AGENDA

Information Items
1. (1:30 pm) GFEC Refresher (Bill Karpus)
2. (1:40 pm) Career Pathways Data Brief (Parmesh Ramanathan)

Automatic Consent
3. (1:45 pm) Automatic consent approvals
   a. Minutes from May 10, 2019
   b. Extension of Graduate Faculty Status until June 30, 2020 to Department of Material Science and Engineering Professor Max Lagally

Approvals
4. (1:50 pm) Suspend admissions to the Occupational Therapy MS effective Summer 2020 (Sharon Gartland)
5. (1:55 pm) Request to approve new Named Option “Professional Program” in the MS Atmospheric & Oceanic Sciences effective Fall 2020 (Ankur Desai)
6. (2:10 pm) Request to approve new Named Option “Research Program” in the MS Atmospheric & Oceanic Sciences effective Fall 2020 (Ankur Desai)
7. (2:25 pm) Request to approve Notice of Intent to plan a new degree MS – Environmental Remediation and Management (Karen Wassarman, Alfred Hartemink)
8. (2:45 pm) Request to rename the Marketing MBA named option “Market Research” to “Marketing Analytics and Insights” effective Fall 2020 (Neeraj Arora, Kristin Branch)

Three-Year Check-Ins
9. (2:55 pm) Nurse Educator Graduate/Professional Certificate (Parmesh Ramanathan)
10. (3:05 pm) MS Statistics Named Option “Data Science” (Parmesh Ramanathan)

Program Review
11. (3:15 pm) Plant Pathology (MS, PhD, PhD Minor) (Nicole Perna)
National data suggests that newly minted PhDs face an early-career employment landscape characterized by greater levels of uncertainty and competition for academic positions compared to prior generations.¹

Popular reports of an “employment crisis” among new PhDs may stoke students’ anxiety over employment.² Yet national estimates put the unemployment rate of PhD-level scientists and engineers at just 2%—lower than the country’s overall jobless rate.³

Despite this conflicting picture of long-term PhD employment prospects, national data makes clear that a significant proportion of graduates end up pursuing careers outside academia in private industry, government agencies, non-profit organizations, and other sectors.⁴ Whether PhD students see these non-academic careers as desirable options prior to entering the job market, however, has been an outstanding question.

This data brief provides a window into the specific career preferences of UW–Madison PhD students, and examines the alignment of those preferences with the career outcomes of UW–Madison PhD alumni. The brief serves as a useful resource to university leaders and program staff concerned with how to better support the career preparation of UW–Madison doctoral students.

This brief is the first in a series of briefs based on student and alumni survey data collected as part of a national, multi-year study of career outcomes led by the Council of Graduate Schools. More information on the data and sample is detailed at the end of this brief.

KEY FINDINGS

• PhD students are interested in multiple employment sectors. Although three-quarters of those surveyed view academic employment as highly desirable, one in four did not express a strong desire to work in academia. Many who desire postsecondary employment also express strong interest in for-profit, government, or non-profit jobs.

• Employment preferences differ by gender and area of study. Female students are more likely to desire non-profit work than their male peers, while male students are more likely to desire for-profit or government employment. Generally, Social Sciences and Arts & Humanities students are more interested in postsecondary employment, while Physical and Biological Sciences students are more interested in for-profit jobs.

• Most PhD students who desire postsecondary employment are open to jobs in different types of institutions. Positions at research universities are most desired by those aspiring to academic jobs. However, nearly three-fifths of those students also rate jobs in liberal arts colleges, master’s/regional universities, or two-year colleges as highly desirable.

• PhD students have some understanding of labor market opportunities and outcomes for graduates in their area of study. The relative desirability of employment sectors among students generally mirrors the employment rates of graduates in each area of study.

• The traditional view of PhD programs as academic career training should be critically questioned. Most students aren’t narrowly focused on careers in academia—a pattern reflected in the diversity of sectors where alumni are employed. Nearly half of all alumni report employment in sectors other than postsecondary education, which challenges the traditional view of PhD programs as academic career training alone.
PhD students’ career preferences are diverse—characterized by an interest in multiple employment sectors (figure 1). Among survey respondents, 74% hope to find employment in postsecondary education after completing their degree, indicating that such jobs would be “very” or “extremely” desirable. However, student interest in careers outside of academia is also robust with high percentages expressing a strong desire for employment in for-profit (42%), government (41%), or non-profit (32%) organizations after graduation. Notably, around a quarter of PhD students express only moderate or low desire for postsecondary employment-instead rating other sectors as more desirable.

PhD students pursuing different areas of study tend to prefer different employment sectors (figure 1). While interest in postsecondary employment is high among all students, those in the Arts & Humanities and Social Sciences are particularly likely to desire postsecondary employment after they graduate. Alternately, for students in the Biological and Physical Sciences postsecondary careers appear somewhat less desirable, with many students expressing interest in for-profit employment after graduation. In the Physical Sciences, nearly two-thirds of PhD students rate for-profit employment as highly desirable, while just half of those in the Biological Sciences say the same.

**Notes:** Students were asked how much they desire a particular employment sector on a 5-point scale (1=not at all; 2=slightly; 3=moderately; 4=very; 5=extremely). The top two categories were combined to indicate ‘desirable’ in this brief. Survey questions on preferred employment sectors were not mutually exclusive. Reported percentages therefore add up to more than 100%.
HOW DO PHD STUDENTS’ CAREER PREFERENCES DIFFER BY GENDER?

Male and female PhD students have somewhat different career preferences on average, with males more likely to desire for-profit employment and females more often interested in non-profit work (figure 2). This pattern is also reflected within individual areas of study. Interest in for-profit employment among students in the Physical Sciences is around 12 percentage points higher among males compared to females. Conversely, female students in the Social Sciences are about 14 percentage points more likely than their male counterparts to rate non-profit employment as highly desirable.

[FIGURE 2] GENDER DIFFERENCES IN EMPLOYMENT SECTOR PREFERENCE

Notes: Figure 2 shows the difference in percentages of female (n=448) versus male (n=408) students desiring work in four different employment sectors. Bars facing left indicate a higher percentage of male students desiring the sector, while bars facing right indicate a higher percentage of female students desiring that sector. Percentages were calculated within each area of study, as well as for the total sample.
WHAT TYPES OF POSTSECONDARY INSTITUTIONS DO
PHD STUDENTS PREFER FOR EMPLOYMENT?

The postsecondary employment preferences of UW–
Madison PhD students are characterized by their
diversity (figure 3). Among the students who indicate a
strong desire for postsecondary employment after they
graduate, nearly 85% hope to find work at a research
university (figure 3). Yet more than half of those interested
in postsecondary employment—including 57% of those
desiring work at a research university—appear equally open
to other types of postsecondary employment. About one
in five students, for example, report the same high level
of interest in working at a research university, a master’s/
regional university, or a liberal arts college. One in 10
students desiring postsecondary employment report the
same high level of interest in all institution types including
work at community or two-year colleges.

[FIGURE 3] TYPES OF POSTSECONDARY EMPLOYMENT PREFERRED BY PHD STUDENTS

Notes: Figure 3 only represents students who indicated that postsecondary education was a desirable employment sector (637 out of 856 total).
How focused are PhD students’ career aspirations?

Most PhD students appear to take a broad view when it comes to their post-degree career aspirations. Less than half of students indicate a clear preference to find work in just one employment sector (figure 4). On the other hand, the approximately 50% of students reporting high interest in two or three different employment sectors appears to challenge the notion that PhD students are narrowly focused on careers in postsecondary institutions. Notably, one in 14 students reports high interest in four different career sectors, which may indicate a general lack of clarity regarding their career direction.

Notes: The employment sectors are postsecondary education, government, non-profit organization, and for-profit organization.
HOW FOCUSED ARE PHD STUDENTS’ CAREER ASPIRATIONS? (CONTINUED)

Most students with multiple employment sector preferences include both the postsecondary and for-profit sectors among those preferences (figure 5). This is particularly true among students in the Physical Sciences where 15% indicate that both employment sectors are highly desirable. Among students with one clear career sector preference, that preference is most commonly postsecondary education (figure 5). About one-quarter of all PhD students overall report a singular preference for postsecondary employment over work in other sectors, with higher percentages of such students in the Arts & Humanities and Social Sciences. Nevertheless, a considerable number of students—particularly those in the Physical Sciences—appear to place a higher premium on for-profit organizations above all other employment sectors, including postsecondary.

1 IN 4
RESPONDENTS REPORT A SINGULAR PREFERENCE FOR POSTSECONDARY EMPLOYMENT

[FIGURE 5]
OVERLAPS IN CAREER PREFERENCES

P=Postsecondary education
G=Government
N=Non-profit organization
F=For-profit organization

Notes: Figure 5 represents the combination of employment sectors students reported as desirable. Percentages were calculated within each area of study and for the total sample.
HOW DO PHD STUDENT CAREER PREFERENCES ALIGN WITH ALUMNI OUTCOMES?

The employment profile of UW–Madison PhD alumni is highly diverse. Just over one-half work in postsecondary education, while around one in four works in the for-profit sector (figure 6). The remaining 20% are employed in other sectors such as government or non-profit organizations.

Though different measurement scales of student career preferences and alumni outcomes make comparison of the two difficult, general patterns suggest that students have some understanding of labor market opportunities and outcomes for graduates in their area of study (figure 7). The relative desirability of postsecondary employment across the four areas of study mirrors the relative postsecondary employment rates of alumni from each area. Similarly, the relatively high desirability of for-profit employment among students in the Physical and Biological Sciences mirrors the much higher rates of that type of employment among graduates compared to those in the Social Sciences or Arts & Humanities.

Our findings challenge the traditional notion of PhD programs as training students exclusively for work in academia. Students hold a diversity of career sector interests, which is also reflected in the diversity of sectors where alumni are actually employed. Nearly one-half of all alumni report employment in sectors other than postsecondary education, with notably higher percentages of those working outside academia in the Physical and Biological Sciences.

Notes: Students indicated how much they desire a career sector on a 5-point scale (1=not at all; 2=slightly; 3=moderately; 4=very; 5=extremely). The left side of the figure displays the average desirability of each career sector on this scale. The right side of the figure displays the percentage of PhD alumni actually employed in each sector.
ABOUT THE DATA SOURCE AND SAMPLE

This brief is based on combined data from annual web surveys of UW–Madison PhD students and alumni. The surveys were designed by the Council of Graduate Schools (CGS) and administered by UW–Madison as part of the CGS PhD Career Pathways Coalition. Alumni information is derived from survey data collected in fall 2017 and fall 2018, and student information is derived from survey data collected in spring 2018 and spring 2019.

The full combined alumni sample includes 1,430 PhD recipients who were three, eight, or 15 years post-degree at the time of survey fielding. The survey was sent out to all 4,449 PhD recipients for those graduation years, and had an overall response rate of 32%. Prior to analysis, 57 unemployed alumni were dropped, making the final alumni analysis sample 1,373. The combined student analysis sample includes 856 PhD students. Surveys were originally sent out to all enrolled PhD students who were two or five years into their program at the time of survey fielding (N=2,318). The overall student survey response rate was 37%.

THE CGS PHD CAREER PATHWAYS COALITION

The Council of Graduate Schools PhD Career Pathways is a coalition of 70 doctoral institutions working to better understand and support PhD careers across all broad fields of study. Over the course of the project, universities collect data from current PhD students and alumni using surveys that were developed by CGS in consultation with senior university leaders, funding agencies, disciplinary societies, researchers, and PhD students and alumni. The resulting data allow universities to analyze PhD career preferences and outcomes at the program level and help faculty and university leaders strengthen career services, professional development opportunities, and mentoring.

ACKNOWLEDGEMENTS

The brief was prepared by Peter Kinsley, Eunji You, and Parmesh Ramanathan from the UW–Madison Graduate School Office of Academic Analysis, Planning & Assessment. Thanks to Meghan Chua for providing layout and production support, and to Chad Kniss at the UW Survey Center for managing survey administration. This brief is based on work supported by grants from the Andrew W. Mellon Foundation (31600612) and the National Science Foundation (1661272). Any opinions, findings, and conclusions or recommendations expressed in this brief do not necessarily reflect the views of the funders or of the Council of Graduate Schools.

REFERENCES


4. ibid


Comments or questions about this brief can be sent to the Graduate School Office of Academic Analysis, Planning & Assessment at data@grad.wisc.edu.
University of Wisconsin-Madison
Graduate Faculty Executive Committee Meeting
1:30 pm – 3:30 pm, Room 52 Bascom Hall
May 10, 2019

MINUTES

Members Present: Caroline Alexander, Lara Collier, Yu Hen Hu, William Karpus, Lisa Martin, Nicole Perna, John Pfotenhauer, Parmesh Ramanathan, Gail Robertson, Tracy Schroepfer, Bret Shaw (left before agenda item 7), Leslie Smith III

Members Absent: Joseph Dennis, Florence Hsia, Steffen Lempp, Christa Olson, Shannon Stahl, Steph Tai, Chris Walker, Earlese Ward

Guests: James Keck, Carolyn Kelley, Elaine Klein, Eric MacKay, Andrea Poehling, Carolina Sarmiento

Staff: Amy Berholz, Elena Hsu, Amy Kuether, LaRuth McAfee, A.J. Meinig, Emily Reynolds, Christopher Yue

Dean William Karpus called the meeting to order.

1. The minutes of April 12, 2019 were approved as a matter of automatic consent.

Approvals:

2. Dean Karpus introduced Assistant Professor Carolina Sarmiento and Graduate Coordinator Eric MacKay from the School of Human Ecology who presented a request to approve the Capstone Certificate in Community and Nonprofit Leadership, School of Human Ecology, effective Fall 2019. Sarmiento and MacKay addressed GFEC questions regarding courses on financial administration and the number of faculty members for the program.

Motion: Moved and seconded to approve a new Capstone Certificate in Community and Nonprofit Leadership, School of Human Ecology, effective Fall 2019. The motion was passed unanimously.

3. Dean Karpus introduced James Keck, Associate Dean for Basic Sciences, School of Medicine and Public Health, who presented the following requests:

   a. Suspend admission to the Physiology MS/PhD effective Summer 2019.

   b. Discontinue the Physiology MS/PhD effective Fall 2024 due to a significant decline in admissions and enrollment in the Physiology MS/PhD. The Cellular and Molecular Biology graduate program will create a physiology focus group as a home for physiology students, pending discontinuation of the program. Keck addressed GFEC questions regarding the national trend of similar programs.

Motion: Moved and seconded to approve a request to suspend admission to the Physiology MS/PhD effective Summer 2019 and discontinue the Physiology MS/PhD effective Fall 2024. The motion was passed with one abstention.

4. Dean Karpus introduced Graduate School Associate Dean Parmesh Ramanathan, who presented a request to change the admitting status of the Sociology MS within the Department of Sociology, College of Letters & Science, to non-admitting effective Fall 2019. The request formalizes the status currently practiced by the program.
Motion: Moved and seconded to approve a request to change the admitting status of the Sociology MS within the Department of Sociology, College of Letters & Science, to non-admitting effective Fall 2019. The motion was passed unanimously.

5. Dean Karpus introduced Carolyn Kelley, Senior Associate Dean for Academic Programs, School of Education, who presented a request to discontinue the Art Education MA effective Fall 2019. The program is currently suspended, with the last students graduating in 2015.

Motion: Moved and seconded to approve discontinuation of the Art Education MA, School of Education, effective Fall 2019. The motion was passed unanimously.

6. Educational Leadership and Policy Analysis (ELPA) MS/PhD
Dean Karpus introduced Carolyn Kelly, Senior Associate Dean for Academic Programs, School of Education, who presented the following requests to approve named options in the Education Leadership and Policy Analysis program. These paths already exist, informally, in the ELPA degree programs, and the creation of named options was encouraged during the last institutional program review.

   a. Request to approve the named option “Educational Policy Analysis & Evaluation” in the Educational Leadership and Policy Analysis MS effective Fall 2020.

   Motion: Moved and seconded to approve the named option “Educational Policy Analysis & Evaluation” in the Educational Leadership and Policy Analysis MS, School of Education, effective Fall 2020. The motion was passed unanimously.

   b. Request to approve the named option “Educational Policy Analysis & Evaluation” in the Educational Leadership and Policy Analysis PhD effective Fall 2020.

   Motion: Moved and seconded to approve the named option “Educational Policy Analysis & Evaluation” in the Educational Leadership and Policy Analysis PhD, School of Education, effective Fall 2020. The motion was passed unanimously.

   c. Request to approve the named option “Higher Education” in the Educational Leadership and Policy Analysis MS effective Fall 2020.

   Motion: Moved and seconded to approve the named option “Higher Education” in the Educational Leadership and Policy Analysis MS, School of Education, effective Fall 2020. The motion was passed unanimously.

   d. Request to approve the named option “Higher Education” in the Educational Leadership and Policy Analysis PhD effective Fall 2020.

