

Evaluation of a Commercial Equipment Award Program

Andrew Smerdon¹ and Agustín Riso¹

¹Aquatec Group

November 23, 2022

Abstract

In 2012, Aquatec launched an equipment award scheme for postgraduate students and early career scientists. Successful recipients with limited budgets gain free access to high quality subsea instrumentation for a laboratory or field campaign of up to three months, plus a travel grant to allow them to present their work at a conference. So far there have been 11 successful awardees who have applied from or deployed instruments in 13 countries spanning five continents, in estuaries, lakes, rivers, and coastal seas. In this paper, we present an overview of the most successful award projects. We also evaluate the impact of the scheme on the award recipients' chosen project work and how it influenced their future career. The evaluation draws on analysis of the recipient study reports and the use of questionnaires and interviews. The scheme has also suffered the occasional setback. We attempt to identify some of the potential pitfalls of such a program, and highlight the key factors that lead not only to the best student experience, but also a positive outcome for the awarding company

Evaluation of a Commercial Equipment Award Program

Andy Smerdon, Agustín Riso

Aquatec Group Ltd, Aquatec House, Stroudley Road, Basingstoke RG248FW, UK. Email: inquiry@aquatecgroup.com

Background



In 2012, Aquatec launched an equipment award scheme for postgraduate students and early career scientists.

Successful recipients with limited budgets gain free access to high quality subsea instrumentation for a laboratory or field campaign of up to three months, plus a travel grant to allow them to present their work at a conference.

Aims:

- To help ambitious young researchers overcome financial barriers to access state-of-the-art technology
- To provide an introduction to bidding for research funding
- To foster links between industry and academia
- To generate case studies for real world applications
- To introduce Aquatec and its technology to new generations of researchers

Statistics

So far there have been 13 successful awardees who have applied from or deployed instruments in over 14 countries spanning five continents, in flumes, lakes, rivers, and coastal seas.

Over the years, Aquatec has made awards of the AQUAscat® 1000R and 1000LT acoustic suspended sediment profilers, the AQUAlogger® 210TY and 310TY turbidity data loggers, and the AQUAlogger® 520 temperature and depth logger, according to availability of instruments from their demonstration or rental pools.



AQUAscat® 1000R



AQUAscat® 1000LT



AQUAlogger® 210TY



AQUAlogger® 310TY



AQUAlogger® 520

How it Works

Successful awardees put forward a brief proposal outlining their plans including:

- Research context
- Processes to be studied
- Coherent research aims
- Demonstration of the need for the instrument
- How the instrument will be deployed
- How the instrument will provide the answers sought

The proposals are judged by representatives from Aquatec's product management, engineering and marketing teams, and marked according to science and innovation, practicality, and demonstration of need. Once the successful applicants have been notified and all terms and conditions accepted, the instrument is despatched in time for the awardee's planned study. At the end of the loan period, they return the instrument, and write up their work. Once a satisfactory report has been submitted, a travel grant is awarded.

Acknowledgements

The Authors would like to thank:

- Stephanie Moore (University of Ottawa), Guillaume Dramaïs (Iretea) and Philippe Dussouillez (CEREGE)
- Greg Easson and Jarett Bell, University of Mississippi
- Nicholas Jordan, University of Wisconsin-Madison
- Elizabeth Gardner, University College London (UCL)

The Successes

Many of the awards have resulted in excellent reports and provided data that has formed part of a Masters or Doctoral thesis or postdoctoral publication. Four such studies are highlighted below.



Study of the hydro-sedimentary dynamics of the Lower Mekong River

Stephanie Moore (University of Ottawa), Guillaume Dramaïs (Iretea) and Philippe Dussouillez (CEREGE)

The objective of this project was to measure the flux of sediment and the spatial distribution of both particle size and concentration at three locations in different physiographic regions of the Lower Mekong River.

"I had an opportunity to contribute to work on a study of sediment transport in the Mekong River. It seemed like an ideal opportunity to test out the AQUAscat® 1000R since we were interested in having a better understanding of the spatial distribution of sediment and wanted to measure both sediment size and concentration."



Impacts of Shoreline Protection Structures on Sediment Transport in the Great Lakes

Nicholas Jordan, University of Wisconsin-Madison

Nicholas' project addressed two critical scientific and management questions in the Great Lakes, specifically: how shoreline protection structures impact sediment transport on bluffed coasts; and how rapidly eroding coastal areas might be sustainably protected.

"A lightweight and portable acoustic backscatter sensor would greatly benefit this research. The AQUAscat® 1000LT is ideally suited for this task."

The benefits of the awards for these students are evident from their testimonials. However, the benefits for Aquatec, the awarding company, are also significant and lasting. For example, news of the awards provides positive publicity, several of the case studies feature on Aquatec's web site, and two of them are featured on Aquatec's stand at this conference.



Hydrogeomorphology and ecology in a sedimentary coastal lake and wetland system: Sheskinmore Lough SPA

Elizabeth Gardner, University College London (UCL)

The project aimed at developing a more detailed understanding of the hydrology of Sheskinmore Lough. The AQUAlogger® 520PT10 aided in investigating lake level fluctuations in relation to precipitation and temperature.

"The AQUAlogger® 520PT10 has been invaluable and acted as a vital springboard for this PhD in terms of directing further research. I would like to express my sincere thanks to Aquatec."



Evaluation of the effect of opening the Bonnet Carré Spillway on the Mississippi Gulf Coast oyster production

Greg Easson and Jarett Bell, University of Mississippi

This experiment monitored the Bonnet Carré Spillway opening event. The AQUAlogger® 310TY provided short term quantification of abiotic/physical parameters located in the study area.

"The instrument allows us to expand our study parameters and provide further data that will help in restoration and resilience of oyster reefs on the Mississippi Gulf Coast."

Learning Points

While some awards have been an unqualified success, others have provided opportunities to improve the scheme in future years. Below are a few examples:

Training

Some of the instruments are complex to set up. While seasoned researchers will ask questions and test performance first, younger researchers are more likely to 'wing it', sometimes with disappointing consequences. We now engage with awardees at the outset, to ensure they set up their instrument correctly.

Expectations

We offer a free instrument loan. One awardee assumed we would also cover the vessel cost to deploy the instrument. Each year the terms and conditions are honed to ensure awardees' expectations are met.

Logistics

Within reason, our award instruments know no boundaries, but we do ask for awardees to arrange for their return. However it sometimes proves difficult for them to arrange correct return shipping and paperwork. We are investigating how to smooth this process.

Insurance

We expect awardees to take responsibility for the instrument while in their possession. However, their institutional insurance often seems unable to cope with this, occasionally leading to awards having to be declined.

Finding Features

Occasionally, awardees use an instrument in a previously untried configuration, yielding perplexing results, and testing our technical support team. One such occasion allowed us to develop a new technique to interpret very shallow depth readings under strong temperature variations.

