

# FISHERIES AND WILDLIFE GRADUATE PROGRAM REVIEW

Site visit: April 10, 2017

Review report submitted: 23 June 2017

## **Overall Recommendation: Maintain and Expand as resources allow**

### **Summary of Findings:**

The Fisheries and Wildlife graduate programs are high quality and appear to be thriving. Nationally, the program's online course offerings and degrees are currently second to none in the field, and the program is reliant on this revenue stream--perhaps overly so. The Hatfield Center is a major attractant for graduate students, despite its distance from Corvallis. The sense of community among the graduate students is really strong, and the students provide outstanding leadership for the graduate program.

Recommendations below are meant to improve and help sustain a strong program, avoid any potential financial challenges, and position the department for future opportunities.

### *Summary of Specific Recommendations*

1. The program is vulnerable to changes in the returned revenue policy on Ecampus courses and degrees, and needs to plan for decreasing support from this source.
2. The department needs to describe plans for eliminating the current budget deficit which appears to have persisted despite healthy revenue from Ecampus.
3. The program should consider hiring more instructors instead of expanding GTA positions to cover teaching responsibilities, and reinvest the savings into GRAs.
4. A full review and revamping of the curricular offerings should be done to create more stand-alone graduate courses that address general skills, and reduce the number of specialty courses.
5. Find a way to secure and promise multi-year full funding for all admitted students.
6. Investigate ways to move towards more consolidation of the program on the Corvallis campus.
7. Assess and document the performance goals and impacts of the on-line Certificates.
8. The annual review process and provision of written performance metrics for faculty based on appointments, especially pre-tenure faculty, was unclear and should be better articulated.
9. A formal review process for Courtesy Faculty should be defined.
10. Create a plan to improve diversity recruitment strategies and set goals.
11. Provide an analysis of the decline in enrollments in the MSc and PhD programs over the last few years and a plan for reversal of the trend.
12. Improve communication of key issues to faculty from the chair and college.
13. Formalize a process for offering advice on career planning to graduate students.
14. Need to address rising education costs at the university level that make graduate students more expensive than field technicians, post docs, etc. The issue of capped tuition remissions for graduate assistants in a program is a problem.
15. Risk management (e.g., insurance) issues need to be resolved at College level.

## Detailed Findings

### I. Introduction

#### *Objectives of the review*

The objectives of the ten-year review of the Fisheries and Wildlife Graduate Program in the College of Agricultural Sciences at Oregon State University are to assess its status, provide documentation of findings, and provide specific recommendations.

The review team included three external reviewers and three internal reviewers (see review team below). The review team met on Sunday, April 9th for a pre-review meeting. The review panel met on Monday, August 10 with the following groups:

8:15–9:00 am Meet with Program Director (Heppell)  
9:00–10:00 am Meet with Graduate Committee  
10:15–11:00 am Meet with Advising and Program Staff  
11:00–11:30 am Meet with off-campus faculty and instructors (video conference)  
11:30–12:30 pm Meet with all faculty and instructors  
12:30–1:45 pm Meet with Fisheries and Wildlife Graduate Student Association and tour of facilities  
2:00–2:45 pm Meet with Deans  
3:00–4:00 pm Meet with Graduate Students  
4:00–5:00 pm Executive Review Session  
5:00–5:45 pm Exit Report

In addition to the information provided during the interviews on Monday, April 10th, the department provided to the panel a report, the Self-Study of the Graduate Programs in Fisheries and Wildlife, that was used as the basis for much of the information in this review.

#### *Site visit review team*

- Ed Bowles (ODFW) – external reviewer; employer
- Henry “Rique” Campa III (Michigan State University) – external academic reviewer
- Stephen Dinsmore (Iowa State University) – external academic reviewer
- Theresa Filtz (OSU) – internal reviewer
- Jim Coakley (OSU) – internal reviewer
- Jennifer Brown (OSU) – Graduate School Dean

#### *Order of events*

The site visit agenda is attached as Appendix I and followed a standard schedule.

