ENTS External Review
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On January 25-27, 2004, an external panel conducted a review of the Carleton College Environmental and Technology Sciences (ENTS) concentration. Panelists included Harold Ward, Brown University; Elizabeth DeSombre, Wellesley College; and Barbara Liukkonen, University of Minnesota. This report contains our observations and recommendations based on a review of documents such as the program self-assessment and interviews with faculty, staff, students, an alumnus, and administrators.

I. BUILDING FROM STRENGTH

In reviewing the ENTS concentration, our panel identified several strengths that can serve as the foundation on which to build a more integrated, coherent program to produce graduates who excel in interdisciplinarity. These strengths include faculty commitment, student interest and enthusiasm, innovative methods, and community impacts.

1.1 Faculty

Interviews with ENTS faculty revealed that they are dedicated to the program, devoting significant time, thought, and resources to teaching, guiding the program, and securing extramural funds. This investment is particularly noteworthy given that faculty are overloaded with departmental and other collegiate commitments and they frequently do not get teaching credit for ENTS-related work.

Senior faculty who initiated and grew the program deserve recognition for continuing to provide leadership and vision. Several dynamic junior faculty are enthusiastic about ENTS despite the pressures of developing new courses, initiating research, and preparing for tenure review. Capitalizing on this faculty dedication will require innovative rethinking of how credit, recognition, or release time is awarded for advising students, teaching colloquia, guiding the program, team teaching, and developing interdisciplinary course offerings.

1.2 Campus Community

Students highly value the opportunities and community provided by ENTS. Several told the panel that the opportunity to participate in interdisciplinary environmental studies influenced their decisions to attend Carleton, and the Dean of Admissions stated that many prospective students inquire about environmental studies. Carleton students’ interest and enthusiasm for this type of interdisciplinary program reflects a growing national demand.

Carleton ENTS concentrators told us that they are more closely connected with their peers in ENTS than with students in their major, with the exception of geology majors. This sense of community is a measure of success, resulting from the involvement of students in campus activism, community stewardship, shared outdoor recreational activities, and the principles of living sustainably. Students are aware of limitations in the
continuity and structural requirements for the ENTS concentration, but despite these challenges they believe the ENTS course work and service-learning opportunities are among the most valuable at Carleton. Because students are engaged and committed to the program, they could be a valuable source of input as the concentration is redesigned or expanded into a major.

1.3 Innovative Methods

Several innovative characteristics of the ENTS concentration are worthy building blocks for the future program. The practice of hiring an ENTS graduate to serve as the Educational Associate provides a valuable link with concentrators, supplements staff’s ability to coordinate ENTS events, and offers assistance with projects such as the ENTS review. The Post Doc/Visiting Professor position, currently held by Tsegaye Nega, should be continued if possible, to extend teaching resources, develop new course offerings, and bring an international perspective to the program.

The dyad course concept is another innovative method that offers great potential. Pairing courses from different disciplines and pursuing common themes models the integrated, interdisciplinary epistemology that ENTS is striving to achieve. Students recalled the dyad taught by Savina and Kowalewski as an extremely valuable course. The dyad concept requires substantial investment of time and thought, but should somehow be implemented in the revised ENTS curriculum.

“Building a Green Building” to be co-taught in spring 2004 by Gary Wagenbach, Biology faculty, and Richard Strong, Facilities Director, represents a unique collaboration that will tie together course work and a study completed as part of the Junior Colloquium, with practical hands-on experience. This course will also benefit the larger Carleton and Northfield communities by creating a regional demonstration site. This type of innovative partnership with non-traditional campus departments demonstrates great potential for a truly interdisciplinary program.

1.4 Connections with the Broader Community

The ENTS concentration has a tradition of community engagement and social activism. The value of this tradition represents another major strength of the program. Students are actively involved in campus activities such as SOPE, special houses (e.g., Green House, Farm House), facilities management, energy generation, and other environmental causes. ENTS-sponsored events such as visiting professors, speakers, and seminars benefit the larger Carleton community. Service learning projects and active participation on the Environmental Council allow ENTS students to contribute to the Northfield and regional communities on issues related to sprawl, storm water management, preserving agricultural lands, and other critical concerns in southeastern Minnesota. This practical, results-oriented approach requires students to integrate the theoretical concepts they have learned in the classroom with real world experience. This pedagogy should be retained as a foundation of the redesigned ENTS concentration or major.

