

13 December 2007

Suzanne T. Ortega
Dean and Vice Provost
University of Washington

Thomas W. Gething
Associate Dean
University of Washington

Dear Drs. Ortega and Gething:

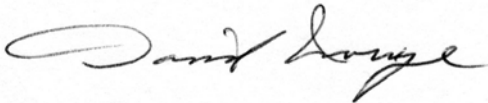
We write as the Environmental Management Review Committee that you have charged in your letter of 19 October 2007 with the task of reviewing the Environmental Management Graduate Certificate Program. To accomplish this review we had an initial meeting on 18 October (Dr. Inouye participated by telephone), conducted a site visit on 1-2 November to talk with administrators, faculty, students, and staff (see attached schedule), communicated with Program alumni after the site visit, and subsequently wrote this report. We presented our preliminary recommendations about the Program during an exit interview on 2 November, and include a more substantial analysis in this written report.

Thank you for the opportunity to learn about the EM Certificate Program. We hope that you and the Program will find our report useful in planning its future.

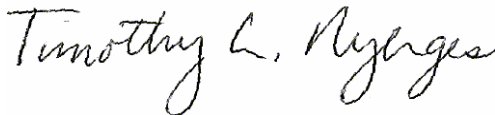
Sincerely,



Dr. Susan M. Bolton, Professor
College of Forest Resources
University of Washington



Dr. David W. Inouye, Professor
Department of Biology
University of Maryland



Dr. Timothy L. Nyerges, Professor
Department of Geography
University of Washington

University of Washington
Environmental Management Certificate Program Review

Submitted to
Graduate School
University of Washington

By

Environmental Management Graduate Certificate Review Committee

Susan M. Bolton, Professor, College of Forest Resources, University of Washington

David W. Inouye, Professor, Department of Biology, University of Maryland

Timothy L. Nyerges, Professor, Department of Geography, University of Washington

13 December 2007

Executive Summary

The Environmental Management (EM) graduate certificate program is at a crossroads, with significant uncertainties in its future because of recent and forthcoming changes in the Program on the Environment (PoE), a possible future College of the Environment, and the end of the three-year award from the Luce Foundation. The recent appointments of new Directors for both the EM Program and PoE, and of a new Steering Committee for the PoE, also create some uncertainties and opportunities.

Many faculty, staff, and students are contributing to the success of the EM Program, but there are many who could still add to its success. Too little planning, with a large amount of external funding for a short time, and with little evaluative feedback, is allowing the Program to flounder a bit.

- The “steady as she goes approach” of the Steering Committee has not yet come to grips with the realization that some significant problems are coming for the Program if not addressed soon.
- The success with raising external funds from the Luce Foundation has contributed to a lack of awareness (perhaps complacency) about how keystone projects are the most visible success, but because of the change from a one-quarter capstone to the three-quarter keystone course students’ abilities to enroll in and complete core courses has been negatively affected. Faculty, staff, and students alike are unaware of this issue as it is only beginning to surface.

In the current configuration of the 3-quarter keystone course, some students are taking the capstone course prior to the core courses or even just taking the capstone and foregoing the certificate. Assuming the core courses are indeed a core, students’ contributions to and benefits from the keystone project would be greater if they took the core courses prior to the project.

Communication confusion about the governance and funding of the PoE and EM Program is in part due to the number of administrative reporting changes that have taken place recently. Nonetheless, it is critically important to clarify the relationships between PoE and EM programs in regards to missions, governance, and budgeting. Without this clarification, all of the programs (including perhaps other certificate programs) are likely to experience some level of ineffectiveness, perhaps increasingly so the longer these issues remain unclear.

Given the positive responses from faculty, staff, students, and alumni and the continued growth in opportunities for making a difference in Environmental Management education on campus, the review committee concludes that EM Certificate Program should definitely continue. In what form it continues is of course dependent on how the PoE and EM Directors, plus their respective Advisory Board and Steering Committee, synthesize a future direction based upon a fiscally achievable and sustainable level of funding. Much opportunity and work exists to steer the EM Certificate Program on a course that makes sense.

1. Introduction

At the University of Washington, new graduate certificate programs are normally reviewed by the Graduate School after five years of operation. The Environmental Management Graduate Certificate Program (hereafter EM Program) is being reviewed after six years of operation because it was most appropriate given several circumstances discussed below.

The Dean of the Graduate School charged a review committee to examine the self-study document, talk with faculty, staff, students, and alumni as appropriate if not available for a site visit, participate in a site visit, and then address four principal questions as follows, with the committee's inclusion of the parentheticals.

Are they (faculty/staff/students) doing what they should be doing?

Are they (faculty/staff/students) doing it well?

How can they (faculty/staff/students) do things better?

How should the University (administrators) assist them?

The EM certificate program is at a crossroads, with significant uncertainties in its future because of recent and forthcoming changes in the Program on the Environment (PoE), a possible future College of the Environment, and the end of the three-year award from the Luce Foundation. The recent appointments of new Directors for both the EM Program and PoE, and of a new Advisory Board for the PoE, also create some uncertainties and opportunities.

The review committee's program evaluation was made more challenging by the unsettled overall context for the EM Program, but nonetheless the committee was able to identify clearly program strengths, weaknesses, opportunities, and threats for success. From a synthesis of those insights, we suggest five potential future directions for the program, called scenarios, and indicate what we see as some of the advantages and disadvantages that each of them may present. As the larger context for the EM Program becomes more settled, the EM Director and Steering Committee together with the PoE Director should consider which of these scenarios, or perhaps another one, to pursue. It is not up to the review committee to tell EM and PoE which one to pursue. Only with some hard thinking on the part of the EM and PoE Program Directors as well as their respective Steering Committees will the path become clear. We believe there are tremendous opportunities for forming a world-class environmental management certificate program because of the world-wide heightened demand for sustainable development. In concluding this report, we provide recommendations to all who would use this report for helping to further the success of the EM Program.

2. EM Certificate Program Evaluation

The evaluation process consisted of assembling a large volume of documentation consisting of the original proposal for the program, the self-study document containing a report of past activities and potentials, a number of different operating documents, and feedback provided through interviews and email from faculty, staff, students, and alumni of the EM

Program. The interviews were conducted as part of a site visit by the review committee on November 1 and 2, 2007. See Appendix A for the site visit agenda.

Below we highlight our observations of the strengths, weaknesses, opportunities, and threats for the EM Program that represent the core of our evaluation.

Strengths of the EM Program

In general, all faculty, staff and students with whom we met felt the EM Certificate Program delivers a good (and in many instances excellent) interdisciplinary learning experience for students through a combination of core courses, electives, and applied research project. The information we obtained about the program suggests that it is generally meeting the needs of those enrolled, and particularly meeting the needs of those who graduate. We received e-mail responses from 12 program alumni (see Appendix C), and they were uniformly positive about their experiences, which most of them felt had helped them to find employment.