#### *Organization of the report*

The report was thorough and thoughtful, and organized as required by OSU Graduate Program Guidelines.

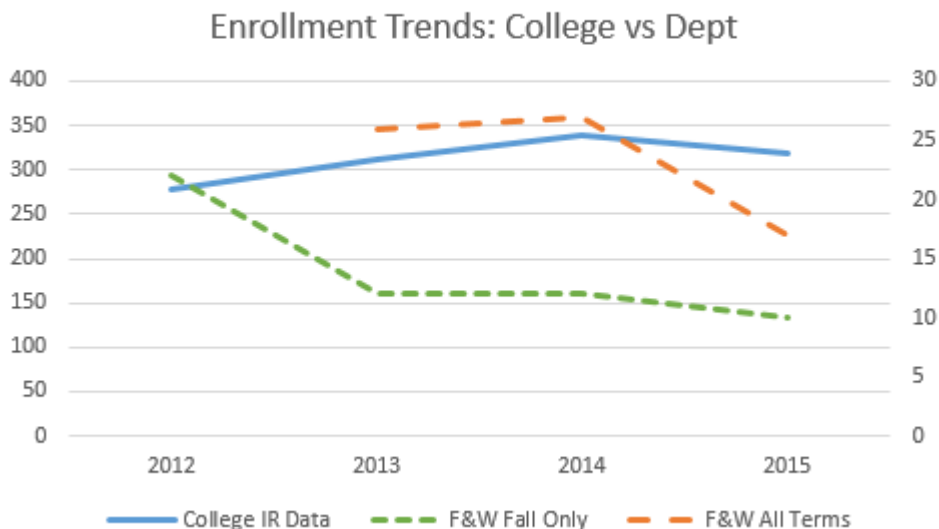
## II. Inputs

### *The mission of the program, and its relationship and alignment with the mission of the academic college(s), Graduate School and university mission*

The Department of Fisheries and Wildlife has a long history of providing comprehensive research, education and outreach. As one of the largest units in the College of Agricultural Sciences, it is well aligned with the mission of the university. The Department offers undergraduate, masters and doctoral degree programs on campus, and an online BS degree in Fisheries and Wildlife Sciences and a Professional Science Masters degree in Fisheries and Wildlife Administration. The Department supports research on the main campus in Corvallis, at the Hatfield Marine Science Center in Newport, and in central and eastern Oregon at the Hermiston Agricultural Extension Center and the Union Experiment Station.

### *Recruitment and enrollment trends of students*

The Review Committee is concerned with the trends towards reduced enrollment in the MSc and PhD programs (Figures 1-9 in the self-study report, based on fall-term admissions). The Department uses rolling admissions, with Figures 10-13 depicting enrollment trends for the entire year. From 2012 to 2014, the fall enrollments for the College showed a 21% increase while enrollments for the Department were down 45%. From 2014-2015, College fall enrollments decreased 6% while college enrollments decreased 17%. The Department was not able to provide rationale as to why their enrollments were not consistent with enrollments across the College.



### *Admissions selectivity and other indications of selecting high quality and diverse students*

The admission requirements for the MS and Doctoral programs require a minimum UG GPA of 3.0 and GRE scores at or above the 50<sup>th</sup> percentile. The average GPA of the matriculated

students is well above the minimum (approx. 3.5) and average GRE scores are in the 64<sup>th</sup> percentile.

The Department has made a commitment to diversity and inclusion, and has surveyed current graduate students to assess the climate within the Department. However, that climate survey only reflects the perceptions of the current student population, and may not be representative of a more diverse student body.

The Review Team believes the Department needs to rethink their diversity recruitment strategies and provide goals. While there does appear to be appropriate gender diversity, and ethnic diversity appears to be around 27%, there is little analysis in the self-study regarding the department's current mix, trends and aspirations. The department participates in diversity recruiting. To what extent are current efforts successful and worth further investment and what else can be tried?

