

**Report of External Reviewers on the Rubenstein School for Environment and
Natural Resources, University of Vermont**

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Introduction

An invited, comprehensive program review of the Rubenstein School of Environment and Natural Resources (RSENR) was conducted on September 14-15, 2016 by a team of four external reviewers to offer observations and suggestions on the academic programs of the School with particular focus on the RSENR graduate program and three of its undergraduate programs: Natural Resources; Parks, Recreation and Tourism, and Wildlife and Fisheries Biology. The team wishes to thank the Dean, faculty, staff, and students of RSENR for their warm welcome and thorough descriptions of their academic offerings and operations during the site visit. In a short period of time the team was able to gain substantial insight into the mission, goals, faculty, administration, curricula, and student outcomes associated with RSENR. It is the team's earnest hope that this review will encourage reflection among all members of the RSENR community such that its programs will attain higher levels of success.

Based on instructions received by the team from the Office of the Provost, University of Vermont (UVM), the report will be organized into three major sections: (a) Conclusions; (b) Recommendations; and (3) Analysis. The team has taken the liberty to focus its more detailed descriptions of the four programs assessed during the "Analysis" section, with the first two sections of the report addressing issues common to the entire School. Considering the integrated structure of the School's programs, which we universally applaud, it seems appropriate to target the teams' recommendations to the School's overall approach rather than repeating themes across the programs. We have also included in this report a final section, "Response to Dean's Questions" that addresses five questions submitted to the team by Dean Mathews.

The team wishes to emphasize a cautionary note regarding our observations and conclusions. A brief visit of a review body cannot possibly unpack all the complexities relevant to the delivery of a broad set of educational programs within a modern university. The excellent self-study materials provided in advance to the team coupled with our own experience allowed us to develop a fresh perspective, but our analysis can hardly be considered authoritative or comprehensive. We also became aware of significant transitions occurring across the UVM campus, particularly regarding the budget allocation process, such that significant changes are likely to occur across campus in the near future. These potential changes fall outside the bounds of any recommendations of the team, but may bear on the suitability or practicality of some of our recommendations being implemented. Nevertheless, we feel confident that our major conclusions reflect some verifiable realities within RSENR, particularly our overriding impression that it is the high quality of the people and their dedication to the School's mission that make RSENR a special place. We are grateful to have had the opportunity to learn from you, and we hope this report will offer some added value to your endeavors.

Conclusions

This section will provide the team's general conclusions about RSENR including our evaluations of the School's approach to undergraduate education, its administration and structure, research capabilities, quality of faculty, student outcomes, and assessment practices.

Undergraduate education:

RSENR provides a high-quality undergraduate experience for all the programs observed. Both faculty and students recognize the value of applied, field-based learning, and although this approach creates greater effort, coordination, cost, and support to manifest, students consistently mentioned the importance of hands-on experiences as a regular part of coursework.

The attention given to a core curriculum for undergraduates advances several UVM and RSENR goals. Its attention to diversity and cultural sensitivity is particularly laudable, and the integration of social sciences into the physical science program prepares students to be effective professionals. The core curriculum will need to remain fresh, challenging, and issue-driven to continue to motivate students. Since core classes are large in size and demanding for instructors, delivering the core curriculum will require RSENR to carefully consider how these teaching responsibilities are distributed equitably across faculty. Young faculty, feeling intense pressure to develop their scholarship to advance through tenure, might find core curricular teaching responsibilities burdensome. Because stimulating coursework early in a student's career supports student retention, a focus on nurturing the most talented instructors for core classes will contribute to long-term success.

The current uptick in first-year enrollment reflects a key strength of RSENR – the creation of a reputation of relevance and student empowerment through RSENR's programs. Students we met, and the self-study report, demonstrated that students have a high probability of finding employment in their field within a few years of graduation. The team also heard from students that part of the undergraduate program's attractiveness is the demonstration by faculty of a commitment to mentoring and advising. This commitment has bounds, however, and the team will recommend the consideration of additional support to professional advising, so that faculty can focus more directly on student mentoring. Sustaining student solidarity with the School's mission and approach will be vital in the success of RSENR under the new budget model, since undergraduate enrollment will tend to drive resource allocation. Care must be taken not to allow budget algorithms to drive course design, since the laboratory and field courses of RSENR undergird its educational quality. In short, the RSENR undergraduate program shines at UVM, and protecting it as a foundational strength will be a central responsibility of administrators.