Faculty members on the EM Steering Committee hail from a wide variety of disciplines across the UW campus and the Bothell campus. They provide an overall broad-based perspective for the EM curriculum and student admissions that strengthens the interdisciplinary mission of the EM Program. Faculty and staff recognize that there are various models for delivering a curriculum, each model perhaps being associated with a different level of funding support for faculty and students to participate in the keystone course.

The current program curriculum consists of a set of three core courses taught in a sequence, a choice of electives, and a 3-quarter keystone course project. Two of the core courses – Role of Scientific Information in Environmental Decisions, and Environmental Policy Processes, have significant institutional teaching support as they are part of a regular faculty load, and are therefore regularly offered by dedicated faculty. The third core course, Business Strategy and the Environment, requires significant funding to obtain faculty to teach it, as does the keystone project. The faculty members we met with were strong supporters of the overall program including both the core course sequence component as well as the keystone component. The current 3-quarter keystone course is particularly strong and has engendered significant student enthusiasm.

Based on the student evaluations and the discussions with students, the previous capstone (1-quarter) and current keystone (3-quarter) courses (and associated project) are highly regarded as worthwhile learning experiences. The keystone project work has provided hands-on, practical and intellectual opportunities and challenges for students, allowing them to experience diverse perspectives and meet with organizations in the community that are undertaking environmental work. The students really like the keystone experience as a longer in-depth immersive experience into project activity, in preference to a one-quarter capstone experience (although the current students have not taken a one-quarter version). They all surmise that one quarter would not be long enough to get projects done if they remain the same size and complexity. Feedback from alumni about an earlier version of the capstone course was similarly enthusiastic (see Appendix C).

The resources currently available are sufficient to operate the program in its current form for the rest of this year and part of next year (using a no-cost extension of grant funds). Feedback from the external client community on the keystone deliverables indicates a very high level of satisfaction with student performance. Faculty thought that the development of good relationships with external clients was a very beneficial outcome for the University of Washington as a whole.

The University of Washington Graduate Program has supported the EM Program through the PoE to provide graduate students with an interdisciplinary educational experience that is unique and therefore unavailable in any other single unit. The Graduate Program can continue to provide perspective and leadership ideas even though PoE has now administratively moved to the Council of Environmental Deans. These program reviews are one way to do that, and should definitely continue for all certificate programs.

Weaknesses of the EM Program/Challenges Facing the EM Program

In general, communication among people important to the program needs significant improvement. There is not a consistent story about the program from the different people we interviewed. We heard many inconsistencies about Program status, management, and operations over the two-day site visit. Much of the current faculty enthusiasm seems to be based on the funding that supports their involvement and there were indications that participation would drop significantly without extra funding for participation, especially the 3-quarter keystone course sequence, but also the business core course. Some faculty would continue to participate if the 3-quarter keystone project were directly tied to their research area of interest or would provide a publishable result. At least two key faculty members are currently on sabbatical and we did not get to meet in person with them, although one participated via a conference call. Two faculty members with whom we were scheduled to meet did not attend, nor bother to reschedule their meetings.

Most faculty and students see the core courses as responding to the needs of most students. However, one faculty member observes, and some members of the review committee observe, that policy-oriented courses do not necessarily reflect the breadth of the certificate title 'Environmental Management'. Almost half of all students have been from Public or Marine Affairs, policy focused programs. Given the benefits cited in the alumni responses to interdisciplinary team work, efforts should be made to increase the number of students from other colleges and disciplines especially natural sciences in order to capture the 'environment'.

Students from policy-oriented programs might not be getting sufficient exposure to natural science materials to make their participation as broad a learning experience as could be. Opening the electives to more natural science courses might work, but then several faculty members commented that the pre-requisites are often a barrier for students with a policy background only. Opening the elective to more social science courses might also work. At the current time, the Graduate Program Coordinator, with input from the EM Steering Committee,

makes this call on allowable electives. Student interviewees called for more clarity in the criteria for what makes an appropriate elective.

In line with the above communication issues, it is almost inevitable in a young interdisciplinary program with many changes in administration that program operations have been uncoordinated and poorly documented. Many changes in various positions, including the change-over in POE Director, EM Program Director and Graduate Program Coordinator have contributed to this problem of documentation. This has made the review somewhat challenging. There is no clear “long-term” champion for the EM program or if there is, it was not apparent to us during the site visit. The current EM Program Director did not volunteer for the position and had to be coaxed to accept it. The Steering Committee appears to think the program is running just fine and needs no on-going strategic planning or visioning. This is based on a small sample as only 5 of 12 listed members came to the site visit and one of them admitted to having not been active lately due to schedule conflicts with the regular meetings.

The EM Program (and associated certificate) is invisible across much of campus and seems to be broadly advertised only in the Evans School and Mechanical Engineering. The efforts by the program coordinator to advertise the program do not seem to have had a high rate of success in other departments. Some graduate students indicated that the fact they did not learn about the EM program until after they had already been in their home program for a quarter or longer made it difficult for them to fit the certificate requirements into their course schedules.

The duties of the EM Graduate Program Coordinator (GPC) need to be clarified and possibly re-examined. A masters-level staff person might not be the appropriate lead person for contacting major funding agencies for funding or large organizations for projects. Scoping of projects might be best handled by faculty or a faculty-level person, especially in a potential shorter keystone/capstone experience with post-Luce funding.

As currently operating, based on discussions with students, the program is not following the graduate certificate guidelines posted on the Graduate School’s Website of having a sequence of core classes followed by a capstone project. A significant number of students are working on keystone projects without having taken any or many of the core classes. This raises the question of whether the core courses are necessary for a successful keystone/capstone project. At least one student was clear about just taking the keystone course and opting out of the three core courses and the certificate. It is good that the student has recognized the value of the keystone experience but this points up a detrimental effect that a significant influx of funds (Luce Grant) has had on the overall program pedagogy, even if one considers how much better the keystone course learning experience might be than a one-quarter capstone.

Raising funds to cover the capstone/keystone project courses is seen by some as a collaborative effort, but this view is not shared among those involved in EM governance. No “committed source” of funds has been identified as yet to sustain any portion of the keystone projects. With the EM director being recently appointed, and the just over one-year appointment of the GPC, there has not yet been time to identify how funds will make the project-oriented course(s) more financially sustainable in the future. Thus, it appears that the two-year term for an EM director is hindering the longer-term perspective for success.