*Level of financial support of student, and as compared to peers*

The department supports a strong graduate program for the preparation of M.S. and Ph.D. students. Support for most students comes from external grants that are provided by a diverse assortment of primarily federal and state governmental agencies. Most students receive support in the form of a Graduate Research Assistantship (GRA); fewer are supported by a Graduate Teaching Assistantship (GTA) or a fellowship. At admission, faculty are required to confirm at least one year of student support; the remaining funding can be documented at admission or deferred until later in the degree program. All students receive tuition remission, which comes from a fixed annual allocation from the Graduate College.

The environment for funding graduate students at OSU is also changing and presents new challenges for the Department. This scenario includes rising tuition costs, increasing stipends because graduate students are unionized, declining institutional support for tuition remission (this comes from a fund with a fixed annual allocation), increasing university "taxes" and other administrative fees on research contracts, and an increasing reluctance to cover tuition costs on extramural grants. This environment seems to dis-incentivize selecting and preparing graduate students by making it more economically feasible to use post docs, research associates, and field technicians to meet research needs. The end result is that the educational mandate of OSU may be undermined at the expense of an elevated research program. This would be inconsistent with the vision for a Land Grant Institution.

The review committee suggests that the Department be proactive in addressing several issues related to funding graduate students. The review team noted during the visit that fewer than 50% of the new graduate students have more than one year worth of funding at the time of admission. The review team discussed that this may be problematic for competitively recruiting students and having them graduate in a timely manner. Many peer institutions require that >1 year of funding be confirmed at admission. Such a policy serves to minimize the chance that a student will be accepted, subsequent funding will not materialize, and the student may need departmental support to complete their degree in a timely manner. The review committee is also concerned that this may eventually adversely affect student recruitment because competing programs are able to offer longer-term (and thus

more stable) funding agreements. The Department needs to address the rising costs that increasingly make graduate education a less desirable alternative to post docs or other temporary research positions. This could include discussions with upper administration about increases in the tuition remission allocation to the department, or discussions with funding agencies about the value of supporting tuition costs in addition to salaries.

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### *Curriculum strength*

The graduate programs online presence and course offerings are second to none and well-recognized nationally. The on-campus curriculum is sufficient but improvements could be made as the mix of courses doesn't seem right, and this is the focus of our review in this section.

The number of course offerings is large and the students didn't perceive value in a lot of the courses. The high number of slash courses (which students feel are undergrad focused), and low number of stand-alone graduate courses that have ample enrollment are problems. The department is urged to consider collapsing or revising which graduate specialty courses are taught.

New graduate level courses could address theory, applied ecology, management and modeling. Examples could match each subject area. The example discussed with faculty and administrators was to offer broad topical courses such as "Quantitative Population Ecology and Management". Such a course would be of interest to Fisheries and Wildlife students, could have a theoretical basis, and provide students an opportunity to model population dynamics over space and time in relation to population threats and/or effects of habitat management actions on populations.

Conversely or in parallel, where students or faculty perceive there is a specific need for a "skill"-whether in research, teaching, or outreach, the department may choose to offer a "workshop" or "no-credit, multiple day institute" instead of a "course". Examples discussed by the review team included (1) R workshop, (2) GIS workshop or institute, (3) active learning in the classroom.

Disparate space issues, slash classes, unstructured curriculum requirements, a plethora of course options, and an "open-ended" application process can all contribute toward a lack of cohesiveness and collaboration among graduate students within and among cohorts. Given this backdrop, focused efforts are needed to incentivize better cohesion and collaboration and avoid silo effects within the grad program. One solution is less "specialized" courses at the graduate level (e.g., see example described above) and more interdisciplinary courses that encourage collaborations across disciplines, but teach a common need using case-histories to make practical to various specialized needs.

