The School of Aquatic and Fishery Sciences Response to The 10-Year Review Committee Report

We thank the members of the 10-Year Review Committee (UW members: John Marzluff and Parker MacCready; external members Bonnie McCay and Mary Power) for contributing to the review of the School of Aquatic and Fishery Sciences (SAFS) and highlighting ways that we can improve the School's ability to achieve its mission of excellence in teaching, research, and service. We appreciate their careful review of our Self-Study report and their willingness to meet with members of all components of the SAFS community and consider written input from affiliates and alumni.

We are pleased the committee agreed that SAFS enjoys international recognition for excellence in teaching, research, and service to a broad range of stakeholders, and recommended that we continue to administer our current programs. We are proud of the fact that the committee noted that the School has a warm collegial atmosphere fostered by faculty and staff who genuinely value the contributions of all members of the SAFS community.

This document outlines our responses to the recommendations of the Review Committee arranged by section, with specific responses to each recommendation. We list a set of next steps at the end of this document.

Summary Response

The Report of the Review Committee highlighted several issues that we identified as key to the success of the School in our Self Study report. These include the impact of changes to the incentive structure recently implemented at the UW, how funds are allocated, and the impact to SAFS (both positive and negative) of the proposed Marine Biology major.

The Review Committee challenged us to strengthen our links with colleagues within the College through, for example, shared teaching and increased opportunities for interactions at a professional level. They also highlighted the importance of outreach by faculty and students directly, as well as via our website. We fully support these important directions and guidance.

The Review Committee highlighted four general areas as being of greatest importance for the future success of the School:

- **Increase the transparency of CoEnv policies, especially around finances and faculty hiring**. We completely agree that transparency at all levels (between the College and the School, the School administration and the rest of the SAFS community, etc.) is critical to us moving forward effectively and maintaining collegiality within the School. The School administration will work with the College to identify areas where transparency in decision-making could be improved and also increase efforts to explain College policies to the rest of the School. We will use faculty meetings and particularly our annual Faculty Retreat to explain College policies to faculty and obtain their input and feedback on those policies. We will continue to seek fully transparent communication with the College, so as to effectively plan and implement ongoing changes to our programs.
- **Re-think the Marine Biology Major so that it enhances the present collegiality of SAFS and Oceanography instead of competing with their existing strong programs**. We value our collegial relationship with Oceanography and do not see any imminent threat to our interactions. However, we are seriously concerned about the impact of the proposed Marine Biology major on the AFS major and the ability of

SAFS to determine its goals for undergraduate education. The development of the Marine Biology major as well as the cluster hire associated with the Future of Ice Initiative have facilitated more discussions between SAFS and Oceanography than has occurred in the past. Rather, our concerns with the proposed Marine Biology major focus on ensuring that it is as intellectually challenging as the existing SAFS and Oceanography majors, and its consequences for our major (see our responses to Recommendation 3).

- **Sustain and enhance the exposure of SAFS students at all levels to fieldwork, diverse aquatic organisms, and natural environments.** We believe that experiential learning, in all its aspects, is a key component of both our undergraduate and graduate programs, and we intend to both maintain and enhance what is currently a very successful program in this regard.
- **Fix the SAFS website.** The website is the way that many potential students and collaborators learn about the School. We are currently working with the College to develop a new website and populate it with content material. We hope to launch the new website in fall 2014.

The Committee made a number of recommendations for issues to be considered by the Dean. We do not believe that it is appropriate for us to comment in detail on these recommendations. However, we, along with the Dean, certainly support the general sense of these recommendations that relate primarily to transparency. We also strongly endorse the recommendation related to appropriately recognizing contributions of SAFS (and SEFS) faculty to the QSCI program, that efforts are made to establish an Environmental Institute and that the Dean's office works with SAFS Administration to renegotiate the MOU between NOAA and the UW.

