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Research projects

My field of research is ecotoxicology and with main focus on endocrine disrupting chemicals (EDCs) and their effects on aquatic invertebrates, fish, and amphibians in field and laboratory setups. I am experienced in the development and validation of endocrine endpoints and biomarkers, especially biochemical and histological, and I have been involved in the development and validation of OECD test guidelines for EDCs. I am project leader on research projects in Danish Centre on Endocrine Disruptors (CeHoS) contracted by the Danish Environmental Protection Agency (EPA). CeHoS is a multidisciplinary research collaboration established in 2010 and with the overall aim to build new knowledge on EDCs and to provide information for the preventive work of the regulatory authorities. I am also participating in the recently funded EU-project ERGO (Endocrine Guideline Optimisation), which aims to break down the currently existing wall between human health and environmental testing of EDCs by demonstrating that it is feasible to extrapolate effects of EDCs across the vertebrate classes including humans.

- 2019-2023 EU Horizon 2020 project: Endocrine Guideline Optimisation (ERGO)
- 2019-2023 Member of the Management Committee in the COST Action: Pesticide Risk Assessment for Amphibians and Reptiles (PERIAMAR)
- 2018-2021 Center for Hormonforstyrrende stoffer (CeHos) funded by Miljøstyrelsen

Education and working experience

- 2019-present Associate professor, Department of Biology, SDU
- 2010-2019 Postdoc and assistant professor, Department of Biology, SDU. Research projects funded by the Danish EPA via CeHoS
- 2009-2010 Guest researcher, hosted by Professor Glen Van Der Kraak, Department of Integrative Biology, University of Guelph, Canada.
- 2006-2010 PhD in Ecotoxicology "Sexual differentiation and steroid hormone levels in zebrafish (*Danio rerio*)", under supervision of Professor Poul Bjerregaard, SDU
- 2002-2006 Ba/Msc in Biology and Communication, SDU.

Teaching (selected)

- 2016-present Basic Ecotoxicology (5 ECTS)
- 2015-present Career development for biology students (5 ECTS)
- 2018 Workshops for BA-students: Designing, managing, and communicating research projects
- 2018 Scientific writing and graphic design for science students (online video course)
- 2016 Authored: Writing guide for science students
- 2011-2017 Scientific writing and graphic design for science students

Administrative tasks

- 2017-present Biology teaching committee
- 2017-2019 Study coordinator (Biology)

Consultancy and evaluation of funding applications

- Scientific support for The Danish EPA and SWECO (2009-present)
- External expert evaluator of EU COST-action applications (2019)

Peer review activity

Aquatic Toxicology, Environmental Science and Technology, Environmental Pollution, ACTIVITYMarine Environmental Research, Environmental Toxicology and Pharmacology, Ecotoxicology, and The AAPS Journal.

Aarhus University Press (Teaching and supervision in higher education)

Awards

- 2016 Winner of 'Best pedagogical development project and poster 2016' (SDU)
2012 Winner of 'Information's PhD Cup 2012' – Awards young scientists for their ability to communicate and participate in the public debate. Dagbladet Information.

Public outreach (selected)

- 2017 'Renere vand betyder farvel til tvekønnede fisk', Danish Broadcasting Corporation (DR)
2017 'Male trout are now real males again', EurekAlert!, American Association for the Advancement of Science
2012 TV programme, 'PhD på tre minutter' Danish Broadcasting Corporation (DR2)
2008-present Public speaker, The Danish Science Festival, high schools, Folkeuniversitetet, CeHos Informationsdag etc.

