



Program in Environmental Analysis

To: Dean of Faculty Steve Worchel, Associate Chancellor Christopher Lu, Division Chair Ernest Kho, Geology Department Chair Kenneth Hon, University of Hawaii at Hilo (UHH)

From: Associate Professor Richard W. Hazlett, Department of Geology, Coordinator -- Program in Environmental Analysis, Pomona College

**Re: UHH Geology Department External Review Report, November 30, 2002**

Dear Colleagues,

I have carefully read the draft Self-Study report of the UHH Geology Department and have completed my review with a site visit and interviews with the following parties, *in addition* to yourselves:

Associate Professor James L. Anderson  
Assistant Professor Jene Michaud  
Dr. Don Thomas, Center for the Study of Active Volcanoes (CSAV)  
Technician Darcy Bevins  
Visiting Instructor Bennetta Schmidt  
Arnold Okamura (Hawaiian Volcano Observatory)  
James Kauahikaua (Hawaiian Volcano Observatory)  
Approximately 20 students, primarily or exclusively Geology majors, as a group.

The UHH Geology Department is a vibrant, well-focused academic program with dedicated, talented, highly competent faculty. The teaching faculty is impressively cohesive within the department, and shows a proper level of commitment to the mission of undergraduate instruction at UHH. The consensus-based weekly meetings of the faculty, and the compatibilities of personalities and goals are valuable, if not essential, program assets.

The basis of my assessment of pedagogy and is not great (as is typical of virtually all external reviews), though I believe it is worth conveying "first impressions" based upon reading of course syllabi attached to the Self-Study report, and visit to one introductory class session taught by Dr. Anderson, and conversations with students. Please note that I have also, quite incidentally, visited with groups of UHH students who have been engaged in past field mapping in eastern California, and so can speak to this aspect of their education as well. That said, I am impressed with the high quality of the courses offered at UHH. They not only teach students essential facts and concepts, but attempt to teach critical thinking and interpretation, in some cases using the latest analytical tools, including specialized computer software and geodetic equipment, in doing so. The

faculty strives to maximize use of local resources in teaching such challenging “Mainland” topics as structural geology, and petrology. It is wonderful to see the creativity and ingenuity they have exercised in this regard. Of all the syllabi, I thought that those for sedimentology and historical geology lacked some depth relative to those of the other courses, but this may simply reflect the filtered syllabi composition I read rather than any substantive shortcoming. I was impressed that the examples of graded assignments provided by Dr. Anderson showed keen and thoughtful attention to providing individual students feedback on why particular exercises were missed, and how to improve course performance. This sets a good example of conscientious teaching for all faculty, which is especially important at UHH given its “mixed bag” of student backgrounds. Student-faculty communication is vital, and conscientious feedback is the best way to get it going and maintaining it. Given that UHH represents, by all appearances, the flagship undergraduate college in the Hawaiian Islands, I cannot over-emphasize this painstaking but often under-appreciated professional duty.

The infrastructure of the Department is exceptional, but UHH must be assiduous in making sure that it stays that way. A secure maintenance contract or arrangement that does not tie up Dr. Hon and distract him from important basic teaching duties is necessary for the electron microprobe. There is much student interest in integrating the microprobe into their undergraduate teaching, and I applaud this. I am happy to see that this is complimented by similar faculty interest in getting students involved in microprobe research as well. It appears that the X-ray diffractometer needs a sufficient radiation and toxic materials inspection to assuage the environmental concerns of the geology faculty who use it, or would like to do so. This equipment ought to have a routine maintenance contract or inspection satisfactory to the geology faculty. I understand, perhaps erroneously, that some maintenance arrangements are already in place. It appears to me, however, that these need to be reviewed and if need be improved. An annual cleanup or inspection of polarizing microscopes also ought to be undertaken, until such time, at least, as laboratory climate control assures that these valuable instruments can be used and stored without damage from humidity. (The air conditioning system itself, despite the newness and appeal of the building housing the Department, is strikingly inefficient).