   Motion: Moved and seconded to approve the named option “Higher Education” in the Educational Leadership and Policy Analysis PhD, School of Education, effective Fall 2020. The motion was passed unanimously.

   e. Request to approve the named option “K-12 Leadership” in the Educational Leadership and Policy Analysis MS effective Fall 2020.

   Motion: Moved and seconded to approve the named option “K-12 Leadership” in the Educational Leadership and Policy Analysis MS, School of Education, effective Fall 2020. The motion was passed unanimously.

   f. Request to approve the named option “K-12 Leadership” in the Educational Leadership and Policy Analysis PhD effective Fall 2020.

   Motion: Moved and seconded to approve the named option “K-12 Leadership” in the Educational Leadership and Policy Analysis PhD, School of Education, effective Fall 2020. The motion was passed unanimously.
Program Reviews

7. GFEC member Gail Robertson presented the Institutional 10-Year Program Review of the MS in Pharmacy in the School of Pharmacy. Robertson noted strengths of the program include a national reputation for producing top tier candidates for pharmacy leadership positions, strong relations with the Health Center, strong interdisciplinary curriculum, competitive tuition support, students equipped to enter into leadership roles, strong preceptor and advisor development program, and continuous feedback structure to improve the program.

Robertson discussed committee recommendations, including the recruitment and enrollment of a more diverse student group, encouraging students to seek electives based on personal and professional goals, broadening advising beyond the operations of pharmacy and healthcare, tying electives to the Master’s project, expanding interaction with students in other degree programs, and diversifying the leadership team with hires from outside the organization.

Motion: Moved and seconded to accept the Institutional 10-Year Review of the MS in Pharmacy, School of Pharmacy. The motion was passed unanimously with one abstention.

Adjournment:

Meeting adjourned by Dean William Karpus.
18 July 2019

Max Lagally, PhD
Professor
Department of Materials Science and Engineering
College of Engineering
University of Wisconsin-Madison
Sent Electronically

Dear Professor Lagally,

I have reviewed your request for graduate faculty status extension through June 30, 2019 in order to continue advising a student beyond one year of your retirement. Based on unique circumstances out of the student’s control, strong endorsement from the Department of Materials Science and Engineering, your active research portfolio, and the fact that the Graduate Faculty Executive Committee (GFEC) does not meet in the summer term, I will grant a provisional extension effectively immediately. The request will be formally presented to the GFEC as a consent agenda item for full approval at its next meeting on September 13, 2019.

We appreciate your proactive efforts to support and mentor graduate students.

Sincerely,

[Signature]

Date: 2019.07.18
10:15:36 -05'00'

William J. Karpus
Dean of the Graduate School
Professor of Pathology and Laboratory Medicine

cc: Ian Robertson, College of Engineering
    David Noyce, College of Engineering
    Darryl Thelen, College of Engineering
    Laura Albert, College of Engineering
    Susan Babcock, Materials Science Engineering
    Paul Evans, Materials Science Engineering
    Janna Kristin Pollock, Materials Science Engineering
    Parmesh Ramanathan, Graduate School
    Amy Kuether, Graduate School
    Emily Reynolds, Graduate School
Program Change Request

Date Submitted: 04/12/19 3:55 pm

Viewing: **MS 720EDU: Occupational Therapy**

Last approved: 09/20/18 5:02 pm
Last edit: 08/05/19 3:12 pm
Changes proposed by: ejach

**Catalog Pages Using this Program**

**Occupational Therapy, M.S.**

**Name of the school or college academic planner who you consulted with on this proposal.**

<table>
<thead>
<tr>
<th>Name</th>
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<tr>
<td>Elizabeth Jach - EDU</td>
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</tbody>
</table>

**Proposal Abstract/Summary:**

Admission to the MS in Occupational Therapy can be suspended effective Summer 2020, last admit term Spring 2020.

If approved, what term should the proposed change be effective?

Spring 2020 (1204) [Oct. Midcycle]

Select yes if this proposal is only to add, remove, or rearrange curricular requirements, and will change less than 50% of the curriculum.

No

**Basic Information**

Program State: Suspend Admissions Active

Type of Program: Degree/Major

Who is the audience?

Graduate or professional

Home Department: KINESIO

School/College: School of Education

The program will be governed by the home department/academic unit as specified. Will an additional coordinating or oversight committee be established for the program?

No

Is this in the Graduate School? Yes

Award: Master of Science

SIS Code: MS 720EDU

SIS Description: Occupational Therapy MS

Transcript Title: Occupational Therapy

Named Options:

In Workflow
1. KINESIO Dept. Approver
2. EDU School Admin Reviewer
3. EDU School Approver
4. APIR Admin
5. GFEC Approver
6. UAPC Approver
7. APIR Admin
8. Registrar
9. Publication Ready

Approval Path
1. 04/15/19 8:52 am Lisa Cappabianca (lcappabianca): Approved for KINESIO Dept. Approver
2. 05/16/19 11:02 am Elizabeth A Jach (ejach): Approved for EDU School Admin Reviewer
3. 05/16/19 11:25 am Elizabeth A Jach (ejach): Approved for EDU School Approver
4. 08/05/19 3:21 pm Nicole Wiessinger (wiessinger): Approved for APIR Admin

History
1. Sep 20, 2018 by clmig-smenda
**Suspension and Discontinuation**

What is the date by which you will submit a plan to resolve the suspended status, if approved?  
10/1/2021

What is the last term that a student could declare this program?  
Spring 2020 (1204)

What is the timeline and advance communication plan?  
The Occupational Therapy faculty respectfully request suspension of admissions to the Masters of Science in Occupational Therapy beginning Summer 2020 to permit the faculty to plan a restructuring and re-organization of the entry-level professional curriculum in response to the Accreditation Council of Occupational Therapy Education’s (ACOTE) mandate that entry-level education move to the Doctor of Occupational Therapy (OTD) degree by July 1, 2027. The program is developing two named options for the OTD degree (entry-level [EL] and post-professional [PP]) and anticipate the first class of students will matriculate into the new program in summer 2021. Suspending admission into the current MSOT program beginning summer 2020 will allow a full teach out of students in the MSOT program while also allowing the program time to fully plan the restructuring and re-organization of the entry-level program. Students admitted in summer 2019 will graduate in December 2021. A decision about program discontinuation can be made in the fall of 2021 (likely to go into effect for fall 2022).

Explain the precipitating circumstances or rationale for the proposal.  
In August 2017, ACOTE mandated the OTD as the entry-level degree requirement for the occupational therapist by July 1, 2027 and reaffirmed that decision in August 2018. It is the UW-Madison OT Program faculty’s opinion that being situated in a very high research university with a strong commitment to doctoral-level education, our mission should include transition to an entry-level named option within the OTD degree.

What is the potential impact on enrolled students?  
The current entry-level MS-OT degree program has sustained a strong admissions pool over the course of the past five years with total number of applications consistently exceeding 300 for the 25 available slots. The proposed timeline will enable students enrolling this summer to complete the program. In anticipation of the ACOTE entry-level OTD mandate, the OT Program’s Admissions Coordinator has been notifying prospective students in the pipeline that planning is in progress for transition of the program and that MS-OT admissions will likely be suspended in the near future. We will continue to advise and support prospective students interested in a career in occupational therapy through the transition. We will also ensure that all students enrolled in the MS-OT program as of Summer 2019, will be supported to completion of their degree.

What is the potential impact on faculty and staff?  
OT Program faculty have agreed to develop the EL-OTD named option within the same Revenue-Generating (131) budget model as the current PP-OTD program. A proposal for development funds from the Division of Continuing Studies to support the creation of a new EL-OTD named option and the revision of the entry-level curriculum is being drafted, including funds to support a transition year from 2020-2021.

Explain and provide evidence of efforts made to confer with and to notify faculty and staff.  
OT program faculty submitted a memo of suspension of admission to the MS-OT degree program to the Department of Kinesiology on 2/15/19 and it was approved at the Kinesiology Department meeting on March 8, 2019.
Explain and provide evidence of efforts made to confer with and to notify current students.

Current MSOT students have been informed through the Student Occupational Therapy Association presidents who have been kept up to date on plans to transitioning from master’s level to doctoral level training. Current MSOT students will again be told about plans to suspend the MSOT program admissions at the scheduled listening sessions run by Program Director Dr. Sharon Gartland on April 22 and April 24, 2019. New MSOT students will be told at their orientation on May 31, 2019.

Explain and provide evidence of efforts made to confer with and to notify alumni and other stakeholders.

Alumni and other stakeholders were informed at the 75th Anniversary Celebration in September 2018 by Dr. Ruth Benedict. The fieldwork sites that accept our students have also been informed by Josh Brown (our fieldwork coordinator) as he communicates with them about future placements. We will also have an article in the next OT Matters newsletter to inform Alumni and Stakeholders of our suspension of MSOT admission and intent to transition to Entry Level OTD.

Teach-out plan - How will program quality be maintained during the suspended period or the teach-out period for discontinued programs?

We will teach out all enrolled students making satisfactory progress toward the degree and will not seek discontinuation of the degree until all MS-OT students are graduated. The MS-OT program is currently accredited until 2025.

Teach-out plan: A) For currently enrolled students, how will required courses, curricular elements, advising and other student services be provided?

Students admitted in summer 2019 will complete the MS OT program in its current form in December 2021. Courses, curricular elements, advising, and student services will be maintained.

Teach-out plan: B) For prospective students in the admissions pipeline, how are any commitments being met or needs to notify them that their program of interest will not be available?

The OT Program’s Admissions Coordinator has been notifying prospective students in the pipeline that planning is in progress for transition of the program and that MS-OT admissions will likely be suspended in the near future. The program will continue to advise and support prospective students interested in a career in occupational therapy through the transition.

Teach-out plan: C) For stopped out students, what provisions are made for their re-entry? What program(s) will they be re-entered into?

The ACOTE standards for accreditation of an EL-OTD program encompass and expand upon the full complement of standards for Masters degree programs so accommodating the curricular needs of any MS-OT students who may need to take a Leave of Absence from the program during the period of transition should be feasible. Another option would be working with the Graduate School to identify a completion route through a special committee master’s degree with a named option in occupational therapy.

Teach-out plan: D) Provide any other information relevant to teach-out planning.

NA

Roles by Responsibility: List one person for each role in the drop down list. Use the green + to create additional boxes.

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<thead>
<tr>
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<th>Name (Last, First)</th>
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<th>Title</th>
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<tbody>
<tr>
<td>Department Chair</td>
<td>Diffie, Gary M</td>
<td><a href="mailto:gmdiffie@wisc.edu">gmdiffie@wisc.edu</a></td>
<td>608/262-7732</td>
<td></td>
</tr>
<tr>
<td>Faculty Director</td>
<td>Gartland, Sharon G</td>
<td><a href="mailto:sgartland@wisc.edu">sgartland@wisc.edu</a></td>
<td>608/890-3299</td>
<td></td>
</tr>
<tr>
<td>Primary Dean’s Office Contact</td>
<td>Jach, Elizabeth A</td>
<td><a href="mailto:ejach@wisc.edu">ejach@wisc.edu</a></td>
<td>608/262-3389</td>
<td></td>
</tr>
</tbody>
</table>

List the departments that have a vested interest in this proposal.

- School of Nursing (NURSING)
- School of Med & Pub Hlth ACAF (SMPH ACAF)
Are all program reviews in the home academic unit up to date? Yes
Are all assessment plans in the home academic unit up to date? Yes
Are all assessment reports in the home academic unit up to date? Yes
Mode of Delivery: Face-to-Face (majority face-to-face courses)
Will this program be part of a consortial or collaborative arrangement with another college or university? No
Will instruction take place at a location geographically separate from UW-Madison? No
Will this program have outside accreditation? Yes

Guide Accreditation tab

Accreditation

Accreditation Council for Occupational Therapy Education
Accreditation status: Accreditation. Next accreditation review: 2017–2018

Certification/Licensure

National Board for Certification in Occupational Therapy.

<table>
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<tr>
<th>Year of Exam</th>
<th>UW-Madison Graduates: First Attempt</th>
<th>National: First Attempt</th>
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<td>2016</td>
<td>100%</td>
<td>not available</td>
</tr>
<tr>
<td>2015</td>
<td>100%</td>
<td>not available</td>
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<tr>
<td>2014</td>
<td>100%</td>
<td>not available</td>
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Note: The table shows pass rates on the national certification exam. Licenses are awarded at the state level.

Will graduates of this program seek licensure or certification after graduation? No

Faculty and Staff Resources

Confirm that the program advisor(s) or coordinator(s) have been consulted and reviewed this proposal. Yes

Select the Graduate Research Scholars Community for this program.
School of Education Graduate Research Scholars

Curriculum and Requirements

If you are proposing a change to the curriculum, what percentage of the curriculum is changing? No change

Guide Admissions/How to Get In tab

Approved Shared Content from /shared/graduate-school-admissions/

Graduate School Admissions

Graduate admissions is a two-step process between academic degree programs and the Graduate School. Applicants must meet requirements of both the program(s) and the Graduate School. Once you have researched the graduate program(s) you are interested in, apply online.

https://next-guide.wisc.edu/courseleaf/approve/?role=GRAD SCH Dept Approver
M.S. in Occupational Therapy (Professional)

Admission to the entry-level professional program in occupational therapy requires:
Bachelor's degree (or equivalent) from a regionally accredited school of higher education by the start of the program
Transcripts from each college, university, or technical college attended showing work completed and in progress
Graduate Record Exam (GRE) scores
Documentation of paid or volunteer experience in at least two different settings serving persons across the lifespan with physical, behavioral or mental health disabilities
Direct observation of Registered Occupational Therapists, or Certified Occupational Therapy Assistants, providing services is highly recommended
Minimum of three letters of recommendation
Personal statement responding to prompts provided on the graduate application
At least a "C" or better in the following prerequisite courses or their equivalent:

<table>
<thead>
<tr>
<th>Course List</th>
</tr>
</thead>
<tbody>
<tr>
<td>Code</td>
</tr>
<tr>
<td>Credits</td>
</tr>
</tbody>
</table>

**PREREQUISITE COURSES (UW-Madison or comparable) * | |

Lifespan Development 1 (one of the following): 1

- **HDFS 362**: Development of the Young Child
- **ED PSYCH 320**: Human Development in Infancy and Childhood
- **PSYCH 460**: Child Development

Lifespan Development 2:

- **HDFS 363**: Development from Adolescence to Old Age

Abnormal Psychology:

- **PSYCH 405**: Abnormal Psychology

Statistics:

- **PSYCH 210**: Basic Statistics for Psychology

Anatomy & Physiology: 2

- **ANAT & PHY 337**: Human Anatomy
- **ANAT & PHY 338**: Human Anatomy Laboratory
- **ANAT & PHY 335**: Physiology (with Lab)

*Further guidelines for acceptable prerequisite coursework may be found here.*

1. Applicants who complete a lifespan/human development course should complete a second course in child or adult development.

2. Applicants may complete 6–8 credits (two semesters) of combined anatomy and physiology (with lab) to fulfill both the anatomy and physiology prerequisite.

---

**Approved Shared Content from /shared/graduate-school-admissions/**

**Graduate School Admissions**

Graduate admissions is a two-step process between academic degree programs and the Graduate School. Applicants must meet requirements of both the program(s) and the Graduate School. Once you have researched the graduate program(s) you are interested in, apply online.

Those who are not familiar with using the html editor fields may upload a document.

https://next-guide.wisc.edu/courseleaf/
with information about the curriculum for
use by those who will format and edit the
content that will appear in the Guide.

Guide Requirements tab

**Approved Shared Content from** /shared/graduate-minimum-degree-requirements-and-satisfactory-progress/**

**Minimum Graduate School Requirements**

Review the Graduate School minimum academic progress and degree requirements, in addition to the program requirements listed below.

**Major Requirements**

**MODE OF INSTRUCTION**

<table>
<thead>
<tr>
<th>Mode of Instruction</th>
<th>Face to Face</th>
<th>Evening/Weekend</th>
<th>Online</th>
<th>Hybrid</th>
<th>Accelerated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

**Mode of Instruction Definitions**

**Evening/Weekend:** These programs are offered in an evening and/or weekend format to accommodate working schedules. Enjoy the advantages of on-campus courses and personal connections, while keeping your day job. For more information about the meeting schedule of a specific program, contact the program.

**Online:** These programs are offered primarily online. Many available online programs can be completed almost entirely online with all online programs offering at least 50 percent or more of the program work online. Some online programs have an on-campus component that is often designed to accommodate working schedules. Take advantage of the convenience of online learning while participating in a rich, interactive learning environment. For more information about the online nature of a specific program, contact the program.

