

January 31, 2008

To: Dr. Suzanne Ortega, Vice Provost and Dean, the Graduate School

From: Clare Ryan, Faculty Director, Environmental Management Certificate Program

Environmental Management Certificate Steering Committee (B. Beyers, J. Cooper, A. Cullen, R. Gammon, K. Laverty, T. Leschine, C. Thomas, L. Jantarasami, D. Morgan, E. Levitt)

Cc: Dr. Thomas Gething, Associate Dean, the Graduate School
Council of Environmental Deans (A. Nowell, S. Archibald, B. Bare, A. Cauce, D. Friedman, M. O'Donnell, P. Wahl)
Julia Parrish, Director, Program on the Environment
EM Certificate Students
EM Program Review Committee (S. Bolton, D. Inouye, T. Nyerges)
PoE Advisory Board
Victor Yagi, Graduate Program Coordinator, PoE
David Canfield-Budde, Academic Program Specialist, the Graduate School

Dear Dr. Ortega,

The Environmental Management (EM) Steering Committee and I would like to thank the members of the EM Certificate Program Review Committee (Susan M. Bolton, Professor, College of Forest Resources, University of Washington; David W. Inouye, Professor, Department of Biology, University of Maryland; and Timothy Nyerges, Professor, Department of Geography, University of Washington) for their thorough review of the EM Certificate program. We appreciate their identification of the strengths, challenges and opportunities for the program, and the many useful suggestions they provide in their report.

The EM Steering Committee concurs with and wholeheartedly endorses the Review Committee's recommendation that the EM Certificate Program continue.

There are several items in the report that we would like to comment on, as well as provide an update on how we are addressing key issues raised in the review report.

EM Certificate Program Purpose

The purpose and goal of the EM Certificate requires clarification. The EM Certificate has always focused on management and implementation, based on an understanding of

established science. The Review Committee report states that a weakness of the program is that policy-oriented students may not be getting sufficient exposure to natural science materials. We believe this misconstrues the purpose of the program. The program provides a certificate in environmental *management*, not environmental science. The program strongly emphasizes practical application of scientific knowledge in coursework and projects, and is based on knowledge gained through a student's primary course of study and its application via the interdisciplinary Keystone project teams. The application of engineering, business, policy and management aspects to decision making is unique to EM.

EM Certificate Home – Program on the Environment is Appropriate

The review report raised the question of whether a departmental home for the EM Certificate was appropriate, and whether the EM program might fit into a College of the Environment, should one be created at the UW. In addition, some interest was expressed by Dean Archibald of the Evans School in providing a home for EM.

Given the diverse and dispersed unit representation of EM expertise required for the success of the EM Program, the EM Working Group (1999) determined that housing the program in a specific school or college was not optimal. Therefore, PoE, with its interdisciplinary structure, was determined to be the most appropriate home for the Certificate Program.

Because the EM program is fundamentally interdisciplinary, the vision and infrastructure currently provided by the PoE and potentially provided by a College of the Environment should be maintained, no matter the ultimate home. Noting the high degree of uncertainty surrounding a future College of the Environment, ***the EM Steering Committee recommends that the EM Certificate remain in PoE until this uncertainty is resolved.*** The EM Certificate is one of the most notable environmentally themed interdisciplinary graduate education programs at the UW, and is arguably the one with greatest breadth. It serves as one of the primary ways for PoE and the UW to fulfill its graduate education mission and responsibilities. This important interdisciplinary mix and broad inclusiveness might be reduced if the program were housed in one or more schools or departments.

We are pursuing development of more formal relationships (regarding access to and delivery of core courses, visibility of the certificate program, and closer alignment with existing degree programs) with units such as the Evans School and the Business School. We anticipate establishing specific mechanisms through which these and other units can more formally affiliate themselves with the EM Certificate. This shared ownership will solidify investment in and heighten the institutional profile of the certificate, as well as identify potential departmental “champions” for the program.