RSENR Administration and Structure

The School has organized its faculty, administration, and curricula around an integrated program model, a design that cannot be commonly found across natural resources schools and colleges. Although this model can be difficult to manage because of its breadth, at RSENR it has fostered what we observed as a level of collegiality and shared responsibility that appear motivational to faculty. The distribution of administrative duties among associate deans appears to be working well, due in no small part to the dedication to holism and excellent communication skills of the current administrative team. Additionally, Dean Mathews has fostered a confidence and cohesion around the School's mission that drives a sense of common cause. The centralized design for student services offered in the Dean's office appears to provide efficient and effective support to students.

The division of the educational experience of undergraduates into programs requires dedicated mid-level leadership by Program Directors. The team observed this to be functional, although some signs of strain were evident, suggesting that the duties of Program Directors can be overwhelming. The current level of additional compensation to Program Directors seems to be low based on their extensive duties.

Research

As the self-study identifies, RSENR faculty have been highly productive researchers, particularly in light of their heavy teaching loads. Like all universities, the health of the research program at RSENR is directly related to the quality of graduate students and opportunities graduate students are afforded during their studies, and additional assessment information on the graduate program can be found later in this report.

Limitations of existing research facilities at RSENR may impede the desired expansion of faculty research or the School's PhD program. The quasi-refurbished, old Forest Service facility on Spear Street requires significant investment.

The decision to focus McIntire-Stennis resources toward enhancing the PhD program, and the encouragement of multiple PI's for these awards should advance opportunities for integrated research. The team believes that the ability of faculty to generate competitive research proposals would be substantially advanced by dedicated and timely pre-award support.

Faculty

Any university's value circulates around the quality of its faculty. The visit of the review team confirmed the statement in the self-study report that "our faculty is flourishing." Collegiality among faculty was evident and widely valued. Research productivity appears high, given the significant investment of faculty in teaching, service, and student advising. The egalitarian nature of faculty decision processes

impressed the review team, as evidenced by the inclusion of lecturers and senior lecturers in academic planning.

Young, tenure-track faculty feel stress from high levels of expectations. Although young faculty have access to mentoring and counsel in their path to promotion and tenure, more formalized, consistent conversations on performance expectations as well as modifying the distribution of responsibilities early in a faculty member's academic career might alleviate some stress and nurture greater confidence.

The use of full-time and part time lecturers with opportunity for promotion to Senior Lecturer appears to be an effective means to address teaching demands. RSENR seems to have adopted a fair balance in the use of lecturers for instruction. However, students and their families expect a large proportion of instruction delivered by faculty with the rank of professor, and faculty have appropriately embraced teaching as a central function of their work.

Student outcomes

The team was deeply impressed by the curiosity, commitment, and energy of RSENR students. Both graduate and undergraduate students expressed excitement about their academic endeavors and anticipate making a difference in the world. When recent graduates of RSENR were interviewed, they believed their education prepared them well for their professional careers. Students recounted how faculty advisors were available and approachable, and they sensed that both faculty and staff took personal interest in their success. Students appreciated being part of a larger community, and they enjoyed the extra-curricular events sponsored by RSENR, such as a School-wide annual picnic.

Some students mentioned a degree of impatience with the core requirements, understandably desiring maximum efficiency in completing their studies, but also concerned that core courses might not complement the other offerings in their major as well as they could. In general, students praised the integrated, applied approach within their programs, feeling that it gave them a leg up on employment. Statistics presented in the self-study identified that over 70% of students find employment within their chosen field within three years, a strong indicator of student success.