The geologists are quite concerned about equipment and technical support from another perspective as well. As originally intended by Dr. Joseph Halbig, the founder of the Geology Department at UHH, and Dr. Robert Decker (USGS), the founder of the adjoining Center for the Study of Active Volcanoes (CSAV), CSAV would be an *ancillary component* of the Geology Department, sharing space, equipment, and technical (APT) support with the teaching geology faculty. The original vision, of which I happened to be personal witness, sought to integrate CSAV so fully in the Geology Department that the CSAV director would himself (or herself) participate in undergraduate student teaching and department operations, and undergraduates would participate in CSAV related research and other programs as well. The arrangement was envisioned as mutually complimentary; one which would really put the UHH Geology Department on the map as a desirable destination for undergraduates, as well as an educational platform for important professional research and public service. Perhaps this

vision was overly ambitious. Nevertheless, at first, the CSAV-Geology joint program was pursued in a promising way, but for various issues related to political, financial, and personnel matters far too complex and unnecessary to reiterate here, a split developed which parties on both sides during my visit refer to as “tragic.” And I quite agree, for in the end victims of such internecine academic disputes include the ones who are most innocent—the students. Apart from suggesting that the institution do something at once to resolve this embarrassing and festering situation, perhaps by appointing a special committee of review and reconciliation, I can only indicate that there is considerable fear among the Geology Department faculty that severance of CSAV from the Department will mean a loss of valuable teaching resources, including field transport, geodetic equipment, and APT assistance. With the exception of APT assistance, the CSAV staff assures me that they have no intention of denying the Geology Department such resources, which were purchased for the most part or entirely on CSAV budget at a time the CSAV was very plainly integrated with the Geology program. On the contrary, the CSAV persons I interviewed told me that they will be happy to continue providing these resources, as needed and available, in helping fulfill their service to undergraduate teaching at UHH.

Because my careful review of the CSAV (1989) charter reveals that there is no written commitment for the Center to remain a part of the Geology Department<sup>1</sup>, despite the spirit of its inception, there seems a possibility in the future that the Center will indeed go its own way. In this event, CSAV would take its current APT support, Darcy Bevins, with it. For all practical purposes, Ms. Bevins presently regards herself as detached from the Geology Department already, though the geologists view her position otherwise. This, then, is another source of organizational tension which needs to be resolved. It is a critical issue for this review, because the geology faculty, compared to many of their peers at other colleges and universities, are subjected to demanding (3-3) teaching schedules, have to do their own budget accounting, and basically lack secretarial support for all other department operations. A technician to help with ordering, purchases and accounting, duplicating, infrastructure maintenance, field trip preparation, archiving, and student research assistance, would be a boon, it is clear. At present, these unassisted tasks gobble up a significant amount of faculty energy and time which otherwise might be devoted to teaching and, just as significantly perhaps, research. A separation of CSAV from the Geology Department, then, carries with it perhaps most significantly, a formal withdrawal of technical support. A resolution of this situation may establish that this is the best way to go—for CSAV has its own very demanding technical needs. But for the purposes of this review, it leaves the Department under permanently unfortunate circumstances where it hopes it now lies only temporarily; starved of the clerical support it needs to function easily. I understand that APT support is short for departments

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1) But note the following: Article V—Director of The Center, “A faculty member from the Geology Department, Division of Natural Sciences, University of Hawaii at Hilo, shall be appointed by the Dean of the College of Arts and Sciences to act as the Center’s administrative coordinator with the title of Director... The Director shall normally serve for a term of three years, subject to satisfactory annual evaluation by the Dean.” (These organic clauses have essentially fallen by the wayside much perplexing an outsider like me).

throughout UHH. Perhaps, then, this review can be used to help set an *institutional* goal for improvement in that regard. One thing is clear, that if UHH strives to become a stronger “research university,” it cannot do so with much hope of success before freeing faculty of the accessory paper task load which they presently have to undertake.

I’ve one final note to make before leaving the topic of CSAV: This program is presently rendering a valuable service to the United States Geological Survey and the global volcanological community. Its research projects include a crustal drilling project of considerable scientific interest. This is largely due, no doubt, to the exceptionally strong dedication of current Director Donald Thomas and his assistant, Darcy Bevins, working in collaboration with various outside agencies. These accomplishments, building on the earlier significant efforts of former Director James Anderson and Robert Decker, accrue to the positive reputation of UHH. Yet the roles of CSAV and the Geology Department become ambiguous if the institution itself is uncertain about its purpose and mission. During my visit, I acquired the uneasy feeling in speaking with administrators that the mission of UHH is uncertain and has remained so for some years. The basic tension between serving undergraduates and moving the academy forward into locally meaningful research fields must be established and then pursued with a real respect for human resource limitations, and with utmost clarity and agreement at all levels. Lacking this makes the resolution of the CSAV-Geology Department conflict even more challenging (for, despite its notable public service and accomplishments, it is hard to argue that CSAV in its present form very greatly benefits the undergraduate teaching focus of the University). It also renders another important aspect of Geology program development difficult, namely self-evaluation. If self-evaluation focuses on teaching, then it appears that the Department is already making great strides in developing a system of doing this efficiently and effectively, primarily through the hard work of the Department Chair Ken Hon. If the measure of department success must include research as well, however, it is less clear what the standard of success should be, and how progress might be evaluated. I believe that this is another example of an overlapping departmental-institutional concern that has the potential for impacting morale and performance in this small program.