**Hybrid:** These programs have innovative curricula that combine on-campus and online formats. Most hybrid programs are completed on-campus with a partial or completely online semester. For more information about the hybrid schedule of a specific program, contact the program.

**Accelerated:** These on-campus programs are offered in an accelerated format that allows you to complete your program in a condensed time-frame. Enjoy the advantages of on-campus courses with minimal disruption to your career. For more information about the accelerated nature of a specific program, contact the program.

**CURRICULAR REQUIREMENTS**

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Detail</th>
</tr>
</thead>
</table>
### Required COURSES

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANATOMY 622</td>
<td>Human Anatomy-Physical Therapy, Occupational Therapy</td>
<td>6</td>
</tr>
<tr>
<td>OCC THER 610</td>
<td>Professional Skills I: Professional Practice in Occupational Therapy</td>
<td>2</td>
</tr>
<tr>
<td>OCC THER 611</td>
<td>Professional Skills II: Communication &amp; Interpersonal Skills in OT</td>
<td>2</td>
</tr>
<tr>
<td>OCC THER 612</td>
<td>Professional Skills III: Organization and Management in OT Practice</td>
<td>3</td>
</tr>
<tr>
<td>OCC THER 613</td>
<td>Professional Skills IV: Community-based OT Practice</td>
<td>2</td>
</tr>
<tr>
<td>OCC THER 620</td>
<td>Occupational-based Theory and Practice</td>
<td>2</td>
</tr>
<tr>
<td>OCC THER 621</td>
<td>Assessment of Occupational Participation</td>
<td>3</td>
</tr>
<tr>
<td>OCC THER 622</td>
<td>Infant and Childhood Occupations and Therapeutic Interventions</td>
<td>4</td>
</tr>
<tr>
<td>OCC THER 623</td>
<td>Adolescent and Young Adult Occupations and Therapeutic Interventions</td>
<td>4</td>
</tr>
<tr>
<td>OCC THER 624</td>
<td>Middle and Late Adulthood Occupations and Therapeutic Interventions</td>
<td>4</td>
</tr>
<tr>
<td>OCC THER 625</td>
<td>Level-I Fieldwork: Infants and Children</td>
<td>1</td>
</tr>
<tr>
<td>OCC THER 626</td>
<td>Level-I Fieldwork: Adolescents and Young Adults</td>
<td>1</td>
</tr>
<tr>
<td>OCC THER 627</td>
<td>Level-I Fieldwork: Middle and Late Adulthood</td>
<td>1</td>
</tr>
<tr>
<td>OCC THER 629</td>
<td>Medical Lectures for Occupational Therapy</td>
<td>2</td>
</tr>
<tr>
<td>OCC THER 640</td>
<td>Applied Neuroanatomy for Allied Health Professionals</td>
<td>3</td>
</tr>
<tr>
<td>OCC THER 662</td>
<td>Level II Fieldwork A</td>
<td>6</td>
</tr>
<tr>
<td>OCC THER 664</td>
<td>Level II Fieldwork B</td>
<td>6</td>
</tr>
<tr>
<td>OCC THER 671</td>
<td>Scientific Inquiry in OT I: Evidence-Based Practice.</td>
<td>2</td>
</tr>
<tr>
<td>OCC THER 672</td>
<td>Scientific Inquiry in Occupational Therapy II: Research Design and Methods</td>
<td>2</td>
</tr>
<tr>
<td>OCC THER 673</td>
<td>Scientific Inquiry in OT III: Data Collection and Analysis.</td>
<td>3</td>
</tr>
<tr>
<td>OCC THER 674</td>
<td>Scientific Inquiry in OT IV: Scientific Writing for Publication</td>
<td>2</td>
</tr>
</tbody>
</table>

The MS-OT has a prescribed curriculum of 61 credits, with potential for electives. See Curriculum on the OT website.

Total credits required:
### Approved Shared Content from /shared/graduate-school-policies/

**Graduate School Policies**

The [Graduate School's Academic Policies and Procedures](https://www.wisc.edu) provide essential information regarding general university policies. Program authority to set degree policies beyond the minimum required by the Graduate School lies with the degree program faculty. Policies set by the academic degree program can be found below.

### Major-Specific Policies

#### Graduate Program Handbook

The [Graduate Program Handbook](https://www.wisc.edu) is the repository for all of the program's policies and requirements.

#### Prior Coursework

- **Graduate Work from Other Institutions**
  
  With program approval, students are allowed to count no more than 15 credits of graduate course work from other institutions. Coursework earned five or more years prior to admission to a master's degree is not allowed to satisfy requirements.

- **UW–Madison Undergraduate**
  
  No credits from a UW–Madison undergraduate degree are allowed to count toward the degree.

- **UW–Madison University Special**
  
  With program approval and payment of the difference in tuition (between special and graduate tuition), students are allowed to count no more than 15 credits of course work numbered 300 or above taken in UW–Madison University Special student status. Coursework earned five or more years prior to admission to a master's degree is not allowed to satisfy requirements.

#### Probation

The Graduate School regularly reviews the record of any student who earned grades of BC, C, D, F, or Incomplete in a graduate course (300 or above), or grade of U in research credits. This review could result in academic probation with a hold on future enrollment or in being suspended from the Graduate School. See [Probation](https://www.wisc.edu) on the Graduate School website.

#### ADVISOR / COMMITTEE

All students must have an assigned advisor to meet UW information management needs, and accordingly, and of its own volition, the department assigns an advisor to each student. Assigned advisors in the M. S. in Occupational Therapy (MS–OT) program are graduate research or clinical faculty. To ensure that students are making satisfactory progress toward a degree, the Graduate School expects them to meet with their advisor on a regular basis.

#### CREDITS PER TERM ALLOWED

- **15 credits**

#### Time Constraints

- Master's degree students who have been absent for five or more consecutive years lose all credits that they have earned before their absence.
- Individual programs may count the coursework students completed prior to their absence for meeting program requirements; that coursework may not count toward Graduate School credit requirements.
- Level II fieldwork must be completed within 24 months of completion of coursework.

#### Other

- **n/a**

#### Program Learning Outcomes and Assessment

https://next-guide.wisc.edu/courseleaf/approve/?role=GRAD SCH Dept. Approver
List the program learning outcomes.

| Outcomes – enter one learning outcome per box. Use the green + to create additional boxes. |
|---|---|
| 1 | (Foundational Knowledge) Demonstrate an understanding of the physical, psychological and contextual substrates of human occupation in typical and nontypical development. |
| 2 | (Foundational Knowledge) Discuss the role of personal and environmental factors on involvement in daily activities and community participation. |
| 3 | (Foundational Knowledge) Critically examine and apply theories associated with the science of human occupation and models of interprofessional practice to service delivery. |
| 4 | (Foundational Knowledge) Demonstrate knowledge of one's own role and those of other professions to appropriately assess and address the needs of clients and populations served. |
| 5 | (Scientific Inquiry and Theory Development) Articulate current problems facing the profession of occupational therapy in an interprofessional context with respect to theory, knowledge and practice. |
| 6 | (Scientific Inquiry and Theory Development) Identify and critique current knowledge, theories and evidence to inform practice. |
| 7 | (Scientific Inquiry and Theory Development) Demonstrate necessary skills for designing a scholarly proposal that includes a research question, relevant literature, samples, design, measurement and data analysis. |
| 8 | (Scientific Inquiry and Theory Development) Participate in scholarly activities that evaluate professional practice, service delivery, and/or professional issues. |
| 9 | (Practice Reasoning and Decision Making) Appropriately assess clients’ participation in daily life activities and employ an interprofessional approach to determining clients’ needs within the context of family and society. |
| 10 | (Practice Reasoning and Decision Making) Identify factors within the environment that influence participation in home and community life. |
| 11 | (Practice Reasoning and Decision Making) Plan for discharge in collaboration with the client and family and terminate occupational therapy when appropriate. |
| 12 | (Professional Conduct) Articulate the values of the occupational therapy profession. |
| 13 | (Professional Conduct) Work with individuals of other professions to maintain a climate of mutual respect and shared values. |
| 14 | (Professional Conduct) Describe the varied roles of the occupational therapist as practitioner, educator, researcher, and entrepreneur. |
| 15 | (Professional Conduct) Establish appropriate therapeutic relationships with individuals, groups, organizations and systems, |
| 16 | (Professional Conduct) Use effective interpersonal communication and demonstrate effective and culturally sensitive group communication. |
| 17 | (Professional Conduct) Demonstrate use of safety precautions with the client during the process of practice. |
| 18 | (Professional Conduct) Demonstrate knowledge of legal and ethical issues related to care in health, education, and community settings. |

Summarize the assessment plan.

Approved Assessment Plan:
Commitments

Courses in the curriculum are numbered 300 or higher.

Yes

The program faculty/staff will ensure the program website, Advance Your Career materials if applicable, and other presentations are consistent with the Guide information for this program.

Yes

Supporting Information

List name and department of those who are in support of this proposal.

If those supporting the proposal provided a letter or email of support upload here. A letter is NOT required. Upload any other explanatory information about support from other UW-Madison units.

Additional Information:  

Admissions Table Memo 2019-04-08 Graduate School Approval.pdf  
MS-OT Admit Suspension Memo - 02_17_2019.docx

Approvals

Department Approval - This proposal has been approved by the faculty at the department/academic unit level. The program faculty confirm that the unit has the capacity and resources (financial, physical, instructional, and administrative) to meet the responsibilities associated with offering the program, including offering the necessary courses, advising students, maintaining accurate information about the program in the Guide and elsewhere, conducting student learning assessment and program review, and otherwise attend to all responsibilities related to offering this program.

Enter any notes about approval here:

Entered by: Elizabeth Jach  
Date entered: 5/16/19

School/College Approval - This proposal has been approved at the school/college level and it is submitted with the Dean’s support. The Dean and program faculty confirm that the unit has the capacity and resources (financial, physical, instructional, and administrative) to meet the responsibilities associated with offering the program, including offering the necessary courses, advising students, maintaining accurate information about the program in the Guide and elsewhere, conducting student learning assessment and program review, and otherwise attend to all responsibilities related to offering this program.

Enter any notes about approval here:

Entered by and date:

Entered by: Elizabeth Jach  
Date entered: 5/16/19

GFEC Approval - This proposal has been approved by the Graduate Faculty Executive Committee and the Dean of the Graduate School.

Enter any notes about the approval here:

Entered by:  
Date entered:

UAAP Approval - This proposal has been approved by the University Academic Planning Council and the Provost.

Enter any notes about approval here:

Entered by:  
Date entered:
For Administrative Use

Admin Notes:
Guide URL:
Effective date:
Career: Graduate
SIS Program Code: G720
SIS Short Description: Occ Ther
Other plan codes associated with this program:
Diploma Text: Master of Science
Diploma Text 2: OCCUPATIONAL THERAPY
Degree: 861
Field of Study: Biological Science
Program Length: 2
National Student Clearing House Classification:
Plan Group: 720
Educational Level: Masters degrees
Award Category: Master's
Enrollment Category: Master's
CIP Code: 51.2306 - Occupational Therapy/Therapist.
STEMOPT:
UWSTEM:
HEALTH: Yes
Educational Innovation Program:
Distance Education Program:
Non Traditional Program:
Special Plan Type:
Added to UW System Crosswalk:

Reviewer: Karen E Mittelstadt (mittelstadt) [04/23/19 11:31 am]: No input/concerns from the School of Nursing. Thank you for notification and the opportunity to review. ~Karen Mittelstadt, Assistant
To: Department of Kinesiology, Graduate Studies Committee  
School of Education, Academic Planning Council (APC)  
Provost’s Office  
Graduate Faculty Executive Committee (GFEC)  
University Academic Planning Council

From: Sharon Gartland, OTD, OTR,  
Clinical Professor, Occupational Therapy Program Director  
Ruth Benedict, DrPH, OTR  
Professor, OT Program Faculty

Date: February 15, 2019

RE: Suspension of Admissions to the MS-OT degree program

The Occupational Therapy faculty respectfully request suspension of admissions to the Masters of Science in Occupational Therapy beginning Summer 2020 to permit the faculty to plan a restructuring and re-organization of the entry-level professional curriculum in response to the Accreditation Council of Occupational Therapy Education’s (ACOTE) mandate that entry-level education move to the Doctor of Occupational Therapy (OTD) degree by July 1, 2027. We are currently developing the curriculum for a new entry-level OTD degree and anticipate the first class of students will matriculate into this new program in summer 2021. Suspending admission into the current MSOT program beginning summer 2020 will allow us to provide a full teachout of students in the MSOT program while also allowing the program time to fully plan the restructuring and re-organization of the entry-level program.

Background: In August 2017, ACOTE mandated the OTD as the entry-level degree requirement for the occupational therapist by July 1, 2027 and reaffirmed that decision in August 2018. The following table shows the current status of transition of U.S. occupational therapy programs to accredited entry-level OTD degrees. The Occupational Therapy Program secured approval for a Doctor of Occupational Therapy degree from the UW System Board of Regents on December 11, 2015. It is the UW-Madison OT Program faculty’s opinion that being situated in a very high research university with a strong commitment to doctoral-level education, our mission should include transition to an entry-level named option within the OTD degree.

<table>
<thead>
<tr>
<th>Program Status</th>
<th>OT Doctoral</th>
<th>OT Master’s*</th>
<th>OTA Baccalaur.</th>
<th>OTA Associate</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accredited Programs</td>
<td>29</td>
<td>98</td>
<td>0</td>
<td>216</td>
<td>343</td>
</tr>
<tr>
<td>Accredited Master’s Programs</td>
<td></td>
<td></td>
<td>74</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Programs Transitioning to the Doctoral Level*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Candidate Programs</td>
<td>34</td>
<td>11</td>
<td>0</td>
<td>14</td>
<td>59</td>
</tr>
<tr>
<td>Applicant Programs</td>
<td>81</td>
<td>8</td>
<td>4</td>
<td>17</td>
<td>110</td>
</tr>
<tr>
<td>TOTAL</td>
<td>144</td>
<td>117</td>
<td>4</td>
<td>247</td>
<td>512</td>
</tr>
</tbody>
</table>

*NOTE: The total program count does not include the 74 programs that are retaining accreditation for the master’s programs while the transition to the doctoral level is finalized.
The current entry-level MS-OT degree program has sustained a strong admissions pool over the course of the past five years with total number of applications consistently exceeding 300 for the 25 available slots. A recent “360 Degree Program Scalability Analysis for a Doctor of Occupational Therapy Program” conducted by EAB for the Division of Continuing Studies at UW-Madison suggests that while the current labor demand for OTD trained therapists is low, the demand for doctoral-level therapists is anticipated to grow from 2017-2027 as the ACOTE mandate takes effect. According to the Bureau of Labor Statistics (https://www.bls.gov/ooh/healthcare/occupational-therapists.htm) employment of occupational therapists is projected to grow 24 percent from 2016 to 2026, much faster than the average for all occupations.

The OT Program faculty and staff have committed to transitioning the entry-level curriculum and degree from MS to OTD. We are envisioning a review of our current MS curricular requirements, post-professional OTD curricular requirements and anticipate a blending and expansion of these curricula to meet the new ACOTE OTD standards. The new entry-level curriculum will be offered in a face-to-face residential and blended learning format and will include a variety of didactic course work and immersive clinical experiences to prepare students for certification and licensure as occupational therapists. The Program faculty and staff is working with the Department of Kinesiology Chair and Graduate Studies Committee in the development of the new entry-level OTD (EL-OTD) option.

As we anticipate the program will draw a new pool of students, OT Program faculty have agreed to develop the EL-OTD named option within the same Revenue-Generating (131) budget model as the current PP-OTD program. A proposal for development funds from the Division of Continuing Studies to support the creation of a new EL-OTD named option and the revision of the entry-level curriculum is being drafted, including funds to support a transition year from 2020-2021. The OT Program proposes to suspend admissions to the MS-OT beginning with the Fall 2019 admissions cycle. The Program’s proposed timeline for the transition is as follows:

**Proposed Timeline:**

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summer 2019</td>
<td>Last class of MS-OT students matriculate with anticipated graduation in Dec 2021</td>
</tr>
<tr>
<td>AY 2019-2020</td>
<td>MS-OT classes of 2020 &amp; 2021 enrolled in didactic coursework; class of 2019 on Fieldwork (fall)</td>
</tr>
<tr>
<td>Fall 2019</td>
<td>Suspend MS-OT application process</td>
</tr>
<tr>
<td>Dec 2019</td>
<td>MS-OT class of 2019 graduates</td>
</tr>
<tr>
<td>Summer 2020</td>
<td>Suspend MS-OT admissions</td>
</tr>
<tr>
<td>AY 2020-2021</td>
<td>MS-OT class of 2021 enrolled in didactic coursework; class of 2020 on Fieldwork (fall); Finalize EL-OTD</td>
</tr>
<tr>
<td>Fall 2020</td>
<td>Begin admissions process for entry-level OTD</td>
</tr>
<tr>
<td>Dec 2020</td>
<td>MS-OT class of 2020 graduates</td>
</tr>
<tr>
<td>Summer 2021</td>
<td>EL-OTD class of 2024 matriculates;</td>
</tr>
<tr>
<td>AY 2021-2022</td>
<td>MS-OT class of 2021 on Fieldwork (fall); EL-OTD class of 2024 enrolled in didactic coursework</td>
</tr>
<tr>
<td>Dec 2021</td>
<td>MS-OT class of 2021 graduates</td>
</tr>
<tr>
<td>Fall 2022</td>
<td>Proposal to discontinue MS-OT program</td>
</tr>
</tbody>
</table>

In anticipation of the ACOTE entry-level OTD mandate, the OT Program’s Admissions Coordinator has been notifying prospective students in the pipeline that planning is in progress for transition of the program and that MS-OT admissions will likely be suspended in the near future. We will continue to advise and support prospective students interested in a career in occupational therapy through the
transition. We will also ensure that all students enrolled in the MS-OT program as of Summer 2019, will be supported to completion of their degree.

