

## Curriculum vitae

**Peter Vilhelm Skov**

**Current occupation:** Professor  
Technical University of Denmark  
National Institute of Aquatic Resources (DTU Aqua)

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**Degrees**

PhD, School of Biomedical Sciences, University of Queensland, Australia (2004)

MSc, Institute for Biology, University of Copenhagen, Denmark (2000)

**Positions**

2024 – present	Professor, DTU Aqua, Technical University of Denmark
2009 – 2024	Associate Professor, DTU Aqua, Technical University of Denmark
2004 – 2008	Post-doctoral researcher, Institute for Biology, University of Copenhagen
2000 – 2004	Ph.D. fellow, School of Biomedical Sciences, University of Queensland

**Research expertise**

Bioenergetics of fish in aquaculture: nutritional physiology, food requirements, energy intake and utilization, effects of environmental and water quality perturbations on energy partitioning, substrate use, and growth. Application of exercise in fishes, metabolic rates and effects of environmental change. Activity, robustness, and dominance in cultured fish. The importance of dissolved gases in aquaculture, including methods, efficiency and operational costs of aeration and/or degassing installations, and the significance of gas saturation levels on production performance and physiology. Use of alternative ingredients in formulated diets for fish; side- and waste streams from agricultural processing. Alternative protein sources in fish nutrition.

**Publications**

**Scopus:** 93, **Citations:** 1936, **h-index:** 26, **Other peer review publications:** 1. **Book chapters:** 3, **Reports:** 10, **Conference presentations (oral):** 44

**Memberships of scientific committees**

Member of the Institute Study Board (2009-2019), Head of Study Board (2010-2019), Head of Studies for Sustainable Fisheries and Aquaculture (M.Sc.) (2021-present)

Member of assessment committees for the Norwegian Research Council (2020 – 2024), *ad hoc* assessor of research proposals for The Netherlands Organisation for Scientific Research (NOW) and Swiss State Secretariat for Education, Research and Innovation (SERI).

**Educational tasks at academical level, past 5 years**

Course coordinator for Fish Nutrition and Bioenergetics (M.Sc.), Recirculating Aquaculture Systems (M.Sc.), Introduction to Aquatic Ecosystems (M.Sc.)

Fisheries and Aquaculture (B.Sc); Introduction to aquatic ecosystems, anthropogenic threats, and sustainable solutions (M.Sc); Fish Nutrition and Bioenergetics (M.Sc); Recirculating Aquaculture Systems (M.Sc), Exercises in RAS (M.Sc).

**Ph.D. Supervision, past 5 years**

Tilo Pfalzgraff, 2018 – 2021; Freja Karlsen, 2019 – 2022; Julie Hansen Bergstedt, 2020 – 2023; Wanhe Qi, 2021-2024; Stephen Gyamfi, 2019-2023 (co-supervisor, KNUST, Ghana); Muumin Hamad, 2019-2022 (co-supervisor, SUA, Tanzania).

In addition to supervision of B.Sc. and M.Sc. students from DTU, and serving as external examiner in the Censor corps for biology.

**Collaboration with industry stakeholders, past 5 years**

Danish Salmon A/S and AquaPri A/S on dissolved gases in aquaculture production and education (internships); BioMar A/S, nutritional physiology and protein retention in fishes; Launis A/S, the use of shrimp waste as feed ingredients for fish and lobsters; Carlsberg A/S, refining brewers spent grains for use as a protein source in fish feeds, AquaPri A/S and various aquaculture producers on dissolved gases in aquaculture (primarily dissolved nitrogen and CO<sub>2</sub>).

**Scientific highlights**

My work on the effects of dissolved carbon dioxide (CO<sub>2</sub>) on fish physiology and performance began about 10 years ago, first in a relatively simple growth trial, the data from which was published as part of a monograph on CO<sub>2</sub> in aquaculture for the book series *Fish Physiology* (Skov, 2019, B1) showing that dissolved CO<sub>2</sub> levels cause a dose-dependent decrease in feed conversion efficiency and growth in rainbow trout. Before this was published, we had already completed a series of studies on how CO<sub>2</sub> affects the metabolic performance of Atlantic salmon using stepwise ramping of CO<sub>2</sub> to identify the breakpoint at which fish could not maintain oxygen uptake, which also included a series of studies on production performance (Khan et al., 2018, P48). Once again our results showed that a “safe-level” of CO<sub>2</sub> in terms of production performance is non-existent. These results were presented at TekSet, one of the largest conferences for smolt production in Norway in 2020 (Skov, 2020, C30). Studying the effects of CO<sub>2</sub> levels on fish performance was then expanded to consider combined effects of CO<sub>2</sub> and hypoxia, allowing us to show in a recent study (Hamad et al., 2023, P77) that when co-occurring, effects are much greater than the sum of individual responses. Along the way, I became interested in nephrocalcinosis, a very large financial and image related problem for salmonid aquaculture. In a recently completed project, we have preliminary data to show that water hardness and dietary phosphorous levels lead to the onset of accumulation of P, Ca, and Mg in rainbow trout kidney. This is the rationale for the accompanying application, where we want to expand on the water quality and dietary variables investigate this issue in more depth.