Human dimensions education and training needs more explicit integration into curriculum options and expectations, as well as better showcasing for potential employers. Human

dimensions training has been integrated into undergraduate and graduate education at universities since the late 1970s-early 1980s, and has been a cornerstone of Fisheries and Wildlife ecology and management since. The expansion of human dimensions training should include a focus on collecting and understanding human dimension data, the role of humans in management, communication with stakeholders, conflict resolution, mediation, and problem-solving.

#### *Quality of personnel and adequacy to achieve mission and goals*

The review committee strongly suggests that the program NEEDS to have a designated tenure-track faculty administrator to act as the Director of Graduate Education. This is common among other Fisheries and Wildlife programs across the country. Such a faculty member serving as the “Graduate Committee Chair”, who has had a research program would be the person in the department who oversees departmental, college and university policies and help direct the program. Currently, the review committee had questions regarding: who signs the forms; who leads a departmental new graduate student orientation; who discusses issues with students that they can’t discuss with their advisors; who monitors graduate education milestones; who stays abreast of changes in university policies affecting graduate students and program requirements?

Questions that arose during the review regarding faculty concerned how the performance expectations of untenured faculty were being conveyed and the review process for courtesy faculty. What is the conversation for promotion and tenure processes? Are performance expectations explicitly and mutually set, and written and used during the annual review process? The review team was told that this is murky with the use of Digital Measures for capturing performance. There are limitations of using Digital Measures as the sole tool for evaluating faculty members such as metrics to evaluate teaching quality. Further, the department needs to develop a formal review process for courtesy faculty.

One idea that occurred to the committee is that the department may consider whether hiring more instructors would provide revenue that could be used to support GRAs, rather than using GTAs to teach classes. Full-time Instructors could cover multiple courses. The department wouldn’t need as many people and wouldn’t need to continuously train new graduate students to teach courses. This would result in having fewer funded graduate students on TAs, but perhaps there would be more funding available for RAs.

#### *Level and quality of infrastructure*

Space issues came up multiple times during the site visit. Lack of space is inconsistent with the potential of the program. Problems encountered included the spread of the program across multiple buildings on the Corvallis campus. This is common across the country in large Fisheries and Wildlife programs. OSU is somewhat unique in that space for consolidation of the programs is available in Nash Hall, but other programs are using space in Nash and have invested in that space. OSU may need to periodically force a spatial “reboot” independent of investments to facilitate appropriate consolidations.

Hatfield Marine Science Center (HMSC) is a vital component of the grad program and highly valued by grad students. A prominent concern voiced by participants from HMSC included

the loss of on-site students taking courses only provided at Corvallis, which can reduce the availability of these students to Principle Investigators at HMSC and further reduce on-site collaborations and social networks. On-line classes offered at HMSC can also reduce the incentive for students to relocate to the Newport campus. Although these concerns are real, the program can probably wait to address them until after the Marine Studies Initiative and expansion plays out.

#### *Quality of organizational support*

Online programs generate a large part of the overall budget for this program to help support graduate students. Dependence on this revenue source is a real risk as other universities develop online degree programs, certificates, and courses, and revenues are vulnerable to increases in funds withheld by the college and/or university. It was the impression of the review team, after talking with college administrators, that it is likely the Ecampus revenue stream will diminish moving forward. The program should be thinking proactively about a plan for declining funds from this source, and how this will impact the size and quality of the graduate program. Further, the program is still running a deficit despite the large revenue stream from online programs. This is a concern given the length of time it has persisted and needs attention.

Risk management is an issue affecting the graduate program and needs to be addressed at the university level. The review team suggest that the program continue to highlight specific issues with the Dean. The College needs to take on the risk rather than letting it filter down to the units. The review team thought there needs to be a cultural and institutional shift away from risk “avoidance” toward more practical risk “management”. The avoidance paradigm stymies creative collaborations for funding and implementation. The Dean’s office isn’t blind to the issues facing the department in terms of space, risk management, budgetary constraints, and national trends. However, it was not clear to the review team that the Dean communicates effectively to the faculty level. Similarly, it was not clear that the Dean understands the practical impact of these issues at the faculty and student level.

