the EU Horizon 2020 project GoJelly (*A gelatinous solution to plastic pollution*), focus on marine food web ecology and the improved integration of jellyfish in food web understanding
01/2018 –	Task leader in the EU BONUS project BLUEWEBS (*Blue Growth boundaries in novel Baltic food webs*), focus on the reconstruction of benthic vs. pelagic feeding of Baltic cod over three decades with increasing anoxic areas. (www.syke.fi/bonusbluewebs)
05/2014 – 12/2017	Scientific coordinator, EU BONUS BIO-C3 (*Biodiversity changes: causes, consequences and management implications*) project; 3.7 Mio €, 13 partners from 7 Baltic nations, ~85 project participants (www.bio-c3.eu)
01/2011 – 12/2014	Postdoctoral researcher, GEOMAR Helmholtz Centre for Ocean Research Kiel, Evolutionary Ecology of Marine Fishes group (EV). Main projects: *Local and global patterns in fisheries induced evolution* (02/2012 – 12/2014); *Ecology and conservation genetics of anadromous whitefishes* (2010 – 2012), in collaboration with Dr. C. Eizaguirre).
05/2012 – present	Chief scientist (6 cruises period 2013 - 2018) and coordinator of fisheries, plankton and oceanographic research cruises with the GEOMAR research vessel ALKOR (12 scientists, 12 crew). Previous participation in research cruises in Germany, the USA and France.
10/2012 – 03/2013, 10/2014 – 02/2015	Parental leave.
09/2009 – 12/2010	Self-employed as biological consultant and scientific diver.
09/2007 – 08/2009	Postdoctoral researcher with Dr. Mireille Harmelin-Vivien, Centre d'Océanologie de Marseille; Projects: *Coupling of terrestrial and coastal ecosystems in the NW Mediterranean assessed by stable isotope analysis (SIA); Marine flatfish migrations assessed by SIA.*
01/2004 – 05/2007	Graduate research assistant with Dr. C. Birkeland, UH.
10/2002 – 12/2003	Scientific research consultant for the NGO "The Nature Conservancy", the consulting firm Cesar Environmental Economics Consulting, and the Hawaii Division of Aquatic Resources; Projects: *Sustainability of the aquarium fish industry (AFI) in Hawaii; The economic value of reefs in Hawaii; Reef user fees for conservation in Hawaii; Hawaii marine aquarium fish industry database construction.*
04/2000 – 05/2000	Scientific diver, nature documentary project, Aldabra, Seychelles.
09/1998 – 10/1998	Research assistant, Biological Station Sylt; Seagrass ecology.

SUPERVISING

(Co-)supervision of 2 Ph.D., 7 Master, and 4 Bachelor theses, 1 intern during her German voluntary year in science and technology, 1 technician, and various short term internships. Projects:

