

BOTANY DEPARTMENT'S RESPONSE TO THE REVIEW TEAM REPORT

INTRODUCTION

It is important that the seriousness with which the Department of Botany takes the process of self-assessment be recognized by professionals from outside of our University. This the Program Review Team has noted in their introduction to the report. Of special note is the review team's assessment of the role of Botany in the academy with which we strongly concur. This is especially important to our current status as a department that is at a critical minimum size for delivery of a high quality educational experience to the various publics which we serve. It is our hope that future expansion not be driven totally by some artificial quantitative measure of worth, such as SCHs generated or cost per graduate, but rather be driven by a sincere desire to develop a comprehensive program representing all major sub-disciplines that would help market botany to future student recruits. To a large extent, we must avoid the chicken and the egg problem, that is if we cannot develop the program unless we have a certain population of student majors, we will not have the students unless we have an attractive program for them.

While we obviously agree with all statements of strengths identified by the review team we would like to concentrate our responses to the challenges identified and the recommendations for change articulated in the report.

CHALLENGES FOR BOTANY DEPARTMENT

(1) Several challenges described in the review need to be addressed not only at the department level but at the COS and university levels. These include recruitment, facilities, computing support, and faculty loads. Central administration ought to provide clarity and/or leadership on how to accommodate rising scholarship expectations for faculty, especially in smaller departments, given the increased emphasis on and faculty involvement with undergraduate research and service learning within the long standing WSU teaching load requirement. To deliver the full spectrum of courses in a small department almost always necessitates overload for each faculty in teaching (especially when mentoring of student research projects are involved) and service to the campus community. Current faculty have a great interest in each of the highlighted challenges identified by the review team but are somewhat reluctant to further increase workload.

Recruitment will need to be addressed by the COS as well as at the department level. We are prepared to entertain expanded opportunities for recruitment especially those involving our Botany Club. In this respect the club is underutilized. Members could assist the faculty in taking programs to local schools to give students at all grade levels an opportunity to understand what Botany is and what one could do with a Botany degree. Perhaps the faculty advisor could be given some release time to coordinate such club activities that would likely involve preparations of media materials and lead short field experiences for grade school students on Saturdays. With respect to increasing the visibility of Botany on campus, the Botany Club could lead additional field trips besides the current ones the department leads to the Uinta Mountains and Antelope Island. Club members could also partner with other department clubs to host open house activities and cooperate with the Ogden Nature Center to sponsor wildflower walks. The Natural History Museum offers a venue with high K-12 traffic. We have some connection to the cactus/succulent garden, but other displays would provide visibility. The last S4 meeting featured undergraduate research presentations. If undergraduates could give more of the presentations (like four undergraduates instead of a single speaker at a meeting), all departments could get more notice. These wouldn't have to be just research presentations. They could include our greenhouse workers, the planetarium volunteers, the SCME and Science Fair students, various club officers, etc. describing what they do as undergraduates in COS. At our most recent exit interviews of graduating seniors, students brought up the idea of getting more "teaching" experience during their senior year. At a strictly undergraduate institution, opportunities are somewhat limited but the faculty is

entertaining the idea of involving more of our students in a few of our beginning laboratories. Getting the experience as part of a coordinated recruitment program is also being seriously contemplated. This is perhaps the answer to the review team's recommendation that we, more aggressively, recruit within the regional Hispanic community.

A botanic garden, on campus, would greatly increase our visibility, but there are numerous problems associated with establishing one. 1. We would need a major donor to fund the installation of the garden, pay for maintenance, and pay a salary for a director. 2. The space suggested by the students is reserved for the second phase of the Science Lab building. Granted, it has been a long time in coming, but if something else were to occupy that land before additional COS space was obtained (e.g., the Marriott Health Professions building), there would be serious morale repercussions in the college. Also, that space seems a bit small. If COS were to occupy MH, the entire expanse between SL and MH could become a botanic garden, providing high visibility for Botany and an attractive connection between the two buildings.