### III. Productivity

#### *4- and 8-year graduation rates for master’s and doctoral students*

The Graduate Program Review Self Study document assessed the time to degree completion for M.S. and Ph.D. students by discipline. Doctoral degrees typically take 5-7 years to complete (slightly less for Wildlife students when compared to Fisheries majors) while M.S. degrees are almost always completed in 3 years. These times to degree completion are similar to those at peer institutions, especially for the M.S. degree. The review committee further suggests that every effort be made to shorten the time to degree for Ph.D. students to 5 years. This is a common time-to-degree, nationally, for Ph.D. students in natural resources areas who enter a program with an M.S. This will have an added benefit in reducing stipend and tuition costs and, with proper mentoring, may not result in a loss of research productivity. Not allowing Ph.D. students to “linger” beyond 5 years may also benefit recruiting efforts because many prospective students seek to minimize the time needed to complete a Ph.D. program.

### *Publications or evidence of other scholarly work by students and faculty*

The Graduate Program Review Self Study document provided the review team with a detailed assessment of student and faculty scholarly work. The Fisheries and Wildlife programs combined have produced from 16 to 30 degrees per year since 2007. Most graduate degrees are at the M.S. level with fewer doctoral students. Downloads of theses and dissertations through the Scholars Archive have declined dramatically since 2007, possibly because they are readily available through other outlets. Students are encouraged to publish their findings in peer-reviewed journals, which has resulted in an average of 1 paper for M.S. students and 2.5 papers for Ph.D. students. Greater than 90% of all Ph.D. students publish at least one paper while >60% of all M.S. students publish. Publication rates appear stable over time. The review team agrees that Fisheries and Wildlife graduate students are very productive with respect to peer institutions.

As with most Fisheries and Wildlife programs across the country research performance metrics often include (1) publications (i.e., especially peer-reviewed articles), (2) grants, (3) invited talks, and (4) graduation rates, time-to-degree, and placement of graduate students. It should be noted that such items are only metrics of the research appointment of faculty members or students, and expectations for these should be explicitly set with the chair (i.e., for faculty members) and advisor (i.e., for the graduate student). Based on the review of materials distributed by the department and from talking with faculty and students, the department appears to have a productive research program.

### *Student satisfaction with their education and mentoring experiences*

Graduate students in Fisheries and Wildlife are generally satisfied with their experience at OSU. Furthermore, their degrees are an asset to future employment in their respective profession. Data from an OSU post-graduate survey indicate a pattern of high employment rates (>90% for 3 years post degree) for M.S. and Ph.D. graduates. Roughly equal numbers of M.S. graduates have permanent and temporary jobs while a majority of Ph.D. students have found permanent employment; <10% from either degree program are unemployed. This information confirms that graduates of Fisheries and Wildlife are highly sought by employers in the natural resources profession.

The same OSU survey tool is also used to assess student preparedness in key areas of knowledge or with particular skill sets. The results suggest that overall the Department is meeting most needs of its graduates, but that there are areas where improvement is needed. In particular, the skill sets that are often used by graduates but were not covered well at OSU need attention. The review committee noted that many such skills centered in the areas of policy, human dimensions, conflict resolution, and other areas that were less specific to the two disciplines. Graduates seem to receive solid training in the technical areas of their degree program, but could benefit from additional training in the areas described above.

The review committee also assessed other forms of training and support provided to graduate students. Graduate students are generally satisfied with support for research activities, office space, and travel to meetings with minor differences between campuses.