Core Courses and Keystone

The review report raised the issue that some students have enrolled in the capstone (now called the Keystone Project) before all core courses had been completed. This has happened only since the Luce funding enabled the more extensive projects to be

developed and implemented. We agree that the capstone experience should occur after most, if not all, of the core coursework has been completed, and have addressed this in our proposed future structure. In that structure, students will be required to complete at least a subset of (but preferably all) core courses before enrolling in the Keystone, and take the remainder concurrently with the project.

Governance and Relationship to PoE

We agree that there is a need to more clearly define the relationship between PoE and EM. PoE is the intellectual and administrative home for EM, and in collaboration with the EM Steering Committee, PoE is responsible for ensuring that the academic and experiential components of the program are delivered to EM students. In compliance with The Graduate School Guidelines for Certificate Programs, PoE has appointed faculty from diverse disciplines to a Steering Committee that guides the intellectual direction of EM and meets regularly to discuss matters of program design and implementation. Initially, PoE had a Governing Board that was directly involved in both policy (e.g., approving EM bylaws) and making funding decisions. That Governing Board evolved into an Advisory Board and is no longer a decision-making body for PoE's undergraduate or graduate programs. However, because of its broad representation from across campuses and disciplines, the Advisory Board should serve as a valuable sounding board for EM ideas and should adopt a more active role concerning discussions related to EM Program direction and funding. EM Director Clare Ryan made a presentation to the PoE Advisory Board on Jan. 9, 2008 and strongly suggested that the PoE Advisory Board become more active in this area.

The PoE Director, a UW faculty member appointed on a rotating basis of 2-3 years, has responsibility for financial allocations from PoE's state budget. PoE received a "lump sum" in its budget when it was established in 1998 and this sum has been expended at the discretion of the Director(s) and the Governing Board, during its existence, to allocate funding to support PoE's responsibilities at both the undergraduate and graduate levels. A specific yearly allocation to support EM has not existed, and the level of financial commitment has varied based on need. Because the EM Certificate is highly interdisciplinary and PoE has no faculty of its own, there have been variations in the support provided for the core courses, for example, based on agreements between PoE Director(s) and faculty teaching the core course and his/her director, chair or dean. Funding for the full-time Graduate Program Coordinator has been split 50:50 between PoE and The Graduate School since 2000.

In order to provide some degree of certainty regarding future program planning, and to ensure delivery of the key components of the EM Certificate, the ***EM Steering Committee recommends that PoE allocate an annual amount of funding to be dedicated for EM from the PoE budget.*** Should a College of the Environment be created at UW, we see this as an additional opportunity to formally institutionalize a stable funding base dedicated to the EM Certificate Program.

Visibility of EM Certificate, Recruitment and Diversity

Recruitment and visibility of the EM Certificate can definitely be improved, and the EM Director is working with the PoE Director to clarify the roles and responsibilities of the Graduate Program Coordinator (GPC). The GPC plays an active role in all PoE graduate program initiatives, supports the Program's commitment to diversity, and develops and maintains relationships with graduate student groups, departments, and programs on campus. More aggressive recruitment and diversity strategies will be designed in collaboration with the PoE and EM Directors and the EM Steering Committee. Strategies will include but not be limited to: a) increasing connections with graduate programs across campus and actively introducing EM to potential students in departmental orientations; b) promoting EM to faculty and ensuring they understand the opportunities available to their students in such a program; c) increasing participation in graduate student interest groups, d) increasing awareness of local organizations (all sectors) about EM Program and graduates. As the EM Certificate Program continues to grow, so does its alumni base. The development of an alumni tracking system is underway, as are plans to encourage and support active involvement of alumni in the Program.

Given that the EM Program recruits from degree programs where graduate students have already been admitted, diversity is limited by the pool of students already admitted to the UW. We agree that the Director and EM faculty should actively encourage their home departments and schools to strive for diversity during the recruitment process. The UW has a number of fellowships available to support students from underrepresented groups, but these are limited to departments. If these and other fellowships were available to certificate programs such as EM, this would be an effective way to recruit underrepresented students into the program.