**Teachout**: We will teach out all enrolled students making satisfactory progress toward the degree and will not seek discontinuation of the degree until all MS-OT students are graduated. The MS-OT program is currently accredited until 2025. The ACOTE standards for accreditation of an EL-OTD program encompass and expand upon the full complement of standards for Masters degree programs so accommodating the curricular needs of any MS-OT students who may need to take a Leave of Absence from the program during the period of transition should be feasible.

The program faculty will submit a proposal to the Office of the Provost to discontinue the MS-OT program within three years of the suspension of admissions to the program (Fall 2022).
MEMORANDUM

Date: March 7, 2019
FROM: Parmesh Ramanathan, Associate Dean, Graduate School
RE: Addition of Admissions Table into Guide/Lumen Programs

The Graduate School has decided to reformat and restructure key admissions content of all degrees and named options that are applicable in the Graduate School eApplication system into a uniform table on Guide pages. The fields in the table are: Fall Deadline, Spring Deadline, Summer Deadline, GRE (Graduate Record Examinations), English Proficiency Test, Other Test(s) (e.g., GMAT, MCAT), and Letters of Recommendation Required. We are using consistent text input across as many of these fields as possible so that we will be able to export data from the table, which will aid us both in making internal processes more efficient and allowing us to more easily monitor admissions trends across our programs.

Information for the table was collected from existing Guide content and from our eApplication system and then distributed to programs for verification. After receiving ACPARAC approval, the table is now being added by the Graduate School in Lumen Programs to every applicable page, to be effective in the Fall 2019 Guide.

This update is in line with other formatting and structure changes in Guide on the Requirements and Policies tab and contributes to our mission to present information to students in a clear, easily accessible way.

Any questions about the admissions table may be directed to Emily Reynolds (emily.reynolds@wisc.edu), Academic Planning Specialist in the Graduate School.

CC: William Karpus, Graduate School
    Judy Bauman, Graduate School
    Emily Reynolds, Graduate School
    Jocelyn Milner, Academic Planning and Institutional Research
    Michelle Young, Academic Planning and Institutional Research
    Melissa Schultz, Academic Planning and Institutional Research
    Will Lipske, Office of the Registrar
Please consult the table below for key information about this degree program's admissions requirements. The program may have more detailed admissions requirements, which can be found below the table or on the program's website. Graduate admissions is a two-step process between academic degree programs and the Graduate School. **Applicants must meet the minimum requirements of the Graduate School as well as the program(s).** Once you have researched the graduate program(s) you are interested in, apply online.

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall Deadline</td>
<td>November 15</td>
</tr>
<tr>
<td>Spring Deadline</td>
<td>The program does not admit in the spring.</td>
</tr>
<tr>
<td>Summer Deadline</td>
<td>The program does not admit in the summer.</td>
</tr>
<tr>
<td>GRE (Graduate Record Examinations)</td>
<td>Not required.</td>
</tr>
<tr>
<td>English Proficiency Test</td>
<td>For applicants whose first language is not English or whose undergraduate instruction was not in English must provide an English proficiency test score and meet the Graduate School minimum requirements (<a href="https://grad.wisc.edu/apply/requirements/#english-proficiency">https://grad.wisc.edu/apply/requirements/#english-proficiency</a>).</td>
</tr>
<tr>
<td>Other Test(s) (e.g., GMAT, MCAT)</td>
<td>n/a</td>
</tr>
<tr>
<td>Letters of Recommendation</td>
<td>3*</td>
</tr>
<tr>
<td>Required</td>
<td></td>
</tr>
</tbody>
</table>

* Strong letters of recommendation will provide the department with evidence that you will succeed in the study of African languages and expressive cultures at the graduate level.
## Program Change Request

### New Program Proposal

**Date Submitted:** 08/21/19 12:04 pm  
**Viewing:** Professional Program  
**Parent Plan:** MAI: Atmospheric & Oceanic Sci/MS  
**Last edit:** 08/21/19 12:21 pm  
**Changes proposed by:** emklein

**Name of the school or college academic planner who you consulted with on this proposal.**

<table>
<thead>
<tr>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elaine M Klein - L&amp;S</td>
</tr>
</tbody>
</table>

**Proposal/Abstract/Summary:**

The 30-credit hybrid non-pooled tuition accelerated (12-month, part-time enrollment possible) named option professional master's focused on atmospheric science from the University of Wisconsin – Madison provides training for meteorology professionals supporting weather and climate needs of diverse industries. The program focuses on advanced training in fundamental atmospheric sciences in addition to skills development in forecasting, modeling, data analysis, scientific communication, and evaluation of research specific to our discipline. Target students leave with a M.S. degree equipped for positions in weather and climate forecasting, risk analyses, technical data analysis, and scientific communication.

### Basic Information

**Type of Program:** Named Option  
**Parent Program:** MAI: Atmospheric & Oceanic Sci/MS  
**Parent Audience:** Graduate or professional  
**Parent Home:** ATM OCNS  
**Department:** College of Letters and Science  
**School/College:** The program will be governed by the home department/academic unit as specified. Will an additional coordinating or oversight committee be established for the program?  
No  
**Parent is in the Graduate School:** Yes  
**SIS Code:**  
**SIS Description:**  
**Transcript Title:** Professional Program  
**Named Options:** Sub Plan 1047: No Title Round  
Sub Plan 1062: No Title Round  
**Does the parent program offer this as an additional major as well?** No  
**Roles by Responsibility:** List one person for each role in the drop down list. Use the green + to create additional boxes.

---

**In Workflow**
1. 03/18/19 6:07 am  
Ankur R Desai (aradesai2): Approved for ATM OCNS Dept. Approver  
2. 03/19/19 1:47 pm  
Elaine M Klein (emklein): Approved for L&S College Admin Reviewer  
3. 04/18/19 4:48 am  
Elaine M Klein (emklein): Rollback to L&S College Admin Reviewer for L&S College Approver  
4. 04/18/19 4:51 pm  
Elaine M Klein (emklein): Approved for L&S College Admin Reviewer  
5. 04/30/19 10:58 am  
Elaine M Klein (emklein): Approved for L&S College Approver  
6. 08/05/19 2:14 am  
Nicole Wessinger (wessinger): Rollback to L&S College Approver for APIR Admin  
7. 08/06/19 3:19 pm  
Elaine M Klein (emklein): Approved for L&S College Approver  
8. 08/21/19 12:09 pm  
Dee D Vanhuyen (ddvanhuyen): Approved for ATM OCNS Dept. Approver  
9. 08/21/19 12:21 pm

---

[Link to CourseLeaf Approval Page](https://next-guide.wisc.edu/courseleaf/approve/?role=GRAD SCH Dept. Approver)
<table>
<thead>
<tr>
<th>Role Type</th>
<th>Name (Last, First)</th>
<th>Email</th>
<th>Phone</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department Chair</td>
<td>Tripoli, Gregory J</td>
<td><a href="mailto:gtripoli@wisc.edu">gtripoli@wisc.edu</a></td>
<td>608/262-3700</td>
<td></td>
</tr>
<tr>
<td>Faculty Director</td>
<td>Desai, Ankur R</td>
<td><a href="mailto:ardesai2@wisc.edu">ardesai2@wisc.edu</a></td>
<td>608/262-0305</td>
<td></td>
</tr>
<tr>
<td>Primary Contact</td>
<td>Dahmen, Chelsea Marie</td>
<td><a href="mailto:cdahmen@wisc.edu">cdahmen@wisc.edu</a></td>
<td>608/262-2829</td>
<td></td>
</tr>
<tr>
<td>Primary Dean’s Office Contact</td>
<td>Klein, Elaine M</td>
<td><a href="mailto:emklen@wisc.edu">emklen@wisc.edu</a></td>
<td>608/265-8484</td>
<td></td>
</tr>
</tbody>
</table>

List the departments that have a vested interest in this proposal:

<table>
<thead>
<tr>
<th>Departments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Studies (ENV ST-L&amp;S)</td>
</tr>
<tr>
<td>Civil and Environmental Engr (CIV &amp; EGR)</td>
</tr>
<tr>
<td>Risk and Insurance (ACT SCI RMI)</td>
</tr>
</tbody>
</table>

Are all program reviews in the home academic unit up to date? Yes
Are all assessment plans in the home academic unit up to date? Yes
Are all assessment reports in the home academic unit up to date? Yes
Mode of Delivery: Face-to-face (majority face-to-face courses)
Will this program be part of a consortial or collaborative arrangement with another college or university? No
Will instruction take place at a location geographically separate from UW-Madison? No
Parent has outside accreditation: No
Graduates of parent program seek licensure or certification after graduation: No
First term of student enrollment: Fall 2020 (1212)
When will the application for the first term of enrollment open? Fall 2019 (1202)
Which terms will you allow new students to enroll? What are the application deadlines for each term selected?

<table>
<thead>
<tr>
<th>Start Term</th>
<th>Application Deadline MM/DD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td>01/15</td>
</tr>
</tbody>
</table>

Year of three year check-in to GFSIC (3 years after first student enrollment): 2024
Year of first program review (5 years after first student enrollment): 2026

If this proposal is approved, describe the implementation plan and timeline:

February 2019: Course proposals entered and approved by department
March 2019: Complete program proposal, send forward
Following approval of program, the following steps will be pursued (roughly estimated to span Summer 2019 and early Fall 2019):
Convene implementation meeting to ensure all parties involved in implementation steps are aware of responsibilities and timeline.
Pending approval of program and funds, hire academic staff program coordinator
Develop recruitment material, engage alumni board
(Note: Prof Desai has a Fall 2019 Prof Dev teaching release to work on Prof Master’s program)
Set up admissions website material
Line up internship partners, train new staff
Visit peer programs to study best practices (Desai)
Prepare material for Certified Consulting Meteorologist exam (Desai)
Advertise program at American Meteorological Society
Attend Certified Consulting Meteorologist exam
Review applications, admit first class (~10 students)
Set up Fall 2020 timetable
Develop material for orientation
Verify internship partners, test technology for AOS 810/811
Rationale and Justifications

How does the named option relate to the major and to other named options in the major, if relevant?

With approval of this program, and the proposed "Research" named option, the MS in AOS will have two distinct programs:

A MS "Research" named program, which is a traditional 2-year in-person thesis based program. Students in this program are admitted based on research interest, and focus on conducting atmospheric science research with an advisor. The core focus on training for research careers and entry into the Ph.D. program. Required courses are focused on theory and training as a scholar.

MS "Professional Program" named option (this proposal), which is a hybrid (majority face-to-face) 1-year program where students will focus on practical training on skills needed to succeed in meteorological consulting, risk management, and operational forecasting. This program is geared to students who are not focused on careers in science research or entering a Ph.D. program. While many courses are similar to those taken for the "Research" option, the requirements of courses in programming, data analysis, professional development, and practical summer internship replace the thesis and direct mentoring by a research advisor. These students will be well trained for the AMS Certified Consulting Meteorologist exam.

Why is the program being proposed? What is its purpose?

The professional program concept was developed over the 2016-2018 period by the AOS Professional Master's ad hoc committee, and unanimously approved by the AOS faculty executive committee in December 2018. The goal of the program is to address 1) needs of undergraduate majors who have expressed interest in a 5th year master's degree (including a successful trial test with 2-3 students), 2) at least 1-2 students a year who enroll in our MS thesis program who have found the research-based thesis to be not suited to their interests (and therefore failing to complete) but who would have succeeded here, 3) significant applicant pool to our MS program (dozen or) who cannot be supported by thesis program (lack of RA/TA/Advisor) and therefore do not enroll, but who would be willing to enroll in this program, 3) market analysis and alumni interviews demonstrating strong demand by employers for MS trained atmospheric professionals (and lower demand for solely B.S. trained) demand by students for this degree option, and relatively limited competition right now in this arena. Finally, we believe the developing such a program would benefit the department as a whole by providing more resources to offer courses specific to atmospheric science data analysis, forecasting, and programming that may also support other campus departments, our Ph.D./M.S. thesis students, and faculty teaching interests.

Do current students need or want the program? Provide evidence.

Our undergraduate advisor has been getting regular visits by our majors and intended majors expressing interest in this program and eagerness to enroll. Informal surveys of our majors suggested that a good fraction of our graduating seniors would consider enrolling in this program instead of seeking MS degrees elsewhere. We have also witnessed several of enrollies to our MS thesis research program each year who are primarily interested in professional development in the MS and struggle to complete the thesis. Finally, we note that a large fraction of our thesis students are terminal MS students who get good jobs after graduation. This program would better meet needs of those students and allow them to graduate sooner.

What is the market, workforce, and industry need for this program? Provide evidence.

The Division of Continuing Studies conducted a market analysis, peer program analysis, and alumni interviews with our alumni board. All three studies showed strong demand for the program, limited competition in the region in our niches, and enthusiasm by alumni in industry for the program, for hosting interns, and for addressing the needs of our field. The American Meteorological Society has recently revised its recommended program standards to address a rapidly changing workforce, and our program directly addresses the needs outlined in those reports, too. The market analysis showed a larger number of positions seeking skilled atmospheric scientists. The alumni board noted that a professional MS from UW would be viewed strongly in that market. Most of our existing BS students have noted that an MS is the new entry ticket to many positions in our field in forecasting, consulting, operations. In particular, skills like technical writing, programming for data analysis, forecast modeling, working with diverse teams, and advanced understanding of societal issues of climate/weather are key factors for their hiring.

What gap in the program array is it intended to fill?

Our current MS program is thesis based, thus requiring a research advisor, a thesis topic, and preferably assistantship support. For students primarily interested in careers in atmospheric science, forecasting, modeling, communications, or consulting, this is not the best fit. As a result, often do we not admit students whose primary interests in these areas are due lack of advisor/thesis topic. If we do admit them, then we struggle to find assistantship support for them, since we are a 90%-RA funded program. We have over 80-100 applicants a year to the PhD and MS program combined, and at least 10 or more of these already would be direct fits into a professional MS program based on the graduate chair's 9 years experience of running admissions. A program that is internships based instead of thesis driven, 1 year, with courses in programming and skills development, but still includes our rigorous core program and maintains high admissions and academic standards, will allow us to serve a pool of students who can grow the program, contribute broadly in careers in our field, and help maintain our reputation as a top graduate program.
Faculty and Staff Resources

List the core program faculty and staff with title and departmental affiliation who are primarily involved and will participate in the delivery and oversight.