Conferences and Meetings (selected)

- 2007-2019 Poster and oral platform presentations at SETAC Annual Meetings (Europe, North America and South America)
2018 Invited speaker: Biannual advisory seminar on teaching, SDU, Denmark
2016 Oral presentation at Teaching for active learning (TAL) conference, SDU, Denmark
2013 Oral presentation: Endocrine Disrupting Chemicals and Female Reproduction, Uppsala, Sweden
2009-2013 Copenhagen Workshop on Endocrine Disrupters, The National Hospital, Copenhagen

Courses (selected)

- 2017 The academic writing competences of today's students, The Central Education Committee (CUU), SDU.
2016 Commercial Diver certificate
2015-2016 Lecturer Training programme, SDU
2015 Training in public speaking and presentation skills, Centre for Art and Science, SDU.
2014-2015 Project management 1 + 2, The Central Education Committee (CUU), SDU.
2013 The news media and science - 5 workshops on how to understand and use the news media in science communication, The daily newspaper Information and the Danish national Broadcasting Corporation (DR), Copenhagen

Publikationer

Two common mild analgesics have no effect on general endocrine mediated endpoints in zebrafish (*Danio rerio*)

Morthorst, J. E., Lund, B., Holbech, H. & Bjerregaard, P., jan. 2018, I : Comparative Biochemistry and Physiology - Part C: Toxicology & Pharmacology. 204, s. 63-70

Vitellogenin concentrations in feral Danish brown trout have decreased: An effect of improved sewage treatment in rural areas?

Morthorst, J. E., Korsholm Mathiesen, K., Holbech, H., Pedersen, K. L. & Bjerregaard, P., 2018, I : Environmental Toxicology and Chemistry. 37, 3, s. 839-845

A field study of hemolymph yolk protein levels in a bivalve (*Unio tumidus*) and future considerations for bivalve yolk protein as endocrine biomarker

Morthorst, J. E., feb. 2017, I : Comparative Biochemistry and Physiology - Part C: Toxicology & Pharmacology. 192, s. 16-22

Severe malformations of eelpout (*Zoarces viviparus*) fry are induced by maternal estrogenic exposure during early embryogenesis

Morthorst, J. E., Korsgaard, B. & Bjerregaard, P., feb. 2016, I : Marine Environmental Research. 113, February, s. 80-87

17 β -estradiol causes abnormal development in embryos of the viviparous eelpout

Morthorst, J. E., Brande-Lavridsen, N., Korsgaard, B. & Bjerregaard, P., nov. 2014, I : Environmental Science and Technology. 48, 24, s. 14668-14676

Evaluation of yolk protein levels as estrogenic biomarker in bivalves; Comparison of the alkali labile phosphate method (ALP) and a species specific immunoassay (ELISA)

Morthorst, J. E., Holbech, H., Jeppesen, M., Kinnberg, K. L., Pedersen, K. L. & Bjerregaard, P., nov. 2014, I : Comparative Biochemistry and Physiology - Part C: Toxicology & Pharmacology. 166, November, s. 88-95

Ibuprofen reduces zebrafish PGE2 levels but steroid hormone levels and reproductive parameters are not affected

Morthorst, J. E., Lister, A., Bjerregaard, P. & Van Der Kraak, G., mar. 2013, I : Comparative Biochemistry and Physiology - Part C: Toxicology & Pharmacology. 157, 2, s. 251-257 7 s.

Expression of prostaglandin synthases (*pgds* and *pges*) during zebrafish gonadal differentiation

Jørgensen, A., Nielsen, J. E., Nielsen, B. F., Morthorst, J. E., Bjerregaard, P. & Leffers, H., 2010, I : Comparative Biochemistry and Physiology A. 157, 1, s. 102-108

Trenbolone causes irreversible masculinization of zebrafish at environmentally relevant concentrations

Morthorst, J. E., Holbech, H. & Bjerregaard, P., 2010, I : Aquatic Toxicology. 98, 4, s. 336-343 8 s.

Laser capture microdissection of gonads from juvenile zebrafish

Jørgensen, A., Nielsen, J., Morthorst, J. E., Bjerregaard, P. & Leffers, H., 2009, I : Reproductive Biology and Endocrinology. 7, 8 s., 97.