

Aquaculture Research Collaborative Hub – U.K. (ARCH-UK)



What is ARCH-UK?

- ARCH-UK is an integrated aquaculture network that aims to solve the shared and specific issues preventing the sustainable growth in all sectors of the UK aquaculture industry.
- It is funded by the BBSRC/NERC UK Aquaculture Initiative for 4 years commencing 1 March 2017.



What are the goals of ARCH-UK?

- To develop a community of people working together drawing in new researchers
- To develop a strategic aquaculture research agenda for the U.K.
- To assist the RCUK in building a UK academic capability to underpin capacity that meets the long term needs of industry
- To encourage exchange of knowledge
- To facilitate development of solutions to community-level challenges
- To encourage translation of new technologies
- To help improve the contribution of the UK aquaculture industry to national food security

Who organises the network?

- Professors Brendan Mc Andrew (Stirling University) and Sam Martin (University of Aberdeen) (**mainly fin fish**)
- Professors Charles Tyler (Exeter University) and Andrew Rowley (Swansea University) (**mainly shellfish**)



Swansea University
Prifysgol Abertawe

Institute of
Aquaculture
UNIVERSITY of STIRLING

Membership of the network

- UK based academics with interest in aquaculture and techniques and technologies
- Representatives of government and non-governmental organisations (e.g. Cefas, Defra, EA, NRW, etc.)
- Industry and industry-facing organisations (e.g. SAGB, ASSG, Seafish, SSPO etc.)
- Overall, membership is open to all interested parties and funding is available to support their participation (i.e. attend meetings)

How is ARCH-UK organised?

MANAGEMENT HUB

1. Grant holders
2. Working group leaders
3. Network managers (one based in Stirling and one based in Swansea)

ADVISORY BOARD

Independent Chair, representatives of key organisations including Cefas, SeaFish, SAGB, BTA, Defra, SSPO, Marine Scotland

RESEARCH COUNCIL REPRESENTATION

What are the working groups?

- WG1: Finfish nutrition
- WG2: Finfish health and welfare
- WG3: Shellfish health and disease
- WG4: Human health and food safety
- WG5: Stock improvement
- WG6: Markets, economics, social science and technology development
- WG7: Environmental interactions, climate change and environment and capacity
- WG8: Career development & training

What roles do work groups play?

- They create research priorities (this helps to advise Research Council in their development of aquaculture funding)
- They advise on doctoral training requirements
- They develop specific workshops
- They assist in the development of early career researchers by ensuring their engagement
- They champion introduction of new approaches/technologies

RESEARCH PRIORITIES – WG 3 (Shellfish health & disease)

1. An inter-disciplinary approach is required in the study of shellfish diseases. In particular, we have paucity of knowledge of how such diseases are spread and the role of vectors and/or reservoirs. A multidisciplinary approach of pathologists (both traditional and those using eDNA), immunologists, epidemiologists and ecological modellers would be appropriate for any large-scale projects.
2. Our appreciation of host – parasite/pathogen interactions are still in early development for some key diseases.
3. Our knowledge base of shellfish species such as blue mussels and oysters, is lacking and hampered by a lack of genomic information. Again, inter- and multi-disciplinary approaches may be required to make progress.

RESEARCH PRIORITIES – WG 4 (Human health and food safety)

- Infectivity assays for viruses
- Development of novel technology for: (a) remote monitoring of the environment; (b) rapid screening methods/field kits to test for microbial contamination; (c) rapid screening for and detection of algal blooms; and (d) mitigation technology (e.g. high pressure/gamma radiation, depuration, rapid diagnostics, remote diagnostics). Such approaches may be inter- and/or multi-disciplinary in nature.
- Larger catchment scale studies to better understand anthropogenic inputs/water quality and impact on shellfish harvesting areas.
- Detailed investigations into the threat from emerging disease-causing agents as a result of climate change, including vibrios such as *V. parahaemolyticus*.

What other activities will ARCH-UK be involved in?

- Annual Science Events (networking)
- ARCH-UK website
- Development of doctoral training programmes?
- Early career researcher workshops
- Events bringing together grant holders from Aquaculture Initiative

Some key considerations

- Involvement in work groups is open to all interested parties
- There are funds available to support travel etc. for all those who attend meetings
- Funds will be available for individuals to attend Annual Science meetings
- Reports of working groups will be available to all parties
- Stakeholder engagement is of key importance to the success of ARCH-UK if we are to achieve our goals

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