<table>
<thead>
<tr>
<th>Name (Last, First)</th>
<th>Department</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Desai, Ankur R</td>
<td>Atmospheric &amp; Oceanic Sciences</td>
<td>Graduate program chair</td>
</tr>
<tr>
<td></td>
<td>(ATM OCN S)</td>
<td></td>
</tr>
<tr>
<td>Dahmen, Chelsea Marie</td>
<td>Atmospheric &amp; Oceanic Sciences</td>
<td>Department administrator</td>
</tr>
<tr>
<td></td>
<td>(ATM OCN S)</td>
<td></td>
</tr>
<tr>
<td>Vanuyven, Dee D</td>
<td>Atmospheric &amp; Oceanic Sciences</td>
<td>Student status coordinator</td>
</tr>
<tr>
<td></td>
<td>(ATM OCN S)</td>
<td></td>
</tr>
<tr>
<td>Tripoli, Gregory J</td>
<td>Atmospheric &amp; Oceanic Sciences</td>
<td>Dept chair</td>
</tr>
<tr>
<td></td>
<td>(ATM OCN S)</td>
<td></td>
</tr>
<tr>
<td>Morgan, Michael Cottman</td>
<td>Atmospheric &amp; Oceanic Sciences</td>
<td>Undergraduate program chair</td>
</tr>
<tr>
<td></td>
<td>(ATM OCN S)</td>
<td></td>
</tr>
<tr>
<td>Schueffner, Eric L</td>
<td>Atmospheric &amp; Oceanic Sciences</td>
<td>Undergraduate advisor</td>
</tr>
<tr>
<td></td>
<td>(ATM OCN S)</td>
<td></td>
</tr>
<tr>
<td>Pokrant, Peter J</td>
<td>Atmospheric &amp; Oceanic Sciences</td>
<td>Department computing support</td>
</tr>
<tr>
<td></td>
<td>(ATM OCN S)</td>
<td></td>
</tr>
<tr>
<td>Feldy, Susan D</td>
<td>Atmospheric &amp; Oceanic Sciences</td>
<td>Administrative Assistant</td>
</tr>
<tr>
<td></td>
<td>(ATM OCN S)</td>
<td></td>
</tr>
</tbody>
</table>

What resources are available to support faculty, staff, labs, equipment, etc.?  
The AOS building contains the AOS department, Nelson Institute Center for Climatic Research,  
the Graduate School’s Space Science and Engineering Center, and the NOAA Center for  
Integration of Meteorological Satellite Studies (CIMSS). All units work together to create a  
dynamic environment with access to computer labs for students. The highest performance  
single compute node on campus in BSEC, access to the largest number of academic staff PCs on  
campus in a single center, and numerous meeting rooms, classroom spaces. There are seminars  
3-4 days a week among the departments and center. All units (AOS, CCR, SSEC, CIMSS) have  
support staff that help students, labs for specialized needs, and conduct joint events like the  
b厦ide wide poster session every spring, named lecture series, or alumni meet-up days in the  
fall. Professional program students would be given keys to the building, access to the 14th floor  
computing lab, and shared meeting space in seminar rooms on 8th, 10th, 14th and 15th floors.

Program advisor(s) with title and departmental affiliation.

<table>
<thead>
<tr>
<th>Name (Last, First)</th>
<th>Department</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Desai, Ankur R</td>
<td>Atmospheric &amp; Oceanic Sciences</td>
<td>Professor</td>
</tr>
<tr>
<td></td>
<td>(ATM OCN S)</td>
<td></td>
</tr>
</tbody>
</table>

Describe how student services and advising will be supported.

The non-taxed tuition revenue will support a full-time academic advisor/coordinator for the program. A tenured faculty member will be appointed to serve as program director. The director and advisor will work jointly on recruiting, admission, orientation, and advising. Students will have regularly (monthly) meetings with the advisor. The Advisor will be a core instructor for the program course sequence (810/811). We also expect shared services with existing AOS staff such as the graduate coordinator of the thesis programs, department administrator, university staff, department chair, and thesis graduate program chair on issues like registration, timetable, human resources, visa/immigration, financial aid, mandatory trainings, travel reimbursement and purchasing, and academic misconduct.

As the program grows beyond 20 students, we will need to revisit the advising model, including options for peer mentoring, hiring of dedicated 131-supported faculty, and/or a second coordinator position.

Internship placement will also require additional consideration as the program grows. Our current policy now reads: “At the end of the spring semester, all students are expected to have secured a paid or unpaid internship with a minimum of 10 hours per week of expected work for a minimum of 8 weeks. The internship, occurring in conjunction with online classes ATM OCN 810, 811, and 999, can include placement in a private company, public sector agency or lab, university setting, or on or off campus, based on student interest, availability, and advisor approval. It is the responsibility of both the student and the program coordinator to assist in this match. In case the student is unable to secure an internship or seeks a more entrepreneurial approach, the student can propose an alternate in lieu of internship. The alternative must meet minimum hour and length requirements, but may include independent business start-up planning, direct consulting with faculty, or other creative approaches. The alternative must have a direct mentor or supervisor identified and requires approval of the program director.”

Confirm that the program advisor(s) or coordinator(s) have been consulted and reviewed the proposal.

Resources, Budget, and Finance

Is this a revenue program? Yes

What is the tuition structure for this program? Markers-based tuition - separate proposal to be submitted

Select a tuition increment: $1,000/credit

What is the rationale for selecting this tuition increment?
DCS conducted a market analysis for peer programs. The analysis showed that a flat tuition rate of $30,000 ($1,000/credit, 30 credits, with up to 7 transfer credits for UW-Madison graduates) would put us on the low end of the scale (mean $25,000 instate, $50,000 out of state). However, the faculty feel strongly that the main goal of this program is to provide an affordable pathway for students in our field, that is commensurate with typical tuition levels at this university and what allows the program to at least break even with a small class and make some money to support growth and investment in supports. We feel this attractive and easy to remember price will drive admissions here and away from over-priced programs at lower quality institutions. While this may make our budget smaller, the faculty strongly opposed setting a high tuition given the crisis in student loan debt and average salaries in our field. We are willing to revisit this, but we are interested in improving our program and providing access to all students.

Upload the proposal for market based tuition: PREZ - ADS Competitive Pricing.pdf
Market Based Tuition Model ADS professional masters CM0031519.xlsx

Provide a summary business plan.

The ADS M.S Professional Program named option will have a tuition rate of $1,000/credit. We project long-term (steady-state) enrollment of 40, ramping up over first few years, starting with 10, and revenue projections of $1.2 million dollars a year once those enrollment targets are met.

The costs for this program are primarily for 1) academic staff support of marketing, advising, and instruction, 2) teaching assistant support for instruction of the internship class, and 3) additional teaching or project assistantship support once the program grows to meet enrollment projections to support academic staff advising and marketing. The program is expected to be self-funding within the first two years. At least initially, the program will make use of existing courses, with faculty paid on fund 101 and teaching as part of their regular teaching loads. In return, the program will use future expected 131 surplus to hire additional faculty, staff, and/or TAs in support of traditional 101 students.

We have selected $1,000 per credit based on market analysis of peers and expected program costs and revenue. Our faculty voted to select a tuition increment on the more affordable side given competition in the market (see market based tuition policy form attachment and DCS competitive pricing attachment), providing value to Wisconsin residents and regional students, and a relative salary potential of graduates.

Chelsea Dahmen, Department Administrator, will manage funds and support budget planning and projections. We will monitor admission and retention, and align future projections of student enrollment based on those.

Provide an overview of plans for funding the program including but not limited to program administration, instructional/curricular delivery, technology needs and program assessment.

As detailed in the budget, the program is relatively low cost to implement, as most of the classes are existing, new classes (internship) will be supervised by the academic staff hired to advise and support the program, and assuming existing computing lab and seminar space will be used in the ADS Building, and lab materials are limited.

The revenue supports hiring of an academic staff 1/4 FTE to support recruiting, admission, advising, internship placement, and instruction of the summer internship course. This staff will work closely with the faculty appointment program director, who will shape academic policy, strategic plans, program assessment, and student support.

We also will use 131 revenue to hire a summer 50% teaching assistant (TA) who will assist on the summer internship courses (810/811), managing the online videoconferences and individual meetings and act as a point of contact for internship leads. The internship course will be taught by the academic staff hire who will mentor this TA.

We will use investment in later years both to support our 101 program, including return of initial startup funds supported by 101 through funding of 101 staff positions, and our 131 program by hiring additional TAs to assist instructors in other undergraduate courses or practical skills classes open to both graduates and undergraduates. This additional support will allow faculty to more intensively teach in the larger graduate core classes that will arise from courses used by both 131 and 101 students. We will also invest in a 3% to help maintain student records, organize website and marketing material, and help attend national meetings to recruit.

Our existing department administrator, student status coordinator, administrative assistant, and classroom IT support staff will provide support to 131 students. Given that our thesis based programs (MS and PhD) are smaller than long term average, there is adequate support at the moment from these staff. As the program grows, we intend to re-invest tuition funds for hiring of new appointments in these areas.

Travel support is included so that students can present and attend the annual American Meteorological Society (AMS) meeting, which is where the Certified Consulting Meteorologist (CCM) exam is administered.

Tuition support for electives in other departments is budgeted at $600/student credit hour, per UWS policy for several programs. These are not required courses so we have used best judgement in number of credit hours likely to be applied to each based on equal apportionment of students to each specialty or elective.

We provide up to 7 transfer credits for our own majors (UW ADS), which we view as a tuition discount for
those students, assuming 20% of students fall in this category.

What is the marketing plan?

We have a robust recruiting plan already for our thesis based programs. Our initial market will draw from similar locations. Jointly with our graduate student association (GSA), graduate advisor, and graduate chair, we have designed a number of materials (brochures, websites, table materials, posters) that will be updated to highlight the new named option. Our primary venue for this is the annual American Meteorological Society meeting. We have also identified a few other meetings and major undergraduate meteorology programs (Oklahoma University, Penn State, University of Washington) where we will invest additional resources in visits, mailing flyers, and direct outreach to program chairs at respective institutions.

Our alumni engagement board has been involved in planning for last year. They formed three years ago with an elected body of alumni who organize events. They have started an annual alumni day in fall semester. We will use that event to recruit internship partners and promote the program.

We believe these efforts will be sufficient to attract students to our nationally recognized department (top 15 in nation for atmospheric science). We have many students who apply to our thesis named option who are better fits for the professional option. We will provide better guidance on our website to help students properly select program. The admissions committee will review both programs simultaneously to improve coordination and transfer of admission material from one program to the other based on fit.

Our department is also committed to recruiting and retaining a diverse graduate student pool. Though the Geosciences at large are less diverse than other STEM fields, work done by the department, through its adapted diversity plan, has allowed it to identify several pathways to help diversify its applicant pool and student body. Over the past 8 years, the department has transitioned to a holistic admissions model (as detailed in admissions section below), which has increased diversity, primarily in underrepresented minorities, while maintaining strength in students and outcomes. We are one of the only atmospheric science programs in country at gender parity in graduate program. We have placed emphasis on recruiting diverse faculty based on research that diverse faculty recruit diverse students, by being one of the first STEM departments in UW to require a diversity statement of all faculty candidates. We have added diversity events into our seminar calendar; the graduate students have formed a diversity committee, and ask all faculty to attend one workshop a year in areas of inclusion or bias training. We review annual support from the graduate school support competition, which requires us to collect data on student diversity and to support recruitment practices that enhance diversity. We award AOF fellowships nearly every year. This year we will start funding more faculty visits to minority-serving institutions with strong atmospheric science programs such as Howard University, University of Puerto Rico Mayaguez, and University of Arizona.

Does the program or change require substantial new resources other than those just described? Describe the needs. Confirm that the dean is committed to providing the resources.

An academic staff will be hired in anticipation of being fully supported on program-generated 131 funds. The L&S Associate Dean for Fiscal Initiatives is aware that the account will be in deficit in advance of future revenues.

Are new Library resources needed to support this program?

No

Describe plans for funding students including but not limited to funding sources and how funding decisions are made.

Students will not be provided direct funding in this program and policy will prohibit them from getting assistant/ship (RA, TA, or PA) support that would waive tuition; this support is reserved for the research program. However, we are allowing up to 7 credit transfer for UW ADS graduates, which will provide a substantial discount for graduates of the UW-Madison BA/BS major in ADS.

If program projections are accurate, we will consider re-investing in scholarships for students should that be seen as a way to increase enrollment and support increased diversity of enrollees.

Curriculum and Requirements

Parent Plan Admissions/How To Get In: Requirements

Students apply to the MS in Atmospheric and Oceanic Sciences through one of the named options:

Atmospheric and Oceanic Research Program
Atmospheric and Oceanic Sciences Professional Program

Guide Admissions/How To Get In tab

Approved Shared Content from /shared/graduate-school-admissions/

Graduate School Admissions

Graduate admissions is a two-step process between academic degree programs and the Graduate School. Applicants must meet requirements of both the program(s) and the Graduate School. Once you have researched the graduate program(s) you are interested in, apply online.

Graduate Admissions Requirements

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall Deadline</td>
<td>January 15</td>
</tr>
<tr>
<td>Spring Deadline</td>
<td>This program does not admit in the spring.</td>
</tr>
<tr>
<td>Summer Deadline</td>
<td>This program does not admit in the summer.</td>
</tr>
<tr>
<td>GRE (Graduate Record Examinations)</td>
<td>General test required</td>
</tr>
<tr>
<td>English Proficiency Test</td>
<td>Every applicant whose native language is not English or whose undergraduate instruction was not in English must provide an English proficiency test score and meet the Graduate School minimum requirements (<a href="https://grad.wisc.edu/apply/requirements/english-proficiency">https://grad.wisc.edu/apply/requirements/english-proficiency</a>).</td>
</tr>
</tbody>
</table>
Admission to the Professional Program requires the same academic strength and expectations of the Research Program, except that you do not need to elect an advisor or research topic.

Our criteria for admissions is holistic and we generally favor high quality applicants who have:

- Evidence of interest in meteorological, climate, ocean, and/or remote sensing careers
- Sufficient background in prerequisite courses to be successful in AOS courses and careers, regardless of academic major
- Evidence of solid written and oral English communication skills
- GPA, GRE, and TOEFL scores reflective of academic strength

Ability to enhance the academic, geographic, gender, ethnic, economic, or cultural diversity of our department, especially for underrepresented groups

Applications submitted by January 15th are given highest consideration for Fall semester admission. All applicants are assessed and ranked by an admissions committee chaired by the Graduate Program Chair.

Admission priority is given to the highest ranked applicants who best meet our application criteria. No assistantship funding is available in the professional program.

Describe plans for recruiting students to this program.

We have a robust recruiting plan already for our thesis based programs. Our initial market will draw from similar locations. Jointly with our graduate student association (GSA), undergraduate advisor, and graduate chair, we have designed a number of materials (brochures, website, table materials, posters) that will be updated to highlight the new named option. Our primary venue for this is the annual American Meteorological Society meeting. We have identified a few other meetings and major undergraduate meteorology program (Oklahoma University, Penn State, University of Washington) where we will invest additional resources in visits, mailing flyers, and direct outreach to program chairs at respective institutions.

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Projected Annual Enrollment:

<table>
<thead>
<tr>
<th>Year</th>
<th>Projected Enrollment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1</td>
<td>10</td>
</tr>
<tr>
<td>Year 2</td>
<td>15</td>
</tr>
<tr>
<td>Year 3</td>
<td>20</td>
</tr>
<tr>
<td>Year 4</td>
<td>30</td>
</tr>
<tr>
<td>Year 5</td>
<td>40</td>
</tr>
</tbody>
</table>

Maximum enrollment that can be supported with existing instructional and student services resources: 20

Those who are not familiar with using the html editor fields may upload a document with information about the curriculum for use by those who will format and edit the content that will appear in the Guide.

Parent Requirements

Approved Shared Content from /shared/graduate-minimum-degree-requirements-and-satisfactory-progress/

Minimum Graduate School Requirements

Review the Graduate School minimum academic progress and degree requirements, in addition to the program requirements listed below.

Major Requirements

Note: The major is currently non-admitting. Students are admitted through one of the named options (sub-majors) below.
Approved Shared Content from /shared/graduate-school-mode-instruction-definitions/

CURRICULAR REQUIREMENTS

<table>
<thead>
<tr>
<th>Requirements</th>
<th>University General Education Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Credit Requirement</td>
<td>M.S.—Research Named Option: 30 credits</td>
</tr>
<tr>
<td>Minimum Graduate Coursework</td>
<td>M.S.—Professional Named Option: 30 credits</td>
</tr>
<tr>
<td>Minimum Residence Credit Requirement</td>
<td>18 credits</td>
</tr>
<tr>
<td>Overall Graduate GPA Requirement</td>
<td>See either the M.S. named option in Research or Professional Program for the requirement information</td>
</tr>
<tr>
<td>Other Grade Requirements</td>
<td>The Graduate School requires an average grade of B or better in all coursework (300 or above, not including research credits) taken as a graduate student unless conditions for probationary status require higher grades. Grades of incomplete are considered to be unsatisfactory if they are not removed during the next enrolled semester.</td>
</tr>
<tr>
<td>Assessments and Examinations</td>
<td>See either the named option in Research or Professional Program for the requirement information</td>
</tr>
<tr>
<td>Language Requirements</td>
<td>No language requirements.</td>
</tr>
</tbody>
</table>

REQUIRED COURSES

Select a Named Option for required courses.

Named Options (Sub-Majors)

A named option is a formally documented sub-major within an academic major program. Named options appear on the transcript with degree conferred. Students pursuing the Master of Science in Atmospheric and Oceanic Sciences must select one of the named options:

Atmospheric and Oceanic Sciences Research Program
Atmospheric and Oceanic Sciences Professional Program

Approved Shared Content from /shared/graduate-minimum-degree-requirements-and-satisfactory-progress/

Minimum Graduate School Requirements

Review the Graduate School minimum academic progress and degree requirements, in addition to the program requirements listed below.

Named Option requirements

mode of instruction

Approved Shared Content from /shared/graduate-school-mode-instruction-definitions/

E-mail: The program offers an evening and/or weekend format to accommodate working schedules. Enjoy the advantages of on-campus courses and personal connections, while keeping your day job. For more information about the evening schedule of a specific program, contact the program.