- *Thinner females – fewer eggs? Temporal trends in Eastern Baltic cod feduncdity (2005-2016)* (MSc. Serra Örey) (2018)
- *Otolith time machine: 40 year history of Baltic cod feeding ecology reconstructed with otolith protein C, N and S stable isotope analysis* (BSc. Robert Priester) (2018)
- *Unlocking the potential of biological sample archives: benthic-pelagic feeding of Baltic cod assessed by otolith protein stable isotope analysis* (BSc. Paulina Urban) (2016)
- *Stable isotope fractionation rate in the carnivorous jellyfish* Mnemiopsis leidyi (MSc. Lea Kraienhemke) (2015) (co-supervised with Jamileh Javidpour)
- *Eelgrass* Zostera marina *isotopic signatures as eutrophication indicator in the Baltic Sea* (PhD chapter P. Schubert) (2010-2018)
- *Temporal changes in genetic diversity of central Baltic cod stocks* (MSc L. Elsbernd) (2015-) (co-supervised with Thorsten Reusch)
- *Job orientation internships for high school students* (6-week internship J. Greenway, 12th grade, 2015; 2 wee-internship N. Weigt, 11th grade, 2016)
- *Voluntary pupil's day in science* (supervision of 6th grader L. Becker) (2015)
- *Feeding ecology of Baltic cod assessed by stable isotope analysis* (BSc. C. Mohm) (2014)
- *Feeding ecology, migration behavior, and natural reproduction of endangered North Sea houting (*Coregonus oxyrinchus*)* (Bachelor thesis and MSc. thesis S. Nickel) (2012, 2013)
- *Patterns of parallel evolution in the houting complex* (MSc L. Phelps) (2012-2013) (co-supervised with Chris Eizaguirre)
- *Feeding ecology of the invasive combjelly* Mnemiopsis leidyi *in the Baltic Sea* (MSc A. Cipriano) (2011-2012) (co-supervised with Jamileh Javidpour)
- *Niche segregation between three species of pipefishes in the Baltic Sea assessed by stable isotope analysis* (MSc L. Miersch) (2011-2012) (co-supervised with Olivia Roth)
- *Gill raker differentiation between German whitefish populations* (Voluntary year G. Ramm) (2011-2012)
- *Twaite shad (*Alosa fallax*) migrations in the Elbe estuary assessed by otolith microchemistry* (PhD chapter V. Magath) (2011-2012)

TEACHING

07 and 09/2016	Lecturer, high-school teacher training workshops on *Biodiversity in the Baltic realm – function, services and anthropogenic threats*.
07/2015	Lecturer, 1-week summer school *The Baltic Sea: a model for the global future ocean.* (PhD and postdoc level)
2011 - 2017	Supervision of 9 marine biological excursions (BSc. to PhD level).
Winter 2011/2012	Seminar on Current topics in fish ecology and evolution (co-taught).
Summer 2010	3-week block course Molecular Ecology (co-taught).
01/2005 – 07/2005	Teaching assistant for Limnology, University of Hawaii

THIRD-PARTY FUNDING

01/2019 – 06/2020	Proponent of EU BONUS project "XWEBS – Taking stock of Baltic Sea food webs: synthesis for sustainable use of ecosystem goods and services"; coordinator of 4 partner collaboration. (€450,000)
2013 – present	Co-proponent on the submission of successful DFG Ship time proposals for two annual expeditions (2 x 16 days, 2013, 2014, 2015, 2016, 2017, 2018, 2019) with RV Alkor to continue an integrative long-term data series of the central Baltic Sea.
07/2016 – 08/2017	Future Ocean Cluster of Excellence "mini-proposal" funding, own project "Otolith time machines". (€72,244)
07/2015 – 09/2018	State-funded („Fischereiabgabe") project „Optimierung des Meerforellen-Managements in Schleswig-Holstein/Improved management of sea trout stocks in Schleswig Holstein" (co-grantee with C. Petereit, O. Puebla, T. Reusch, €486,000)
02/2012 – 05/2014	Future Ocean Cluster of Excellence grant obtained via own proposal "Local and global patterns in fisheries-induced evolution" (€180,000).
2010 – 2012	Grant for conservation genetic and ecological work on the endangered fish species *Coregonus oxyrinchus*, obtained via own proposals to the German State Agency LLUR (Landesamt für Landwirtschaft, Umwelt und Ländliche Raeume) (J. Dierking and C. Eizaguirre, €160,000).
09/2007 – 08/2009	Research stipend by German NGO "Okeanos" via own proposal (€40,000).
10/2003 – 12/2006	Hawaii Coral Reef Initiative grant in support of dissertation project on *Cephalopholis argus* obtained via own proposal ($68,200).

SCHOLARSHIPS, AWARDS

08/2001 – 12/2004	Fulbright Scholarship for graduate study in the USA.
02/2003	EECB graduate student research award.
09/2002	International Student Services Scholarship for outstanding contribution in promoting intercultural understanding.
08/2002	Dai Ho Chun Scholarship for Outstanding International Students.

