



To: Joy Williamson-Lott, Dean of the Graduate School  
From: Dan Brown, Director, School of Environmental and Forest Sciences  
Date: May 1, 2020  
Re: School of Environmental and Forest Sciences response to Academic Review Committee Report

The School of Environmental and Forest Sciences (SEFS) community wishes to express its thanks to the Review Committee and the Graduate School leadership and staff for the time and thoughtful consideration they have dedicated to the review process. We are pleased with the committee's conclusion that SEFS is providing excellent education and training to its students, and the recommendation that our programs continue, with the next formal review in ten years.

As the committee noted, its charge was to review SEFS' programs to provide the Director and faculty with constructive recommendations for strengthening its undergraduate and graduate programs. The committee also addressed our unit-defined questions throughout their report. Following a brief summary, our response addresses the key findings and conclusions of the committee and provides clarification on specific issues when necessary.

### **Summary of SEFS responses to Key Findings:**

- *Finding:* SEFS hosts an ambitious and talented group of scholars, with healthy academic programs. Strategic planning and decisions are required to align curriculum and programs to an evolving faculty.

SEFS will continue its strategic planning efforts to align its undergraduate and graduate programs, with future directions determined by the faculty as a whole. This will allow us to systematically address and align curricular and capacity issues in our BSE, ESRM, and graduate programs, along with updating learning goals and course content.

- *Finding:* The unit is making rapid strides towards transparency and equity. Clear efforts to strengthen faculty and student engagement and build a unit-wide intellectual community are underway. Strategic planning is in progress and these efforts should be rewarded.

SEFS will continue its work towards strengthening faculty and student governance, transparency, and equity and inclusion. Much work has already been accomplished in terms of collectively developing, revising, and publishing policies related to curricular and teaching resources, graduate student progress, faculty promotion and tenure, research program funding and staffing, and equitable allocation of financial and facility resources.

- *Finding:* There is a specific and urgent need for facilities upgrades and new resources to support the emerging vision of the unit.

SEFS wholeheartedly agrees with this finding. The current violation of the federal Americans with Disabilities Act in Anderson Hall is unacceptable. The poor state of all of the buildings has had demonstrably negative impacts on research, teaching, and, as a result, our contributions to the entire UW and external communities. We have identified significant, specific facility improvements that are needed. Specifically, we are working with University capital planning and

facilities to pursue a major renovation of Anderson Hall to address accessibility, safety, functionality, and comfort. We have identified needs such as securing our buildings with electronic locking systems, replacing end-of-life facility components (e.g. freezers in Bloedel Hall; analytical lab equipment), working with UW facilities to repair or replace major systems in Bloedel Hall (e.g., HVAC and plumbing), and addressing other deferred maintenance.

The review committee noted an historical “green/brown divide” and perceptions of “tyranny of the majority” that present evident and on-going challenges to integrating the diverse and already heavily committed group of faculty members in an undepartmentalized school. On the other hand, they also heard about efforts to build and maintain a sense of intellectual community beyond faculty interest areas, and the persistent challenge of overcoming traditional disciplinary boundaries and the structural legacy of the old College of Forest Resources. The committee saw evidence that the Elected Faculty Council, the Diversity, Equity, and Inclusion Committee and the SEFS seminar are important efforts toward this end. These enhanced and strengthened collective discussion and decision processes allow for consideration and persuasion based on intellectual merits relative to our common goals. Faculty discussion of the review committee report emphasized the importance of encouraging, hearing, and respecting minority views in discussions and decision processes. SEFS views its intellectual diversity as a core strength in its mission of “generating and disseminating knowledge for the stewardship of natural and managed environments and the sustainable use of their products and services,” and takes great pride in our multidisciplinary faculty, staff, students, and courses. Our students are uniquely prepared to take on the biggest environmental challenges of the future.

#### **Graduate programs and curricula:**

The committee highlighted the School’s strong national reputation; outstanding, productive, and engaged faculty; and top graduate scholars. The committee also heard comments about issues related to enrollment, graduate student funding, curriculum, and community that deserve some attention.