II. STAFFING AND ADMINISTRATION
As noted already, Carleton’s ENTS program has two groups of particularly dedicated and involved faculty members. One group is the quite senior (and, in some cases, retired) faculty members who have played a major role over time in creating or sustaining the program, often by developing new interests and pursuing new teaching directions they did not initially bring to Carleton. The second group is a set of not-yet-tenured faculty members whose training or research interests fall within the ENTS rubric, and who have been willing, even without credit, to contribute to the program. This cohort will likely provide strong leadership in the medium term, assuming the removal of current disincentives, and their potential long-term contributions promise an upward trajectory for the program. In the interim, however, there is or soon will be a vacuum between these two groups, and there are structural reasons to be concerned about the continued ability of the currently-junior people to participate in the program. Several issues, therefore, should be addressed, including ensuring a strong program direction in the short and medium term, maintaining the number of people available to teach in the program, easing their ability to do so, and considering strategies to engage mid-career faculty.

2.1 Program Director

In our experience, one of the central features of almost all successful interdisciplinary environmental studies program is the presence of at least one faculty member whose primary allegiance is to the program and whose mission it is to develop and oversee its success. With the departure of Dale Jamieson, Carleton has lost such a person. The departmentally-based structure at Carleton makes it even more important that Jamieson is replaced by a strong, interdisciplinarily-adept director, since the level of coordination required to ensure that the necessary courses are available and offered at appropriate times is high. We therefore recommend that the college hire a senior (associate or early-stage full professor) faculty member to play this role for ENTS at Carleton. We further recommend that the person have experience with interdisciplinary teaching (and, ideally, administration) in environmental studies programs.

In the longer run, we agree with many of the faculty with whom we consulted that a directorship model similar to that of American Studies – in which a faculty director leads the program for three years, offering three courses in the program while an associate director offers one – would be an appropriate one for the ENTS program. That would facilitate an increasing depth of commitment and creation of expertise among faculty members.

2.2 FTEs Available to ENTS

As of this past fall, the ENTS program looked to be reasonably well staffed, with Dale Jamieson responsible for five courses that counted towards the ENTS program, the commitment to allow Tsegaye Nega to remain at Carleton for two more years (teaching, we presume, at least three courses that would count towards the ENTS program each year), and a standard set of cross-listed courses.

We start from the assumption that since Jamieson was tenured in the college, and thus
would have been able to continue to offer ENTS courses past the time when the Luce money that funded his hire would have ended, Carleton has made a commitment to support this number of ENTS courses for the foreseeable future. That Jamieson is no longer at the college should not negate that commitment: we recommend filling this position as soon as possible, in a way that makes the most curricular sense for the ENTS program as well as for the college as a whole. We strongly advocate that this be done by hiring someone at the senior level to serve as interim director of the program, as suggested above. Regardless of whether this hire is at the senior level (as we suggest), we believe that these courses must be replaced for the ENTS program to be viable.

Likewise, we applaud the offer of a two-year extension to Tsegaye Nega’s contract after the end of his Mellon post-doc, and hope that he will accept the offer. But if he does not, we urge the college to reallocate this money to support the ENTS courses that he would have been able to offer, perhaps by hiring a visiting assistant professor for a two-year period in an area that would be support the ENTS program and other college priorities.

2.3 Formalization of ENTS Teaching Obligations

We concur with the ENTS self-study that a formalization of existing teaching service by departmental faculty to the ENTS program is an important first step. This could be on a permanent basis with explicit contractual obligations to the program, (as is certainly appropriate when new people are hired with expected participation in the program). For existing faculty who contribute to the program it would help both them and the ENTS program to have those teaching commitments more fully clarified, either contractually or otherwise. These could, for instance, be negotiated for a three-year period, wherein each department would agree in advance how many – and, ideally which – courses it would contribute to ENTS.

On a related note, we support ENTS participation in the review processes of those junior faculty members who are particularly active in (or obligated to) the ENTS program. At one end of the spectrum, making joint appointments (as has been done recently for American Studies) whose review committees are explicitly composed of half departmental and half program members, is a useful step. For those junior faculty members who do not have joint appointments, however, we encourage ENTS participation in their review and tenure processes, in a more formal manner. While it is useful to have a letter from the ENTS director as part of a candidate’s file, it is a stronger statement to have someone from ENTS actually involved in reappointment or tenure deliberations.

