Environment and Resources Working Group
Final Report
19 January 2012

The Environment and Resources and Related Programs Working Group was established in May 2011 and charged with three overlapping objectives:

1. To summarize and review the existing Arts & Science undergraduate and graduate programs in the general area of environment and resources.
2. To identify strengths and weaknesses of the current Faculty unit structures, considering the academic plans of the units and cognate disciplines.
3. To make recommendations (either organizational or otherwise) that would strengthen environment and natural resources programs overall, identifying specific outcomes and measures of progress toward academic goals while ensuring that the resources we place into initiatives on the environment and resources achieve the greatest scholarly and educational impact.

The Working Group provided two progress reports to the Arts & Science community. The September update identified and sought input on undergraduate program themes being considered for development, while the November report recommended options for administrative structures to best support our efforts in environment and resources. After the release of each of the two reports, the Working Group co-chairs engaged in consultations to hear the thoughts and suggestions of faculty, staff and students. The Working Group also received written submissions in response to its calls for input; a list of individuals and groups consulted and the names of individuals who presented written submissions are in Appendix A. The September and November reports were discussed at the October 3rd and December 5th meetings of the Arts & Science Faculty Council.

During the two rounds of consultations, faculty, staff and students were positive and enthusiastic about programs in environment. They encouraged us to move forward in enhancing the visibility and coherence of programs and activities and provided thoughtful feedback on the proposed programs as well as on administrative models. This Final Report provides a synthesis of the input on the proposed academic programs, recommendations for an administrative structure and proposed next steps.

The Interim Report recommended the establishment of a program committee to propose modifications for the Environmental Studies Program and another to develop proposals for either two new programs in Earth System Science and Environmental Science or a single program that combines aspects of both areas. There were questions about academic rationale and possible overlap of the two science programs and the committee agreed it would be appropriate for a single program committee to advise on the advisability of offering two separate programs or a

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1 The membership of the committee, terms of reference, and related memos and two interim reports are available at http://www.artsci.utoronto.ca/faculty-staff/committees-reports/envres
single program with different areas of concentration. The Working Group recommended that each committee should include two undergraduate students, consult widely with participating academic units and begin work immediately with the aim of having proposals developed by the end of the 2011-12 academic year; this would allow time to seek the required approvals in order to offer the programs in 2013-14.

**Recommendation 1:** Establish two program committees to develop full proposals for new programs in Earth System Science and Environmental Science (or for one program that combines both) and modifications for the Environmental Studies Program. In consultation with participating academic units, the proposals should be developed by the end of the 2011-12 academic year with the aim of seeking required approvals and offering the programs by 2013-14. Some degree of overlap in the committee membership will be needed.

**Administrative and structural model**

Consultations with faculty and students provided considerable input on possible models for the administrative structures required to deliver the proposed new programs. The Interim Report provided a set of general principles (reaffirmed during the second round of consultations) that an administrative structure should follow in order to fully support teaching and research programs in environment. They are:

- Involve multiple units and administer programs as *shared* endeavours.
- Provide a home in terms of student advising and intellectual community.
- Offer Masters and PhD programs graduate programs in the future.
- Maintain co-curricular sustainability-related opportunities for our students.
- Support ‘value added’ A&S research and intellectual community in environment that builds on existing disciplinary strengths.
- Offer high quality professional development opportunities.

In addition, the Working Group recognized the difficulties inherent in spreading its activities across too broad an array of subject areas. Specifically, while the group was struck to investigate the faculty’s activities in Environment and Resources, it became clear that some aspects of “resources” would best be served if they were led by existing units and not included within the School. For example, much teaching and research in Geology relates to exploration for natural resources (minerals, oil, etc.) and, while such activities are clearly linked to environmental issues, it would be difficult to subsume all of such research and teaching within one unit.

The general features and rationales for three possible administrative models emerged in consultations and were presented for further discussion in the Interim Report. These included a department or EDU:A with the ability to offer academic programs and administer primary faculty appointing (Model 1); a distributed model in which shared programs are administered by an existing department (Model 2); and, an EDU:B with the ability to offer academic programs and engage in cross-appointments with existing departments (Model 3). Consultation on the three options proposed resulted in much thoughtful discussion and led to a general consensus that
Model 3 – an EDU:B – be proposed as the administrative structure for environment within the Faculty of Arts & Science at this time.