Placement of PoE and the EM Program under the administration of the Council of Environmental Deans (Council), and its impending physical relocation to south campus, has (not surprisingly) been misinterpreted by many faculty/staff/students as a PoE/EM movement into the administration of the College of Ocean and Fishery Sciences. The review committee concludes that the misinterpretation is in part due to the fact that the current chair of the Council is Dean Arthur Nowell. Some steering committee members made reference to the “remote location” of the PoE/EM when it physically relocates to College of Ocean and Fishery Sciences space. Some PoE staff commented that PoE is the appropriate unit within which EM should be located. One person we interviewed thought that PoE was not the appropriate unit for EM, but no reason was given for this. Nonetheless, the recent change in administrative reporting lines appears to contribute to indecision about the status of the program and the lack of planning.

Opportunities for Further Success of the EM Program

The review committee has identified several opportunities for improvements in the EM Program, among which are reconfigured opportunities related to core course offerings and capstone/keystone courses.

There was some discussion about the advantages of streamlining the EM Steering Committee, to take advantage of the larger and newly appointed PoE Advisory Board and draw closer ties between the PoE Advisory Board and the EM Steering Committee.

It appears that the EM Director and the EM Steering Committee are interested in forming a planning subcommittee from among the members of the steering committee. However, since many faculty members see the College of the Environment as the right place for the EM Program, they are waiting to see what plays out. Waiting until all administrative and organizational dust has settled for the College of the Environment will take too long. A planning subcommittee of the EM Steering Committee would help articulate a strategic plan for EM, assessing and detailing the five scenarios that are articulated in the Section 3 of this report (or other scenarios). Strategic planning should be part of the overall input to what is possible for an EM Certificate. The EM Steering Committee and the EM and PoE Directors are willing to consider different models for delivery curriculum to students, and thus recognize a discussion about what level of curriculum delivery is appropriate for the resources available, and vice versa.

Another opportunity in line with a strategic plan is that more could be done to link EM with other programs across campus to minimize duplication of effort. Several people commented that there is a different “business climate” in the world today than there was ten years ago in regards to environmental awareness. This new climate may help to foster new ties with the School of Business on the Seattle Campus and bring closer ties with the Bothell Business Program. Early November 2007 events such as the Mayoral Climate Change Summit clearly show an interest on the part of small, medium and big business to engage in the business of the environment.

Both the Evans School and College of Architecture and Urban Planning have capstone-like programs that could deal with environmental issues. There may also be others, but these are

the two that the committee heard about during the site visit. There are already instances of students not in the certificate program being added to keystone projects, which suggests there are opportunities to broaden recruitment to the Program. Looking at ways to collaborate in the search for external clients and provide more interdisciplinary teams to work on these projects seems like a win-win proposition.

Dean Archibald of the Evans School welcomes discussions about relocating the EM Program to the Evans School if in the future PoE is no longer interested in or capable of housing it. Two of the three core courses are commonly taught by Evans School faculty, and the third course could be contracted for – perhaps even by affiliate faculty outside the UW if the cost of the core course is no longer affordable at the current rate.

Faculty members are willing to be instructors for the capstone/keystone projects if they receive remuneration. However, if the Steering Committee and/or EM Director can identify projects with direct connections to faculty research then these faculty members are more likely to be willing to be instructors for capstone courses, perhaps even without remuneration.

Another opportunity that does not seem to have been actively pursued, but for which there is some EM experience, is to find internal projects at the UW that could serve as the keystone/capstone projects. These would undoubtedly be a win-win for the University.

To date, unlike the projects in the Evans School and the College of Architecture and Urban Planning, the EM program capstone/keystone clients have not been asked to provide funds to enable the projects. This is a direction the EM Director would like to pursue and the Review Committee concurs.

With the College of Environment still in the planning stages, there is clear opportunity to ask important questions about how the EM Program addresses the spirit and mission of the College. With the planning activity for the proposed graduate program in Conservation of Living Systems now underway, there is opportunity for considering how an EM Program relates to that future graduate program. The EM Steering Committee is rather broad-based, and can provide important insights about the link between the EM Program and the Conservation of Living Systems graduate program.

Threats as Barriers to Success of the EM Program

Large institutional uncertainties currently pose barriers to program development. The unknown form, status and role of the proposed College of the Environment tend to make many faculty and staff want to take a wait and see position as any effort and planning could end up being for naught depending on College of the Environment (CoE) developments. The role of Director of PoE seems to have a strong effect on the EM Program. Historically, the PoE directors have been highly supportive of the EM Program but the current Director is not as supportive, probably in large part because of financial constraints and/or being new to the PoE Director position and being forced to grapple with major financial concerns in the near term.

Strong feelings exist among members of the EM Steering Committee that the appropriate place for PoE and EM is within a neutral interdisciplinary administration, which is why the Graduate School was chosen. Several people pointed to the demise of Institute for Environmental Studies (IES) and its focus within a disciplinary unit, although of course there were certainly other extenuating circumstances that contributed to the discontinuation of IES. Thus the recent move of the EM Program to oversight by the Council of Environmental Deans raised some concern.

The review committee heard many times that under the current curriculum offering, faculty would not be interested in keystone project mentoring unless they received extra compensation as summer salary, or monies for buyout of course time in another quarter. Of course this approach to course offering is not the only approach, as being more creative with internal teaching line offerings is also possible. This latter approach would require more advanced coordination among faculty and courses, and is not easy.

With the advent of the keystone projects, several students within the program at the current time told the review committee that the core courses are not taken as prerequisites to the keystone project. Sometimes the courses would be taken after the keystone project, because the keystone is a three-quarter experience. Students do not have the time to take core courses and keystone project courses simultaneously, and if they only learn about the EM Program after enrolling in a graduate program they typically don't start the core courses right away.

As mentioned in the section on weaknesses, there is communication confusion about the governance and funding of PoE and EM programs. Although the confusion is likely due to the number of administrative changes that have taken place recently, it is nonetheless critically important to clarify the relationships between PoE (undergrad) and EM (grad) and other programs, particularly the other certificate programs, in regards to missions, governance, and budgeting. Without this clarification, all of the programs are likely to experience some level of ineffectiveness, perhaps increasingly so the longer these issues remain unclear. Representatives from the Graduate School can meet with representatives from the Council of Environmental Deans to discuss past and future expectations with members of the PoE Advisory Board and the EM Steering Committee.

3. Scenario Options – Moving Forward

As described above, moving forward with the EM Program will require considerable thinking and planning on the part of the EM Steering Committee, EM Director and the PoE Director, with additional consideration by the PoE Advisory Board. To help with that thinking and planning, the review committee offers five scenarios ranging from the ideal and current scenario (unrealistic without significant external funding), through a “raise the bar higher” scenario to take advantage of the keystone level of learning but on a more realistic budgeting level in scenario 2, to an original level of success in scenario 3 (based on the capstone course), all the way to a leaner, reduced learning experience in scenario 4. To that continuum of a graduate certificate program, we add a fifth scenario related to graduate program integration

considering the development of the College of the Environment. Perhaps over time, a scenario might be phased in or out depending on a choice made by governing bodies.