Administration

Recommendation 1. *The SAFS Director should consider how to enhance cross-campus collaboration by investigating shared teaching of similar classes (e.g., population biology, natural resource economics, marine ecology, natural resource policy) with faculty in the School of Environmental and Forest Sciences (SEFS), Oceanography, Biology, and School of Marine and Environmental Affairs (SMEA). An effort should be made to continue faculty participation, especially with new hires, in the QSCI curriculum. The bridge with SEFS should be enhanced as the Washington Cooperative Fish and Wildlife Unit seeks to expand its faculty into terrestrial wildlife science.*

Responses:

1. SAFS supports cross-College and cross-campus teaching efforts that ensure that content is taught as efficiently as possible. Several of our classes are currently cross-listed in other units (see Appendix E.9 of the Self-Study report), and we are already involved in shared teaching in BIOL 180. Although the Marine Biology major is not finalized or approved, there is an expectation that the Aquatic Physiology and Evolution classes will be taught jointly by faculty in SAFS and Oceanography, primarily to ensure that the material is covered by the most qualified faculty. The SAFS Curriculum Committee will be tasked during fall quarter 2014 to identify where existing SAFS classes are similar to classes in other units and investigate whether opportunities exist for shared teaching.
2. SAFS is very supportive of the QSCI program, which provides the introductory calculus and statistics classes taken by the majority of SAFS majors. SAFS faculty currently teach some of the QSCI calculus and statistics classes as well as several of the upper division QSCI classes. There is an expectation that new hires will teach one class outside of the

unit. As existing SAFS contributions to QSCI change, e.g., due to retirements, teaching in the QSCI program is clearly an option for satisfying this expectation.

3. It is likely that there will be retirements in the Co-op unit in the next few years, and the possibility exists for expanding the unit by hiring an additional assistant unit leader. SAFS recognizes that some of the co-operators desire to see faculty working in the general area of terrestrial wildlife science. We will work with the Co-op program to identify the best ways for future changes to be implemented.

Recommendation 2. *We encourage the Dean and her assistants to work with the Director and the SAFS faculty to empower the School to hire needed faculty and to clarify how resources derived from tuition and indirect costs will be allocated, making the process more transparent and motivational to the faculty, staff, and students of SAFS.*

Response: The SAFS administration already has a good understanding of how resources derived from tuition and indirect costs are allocated. The SAFS faculty at large may be less familiar with resource allocation policies. SAFS supports increased transparency on this issue as well as on all aspects of the interactions among the Dean's Office, SAFS administration, and the rest of the SAFS community. The SAFS Director will work with the Dean's Office to develop an outline of the resource allocation process and provide it to faculty and staff. The 2014 faculty retreat will be the ideal opportunity to inform faculty about the allocation process.

Recommendation 3. *The Dean must address the repercussions of the proposed Marine Biology major for SAFS. Experiential learning and connection to the faculty define the currently successful SAFS undergrad major. Every effort should be made to retain these qualities within SAFS, and not drain them in the quest to create new and competitive majors within the College. Discussions between the CoENV administration, the SAFS Director, and SAFS faculty and students should be expanded to determine how best to provide students interested in Marine Biology a more focused curriculum track within existing SAFS and Oceanography majors.*

Response: SAFS identified several of the potential repercussions of the proposed Marine Biology major in the Self-Study report, and additional concerns were raised during the meetings with the Review Committee. It is clear that there is considerable demand among undergraduate students for a Marine Biology major; a well-designed Marine Biology major has the potential to increase the number of people graduating from the UW with an understanding of marine systems. The additional number of majors and student credit hours in the College should increase the ability of the College and the School to increase faculty numbers and TAs. The key issues for SAFS are ensuring that: (a) the academic excellence of the Marine Biology major is at least as high as that of the Aquatic and Fishery Sciences major, (b) the almost-certain reduction in AFS majors will not be seen as a SAFS "failure" as the Marine Biology major develops, and (c) we can continue to teach our classes so that students get the best possible undergraduate experience and education.

In working through the process of developing a draft proposal for a major in Marine Biology, the Dean's Office has involved both SAFS and Oceanography in every phase. As noted by the response of SAFS to the Review Committee Report, SAFS faculty were prominently represented on the Ad Hoc Committee that drafted the proposal; SAFS faculty have also been involved in reviewing earlier drafts of the report, as have SAFS students; and this input was used to create several new requirements. In addition, SAFS faculty will likely be teaching these requirements (and in fact have drafted the syllabi for these classes, which will become SAFS courses). The Chair of the SAFS Curriculum Committee has been working closely with the Marine Biology Major Ad Hoc Committee and with her counterpart

in Oceanography to collectively re-craft the proposal, and it is this larger and more complete document that was recently received by the Dean's Office, and in turn passed back to the directors of both SAFS and Oceanography, respectively, to disseminate within their units according to their customs and review structures. The Dean's Office has not prescribed how the units will review this document, only that they will engage in a serious and thorough discussion. This level of involvement is completely crucial, as the current construction of the proposed major relies very heavily on close academic ties, and specifically courses delivered by faculty within both units.