PRESENTATIONS (SELECTED FROM >50)

Dierking, J.. The Baltic Sea as a time machine for the global coastal ocean. Invited presentation. BONUS session on Science for sustainability in regional seas and beyond. EU Parliament, Brussels, Belgium, 16 May 2018.

Dierking, J., Dewitz, B. v., Hemmer-Hansen, J., Nielsen, E., Elsbernd, L., Bracamonte, S., Schulz, H., Petereit, C., Hinrichsen, H.-H., Reusch, T.. Eastern Baltic cod population structure over a period with strong environmental fluctuations (1996 – 2016). Invited presentation. 2nd Cod AquaGenome Workshop, Tjärnö, Sweden, 18-19 September 2017.

Dierking, J., Dewitz, B. v., Hinrichsen, H.-H., Reusch, T.. Oxygen minimum zone induced fluctuations in cod genetic diversity – and what the Baltic Sea may tell us about the global future ocean. Sustainable Ocean Development Symposium, New York City, USA, 27-29 September 2015

Dierking, J. v. Dewitz, L. Elsbernd, S. Bracamonte, H. Schulz, R. Voss, K. Hüssy, R. Froese, H.-H. Hinrichsen, T. Reusch. Baltic cod genetic diversity predicted by stock structure and oxygen situation – a new indicator for ecosystem based management? Invited presentation,

ICES/HELCOM Working Group on Integrated Assessments of the Baltic Sea (WGIAB), Kiel, Germany, February 10-14 2014**.**

Dierking, J. Evolutionary ecology of anadromous (North Sea houting) and marine (Baltic cod) fishes. Invited presentation, Danish Technical University, Section for Marine Living Resources, Silkeborg, Denmark, December 5 2013.

Dierking, J., Marohn, L., Magath, V., Nickel, S., Praebel, K., Fietzke, J., Brunke, M., Eizaguirre, C. Integrating stable isotope, otolith microchemistry, and genetic analysis to assess intra-population migration strategies of endangered anadromous North Sea houting. The 8th International Conference on Applications of Stable Isotope Techniques to Ecological Studies. Brest, France, August 20-24 2012.

Dierking, J., Praebel, K., Borcherding, J., Brunke, M., Eizaguirre, C. The return of the houtings: genetics and ecology of anadromous whitefishes in Germany. 11th International Symposium on the Biology and Management of Coregonid Fishes. Mondsee, Austria, September 2011.

Dierking, J., Banaru, D., Hermand, R., Fontaine, M.F., Degiovanni, C., Letourneur, Y., Nicolas, C., Salen-Picard, C., Harmelin-Vivien, M. Land and Sea connected: stable isotopes reveal a role of terrestrial organic matter in nearshore ecosystem functioning in the Gulf of Lions, Mediterranean sea. 6th International Conference on Applications of Stable isotope Techniques to Ecological Studies. Honolulu, Hawaii, August 2008.

REVIEWING

Reviewer for the journals *Biological Conservation*, *Canadian Journal of Fisheries and Aquatic Sciences, Fishery Bulletin*, *Journal of Animal Ecology*, *Journal of Experimental Marine Ecology*, *Journal of Fish Biology*, *Marine Biology*, *Marine Ecology Progress Series*, *Marine Environmental Research, Marine Pollution Bulletin*, *ICES Journal of Marine Science*, *Heredity*; Ph.D. thesis examiner Andhra University (India).

ORGANIZATION OF CONFERENCES, SUMMER SCHOOLS, MEETINGS

Co-convener (with Henn Ojaveer, Estonian Marine Institute, Tartu University, and Stefan Neuenfeldt, Technical University of Denmark) of the BONUS Symposium *Science delivery for sustainable use of the Baltic Sea living resources,* 130 participants including scientists and stakeholders. Tallinn, Estonia, September 17-19 2017.