2.4 Teaching Credit for ENTS courses

We are impressed that departmental faculty have enough allegiance to the ENTS program to teach the junior colloquium and senior capstone without receiving teaching credit. We strongly recommend, however, that these courses be constituted in a way that carries
teaching credit for the faculty who oversee them. This is an issue not only of ensuring the quality of the courses but of fairness. Junior faculty, in particular, should not be asked to do uncredited teaching. That tenured faculty members have been willing to teach these courses without credit sets a particularly dangerous precedent for more junior people who can less afford the extra obligations and who may be reluctant to refuse requests for service. Most of our recommendations about reforming the curriculum involve increasing the magnitude of the courses, which might make them fit more easily into the normal teaching credit scheme at Carleton. Even if a course carries fewer academic credits than a traditional course, mechanisms should be created to allow accumulation of teaching credit. For instance, overseeing two terms of a three-credit course (or three terms of a two-credit course) should aggregate into one teaching credit. This could work even if the courses are taught in different years.

2.5 Engaging Mid-Career Faculty

There are some associate professors at Carleton whose research or teaching areas are of relevance to the ENTS program but who are not involved with ENTS. We encourage bringing these people into the ENTS program for the purposes of teaching courses, supervising the junior colloquium and the senior capstone, and generally contributing to the intellectual life of the program. Our understanding is that there are a variety of historical reasons that these people have chosen not to affiliate with ENTS, and that there is no single solution to increasing their level of involvement. We urge the administration and ENTS leadership to reach out to individuals whose research and teaching makes them obvious candidates for participation. Offering course development funding may encourage some people to offer new courses. In most cases it seems likely that individual conversations with those who might become involved would be a good first step.

2.6 Preparing for a Future Reduction in Teaching Load

It is important to consider the impact the proposed college-wide reduction in teaching load will have on ENTS and other interdepartmental programs. At this point, most of the courses that are taught in the program are functionally the “sixth course” that a given faculty member offers, after teaching four or five courses that departments believe they need. While there is value in reducing the teaching load, if it is not done in a way that gives serious consideration to interdepartmental programs, these programs will suffer. The goal to reduce the teaching load by adding new faculty members is a laudable one, but does not address all potential problems. New faculty positions will either have to be created specifically in the interdepartmental programs that would lose courses, or will have to be strategically added to departments so that existing faculty can continue to offer or expand their ENTS offerings. We urge involvement of interdepartmental programs in any discussions of how a reduction of teaching load will be accomplished.

2.7 Program Assistance

The existence of the fifth year intern (Educational Associate) is a low-cost, valuable and creative solution to the need for program assistance, both academic and administrative. This position also provides useful experience for an ENTS graduate. We strongly suggest
that this position be maintained and made more formal so that the ENTS program can rely on an Educational Assistant each year. Funding might come from money nominally dedicated to environmental studies or through new money generated from the upcoming campaign.

We also applaud the shared assistant position among several interdisciplinary programs currently filled by Tami Little. Having such assistance is important and everyone agrees that Tami does an excellent job. Given the work she does, we additionally suggest that her job be upgraded from “assistant” to “administrative assistant.” We also recommend increasing the time she is able to devote to ENTS, perhaps by increasing the number of hours she works during the school year or shifting some of her responsibilities elsewhere. If additional program assistance is needed, we recommend allocating funding to hire current ENTS students to assist with the program. Hiring current students for this type of work can also provide important connections between the students and the program.

2.8 An ENTS department?

We urge consideration of the creation of an ENTS department. While it is not the only way to address the various staffing and administration issues discussed above, it would address many of them simultaneously. When we discussed this issue with ENTS-affiliated faculty during our visit, there was general support for it, especially in the context of Carleton’s department-centric approach. Having an ENTS department would allow for greater ENTS involvement in hiring and review of faculty who teach under the ENTS rubric, would ensure greater participation by ENTS in college decision making processes, would give ENTS great stability, and would facilitate the appointment of a director with primary allegiance to ENTS. According to Dean Thiboutot, a major in environmental studies would be influential in attracting outstanding prospective students.

If ENTS were to become a department, many of the faculty based in other departments who teach joint ENTS courses could have joint appointments with ENTS (something we would encourage regardless) and the chair of ENTS could bargain with departments on a more even basis for service to ENTS. An ENTS department would also benefit by including courses offered--or cross-listed by--faculty who do not have an ENTS appointment.

III. CURRICULAR ISSUES

Everyone with whom we spoke values the ENTS concentration and wants to maintain it, yet no one is satisfied with its current form. Students told us that the concentration can be accidental, not intentional, and faculty members are concerned that the concentration may be insufficiently interdisciplinary. But students also spoke of the sense of community that comes from an association with ENTS, which encourages stronger connections with their peers than with most other majors.

