

External Review of the Tropical Conservation Biology and Environmental Science (TCBES) graduate program at the University of Hawaii – Hilo

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Background

I was invited to serve as an external reviewer of TCBES on February 5, 2019 and visited campus March 28-29, 2019. I have done research on the island for over 20 years, am very familiar with TCBES, and have been involved with or directed undergraduate and graduate programs. During my visit I met extensively with students, faculty and campus administration. Prior to my visit, the program shared with me with their self-generated internal review document.

General Statements

The TCBES graduate program is a high-quality Masters program ideally situated to tackle relevant and important topics in conservation biology, environmental science, and sustainability. The training and quality of student research is on par with other top programs in the country. However, the performance of the program appears to be driven by the dedication (perhaps over dedication) of a few key faculty. The institutional support is not in parallel with this effort and a danger exists that as these faculty are overwhelmed with responsibilities; the quality of the program will decline through time. The program has been helped by large investments by federal funding agencies and is ideally positioned to be a flagship program at UH-Hilo and recognized internationally. However, this will require a holistic investment by both the local administration at UH-Hilo and the larger University of Hawaii System. I think this investment is well worth the effort and will in the end be of great benefit to the University. I have reviewed several graduate programs in my career and have never seen the level of faculty dedication as I saw with TCBES. As with any university, financial constraints exists, but it would be a shame if issues within the University of Hawaii system did not allow this program to reach its potential.

Critical and immediate issues

Support of the increased focus on internship-based degrees: The program has recently expanded a track of the program to provide non-thesis masters degrees which culminate in an internship with a relevant agency or organization that aligns with the student's occupational goals. I think this is a great area of focus and one that provides unique training for students hoping to move into natural resource management and environmental consulting. However, there are three primary issues that need to be immediately addressed. First, the program is heavily dependent upon a coordinator position for student mentorship and the facilitation of internships. This is currently a temporary position with a high teaching load. The number of

students is likely to double in the coming year and it is almost an impossible task for a single person in a temporary position to provide what is needed. **Recommendation: The current position should be made permanent as soon as possible. Additionally, serious effort should be made to either reduce or eliminate the teaching load of this position such that adequate time is available for mentorship and facilitation or an additional person should be supported.** Second, the student advising model of a single coordinator is not adequate for students. It is a single voice and one that does not have the time to properly advise a student program. **Recommendation: An advising team consisting of the coordinator, a faculty member in the student's area of interest and a peer advisor from the second-year cohort should be assigned to each student at the beginning of their program. This group would act as a committee or 'launch team' to help the student formulate their ideas and guide them towards an internship. Once the internship is formalized, a partner mentor from the internship should be added to the advising team.** Third, the region is a rich market for relevant internships. However, there is a lack of clarity on what internships might be available in any given year. **Recommendation: TCBES should work with partners wherever possible to generate at least informationally what internships are available annually and ideally have agreements with several partners to have guaranteed internships available each year.**

Support and organization of teaching for the TCBES program: The overall feeling of students and faculty is that the courses offered for TCBES students is sometimes lacking and is often ad hoc in the way it is staffed. This is common in cross-department and cross-college degree programs at many universities. The natural structure for teaching is for department chairs, with guidance from the administration, have a portfolio of responsibility for teaching and assign faculty and lecturers accordingly. If a program is not part of any portfolio, then teaching within the program is obviously challenged. It appears this is currently the case for TCBES and is likely not sustainable. **Recommendations: commonly, cross department and college degree programs have partial faculty appointments department chairs can use to guide teaching assignments. For example, a program could functionally have two faculty lines assigned that were split among multiple faculty from participating departments at some increment (e.g., 12.5 or 25%). This would designate teaching time for participating faculty. In discussions during my visit, there was some resistance to this kind of structure because of a fear of creating a 'graduate' and 'undergraduate' faculty at UH-Hilo. Personally, I think this is an outdated idea as education is a holistic endeavor and faculty, whether they are appointed in a graduate program or not, should be thinking about and integrated educational experience for all students. However, if this is indeed an issue then a very specific set of MOUs should be set up among colleges and departments such that it is clear how and what courses are taught within TCBES. Further, some concerns were raised about constraints on offering diverse courses and the problems associated with experimental courses and low enrollments. These issues are solved at many universities by offering Topic course numbers. For example, one would have a course 'Topics in ecosystem science' or 'Topics in conservation biology'. The course content could vary based on student interest and faculty/visitor expertise under this umbrella course number. This would simultaneously provide diversification of courses and likely increase enrollment.**

Future leadership of TCBES: The TCBES program is currently led by Drs. Rebecca Ostertag and Patrick Hart. Both are unbelievable dedicated and my feeling during my visit was that much of the success of the program is due to their work and leadership. Both are preparing to step down and the future leadership will be key to continued success of the program.

