

# University of Stirling Institute of Aquaculture



The University of Stirling's Institute of Aquaculture is working to embed a culture of impact that ensures that its research has a life outside the laboratory. The Institute works closely with the aquaculture industry and provides policy advice to governments, thus ensuring the impact from its research is far-reaching.

The Institute of Aquaculture conducts world class research and teaching, covering the many facets of aquaculture science and supporting the sustainable development of aquaculture worldwide.

With over 120 staff and post-graduate students the Institute is the largest organisation of its kind in the UK and has a strong global reputation.

## Delivering Impact

The Institute of Aquaculture aims to develop a culture of impact orientation in all staff and postgraduate students to ensure that our research has a life beyond the laboratory. Staff review data on their research impact twice a year with Institute management and develop plans for improving their future impact. Senior staff provide mentoring to more junior colleagues in preparing research applications and help to make sure that potential impact pathways, and how impact is to be captured, are considered from the start of research projects. Research is often pursued in collaboration with industry and other stakeholders, ensuring that it has an immediate and direct impact. Research also forms the basis for our commercial services for industry, directly connecting results with practice. Students embark on the impact pathway early in their careers, being introduced to the concept during their induction process and presenting their results and potential impact at our own biannual post-graduate conference which is widely attended by industry and other stakeholders.

The Excellence with Impact competition has helped to embed a much greater appreciation of the importance of research impact throughout the Institute. Junior staff and research post-graduates have been encouraged to specifically consider the immediate and longer term impacts of their research and to formulate this into research plans from their inception. Senior staff have a stronger strategic view of the importance of impact and how it can be used to strengthen research. Particular efforts will be made to support students to appreciate the importance of impact throughout their studies and the need to engage with and to present their findings to stakeholders. We will strengthen our collaborative links with industry and other stakeholders to further improve the relevance and impact of our research and we will vigorously pursue ways of disseminating research findings by electronic and print media, as well as joint workshops and seminars.



Cod: Research at the Institute of Aquaculture supports sustainable development of aquaculture worldwide

## Vaccine development

Disease remains a major obstacle in the development of sustainable aquaculture and, as in other livestock husbandry, prevention of disease by vaccination is a major step towards improving both fish welfare and profitability. The Institute of Aquaculture has successfully developed vaccines against several important bacterial diseases of cultured fish. These are now used globally, delivering major economic and welfare benefits. The vaccines have been developed in collaboration with commercial partners, which has assisted in their licensing and adoption by the industry. Others are currently undergoing field trials and will proceed to full commercialisation in the near future.



Rainbow trout with red-mark syndrome, an economically important condition for which a vaccine is under development

## Alternatives to fish meal

Many feeds for cultured fish contain fish oil and fish meal derived from wild fisheries. This is not sustainable and their replacement with alternatives is an urgent necessity. Researchers within the Institute of Aquaculture Nutrition Group have been developing alternatives to fish meal, and particularly fish oil, largely using vegetable products. The use of such products in fish feeds, without compromising fish production, health and welfare and health benefits to consumers has been refined for the whole life-cycle of salmon and widely adopted by the aquafeed industry. The series of collaborative projects involved both industry and other international academics. The potential exists for extending the use of vegetable-based dietary components to many other fish species.



Salmon with fish oil (bottom) replaced by vegetable oil (top) in their diet are indistinguishable

## Contact

Professor Brendan McAndrew  
Institute of Aquaculture  
University of Stirling  
Stirling  
FK9 4LA

**Website:** [www.stir.ac.uk/aquaculture](http://www.stir.ac.uk/aquaculture)

**Email:** [b.j.mcandrew@stirling.ac.uk](mailto:b.j.mcandrew@stirling.ac.uk)

**Tel:** +44 (0)1786 467884



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The BBSRC Excellence with Impact 2011 scheme ran from 2008 to 2010. It was developed to reward and esteem those university departments most active in embedding a culture that recognises and values the achievement of impact alongside excellent research.