We begin our discussion of the ENTS curriculum with an exploration of the concentration, and then move on to a consideration of an ENTS major. We note at the beginning that strengthening the concentration will certainly make easier the creation of a
major, and that, as the self-study recognized, many curricular features apply to both.

As we have emphasized in our earlier section on staffing, the amount of faculty effort devoted to courses primarily intended for ENTS is quite limited, and consequently all such courses should be as interdisciplinary and should include as many ENTS concentrators as possible. We recommend two essential components of a strengthened concentration: a gateway course and a junior colloquium, both determinedly interdisciplinary. If resources are available, a third or even a fourth interdisciplinary course obviously would assist in building ENTS community and would move the concentrations even further away from a “random collection of courses.” Every effort should be made to assist ENTS students in interdisciplinary thinking, as distinguished from multidisciplinary experiences that come from uncoordinated exposure to a collection of disciplinary courses.

3.1 ENTS Gateway Courses

We recommend a single entry course – pitched to first-year students and sophomores – probably offered in the fall or winter term to serve as the gateway to the concentration and pre-requisite to all ENTS-specific courses. Late-bloomers seeking to concentrate as juniors might be allowed a substitution. This will serve to build community by allowing students to identify their colleagues early in their time at Carleton, and will allow the assumption of a common background in subsequent ENTS courses. The low current enrollments in ENTS 110 most likely have resulted from allowing three entry-level courses, the other two of which satisfy additional requirements. The ENTS faculty should select the content of the gateway course, but we note that we are positively impressed by the syllabus of the sense-of-place approach. While the ideas for courses in uncertainty and in comparative epistemology are intriguing, we speculate that, given the activist sentiments in Carleton students, the sense of place approach may be the most attractive entry point. We would nevertheless encourage development of these additional courses as mid-level ENTS courses, should sufficient staffing be available.

One rationale for the current multiple-gateway approach is that many students don’t learn of ENTS until later in their time at Carleton, and so may not consider taking the gateway ENTS course in their first or even their second year. We suggest two strategies for identifying students with environmental interests. The Admissions Office has the capability of identifying applicants who have expressed interests in the environment at the time of application. The Admissions Office can generate letters (appearing to come from the ENTS director) to encourage these students to matriculate at Carleton. This letter could encourage these students to accept Carleton’s offer and at the same time invite their registration in the gateway ENTS course in their first term.

A parallel strategy is to devote the first few weeks of the Education Associate’s effort to the entering class – attending as many early events as possible to publicize the concentration and the gateway course. In our experience today’s high school students do serious web-research, so it is important that the ENTS site be current, informative and emphatic on the benefits of enrolling in the gateway course in the first semester. The ENTS website should be easily located from the Carleton homepage.
Should experience reveal that a significant number of students interested in the environment reach their fifth term without having taken the gateway course, and if resources allow, we suggest that the ENTS faculty consider offering the gateway course in two terms each year. That may result in an increase in the total registration in the gateway courses, but likely a decrease in enrollment in the fall-term course, and a bifurcation of the ENTS group identity.

3.2 Interdisciplinary Teaching

The self-study is replete with mention of team-teaching, which certainly is one approach to introducing concepts of more than one discipline into a course and it is the approach used by several ES programs. However, a team-teaching approach is inherently multi-disciplinary, not inter-disciplinary – which is not an ideal model for an interdisciplinary program. In many other quality ES programs, an introductory interdisciplinary course is taught quite successfully by one faculty member. ENTS faculty may need some additional training to provide the confidence necessary to undertake their first solo interdisciplinary course. The Mellon New Directions fellowship program is one option, and we understand that other internal faculty development possibilities exist. We note that team-teaching is resource-heavy, and from a resource perspective, faculty development that eliminates the need for team-teaching may be a sound investment.

A different approach to melding disciplines is to link the ENTS gateway course to a disciplinary course that is particularly relevant for the concentration. We heard this approach characterized as a “dyad,” and that a trial approach several years ago was highly successful, although we acknowledge that the proposal here is somewhat different. If there is close coordination between the faculty in the linked courses, this may provide an additional approach to interdisciplinary faculty training. For example, an entry-level, environmentally-relevant science or social-science course could be linked to the gateway course. If these two courses were scheduled on Tu/Th, and if enrollments were entirely co-incident, two full days per week could be available for scheduling field trips, etc.