A department/EDU:A (Model 1) aligned with most of the principles but questions arose as to whether initially shared programs would become increasingly aligned with the unit over time, resulting in a loss of interdisciplinary activities and the shared nature of the programs. Concern was expressed that this has already occurred with the existing Centre for Environment. There was also acknowledgment that synergies between the sciences-social sciences-humanities in the area of environment are currently lacking and would need to be developed before a truly interdisciplinary department could be considered. Also, most faculty active in teaching and research in environment align themselves with their discipline first and are not supportive of a move to a new unit. Finally, there was also a strong sense that a movement of activities in environment out of the multiple units they are currently embedded in would lead to a weakening of programs in those units and of the faculty as a whole. Thus, although there was some support for Model 1, there was explicit recognition by its supporters that, while possible in the future, it is unrealistic at this point.

The ‘distributed model’ (Model 2) was deemed inappropriate in that it would not provide a suitable home for student advising or activity, serve as an appropriate platform for graduate programs, nor lead to a strong intellectual community for students, staff and faculty.

An EDU:B (Model 3) reinforces the concepts of shared programs and maintenance of strong links to activities embedded in other disciplines through judicious use of cross-appointments and involvement of faculty not appointed in the unit in the undergraduate and graduate programs. It also provides a well-defined home for students; i.e., a place for academic advising, dedicated teaching space, a place to interact with faculty and a site for student activities. This model also calls for the unit to work to better identify sources of research funding and help support the preparation of grant and contract proposals related to the environment.

Recommendation 2: The Faculty should establish a new School as an EDU:B. The mandate of the School should reflect the general principals characterized above. The proposal should be brought forward from the Dean’s Office for governance approval in spring 2012 effective July 1, 2012.

The Centre’s operations will continue over into the new School. The Centre’s current academic programs and activities will continue as the development of new or revised programs continues and programs are approved through Arts & Science and university governance processes. Students will be able to complete their current programs. Senior lecturer appointments, cross-appointments and tri-campus graduate appointments will continue into the new unit. The existing organizational structure and administrative positions will migrate to the new School to continue to support its academic mission with no reduction or changes planned, however, changes may be required as the School and its programs evolve.

The Working Group considered that the name ‘School of the Environment’ would be appropriate; the name encompasses the general focus on research and teaching of humanities, social science, and science faculty working in the area; based on our consultations, the term ‘Environment’ resonates with undergraduate students.
Recommendation 3: Pending approval of a new School, the Dean should strike an advisory committee to recommend a Director. The Director should ensure that the mandate of the new School encompasses the principles outlined above.

The Director will consider the School’s operations in order to ensure they support environment undergraduate and graduate programs and research. The Working Group considered that an essential quality for the consideration of candidates for the directorship includes the ability to appreciate the interdisciplinary and disciplinary breadth reflected in environmental programs and research.

Discussions with faculty, staff and students made it clear that several aspects of the new unit will be critical for its success and there was some concern that a new EDU:B would not be sufficiently different from CfE, also an EDU:B, to ensure its success. Consensus emerged that there were several important areas in which the new EDU:B would need to differ considerably from the existing centre. These elements include establishing Faculty support for shared undergraduate and graduate programs, alignment of the School’s activities with its academic mission, affiliation with research and teaching units, and a cohesive space. The following elements have been identified as critical to an effective structure and effectively distinguish the new unit from the current CfE:

- Institutional support for shared undergraduate and graduate programs

  Teaching in the CfE is currently heavily dependent on stipend teaching and a limited number of lecturers. The Working Group is fully convinced of the need to involve the breadth and depth of expertise of faculty members in other units within the shared programs. An academic associate director will be required to coordinate undergraduate programs, assist in advising students, and oversee other academic program-related activities such as those in the Sustainability Office.

Recommendation 4: Establish an Environment Undergraduate Curriculum Committee with the responsibility and authority to review courses and curriculum for environment related programs offered across the Faculty of Arts & Science.

That undergraduate teaching programs in environment should be shared programs is further reflected in the strong support for the establishment of a standing Environment Undergraduate Curriculum Committee. The Committee would review courses and curriculum for environment-related programs offered across the Faculty with the aim of identifying possible conflicts and overlaps and resolving such issues before requesting approval from the Curriculum Committees. The Committee would have explicit support from the Dean’s office and be chaired by the A&S Associate Dean, Undergraduate Academic Programs. The bulk of the committee would be comprised of academic administrators from units that will participate in environment programs. The Director of the School would be a member of the Committee. The need for the Committee would be reviewed in three years.

