Spring 2014 Sabbatical Report:  
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Proposed outcomes:
- 1-2 grant proposals written and submitted for consideration
- 1-2 manuscripts written and submitted for publication
- field trip to India to establish collaborations and collect samples

Actual Outcomes (explain difference)

My most important accomplishment during my sabbatical was surviving. I had a near-death experience resulting in a five day hospitalization and months of recovery. Luckily, I had been addressing health issues (blood pressure, weight, stress, ...) and that helped me to survive the surgery and very probably enabled the recovery. Notwithstanding, I also managed to accomplish some other important milestones with my academic work.

My sabbatical was originally approved for the autumn of 2010 but I derailed that plan by accepting the position of Associate Dean for the College of Arts and Sciences. My timing in that position coincided with unprecedented cuts to the UHH budget precipitated by dramatic shortfalls of Legislative support to the UH System. This painful experience made me acutely aware of sources of support and the need to be accountable to those sources. This insight inspired introspection about my research goals and drew me to seek a way to use my skills in ecological genetics to better serve the needs of the people of Hawai`i. I decided that a better understanding of the ecology of agricultural systems would be an important at a time when more sustainable approaches to cultivation are needed to pull Hawai`i out of an increasing agricultural crisis largely a product of techniques too heavily dependent on artificial inputs. I believe that I am in a good position to study this area having been, with my Wife, one of the pioneering tea farmers in Hawai`i since 2001.

My first goal during my sabbatical was to organize 10 years of data, collected from an agro-business perspective, for the purpose of completely changing my research focus. This data includes cultivation experiments, ecological changes, and productivity outcomes. I am now bringing my ecological genetics background and experience to bear studying ecologically structured agricultural systems. The State of Hawai`i is presently in an agricultural and food security crisis. I have begun working with local, small scale, farmers to enable the shift of local farming practices away from industrial farming toward a model that provides important ecosystem services and helps to ameliorate the negative impacts of industrial farming. This approach helps improve the socio-economic sustainability of small-scale farmers. My sabbatical was essential in affording me some of the time necessary to build a network of collaborators with diverse specializations in chemistry, Hawaiian agricultural techniques, energy engineering, and public health. Organizing this data inspired me to start writing a series of manuals to enable new tea (and other types of) farmers to utilize agro-ecological techniques. The purpose of this series is the broad dissemination of ecologically sound agricultural techniques that will help to improve food security. I am still working on the series and my goal is to publish the first two manuals in the autumn of 2015.

My sabbatical enabled me to work with Kamehameha Schools to propose the integration of sustainable agricultural, water use, and energy use/production strategies to achieve food/water/energy security in Hawai`i. This collaborative work has also lead to the development of a collaborative and dual perspective summer class taking Western and Hawaiian scientific perspectives to create community centered small scale development that enables food/water/energy security. While this class was offered for the first summer semester of 2015, insufficient enrollment lead to its cancellation. I will be working with Gail Makuakane-Lundin to find ways to improving the enrollment for the summer of 2016.

I submitted two proposals for research support as proposed. One was a collaborative pre-proposal with a colleague at Tufts University (George Ellmore) to the USDA ($500,000). We were not invited to submit a
full proposal. I also submitted a proposal to Kamehameha Schools ($264,500) with a KS collaborator (Kalei Nu‘uhiwa).

I did not manage to travel to India because I did not find the money to do so. Nonetheless, I did attend and participate in “The Word Tea Expo” held in Long Beach, CA, where I met with and discussed collaborative possibilities with tea growers from India, Sri Lanka, and Japan as well as with new tea farmers from the USA; our company, Big Island Tea, has celebrity status in the USA and elsewhere because we are the first tea producers in the USA to continuously sell all of the tea we harvest in the rare Ultra-premium tea market. Since this time, I have established a research collaboration with Dr. Selena Ahmed of Montana State University, to study the effects of climate change on tea quality. We recently submitted a collaborative full proposal to the USDA for $500,000 of research support.

**Sabbatical benefits to my professional development, benefits to dept/UH/profession**

My 1/2 year sabbatical was an important opportunity to make a very big change in my research focus. One of the results of this sabbatical work has been increased exposure of the UHH Biology department to the academic community. I have established an on-going discussion with George Ellmore at Tufts University and a new collaboration with a colleague, Selena Ahmed, at Montana State University.

Discussions that I engaged with people at Kamehameha Schools have lead to the creation of an experimental class that I will team-teach with Kalei Nu‘uhiwa of KS. The creation of this course has lead to discussions with Keiki Kawai‘ae‘a to explore cross-listing with Kahakula ‘O Ke‘elikolani. I believe this is the beginning of more collaborations between Biology/CAS and Kahakula to explore offering integrated curriculum that better serves our students and encourages more participation of Native Hawaiian students who are poorly represented in the sciences.

I was also contacted by my Alma Mater, SFU, a school of 40,000+ students, that is beginning the celebration of its 50th anniversary. SFU is ranked the #1 comprehensive university in Canada (for the 12th time in 24 years including four of the years I attended). A part of this celebration is the creation of Faculty of Science Inspiring Alumni website: a selection of 50 alumni from the Sciences for which I was invited to join. Since that time, I was also asked to have my profile uploaded to the University’s Alumni page. This acknowledgement also shines a light on UHH.

**Late submission perspective**

I hope that my students don’t see this section of my report! I believe there is a benefit, for this report, in my late submission. It has now been almost one year since the end of my sabbatical. Looking back at the last year, in the context of my last 16 years at UHH, I see the enormous value of the sabbatical break that I took (I sure don’t want to postpone my next one!). I have spoken strongly in my department for many years that I believe Senior faculty should be the ones teaching freshmen classes. I took on teaching BIOL 175 (~100 students per semester) last autumn. At the finish of the first summer semester of 2015, I have now taught the class 3 times. I have taught over 18 classes in Biology, from freshman to graduate level, and can say that while freshman classes are much harder classes to teach than any other level, I believe the rewards are much greater than the hurdles. Given the vast breadth of topics covered in BIOL 175, I am very grateful for the time in my sabbatical that allowed me to prepare for teaching this class. I have undertaken a dramatic shift in my research interest. This shift was informed by my time as CAS Associate Dean and all the people, especially prominent community members, I met with during that time. My shift was also informed by my time as the Coordinator of UHH’s first Office of Sustainability and the people I met with across the state and especially the joint task force with Hawai‘i Department of Agriculture and Department of Workforce Development, on which I participated. The shift in my research focus required organization of data that I have kept as a business person. I can say now, one year after my sabbatical, that I am more excited about my research and new collaborations, than I have been in the last 7 years. Mahalo for this opportunity.