Given the tendency of many students to meet distribution credits early, we suggest that the ENTS faculty initiate a conversation with the ECC about giving “distro” credit for 110 and other truly interdisciplinary courses. We don’t understand the Carleton distribution philosophy sufficiently to recommend ways in which this could be done, but suggest that if interdisciplinary thinking truly is a value at Carleton, including a one-course interdisciplinary distribution requirement would be logical. Alternatively, the gateway course could be structured to meet some other requirement – perhaps enhanced writing skills.

3.3 Junior Colloquium

Students and ENTS faculty agree that the current colloquium model is insufficient on all counts. It provides no credit for faculty and, with one-credit and the pass-fail grade option, is the lowest priority for students. Still the colloquium currently provides the primary opportunity for ENTS students to identify each other and an incentive to attend
ENTS events which otherwise would be overlooked. We recommend consideration of three options – a two-credit course each term of the junior year, two three-credit courses or one six-credit course - any of which would be suitable for a project course – and all of which would earn a faculty member a full course credit (for the two- or three-credit models, credits should be bankable). As for content – the sentiment of the students with whom we met was to “do something,” not “read something” – and certainly other ES programs have found project/service-learning courses to provide an excellent opportunity to integrate disciplinary courses and to illustrate problem-solving techniques and develop skills. Given the scarcity of teaching resources, a project course should focus on a single project of sufficient scope to engage all enrolled students as members of teams working on distinct but related aspects of the project. Given the respect which service-learning is accorded at Carleton, a project class that is designed and carried out with a community partner seems desirable.

3.4 Additional Concentration Courses

The self-study recommends a concentration model with eight courses. Assuming this is the correct upper limit, after the introductory and colloquium courses, six other courses must be chosen. We do not express an opinion on the content of these courses, beyond noting that it is quite common for ES programs to require or encourage some experience in environmental sciences and environmental economics. Instead, we focus on the guidance students are given in the selection of these six courses. The self-study suggests a menu approach, which, as far as well can tell, allows course selection without much regard to any connection between these courses and with little to no faculty advice on the choice. We heard from students that concentrations are sometimes “discovered” rather than planned – and are then undertaken primarily as resume-builders.

A preferable alternative is a concentration planned during the sophomore year, with advice initially from the Education Associate, followed by meeting with a faculty concentration advisor. In the sophomore year, academic goals are often not well defined, and guidance from advisors – with probing questions and suggestions – can help to clarify. During this process, faculty advice can suggest foci that are relatively better-supported by Carleton courses then others. It should be acceptable to say to a student that not all possible concentration foci can be appropriately supported.

For the planning discussions with their concentration advisor, students should prepare a suggested list of six courses and a brief essay explaining how the courses relate to each other, are of increasing challenge, and lead to a defined learning goal. In these discussions the advisor works with a student to identify the six best courses (without regard to categories) to assist the student in attaining his or her goals.

This approach will encourage breadth in the concentration and will make it less likely for a concentration to be accidental. We recognize that student’s aspirations may – indeed should - evolve with time, and as they do, so should students’ plans. Similarly, should a course become unavailable or a new, more desirable course be introduced, the plan should be revised, but only in consultation with the advisor. Finally, the advising process can guide students in their choice of terms to be away from Carleton, so that
concentrators will be on campus for course sequences critical to the concentration.

3.5 Senior Capstone

It seems that any significant ENTS “capstone” requirement for the concentration during the senior year is likely to take second priority to the major comps. We have reflected on the self-study recommendation of a portfolio construction, and found two aspects of that idea quite compelling. Certainly it is desirable to inform concentrators at the time the concentration is declared that they should retain the products of their course work and extra-curricular efforts (e.g. internships, etc.). One device could be to allocate space on an ENTS server to each concentrator, so student’s documents are not lost when a computer fails or is replaced. This would allow an occasional check by the Education Associate to be sure that documents are accumulating for each student. In the senior year, we suggest a one- or two-credit course in which the concentrators would look back over their four years at Carleton, would write a retrospective reflection on their experiences, and would make a presentation to their colleagues (especially their junior colleagues) and to such ENTS faculty as could attend.

3.6 ENTS and the Humanities

We were asked specifically by the President to address the role of humanities in ENTS. Few ES programs have a significant humanities component, so to the extent that ENTS has a strong humanities involvement, the program will be unusual in that way. In addition, many students and faculty members believe that humanities courses served a valuable function in introducing ethical or sensory aspects that underlie concern for the environment. Also, we note that although Carleton’s claims to a strong humanities contribution have been valid in the past, these contributions are at risk from faculty moves and pending retirements. For example, there appear to be no plans to replace the American Environmental History course that will be lost because of a retirement, which is somewhat puzzling given how rapidly the field of environmental history is growing. In our experiences, we have found that humanities are more relevant to some interdisciplinary explorations than to others and anticipate that a well-advised educational plan will seek out the humanities as needed.