In addition, in the Interim Report the Working Group strongly recommended that the Dean’s Office, in coordination with academic units, develop a mechanism that will allow
academic units to receive full recognition for faculty involved, and the numbers of students taught by those faculty members. It is imperative that academic units give full recognition to faculty teaching in shared environment and resource programs and that those academic units receive full recognition for the numbers of students taught by their faculty members. This is critical for the continued buy-in of the participating units. Several colleagues pointed to the lack of such a mechanism in the past as leading to a lack of involvement by some units in the current CfE.

**Recommendation 5:** In coordination with academic units, the Dean’s Office should develop a mechanism to acknowledge academic units that contribute teaching resources to the shared environment programs.

There was strong support for the new unit to continue to offer a range of collaborative programs with units active in environment. The Working Group thought it appropriate for the current CfE graduate collaborative programs to be reviewed in the near future. There was also much interest for the development of new tri-campus masters and PhD graduate degree programs.

**Recommendation 6:** Establish a program committee to develop proposal(s) for new graduate programs in environment.

The Working Group discussed whether a committee should be struck this term to consider the development of such a program(s) or whether it would be best to wait for a Director to be appointed. Given the enthusiasm expressed in continuing the momentum on environment programs and the fact that the CfE had already developed a proposal for an MA, (which was placed on hold while a previous Provostial Task Force on Environment was deliberating) the Working Group suggests that the graduate committee be struck as soon as possible. This committee will be co-chaired by the Vice-Dean Graduate and Research and the Director of the CfE to begin the task of preliminary work for program development. When the Director of the School is appointed, he/she will chair the committee. The committee would include tri-campus representation.

- **Alignment of the School’s activities with its academic mission**

  Faculty and students were keen to ensure the mission of the new School would be directly relevant to their needs and interests and, wherever possible, bring together faculty members from across the humanities, social sciences and sciences. Joint seminars in the School, mounted in collaboration with departments and focused on the research interests within the Faculty would provide a forum for cross-disciplinary conversations spanning local, regional and global scales and would help develop a stronger intellectual agenda. Seminars should aim to attract university faculty and students. Similarly, a faculty research fellowship program and pre-doctoral fellowships for senior graduate students would support the academic basis of the unit and contribute to the sense of activity and place.

  The new School would also make it explicit that its activities are relevant to, and dependent on, faculty from the humanities, social sciences and the sciences. All three
areas of discipline were initially active in the CfE but involvement of many science units has all but disappeared. The vast majority of science faculty and students we met with described their attachment to the Centre for Global Change Science (CGCS), current activities in the CfE are focused on the Social Sciences and Humanities.

The Working Group was fully cognizant that it is neither desirable nor possible to force interactions across the broad range of interests that constitute academic interests in the environment. The goal is to provide opportunity for interdisciplinary activities in both teaching and research; interdisciplinary partnerships will grow best if they grow naturally.

The input of faculty from units outside the School will also help provide academic input to the professional development programs; this is seen as important in that the professional programs are an important aspect of the external face of environment at the Faculty.

While the Working Group focused on undergraduate programs, there was a strong sense, supported by the feedback, that the new unit work to identify sources of research support and facilitate development of grant proposals related to environment. Some such proposals are likely to be interdisciplinary efforts but the working group found no need to restrict support to such applications; support should be provided for individual faculty as well. Consultations point to the need for some form of dedicated research support within the School that would facilitate applications to environment-related granting agencies and provide support to faculty members across Arts & Science units. Metrics of success would include number of application and success rates.

Wherever possible, the new unit should strive to engage its undergraduate students in the research programs of faculty. This could be facilitated by the seminar program described above and through possible support for summer undergraduate research projects. Greater involvement with tenure track faculty from collaborating units should also work to provide access to more research experiences for undergraduate students.

- **Affiliated research and teaching units**

Stronger academic links between faculty and students in environment from different units in the Faculty can be facilitated by formalizing relationships with existing units. The School would both affiliate with and serve as a home for other centres, allowing students and faculty to take advantage of the full span of activities in environment in Arts & Science. The Directors of the Centre for Global Change Science (CGCS) and the Koffler Scientific Reserve (KSR) have indicated a willingness to be formally aligned with a new School.