The Dean's Office is working with the directors of SAFS and Oceanography to create a set of guidelines for the construction of a new interdisciplinary major and will apply these guidelines in the construction of a budget document laying out how such a major would be supported, and how it might affect the resources and reputation of the participating units. This discussion, once finalized between the Dean's Office and the directors, will also be shared with the faculty of both units.

Faculty

Recommendation 4. *The Provost and Dean should revisit the pay structure and its inflexibility for UW Research Faculty. They should make every effort to work within the Faculty Code to address the salary inequality of the Research Faculty.*

Response: As noted in the Self-Study report, SAFS is concerned about salary inequity for all faculty, and particularly Research Faculty. Since the Self-Study report was produced, SAFS administration has successfully implemented increases to the salaries of the three Research Faculty members who have resources to support increased salaries and who were sufficiently poorly paid that there was a reasonable risk they might leave the UW. SAFS agrees that a broader discussion of pay structure is warranted and will provide any information to assist the Provost and Dean in this regard.

Recommendation 5. *SAFS should look for opportunities to maintain their Research Faculty numbers by bringing in established mid-career scientists who complement core SAFS strengths. While present funding constraints may narrow the field of such candidates, SAFS' long partnership with agencies with strong research components may sustain opportunities for these affiliations into the future.*

Response: SAFS highly values the research, service, and teaching contributions made by the Research Faculty. Existing Research Faculty are all senior with established research programs. SAFS is considering identifying, and then hiring, new research faculty, and we agree with the Review Committee that mid-career scientists are most likely to be able to sustain the sufficiently large research programs needed to support a faculty member, his/her research staff, and a group of undergraduate and graduate students. It is important that new research faculty complement, rather than compete with, existing faculty. At the next Faculty Retreat, SAFS is planning to develop a set of research visions. Some of these will fit well within the scope of the existing research programs of current faculty and could lead to proposals to support new large cutting-edge collaborative research programs. The faculty will consider if a new research faculty member should be proposed for hire where a research vision does not match the skills and interests reflected in present faculty and staff. However, we believe that the main mechanism for maintaining the excellence in SAFS is via more traditional tenure-track lines.

Recommendation 6. *As the School continues to build depth in its world class quantitative fishery assessment program, so too should it seek to increase faculty diversity in gender,*

race, expertise (notably hiring whole organism scientists such as ichthyologists or field ecologists), and academic training.
Response: SAFS's highest priority is maintaining first-class faculty who will support the School's missions. SAFS developed a process for identifying the best areas for new hires, as outlined in the Self-Study report, and is currently applying this process in view of Loveday Conquest's retirement. The process actively seeks faculty candidates who can lead to increased faculty diversity. The possibility of hiring whole organism scientists is part of the current discussion, but that need will be evaluated relative to other needs. In particular, given Loveday's retirement, there are now fewer faculty members available to teach classes in the QSCI and QERM programs. Diversity in the faculty has been and will continue to be a major factor in selecting suitable candidates for faculty positions.

Recommendation 7. *To maintain disciplinary breadth in teaching and mentoring, the UW, CoENV, and SAFS administration should work together to fight narrowing training, particularly the devaluation of natural history science. This could be done with three initiatives*:
(A) *The Provost and Dean should continue to support small class sizes (<30) needed for field and laboratory instruction, and support for field courses, which though costly in terms of FTE/teaching credit hours, are life-changing for UW students. The importance of such experiences cannot be overestimated. For example, a number of SAFS students and alums who were able to spend a field season with the Alaska Salmon Program report that this experience 'hooked' them into academic programs and careers in fisheries and aquatic sciences*.
Response: SAFS supports this recommendation. We are justifiably proud that our classes are generally small and that we have unique field and laboratory classes. As the SAFS program develops and grows, a focus for evaluation of new or modified classes will be the extent to which we are able to retain (and expand) these features of the program.