3.7 ENTS Major?

We have heard support for an ENTS major from the some of the faculty, have identified benefits for admissions and know from experience in other ES programs that a major generally offers a greater opportunity for environmental employment and gives evidence of a stronger commitment to protection of the environment than a minor/concentration. Of course, the larger number of courses also allows for a more ambitious educational plan and a greater opportunity to demonstrate expertise. While we do not recommend a major be offered in the very near term, since virtually all of the foregoing discussion is relevant to a major, we continue with a discussion of curricular aspects of that option here.

We believe that all of the features of the concentration would be appropriate for the major, save the one- or two-credit course in the senior year. For a major, the senior year
should certainly include an individual comprehensive experience, preferably extending over the full senior year. The minimum comp experience should be six credits. However, because we recognize the particularly high value of a capstone experience (in fact, to emphasize this importance, these culminating experiences might be viewed as “keystone”) we suggest that the ENTS faculty consider allowing nine or even twelve credits for experiences of greater challenge, leading to Honors in ENTS.

We heard from students that the summer internship experiences, while valued, are not being integrated with students’ curricula. We recommend that majors be given a preference for internship funding, and that an effort be made to connect the internship experience with the comp planning. Given that the junior colloquium will be a group experience, we suggest that the senior comp should be individual, to allow each student to develop and to demonstrate independent thinking and accomplishment.

Majors should be required to present the results of their work in a public presentation during their final term. In order to prevent the audience fatigue that comes when all seniors present their work in the few weeks at the end of term, we suggest that presentations be distributed evenly through the final term – probably no more than two/week. There should be the strong expectation that all junior concentrators and majors should attend, along with as many ENTS faculty as feasible. Recognizing the extraordinary demands already placed on Carleton faculty, and especially on faculty working in programs, faculty may wish to allocate attendance amongst themselves, so all majors have the respect shown by faculty attendance and critical questioning. As part of their comp exercises, majors should compile an educational record (portfolio) and prepare a retrospective, which could be presented at the end of the comp seminar.

The two, two-and-a-half or three courses remaining for the twelve-course limit1 of the major should be identified as part of the educational planning process. Since the major should be attempted only after significant additional resources are allocated to ENTS, perhaps another interdisciplinary course could be added at the sophomore/junior level, required for majors and allowed for concentrators, to strengthen the sense of community still further. If the faculty conclude that a particular subject matter area should be required of all majors, perhaps in the form of a fully-integrated environmental science course or an ecological economics course, such material could be included in the major requirements.

The Dean raised the question of whether an ENTS major – or by implication, any interdisciplinary major – could have the “depth” appropriate for a major. By definition, as long as disciplinary and interdisciplinary majors are held to the same course limit (see footnote 1) – it will not be logically possible for the interdisciplinary major to reach the depth available in a single disciplinary major, nor would it be desirable. Disciplinary depth usually is defined by physical and natural scientists as vertical integration, with

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1 Given that the College ECC has been considering interdisciplinary programs, the ENTS faculty might consider raising the issue of whether the twelve-course limit should be applied to interdisciplinary majors. The usual rationale for placing an upper limit on major requirements is to prevent excessive narrowing. Obviously that reasoning does not apply to an interdisciplinary major, which by its nature is expansive and inclusive of several modes of thought. A limit of 14 or 15 courses for an ENTS major would enable a stronger degree.
each science course serving as a prerequisite for courses at the next higher level. This verticality is not generally found in the social sciences or the humanities, where “depth” is as shallow as one or two courses. We believe that the strength of an interdisciplinary major should be judged by its demonstrated abilities to assist and ensure students to cross disciplinary boundaries, to select from the disciplines the knowledge and skills necessary for environmental enquiry, and to integrate this information in the identification, analysis and resolution of environmental issues. The interdisciplinary scholar will more often contribute by creative integration of disciplinary information – often leading to new ways to visualize relationships - than by developing new information that lies within a single discipline. The successful interdisciplinary experience will build the confidence to address problems that require recourse to disciplines not studied formally, but from which an understanding of the general language of that discipline will allow the needed information to be identified and applied.