Assessment practices

RSENR has undertaken a serious, comprehensive approach to academic assessment with an approach that acknowledges a sequence of student attainment (exposure, building capacity, and competency) as well as a means to track the various dimensions of student learning across six rubrics. The sophistication of the assessment impressed the review team, and its design allows for multiple levels of measurement. However, the very weight of the assessment might overwhelm users in the future, and thought must be directed on how assessment results will be used.

Recommendations

The following bulleted list of recommendations was developed during the team's site visit and through subsequent discussion and analysis. Although each may be considered as an independent suggestion, they are intended to be mutually supportive, building on the strengths of UVM, RSENR, and RSENR's educational mission to "understand, nurture, and enrich the interdependence of people through healthy ecological systems."

- Continue to invest in the existing, integrated, service-based undergraduate curriculum to sustain its relevance, attractiveness, and quality. Guard against erosion of the current "high-touch" approach that connects students with faculty.
- Revisit the content of the core curriculum continuously with attention to the creation of multiple pathways within the core to desired competencies in each undergraduate academic program.
- Consider what feasible changes could be implemented from the results of the adopted academic assessment process (or more simply, what do you plan to do with this information?). Revisit the steps in the assessment process to simplify its protocols to direct attention to the most straightforward potential curricular changes.
- Develop a process and engage in School-wide discussions that identify bottlenecks and constraints in the RSENR graduate program. Clarify relationships among graduate coursework, current and future Masters programs (including Professional MS opportunities), and the PhD program. Recognize the tradeoffs between an expansion of the graduate program and the delivery of undergraduate curricula.
- Develop a clear case statement for donors to invest in research facilities to continue to attract new faculty and facilitate recruitment and success of graduate students.
- Support faculty research through the hire of a pre-award specialist in the RSENR financial office to help navigate proposals through the application process
- Develop and monitor expectations for new faculty members so that they are not overwhelmed in their path toward tenure. Consider a flexible distribution of workload for young, tenure track faculty as a modification of the common 40-40-20 split among teaching, research, and service.
- Find the necessary resources to hire an additional professional advisor to work as part of the existing student support staff in the Dean's Office. This will allow faculty to retain their important roles as student mentors, while relieving them of rote duties to channel students into required courses.
- Consider original methods to increase the compensation of Program Directors within RSENR. Current incentives for the multiple responsibilities associated with these positions appear inadequate.

- Work with the Office of the Provost to ensure that the new IBB model for resource allocation does not diminish opportunities for laboratory and field-based courses. A request for a permanent seat on the Provost's Educational Stewardship Committee may help mitigate potential losses from formula-driven budgets.
- Consider a means to adjust the IBB such that RSENR personnel who advise and mentor students within the Environmental Sciences Program (ESP) are rewarded for their advising duties for ESP students enrolled in the College of Agriculture and Life Sciences or the College of Arts and Sciences.

Analysis

The following section examines the four programs selected for review within the RSENR: Natural Resources; Parks, Recreation and Tourism; Wildlife and Fisheries Biology; and the Graduate Program. The analysis utilizes a simple format of general observations, strengths, challenges, and opportunities for each program.

Natural Resources Program

General observations of the NR Program

The NR program has very highly regarded, award-winning faculty involved, including Program Director Clare Ginger, Jen Pontius, Deane Wang, Zak Ispa-Landa, Walt Kuentzel, and Curt Ventriss. It strikes a valuable balance between social and natural sciences and ensures that majors are exposed to both. It has three options: Resource Ecology (a more ecologically-oriented curriculum), Resource Planning (a more social science-based decision making/planning focus), and Integrated Natural Resources (a more independently-designed curriculum based on student interests).

As described in the self-study, the NR faculty proposes changing the program name to Ecology, Society and Sustainability. This name change would better reflect the curriculum and bring the program more in line with other programs around the country. The NR title suggests a more management-oriented program that is not consistent with this program's curriculum and goals. Few integrated social and natural science undergraduate programs of this type exist around the country and the new name would help the program to stand out vis a vis other programs in natural resource schools.

