Nomination Statement

For the 2016 CIRES Outstanding Performance Award in the Service category, I would like to nominate CIRES Associate Scientists Kelly Carignan and Matthew Love. In April, 2016 Kelly and Matt were invited to Victoria, Canada with support from Emergency Management BC (EMBC) and Ocean Networks Canada (ONC) to lead a workshop on building coastal digital elevation models (DEMs) at the University of Victoria (UVic). This 5 day DEM training session brought together ten participants from ONC, UVic, GeoBC, Canadian Hydrographic Service (CHS) and Alberni-Clayoquot Regional District (ACRD). These key members learned the process involved in developing a tsunami DEM using a variety of data sources, software and rigorous methodologies. Providing this training went above and beyond the normal duties of their jobs as developers as they had to develop the training course from scratch, plan the methodology for teaching complicated procedures in a 5 day workshop. They have received outstanding reviews following the very successful training as you will see in the letters of support written. This work has opened the door for international communication and collaboration to improve tsunami preparedness in British Columbia and the rest of the Canada. It is a first step, but an important one that will enable other communities to prepare.

Criteria

Criteria 1: Implementation of a creative or innovative idea, device, process, or system that aids in research, teaching, or outreach at CIRES.

Kelly and Matt created and implemented the 5-day DEM training course. The course was entirely constructed by Kelly and Matt and was the first of its kind to be offered by NCEI/CIRES scientists on DEM development specifically for tsunami forecast and warning. When Ocean Networks Canada (ONC) first approached the CIRES scientists about providing the training, they were hesitant having not been involved with such a training course themselves or having a teaching background. The

task seemed entirely overwhelming. However, the 2 CIRES scientists recognized the importance of enabling other organizations and other nations to have the capability so they worked tirelessly and diligently to be well prepared, making course modules, planning each day, and creating a detailed timeline and agenda. This shared learning experience has opened the door for international communication and collaboration to improve tsunami preparedness in British Columbia and the rest of the Canada. It is a first step, but an important one that will enable other communities to prepare. And now that Kelly and Matt have laid the ground work, others can benefit.

Criteria 2: Development or improvement of a service that increases the efficiency, quality, or visibility of scientific research or outreach.
Tsunami waves know no borders, making international cooperation key. It is important that nations that share our coastline, and all those with a potential risk, can be as prepared as possible for such a disaster. The modeling of tsunami waves presents a unique challenge; tracking powerful, landward-moving waves involves a sophisticated integration of both land-based topographic data (elevation) and ocean-based bathymetric data (water depth) into one seamless data set. The workshop participants soon discovered the extremely complex, detailed, and time-consuming task of this process. It involves gathering, editing and integrating multiple data formats from a variety of sources to create the single high-resolution data set needed for a tsunami DEM. Kelly and Matt were able to successfully describe the process using detailed, well-prepared examples so the students could replicate and implement the methodology. The DEMs developed by the CIRES scientists at NCEI are a vital tool in tsunami forecasting and inundation modelling and the CIRES/NCEI developed methodology has defined the global standards being used by tsunami planning and warning centers. Through Kelly and Matts effort to bring this training to other nations we are increasing the efficiency of our Tsunami Warning System as they will ultimately be better prepared to make forecasts and warnings by having the knowledge of what could happen on all coasts in North America.

Criteria 3: Providing a service that promotes or inspires excellence and dedication to research performed at CIRES or in the wider community.

There is no question of the dedication of these 2 CIRES staff in the work they did this past year in putting together this course. They were determined to have it go off without a hitch. We have heard glowing reviews, as you can see from the letters of support, both in the professionalism displayed during the training, the efforts to obtain the data necessary for the training and building the DEM for Barkley Sound and the City Port of Alberni, Canada. The efforts in obtaining the necessary data from international organizations alone is exemplary! I am inspired on a daily basis by the efforts of these 2 scientists to work with organizations all across the globe to develop the best products for our partners. A lot of this background work goes unnoticed. The dedication is most certainly inspiring and I hope the nominating committee feels the same way.