The Working Group heard that the CGCS has built an enthusiastic community of science scholars and students that attend its seminars and lectures and participate in its undergraduate offerings. Incorporating such units would allow for the science community to complement and strengthen other activities of the School that in turn could further highlight the offerings at CGCS and KSR. Other academic units may be developed or consider being housed within the School in order to benefit from its administrative
structure and community, and to increase the critical mass of teaching and research that is associated with the School. That faculty members would have their primary appointments in an A&S department was seen as helpful in fostering these relationships.

- **Infrastructure and resources**

  The committee heard repeatedly that physical location and layout would be critical to the success of the School. Space occupied by the current CfE in the Earth Sciences Building works to severely limit its sense of identity, its academic cohesion, and the efficiency of its operations. Students in particular find the space over-dispersed and hard to find. Activities should be readily visible both internally and externally to the University with welcoming areas and entry points where students and faculty can meet and participate in joint events.

**Recommendation 7: A committee should be struck by the Dean’s Office to assess the space needs for the School.**

The committee should be struck early in 2012 to conduct a space assessment and identify a suitable location for the School. Its composition should include faculty, staff and students associated with programs in the environment.

As an EDU:B, the School will be able to make cross-appointments of up to 49%; senior lecturers who currently hold 100% appointments in the CfE would be given the option of retaining such appointments in the new unit. Consultations indicated that potential cross-appointments will need to be carefully considered by the Director once the programs are more fully developed; it will be important that appointments reflect the balance of disciplines in environment. Any new partial appointments would need to be proposed by the Director, in collaboration with other academic units, to the Faculty of Arts & Science Appointments Committee. The mandate this committee is to review requests for academic appointments on an annual basis and advise the Dean on searches to be undertaken in the academic units.

The CfE’s budget provides for the mounting of its current programs, staffing and a professional development series of courses. Wherever possible, the School would aim to ensure its budget reflects the ability to maximize support for its academic programs including the undergraduate and graduate student experience.

**Recommendation 8: The new School will incorporate the current budget of the Centre. The Director of the new School should review the budget with the Dean’s office to ensure the fit with the unit’s mission, activities and commitments.**

In developing the proposal for a new School, it is critical that all accompanying recommendations are initiated as a coherent set. These include the establishment of committees to modify and develop undergraduate programs in environment, establishment of a standing FAS Environment Undergraduate Curriculum Committee, and the development of a mechanism to acknowledge academic units that contribute teaching resources to the shared environment.
programs. These recommendations will support the new School in achieving the alignment of its activities with its academic mission. A review of the new School and its programs should be conducted within the next 5-7 years in line with the university’s quality assurance process for academic programs and in order to assess whether an EDU:A model would be appropriate at that time.

Next steps

The Working Group has engaged in two rounds of consultations in the previous academic term. With this Final Report, the committee recommends that a proposal be developed for the establishment of a new School to be structured as an EDU:B with the aim of bringing it forward to FAS Council and University governance this academic term.

Focused consultations should continue as the proposal and programs are developed. In particular, the Working Group co-chairs will visit large undergraduate classes such as ENV 222 in order to ensure students are aware of discussions and can ask questions regarding the unit proposal and development of programs. The Working Group co-chairs will ensure that current students are aware that they will be able to complete their current programs.

Pending approval by the Faculty and university governance, the search for the Director of the new School should be initiated. The three Working Group reports reflect the consultations with faculty, students and staff and should be reviewed by the search committee in considering the qualities required of the unit’s Director.
Appendix A

List of consultation meetings and submissions

Consultations on environment undergraduate programs

Department of Anthropology
Department of Chemistry – Environmental Chemistry Group
Department of Ecology and Evolutionary Biology
Centre for Environment
Department of Geography
Department of Geography Alternatives Working Group
Department of Geology
Department of Physics Atmospheric Physics Group

A&S Faculty Council
Arts & Science Students Union (ASSU) Executive
Council of Chairs, Principals, and Academic Directors (CPAD)
Coalition of Arts & Science Directors (CASD)
Tri-Campus Deans