(2) The review team says: "*While the Botany Department has done a good job of maintaining current laboratory resources, more space and equipment are desperately needed.*" The space issue, and to a great extent, the equipment issue are issues of concern to the entire College. We have some equipment, but we have not pushed hard for more in Plant Physiology and Plant Genetics because of the lack of enrollment in these courses that would use it. Plant Genetics and Plant Physiology have been cancelled frequently since the institution of the tracks options, so we could not see any point in spending limited resources on classes that basically do not exist most of the time. Also, as noted by Dr. Harley, the genetics class needs to be revised if the lab portion is to be meaningful. She suggests revising Plant Genetics to become a 4 credit class with 3 hours of lecture and one 3 hour lab period per week. The current three credit version of the class is officially 2 hours of lecture and one 2 hour lab period per week. The laboratory work has become almost nonexistent for two main reasons: 1) the laboratory period is not long enough for many activities 2) the need to cover not just the "how to" and applications of plant genetic engineering but the various ethical and societal implications as well has cannibalized laboratory time to provide lecture and discussion time.

Equipment is slowly being added to the department but increased infusion of resources will be necessary if we are to keep pace with research demands. The Department of Botany will take seriously the recommendation that the review team makes regarding more aggressive efforts in concert with the Development Office to search for corporate support.

(3) *The current semester schedule is a challenge for integrating field aspects of the taxonomy, ecology, and field botany courses. The spring semester is ending just as plants are beginning to flower in Utah.* This is an issue we have been living with since semester conversion and the problems have been exacerbated this spring (08) which is a very late spring. Dr. Clark was able to find just a few living wildflowers and these only during final exam week. The idea of running a summer field camp has been discussed off and on for many years and we often reflect upon the attempt at such a program with very limited success during the decade of the 80s. One main concern about a summer field school is that it combines overloaded faculty with a low enrollment offering. This might be something students say they want, but they won't take for a host of reasons. One possibility for a field experience during a suitable weather period might be to have students take the preparation part in Spring Semester, get a T grade, and go on the actual trip either in late May/early June or in August just before classes start/early Fall semester. Another possibility would be to augment enrollments of WSU students with students from all over the country. This presents some interesting challenges in marketing, given that reputations of field camps at field stations have taken many years to develop. Another viable opportunity was suggested in the review team report of involving our students in the Kampong, a garden in Coconut Grove, Florida, administered by the National Tropical Botanical Garden, which has dormitories, laboratory space, and a superb living collection for students to study with faculty supervision.

(4) The department will take seriously the advice of the review team to make the secretary a full-time one rather than the shared duties she manages with the Microbiology Department.

(5) Waning research on the part of senior faculty makes their replacements of paramount importance. The department has not experienced much turnover, which in many respects, has been a good thing, however, this has meant paucity of opportunities to bring in fresh ideas with active researchers. The expectations of faculty have changed tremendously as the institution has grown and matured. At one time, some 3-4 decades ago, research was a dirty word. As faculty, who have been beaten up by this non-research culture of the past retire, replacement with new faculty, with a track record of research publications, becomes imperative.

RECOMMENDATIONS FOR CHANGE

(1) Curricular Issues:

General Education & On-Line Opportunities

Plants in Human Affairs is the one class offered online. Our limited online presence could be hurting our visibility. Certainly *Environment Appreciation* would be our highest enrollment online class if we were to offer it - and if an enrollment cap was honored, would do the least damage to on campus sections. We have resisted moving in the direction of on-line versions of *Environment Appreciation* because we believe that most of the impact would be lost without impassioned contact with students. *Plant Biology*, which had been growing until this year, might leave us with a single on campus section per semester if it were offered online. There should be a general education review soon. The 1991 review was driven by the dual paradigms that there were too many GE classes and that only survey classes were suitable for science GE. The review associated with semester conversion brought us the *Nutrition* course as a Life Science General Education competitor. If the next GE review is saner, we might be able to address the two areas we had GEs for 20 yrs ago that people consistently wish we still offered (as long as the classes can meet the new LS requirements): *Local Flora* and a gardening class (turned into a majors class following the GE massacre of 1991). These are the types of GE classes that people will take.