(B) *The Dean and Director should facilitate seminars and retreats (perhaps at field stations where participants can better focus on the program at hand) that engage SAFS faculty, postdocs, research scientists, and students with interested participants from other units like Biology, Oceanography, SMEA, SEFS, Civil and Environmental Engineering, Environmental Law, Journalism, the Arts, and Built Environments. Workshops or symposia could include presentations and discussions of topics in aquatic sciences research, career paths and employment opportunities, or topics that cross disciplines and address new emerging environmental and societal issues (e.g., citizen science, adaptive management, species invasion, climate change).*
Response: SAFS is already engaged with other units from across the College and UW, and we seek to maintain and strengthen these relationships. In particular, SAFS faculty have played leadership roles in recent cross-UW initiatives: the Freshwater Initiative, Future of Ice, and the Washington Ocean Acidification Center. We think that an additional way for SAFS to further strengthen its cross-campus engagement is through the establishment of an Environmental Institute (EI) and note that the establishment of an EI is a top campaign priority for the College. SAFS will continue to work with the College to support these as well as other initiatives under development that further establish UW as a viable and vigorous place for emerging interdisciplinary science to be conducted with partners, such as stakeholders and agencies.

(C) *The Director of SAFS should consider encouraging courses with co-teaching by teams of organismal and quantitative graduate students (or faculty).*

Response: We interpret this recommendation within the context of reduced educational breadth in organismal and quantitative graduate students. We agree that ensuring disciplinary breadth is important, and our experience is that most of our organismal biologists (including field ecologists) already gain wide exposure to quantitative methods. In fact, most students leave SAFS with more training in quantitative methods (programming, statistics, modeling) than those at many peer institutions. Whether quantitative students have a sufficiently broad background in genetics, ecology, and natural history is unclear. Our Curriculum Committee regularly reviews the graduate program, and will continue to do so with an eye towards maintaining the balance of disciplinary depth and breadth. We will also emphasize this need to graduate committee members to ensure that students' Plans of Study and qualifying exams are prepared appropriately

Recommendation 8. *To more fully develop the ability to train students in integrated fisheries assessment and ecosystem-based management, the Dean and Director should work with other units on a study of the potential for cluster hires and more effective coordination to bring socio-economic and policy expertise into teaching, research, and service activities. This planning effort should include key stakeholders including the Northwest and Alaska Fisheries Science Centers of NOAA.*
Response: One SAFS faculty member (Chris Anderson) is an economist; since joining SAFS in 2013, he has developed two new courses in fisheries economics (FISH 230 and FISH 507/SMEA 538). In addition, a class is now being given in SMEA by Penny Dalton and Dave Fluharty on federal fisheries policy (SMEA 581). This class is co-listed within SAFS, and several SAFS students have taken it. However, we generally agree with the recommendation to further examine the breadth of classes that exist on campus and work with social scientists both on campus and at the Northwest Fisheries Science Center and Alaska Fisheries Science Center to identify curricular gaps. While a cluster hire is one way to address gaps, SAFS has been fortunate in that NOAA staff have been willing to give specialist classes in their areas of expertise. To date, the focus has been on quantitative methods and stream and watershed ecology, but there is no reason why a social scientist from NOAA could not work with SAFS faculty to teach classes. Those classes would be of interest outside of SAFS (Biology and perhaps NOAA itself).

Graduate Students

Recommendation 9. *In both the College and the School, every effort should be made to provide incentives for the faculty to take on grad students. TA positions generated by returns on tuition generated by teaching courses with general appeal to the UW student body could help (and provide important learning opportunities for students seeking faculty careers), as long as the hours spent by the student do not overrun their ability to make real research progress*.
Response: We agree that the declining graduate enrolment numbers are a concern. The primary cause for this is the reduction in federal funding for science programs (National Science Foundation, NOAA, EPA), which is the primary way that we support our students. SAFS has not historically adopted a model that relies heavily on TAs for graduate student support for two main reasons. The first is that we have a limited number of TA positions within our teaching program. The second is that the faculty believe that while teaching can be an enriching experience, over-reliance on TA positions can hamper progress towards degrees. SAFS has already received additional TAships from the College based on new classes (e.g., FISH 230 and FISH 260), and we expect to see more TAships in SAFS if the proposed Marine Biology major is implemented. It is worth highlighting that it is often difficult to fill several of the SAFS TAships that are available annually, since most graduate students prefer

to take RAships and work on their theses related to these positions. We recognize that the ability to support new graduate students with TAships would be enhanced if there were a clearer and more predictable sequence of announcements about TA availability, which means that the administration would need to make decisions regarding TA allocations sooner in the academic year. SAFS will aim to make these decisions early in winter quarter in the future so that faculty can base offers to potential new students on guaranteed TA places.

