



February 13, 2017

**RE: Arctic coastal and drifting ice processes and dynamics**

Dear NPC, NIRB and NRI;

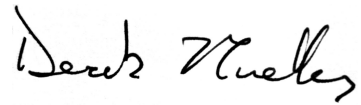
I have been conducting research under NRI licence **02-011-16R-M** (2012-2016), held under my name, and **02-010-16R-M** (2011-2016), under my long term collaborator, Luke Copland's name for several years. As Luke is no longer actively researching at the northern coast of Ellesmere Island, I am interested in combining all of my related research activities under a single licence, which is the purpose of this application. Please note that the research was previously screened by NPC for conformity and reviewed by NIRB (**09YN071** and **08YN010**, respectively). However, in the combined application, the list of equipment and techniques has evolved somewhat and we are interested in working out of, and eventually in partnership with, communities more in the future.

In the table below I have detailed the activities that myself and my team have undertaken in the past under NIRB and NRI and which of my proposed activities are new.

Activity	NIRB reference	Comment
Deploying ice tracking beacons	09YN071	Where there are ice islands in Nunavut waters
Sonar mapping of ice	09YN071	Seeking to do so off the coast of Ellesmere Island
Use of aircraft and snow machines; fuel caches	08YN010	Access of field sites is implicit for 09YN071 activities
Temporary camping, greywater, hazardous chemicals, etc	08YN010	Currently only required for Ellesmere Isl.
Radar ice surveys	08YN010	We also do this on ice islands
Ice coring	08YN010	We also do this on ice islands
Hydrological testing/ water profiling	08YN010	We also do this near ice islands
Installation of scientific equipment (eg. weather station, GPS)	08YN010	Note the exact nature of the instruments has evolved over time; we also would like to install equipment on ice islands
Uninhabited aerial vehicles (UAVs)	Proposed	Mapping/surveying
Autonomous underwater vehicles (AUVs), Remotely operated vehicles (ROVs)	Proposed	Mapping/surveying and sampling underwater
Work on landfast ice near Baffin Island (using some activities described above)	Proposed	Measure ice ridges and melt/break-up

I await your decision on the status of this application and I would be pleased to answer questions related to our research and to provide more detail regarding our plans upon request.

Sincerely,

A handwritten signature in black ink, reading "Derek Mueller". The signature is written in a cursive style with a large, stylized 'D' and a long, sweeping underline.