We appreciate the committee’s recognition that addressing graduate funding is a clear priority across SEFS. A point of clarification is that the committee report notes that up to 40% of graduate quarters are unfunded, and this is not an accurate estimate. The MEH and MFR are professional graduate programs, and there is no expectation for funding those students. A more accurate estimate of graduate funding levels is 75% funded and 25% unfunded, based on an assessment of the number of funded quarters among active students in our MS and PhD programs during the 2018-19 academic year. In response to this high priority, the SEFS Scholarship Committee has revised the graduate fellowship award process to include more holistic review of nominated recipients, redirected available funding towards graduate fellowships, and moved timelines so that more complete funding packages are able to be offered with admission offers. The SEFS Research Committee has revised the award process for the McIntire Stennis block grant funding to be timed so that awards can better support graduate student recruitment and funding planning. Finally, our Elected Faculty Advisory Council (EFAC) has been discussing development of potential funding models that would ensure more consistent funding in future graduate admission processes. On-going discussions focus on pooling TA resources across the school, in combination with fellowships to provide school-level packages that can be combined with faculty-driven research support.

The committee highlighted the impressive breadth of research at SEFS and the enthusiasm of graduate students about the diversity of expertise and intellectual resources available to them. They note that the current curricular structure illuminates connections and collaborative

opportunities across disciplines, while also allowing students to develop deep expertise. The committee identified opportunities for improving the graduate curriculum by reviewing the single required graduate course, along with revising other elements of the curriculum to reinforce links among SEFS disciplines and common research methods. In particular, they note potential opportunities to better coordinate with the Quantitative Science program, consider a graduate writing course, include additional orientation programming during the first quarter, and develop professional mentoring regarding post-graduate opportunities.

SEFS has begun to address several of these items. In autumn of 2019, we extended the required orientation class into autumn quarter. This provides an additional shared community experience by meeting regularly throughout the quarter, and provides greater opportunities for information provision and mentoring. We have participated in discussions with QERM regarding the possible expansion of data science course offerings and programming and are also discussing the possibility of a data science option at the graduate level, in coordination with the eScience group at UW.

Regarding our MEH and MFR programs, the committee notes concerns from faculty about the viability of these programs over the long term. SEFS shares these concerns, particularly as key faculty have retired. Discussions have been initiated regarding the future of professional masters training in SEFS and how these programs might serve as a basis for rethinking a more general professional Master's program that can take advantage of the array of courses that are offered and engage more of our existing faculty. This effort depends on resolution of questions about both faculty capacity and funding models that can support such a program.

#### **Undergraduate programs and curricula:**

For the Bioresource Science and Engineering (BSE) program, the committee report raises an urgent conclusion regarding future sustainability of the program, pointing out that the program is "grossly understaffed" and that "current faculty are stretched to deliver the program." SEFS' existing commitment to engaging in strategic planning extends to strategic planning around the role of engineering within the School. Our recently submitted hiring plan takes a theme-based approach to hiring in the school, with a more open approach to hiring that both allows for hiring across multiple disciplines in a strategic direction that allows for greater diversity in hiring. SEFS faculty, including faculty teaching in the BSE, collectively settled on Climate Adaptation as a theme around which hires in the immediate future should be made. Chemical Engineering is included as one of the fields from which SEFS might hire faculty for this strategic direction. [We anticipate future faculty hiring may be minimal given budget considerations associated with the COVID-19 crisis that initiated after this report was written].

Discussions are underway among faculty who teach in the BSE program, the full SEFS faculty, SEFS leadership, and leadership the College of Engineering (Civil and Environmental, Chemical) to continue collective thinking and planning related to how to support and/or evolve the curriculum in ways that establish longer-term sustainability of the BSE program. Possible outcomes of these discussions could include: (a) new engineering faculty hiring in SEFS, (b) joint hiring with a unit(s) in Engineering, (c) exploring greater curricular integration with ESRM, (d) consideration of whether and how to maintain accreditation, and (e) developing more explicit programmatic partnerships with programs in the College of Engineering. Each of these options (and others not listed here), will have strengths and weaknesses that will be considered as part of these discussions.

For the Environmental Science and Resource Management (ESRM) program, the committee notes that the flexibility of the major leads to some students coming late to the major, along with some redundancy in course content, presenting tensions between flexibility and rigor. The report notes that ESRM is one of a minority of open majors at UW (approximately 27% of majors at UW are open majors).

Students expressed a desire to see increased diversity of authors and prominent scientists and conservationists featured within the curriculum in order to reflect the changing face of the field and represent non-Western viewpoints. As part of our strategic planning around curriculum, SEFS is committed to systematically addressing curricular and capacity issues, along with updating learning goals and course content. As a start, we have recently added additional pre-requisite courses (consisting of our core required courses) to some of our upper division courses, and will continue assessing appropriate preparation and content for all of our courses. We are currently evaluating core requirements in the ESRM degree, and aim to focus on curriculum evaluation in our 2020 fall retreat. As part of our diversity, equity, and inclusion work, we have identified evaluation of the curriculum for inclusive programming as a key goal.