Cristina Amon, Dean, Faculty of Applied Science and Engineering
Steven Bernstein, Professor Department of Political Science and Director, Master of Global Affairs Program
Janice Boddy, Professor and Chair, Department of Anthropology
Mel Cappe, Professor, School of Public Policy and Governance
Michael Chazan, Prof. Department of Anthropology and Director, Archaeology Centre
Deborah Cowen, Professor, Department of Geography
Hilary Cunningham, Professor, Department of Anthropology
Helene Cyr, Department of Ecology and Evolutionary Biology
Joe Desloges, Professor, Department of Geography
Miriam Diamond, Department of Geography
Matthew Farish, Professor, Department of Geography
Jeff Geddes, Graduate Student Atmospheric Chemistry
Emily Gilbert Professor, Department of Geography
Mark Hathaway, PhD student, Environmental Studies Collaborative Program, Adult Education, OISE
Joe Heath, Professor and Director Centre for Ethics
Matthew Hoffmann, Professor, Department of Political Science
Karen Ing, Senior Lecturer, Centre for Environment
Don Jackson, Professor, Department of Ecology & Evolutionary Biology and Director, Centre for Environment
Bryan Karney, Chair, Division of Environmental Engineering and Energy Systems, Faculty of Applied Science and Engineering
Marieme Lo, Professor, Women and Gender Studies Institute
Mike Luke, Professor and Chair, Department of Physics
Doug Macdonald, Senior Lecturer, Centre for Environment
Consultations on administrative and structural models

Department of Anthropology
Department of Chemistry – Environmental Chemistry Group
Department of Classics – Environment Group
Centre for Environment
Department of Geography
Department of Geology
Department of Physics - Atmospheric Physics Group

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Coalition of Arts & Science Directors (C ASD)
Environmental Students’ Union (EN SU)
Humanities Chairs
Tri-Campus Deans

Steven Bernstein, Professor, Department of Political Science and Director, Master of Global Affairs Program
Phil Byer, Professor, Faculty of Applied Science and Engineering
Joe Desloges, Professor, Department of Geography
Miriam Diamond, Professor Department of Geography
Steve Easterbrook, Professor, Department of Computer Science
Bill Gough, Professor Department of Physical and Environmental Sciences and Vice-Dean Graduate Education and Program Development, University of Toronto Scarborough
Karen Ing, Senior Lecturer, Centre for Environment
Don Jackson, Professor, Department of Ecology & Evolutionary Biology and Director, Centre for Environment
Mike Luke, Professor and Chair, Department of Physics
Doug Macdonald, Senior Lecturer, Centre for Environment
Virginia Maclaren, Professor and Chair, Department of Geography
Jennifer Murphy, Professor, Department of Chemistry
Dick Peltier, Professor Department of Physics and Director, Centre for Global Change Science
David Powell, Undergraduate Student Advisor and Work Placement Coordinator, Centre for Environment
Scott Prudham, Professor, Department of Geography and Centre for Environment
Russ Pysklywec, Professor and Chair, Department of Geology
Rowan Sage, Professor and Acting Chair, Department of Ecology and Evolutionary Biology
Beth Savan, Senior Lecturer Centre for Environment and Director, Office of Sustainability
Ron Wilson, Interim Director, Human Biology Program
John Zilcosky, Chair, Department of Germanic Languages and Literatures
Summary of recommendations

**Recommendation 1:** Establish two program committees to develop full proposals for new programs in Earth System Science and Environmental Science (or for one program that combines both) and modifications for the Environmental Studies Program. In consultation with participating academic units, the proposals should be developed by the end of the 2011-12 academic year with the aim of seeking required approvals and offering the programs by 2013-14. Some degree of overlap in the committee membership will be needed.

**Recommendation 2:** The Faculty should establish a new School as an EDU:B. The mission of the School should reflect the general principals characterized above. The proposal should be brought forward from the Dean’s Office for governance approval in spring 2012 effective July 1, 2012.

**Recommendation 3:** Pending approval of a new School, the Dean should strike an advisory committee to recommend a Director. The Director’s mandate should encompass developing the mission of the new School to encompass the principles outlined above and alignment of activities to support environment undergraduate and graduate programs and research.

**Recommendation 4:** Establish a standing Environment Undergraduate Curriculum Committee with the responsibility and authority to review courses and curriculum for environment-related programs offered across the Faculty of Arts & Science.

**Recommendation 5:** In coordination with academic units, the Dean’s Office should develop a mechanism to acknowledge academic units that contribute teaching resources to the shared environment programs.

**Recommendation 6:** Establish a program committee to develop proposal(s) for new graduate programs in environment.

**Recommendation 7:** A committee should be struck by the Dean’s Office to assess the space needs for the School.

**Recommendation 8:** The Director of the new School should review the existing budget with the Dean’s office to ensure the fit with the unit’s mission, activities and commitments.