Strengths of the NR Program

- This program has a strong faculty, deeply committed to delivering a challenging curriculum and seriously mentoring undergraduate students. The students appear engaged and passionate about the subject matter. They appreciate the commitment of the faculty and the flexibility of this major and its three majors.
- The program has adapted to changing student needs and opportunities over time, adding options and the Geospatial minor. It has provided a good education for its

graduates who are overwhelmingly satisfied with their education and succeed in their careers and taking next steps toward graduate degrees.

Challenges facing the NR Program

- As with many faculty in the school, this faculty is stretched very thin – they have excellent ideas for improving the program, but few resources to implement them.
- The current structure of the program, as a Natural Resources degree, with multiple options has issues. First, Natural Resources, or perhaps more commonly, Natural Resource Management or Resource Management, degree programs do not typically focus on either in-depth resource ecology, planning, or social sciences. They are typically very management-focused programs (ironically, the self-assessment view this program as the opposite of this and sees the other RESNR programs as more management-focused than NR). The suggested change to a new name: Ecology, Society, and Sustainability makes sense for the Resource Planning option – which is structured much more like a Conservation Social Science, or similar, program. It may make sense for the Integrated NR option. It is unclear that it makes sense for the Resource Ecology option.
- Coupling the Resource Ecology and Resource Planning options under one degree umbrella may not make sense. It is unclear that they are very coupled at all. While adding the two new integrated socioecological systems 100 level and capstone courses (if resources were available) could go a long way toward advancing that, they may not go far enough. Based on the textual descriptions of the two options, I expected a curriculum for the options that continued to require ecology courses for the Resource Planning students and social science courses for the Resource Ecology students (beyond the core RESNR classes). But the curriculum does not appear to do this. It seems to append a fairly standard natural resource-oriented ecology curriculum onto the RESNR core courses (which are definitely rich in social science content) and vice versa for the Resource Planning option (which appends a social science-focused curriculum onto already pretty social science-focused core courses). I wonder about the distinctiveness of the Resource Ecology option versus the Wildlife curriculum (I understand that it is more generally-focused than just wildlife).
- Adding the two socioecological courses, given sufficient resources, is an excellent idea, but I'm not sure that it goes far enough.
- Student portfolios are an interesting idea as a way to assess overall student progress as a group, but perhaps more usefully, as a way to shepherd and document individual student development – this could be useful for students applying to graduate school or jobs, as a source of clear evidence of development and achievement. I have no experience with this tool, but I suggest that faculty focus more on the latter than the former, as the latter has clear benefit.
- Students from the major like the structure of the curriculum (versus the Environmental Science and Studies curricula). However, given the RESNR policy of assigning curricular advising to program faculty who are therefore

overwhelmed by this time commitment, they find it difficult to get time to talk to faculty about the issues that faculty could really help them with, such as thinking about graduate school, graduate assistantships, or career pathways. Reducing the load of responsibility for overseeing curricular advising could free up NR faculty time to better assist students with these more advanced types of questions and discussions.

Opportunities for the NR program

- RESNR is delivering a world-class curriculum with more social science core course content than almost any other related program in the U.S. Giving students capacity to integrate social and ecological sciences would be really beneficial to their careers and, for those choosing to go on to graduate school and research, to students working in the world of environmental science and management. Few scientists or faculty are skilled in this arena and there is demand for it. NR faculty and curricula are poised to be able to take the lead on this. Unfortunately, the current programs don't go as far as they could. It would be beneficial to take the opportunity of a new ESS program to go further in integrating social and ecological sciences than the program does to date. If the ESS program were to keep the three or two options that currently exist, then I suggest requiring more advanced social science classes of the Resource Ecology students and more advanced ecology classes of the Resource Planning students. However, I don't find the title Resource Planning to successfully describe the option – it is more of a conservation social science curriculum or something along those lines. For a planning option, I would expect more actual planning courses, such as land use information.
- Adding the proposed socioecological classes, changing the name of the degree, and adding the student portfolio requirement would add value to the program. However, program faculty are already highly overworked and these changes would not be reasonable without additional faculty time and resources.
- RESNR stands out relative to other similar units at land grants across the U.S. It is delivering a much more demanding, liberal arts-oriented, undergraduate student-oriented, “ivy league” quality education with integrated social and natural science curricula. It is not comparable to parallel programs at its current benchmark schools. It is different and unique and could capitalize on this by using the potential new ESS program and a new curricula to truly integrate, in a deeper way, the social and natural sciences.
- The Field Naturalist proposal is an interesting way to take advantage of the points made above if it builds in a substantial social science focus by integrating human dimensions, communications, and other pertinent requirements that give it a strong social science, as well as natural science focus.

