**Teaching with Technology Grant Application Form**

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| **Name of Applicants:** | Audrey Dallimore, Leslie King (SES), Deanne Turnbull-Loverock (CTET) , Dan Anthon(Media Services) |
| **Faculty Member’s School/Faculty**: | School of Environment and Sustainability |
| **Project Title:** | Boat based experiential learning educational technology development |
| **Date:** | Sept 29, 2015 |

**Goal(s) and specific objectives**

The objective of this grant is to investigate and create the ability for work being done on the RRU Nearshore Research Boat on the water, to be accessible remotely in real time and afterwards on “tape” to for example : groups of graduate students working on multi-disciplinary nearshore research projects, faculty and students interested in experiential learning, and how this can be accomplished remotely; and or expanded opportunities for collaborative research and resource leveraging with our partners Parks Canada and Natural Resources Canada.

**Significance and benefits of the activities (to learners, to the University, to knowledge creation)**

We are always attempting in SES to resolve the conundrum of providing outdoor experiential learning experiences, in an online environment. Leslie and I for example, have created an online virtual field trip assignment, with the help of Deanne which students seem to enjoy and engage in. The RRU Nearshore Research Boat, in its first year of operation, has already been used for field work with on campus undergraduate and graduate students, and also for collaborative outreach work to First Nations communities in partnership with Parks Canada, under an NSERC PromoScience grant in 2014 and 2015.

These opportunities have been so successful that we have collectively wondered if given some time and a small amount of funding, if we can create a secure remote link and the equipment and technology to interactively engage students in nearshore research and outreach, by connecting remotely to the boat while it is underway. Dan Anthon, who is an experienced and qualified mariner, as well as an RRU media in teaching expert, and Deanne who has worked with Leslie and myself to instruct us on available technologies to accomplish remote online experiential outdoor learning, will be necessary and accomplished members of this team.

**Connection of the activities to team-based learning as per the RRU Learning and Teaching Model AND** P**roposed team-based learning tool/technology, and how you imagine it will be used**

In SES we are now developing group/team based graduate student projects, on nearshore archaeological features in Gulf Islands National Park (GINPR). These students access the area on the boat and are working on projects that range from for example, changing sea levels in the area expected under global climate change, to monitoring of the annual levels of chlorophyll being delivered by coastal ocean dynamics to nearshore areas of potential sustainable aquaculture, to First Nations governance issues around traditional sites of aquatic resource use. The richness of students sharing field experiences in GINPR and working tangentially and collaboratively together is remarkable and unique. To have a stable remote teaching link to the boat, with whatever technology is required for this (eg. secure “hotspot” web link, waterproof-ish video camera etc) would extend this opportunity to students and faculty who want to participate but are not in the local area. This is but one potential use of remote teaching capability from the boat. We hope that under this grant we can establish and acquire the hardware and software technology required, demonstrate its use, and then other faculty and students can use this technology as part of RRU’s TBL technologies.

**Activities or work plan with time frames and benchmarks**

1) First three months : assess the needs and capacity of the boat’s power and communication systems, then identify and acquire the hardware and software needed.

2) Second three months : schedule the team to undertake on water testing.

3) Third three months: test the technology in a real life teaching and learning situation.

4) Final three months: create a sustainable model for providing faculty and students access to this technology, and prepare final grant report and presentation.

**Expected outcomes of the pilot project including impact on curriculum, course design, teaching, and student learning**

With the successful development of this technology through this grant, we foresee not only the success of the teaching and learning examples detailed above, but also the creation of fertile ground for unlimited creative and currently unforeseen applications of this technology for RRU students and faculty, due to our unique coastal location.