The committee report discusses the undergraduate capstone requirement, and incorrectly states that the capstone is only required for the Wildlife option. The capstone requirement remains in place for the Wildlife option, the Restoration Ecology and Environmental Horticulture (REEH) option, and for Honors students. The capstone requirement for other students was not removed lightly; our majors have more than doubled since the current curriculum was established (from 149 in 2007 to 335 in 2018). This increase, along with a decline in faculty numbers (38 in 2000 to 33 in 2019) resulted in a capacity constraint that did not allow faculty to adequately mentor students through a quality capstone experience. The Wildlife and REEH options have structured capstone designs that facilitate students' completion of the capstone.

The committee heard from students that some of their required labs can get expensive. We believe that students were referring to the field trip fees, which pay for transportation costs, and can be costly. While we are sensitive to costs, field and experiential learning are signature elements of our degree program that we are committed to maintaining. As a result of this feedback, we have identified the need to more prominently advertise the student support fund, which provides financial assistance to students for course fees. Additionally, we are considering whether SEFS can pay the fees entirely from endowed funds, and not charge course fees to students. We are doing so currently for our remote learning spring quarter instigated by the COVID-19 pandemic.

### **Personnel, Facilities, and Resources**

As mentioned in the summary, an historical "green/brown divide" and perceptions of "tyranny of the majority" present evident and on-going challenges to integrating the diverse and already heavily committed group of faculty members in an undepartmentalized school. The committee saw evidence that the Elected Faculty Council, the Inclusion and Diversity Committee and the SEFS seminar are important efforts toward this end. We are pleased that the committee noted that unit is making rapid strides towards transparency and equity, and that clear efforts to strengthen faculty and student engagement and build a unit-wide intellectual community are underway.

On reflection of these challenges, the faculty concluded in discussion that the intellectual diversity of who we are in SEFS; i.e., multiple disciplines ranging from environmental science, bioresource science and engineering, wildlife science, forest ecology, landscape ecology, plant science, entomology, economics, policy, management, psychology, and more, and with multiple

built-in connections to agency and industry partners; is something that is a core strength of SEFS and a benefit to our students. Through class field trips, labs, and research projects, we are able to connect students with multiple stakeholder partners in ways that benefit them tremendously for building networks and seeing firsthand how their coursework and research connects to real-world challenges across diverse perspectives. Topical and disciplinary diversity in any unit comes with its challenges, but also is a tremendous asset that brings opportunity. Through collaboration, we are able to bring multiple perspectives to real problems faced by external partners, providing a solution orientation that can draw on collaborative and engaged problem identification, natural and social science expertise, experimental and statistical analyses, and policy and engineering solution sets. Our topical and disciplinary diversity, and connections with outside partners, helps us fulfill our 'social contract' as environmental scientists and engineers. The transdisciplinary and externally engaged work provides our students with experience that is much harder to replicate in units that are more uniform in topical expertise.

The committee notes that critical upgrades are required in facilities to support the educational and research missions of the School and that budget constraints place SEFS in a precarious condition. We have identified, and listed above, some key facility needs, many related to deferred maintenance. Additionally, as we move forward with strategic visioning about future programmatic priorities, some faculty hiring will be necessary to implement these directions.

### **Recommendations and Conclusions:**

We wish to reiterate our appreciation to each of the members of the review committee. Our continued success relies on constructive and candid feedback from our peers and colleagues. This process will contribute greatly to our future success, and we look forward to another decade of growth and innovation. In particular, we are thankful for the committee's careful attention to the areas in which SEFS faculty should focus strategic thinking in the near term. These areas are well summarized by the summary recommendations provided by the committee in their report:

- “Consider the role of both research MS and professional MS programs in the strategic vision of the School and make investments as required to support that vision.
- Continue the work already in progress to articulate a clear policy on funding for graduate research students.
- Consider updating elements of the common graduate curriculum.
- A strategic plan for the future of engineering within SEFS is critically needed.
  - Director- and Dean-level intervention are required to pierce institutional barriers for BSE cooperation with College of Engineering programs.
  - There is tremendous unrealized potential in the unique co-location of engineering and environmental science within the same academic unit.
- A comprehensive look at ESRM curriculum could benefit both students and faculty.”

As outlined in this response, these recommendations track well with the work and discussions we have underway. It is both gratifying to see these priorities underscored as a result of the review, and helpful for us to have them laid out in this way. As a result of this process, we are focusing on specific next steps as described in this response.