Parks, Recreation, and Tourism Program

General observations of the PRT Program

The PRT program within RSENr is recognized as a national leader relative to scholarship undertaken in the field of parks, recreation, and tourism. Professors Kuentzel, Manning, and Stokowski have been active contributors to the field for decades and all have been inducted as Fellows into the Academy of Leisure Sciences, the highest recognition given to scholars in the field.

The PRT philosophy is consistent with the aims of the school in general. Until the recent retirement, all faculty brought expertise to students in one of the areas of PRT.

Strengths of the PRT Program

- The students graduating from the PRT program are positioned well for employment in the PRT job market as evidenced by the placement statistics.
- Students receive excellent opportunities for experiential education, internships, travel opportunities, and contact with professionals in the field through their curriculum in PRT.
- As noted above, the faculty have been nationally recognized for their efforts.
- Students are positive about their education in PRT and feel that their faculty are accessible and open to input regarding the program.
- The addition of Sports Management has contributed to campus collaborations and has provided a means for students to further their career opportunities
- Students believe they are well equipped to engage in society with their background in diversity.

Challenges facing the PRT Program

- The retirement of Professor Manning has left a major hole in the curriculum relative particularly to his expertise in parks.
- Little growth in the number of students in the program has occurred during the past 10 years and the program in its current situation has not been targeted as a potential growth area within RSENr.
- Although the curriculum appears adequate, it has not been substantially updated for some time. The dichotomy of public and private recreation is somewhat false, although students now take all the coursework in both areas.
- PRT has not been promoted as a major either within RSENr or on campus. Although it is typically a “discovery” major, more could be done to enable students to know of its existence and choose it either as a major or as a minor.

Opportunities for the PRT Program

- Hiring a new faculty member whose expertise and scholarship fits within the scope of PRT will be critical to the future of the program. This individual should complement the strengths already existing as well as provide greater depth and breadth for the parks portion of PRT.
- The curriculum is in need of an overhaul relative to the broad areas (public, not-for-profit, and business management) of the field. In addition, the connections

- with RSENr in using the PRT curriculum as a supplement to RSENr's focus needs more emphasis. Students may not need all 12 courses required and likely some of these courses could be streamlined to avoid overlap.
- Sustainability is an important aspect of RSENr as it is to PRT. PRT might consider its curriculum not only in relation to environmental sustainability but also the other pillars related to sustainability (economic and social) since these are also important elements within the curriculum.
 - In redefining the curriculum, the faculty should carefully consider where they fit within RSENr and think about the learning sequencing of courses as it best fits with the RSENr's core requirements.
 - Although not always easy to do with a small complement of faculty, the linking of research and teaching should be emphasized.
 - PRT is an important sector of RSENr and that importance should be made clear in the uniqueness that a PRT program brings as well as the value added to RSENr.
 - The PRT program faculty may need to meet regularly with some facilitated leadership to develop a new curriculum.
 - Efforts should be made to assure that sports management is contributing to the mission of PRT and RSENr.

Wildlife and Fisheries Biology Program

General Observations

Since 2006, the Wildlife and Fisheries Biology Program has focused on research and management related to wildlife and fish populations, and their interactions with people and the environment. In contrast to other programs in RSENr (e.g. Natural Resources), the faculty expertise is concentrated on the natural sciences with limited expertise in the social or human dimensions of wildlife and fisheries. In this respect the position of the program within a larger School with considerable strength in the social sciences is very valuable. Enrollment in the program has grown considerably in recent years, and with an average of 105 majors it is one of the larger programs in the School. There is a strong emphasis on experiential learning in the undergraduate program, which is highly valued by students, but can be time-consuming for faculty. Relative to its size, the program has a small core faculty (4), supported by a similar number of research associate faculty. Faculty have been successful in sustaining a laudable level of research scholarship despite the substantial teaching requirements.