Recommendation 10. *The experiential learning that is the hallmark of the SAFS undergraduate and graduate degrees could be the basis for improved outreach and community building. In particular, grad students could use field sites (FHL, Big Beef Creek, etc.) for public outreach, informal education, and welcoming of new people to the SAFS "family." This could be done with modest support from the Director and Dean, and would provide an opportunity for building grad students' communication skills beyond that afforded by standard TAs*.
Response: SAFS considers outreach to be a key faculty activity and all faculty are involved in outreach in some way. The Self Study report only included a few examples of our outreach activities owing to limited space. We have included a short appendix to this response which lists some of the outreach activities already conducted by graduate students. We are planning to invite proposals from graduate students for outreach activities outside of SAFS. These proposals could be for up to $4,000 and would be subject to review by the School's Recruitment Scholarship and Admissions Committee, which also reviews proposals for small research grants by graduate students. We will implement this new program starting in Winter 2015.

The Review Committee noted that some of the graduate students expressed the desire to have increased opportunities to teach and engage with undergraduates. As noted by the Review Committee, we expect that the number of TAs will increase in SAFS if the proposed Marine Biology major is implemented. Although some graduate students wish to be more engaged in undergraduate education, several TAships in SAFS (and QSCI) are not filled by SAFS students. TAships are allocated based on enrolment and pedagogical needs; the classes do not always match the subject areas students wish to teach. SAFS has regularly discussed whether all students (or all PhD students) should TA at least one quarter. The obvious benefits of this requirement are that all students have an opportunity to see whether they wish to make teaching part of their careers and that they leave SAFS with some teaching experience. The problems with required TAships is that there may be too few that match student expertise, the performance of a TA might be poor if he/she feels forced to become a TA, and students may already have career plans which do not involve teaching (for example, students already employed by an agency). SAFS will continue to discuss this issue.

Undergraduate Students

Recommendation 11. *The Director and Faculty of SAFS should develop an undergraduate version of the class "FISH 522 Hot Topics in Aquatic and Fishery Science" to help undergraduates understand the breadth of research occurring in SAFS, and to enhance their social and scientific integration. This class should be followed with more career guidance, especially for underclassmen, which might include mentoring of undergraduates by graduate students and postdocs. To add consistency in expectation, the capstone class should be made more formal (as it is in Oceanography). In particular, proposals should be turned in prior to actual fieldwork.*
Response: There is general support for a class like this in SAFS. Many units in the College have similar classes; for example, Oceanography has two new seminar classes, one for new

students, while the other is a 400-level class, focused on career development and job searches. Similarly, the marine biology minor includes a seminar-research survey, with guest lecturers (FISH/OCEAN/BIOL 477). We note that SAFS previously had a required class that aimed to provide a survey of the field (FISH 210, "Research Methods in Aquatic and Fishery Sciences"). This course was discontinued because it was deemed to be ineffective at achieving its curricular goals. The challenge that SAFS faces for these types of courses is that students declare their major at widely varying stages during their undergraduate program. Many transfer students choose to enroll, begin taking advanced courses immediately, and then take the survey courses afterwards. Others declare early and take courses in the order that we intend. In addition, this class would overlap to some extent with FISH 478 which is an undergraduate class linked to the highly successful Bevan Series for Sustainable Fisheries. SAFS plans to follow up on this recommendation by first conducting a full review of similar classes across units in the College, including College-level classes, and identifying a structure that will best satisfy the needs of our students. We anticipate completing this review and providing a course for implementation in Fall 2015 if this is deemed to lead to an improved curriculum.