IV. FUNDING

To strengthen and expand the ENTS program will require a stable, dedicated source of funds. These funds might come from reallocation of existing endowments, from the collegiate budget, or from the proposed capital campaign. A comprehensive program budget should be developed for the growth stages of the program, accompanied by plans on securing necessary funds. Offering a more transparent budgeting process will allow ENTS leaders and faculty to strengthen the program and plan ahead more realistically. Funds to encourage and support professional development will be critical to ENTS continued success.

At present, there seem to be three opportunities for reallocating internal funds to support the ENTS program. The Environmental Studies endowment, established in 1973, was intended to support “student and student/faculty research projects that have to do with the environment.” According to information from the Dean’s Office, “the majority of this money spent has been for budgetary relief.” We recommend that these funds be redirected to the ENTS program. While the funding has not gone unused by the college in recent years, the donor clearly intended it to be used to support environmental studies, which is currently represented at Carleton by the ENTS program. We urge the administration to designate the endowment income from this fund for ENTS. The Lloyd McBride Chair in Environmental Studies, established to “ensure that Carleton students will have the opportunity to study in a comprehensive way the relationship of human societies and their physical environments,” currently supports release time for one course. With an annual income of over $150,000 this chair could provide significantly more to the ENTS concentration. The Winifred and Atherton Bean Chair was created “in recognition of the need to resolve the political, economic, and ethical problems that often arise from scientific and technological advances.” This description closely parallels the ENTS mission and could be providing more intentional support for the program. Faculty and administration should reexamine the use of both the McBride and Bean endowed chairs, and develop a plan for how they will be re-designated upon faculty retirement or turnover. Finally, the small ENTS funds that are currently not being spent because of low market values should be revisited and perhaps combined into a single fund that will support student internships or projects. These funds could grow substantially if they were
marketed to alumni and external funders as a place for contributions, particularly if the strategy included stories of student experiences.

The proposed capital campaign offers significant opportunities for the ENTS program. Alumni working in environmental, scientific, and technological fields are likely to contribute to an ENTS endowment or provide operational funds through dedicated annual giving. Corporate or other large funders could be encouraged to support a well-designed interdisciplinary program that addresses critical issues in today’s world. The ENTS program itself or construction of a “green building” could become a focal point for the capital campaign that would benefit the larger college community. In addition, funds to support specific ENTS projects, curriculum enhancements, or equipment should continue to be pursued through selected grant opportunities and informed solicitation.

It may be useful for the administration to conceptualize a comprehensive budget that determines the true cost of such an interdisciplinary program, including faculty teaching and advising, a Program Director, staff support and the Educational Assistant, student internships and field work, course work and development, seminars from internal and visiting scholars, equipment and computers, space, and other needs. Paired with income sources, this budget becomes the basis for soliciting funds through the capital campaign, internal reallocation, and extramural grant funding. A budget should be created for the current program, and for future growth stages such as an expanded concentration, development of a major or departmental status, and construction of a green building or ENTS center. Most faculty were very unclear about the current ENTS budget and how much is available to support the program; a more transparent budgeting process and prioritization will also help reduce faculty and staff uncertainty, strengthen the program, and promote more realistic planning for program growth.

To develop and enhance interdisciplinary course offerings, strengthen interdepartmental relationships, and continue to offer new opportunities for student research and internships, administration and ENTS leadership should work together to identify and secure extramural grant funds. The ENTS program has capitalized on Luce and Mellon opportunities in the past and should continue to pursue multi-year grant funding for professional development and major initiatives. In addition, the ENTS Program Director should work with the Stewardship and Development offices to craft a strategy and program message that will attract contributions for specific short-term needs.

V. SPACE

Interdisciplinary programs that bring together students and faculty from diverse disciplines and departments can more easily promote coherence and a sense of community with a dedicated space to serve as home. An ideal location would offer space for informal gathering, meetings and seminars, classroom or lab activities, computer stations, and posting announcements, as well as offices for the Program Director, support staff, the Educational Assistant, and visiting professors or post docs. By bringing these functions together in a central location, the program will be more efficient, have greater visibility for potential students and contributing faculty, and offer increased opportunities for students from different departments to learn from each other and share their
In the near term, the current space in Goodsell Observatory, with some minimal remodeling and reallocation, can serve as a suitable base for the ENTS program. As the program expands it is likely to need larger accommodations, but in the meantime administration could help stabilize the program and reduce uncertainty by confirming that the Goodsell space will be dedicated to ENTS for a number of years. If the capital campaign is successful, or an endowment secured, a “green” building for the ENTS program, faculty and staff offices, and student gathering space would be ideal.