Online: These programs are offered primarily online. Many available online programs can be completed almost entirely online with all online programs offering at least 50 percent or more of the program work online. Some online programs have an on-campus component that is often designed to accommodate working schedules. Take advantage of the convenience of online learning while participating in a rich, interactive learning environment. For more information about the online nature of a specific program, contact the program.

Hybrid: These programs have innovative curricula that combine on-campus and online formats. Most Hybrid programs are completed on-campus with a partial or completely online semester. For more information about the hybrid schedule of a specific program, contact the program.

https://next-guide.wisc.edu/courseleaf/approve/?role=GRAD SCH Dept Approver
Curricular Requirements

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Credit Requirement</td>
<td>30 credits</td>
</tr>
<tr>
<td>Minimum Residence Credit Requirement</td>
<td>16 credits</td>
</tr>
<tr>
<td>Minimum Graduate Coursework</td>
<td>At least half of degree coursework (15 out of 30 total credits) must be in graduate-level coursework; courses with the Graduate Level Coursework attribute are identified and searchable in the university's Course Guide (<a href="http://my-wisc.edu/CourseGuideRedirect/BrowseByTitle">http://my-wisc.edu/CourseGuideRedirect/BrowseByTitle</a>).</td>
</tr>
<tr>
<td>Overall Graduate GPA Requirement</td>
<td>3.00 GPA required</td>
</tr>
<tr>
<td>Other Grade Requirements</td>
<td>Students must earn a C or above in all coursework.</td>
</tr>
<tr>
<td>Assessments and Examinations</td>
<td>Students may not have any more than two incompletes on their record at any one time.</td>
</tr>
<tr>
<td>Language Requirements</td>
<td>None</td>
</tr>
</tbody>
</table>

Language Requirements

9 credits in fundamentals of AOS
Students pick three of the following

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATM OCN 610</td>
<td>Geophysical Fluid Dynamics I</td>
<td>3</td>
</tr>
<tr>
<td>ATM OCN 611</td>
<td>Geophysical Fluid Dynamics II</td>
<td>3</td>
</tr>
<tr>
<td>ATM OCN 630</td>
<td>Introduction to Atmospheric and Oceanic Physics</td>
<td>3</td>
</tr>
<tr>
<td>ATM OCN 640</td>
<td>Radiation in the Atmosphere and Ocean</td>
<td>3</td>
</tr>
</tbody>
</table>

5-6 credits in technical scientific data analysis, measurements and/or programming
At least three credits must be in AOS

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATM OCN 404</td>
<td>Meteorological Measurements</td>
<td>2</td>
</tr>
<tr>
<td>ATM OCN 373</td>
<td>Computational Methods in Atmospheric and Oceanic Sciences</td>
<td>3</td>
</tr>
<tr>
<td>ATM OCN 375</td>
<td>Climatological Analysis</td>
<td>3-4</td>
</tr>
<tr>
<td>ATM OCN 650</td>
<td>Analysis of Atmospheric Systems</td>
<td>3</td>
</tr>
<tr>
<td>RM I 790</td>
<td>Principles of Risk Management</td>
<td>3</td>
</tr>
<tr>
<td>RM I 650</td>
<td>Sustainability, Environmental and Social Risk Management</td>
<td>3</td>
</tr>
</tbody>
</table>

9-10 credits in applied aspects of AOS
Students must pick a specialty option and PICK AT LEAST TWO courses of those lists for the specialty based on availability and interest, and AT LEAST ONE course either from the same specialty or another specialty. At least 6 of these credits must be ATM OCN.

Climate

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATM OCN 435</td>
<td>Global Climate Processes</td>
<td>3</td>
</tr>
<tr>
<td>ATM OCN/CEIR ST 520</td>
<td>Biodimatology</td>
<td>3</td>
</tr>
<tr>
<td>ATM OCN 522</td>
<td>Tropical Meteorology</td>
<td>3</td>
</tr>
<tr>
<td>ATM OCN/CEIR ST/GEOG 528</td>
<td>Past Climates and Climatic Change</td>
<td>3</td>
</tr>
<tr>
<td>ATM OCN 660</td>
<td>Introduction to Physical Oceanography</td>
<td>3</td>
</tr>
<tr>
<td>ATM OCN 705</td>
<td>The Middle Atmosphere</td>
<td>3</td>
</tr>
<tr>
<td>ATM OCN 713</td>
<td>General Circulation of the Atmosphere</td>
<td>3</td>
</tr>
<tr>
<td>ATM OCN 750</td>
<td>Large-Scale Ocean Atmosphere Coupling</td>
<td>3</td>
</tr>
</tbody>
</table>

Satellite meteorology

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATM OCN 441</td>
<td>Radar and Satellite Meteorology</td>
<td>3</td>
</tr>
<tr>
<td>ATM OCN 637</td>
<td>Cloud Physics</td>
<td>3-4</td>
</tr>
<tr>
<td>ATM OCN 740</td>
<td>Advanced Atmospheric Radiation</td>
<td>3</td>
</tr>
<tr>
<td>ATM OCN/CEIR ST 745</td>
<td>Meteorological Satellite Applications</td>
<td>2-3</td>
</tr>
</tbody>
</table>

Air Quality

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATM OCN/CEIR ST 535</td>
<td>Atmospheric Dispersion and Air Pollution</td>
<td>3</td>
</tr>
<tr>
<td>ATM OCN 638</td>
<td>Atmospheric Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>ATM OCN/CEIR ST/GEOG 701</td>
<td>The Chemistry of Air Pollution</td>
<td>2</td>
</tr>
<tr>
<td>ATM OCN 773</td>
<td>Boundary Layer Meteorology</td>
<td>3</td>
</tr>
<tr>
<td>ENVIR ST/CEIR ST POP HLTH 502</td>
<td>Air Pollution and Human Health</td>
<td>3</td>
</tr>
</tbody>
</table>

Forecasting and modeling

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATM OCN 610</td>
<td>Geophysical Fluid Dynamics I I</td>
<td>3</td>
</tr>
<tr>
<td>ATM OCN 652</td>
<td>The Fractal Cyclone</td>
<td>3</td>
</tr>
<tr>
<td>ATM OCN 653</td>
<td>The Fractal Cyclone II</td>
<td>3</td>
</tr>
<tr>
<td>ATM OCN 453</td>
<td>Synoptic Laboratory II: Mesoscale Meteorology</td>
<td>4</td>
</tr>
<tr>
<td>ATM OCN 771</td>
<td>Numerical Modeling in Meteorology</td>
<td>3</td>
</tr>
<tr>
<td>ATM OCN 801</td>
<td>Topics in Theoretical Meteorology</td>
<td>2-3</td>
</tr>
</tbody>
</table>

1 ATM OCN 610 can count only if not used to count for fundamentals requirement.
6 credits in professional development
Approved Shared Content from /shared/graduate-school-policies/

Graduate School Policies

The Graduate School's Academic Policies and Procedures provide essential information regarding general university policies. Program authority to set degree policies beyond the minimum required by the Graduate School lies with the degree program faculty. Policies set by the academic degree program can be found below.

Major-Specific Policies

Graduate Program Handbook

The Graduate Program Handbook is the repository for all of the program's policies and requirements.

Prior Coursework

Graduate Work from Other Institutions

See either the M.S. named option in Research or Professional Program for the policy information.

UW–Madison Undergraduate

See either the M.S. named option in Research or Professional Program for the policy information.

UW–Madison University Special

See either the M.S. named option in Research or Professional Program for the policy information.

Guide Graduate Policies tab

Approved Shared Content from /shared/graduate-school-policies/

Graduate School Policies

The Graduate School's Academic Policies and Procedures provide essential information regarding general university policies. Program authority to set degree policies beyond the minimum required by the Graduate School lies with the degree program faculty. Policies set by the academic degree program can be found below.

Named Option-Specific Policies

GRADUATE PROGRAM HANDBOOK

The Graduate Program Handbook is the repository for all of the program's policies and requirements.

Internship requirement

At the end of the spring semester, all students are expected to have secured a paid or unpaid internship with a minimum of 10 hours per week of expected work for a minimum of 8 weeks. The internship, occurring in conjunction with online classes ATM OCN 810, 811, and 999, can include placement in a private company, public sector agency, or university setting, on or off campus, based on student interest, availability, and advisor approval. It is the responsibility of both the student and the program coordinator to assist in this match. In case the student is unable to secure an internship or seeks a more entrepreneurial approach, the student can propose an alternate in lieu of internship. The alternative must still meet minimum hour and length requirements, but may include independent business start-up planning, direct consulting with faculty, or other creative approaches. The alternative must have a direct mentor or supervisor identified and requires approval of the program director.

PRIOR COURSEWORK

Graduate Work from Other Institutions

Students will not be permitted to use credits from previously earned graduate coursework.

UW–Madison Undergraduate

With advisor approval, up to 7 credits numbered 300 or above may be counted toward the degree specialization areas (not the core degree requirements). These credits may be counted toward the minimum graduate coursework (50%) requirement if they are in courses numbered 700 or above. No credits may be counted toward the minimum graduate residence credit requirement. Coursework earned five or more years prior to admission to a master's degree is not allowed to satisfy requirements.

UW–Madison University Special

With program approval, and payment of the difference in tuition, students are allowed to count up to 7 credits of coursework numbered 300 or above taken as a UW–Madison Special student toward the minimum graduate residence credit requirement and the minimum graduate degree credit requirement. These credits may be counted toward the minimum graduate coursework (50%) requirement if they are in courses numbered 700 or above. Coursework earned five or more years prior to admission is not allowed to satisfy requirements.

PROBATION

The Graduate School regularly reviews the record of any student who earned grades of B+, C, D, F, or incomplete in a graduate course (300 or above), or grade of U in research credits. This review could result in academic probation with a hold on future enrollment or being suspended from the Graduate School.

Good standing (progressing according to standards; any funding guarantee remains in place)

Probation (not progressing according to standards but permitted to enroll; loss of funding guarantee; specific plan with dates and deadlines in place in regard to removal of probationary status)

Unsatisfactory progress (not progressing according to standards; not permitted to enroll, dismissal, leave of absence or change of advisor or program)
A semester GPA below 3.0 will result in the student being placed on academic probation. If a semester GPA of 3.0 is not attained during the subsequent semester of full-time enrollment (or 12 credits of enrollment if enrolled part-time), this will be deemed unsatisfactory progress and the student may be dismissed from the program or allowed to continue for one additional semester based on advisor appeal to the Graduate School.

ADVISOR

All students will be assigned a faculty advisor who assists them in planning a course sequence that meets degree requirements and who will discuss career objectives with the students.

CREDITS PER TERM ALLOWED

15 credits

TIME CONSTRAINTS

The professional degree should take 12 months to complete at full-time enrollment, starting in fall semester. Master's degree students who have been absent for five or more consecutive years lose all credits that they have earned before their absence. Individual programs may count the coursework students completed prior to their absence for meeting program requirements; that coursework may not count toward Graduate School credit requirements.

OTHER

Students enrolled in this program are not permitted to accept teaching assistantships, project assistantships, research assistantships or other appointments that would result in a tuition waiver. Students in this program cannot enroll in other graduate programs nor take courses outside the prescribed curriculum. Students in the professional program may not switch to research program and then back to professional program. A one-way switch is allowed.

Discuss expected progress to degree and time to degree. For undergraduate programs discuss considerations for supporting students to complete the degree in four academic years.

We expect most students enrolled full time will complete the program in 12 months (fall, spring, summer), with the internship and 810/811 serving as capstone in the summer. AOS 999 is taken 1 credit per semester for professional development. We will allow students to enroll part-time on a per credit basis if that fits with job/work needs better (for example, employer is paying for student to acquire degree while still employed).

A typical sequence would look like this:

Fall - enrollment
4 3-credit courses
1 credit AOS 999

Spring -
4 3-credit courses
...
Atmospheric and Oceanic Sciences
Competitive Pricing
Summary

• Eight competitor programs are included in this analysis. The programs were identified by UW–Madison faculty. To be considered a competitor the program had to confer a Master’s degree and be non-thesis.
  • 6 programs split tuition by in-state and out-of-state
  • 1 program (Miami) charges a flat rate
  • 1 program (Illinois) is fully funded, so tuition is irrelevant
  • 3 programs do not provide any special funding for students

• In-state tuition
  • Range: $14,694 - $50,944 (outlier)
  • Mean: $25,614
  • Median: $19,545
  • Tiers
    • Lowest: ~$15,000
    • Low: ~$24,000
    • Middle: ~$34,000
    • Highest: ~$51,000

• Out-of-State tuition
  • Range: $33,471 - $95,788 (outlier)
  • Mean: $50,088
  • Median: $36,552
  • Tiers
    • Low: ~$35,000
    • Middle: ~$61,000
    • Highest: ~$96,000

• The one flat-rate program charges $60,900 in tuition.
• Assuming Madison keeps the model (12 Fall + 12 Spring + 6 Summer) then regular graduate tuition rates would put us in the lowest-low end ($14,985 in-state and $31,644 out-of-state) of tuition charges amongst competitors.
Tuition Chart: Non-Thesis

- **In-state, funding available**
- **In-state, no funding**
- **OOS, funding available**
- **OOS, no funding**
- **Flat rate, no funding**

<table>
<thead>
<tr>
<th>Institution</th>
<th>Tuition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern Arizona</td>
<td>$14,694</td>
</tr>
<tr>
<td>Colorado State</td>
<td>$15,320</td>
</tr>
<tr>
<td>FSU</td>
<td>$15,338</td>
</tr>
<tr>
<td>Millersville</td>
<td>$23,751</td>
</tr>
<tr>
<td>Millersville</td>
<td>$33,471</td>
</tr>
<tr>
<td>UCLA</td>
<td>$33,636</td>
</tr>
<tr>
<td>Northern Arizona</td>
<td>$34,323</td>
</tr>
<tr>
<td>FSU</td>
<td>$35,543</td>
</tr>
<tr>
<td>Colorado State</td>
<td>$37,560</td>
</tr>
<tr>
<td>Michigan</td>
<td>$50,944</td>
</tr>
<tr>
<td>Miami</td>
<td>$60,900</td>
</tr>
<tr>
<td>UCLA</td>
<td>$63,840</td>
</tr>
<tr>
<td>Michigan</td>
<td>$95,788</td>
</tr>
<tr>
<td>Institution</td>
<td>Northern Arizona</td>
</tr>
<tr>
<td>---------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td><strong>Program/Degree</strong></td>
<td>Master of Science in Climate Science and Solutions</td>
</tr>
<tr>
<td><strong>Duration</strong></td>
<td>18 months</td>
</tr>
<tr>
<td><strong>Credits</strong></td>
<td>36</td>
</tr>
<tr>
<td><strong>Tuition Estimate</strong></td>
<td>$14,694 (in-state) $34,323 (oos) *assume 3 semesters</td>
</tr>
<tr>
<td><strong>Modality</strong></td>
<td>Face-to-Face</td>
</tr>
<tr>
<td><strong>Available Funding</strong></td>
<td>Grad assistantships, scholarships, need-based stipends, project specific funding</td>
</tr>
</tbody>
</table>
# Competitive Landscape: Non-Thesis

<table>
<thead>
<tr>
<th>Institution</th>
<th>University of Michigan</th>
<th>UCLA</th>
<th>Millersville University</th>
<th>University of Illinois</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program/Degree</td>
<td>Master of Science Degree in Climate and Space Sciences and Engineering</td>
<td>Atmospheric and Oceanic Sciences M.S.</td>
<td>M.S. in Integrated Scientific Applications, concentration in Climate Science Applications</td>
<td>Master of Science Degree in Atmospheric Sciences</td>
</tr>
<tr>
<td>Duration</td>
<td>Not specified, assume 2 years</td>
<td>2 years (6 quarters)</td>
<td>not specified</td>
<td>not specified</td>
</tr>
<tr>
<td>Credits</td>
<td>30</td>
<td>36</td>
<td>36</td>
<td>32</td>
</tr>
<tr>
<td>Tuition Estimate</td>
<td>$50,944 (in-state) $95,788 (oos)</td>
<td>$33,636 (in-state) $63,840 (oos)</td>
<td>$23,751 (in-state) $33,471 (oos)</td>
<td>not applicable, full waiver program</td>
</tr>
<tr>
<td>Modality</td>
<td>Face-to-Face</td>
<td>Face-to-Face</td>
<td>Blended – online and face-to-face courses</td>
<td>Face-to-Face</td>
</tr>
<tr>
<td>Available Funding</td>
<td>None</td>
<td>Fellowships, grants, teaching assistantships, research assistantships</td>
<td>None</td>
<td>Research Assistantships, Teaching Assistantships, Full tuition waivers</td>
</tr>
<tr>
<td>Institution</td>
<td>University of Washington</td>
<td>MIT</td>
<td>University of Oklahoma</td>
<td></td>
</tr>
<tr>
<td>-------------</td>
<td>--------------------------</td>
<td>-----</td>
<td>------------------------</td>
<td></td>
</tr>
<tr>
<td>Program/Degree</td>
<td>Master of Science in Atmospheric Sciences</td>
<td>Master of Science (Atmospheric Science or Climate Science)</td>
<td>M.S. in Meteorology or M.S. in Professional Meteorology</td>
<td></td>
</tr>
<tr>
<td>Duration</td>
<td>3 years</td>
<td>2 years</td>
<td>2 years</td>
<td></td>
</tr>
<tr>
<td>Credits</td>
<td>36</td>
<td>10 courses</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Tuition Estimate</td>
<td>$47,718 (in-state) $85,185 (oos)</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td></td>
</tr>
<tr>
<td>Modality</td>
<td>Face-to-Face</td>
<td>Face-to-Face</td>
<td>Face-to-Face</td>
<td></td>
</tr>
<tr>
<td>Available Funding</td>
<td>Teaching Assistantships, Research Assistantships, Fellowships</td>
<td>All students are fully funded</td>
<td>Generally only accept students can support through GRA/GTA stipends</td>
<td></td>
</tr>
</tbody>
</table>

**Excluded Competitors:**

- Princeton University, PhD only
- Penn State University, undergrad only
- Lyndon State, undergrad only
Thank you Ankur. I just returned from Europe and have asked my department for a positive vote. I suspect we need also to go through the school and will find out by the end of the week. I personally am supportive,

Joan

From: Ankur Desai <professorankurdesai@gmail.com> On Behalf Of Ankur Desai
Sent: Friday, March 22, 2019 9:57 AM
To: Joan Schmit <joan.schmit@wisc.edu>
Cc: Swanke, Jim (Minneapolis) <jim.swanke@willistowerswatson.com>
Subject: Re: Business meteorology / risk management

This time with attachment!

