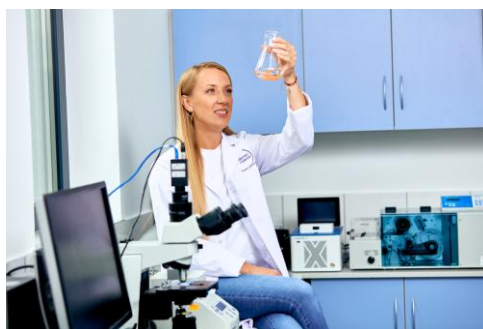


Invitation to Scientific Insights Seminar

Lecture by Sylwia Wałdowska, Ph.D.

- Assistant Professor
- Team of Reproduction and Development in Fish
- ❖ InLife, Institute of Animal Reproduction and Food
Research of the Polish Academy of Sciences,
Poland



Title:



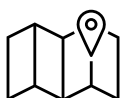
“Beyond sperm preservation: from standardized cryopreservation to paternal effects in fish”

Date:



**Wednesday, 23 September 2026
13:15–14:00**

Place:



**FFPW USB, Zátiší 728, Vodňany
Large meeting room**



Light refreshments provided

Contact person:
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Fakulta rybářství
a ochrany vod
Faculty of Fisheries
and Protection
of Waters

Jihočeská univerzita
v Českých Budějovicích
University of South Bohemia
in České Budějovice



HR EXCELLENCE IN RESEARCH

Sylvia Wałdowska, Ph.D.

23 September 2026

13:15–14:00

Title and abstract of the lecture:

“Beyond sperm preservation: from standardized cryopreservation to paternal effects in fish”

Cryopreservation of fish sperm is an important tool in aquaculture and conservation, enabling long-term storage of genetic resources, synchronization of reproduction and efficient broodstock management. However, its successful application requires standardized and reproducible procedures. Our research has therefore focused on developing species-specific cryopreservation protocols for a range of freshwater fish species, with particular attention to factors determining post-thaw sperm quality and fertilization success.

Beyond its practical applications, cryopreservation can also provide a valuable experimental tool for studying sperm biology and paternal contributions to offspring development. Freezing and thawing impose selective pressure on sperm populations, allowing cryopreservation to be used as a controlled challenge for investigating the biological characteristics of sperm that retain their fertilizing capacity. Using Eurasian perch (*Perca fluviatilis*) as a model, we demonstrated that such cryoselection can be associated with changes in gene expression and phenotypic characteristics of the resulting offspring, enabling the identification of paternal-effect genes. Moreover, further increasing this selective pressure through post-thaw sperm storage revealed additional molecular and developmental consequences in the progeny.

Together, these findings demonstrate that standardized sperm cryopreservation can serve not only as a reproductive technology, but also as an experimental approach for exploring paternal effects and their contribution to offspring phenotype.