Proposed Content and Structure of EM Certificate

As a result of the EM Steering Committee's strategic planning meetings over the last several months, as well as insights from the program review, we are planning modifications to provide more flexibility in core course sequencing and selection, as well as the duration of the Keystone project. We note that our current baseline of three specific core courses and the requirement of a full year of participation in the Keystone project is not always a good match with graduate programs throughout the engaged disciplines. For example, some students have found commitment to a year-long project challenging to fit within department requirements, and at times have included in their coursework courses outside of the EM core that meet key EM pedagogical goals. Students in several units who are very dedicated to the integration of an interdisciplinary experience have participated, but at times at a substantial overload. Thus, we propose to increase the EM program flexibility in this respect by offering students a choice of at least two courses for each of the three core focus domains, and 2 quarters of participation in the Keystone project (at 4 credits per quarter).

Our proposed EM Certificate curriculum is depicted in the table below. Within each domain, the current EM core courses have been designated as highly recommended, but additional course choices are identified. Preferably all (but at least a subset) of the

core courses should be completed before enrolling in the Keystone, with the remainder completed concurrently with the project. The Keystone Project will be 2 quarters instead of one year long. One elective course will still be required (at 3-5 credits), with the only restriction being that the elective be from a unit outside of the student's own home department and relevant to environmental management.

Domain	EM Certificate Coursework
Policy	<p>* PBAF 590/ENVIR 501/CFR 592: Environmental Policy Processes (3 cr)</p> <p>PBAF 575: Public Policy Processes (5 cr)</p> <p>CFR 571/PBAF 592: Natural Resource Policy and Administration (5 cr)</p>
Business	<p>*ENVIR 502: Business Strategy and Environment (4 cr)</p> <p>SBUS 530: Sustainable Business Practice (4 cr)</p>
Science Application	<p>*ENVIR 503/ PBAF597: Role of Science in Environmental Decisions (3 cr)</p> <p>ME415/ CEE495/ ENVIR415: Sustainability and Design for Environment (3 cr)</p>

*Highly recommended course to fulfill core requirement

Keystone project:

- The Keystone Project will be 2 quarters (8 cr total), offered Winter and Spring Quarters.
- External organizations proposing projects must contribute financially to cover Keystone project costs (primarily faculty mentors, but also modest project expenses).
- If the EM Program is unable to pay for a faculty mentor for Keystone projects, we recommend a model where faculty "capstone instructor(s)" are identified and paid (using EM funds) to facilitate student teams on different projects for the 2 quarters.

Elective course: One elective course is required (3-5 cr). The elective course requirement is open, with the expectation that it be related to environmental management, and that the course be selected from a unit *outside* of the student's own unit. The GPC is currently assembling a list of courses that have been used to fulfill the elective requirement.

Total credits required for EM Certificate: 21

This proposed content and structure for the EM Certificate is intended to retain the current pedagogical elements of the interdisciplinary Keystone model and the EM program. A critical element of the success of the Keystone projects (and ultimately the program) has been the participation of external organizations in posing and executing Keystone project topics. The Luce funding enabled the evolution of the Keystone project into a highly successful and valued component of the EM program. To leverage this success, future Keystone Projects will seek financial contributions from external partners. This request has been made in our most recent request for Keystone Project proposals for the 2008-2009 academic year, with the intent of using outside contributions to support faculty participation as Keystone project mentors. Additional funds could be used to support a Keystone teaching assistant, preferably a student who has completed the EM program and will support all projects in a way that facilitates

interactions between projects (including project management, shared analysis methods). This approach is consistent with several of the recommendations made in the review report.

Note that in light of this proposal, we are continuing discussions of structure, including a requirement that students take a minimum number of starred* courses as a way to build cohort and have more control over curricular content that they get. We anticipate that students will be encouraged to take the *courses, and that decisions to stray from the core should benefit from discussions with EM administrators and faculty.

Concluding Remarks

The EM Certificate Program is a powerful example of the UW's commitment and ability to train the environmental leaders and managers of tomorrow. The EM Steering Committee and I appreciate the timely insights provided by the Program Review Committee, and we are working to address many of the issues and recommendations in the review report. Our discussions have focused on development of proposed program changes that we feel are critical to maintaining and enhancing the success of the EM Certificate program, while continuing to provide rich interdisciplinary experiences and training for graduate students.