One topic the team discussed in detail was training offered to students who are involved in teaching (GTAs; on-line and in-person opportunities). Students need to continually receive training for teaching online and on-campus courses—and this needs to be supervised during the respective course. Students indicated that such training was not conducted, which was at odds with materials later provided to and discussed with the committee that suggested such training opportunities do exist and are required. The review committee suggests that the Department better inform students of such training and professional development activities in the future to ensure that everyone is aware of them. Peer institutions have similar requirements for GTA training and this is an essential process to provide undergraduate students with the best possible learning experience.

Departmental preparation for teaching could be supplemented with professional development offerings by the graduate school. Professional development and training in teaching (i.e., whether in a “course” or a required professional development workshop or multi-day institute often used by universities) should ideally cover such topics as (1) departmental, college and university teaching roles and responsibilities; (2) pedagogy; (3) setting expectations and conflict resolution; (4) creating inclusive learning environments; (5) developing and aligning teaching and learning objectives with effective assessment methods through testing and course assignments; (6) developing syllabi; and (7) summary of available resources to support teaching (locally and nationally).

#### *Viability of scholarly community within which students can interact*

The review committee was impressed with the sense of camaraderie between the graduate students and others in the Department. The Fisheries and Wildlife Graduate Student Association (FWGSA) appears to be strong, active in a wide range of departmental activities, and organizes the annual Research Advances in Fisheries, Wildlife, and Ecology (RAFWE) symposium. The group also serves as an important resource for incoming graduate students, helps to mentor undergraduate students in both majors, and functions as a critical liaison between graduate students and the Department. The review committee recognized that there is a strong sense of community among current graduate students, and that this feeling also extends to program alumni. The graduate students should be commended for the service and the leadership they provide to the department.

#### IV. Outcomes and Impacts

##### *Equity, inclusion and diversity activities*

The Fisheries and Wildlife programs should develop a written diversity action plan to set goals and work to proactively recruit diverse candidates into the applicant pool. The program works with SACNAS to directly recruit students but other activities weren’t highlighted. Further, the programs goals for equity and inclusion, and the extent to which these goals are emphasized in faculty evaluations were not specifically mentioned and should be part of a diversity action plan.

##### *Placement and success of graduates*

Review materials demonstrate strong placement of graduates in natural resource fields within three years of graduation. Analyses included years associated with the Great

Recession which constrained state, federal, tribal, academic and private sector job opportunities. Post-recessionary job placement is particularly robust. Although anticipated federal budget cuts could affect job opportunities, placement is expected to remain high from the cascading effect of increasing retirements in the existing workforce.

Strong placement is a testament to the quality of graduates coming out of OSU, wealth of natural resource and academic professional opportunities in the Pacific Northwest, and the strong and mature relationships the graduate program has with state, federal and tribal natural resource entities. These relationships are developed and maintained through numerous cooperative/collaborative research projects and a strong track record of quality graduates.

In spite of strong placement and well-received graduates, there is certainly room for additional improvement in preparing students for the workforce. Graduate Program Review materials (Fig. 57) provide reflections from recent graduates on their preparedness for workplace demands. This self-analysis indicates strong preparedness and workforce need in the areas of data collection, sampling and design, statistics, critical thinking and information synthesis and interpretation. It also indicates less preparedness for other workforce needs associated with data management, math and modeling, and a host of human dimension metrics such as conflict resolution, people management, communication, teamwork and leadership. Better preparation in these areas, particularly human dimensions, is vital to success and career advancement in the natural resource management profession. We recommend using this information to enhance and refocus preparedness curriculum and training. We also recommend a similar survey of resource professionals to see if their perception of preparedness of incoming graduates align with this self-analysis.

With the continued growth and expansion of online courses and certificate programs, it is vital that graduate programs establish clear metrics to measure preparedness, placement and career advancement specific to these areas. The Department's online presence and offerings are second to none, but there was minimal reporting on impacts of the online programs, particularly the certificate programs. What are the demographics of the cohort taking advantage of these programs, i.e. are the certificate and online programs serving a different audience than on-campus? What is the professional development outcome for certificate holders? Although these developments are still relatively new and thus difficult to fully assess, establishing clear metrics to gauge success and adaptively manage these initiatives moving forward is essential to ensure the preparedness and success of graduates and continued support for the certificate programs.