Forensic Botany: Given the number of students in Criminal Justice programs at both the bachelors and masters levels, Forensic Botany is definitely a course we should offer, maybe in two versions. An upper division course could serve both their majors and ours and generate a good number of upper division SCHs. A lower division, general education version of the class would be a draw for the GE population and be a possible recruitment course for majors.

Evolution: We do not understand the statement in the review about there being “no single course” on evolution. If the statement is referring to a complete lack of an evolution course, it is wrong. Each life science department has its own; ours has been offered but not taught for awhile due to lack of enrollment. If the reviewers would like the three life science departments to team teach a single course instead of the discipline specific ones, that is a different issue. It presents the same issue for Botany as a biology GE course would. In theory, a General Education Biology course makes some sense, given that a considerable amount of duplication occurs in the present system. Such a biology class could be the innocent looking start of a Biology Department that ultimately becomes a pre-med mill. As faculty retire, their positions would go toward disciplines to support the pre-med program (note the initiation of a neuroscience undergrad program) rather than maintaining WSU’s current admirable breadth of coverage of the life sciences. Experience at the national level has shown that in 90% of the cases where Botany has been swept up into a large administrative unit of Biology, the discipline has been diminished. Anything that places us on that slippery slope towards consolidation into a Biology Department will be resisted by this faculty. The reader should also keep in mind the uniqueness of the biology disciplines at WSU which the regents should support because they support unique programs. We are the only free-standing Botany program, currently, in the state of Utah.

Molecular Techniques: We agree with the review team that we need someone up on using molecular techniques to study botanical phenomena. Given that low turnover of faculty has worked against maintaining the most up-to-date, state of the science with respect to molecular techniques, upcoming replacements of retiring faculty will address this issue.

(2) A Graduate Program: We agree with the team's suggestion that a Master's program in Ethnobotany is a viable consideration. This would require a huge paradigm shift in which, not only the department but the COS and the university redefined itself and its priorities. Significant outside funding for such a venture is a very real possibility and we are prepared to work with the development office in seeking such resources as suggested by the review team's report.

Graduate programs are another area where the institution has been less than helpful in providing guidelines as to the types of graduate programs that are desirable and addressing teaching loads and scholarly expectations of graduate faculty. The only standard for new graduate programs seems to be what the market will bear. If the market will bear an Ethnobotany program, we're in - as long as it can be done with the existing faculty and without affecting our undergraduate SCH production. Such a model will necessarily have to be changed. An Ethnomedicine or Ethnobotany Master's degree program would certainly meet the need of a unique niche which we could carve out at WSU.

(3) Raising Money: It might be exciting to raise \$500,000 a year from private donations but, as with recruitment of students, we must rely on professionals who specialize in such activities to do this for us or at least assist in significant ways. When time is of the essence, it is difficult to count on a great deal of enthusiasm to take on added assignments, even if we felt we had the expertise to do so.

(4) Future faculty hires: Three faculty have mentioned retiring within the next five years. Just prior to semester conversion, we had reached a level of SCH productivity that we were preparing an argument for hiring one net new faculty. Since then, with the implementation of multiple sections of both face to face and on-line Nutrition classes, our SCHs have dropped and so has our rationale for adding net new faculty. The disciplines covered by the three people currently in eminent-retirement positions include Economic Botany, Ethnobotany, Taxonomy, Algology, Horticulture, and Soils. While we agree that we need someone up on using molecular techniques to study botanical phenomena, we need to decide which of these areas would be the best discipline for us to hire such a person in. What we see in terms of replacements:

A. If we are serious about a masters program in Ethnobotany, an economic botany/ethnobotanist/medicinal plants person should be hired to fill Dr. Bozniak's position.

B. For a while we have viewed the taxonomist position as the one to go for to hire someone with recent experience in molecular techniques.

C. That leaves the third position for either an algologist (who uses molecular techniques?) or a horticulture person who can cover Soils.

It is obvious that the Program Review Team, especially the outside reviewers, were convinced that the Department of Botany is doing the best we can with what we have. The suggestions that have emerged from our discussions with the review team during the on-campus visit as well as the report of the team, portend some exciting opportunities and challenges ahead. The main ingredient for this to come to fruition is institutional support.