Strengths

- The program is delivered by a core of excellent, collegial faculty, supported by a strong partnership with the USGS Cooperative Fish and Wildlife Research Unit.
- The faculty provide outstanding opportunities for research experiences for undergraduate students, as well as a solid graduate research program.
- More generally, the students value the faculty commitment to experiential learning.

- The recently created course in Scientific Writing and Interpretation provides valuable experience for undergraduates in critical thinking, analytical methods, and technical writing.
- Evidence from surveys suggests that graduates from the program enjoy high placement rates into professional positions related to their disciplinary training.

Challenges

- Increased undergraduate enrollment in the program in recent years has put a strain on faculty advising and instruction, given the small size of the core faculty and a single full-time instructor (McDonald).
- This has been exacerbated somewhat by the substantial administrative appointment of a core faculty member (Strong)
- A further pressure on the teaching load for the core faculty and the lone instructor comes from the reduced teaching assignment for one faculty member (Stockwell) due to responsibility for the Rubenstein Ecosystem Science Laboratory.
- The students we met with suggested that the core curriculum requirements detract from opportunities to pursue courses of interest within the major, can create scheduling challenges, and expressed frustration at what was seen as a conservative approach to considering experience outside of the program as potentially obviating the need for certain pre-requisites.
- The small number of core faculty limits undergraduate student opportunities to acquire research experiences, although the extent to which these experiences are made available is commendable.

Opportunities

- There are plans to hire a new faculty member with wildlife expertise, which should alleviate some of the strain on teaching loads for the other faculty; however, serious consideration should be given to instead recruiting an additional full time lecturer (or a faculty member with larger-than-normal teaching assignment) – this will arguably do more to alleviate the teaching overload.
- Consider following the trend among other wildlife and fisheries programs to reduce the number of required organismal biology classes, replacing these requirements with courses more focused on management and on the human dimensions of wildlife and fisheries.
- Strengthen existing and encourage new partnerships with federal and state agencies (and possible NGOs) to facilitate more experiential opportunities for undergraduates.

- Centralize routine advising activities (e.g., course scheduling) to allow faculty advising to be more focused on professional development and career planning.
- Be sure to protect opportunities for hands-on, experiential learning, even in the face of pressures to move towards classroom models that enable higher enrollment (to leverage budgetary resources).
- Consider ways to allow greater flexibility with the core curriculum, recognizing that some students may come to the program with relevant experience that might make some of the core content feel repetitive to them.

The Graduate Program of RSENr

General observations of the Graduate Program

The RESNR graduate program approaches a crossroads in the coming years as the demands for research within the natural resources sector expand exponentially with the staggering challenges facing social and biophysical systems. The tremendous talent across RESNR faculty could allow an expansion of the graduate program and its research outputs, as faculty capabilities for scholarship have already been proven. However, the manner in which the graduate program expands depends on critical choices among faculty, administrators, and likely research clients as well as a conscious acknowledgement of tradeoffs between teaching and research – tenure line faculty reported bring “stressed” between the demands of teaching RSENr’s applied curriculum and the desire for professional advancement afforded by research productivity. Additional tradeoffs between the size of the Masters programs (and its associated course requirements) and the size of the PhD program (with its needs for infrastructure) must be addressed head-on. The team and RSENr faculty alike were surprised to see in the self-study report a goal of 100 PhD students, a target that appears unrealistic given existing funding, facilities, and faculty energy. As the team recommends in this report, a serious conversation within RSENr about the future of the graduate program and its implications seems warranted.