Scenario 1: The current model

Curriculum content: three core courses and a three-quarter keystone course, plus elective credits.

Advantages: This model continues the successful keystone course, the diversity of core courses, student fellowships to increase time commitments to the keystone projects, and high level of faculty involvement as mentors. This scenario offers development of significant new skill sets that are unlikely to be provided by disciplinary training.

Disadvantages: This model requires significant, perhaps unrealistic, fundraising in order to maintain the student fellowships and significant level of faculty mentoring. It also requires significant staff time for activities such as soliciting keystone projects, and may require an unrealistic level of commitment from the students (a level of effort that comes close to a thesis M.S. degree). Not all students can commit the time required to complete the certificate under this model, which leads in part to the problem of students taking the keystone without the core courses.

Scenario 2: A moderately reduced curriculum (and budget)

Curriculum content: three core courses and a two-quarter keystone course, plus elective credits.

Advantages: This model is much less dependent on external funding because of the reduced faculty commitment to the keystone course, and dropping fellowship funding for students. There would still be development of significant new skill sets that are unlikely to be provided by disciplinary training. Staff time could be reduced because of the smaller scope of keystone projects.

Disadvantages: The reduced keystone experience has less flexibility (e.g., allows less time for project scoping), although it would retain the most significant aspects of the experience for the students (working on applied, interdisciplinary projects). This model might require additional work by faculty to help reduce scoping efforts before the beginning of the class projects. It could prove less attractive to students (compared to the current model) if there are no fellowship funds.

Scenario 3: The original EM model (and budget)

Curriculum content: three core courses and a one-quarter capstone course, plus elective credits. One possibility would be to re-orient the capstone course to a focus on project cycle management, using real-world examples for class projects.

Advantages: This model is much less dependent on external funding because of the reduced faculty commitment to a capstone (vs. keystone) course, and dropping fellowship funding for students. Staff time could be reduced significantly. This is a proven model as it represents the original EM program.

Disadvantages: The capstone course would provide significantly less experience to students in interdisciplinary group projects, and potentially a reduced skill set for such work. It could prove less attractive to students (compared to Scenario 1) if there are no fellowship funds.

Scenario 4: A reduced and leaner EM model (internal budget)

Curriculum content: three core courses and a one-quarter capstone course, plus elective credits. The capstone course would not have TA support from internal funds, but would rely on external funds from partner clients.

Advantages: This model is the least dependent on internal funding if the graduate school and PoE decide to reduce funding levels. Coordinating staff would be reduced, and this experience would be transferred to students.

Disadvantages: The capstone experience would be on shaky ground because project coordination would fall to students. Lack of TA support increases faculty stress to make sure project milestones are being met for the client.

Scenario 5: Environment Graduate Program

With the development of the College of the Environment, and the proposed Conservation of Living Systems (CLS) graduate program, there appears to be an opportunity to consider whether the EM Program could become wholly integrated into the CLS program, or become an identifiable part of it.

Advantages: There appears to be a connection between a CLS effort and an EM effort. Making this connection explicit is clearly in the best interest of the Graduate School, and the University of Washington overall.

Disadvantages: Integrating an EM Program into a CLS Program might not give graduate students an opportunity to “minor” in Environmental Management, which is in some sense what a graduate certificate provides.

4. Recommendations

General

- 1) Add some off-campus members to the Steering Committee. They could provide a new perspective, serve as contact people for keystone/capstone projects, and help to spread the word about the EM Program among potential future students.
- 2) Consider the possibility of using EM program alumni who are still completing disciplinary degrees as teaching assistants for the keystone/capstone course.
- 3) The EM Program still lacks visibility on campus. Go to faculty meetings of relevant disciplinary programs to advertise the EM Program, and make sure that their graduate coordinators are aware of it, and advertise the potential for faculty to use EM students in appropriate research projects (e.g., if they teach a keystone/capstone course).
- 4) Encourage (require?) students to take the core courses prior to the keystone/capstone course. Although this has been a problem recently because many graduate students do not learn about the program until after their first year, if the program is better advertised it may become less of a problem.

5) The timeframe for the next review should be three years after the College of the Environment is in place (assuming 2009), and thus 2012.

6) The EM Director working with the PoE Director should clarify the relationships between PoE (undergrad) and EM (grad) and other programs, particularly the other certificate programs, in regards to missions, governance, and budgeting.

Faculty

1) The EM Steering Committee, Director of PoE, and Director of EM should meet as soon as possible with staff (PoE Associate Director and PoE/EM GPC) to clarify what level of funds they seek to mount a particular course delivery and who has responsibility for raising funds for the EM Program.

2) To improve the sustainability of the EM program the Steering Committee and Director must consider alternative scenarios such as the five provided in this report, and the details of those scenarios, or another suitable set of scenarios as detailed by the EM Steering Committee and Director.

3) A capstone task group should be formed to consider the advantages and disadvantages of different capstone/keystone models, plus the funding level and source of funds needed to support the different levels.

4) The Steering Committee should develop an inventory of faculty who are willing to support capstone/keystone project mentoring if the projects are aligned with topics described by those faculty.

5) EM Director and/or Steering Committee should develop a student mentoring strategy that includes diversifying the faculty perspectives provided to students, as per the request of students. Find a way to tap a variety of perspectives, perhaps through Steering Committee members being available to provide “cluster mentoring” on capstone/keystone projects if the budget for projects becomes significantly curtailed.

Certificate Program Operations

1) Expand efforts to contact alumni. They are an important source of feedback about the program, contact points for future keystone/capstone projects, potential mentors for current students, and targets for fundraising.

2) Encourage relevant disciplinary graduate programs to advertise the EM program as a recruiting tool for their own programs (and hence for the EM program).

3) Consider using EM students or graduates (while still completing disciplinary degrees) as staff members.

- 4) Students request that a master list of electives be made available to students, not as the final word for electives, but to give students an idea of what is available.
- 5) The EM Director and Steering Committee should re-examine the priority given to EM students when enrolling in core courses. Clarify how that priority is set.
- 6) The EM Director and Steering Committee should pay particular attention to how the course faculty for capstone/keystone projects should provide guide in project management, particularly with regard to scoping, where drift can occur easily.