The Review Committee notes that some undergraduate students may be limited in their ability to take classes outside of SAFS (e.g., because of prerequisites in Biology). We note that all SAFS undergraduate students take classes outside of SAFS, and they have to take the introductory biology, chemistry, and physics classes. We reviewed the entire biology course offerings following receipt of the Review Committee report. We found that SAFS undergraduate students can get into the majority of the biology classes if they complete the introductory biology sequence (up to BIOL 220) and receive a grade of at least 2.0. There are a few classes that might be difficult for SAFS undergraduates to get into. However, for several of these classes (e.g., BIOL 433, BIOL 443, BIOL 448, BIOL 450, and BIOL 472), there are equivalent SAFS classes. The classes that our students are unlikely to be able to get into and for which no equivalent class exists in SAFS are primarily botany-related. We suspect that a better use by undergraduate students of the advisers in SAFS, Biology, and other units will address this issue, and we don't see a need for a major change to existing processes or prerequisites.

Administrative Staff

Recommendation 12. *The director has enlisted someone to work on the website part-time, with help from the College, but a longer-term commitment to website management on the part of the School and the College is strongly recommended. The role of webmaster could be combined with another important and underdeveloped function: enhancing communication within and beyond SAFS.*

Response: The website re-development is a key priority for SAFS in the short-term, and we expect a release by fall 2014. We are also committed to obtaining website management to reduce the load on some of the current administrative staff and provide a go-to person for changes to the website content. As recognized by the Review Committee, a webmaster is not a stand-alone position, and any new staff member in this area would need to have additional tasks. We are examining several possible ways to accomplish this, including a webmaster position joint with the College or another unit, a position in SAFS that includes both website support and outreach facilitation, or a position in SAFS that includes both website support and support for computing facilities (at present SAFS has strong support for PC-based machines, but much less so for unix- and Mac-based systems).

The Review Committee noted that the tasks of the webmaster are currently distributed among several staff following the disbandment of the webmaster position and that some staff feel inadequately equipped to handle the technical aspects of maintaining and updating the website. In addition, there is considerable uncertainty about who has responsibility for what and how to find information. We believe that the new website will help make uploading material much easier. However, we do anticipate hiring a part-time webmaster to alleviate some of the demands on the administrative staff. We have started to develop a list of website responsibilities of existing staff and to identify ways to help staff with web-related tasks until the new website is in place.

Postdocs and Research Staff

Recommendation 13. *Improved orientation is definitely needed. This is another point at which some commitment to improving communication within the school could make a difference. A specific suggestion was to provide a list of incoming post-docs to existing post-docs, who are invited to be informal guides, helping introduce them to people at the School, and learn about resources and logistics, such as where to sign up for email lists.*

Response: SAFS agrees with this recommendation. We do not believe that a formal orientation event for new postdocs and research staff will be feasible because, unlike graduate students, postdocs and research staff start throughout the year. We will develop the proposed list and announce new postdocs to the SAFS family through email and at departmental seminars, and ideally by inviting new postdocs to give departmental seminars soon after they join SAFS. We will also encourage postdocs and research staff to establish an event similar to the very successful Graduate Student Symposium, where they present their research to the SAFS community. We will also work with the postdocs and research staff to develop a short "guide to being a postdoc and research staff member at SAFS." This guide would highlight the go-to people for various common tasks (e.g., travel) and also opportunities to be more involved in teaching and service within the School. We will also update the photoboards in the foyer of FSH to include postdocs and research staff (previously the photoboards only showed faculty and graduate students). Finally, we will invite postdocs and research staff to attend faculty meetings as observers during the open sessions to get a better feel for how faculty governance operates.

Recommendation 14. *The post-docs and research staff also indicated concern about being underused in the teaching programs of the School. They have very limited opportunities to teach. Efforts to enlist their participation in courses or even teach courses (with appropriate compensation) could enhance their professional careers and provide students with exposure to young, active scientists.*

Response: It should be noted that the ability of postdocs and research staff to teach will, in many instances, be limited when the project that funds them has fixed timelines and milestones. That said, some opportunities already exist for postdocs and research staff to teach classes, but we need to publicize them more. These include: (a) being involved in classes as guest lecturers in their specialist areas, (b) organizing and running independent studies or graduate-level seminar classes, and (c) being paid to give full classes (for example, when faculty are on sabbatical or a class cannot be taught owing to a faculty retirement). These options will be included in the guide referred to in our response to Recommendation 13. An example of the second option was an independent studies class run by two SAFS postdocs, Athol Whitten and Carey McGillaird. These postdocs mentored a group of graduate students who conducted analyses and ended up writing three papers that have been accepted for publication in a peer-reviewed journal.