Despite the problems listed above, the Geology Department appears to be capable of a stable future of good service, provided that the current mix of faculty be maintained and augmented with a compatible, competent replacement for Dr. Carl Johnson, the staff geophysicist who resigned earlier this year. Conversations with students, who widely admire and appreciate their instructors, suggest some improvements that might be considered. Some are expensive, a few are not, with changes potentially bringing huge dividends to the program:

- a) Almost all students commented about the lack of readily available computers in the Department to complete homework assignments. Since some of these assignments involve more than mere word-processing, this is indeed an issue that needs to be addressed. Scheduling conflicts with the computer center evidently significantly limit in-class use of computers at that site, and outside of class, computer use is sometime challenging because of platform incompatibilities, or

schedules. Optimally, the Department should increase the number of in-house work stations. I did not see if a good scanning and printing facility is present in the Department; but I add that these, of course, also should be well-maintained and accessible to students.

- b) Almost all students also complained about the so-called “six-year plan” referring to the every-other-year teaching of required courses, owing to individual course enrollments which otherwise would drop below the critical ten-student threshold were required courses offered on an annual basis. Faculty, too, complained about this enforced practice. Students entering upper level courses often span a wider training range than their peers at other four year colleges and universities, and lack the continuity of development that allows students to build upon what they’ve already learned. As an educator, I see the “ten-student” restriction as a regrettable artifact, and a negative impact of applied cost-benefit analysis. It eats into academic integrity and the ability of faculty to provide coherent, smoothly flowing programs, for the sake of perceived institutional efficiency. Nevertheless, I assume for the moment that this policy will not change. So, it is imperative, based upon the comments of faculty and students both, that the UHH Geology Department increases its overall major enrollments if this problem is to be solved. One easy way to boost enrollments might be to follow the example of the University of South Carolina and various other campuses, whose geology programs have changed the names of many of their courses to make them more comprehensible and interesting for students browsing through the course catalog. Because geology is not taught as a stand-alone course in most high schools, new college students find such traditional curricular titles as “Igneous and Metamorphic Petrology” meaningless, erudite, and intimidating. I recommend that the Geology Department rethink its catalog copy along these lines, perhaps consulting campus programs elsewhere which have made this change. Other measures might include putting out a departmental newsletter (via the Geology Club?) celebrating the various field trips and accomplishments of faculty and students. With copies placed in the library or student commons, copies of this letter might attract student interest in a dynamic and interesting program. An “Open-House” with pizza, slides, and show-and-tell, or even a department camping trip to include students from outside the program interested in learning more about geology might help too.
- c) Students are eager to learn more about graduate schools, field trips, internships, and jobs. I did not find a good posting of such information anywhere in the Department, though I may well have missed this during my whirlwind tour. As a minimum, the Department ought to be maintaining a file of graduate school catalogs from Canadian and American universities and/or a list of *current* graduate school informational websites. A current copy of the American Geological Institute Director of schools and universities with degree-granting geology programs should also be made readily available to students. Catalogs are free from admissions offices (excepting postage), and need be replaced only once every five years or so in order to provide essential information to browsers. Because catalogs may be easier to read casually than websites on a few scattered in-demand work stations, hard copy may be preferable to website postings. Either

way, I recommend that information be shelved in the seminar room or commons area. A separate bulletin board with job and summer internship postings and field camp information is also a “must,” and should be conscientiously maintained. Finally, students recommended that the Department sponsor talks from guest speakers representing various graduate schools. While this may be impractical on a routine basis, it strikes me as a clever idea. My guess is that, as the opportunity arises, visiting geoscientists could be asked to speak with students about graduate opportunities and the research at their home institutions, and would very much enjoy doing so. My bet is that this sort of visit could also go far to help break down the sense of professional isolation between UHH and its Mainland counterparts. It also has the advantage of putting the UHH Geology Department more “on the map” in the thinking of graduate admissions committees. Perhaps such a speakers program could be stimulated by sending a notice out to selected graduate department chairs around the country inviting geoscientists to stop by UHH during their Hawaiian travels with one or two night’s free lodging and meals (perhaps covered by the Department) with a student or faculty host.