Resources:

- 1) Directors and steering committee members should develop a plan for budgeting core courses and capstone/keystone courses from separate sources to lay out broad, but systematic opportunities for success in the post-Luce funding timeframe.
- 2) Graduate School and Council of Deans should clarify the administrative lines of communication and budget for PoE and the EM programs and the role of undergraduate vs. graduate program offerings in PoE.
- 3) PoE and EM Director should meet with the Dean of Business School to clarify what “real” connections exist for pursuing joint opportunities in the business of the environment, and perhaps how the Business School would provide core course teaching support for the EM Program. A new Business School course on Business Strategy and the Environment seems likely to be of interest to the students in this time when there is increasing emphasis placed on the environment by the public and business sector.

Appendix A. Site Visit Agenda

**UNIVERSITY OF WASHINGTON
The Graduate School
Environmental Management (EM)
Graduate Certificate Program Review
November 1-2, 2007**

Wednesday, October 31

6:15pm

**Review Committee working dinner
Café Campagne** (1600 Post Alley at Pine Street; 206-728-2233)

Thursday, November 1

Mary Gates Hall 258

8:30 – 9:00am	Clare Ryan , Environmental Management Program Director
9:00 – 10:00 a.m.	Julia Parrish , Director, Program on the Environment
10:00 – 10:30	Arthur Nowell , Dean, College of Ocean & Fishery Sciences
10:30 – 10:45	BREAK
10:45 – 11:15	Previous Environmental Management Directors Allison Cullen (by phone +41-44-633-4922) Kevin Lavery
11:15 – 11:45	Sandra Archibald , Dean, Evans School of Public Affairs
11:45 – 12:00	BREAK
12:00 – 1:30 (9 students, some will have to leave early and 1 will arrive late)	Lunch with certificate students Dan Morgan (ESS, 06-07 Keystone Project) Bert Loosmore (QERM, new EM student) Jill Harris (SMA, new EM student, 07-08 Keystone Project) Justin Boevers(SMA, 2007-2008 Keystone Project) Lesley Jantarasami (Evans/CFR, Luce Fellow, 2007-2008 Keystone Project) Joel Sisolak (UDP, Luce Fellow, 2007-2008 Keystone Project) Eli Levitt (Evans 2006-2007 Keystone Project) Nicole Palesch (2007-2008 Keystone Project) Kirk Rappe (UDP, new EM student)
1:30 – 1:45	BREAK
1:45 – 2:45	EM Steering Committee: William Beyers (Geography) Joyce Cooper (ME)

Richard Gammon (Ocean. Chem)
Craig Thomas (Evans)
Dan Morgan (ESS, PhD student)

2:45 – 3:15

Course Instructor/Keystone Mentor
Kevin Lavery (Business, Bothell)

3:15 – 3:45

Terry Rustan (PoE Associate Director)

3:45 – 4:00

BREAK

4:00 – 4:15

Meriwether Wilson (UDP Student)

4:15 – 4:30

Open

4:30 – 4:45

Victor Yagi (Graduate Program Coordinator)

5:00 – 5:30

Nancy Rottle (faculty, Landscape Arch)

7:00pm

Review Committee working dinner:
Nell's Restaurant (6804 Green Lake Way N, 206-524-4044)

Friday, November 2
Mary Gates Hall 258

8:30 – 9:00	Keystone Mentors 2007-2008
9:00 – 10:00	Clare Ryan , Environmental Management Program Director
10:00 – 12:30	Executive Session (drafting review committee report) Lunch (boxed lunches catered to Mary Gates 258)
12:30 – 1:00	BREAK

Mary Gates Hall 206

1:00 – 2:00	Exit Interview (Mary Gates Hall 206) Suzanne Ortega, Dan, The Graduate School Thomas W. Gething, Associate Dean, The Graduate School Bruce Bare, Dean, College of Forest Resources Clare Ryan, Director, Environmental Management Graduate Certificate Program David Canfield-Budde, Academic Program Specialist, The Graduate School
2:00 – 3:00	Exit Interview (Mary Gates Hall 206) As above; no program representatives.

Appendix B. Other graduate certificate programs in environmental management

National Programs

University of Wisconsin-Madison

<http://www.sage.wisc.edu/pages/sustained.html>

George Mason University

<http://esp.gmu.edu/graduate/completion/certificate.html>

Niagara College

http://www.niagaracollege.ca/studying/programs/fulltime/ema_0234/

Columbia Southern University

http://www.columbiasouthern.edu/programs/gradcert_envmgt.asp

International programs

University of New South Wales

<http://www.ies.unsw.edu.au/future/gradCert.htm>

University of Queensland

http://www.uq.edu.au/study/program.html?acad_prog=5025

Griffith University

http://www17.griffith.edu.au/cis/p_cat/admission.asp?ProgCode=3005&type=overview

Flinders University

<http://www.flinders.edu.au/calendar/vol2/pg/GCEnvMgmt.htm>

Appendix C. EM Certificate Alumni Email Survey

2 November 2007

Dear Environmental Management Certificate Program alumni,

The Graduate School has appointed us as a committee to review the Environmental Management Graduate Certificate Program. We have read the self-study prepared by the EM program's Director and her staff, and spent two days interviewing administrators, faculty, and students on campus who are associated with the EM program. We were not able to meet with any alumni, and are writing you because we would greatly value your perspective as a graduate of the Program. We have a deadline of about a month to turn in our written report to the Graduate School, so ask if you could please respond within the next 10 days so we can include your feedback in our report. We have listed some questions below, but would value any other comments you would like to make. We would be glad to keep your comments anonymous, or to provide attribution if you would like; please let us know your preference. Please respond to any one of the e-mail addresses below, or if you prefer, give one of us call.

Thank you for your time and assistance in the review process.

Dr. David W. Inouye, Director and Professor
Graduate program in Sustainable Development and Conservation Biology
University of Maryland
College Park, MD 20742-4415
301-405-6946
inouye@umd.edu

Dr. Timothy L. Nyerges, Professor
Department of Geography
University of Washington
Seattle, WA
206-543-5296
Nyerges@u.washington.edu

Dr. Susan M. Bolton, Professor
Forest Resources
University of Washington
Seattle, WA
206-685-7651
sbolton@u.washington.edu

- 1) What year did you receive the EM certificate?
- 2) What is your current employment?
- 3) Did the EM certificate add value to your graduate degree, and was that reflected in your search for employment?
- 4) What was the most useful component of the EM program in development of your skill set? Did you learn things that you wouldn't have learned from your graduate degree program?
- 5) What was the least useful component of the EM program for you?
- 6) Would you recommend that students headed toward your career path participate in the EM program?
- 7) Any other comments/feedback you'd like to provide?