VI. CONCLUDING ISSUES

We were asked by the President to reflect on national trends in Environmental Studies and their implications for ENTS. In our experience, the belief held by skeptics in the 1970s that environmental problems and the educational programs that studied them would be discovered to be ephemeral has largely vanished and along with it the lack of respect that some scientists expressed toward ES programs thought to be soft because of their interdisciplinarity. There is general recognition of the immense challenges of climate change, of depleteable natural resources – water in particular – and of wasteful land use. We do not see any end to the need for well-trained and motivated environmental professionals and scholars, an environmentally-astute electorate to address these issues, and for the educational programs to produce them.

The perception of the demand for environmental education appears widely amongst colleges, and many schools that lacked environmental programs have moved in the past five years to create them – often at the request of their admissions officers. We heard from Carleton’s Dean of Admissions that an environmental major would definitely be of value in his efforts to bring high quality students to Carleton, and that he is regularly asked if there is an environmental major. In reply, he describes the ENTS concentration, and mentions the option of a special environmental major, although he doesn’t necessarily point out that such majors can’t be called “environmental.” The Dean of Admissions also mentioned that potential students sometimes express concerns about the relatively small number of majors at Carleton, so that the addition of another strong major of any sort would be a benefit.

For these reasons, we believe strong consideration should be given to an environmental major. However, because all of the resources necessary for a major are not likely to appear in the very near term, we recommend that the concentration be strengthened as a first step. Fortunately since all steps taken to maintain and improve the concentration would support a major, no effort is thus wasted. Roughly half of the faculty with whom we spoke had doubts or concerns about a major, but virtually all these concerns were based on an uncertainty that the necessary resources would be forthcoming. If the administration is able to provide the resources needed for a strong concentration, we expect that these faculty will then support an ENTS major. There is no question in our minds that a high quality ENTS concentration and major will be a significant benefit to Carleton.
As we have recommended earlier, a search for a dedicated interdisciplinary director for the program should begin in next summer’s recruitment season, but it should be announced to the ENTS faculty as soon as possible. We anticipate that most appropriate candidates for this position will see the prospect of a major as an attractive opportunity for creativity in program development. We also believe that contributions dedicated to ENTS during the capital campaign are more likely to be substantial if justified by the introduction of a full major, and that prospective donors might be even further encouraged by the promotion of ENTS to departmental level, thus specially justifying the need for endowment.

The enthusiasm of the current ENTS faculty provides a solid base on which a strong environmental program can be built. This enthusiasm should be maintained by immediate and strong reassurance (complete with specifics) from the administration as to the College’s commitment to ENTS. Improved and expanded space in Goodsell, dedicated to ENTS over the medium term, will do much to compensate for the loss of the prior ENTS buildings. A serious exploration of departmental possibilities, the announcement of a search for a dedicated interdisciplinary faculty member, a concrete plan to award teaching credits for contributions to ENTS that currently are voluntary, and provision of faculty development opportunities for interdisciplinary training should provide the boost needed to undertake the necessary curricular reform.

VII. SUMMARY

For emphasis, we have collected and restated our major recommendations.

This summer, the college should begin a search to hire an interdisciplinarily-adept senior faculty member, preferably someone with experience in interdisciplinary teaching and administration in environmental studies programs. This person should be dedicated full-time to ENTS and should direct the program for the immediate future.

We recommend a concentration made up of a single gateway course, a six-credit project-based colloquium, and a single credit senior retrospective, with six additional courses chosen with thoughtful faculty advice to best fulfill a concentration planned during the second year.

The number and type of courses taught by departmental faculty that are critical to the ENTS program should be formalized by agreement with the department.

ENTS courses taught by departmental faculty should always earn teaching credit for that faculty member, and partial credits should be bankable.

The fifth-year internship should be maintained and made more formal so that the ENTS program can rely on an Educational Assistant each year.

The Post Doc/Visiting Professor position, currently held by Tsegaye Nega, should be continued if possible.
ENTS faculty should consider faculty development and dyad models as valid alternatives to team-teaching interdisciplinary courses, in order to reduce teaching demands.

An ENTS major should be considered as a logical step to take after strengthening the ENTS concentration, given the potential benefits to students and to the College.

Income from the Environmental Studies endowment should be allocated to the ENTS program, to fulfill the purposes of the endowment which is to fund faculty and student environmental research.

When vacated, the McBride and Bean chairs should be constrained to provide increased support for ENTS.

ENTS should be assured of dedicated space in the near term, most probably in an upgraded Goodsell Observatory.