----------------------------------------------
Ankur R Desai, Professor
Dept of Atmospheric and Oceanic Sciences
University of Wisconsin - Madison
http://flux.aos.wisc.edu desai@aos.wisc.edu @profdesai
O: +1-608-520-0305 / M: +1-608-218-4208

On Mar 22, 2019, at 9:53 AM, Ankur Desai <desai@aos.wisc.edu> wrote:

Dear Joan,
I am following up the Atmospheric and Oceanic Sciences Program professional master’s. At the moment, we have placed two RMI courses (650 and 700) as electives within one of the requirements for the program. If students elect to take those, we would transfer to your unit $600/student credit hour per L&S policy. Given our enrollment projections are modest (~20), we expect increase in enrollment for these courses to be small (< 10/yr).

If you think your program is able to support this, it would be useful for the proposal (due April 1) to get either a letter of support or an email of saying you are in support of the proposal.

Attached is a brief “program concept” detailing the curriculum. You can also view the proposal (in progress) on Lumen at: https://next-guide.wisc.edu/programadmin/?key=1047
Market-Based Tuition Policy

V1 November 2017; V2 November 2018; V 3 11 17 2018; V4 12 04 2018

Under UW System tuition policy the UW-Madison Chancellor has the authority to propose to the UW System President per-credit market-based tuition for programs that serve non-traditional audiences. Programs that are specifically designed for adults and non-traditional audiences, and are supported directly through program revenue, may seek market-based tuition.

For-credit programs seeking market-based tuition must be designed to enhance the professional skills for post-bachelors and non-degree students, be responsive to local and national labor markets, and be delivered in non-traditional formats that include accelerated, hybrid face-to-face/online formats, or part-time, weekend or evening formats. Such programs typically have a clearly defined curriculum that follows a defined path and a predictable timeline for progress and completion. For eligible programs, the market-based tuition structure may allow for more competitive market pricing relative to peer and competitor programs and support enrollment growth.

Policy
Graduate and Capstone programs eligible for the market-based tuition structure may choose between tuition structures:

- A Board of Regent-approved standard graduate or professional-program-specific tuition structure, that includes resident/MN/nonresident tuition rates, plateau structure and segregated fees; OR
- Market-based tuition structure, using one of the following per-credit increments (no residency rates and no credit plateau).

| $800/credit | $1,200/credit |
| $850/credit | $1,300/credit |
| $900/credit | $1,500/credit |
| $1,000/credit | $1,600/credit |
| $1,100/credit | $2,000/credit |
| $1,150/credit | $2,500/credit |

Segregated University Fees
Market-based tuition programs are predominantly face-to-face programs and will charge segregated fees.

Proposal Deadlines
Implementation in Fall or Summer term: submit proposal by December 1 of prior year; approval must be complete by February 1. Implementation in Spring term: submit proposal by August 15; approval must be complete by October 1.

Implementation
• Market-based tuition programs may request any one of the approved tuition increments.
• Programs seeking to utilize one of the market-based tuition increments will have to show that the proposed tuition is appropriate based on the market, and show how the proposed tuition is competitive with peer or competitor programs.
• The tuition structure and rate will apply to all students in the program; cohort tuition is not allowed.
• Submit proposals to the director of Academic Planning and Institutional Research (Jocelyn Milner, Jocelyn.milner@wisc.edu).
• Academic Planning and Institutional Research will coordinate the approvals with the Provost, VCFA, Madison Budget Office and Office of the Chancellor.
• Notification of approval will include program representatives, school/college deans office, Graduate School, Registrar’s Office, Bursar’s Office, Madison Budget Office, Academic Planning and Institutional Research, Division of Continuing Studies, VCFA, and Provost.
• Proposals and decisions will be added to the Lumen Programs system administratively after approval.

This policy is in keeping with UW System Tuition Policy (SYS 805) and UW System Policy for Programming for the Non-Traditional Market (SYS 130)
https://www.wisconsin.edu/uw-policies/uw-system-administrative-policies/tuition-and-fee-policies-for-credit-instruction/
https://www.wisconsin.edu/uw-policies/130-appendix-b-service-based-pricing-guidelines-and-procedures/
SYS 130 https://www.wisconsin.edu/uw-policies/uw-system-administrative-policies/programming-for-the-non-traditional-market-in-the-uw-system/
MARKET-BASED TUITION PROGRAM TUITION REQUEST FORM

In keeping with UW System Administrative Policy 130 (SYS 130) on programming and tuition setting for the non-traditional market, this is a proposal for market-based tuition for a UW-Madison program that has been approved under the entrepreneurial program model. Programs are predominately face-to-face delivered programs designed for adults and non-traditional audiences, designed to enhance the professional skills for post-bachelors and non-degree students, be responsive to local and national labor markets, and be delivered in non-traditional formats that include accelerated, hybrid face-to-face/online formats, part-time, weekend or evening formats. Such programs typically have a clearly defined curriculum that follows a defined path and a predicable timeline for progress and completion. Market-based tuition rates are higher than standard Wisconsin resident graduate tuition at UW-Madison ($670 per credit for Wisconsin residents and $1503 for nonresidents in 2017-18).

1. Program Name: Atmospheric & Oceanic Sciences Professional Masters Program
   Plan Code:
   Subplan Code:

2. Department/Program Contact Person/Title/Email: Ankur Desai, Professor, desai@aos.wisc.edu

3. School/College Contact Person/Title/Email: Elaine Klein, L&S, Associate Dean for Academic Planning, elaine.klein@wisc.edu

4. Request Submission Date: March 27, 2019

5. Term for Requested Tuition to be Effective: Fall 2020

6. Requested Tuition Rate from List of Allowed Rates: $1,000 per credit

6. Describe the student audience, program structure, and how the program meets the criteria for market-based tuition: The student audience for this program are students primarily interested in careers in atmospheric science forecasting, modeling, communications, or consulting for which a research-based master’s program is not a good fit. The one-year, 30-credit professional program proposed would allow students with a 4-year undergraduate degree to get the additional education in a one-year time period that they need to successfully obtain jobs in weather-related fields. This program is designed for non-traditional students, has the potential for 40 students per year at 30 credits each (1200 credits total), and has the opportunity for differentiated market tuition.

7. Provide a rationale that this tuition rate is appropriate, based on the market, and show how the proposed tuition is competitive with peer or competitor programs. Specifically, provide information about competitor programs and pricing (usually presented in tabular form with relevant regional competitors, Big 10 competitors, and other key national competitors), including competitor programs at other UW institutions. Based on the market study conducted by the Division of Continuing Studies, $1,000/credit would put the total cost of the program at $30,000. When taking into account other programs (in-state and out-of-state tuition), this rate is mid-range. Specific details about the market study are included in an attached presentation. There is no other program like this at other UW institutions currently, and are very few nation-wide.
8. Provide a summary of applicant volume, enrollment trends, graduation patterns, and market demand for graduates. We have 80-100 applicants a year to the PhD and MS program combined, and at least 10 or more of these already would be direct fits into a professional MS program based on the graduate chair’s 9 years-experience of running admissions. A program that is internship based instead of thesis driven, 1 year, with courses in programming and skills development, but still includes our rigorous core program and maintains high admissions and academic standards, will allow us to serve a pool of students who can grow the program, contribute broadly in careers in our field, and help maintain our reputation as a top graduate program.

The Division of Continuing Studies conducted a market analysis, peer program analysis, and alumni interviews with our alumni board. All three studies showed strong demand for the program, limited competition in the region or in our niches, and enthusiasm by alumni in industry for the program, for hosting interns, and for addressing the needs of our field. The American Meteorological Society has recently revised its recommended program standards to address a rapidly changing workforce, and our program directly addresses the needs outlined in those reports, too. The market analysis showed a larger number of positions seeking skilled atmospheric scientists. The alumni board noted that a professional MS from UW would be viewed strongly in that market. Most of our existing BS students have noted that an MS is the new entry ticket to many positions in our field in forecasting, consulting, operations. In particular, skills like technical writing, programming for data analysis, forecast modeling, working with diverse teams, and advanced understanding of societal issues of climate/weather are key factors for their hiring.

9. Provide summary information about anticipated program revenues and expenses.
Based on the 131 Program Model spreadsheet, we expect expenses to cover a 50% TA for the summer internship course, a 100% FTE Student Services Coordinator to serve as the Program Coordinator, marketing costs (to cover printing and advertising, as well as funding for the Program Coordinator to travel to conferences for recruiting purposes. Additionally, there will be expenses associated with the credits required from courses in other programs.

The planned use of program revenue currently covers scholarships for current undergraduates in the AOS program at UW (approximately 20% of enrolled students will receive a $7000 discount on tuition), covering the costs (up to $1500 for each student) to attend the AMS Conference and complete their CCM certification, as well as a 33.4% TA for other courses to offset additional work associated with adding 10-40 students per year to existing courses.

Use this request form in conjunction with the UW-Madison policy on market-based tuition.
Submit the form to director of Academic Planning and Institutional Research (Jocelyn.Milner@wisc.edu)

Form creation date 2018 12 04
MEMORANDUM

Date: April 18, 2019
To: Elaine Klein, Associate Dean for Academic Planning, College of Letters and Sciences
From: Barry Gerhart, Interim Albert O. Nicholas Dean, Wisconsin School of Business
Re: Proposal for new named option in the MS-Atmospheric and Oceanic Sciences

Thank you for sharing information about the L&S Department of Atmospheric and Oceanic Sciences’ proposal to create a new “Professional Program” named option in the MS-Atmospheric and Oceanic Sciences. The Wisconsin School of Business (WSB) Academic Planning Council is pleased to provide our support for creation of this named option.

We note that the named option requires two WSB courses on Risk Management (RMI 700 and RMI 650), and look forward to development of an MOU with WSB to address enrollments in these courses by students in the MS-Atmospheric and Oceanic Sciences.

Copies:
Ankur Desai, Department of Atmospheric and Oceanic Sciences
Joan Schmit, Department of Risk and Insurance, WSB
Ella Mae Matsumura, Senior Associate Dean of Academic Programs, WSB
19 April 2019

To: Prof. Gregory Tripoli, Chair, Department of Atmospheric and Oceanic Sciences

Dear Prof. Tripoli,

We are pleased to enthusiastically endorse the proposal for a professionally focused named option within the Atmospheric and Oceanic Science (AOS) Master’s degree that will train application-oriented students.

The remit of the Nelson Institute is all of the environment. To accomplish this daunting objective, we must rely on collaborations across campus. It is for this reason, among others, that we can offer our encouragement and support for this initiative. The research and teaching of AOS is foundational to a strong institutional environmental program. We see this proposed program as adding additional strength.

This specific proposal addresses a need for persons whose objective lies in the direction of application rather than research. For such persons the long apprenticeship required of a research degree is not an efficient pathway. Thus the appeal of a strongly targeted one-year program that will provide them with the background necessary for jobs that require advanced knowledge but not advanced research experience. The credential they earn will allow them to assume a variety of positions as explained in your proposal.

Our experience with professional programs gives us confidence that your accelerated program can meet its objectives. A main reason is that the draw of the University of Wisconsin – Madison and in this instance the stellar reputation of AOS will assure that applicants will be of high quality. This will mean that students accepted into the program will already have substantial academic accomplishments and therefore be equipped to undertake an intensive single year course of study.

The curriculum is properly focused on rigorous technical coursework, but we note the inclusion of courses, for example ES/POP HLTH 502, that draw on broader environmental perspectives. As an interdisciplinary institute, we endorse this element.

We are very willing to provide whatever assistance we can in aid of this valuable program and are strongly supportive of its approval.

Sincerely,

Paul H. Zedler
Assoc. Dean for Research and Education
New Program Proposal

Date Submitted: 03/28/19 5:42 pm

Viewing: Research Program

Parent Program: MAI Atmospheric & Oceanic Sci/MS

Last edit: 08/21/19 11:58 am

Changes proposed by: ardesai2

Name of the school or college academic planner who you consulted with on this proposal:

Name
Elaine M Klein - L&S

Proposal/Abstract/Summary:
As part of our plan to add a professional master's named option in AOS, we are adding a "research program" to move the traditional thesis MS program from the parent program into a separate named option. Students will apply and be admitted to one option or the other, and the parent program will not be an admitting program. No changes to requirements are being made.

The guide will be directed to reflect the distinctions between these formal programs, and to remove references to a non-thesis "track" within the research program, since that informal pathway is no longer relevant in the context of the new program.

Basic Information

Type of Program: Named Option

Parent Program: MAI Atmospheric & Oceanic Sci/MS

Parent Audience: Graduate or professional

Parent Home: ATM OCN S

Department:

Parent School/College: College of Letters and Science

The program will be governed by the home department/academic unit as specified. Will an additional coordinating or oversight committee be established for the program?

No

Parent is in the Graduate School:

Yes

SIS Code:

SIS Description:

Transcript Title: Research Program

Named Options: Sub Plan 1047: No Title Found
Sub Plan 1062: No Title Found

Does the parent program offer this as an additional major as well?

No

Roles by Responsibility: List one person for each role in the drop down list. Use the green + to create additional boxes.

<table>
<thead>
<tr>
<th>Role Type</th>
<th>Name (Last, First)</th>
<th>Email</th>
<th>Phone</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department Chair</td>
<td>Trippoli, Gregory J</td>
<td><a href="mailto:gtrippoli@wisc.edu">gtrippoli@wisc.edu</a></td>
<td>608/262-3700</td>
<td></td>
</tr>
<tr>
<td>Faculty Director</td>
<td>Desai, Ankur R</td>
<td><a href="mailto:ardesai2@wisc.edu">ardesai2@wisc.edu</a></td>
<td>608/520-0305</td>
<td></td>
</tr>
<tr>
<td>Primary Contact</td>
<td>Vanvuren, Dee D</td>
<td><a href="mailto:ddevanvuren@wisc.edu">ddevanvuren@wisc.edu</a></td>
<td>608/262-2827</td>
<td></td>
</tr>
<tr>
<td>Primary Dean's Office Contact</td>
<td>Klein, Elaine M</td>
<td><a href="mailto:emklein@wisc.edu">emklein@wisc.edu</a></td>
<td>608/265-8484</td>
<td></td>
</tr>
</tbody>
</table>

List the departments that have a vested interest in this proposal:
Are all program reviews in the home academic unit up to date? Yes
Are all assessment plans in the home academic unit up to date? Yes
Are all assessment reports in the home academic unit up to date? Yes
Mode of Delivery: Face-to-Face (majority face-to-face courses)
Will this program be part of a consortial or collaborative arrangement with another college or university? No
Will instruction take place at a location geographically separate from UW-Madison? No
Parent has outside accreditation: No
Graduates of parent program seek licensure or certification after graduation: No
First term of student enrollment: Fall 2020 (1212)
When will the application for the first term of enrollment open? Spring 2019 (1194)

Which terms will you allow new students to enroll? What are the application deadlines for each term selected?