Address list

aanderso@u.washington.edu; adebalog@u.washington.edu; abieber@u.washington.edu; ryb@u.washington.edu; gcasad@gmail.com; comkimstock@gmail.com; rwcook@gmail.com; hcurtiss@u.washington.edu; james_dack@yahoo.com; chris@wowbaking.com; cdolwick@u.washington.edu; janel.duffy@chelanpud.org; whe@u.washington.edu; dfarrell@speakeasy.net; fraser@u.washington.edu; eorcg@u.washington.edu; groves@rgs.edu; hardison@u.washington.edu; crhavard@hotmail.com; mherk@u.washington.edu; huangyue@u.washington.edu; h-kita@hy.depe.titech.ac.jp; julietaryn@yahoo.com; koppes@u.washington.edu; ikraucunas@nas.edu; kuharicm@u.washington.edu; gin1998@att.net; alinal@u.washington.edu; ilangel@u.washington.edu; pmarch@u.washington.edu; susano@u.washington.edu; ivonne@u.washington.edu; fatima.oswald@gmail.com; dianacpm@u.washington.edu; pagets@u.washington.edu; catherineborrowman@hotmail.com; sherriepeterson@kennedyJenks.com; kaiapeterson@fastmail.fm; porranee@u.washington.edu; jlrvet@u.washington.edu; Read, Tobias; pearlgrl@u.washington.edu; kellig@gmail.com; brusso@u.washington.edu; klryan@u.washington.edu; Gabriel.Scheer@flexcar.com; ascheerer@ci.kirkland.wa.us; pser461@ecy.wa.gov; qtshang@udel.edu; MARS461@ecy.wa.gov; piscatorviator@yahoo.com; cmszabo@u.washington.edu; debrataevs@lycos.com; tom@wawild.org; bnve@u.washington.edu; bvh@u.washington.edu; krish66@u.washington.edu; hwahto@hatchenergy.com; heidiw@u.washington.edu; wheelless@u.washington.edu; liila@u.washington.edu; raw52@u.washington.edu; aboxnamedalex@gmail.com

Alumni Response 1.

1) What year did you receive the EM certificate?

---I received the certificate in 2002.

2) What is your current employment?

---U.S. Forest Service/ Green MTN National Forest

3) Did the EM certificate add value to your graduate degree, and was that reflected in your search for employment?

---I think it added value. But, was probably overshadowed by my actual degrees.

4) What was the most useful component of the EM program in development of your skill set? Did you learn things that you wouldn't have learned from your graduate degree program?

---Definitely the final research project and seminar presentation. The field trip we took to Hanford was fun.

5) What was the least useful component of the EM program for you?

---Some of the courses were a little weak, but some were excellent.

6) Would you recommend that students headed toward your career path participate in the EM program?

---Yes

Alumni Response 2.

1) What year did you receive the EM certificate?

June 2007

2) What is your current employment?

Working on a contract basis for Solutions for Progress, a public policy consulting firm in Philadelphia, as a researcher/writer. Was hired for my environmental expertise.

3) Did the EM certificate add value to your graduate degree, and was that reflected in your search for employment?

Yes, the yearlong project with/for the organization outside of the university was reflected more so than the actual EM certificate. I was able to use it as work experience.

4) What was the most useful component of the EM program in development of your skill set? Did you learn things that you wouldn't have learned from your graduate degree program?

Definitely working on the yearlong project, especially because I was the fellow and was able to gain project and people management skills.

5) What was the least useful component of the EM program for you?

The additional course requirement (one that was left up to the student to choose) was unnecessary.

6) Would you recommend that students headed toward your career path participate in the EM program?

Absolutely, it was such a great learning opportunity. And, being involved in a long term project in grad school is unusual, since most things that you do are term related. It was great to be able to grow and learn with a project and its participants.

7) Any other comments/feedback you'd like to provide?

It was a great experience and definitely a highlight of my grad school career.

Feel free to call me or email if you'd like to talk about it further.

Alumni Response 3.

Dr. Inouye, Dr. Nyerges, and Dr. Bolton:

Thank you for reviewing the EM certificate program, which was a great experience for me and a great benefit to my current career, and for soliciting advice from graduates. Please see below for my replies to your questions, which I hope are useful as you complete your review. Feel free to contact me if you have any follow up questions.

1) What year did you receive the EM certificate?

I completed the requirements in 2003 and 2004, but officially received the certificate when I completed my Ph.D. in 2005.

2) What is your current employment?

I am a Program Officer with the Board on Atmospheric Sciences and Climate at the National Research Council of the National Academy of Sciences. The National Academies are a private, non-profit institution chartered by Congress to provide advice the nation; we produce over 250 reports each year on a wide range of scientific topics. My responsibilities include managing the report process for many of our climate-related reports, and I also serve as the program director for the Climate Research Committee, which coordinates climate-related research across the Academies and serves as the US National Committee to the World Climate Research Program.

3) Did the EM certificate add value to your graduate degree, and was that reflected in your search for employment?

Absolutely. I do not think I would have thought to even apply for this job in the first place had I not been exposed to environmental management and policy through the EM certificate program, and I have been told that the certificate was a significant factor in the decision to hire me. Even if I had stayed in a research career, I think the EM certificate would have added value to my degree by providing a broader perspective on scientific issues.

4) What was the most useful component of the EM program in development of your skill set? Did you learn things that you wouldn't have learned from your graduate degree program?

Definitely. The background in environmental policy received through the core courses has proven quite useful, as have the elective courses I took in environmental economics and decision-making. But the most useful course by far was the final core course that I took on "global commercialization of environmental technologies", which was at the time taught by Gretchen Hund and Kevin Lavery; this course exposed me to a number of valuable skills such as working with a team of people with different backgrounds, doing background research (including "cold calls" to experts), writing a scientific assessment document together, and presenting our work at a symposium - all skills that I now use on a regular basis.

5) What was the least useful component of the EM program for you?

Probably the other students in the program - they really bogged some of the classes down, and I even wound up dropping one class out of frustration with some of the other students. But I guess

there isn't much that can be done about that, except maybe making the prerequisites for the courses as clear as possible and steering students towards appropriate electives.

6) Would you recommend that students headed toward your career path participate in the EM program?

Yes, absolutely and without reservation. In fact I would also encourage student who intend to stay in a research career to consider the program, both for the intellectual stimulation and the exposure to a different way of thinking.

7) Any other comments/feedback you'd like to provide?

Overall the program was tremendous, and a real benefit to attending the UW for graduate school. I admit that I haven't really kept up with any changes that may have happened with the program since I graduated, but while I was there it seemed to me that the coordination between the core courses, seminars, and electives could have been improved, and there could have been a little more guidance given as to the most appropriate and useful electives for students from different backgrounds to take. However, the range and quality of courses offered through the program was excellent, the time commitment and flexibility of the program really made it easy to complete, and most of the classes I took were either extremely useful, intellectually stimulating, or both - overall a great experience that I am most grateful to have had an opportunity to participate in.

Alumni Response 4.