Recommendation: There are no easy solutions to this issue and I am not in the position to know all of the possibilities. However, given the impression I got during my visit and thinking a bit outside of the box, if I were the one recruiting the position of Director and Associate Director of TCBES I would look to fill the director position with someone with both high-level administrative experience and dedication to TCBES and the associate director position with someone who has an intimate knowledge of the TCBES program and is skilled in navigating the particulars of the University of Hawaii system at all levels. My targets would be James Beets for director and Terri Chong as associate director.

Longer term issues and vision

Mentorship, faculty time and the dangers of faculty burn out: Simply put, the core faculty within TCBES are working at an unsustainable level. It is simply remarkable that a person can teach six courses annually, run a significant research program, provide university service and mentor multiple graduate students and yet some faculty within TCBES do this routinely. They obviously do this because they believe the graduate endeavor improves the undergraduate learning experience, augments and facilitates their research programs, and improves the university. However, I do not think this model is sustainable long term and will ultimately lead to burn out and a lack of faculty retention. As institutions evolve from purely undergraduate education to combined undergraduate graduate educational models, not only does the scholarly experience improve at all levels but mechanisms are put in place to allow for faculty to thrive in such an environment. I do not think these mechanisms are currently in place for the faculty participating in the TCBES program. There are several ways this could improve. First, the mentoring of graduate students takes time and the time schedule for most TCBES is already full given their teaching and service loads. **Recommendation: a mechanism should be in place where the advising of graduate students is part of the annual teaching load. For example, at my home university graduate students enroll in dissertation credit courses and this is part of the expected teaching each year for faculty. Some formula such as three students enrolled in such a course would equate to one standard course (i.e., if a faculty member is primary advisor for three students, then their teaching load would decrease by one course).** Second, one of the primary reasons a university has graduate programs is to create a vibrant research presence. The mechanism driving this presence are graduate students, post-docs and faculty combined with adequate infrastructure. However, what is also required is a competitive presence in support through grant writing. The TCBES faculty (and others at the university) are remarkably competitive in this arena given the lack of support from the system.

Recommendation: I would give serious consideration to providing time for grant writing through either teaching relief or granting short leaves (similar to a short sabbatical) to allow effective faculty to write grants. Finally, I think UH-Hilo is in some ways experiencing growing pains as its graduate programs expand and this is observed from an outside perspective as a culture that does not wholeheartedly embrace combined undergraduate-graduate education as

a holistic system for improved scholarship for all members of the university. **Recommendation:** This is, of course, an issue of institutional culture and culture is slow to change at any institution. However, cultural change has already started at the grass roots level of the university and, in my opinion, needs to be matched by the administration. UH-Hilo is uniquely challenged in that it appears the lack of support for graduate programs at the university does not exist locally, but is at the system level. In fact, my impression is the local administration is generally supportive of TCBES, but is extremely constrained by the overall University of Hawaii system. This is both perplexing and likely difficult to solve. Perhaps naively, I would think competition and hostility would be incredibly destructive within a state university system. I think the UH-Hilo administration should continue and perhaps more forcefully advocate for support of graduate programs similar to that at UH-Manoa.

Long term graduate student support: Most successful graduate programs tend to have stipend and tuition waiver support for students. This is usually linked to teaching or research. This support has been present for TCBES, but seems to be variable year to year and is not a formalized agreement. **Recommendation: Graduate student support as GAs should be standardized and guaranteed year to year.**

Core laboratory facilities: Through federal sources, several core research facilities exist at UH-Hilo and are the backbone for much of the research conducted by TCBES students and faculty. Of these, the remote sensing facility appears to be vibrant and financially stable. Similarly, the analytical facility is doing well financially and is highly subscribed. However, the manager position salary appears to be in some doubt because of the RTRF situation. Finally, the genomics facility is in the biggest state of transition. **Recommendations: the manager salary in the analytical facility should be stabilized either through user fees or university support. Also, because of the state of the science in genomics, it is likely the genomics facility will have declining use. Therefore, utilization of this facility should be transitioned to undergraduate and graduate teaching. This could be an invaluable resource for education.**

Affiliate faculty designation: A very common complaint by students was that it takes a very long time to add non-UH-Hilo faculty to their committee. The process as described to me seems extremely an unnecessarily complicated and not standard best practice shared by other institutions. A common policy is for students to have two committee members from the home and then additional members can be added by the submission of a CV and an approval by the program director. **Recommendation: Consider streamlining this process to avoid unreasonable delays for students.**

Concluding statement

The Tropical Conservation Biology and Environmental Science (TCBES) graduate program is vibrant and making a meaningful impact on students at the University of Hawaii-Hilo. It is well positioned to become one of the best programs of its kind. It is situated in one of the most fruitful research areas on earth, has dedicated faculty and a track record of high impact training

and research. It will require commitment from the UH-Hilo administration and the University of Hawaii system to realize its potential.