

to explore.  
to question.  
**to become inspired.**

*Look deep into nature, and then you will  
understand everything better.*  
- Albert Einstein

inspired **by** nature







WHAT CAN THE  
STUDY OF ONE OF  
THESE DIVERSE  
ECOSYSTEMS TEACH  
US ABOUT THE  
OTHER?



**Singapore.** One of the most dense and modern cities in the world. A country onto itself. Technology and economy drive the form of the city, and yet nature in its metaphorical and literal forms is still embedded and celebrated within. *A case study in the cutting edge of biologically inspired architecture.*



**Indonesia.** The Coral Triangle, the heart of marine biodiversity in the tropical Indo-Pacific, is home to more species of plant and animal life than any other location on the planet. *Density and diversity drive the innovation of form and function faster and further than any place else known to science.*

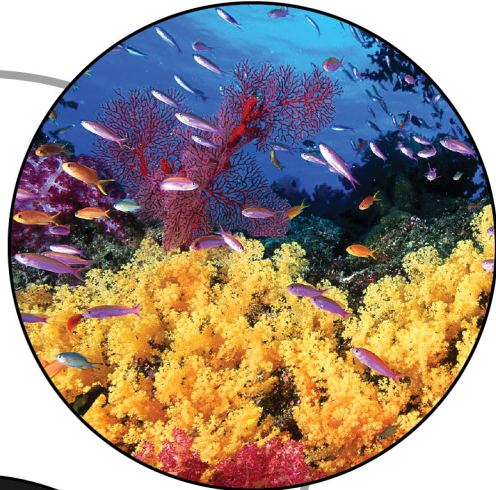


*It's the questions that are most interesting...*



**How is Singapore, this city of the future, adapting and evolving as it grows?**

How do people live in such extreme density? What has happened to nature in this environment? What can we learn from this incredible example?



**What can we learn about how we design our built environment from studying the natural world?**

The natural world holds a great diversity of design solutions and operates at a level of efficiency unmatched by the technology of human architecture. What inspiration could we find if we choose to dive directly in with eyes and minds open to new ideas?



**Is there an intersection between the advance of our technology, and a reconnection with the natural world?**

New digital tools for design and manufacturing are redefining what it is possible to design, engineer, and construct. With these new found abilities, what can we learn from a new investigation of the relationship between architecture and nature?



**ABOVE: Biomimicry in action.** Engineers seeking to decrease the pressure shock waves produced by bullet trains as they entered and exited contained air in tunnels looked to the form of the Kingfisher bird, which has a beak and head designed to smoothly penetrate the water's surface in a high speed dive. The result? A 10% increase in train speed, at the same time as a 15% decrease in power needed to propel the trains.



**BELOW: Which is the more efficient flow of individuals?** This morning commute on mass transit, or a Painted Sweetlips fish school on the move? What else can we learn about optimizing the flow of energy and materials from the natural world? Exploration, questioning, and documentation is the only way to prompt these kinds of questions...



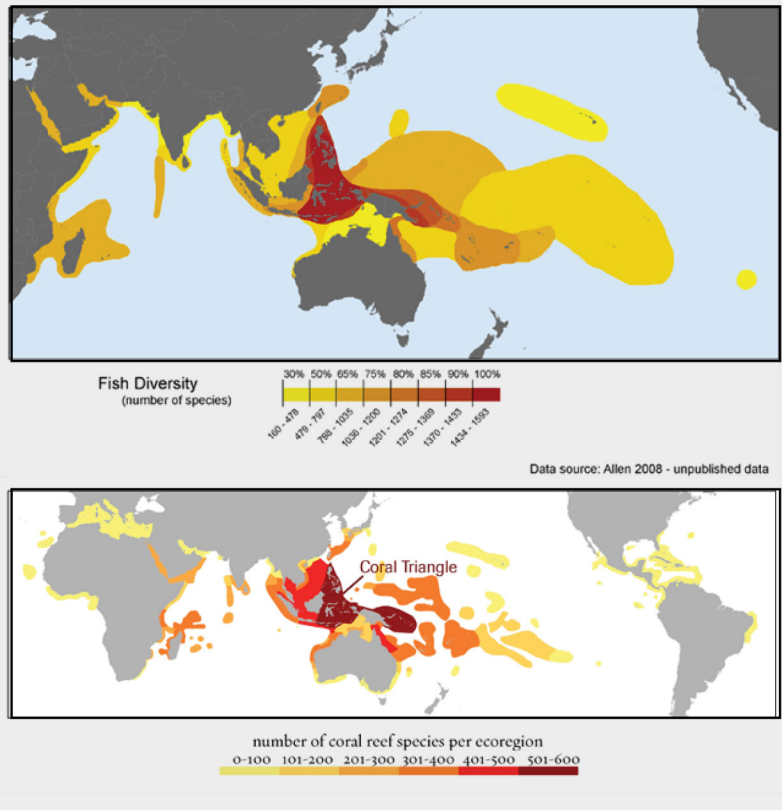
*"Nothing is so dangerous to the progress of the human mind than to assume that our views of science are ultimate, that there are no mysteries in nature, that our triumphs are complete and that there are no new worlds to conquer."*

— **Humphry Davy**





become inspired.



