



**Leopoldina**  
Nationale Akademie  
der Wissenschaften

Leopoldina Symposium, Tuesday 3 September 2024

## Impact of man-made environmental changes on endocrine systems

**Organizers: Horst-Werner Korf ML, Duesseldorf, Germany; Svenja Caspers ML, Duesseldorf, Germany; Oliana Carnevali, Ancona, Italy**

**Venue: Università Politecnica delle Marche - Facoltà di Economia "Giorgio Fuà"  
Piazzale Martelli Raffaele, 8, 60121 Ancona AN  
<https://www.econ.univpm.it/?language=en>**

Man-made changes of the environment are a serious threat for life on earth and affect human health and biodiversity. They are, thus, of utmost social and scientific importance and have been an important focus of the Leopoldina during the last decade. The symposium aims to elucidate and discuss the impact of climate change (global warming, increasing ocean salinity), plastic pollution and endocrine disruption, light pollution and shift work on endocrine systems in both invertebrates and vertebrates including humans. Special emphasis will be placed on endocrine disruption caused by a wide range of plastics and other man-made substances.

Sometimes, the effects caused by an endocrine-disrupting substance are only seen long after the exposure. For example, the exposure of a foetus in the womb to an endocrine-disrupting substance may lead to effects that affect the health of the adult and possibly also future generations. In wildlife, effects that may be related to endocrine disruption have been seen in molluscs, crustaceans, fish, reptiles, birds and mammals in various parts of the world. In some species, impaired reproduction has caused a decrease in the population. Thus, endocrine disruption is a risk for biodiversity. Other risks for biodiversity (such as increases in temperature and salinity of oceans) and for human health (such as chronodisruption caused by light pollution and shift work) will be further topics.

The symposium will comprise survey lectures given by internationally renowned scientists (see program, below) as well as short oral and poster presentations given by young scientists selected from the participants of the 31st Conference of Comparative Endocrinologists. A public lecture on the topic will be presented by the organizer of the 31st CECE, Professor Oliana Carnevali, Ancona in Italian/English language.

### Program

09.00-09.10 Thomas Deller ML, Frankfurt, Germany

#### Opening address

09.10-10.00 Charles Tyler, Exeter, UK

#### Endocrine Disrupting Chemical in Fish - A 35 Year Research Journey

10.00-10.30 Gary Hardiman, Belfast, UK

#### A systems level approach to studying the impacts of macro-micro-nanoplastics on Freshwater Biota and Public Health

10.30-11.00 Coffee Break

11.00-11.20 Arianna Servili, Plouzané, France

#### Neuroendocrine responses of teleost to predicted future environments

- 11.20-11.40 Marta Lombo, León, Spain  
**Endocrine disruptors: the silent threat to male reproduction**
- 11.40-12.00 Helena D´Cotta, Montpellier, France  
**How short and long term rises in water temperature and salinity influence the tilapias (Teleostei: Cichliformes: Cichlidae) endocrinology**
- 12.00-12.20 Istvan Fodor, Tihany, Hungary  
**Top-down” endocrine and metabolic-disrupting effects of tributyltin on a widely used molluscan model species, *Lymnaea stagnalis***
- 12.20 -12.40 Iswarya Arokiadhas, Rishon Letziyon, Israel  
**Splice-specific deficiency in the PAC1 receptor affects temperature-related metabolism in zebrafish**
- 12.40-13.00 Nico Cattaneo, Ancona, Italy  
**Natural-based solutions to mitigate dietary microplastics accumulation and oxidative stress in fish**
- 13.00-14.00 Lunch
- 14.00-14.30 Hamid Habibi, Calgary, Canada  
**Thyroid hormone as an endocrine mediator to regulate reproduction and growth in response to environmental changes in fish**
- 14.30-14.50 Isabel Forner, London, UK  
**Searching for new biomarkers of endocrine disruption: the potential of endocannabinoids and carboxylesterases**
- 14.50-15.10 Maoxiao Peng, Faro, Portugal  
**Putative regulatory factors of the species-specific response of two marine bivalves to ocean acidification**
- 14.50-15.30 Fiorenza Sella, Ancona, Italy  
**Exploring the involvement of Endocannabinoid system and PFOA on human fetal osteoblast cells and human osteoblast bone spheroids**
- 15.30-15.50 Horst-Werner Korf ML, Duesseldorf, Germany  
**The impact of light pollution on endocrine systems**
- 15.50-16.30 **General Discussion**, Leader: Svenja Caspers ML, Duesseldorf, Germany
- 16.30-18.30 Poster session
- 19.00-20.00 **Lecture to the Public**  
Oliana Carnevali, Ancona, Italy  
**Inquinanti ambientali: una minaccia per le Specie Selvatiche e per l’Uomo (Environmental Endocrine Disrupting Chemicals: a treat to Wildlife and Human health)**

**About the German National Academy of Sciences Leopoldina**

The Leopoldina originated in 1652 as a classical scholarly society and now has 1,600 members from almost all branches of science. In 2008, the Leopoldina was appointed as the German National Academy of Sciences and, in this capacity, was invested with two major objectives: representing the German scientific community internationally, and providing policymakers and the public with science-based advice. The Leopoldina champions the freedom and appreciation of science on both the national and the international level. It is her role to identify and analyse scientific issues of social importance. The Leopoldina presents its policy recommendations in a scientifically qualified, independent, transparent and prospective manner, ever mindful of the standards and consequences of science.