> 1) What year did you receive the EM certificate?

2005, then did the program again in 2006 as a Luce fellow

> 2) What is your current employment?

King County, Department of Natural Resources and Parks, Climate Change Initiatives

> 3) Did the EM certificate add value to your graduate degree, and

> was that reflected in your search for employment?

Yes, my EM experience let me get the job I have now.

> 4) What was the most useful component of the EM program in

> development of your skill set? Did you learn things that you wouldn't

> have learned from your graduate degree program?

Experience leading a team; a project with results to point to:

www.climatepartnership.com

> 5) What was the least useful component of the EM program for you?

That it wasn't a stand alone program.

> 6) Would you recommend that students headed toward your career

> path participate in the EM program?

Yes.

> 7) Any other comments/feedback you'd like to provide?

> This program was the best part of graduate school for me.

Alumni Response 5.

1) What year did you receive the EM certificate?

2002, concurrent with a masters in Fisheries. Optional courses were focused on policy and economics

2) What is your current employment?

I am doing a postdoc at the Northwest Fisheries Science Center, NOAA

3) Did the EM certificate add value to your graduate degree, and was that reflected in your search for employment?

Yes it did. It has broadened my opportunities and profile from just stats-maths oriented modeling to policy analysis and policy implementation tactics. This has been extremely valuable to get projects as a consultant. Also, when I applied for my Ph.D. and postdoc, prospective employers have liked the experience with policy, not only modeling. I strengthened my policy background by including policy evaluation as part of my dissertation work.

4) What was the most useful component of the EM program in development of your skill set? Did you learn things that you wouldn't have learned from your graduate degree program?

I really liked the course on environmental policy processes, a core course that everyone in the program has to take and the interdisciplinary character of the class (the students' background) was great. Most times, any graduate course you take has people from the same discipline and one can become entrapped in the jargon and "common knowledge" within a discipline. Having multiple backgrounds enriched the class both in terms of content, interpreting readings and approaches to problem-solving.

5) What was the least useful component of the EM program for you?

Personally I was a bit disappointed with the international business course (used to be a core course). I believe the curriculum for the class has changed and improved. When I took it I was hoping to learn some marketing related or market research techniques or marketing/communications and some new/developing technology. With everyone in the class getting either a masters or a Ph.D., of course research was done in a very thorough way, but no new skills added. Collaboration wise it was great I all the teams had students with different backgrounds.

6) Would you recommend that students headed toward your career path participate in the EM program?

I was a TA for 7 courses and always recommended it, it is great to take courses outside your main field and it just rounds up your skills.

7) Any other comments/feedback you'd like to provide?

Can not think of anything, only that I think it is one of the programs that is reviewed most often and the curriculum is updated regularly. That is rare to find.

Alumni Response 6.

Hi Professor Nyerges,

Thank you for your kind words. I would be happy to have you use my comments in support of the EM program, the one thing I ask is that for our hydrogen initiative, that you do not mention our sponsor organizations by name, because we are waiting to formulate a formal public press release. If you need a more specific quote or statement about EM from me, I am happy to provide you with that as well.

1) What year did you receive the EM certificate?

Spring 2007.

2) What is your current employment?

I am currently a graduate (MS) student at Stanford, in the Atmosphere/Energy concentration of the Civil and Environmental Engineering department. I also work part time as a consultant for Horizon Energy Group.

3) Did the EM certificate add value to your graduate degree, and was that reflected in your search for employment?

I was the only undergraduate in the EM program at the time. I believe that the program added significant value to my degree, and more importantly to my experience at UW. Employers seem to value people who have had a background in environmental management.

4) What was the most useful component of the EM program in development of your skill set? Did you learn things that you wouldn't have learned from your graduate degree program?

The ability to work long term with a team on the keystone projects, and the ability to interact with the professors in the various courses. Those professors contributed really greatly to my personal development.

5) What was the least useful component of the EM program for you?

The talks that the program sponsored, professors, and courses.

6) Would you recommend that students headed toward your career path participate in the EM program?

Yes

7) Any other comments/feedback you'd like to provide?

The EM program is one that means a lot to me, being not only an alumni of the program but someone who worked with the Program on the Environment before I entered the program. As an undergraduate, I had originally intended to be a double major in the Program on the Environment's undergraduate degree. The EM steering committee was extremely gracious and allowed me to take the graduate level program instead, a program that I believed corresponded more strongly with my future intentions. Because of the connections that I made through the EM program, I was able to:

- Create an initiative to build the first two hydrogen stations in Washington State. This initiative has gained the support of [several sponsors deleted here at request of author; see note at the top of the previous page] and a variety of other partners. It is likely that we will soon stage the first international hydrogen road rally between BC and Washington State.
- Become heavily involved with the sustainability work at Washington State. I wrote the 2006 Sustainability Highlights report for our state, which was used by governor Christine Gregoire. We also were able to create a sustainability tracking and reporting application for the State of Washington to use.
- Make the legislative connections that led to provisions for hydrogen energy in HB 1303, a state bill which passed last session in Washington State.
- Make the connections that led to my current job, as an energy consultant for Horizon Energy Group.

I believe strongly in the value of interdisciplinary work at every level of education. I can not think of a program at UW that has fostered this work more effectively than the EM program. Even at Stanford, where their recent drive for funding on green initiatives has raised hundreds of millions of dollars, there is rarely the level of cross-disciplinary interaction and thinking that has been fostered through the EM program at UW. I strongly urge you to sustain and support the program for future years.

If you have any questions, please feel free to contact me.

Alumni Response 7.

1) What year did you receive the EM certificate?

2004

2) What is your current employment?

Program Officer, Marine Mammal Risk Mitigation Program

3) Did the EM certificate add value to your graduate degree, and was that reflected in your search for employment?

Yes.

Yes.

4) What was the most useful component of the EM program in development of your skill set? Did you learn things that you wouldn't have learned from your graduate degree program?

The sustainable/environmental business classes. These classes taught skills and topics outside of the science and policy lessons in the Marine Affairs program. It was also beneficial, yet frustrating, to work on the final project with students from other disciplines.

5) What was the least useful component of the EM program for you?

Everything was useful or essential during the degree program. While I don't use all the skills in my current job, I still appreciate all the experiences.

6) Would you recommend that students headed toward your career path participate in the EM program?

Definitely.

7) Any other comments/feedback you'd like to provide?

Nothing.

Alumni Responses 8.

1) What year did you receive the EM certificate?

2005

2) What is your current employment?

Assistant General Manager at Flexcar

3) Did the EM certificate add value to your graduate degree, and was that reflected in your search for employment?

Technical value? I'm not sure; it certainly didn't get me the job, nor did it prove an impediment. However, a number of things I learned and connections I made were excellent for my job.