## Proposed Travel Experiences

### Indonesia: Biodiversity Exploration

An expedition to explore the Coral Triangle, via the Indonesian archipelago. Not far from the developed metropolis of Singapore in Southeast Asia lies this nearly untouched region, which is the epicenter of species diversity and abundance within the world's oceans. Single reefs in this area have been documented to contain more unique species than the entire tropical Caribbean! As a certified Divemaster and an avid underwater photographer, I will undertake an intensive, multi-day diving expedition to explore, observe, and visually document the incredible diversity of plant, vertebrate, and invertebrate species and interactions, above and below the water in a variety of ecosystems. New species of sharks, fish, corals and invertebrates are still being discovered here regularly, so there is no limit to what unique inspirations may be had! For me, this would truly be a once-in-a-lifetime opportunity to explore some of the most pristine natural habitats on Earth.

### Singapore: Architectural and Urban Exploration ▶

A journey to explore in depth the vibrant city-state of Singapore. Investigating the integration of nature preserves within a dense urban fabric: amazingly, Singapore manages to protect 4 large nature reserves, as well as numerous smaller parks, within the confines of a small island inhabited by nearly 6 million people. Despite intense urbanization, these reserves continue to maintain over 840 species of plants and 500 species of fauna.

Additionally, the world-class contemporary architecture highlights provide amazing examples of biomorphic architecture and the integration of biological systems and plant life within the buildings themselves. Photographic and sketch documentation of this exploration would be used to prepare for the presentation of findings upon return to HMC.



## Inspiration and Documentation

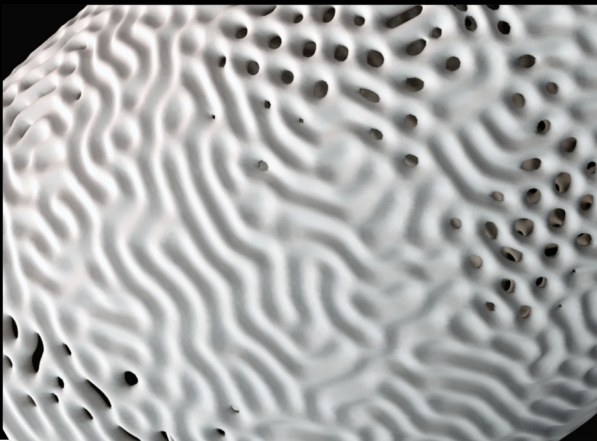
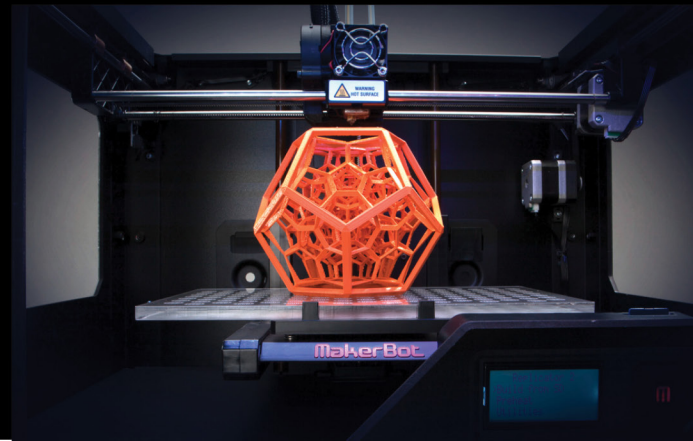
### Goals

The aspiration of this Xref Travel Scholarship proposal is to seek out and document new sources of inspiration, as described above, and use this exploration as a means of furthering the quality of my own work at HMC, as well as that of others. It is my hope that the intense juxtaposition of this vibrant natural ecosystem with the counterpoint of one Asia's most rapidly changing and progressive urban environments will yield a unique perspective on architectural design and planning that will ultimately inform and enrich my own work as a designer for HMC. Indeed, it is my hope that through technological innovation and the continued study of natural systems that we may eventually gain the ability to preserve more of the valuable natural resources we currently see dwindling.

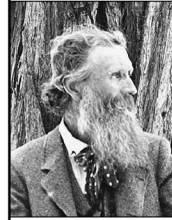
### Bringing the Ideas Back Home

Upon returning from this travel, if the scholarship is awarded, I will prepare a graphical exhibit of the best of the images, sketches, and conclusions of my travels, to be exhibited in the offices of HMC for the viewing and sharing of the experience. I hope that this exercise will both focus my own thoughts on the experience as well as share them with others.

Further, I will design and prepare a three-dimensional artifact, to be digitally modeled and 3D printed for display, in an effort to synthesize some of the ideas, impressions, and inspirations drawn from my experiences into spatial/physical form. While a challenging exercise, it is my hope that this process will help me to both internalize and more fully consider the ideas investigated during my travels, and to further develop my professional craft as a designer with the latest technological tools.







*"In every walk with nature,  
one receives far more than  
he seeks."*

**- John Muir**

Thank you for taking the time to review this submission for the HMC Xref Scholarship Competition. The ideas presented in this submission reflect many of my own interests and curiosities. I believe it would be deeply enriching to pursue them further through the Xref program. Should I have the opportunity to realize this proposal, I would hope that they could provide insight and inspiration for others as well.

***Thank you for your consideration!***