Organizer of two inter-disciplinary writing workshops to advance the manuscript "*The Baltic as a time machine for the global coastal ocean*", supported by BONUS clustering funding. 27 participants from 17 institutes and 8 BONUS projects. Workshop 1 (co-organizer Thorsten Reusch, GEOMAR): Schloss Noer, Germany, 6-9 December 2016; Workshop 2 (co-organizer Jacob Carstensen, Aarhus University): Jyllinge, Denmark, 8-10 May 2017.

Organization of the BONUS BIO-C3 High-school teacher training workshop *Bringing Science to the class room: biodiversity in the Baltic realm – function, services and anthropogenic threats*, with 28 participating teachers from Northern Germany. Schloss Noer, Germany, September 9-10 2016. (with T. Reusch, J. Dengg, GEOMAR) (www.bio-c3/links)

Convener of ICES Annual Science Conference 2015 Theme session Q *From genes to ecosystems: spatial heterogeneity and temporal dynamics of the Baltic Sea*, Copenhagen, Denmark, Sept. 24 2015 (with Karin Hüssy, Technical University of Denmark, Linda Laikre, Stockholm University, Sweden).

Organizer of the EU BONUS BIO-C3 2016 project annual scientific meetings with 40 contributing scientists, Tallinn, Estonia, June 27-30 2016 (Co-organizer Henn Ojaveer, Estonian Marine Institute, Tartu University, Estonia).

Organizer of the Summer school *The Baltic Sea: a model for the global future ocean*, with 32 participating PhD students and postdocs and 13 lecturers from 8 nations. Glücksburg, Germany, July 5-11 2015 (with T. Reusch, GEOMAR) (www.bio-c3/links).

Organizer of the EU BONUS BIO-C3 project 2015 annual scientific meeting with 40 contributing scientists, Kiel, Germany, June 30-July 3 2015.

3rd Young Scientist Conference: Interdisciplinary Approaches to Global Change. Kiel, Germany, October 1-2 2012 (co-organized with Future Ocean Cluster of Excellence postdocs).

Workshop *Managing Genetic Diversity of Fishes?* with economists, fisheries and evolutionary biologists. Wadden Sea Station Sylt, Germany, August 26-29 2012. (Co-organized with T. Requate, M. Quaas, T. Reusch, J. Schmidt).

PROJECT, CRUISE AND SCIENTIFIC COORDINATION

Project coordination	Extensive experience through scientific coordination of the EU BONUS project BIO-C3 with 80 researchers from 13 partner institutes in 7 nations, including EU annual and deliverable reporting, organization and coordination of annual meetings, summer schools, training workshops for teachers and PhD students, conference sessions, scientific symposia, scientific cruises, budget coordination, project representation via talks and posters, interaction with EU office/German funding agency BMBF/international project advisory board/steering committee, implementation of project communications plan, outreach (including project website www.bio-c3.eu, press releases), stakeholder interactions.
Scientific cruises	Extensive experience as chief scientist of multi-disciplinary, multi-week cruises on large research vessels (e.g., RV Alkor, 12 scientists, 12 crew, annual 16-day Baltic Sea deep basins cruises 2013-2018); Participant in French and German fisheries assessments and multi-disciplinary cruises (e.g., MEDITS survey on RV Europe, Baltic cruises on RV Alkor)

COUNCIL AND ADVISORY BOARD MEMBERSHIPS

2011– June 2018	Scientists' representative, GEOMAR Department of Marine Ecology Council.
2014 – present	Member of the GEOMAR data management advisory board.

FURTHER QUALIFICATIONS

Boating	EU coastal and US Geological Survey motorboat operator certifications.
Scientific Diver	American Academy of Underwater Sciences license (~450 dives).
Computer	Access, Minitab, PRIMER, Sigmaplot, Illustrator, MorphoJ, molecular data analysis programs (e.g. Genemarker, Arlequin, FSTAT, Structure, Fluidigm SNP calling, Ne estimator).
Languages	German (native), English (fluent), French (fluent).