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Edmonton Community Foundation
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To Whom it May Concern,

This letter will provide background on my connection and work with the Alberta Aquarium Society Aquatic Biosphere project. I joined this project shortly after it started in 2015. The society conceived of bringing a public aquarium to the greater Edmonton region. I was quite intrigued and think this project has the ability to develop something quite unique to the western region and enhance our community connections within Edmonton.

My background is in Marine Biology, specifically disease research in Aquatic Biology, and I have worked in a research capacity with several of the major public aquariums of the West Coast (e.g. Vancouver Aquarium, Monterey Bay Aquarium). Currently I am researching health of captive coral systems, commonly known as mini-reef or marine tanks. I also conduct collaborative research with the University of Hawaii.

The Aquatic Biosphere project represents an amazing opportunity to develop a center with a focus on water conservation. Aquatic ecosystems of all types are under constant environmental pressures. Our role as aquatic scientists is often to investigate and establish how we can mitigate these pressures and preserve natural habitats. An essential step in this process is to communicate our scientific findings to the general public. Often the public does not “search out” academic publications, rather they rely on the media and other sources such as museums and aquariums to interpret this information for them. The public is primarily interested in the organisms that inhabit these ecosystems and how they can conserve the organisms and their environments. In this project the Aquatic Biosphere will communicate research with exhibits in a way not done to any large extent at major aquariums.

This project has already begun by connecting to the Edmonton community through information sessions and booths at popular trade shows. The Society also applied with my help on some initial grant funding opportunities from: Alberta Conservation Association, National Geographic and a Blue Sky Award. Alberta Conservation Association funded the society to purchase and modify a “scientific trailer” that will be utilized to communicate with the public as we visit various sampling sites for our research projects.

National Geographic funded the Society awarding an underwater drone to conduct a research project supervised by myself and another faculty member. In this project we are examining the presence of invasive fish species in City of Edmonton pond/lake systems.

The Blue Sky Award is an award for the best “Blue Sky” idea in Alberta providing funding to develop architectural concept designs for the award idea. The society received this award and completed the concept designs.

MacEwan students and fellow faculty represent a vast pool of not only talent, but eager participants for the Aquatic Biosphere project. Students in Biological Sciences and other areas of the University (e.g. Business & Art and Design) have been signing up to volunteer on the project and participate in research projects related to the larger concept. The Alberta Biosphere project represents not only an amazing opportunity for improving the Edmonton Community through aspects of tourism but establishing strong working connections within Edmonton between members of the academic community and the public in general.

In reality, this is the point I personally am most excited about. Collaborating with fellow scientists and communicating the information to the public will be a hallmark of the Aquatic Biosphere. A facility that places science projects “into the exhibits” similar to the one fossil dig at Royal Tyrrell museum will be a new and exciting way to have the public view, question, and learn about research in water conservation. One of the most popular areas at Royal Tyrrell Museum is the fossil dig exhibit where the public can watch scientists at work. The Aquatic Biosphere will take this further highlighting the research of scientists by placing them on exhibit with their research organisms and allowing live question and answer sessions with scientists.

Another aspect of this project I am personally connected to is the desire to produce locally sustainable food for consumption. In Edmonton we are limited to a shorter growth cycle for our local food production. The Aquatic Biosphere can extend this cycle by providing aquaponics. My background work in aquaculture also includes aquaponics. Aquaponics uses the waste from water systems to grow plant food. Large tank systems maintaining aquatic organisms like fish produce waste in the form of ammonia and urea – that plants require to grow. The technology exists, to recycle the water of these systems and pull both solid and dissolved waste and use it to produce local fresh plant food such as lettuce, tomatoes, herbs etc.

The majority of people who have heard about this project support the idea of an Aquatic Biosphere with a focus on water conservation. The society is at the early stages of building an operating structure to further plan and undergo a capital campaign for the project. The

support of the Edmonton Community Foundation would be a "strategic and collaborative funder" that could help start this project.

Thank you for considering their submission for a Community Foundation grant. Undoubtedly you are spending many hours reviewing applications and I hope this one stands out from the rest.

Sincerely,

Dr. Ross Shaw