Strengths of the graduate program

- RSENr has an outstanding faculty with enormous potential to acquire extramural funding to support graduate students.
- Current graduate students expressed a very positive relationship with their faculty advisors and appear motivated and well-prepared.
- The Rubenstein Graduate Student Association is popular with students and helps build a sense of community and peer learning opportunities.

- Strong existing linkages with Vermont’s natural resources agencies through Extension and other outreach mechanisms supply ample cases for graduate student research projects, especially at the Masters level.
- The partially on-line, limited residential Masters with a certificate for Leadership in Sustainability might serve as a powerful model for future hybrid Professional Science Masters degrees.
- Positive relationships with both the Law School and the campus-wide Gund Institute offer dual degrees, which have a likelihood of becoming more popular as demand increases for professionals with a broad base of knowledge and skills.

Challenges facing the graduate program

- Graduate lab facilities and office space are inadequate even for the current number of students. Significant investment in the Spear Street facility will be necessary in the near future, as well as more convenient, reliable transportation to and from the Aikin Building.
- The lack of a coherent portfolio of graduate student courses hinders graduate student preparation for their research. Graduate students emphasized the shortage of course offerings as the most limiting factor in the graduate program.

Opportunities for the graduate program

- Hiring a pre-award specialist will greatly help faculty prepare research proposals and likely increase the number of awards. Faculty are typically inefficient in completing the burdensome financial checklists to be submitted to sponsors.
- RSENR may wish to consider innovative methods to offer graduate courses as it reflects on how it wishes to engage in Professional Science Masters programs. On-line courses can be very attractive to mid-career professionals, for example. Further, some universities have coupled selected undergraduate majors to an extra year of study to create “4+1” Masters degrees, which allow specific courses to count toward both undergraduate and graduate credit. This allows some graduate students with degrees from other universities to have additional choices for courses at the MS level.

Responses to the Dean's Questions

In a letter to Associate Provost Reed dated August 24, 2016, Dean Mathews requested that the team address five specific questions during its review of RSENR.

- 1) *What is our unique academic niche among schools of environment and natural resources?*

The integrated program structure coupled with a core curriculum and applied, service-learning courses offer a set of experiences and cross-fertilization uncommon in an era of specialization. The conscious joining of social sciences with physical sciences in the revised Ecology, Society, and Sustainability undergraduate program demonstrates this commitment to integration. The opportunity for students to engage with professionals within a region can be found in many schools, but these encounters are rarely joined with coursework emphasizing culture, diversity, and power relationships in society. Additionally, the new, low-residency Masters degree with a concentration in Leadership for Sustainability offers an original and attractive opportunity for both recent graduates and mid-career professionals.

- 2) *Is our current academic programmatic structure contemporary?*

Surprisingly, no it is not. It is traditional in the best sense of the word in that early natural resources programs were all under a unified roof. However, this model has largely been abandoned in favor of isolated departments that offer greater focus but less integration. The non-departmental structure meets important goals of collegiality and holism, but it will be hard to continue when demands for additional research productivity will push faculty into clusters that tend to advocate for boundaries. The structure of RSENR is actually more futuristic than contemporary.

- 3) *How do we rank relative to our competitors?*

There are numerous ranking systems of professional schools and colleges, none of which the team finds very relevant. In our view, you rank highly in terms of student satisfaction, learning, employment, and motivation.

- 4) *How well do the current numbers of instructional faculty and staff meet the schools needs?*

As our review identifies, there are a few areas – research pre-awards and professional advising for students – where additional staff could help fulfill the School's mission. Instructional faculty, including lecturers and tenure-

track faculty, appear to meet current instructional needs, but there is clear evidence that instructors feel overworked. Since natural resource professionals demand a broad range of knowledge and skills, additional instructors may be necessary. As an example, an area that emerged as underserved at the moment is Geographic Information Systems (GIS).

5) *How well does the current administrative structure serve the School?*

The current administrative structure appears to serve the school well. The Dean's office and the Associate Deans efficiently provide oversight to academics, research, and student services. The Program Directors do extraordinary work to sustain curricula, although as this report mentions, additional incentives to faculty serving as Program Directors may be necessary.