Feedback from students during the Graduate Program Review also indicated a somewhat *ad hoc* approach to advising students on career planning and placement. We recommend developing a more formal process and opportunities, with input and participation from professionals in the workforce. Ideally career advising would be offered at multiple levels from a student's advisor to other faculty members to programs offered through the graduate school or through online programs.

### *Satisfaction of students and graduates with their education and their post-graduation employment success*

Both review materials and verbal feedback indicate an overall strong sense of community and satisfaction among students and graduates. This is heightened by a strong sense of camaraderie and collegiality among students and professors. In spite of this overall content, there are substantial areas of concern that, if addressed, will strengthen the satisfaction and success of students and graduates. Examples include connectivity of work space at the Corvallis campus, funding security, course and training opportunities that better align with professional workforce needs (including less “slash” courses and more dedicated graduate courses), and more opportunities for additional graduate students rather than a tendency to hire post-docs.

### *Professional or national rankings/ratings*

The Department of Fisheries and Wildlife is recognized regionally and nationally as a premier academic institution providing quality graduates for fish and wildlife professions. OSU is also at the vanguard for online learning and alternative degree programs that are essential for meeting the needs of a changing society and profession. This leadership is not without risk. We encourage the Department to formalize objectives (short- and long-term), frameworks and monitoring metrics to ensure these initiatives complement their base program of excellence and do not come at the expense of that excellence. What does the Department want to look like and achieve in the next 10 years?

### *Community engagement activities*

Community engagement by the Department is evident and effective at numerous levels. There is a strong sense of community within the program, in spite of serious connectivity problems with work spaces. There is a strong sense of community within the profession, evident with state, federal and tribal management entities as well as leadership and involvement in professional societies. There also appears to be a healthy integration within the Corvallis and Newport communities.

## V. Conclusions and Recommendations

Overall, the Fisheries and Wildlife programs appear to be vibrant and healthy. It is a good time in the programs to think about revamping curricular offerings. Some issues are university wide, such as concerns about declining revenue from Ecampus, space, and the cap on tuition remissions. However, planning and future thinking will help the programs to stay strong and weather future storms.

# AGENDA

## Day 1

April 9, 2017

5:45 meet in Hilton Garden Inn Lobby for carpool to dinner at Les Caves, reservations for 6:00 pm

## Day 2

April 10, 2017

Breakfast at hotel – vouchers provided

8:00 am meet in Hilton Garden Inn Lobby for walk or carpool to Nash Hall

A grad student will meet you at the hotel; please let us know if this is not needed (i.e. walking on your own)

<b>0815 – 0900</b>	<b>Introductions, Review Objectives and Program Overview - Heppell</b> Review Goals, Program Description, Personnel, Budget	Nash 164
<b>0900 – 1000</b>	<b>Graduate Committee</b> Program Requirements, Admissions, Planning Needs	Nash 164
<b>1015 – 1100</b>	<b>Advising and Program Staff</b> Dunham, Auer, Ahlgren	Nash 164
<b>1100 – 1230</b>	<b>Faculty and Instructors</b> 1100-1130 Off campus faculty only 1130-1230 On-campus faculty join for full discussion	ALS 3005
<b>1230 – 1345</b>	<b>Lunch with FWGSA Leadership Tour of Nash and Hovland Facilities</b>	Nash 104J
<b>1400 - 1445</b>	<b>Meet with Deans</b>	Nash 104J
<b>1500 – 1600</b>	<b>Grad Students</b> Polycom to HMSC 1500 – 1520 All students 1520 – 1600	Nash 032
<b>1600 – 1700</b>	<b>Executive Session</b>	Nash 032