Facilities

Recommendation 15. *The UW and CoENV should target endowment fund-raising to assure the future of the incredibly successful, world-famous Alaska Salmon Program that is still precariously maintained year-to-year by grant writing by a few SAFS faculty*.

Response: Over the past few years, we have made the ASP one of SAFS' foci for endowment fund-raising. The Review Committee's attention to this need strengthens our resolve to stabilize funding to the ASP. SAFS faculty have met with the College Advancement Team to develop an aggressive and more coordinated strategy for improving our outreach to relevant fishing industry representatives and to individual donors with possible interests in watershed ecology and marine conservation. SAFS does not envision any quick-fixes here, but instead hopes to establish a major endowment to support the ASP research, teaching, and outreach activities over the next decade.

Recommendation 16. *The UW and CoENV should help SAFS negotiate to find partners to help plan and share the costs of renovating and repurposing Big Beef Creek. The responsibility for this remarkable site should either be shared more widely, and sustainably, or the site should be abandoned*.

Response: SAFS has and continues to explore many avenues for funding renovations and additional research at Big Beef Creek. This has been an ongoing project since at least the last 10-year review, but progress has been limited owing to lack of funding from the UW as well as potential partners. We will continue to work with the College to explore options for better use of this unique field site.

Other Ways in Which the UW can enhance the Excellence of SAFS

The Report from the Review Committee concluded with a list of 13 additional issues that they identified as narrow in scope. The Director and Dean appreciate this feedback and will continue to work together to address the issues that largely center on personnel and specific budget allocations.

Next steps and Priorities

Immediate (Spring 2014)

1. Announce new postdocs and research staff and invite them to give seminars.
2. Hold focused and open discussions within faculty meetings, the SAFS School Council, and the SAFS Curriculum Committee, which include the Associate Dean for Academic Affairs and Diversity, to address concerns regarding the proposed Marine Biology major.
3. Develop a list of web-related responsibilities of existing staff and identify ways to help them with web-related tasks until the new website is in place.

During Summer 2014

4. Put a new set of photoboards of SAFS community members in place.
5. Create a first draft of a guide for postdocs and research staff.
6. Initiate discussions with NOAA regarding the possibility for one of their social scientists to teach a class in SAFS.

During the 2014 faculty retreat

7. Develop, with the Dean's Office, an outline of the resource allocation process and provide it to SAFS faculty and staff.
8. Develop a set of research visions and use these to identify potential future hires of Research Faculty.

During Fall 2014

9. Identify where SAFS classes are similar to classes in other units and investigate whether opportunities exist for shared teaching. (SAFS Curriculum Committee).
10. Conduct a full review of "hot topics"-like classes across units in the College, including College-level classes, and identify a structure that will best satisfy the needs of our students if development of such a class is deemed an appropriate addition to our curriculum. (SAFS Curriculum Committee).
11. Create a webmaster position joint with the College or another unit, a position in SAFS that includes both website support and outreach facilitation, or a position in SAFS that includes both website support and support for computing facilities.

During Winter 2015

12. Make decisions regarding TA allocations early in winter quarter so faculty can base offers to potential new students on guaranteed TA places.
13. Provide graduate students the opportunities to write proposals related to outreach to be funded by SAFS.

Beyond Winter 2015

14. Work with the postdocs and research staff to establish an event similar to the very successful Graduate Student Symposium for postdocs and research staff to present their research to the SAFS community.