- d) Students voiced deep concern about the library, and I concur that the state of the geological journal holdings is dismal, especially given the present insufficiency and newness of on-line resources, and the delay implicit in inter-library loans. The library should have at least a readily available set of a few key hard-copy journals faculty believe could be frequently used in student library research projects. These need not be terribly expensive, nor duplicate more outrageously costly holdings present in the Hawaiian Volcano Observatory, which keeps a business-hours-only open library for students who can drive the 60 miles round-trip to get there. My “short list” includes *Geotimes* (which includes postings of internships and various other opportunities of potential interest to students), *Geology*, *Bulletin of the Geological Society of America*, *Journal of Volcanology and Geothermal Research* (or *Bulletin of Volcanology*), *Structural Geology*, *Journal of Petrology*, *Geomorphology*, *Journal of Geophysical Research* (at least the red volumes) and *Sedimentary Petrology*, or *Sedimentology*. (More specialized journals ought to be collected by faculty for research purposes on private subscriptions). The library badly needs support. I’m told that the money is there. It sounds as if re-prioritization of expenses is in order.
- e) Students also voiced concern about poor judgment on the part of the Registrar’s Office regarding transfer course credits. More than one pointed out that they did not receive course credit from courses taken at other schools and were then forced to take “markedly inferior” or “simpler” versions of the same courses at UHH. I believe that the departments ought to take a better role (if indeed, they have any role at all!) in reviewing transfer credits which pertain to their own course requirements. Review should be done through the student advisors and/or department chairs. The Registrar should probably not be the sole authority on the matter. Being more fair about transfer credit applications not only improves student morale, but helps programs such as UHH Geology deal a little bit more easily with the “six-year” plan dilemma described above.
- f) I commend the publication of an alumni newsletter by the Department. This builds camaraderie which may well pay-off in years to come. The Department

ought to be keeping a careful record of where its graduating seniors go and what they end up doing for the purposes of self-evaluation as well as grants applications. There seems to be strong evidence that this is underway. I encourage continuation of this practice.

- g) Students greatly appreciate the chance to spend time with their UHH faculty on Mainland field trips (e.g.—Grand Canyon) and in field training (White Mountain Research Station, Bishop, California). The Department has worked hard of its own accord to raise the funds that will enable needy students to undertake these valuable trips on a semi-annual basis. One great fear of the possible separation of CSAV from the Department is that the means of raising this revenue through geodetic surveying will become unavailable, at great cost to instruction in field methods and continental geology. I am reassured from discussion with the CSAV Director that this would not happen, but I underscore that *it mustn't* if this is to remain the only means of generating revenue for this much needed component of the program. Far better would be an external source of funding to keep the Mainland Connection alive for students, though it seems unlikely from my understanding of the state economy that this will happen anytime soon. Nonetheless, there are simply no substitutes for many geological features of importance in the limited natural setting of the islands.

#### Summary:

\*) The UHH Geology Department is a small undergraduate-teaching program whose strengths include cohesiveness, competency, and dedication of faculty.

\*) The Department is exceptionally well-equipped, though lacks the technical support it needs to function without great effort on the part of its faculty. Lack of support may pose increasing challenges as equipment ages without proper routine maintenance, and if the University pushes the Department to move in a more intensively research-focused direction. (As a goal, faculty research probably ought to be confined to a level which allows them simply to remain “current in their teaching” until such time as this support situation improves).

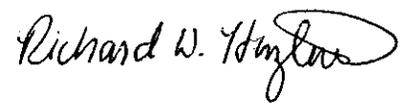
\*) There is a serious situation in the relationship of the Geology Department to CSAV. Because both programs share a common origin, this relationship brings into question the viability of certain essential resources in the Geology Department including equipment and technical support. The situation needs priority resolution, one would hope with a mutually agreeable and formalized (clearly documented) “understanding.”

\*) The Department faces the challenge of increasing its enrollments in order to provide a more coherent undergraduate program, and to ensure that its majors can graduate in a timely way.

\*) Informational services, computer facilities, and library holdings provided by and for the department need improving.

Please contact me if you have any specific questions about comments I've made in this review report. I would be happy to discuss them with you further.

Sincerely,

A handwritten signature in black ink that reads "Richard W. Hazlett". The signature is written in a cursive style with a large, looping flourish at the end of the name.

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