4) What was the most useful component of the EM program in development of your skill set? Did you learn things that you wouldn't have learned from your graduate degree program?

The multi-disciplinarian approach, the connections. Absolutely learned things I wouldn't otherwise have done. This program is wonderful.

5) What was the least useful component of the EM program for you?

Can't recall.

6) Would you recommend that students headed toward your career path participate in the EM program?

Absolutely.

7) Any other comments/feedback you'd like to provide?

Great program - multi-disciplinarian aspect is key, great people (esp. Kevin Lavery & Gretchen Hund), loved the program.

Alumni Response 9.

Hi David! Here are my responses to your questions. Thanks for the chance to respond.

- 1) What year did you receive the EM certificate? 2004
- 2) What is your current employment? Policy Associate at the Northwest Energy Coalition.
- 3) Did the EM certificate add value to your graduate degree, and was that reflected in your search for employment?
Yes, I use it on my resume, interviews and as a clear component of my education and skill set.

- 4) What was the most useful component of the EM program in development of your skill set? Did you learn things that you wouldn't have learned from your graduate degree program?
I do believe the EM program developed my skill set. It allowed me to work closely with people from other programs which was great training for working in the "real world". I had the opportunity to work with an MBA and scientist in a collaborative project which was a great learning experience.

I also enjoyed the opportunity to work with Battel. It was great to learn what they do and how to do professional project work and presentations. The opportunity to learn a wide variety of skills and topic areas supplemented my MPA greatly.

I enjoyed taking classes in the ME department. It was very helpful to what I am doing now. I use a lot of the language and skills I learned here in my policy work today.

- 5) What was the least useful component of the EM program for you?
Don't remember any.

- 6) Would you recommend that students headed toward your career path participate in the EM program?
Of course. I think it is a great idea and a stellar program. They still had a lot to work out in the development of the program when I got the certificate, but I still benefited from it greatly.

- 7) Any other comments/feedback you'd like to provide?
It would be great for the program to get more of a reputation and enhance visibility. It would be nice to have the program more recognized in the community. I recommend alumni events, conferences, press, case studies, ect.

Thanks again.

Alumni Response 10.

Dear Professors Inouye, Bolton, and Nyerges,

Here are my comments, which can be attributed to myself if you wish.

> 1) What year did you receive the EM certificate?

In 2003 I finished my final EM Certificate course. In 2006 I finished my two masters degrees and received the EM Certificate.

> 2) What is your current employment?

I am a research specialist and academic coordinator with the Center for Integrated Water Research, housed in the Environmental Studies Department at UC Santa Cruz. I use both my Evans School and Jackson School training, as well as the interdisciplinary perspective I gained in natural resources management from the EM Certificate in my current employment.

> 3) Did the EM certificate add value to your graduate degree, and

> was that reflected in your search for employment?

I highlighted the fact I completed the coursework for the EM Certificate when I interviewed for an part time administrative job with Professor Haddad, who is now Director of the Center, in 2005. He recognized my professional skills and felt my interest in environmental management was a plus for this entry level job. I first learned about water resources planning and management doing coursework for the EM certificate. This foundation of interdisciplinary coursework helped me demonstrate my ability within a year to be hired as a research specialist as soon as I completed my masters degrees. I was able to write my own job description help build the Center for Integrated Water Research by finding an admin to replace me.

> 4) What was the most useful component of the EM program in

> development of your skill set? Did you learn things that you wouldn't

> have learned from your graduate degree program?

The Global Commercialization of Environmental Technologies course was a confidence building experience. I loved working within a team as the "policy" person who tended to go into too much depth whereas the "business" students were attuned to deadlines, and the other Evans school student had no fear of calling people to do interviews. Our presentation on renewable energy was well received and our paper demonstrated our gradual weekly progress toward a fine work product. Now I have to interview people and write reports on my own, with a senior researcher "grading" me. It is helpful to have had that experience to gain practice contacting people in the field for our project.

Small 10-student course on Climate in the Pacific Northwest was excellent. The two instructors, Nate Mantua and Amy Snover graded our weekly writing assignments with good comments and helped us prepare a presentation on an important aspect of how climate variability affects natural resource managers. What was unique about this course, that I wouldn't have received from my degree program, was the chance to understand the context of the science and policy communications challenge and to gain exposure to how a research center, the Climate Impacts

Group, is contributing a great deal to advance the level of awareness of climate change in natural resources management industries.

> 5) What was the least useful component of the EM program for you?

Can't think of one.

> 6) Would you recommend that students headed toward your career
> path participate in the EM program?

Yes.

> 7) Any other comments/feedback you'd like to provide?

Policy and planning in natural resources management industries requires an interdisciplinary skill set. The EM Certificate was my opportunity to take courses in the area of environmental science and sustainable business strategies to learn enough to know that this was the right area to go into for my career. Thanks for offering it at the UW. I'm hoping UC Santa Cruz can develop a similar program soon, and am working within my capacity at the Center for Integrated Water Research to lobby for this kind of development.

Alumni Response 11.

- > 1) What year did you receive the EM certificate? 2006
- > 2) What is your current employment? self-employed management consultant
- > 3) Did the EM certificate add value to your graduate degree, and was that reflected in your search for employment? It added intellectual value to my graduate degree programs and it has been reflected in my job searches, although not in my current employment.
- > 4) What was the most useful component of the EM program in development of your skill set?

I found working with students from other disciplines, outside of my concurrent degree programs, was the most useful. Did you learn things that you wouldn't have learned from your graduate degree program? The course at the business school was invaluable in bring the private aspect into my general public focused courses. The synthesis of how to bring public, private and academic all into Environmental Management, was a learning opportunity that I have used broadly since. The focus on partnerships was important and explaining value to varied stakeholders.

- > 5) What was the least useful component of the EM program for you?
It has not felt that there has been much job search, networking support, although I understand that it is a new program.

- > 6) Would you recommend that students headed toward your career path participate in the EM program? Yes.

- > 7) Any other comments/feedback you'd like to provide?

Please work on providing more support and opportunities to graduates of the program. We can become our own support network. I would advise putting together a facebook group and emailing all alums to join it.

Alumni Response 12.

I earned my certificate in 2003 as part of the MBA program at UW. That experience motivates my two comments. First is to acknowledge a strength. Studying and interacting with students from a variety of programs, and disciplines, with the concomitant variety of perspectives was a very good thing. Having said that I also think the opportunity that exists for the program is a stronger integration of business into classes and discussions. While some, perhaps many students, are headed for a career in academia, government, or in research, at least some are headed for business and perhaps more will ultimately find themselves in the business world than they think as students. As the only MBA student, there were times I felt like business didn't receive the emphasis it deserved.

I appreciate the opportunity to comment.