Appendix
Some Recent Outreach Activities Involving Graduate Students

1. Donna Hauser: participated in the Polar Science Weekend at the Pacific Science Center (4-day exhibit/game for kids "Narwhal Mysteries" and three public talks), March 2013. This outreach also involved SAFS/Ocean undergraduates from FISH 464. [Faculty adviser: Kristin Laidre]
2. Peter Kuriyama: presented “How and why do people fish?” at the Discover Science Weekend at the Seattle Aquarium, November 2013. [Faculty adviser: Trevor Branch]
3. Louisa Harding: participated in the AFS-UW mentorship program that pairs interested graduate and undergraduate students, Autumn 2013–present [Faculty adviser: Graham Young]
4. Louisa Harding: volunteered with the Olden lab for Paws on Science at the Seattle Science Center, Spring 2013 [Faculty adviser: Graham Young]
5. Louisa Harding: participated in the COSEE (communicating ocean sciences) course that included outreach at the Seattle Aquarium, Spring 2010 [Faculty adviser: Graham Young]
6. Felipe Hurtado: briefed the Pacific Fishery Management Council regarding control rules for Pacific sardine, March 2013 [Faculty adviser: Andre Punt]
7. Emily Runnels: helped with the logistics of the ESSAS Open Science Meeting in Seattle and gave a presentation on the marine ecosystem of the Salish Sea. [Faculty adviser: George Hunt]
8. Wes Larson and Marissa Jones: participated in an NSF-funded Advanced Studies Institute, providing seminars, tutorials, and one-on-one mentoring to teach genomics techniques to students and scientists from Southeast Asia.

Students in the Pietsch lab regularly give tours of the UW Fish Collection (to 3,569 individuals in the past five years). These tours primarily attract K–8 students, teachers, and parents from across the greater Seattle area. Graduate students are also involved in other outreach related to the Fish Collection, including the annual Burke Chocolate Fair, the Burke Behinds the Scene night, the Expanding Your Horizons conference, as well as various events at the Pacific Science Center.

Members of the Roberts lab practice open science, maintaining online electronic lab notebooks. They have developed a Data and Resource Sharing Plan and share their science on numerous platforms including github, tumblr, facebook, youtube, twitter, wikispaces, flickr, and figshare. Two examples of research portals they manage include “Research Notes on Ocean Acidification” and oystergen.es. Their wiki (genefish.wikispaces.com) site, where lab notebooks and protocol information is hosted has had 4,800 unique visits and 21,000 pageviews during the past 12 months. Recently the group has started broadcasting weekly lab meetings live on youtube. In addition to online outreach and education, lab members are active with hands-on activities. Graduate students have given several public presentations on ocean acidification and oyster biology. Students have been involved with Making Connections at the UW Women’s Center, Gear-Up Washington Program, Association of Women in Science, and Girls in Engineering, Math and Science (GEMS). For example, in the past couple of weeks graduate student Mackenzie Gavery assisted with a hack-a-thon activity in the GEMS program, in which girls coded the instructions for how to make elaborate patterns of stacked cups, and she also led a workshop called “Flex Your Mussels” at Seattle Expanding Your Horizons conference for middle school girls. Other examples of outreach activities from the Roberts lab that involve graduate students include participation in the

Rainier High School Science Fair, Seattle Expanding Your Horizons, Science in 180, Wilkes Elementary Science Fair, Paws-on Science Weekend at Pacific Science Center, UWTV interviews, NPR interviews, and presenting at teaching symposiums.

Julian Olden and his students have led a series of public outreach efforts in recent years. For example, they coordinated the first-ever volunteer-based eradication effort for an invasive crayfish in a western Washington lake. During the past two years, hundreds of lakeshore residents have removed thousands of crayfish to help restore native species. This has provided numerous public education opportunities in both local and regional media outlets, including an EarthFix radio piece on NPR. The Olden lab is also working with western US Sea Grant programs to develop tools and educational products that can help prevent species invasions resulting from the release of live organisms after use in the classroom. This program has involved working with elementary and secondary school teachers across Washington and other western states. Finally, the Paws-On-Science annual outreach event remains an exciting way of reaching out to budding ecologists in the Seattle area. The Olden lab and other labs at SAFS contribute regularly to this event, which has included interactive exhibits on invasive species in the past (http://depts.washington.edu/oldenlab/outreach-and-resources/citizen-science/).

The Alaska Salmon Program works extensively with several scientific, management, and education organizations in western Alaska. Some of the notable collaborations include hosting interns from the Bristol Bay Native Association for more than a decade, teaching contributions to Salmon Camp for school children and their teachers developed by the Bristol Bay Economic Development Corporation, and long-term collaborations with Alaska salmon processors and the Alaska Department of Fish and Game. Graduate students are involved in all of these activities.