<table>
<thead>
<tr>
<th>Start Term</th>
<th>Application Deadline MM/DD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td>01/15</td>
</tr>
<tr>
<td>Spring</td>
<td>12/01</td>
</tr>
<tr>
<td>Summer</td>
<td>01/15</td>
</tr>
</tbody>
</table>

Year of three year check-in to GERR (3 years after first student enrollment): 2024
Year of first program review (5 years after first student enrollment): 2026

If this proposal is approved, describe the implementation plan and timeline.
We will modify our website to clarify that the MS program has two named options: research program and professional program. The rest stays the same.

Rationale and Justifications

How does the named option relate to the major and to other named options in the major, if relevant?
As recommended by L&S and the Graduate School, proposing a second named option for the existing research program makes it clear to students who apply that there are two distinct programs of study in this MS program. The “Research Option” will be the traditional research program culminating in a thesis; it will continue to serve as a pathway to doctoral-level study, industry, and research science positions.

Why is the program being proposed? What is its purpose?
As noted above, this proposal is being made to formally distinguish the current research-oriented program from the non-thesis professional program that is being proposed.

Do current students need or want the program? Provide evidence.
Our program has had robust enrollment, nearly 80 applicants (half MS/half PhD, half international/half domestic) for many years. APRB data show that, on average, 10–11 MS-ADS degrees are conferred each year. We anticipate no change in this level of interest.

What is the market, workforce, and industry need for this program? Provide evidence.
We are a top 15 program in atmospheric and oceanic science, our MS thesis majors go on to PhDs, jobs in industry, research science positions.

What gap in the program array is it intended to fill?
Because this program currently exists, the only gap to be filled is to improve communication with students about the two distinct programs offered under the MS-ADS. Creation of this program will ensure that students who apply and are admitted to these programs will see clearly the distinction between them.

Faculty and Staff Resources

List the core program faculty and staff with title and departmental affiliation(s) who are primarily involved and will participate in the delivery and oversight.

<table>
<thead>
<tr>
<th>Name (Last, First)</th>
<th>Department</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Desai, Ankur R</td>
<td>Atmospheric &amp; Oceanic Sciences (ATM OCN 5)</td>
<td>Graduate program chair</td>
</tr>
<tr>
<td>Tripoli, Gregory J</td>
<td>Atmospheric &amp; Oceanic Sciences (ATM OCN 5)</td>
<td>Dept chair</td>
</tr>
<tr>
<td>Dahmen, Chelsea M</td>
<td>Atmospheric &amp; Oceanic Sciences (ATM OCN 5)</td>
<td>Dept administrator</td>
</tr>
<tr>
<td>Vannuccey, Dee D</td>
<td>Atmospheric &amp; Oceanic Sciences (ATM OCN 5)</td>
<td>Grad administrator</td>
</tr>
</tbody>
</table>

What resources are available to support faculty, staff, labs, equipment, etc.?
All resources (faculty, staff, labs, equipment) that are currently dedicated to the research MS-ADS program will continue to support this program.
Describe how student services and advising will be supported.
Advising is supported by our graduate faculty following the process laid out in our graduate handbook and website. This includes annual committee meetings, annual progress reports, department seminar presentations, and monitoring of progress by the student coordinator.

Confirm that the program advisor(s) or coordinator(s) have been consulted and reviewed this proposal.

**Resources, Budget, and Finance**

Is this a revenue program? No

What is the tuition structure for this program?
Standard resident/NI/nonresident graduate tuition

Does the program or change require substantial new resources other than those just described? Describe the needs. Confirm that the dean is committed to providing the resources. No new resources are needed to support continuation of the current program.

Are new library resources needed to support this program? No

Describe plans for funding students including but not limited to funding sources and how funding decisions are made.
Research program students are primarily supported on 12-month 50% RA (current stipend $26,712) and are eligible to be awarded TA or PA/F, or supported by external or university fellowships such as AOF-In generally, 1 new AOF is awarded per year, and the program has had several externally supported fellows from NASA, NSF, or private foundations (e.g., Ford Foundation). MS Research students may also opt to self-fund, though this is not common. The most recent program profile showed fewer than 5% of students in both the MS and PhD were without funding. AOS does not provide written guarantee of funding beyond the first year due to the dependence on RA funding; however, the department is working for guidance from the graduate school on how to implement such guarantees with limited department funding and a small TA allocation. If the Professional Program is successful, additional resources may be reinvested to more easily implement multi-year guarantees.

Funding decisions are based informally on students making adequate progress relative to timely achievement of milestones (as indicated on the annual student progress report), if funding support is available from the student advisor.

**Curriculum and Requirements**

Parent Plan Admissions/How To Get In Requirements
Students apply to the MS in Atmospheric and Oceanic Sciences through one of the named options:
Atmospheric and Oceanic Research Program
Atmospheric and Oceanic Sciences Professional Program
Guide Admissions/How to Get In Tab

**Approved Shared Content from /shared/graduate-school-admissions/**

**Graduate School Admissions**

Graduate admissions is a two-step process between academic degree programs and the Graduate School. Applicants must meet requirements of both the program(s) and the Graduate School. Once you have researched the graduate program(s) you are interested in, apply online.

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall Deadline</td>
<td>January 15</td>
</tr>
<tr>
<td>Spring Deadline</td>
<td>December 1</td>
</tr>
<tr>
<td>Summer Deadline</td>
<td>January 15</td>
</tr>
<tr>
<td>GRE (Graduate Record Examinations)</td>
<td>General test required</td>
</tr>
<tr>
<td>English Proficiency Test</td>
<td>Every applicant whose native language is not English or whose undergraduate instruction was not in English must provide an English proficiency test score and meet the Graduate School minimum requirements (<a href="https://grad.wisc.edu/apply/requirements/english-proficiency">https://grad.wisc.edu/apply/requirements/english-proficiency</a>).</td>
</tr>
<tr>
<td>Other Test(s) [e.g., GMAT, MCAT]</td>
<td>n/a</td>
</tr>
<tr>
<td>Letters of Recommendation Required</td>
<td>3</td>
</tr>
</tbody>
</table>

**Supplemental requirements**

Supplemental form indicating research areas and advisor preferences required

Overall, our criteria for admissions is holistic and we generally favor high-quality applicants who have:
- Evidence of interest in meteorological, climate, ocean, and/or remote sensing research
- Sufficient background in prerequisite courses to be successful in AOS courses and research, regardless of academic major
- Interests that match interests of current faculty seeking students
- Prior experience in research through thesis work, practicum courses, internships, summer research experiences, presentation/publication, etc...
- Received nationally competitive or University-wide awards or fellowships (e.g., NSF GRFP)
- Evidence of solid written and oral English and scientific communication skills
- GPA, GRE, and TOEFL scores reflective of academic strength
- Ability to enhance the academic, geographic, gender, ethnic, economic, or cultural diversity of our department, especially for underrepresented groups

Applications submitted by January 15th are given highest consideration for Fall semester admission. Spring semester admission is also possible, but less common. All applicants are assessed and ranked by an admissions committee chaired by the Graduate Program Chair. Admission priority is given to the highest-ranked applicants who best meet our application criteria (usually ~25-30% for domestic applicants). International applications are not admitted without a source of funding (assistantship, fellowship, or personal) and advisor directly identified.

An offer of admission for fall, typically made in February or early March, does not guarantee funding. Assistantship and internal fellowship decisions are made jointly by the admissions committee and the faculty or group providing the funding in a separate process, with decisions made typically by March/April. You will be notified if funding for you becomes available. Typically we are able to fund approximately 8-10 students a
year, primarily by research assistantship. We do not typically provide teaching assistantships to incoming students. The department discourages self-funding of Ph.D. degrees, but will allow it for M.S. For fall admission, you will have until April 15 to accept or reject any offers of admission or funding.

Describe plans for recruiting students to this program.

We recruit annually at our annual American Meteorological Society Meeting.

Projected Annual Enrollment:

<table>
<thead>
<tr>
<th>Year</th>
<th>Projected Enrollment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1</td>
<td>10</td>
</tr>
<tr>
<td>Year 2</td>
<td>10</td>
</tr>
<tr>
<td>Year 3</td>
<td>10</td>
</tr>
</tbody>
</table>

Maximum enrollment that can be supported with existing instructional and student services resources: 30

Those who are not familiar with using the HTML editor field may upload a document with information about the curriculum for use by those who will format and edit the content that will appear in the Guide.

Parent Requirements

Approved Shared Content from /shared/graduate-minimum-degree-requirements-and-satisfactory-progress/

Minimum Graduate School Requirements

Review the Graduate School minimum academic progress and degree requirements, in addition to the program requirements listed below.

Major Requirements

Note: The major is currently non-admitting. Students are admitted through one of the named options (sub-majors) below.

MODE OF INSTRUCTION

<table>
<thead>
<tr>
<th>Mode of Instruction</th>
<th>Face to Face</th>
<th>Evening/Weekend</th>
<th>Online</th>
<th>Hybrid</th>
<th>Accelerated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Mode of Instruction Definitions

Approved Shared Content from /shared/graduate-school-mode-instruction-definitions/

Evening/Weekend: These programs are offered in an evening and/or weekend format to accommodate working schedules. Enjoy the advantages of on-campus courses and personal connections, while keeping your day job. For more information about the meeting schedule of a specific program, contact the program.

Online: These programs are offered primarily online. Many available online programs can be completed almost entirely online with all online programs offering at least 50 percent or more of the program work online. Some online programs have an on-campus component that is often designed to accommodate working schedules. Take advantage of the convenience of online learning while participating in a rich, interactive learning environment. For more information about the online nature of a specific program, contact the program.

Hybrid: These programs have innovative curricula that combine on-campus and online formats. Most hybrid programs are completed on-campus with a partial or completely online semester. For more information about the hybrid schedule of a specific program, contact the program.

Accelerated: These on-campus programs are offered in an accelerated format that allows you to complete your program in a condensed time-frame. Enjoy the advantages of on-campus courses with minimal disruption to your career. For more information about the accelerated nature of a specific program, contact the program.

CURRICULAR REQUIREMENTS

University General Education Requirements

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Credit Requirement</td>
<td>M.S.—Research Named Option: 30 credits</td>
</tr>
<tr>
<td>Minimum Graduate Coursework Requirement</td>
<td>See either the M.S. named option in Research or Professional Program for the requirement information.</td>
</tr>
<tr>
<td>Overall Graduate GPA Requirement</td>
<td>See either the M.S. named option in Research or Professional Program for the requirement information.</td>
</tr>
<tr>
<td>Other Grade Requirements</td>
<td>The Graduate School requires an average grade of B or better in all coursework (900 or above, not including research credits) taken as a graduate student unless conditions for probationary status require higher grades. Grades of incomplete are considered to be unsatisfactory if they are not removed during the next enrolled semester.</td>
</tr>
<tr>
<td>Assessments and Examinations</td>
<td>See either the named option in Research or Professional Program for the requirement information.</td>
</tr>
<tr>
<td>Language Requirements</td>
<td>No language requirements.</td>
</tr>
</tbody>
</table>

REQUIREd COURSES

Select a Named Option for required courses.

Named Options (Sub-Majors)

A named option is a formally documented sub-major within an academic major program. Named options appear on the transcript with degree conferral. Students pursuing the Master of Science in Atmospheric and Oceanic Sciences must select one of the named options: Atmospheric and Oceanic Sciences Research Program

University General Education Requirements

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Minimum Credit Requirement</td>
<td>M.S.—Research Named Option: 30 credits</td>
</tr>
</tbody>
</table>
Minimum Residence Credit Requirement
16 credits

Minimum Graduate Coursework
See either the M.S. named option in Research or Professional Program for the requirement information.

Overall Graduate GPA Requirement
See either the M.S. named option in Research or Professional Program for the requirement information

Other Grade Requirements
The Graduate School requires an overall grade of 3.0 or better in all coursework (300 or above, not including research credits) taken as a graduate student unless conditions for probationary status require higher grades. Grades of incomplete are considered to be unsatisfactory if they are not removed during the next enrolled semester.

Assessments and Examinations
See either the named option in Research or Professional Program for the requirement information.

Language Requirements
No language requirements.

MODE OF INSTRUCTION

<table>
<thead>
<tr>
<th>Face to Face</th>
<th>Evening/Weekend</th>
<th>Online</th>
<th>Hybrid</th>
<th>Accelerated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Mode of Instruction Definitions

Approved Shared Content from /shared/graduate-school-mode-instruction-definitions/

University General Education Requirements

Requirements

<table>
<thead>
<tr>
<th>Requirement</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Minimum Credit Requirement</td>
<td>30 credits</td>
</tr>
<tr>
<td>Minimum Residence Credit Requirement</td>
<td>16 credits</td>
</tr>
<tr>
<td>Minimum Graduate Coursework</td>
<td>Half of degree coursework (15 credits out of 30 total credits) must be completed graduate-level coursework; courses with the Graduate Level Coursework attribute are identified and searchable in the university's Course Guide (<a href="https://registrar.wisc.edu/course-guide/">https://registrar.wisc.edu/course-guide/</a>).</td>
</tr>
<tr>
<td>Overall Graduate GPA Requirement</td>
<td>3.00 GPA required</td>
</tr>
<tr>
<td>Other Grade Requirements</td>
<td>A grade of B or greater is required for the 12 credits of lecture courses in the department numbered 400 or above.</td>
</tr>
</tbody>
</table>

The Graduate School requires an average grade of B or better in all coursework (300 or above, not including research credits) taken as a graduate student unless conditions for probationary status require higher grades. Grades of incomplete are considered to be unsatisfactory if they are not removed during the next enrolled semester.

Assessments and Examinations

A master's thesis is required, and must be approved by the major professor and two additional faculty members. A public oral presentation of presentation of the thesis research is required.

Language Requirements

No language requirements.

REQUIRED COURSES

There is a set of six core courses which are highly recommended as a good foundation for graduate degrees in the Department of Atmospheric and Oceanic Sciences. A GPA of 3.0 must be maintained for both options.

The following is a listing of the core courses:

<table>
<thead>
<tr>
<th>Course List</th>
</tr>
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<tbody>
<tr>
<td>Code</td>
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<tr>
<td>ATM 610</td>
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<td>ATM 611</td>
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<tr>
<td>ATM 635</td>
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<tr>
<td>ATM 640</td>
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<tr>
<td>ATM 650</td>
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<tr>
<td>ATM 660</td>
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</tbody>
</table>

In consultation with their advisor, every student seeking a M.S. degree, will design a curriculum that must be approved by their advisor.

12 of the credits must be taken in the department as lecture courses numbered 400 or above. Seminars, research, independent study or directed reading courses do not satisfy this requirement. A grade of B or greater is required for these 12 credits.

An additional 12 (at least) credits may be taken in or out of the department. These credits can include seminars, core courses, and other courses taken as a graduate student. Research credits do not count toward this requirement.

Up to 6 research credits in the department can be counted (but are not required) toward the 30 credit requirement.

Total credits required:
30

Parent Plan Graduate Policies

Approved Shared Content from /shared/graduate-school-policies/

Graduate School Policies

The Graduate School's Academic Policies and Procedures provide essential information regarding general university policies. Program authority to set degree policies beyond the minimum required by the Graduate School lies with the degree program faculty. Policies set by the academic degree program can be found below.

Major-Specific Policies
Graduate Program Handbook

The Graduate Program Handbook is the repository for all of the program's policies and requirements.

Prior Coursework

Graduate Work from Other Institutions

See either the M.S. named option in Research or Professional Program for the policy information.

UW–Madison Undergraduate

See either the M.S. named option in Research or Professional Program for the policy information.

UW–Madison University Special

See either the M.S. named option in Research or Professional Program for the policy information.

Guide Graduate Policies tab

Approved Shared Content from /shared/graduate-school-policies/

Graduate School Policies

The Graduate School’s Academic Policies and Procedures provide essential information regarding general university policies. Program authority to set degree policies beyond the minimum required by the Graduate School lies with the degree program faculty. Policies set by the academic degree program can be found below.

Named Option-Specific Policies

Graduate Program Handbook

The Graduate Program Handbook is the repository for all of the program's policies and requirements.

Prior Coursework

Graduate Work from Other Institutions

With program approval, students are allowed to count no more than 14 credits of graduate coursework from other institutions. Coursework earned five or more years prior to admission to a master's degree or earned ten years or more prior to admission to a doctoral degree is not allowed to satisfy requirements.

UW–Madison Undergraduate

With program approval, students are allowed to count no more than 7 credits of graduate coursework taken as an undergraduate at UW-Madison, as long as those credits were not applied toward an undergraduate degree. Coursework earned five or more years prior to admission to a master's degree is not allowed to satisfy requirements.

UW–Madison University Special

With program approval, students are allowed to count no more than 15 credits of coursework numbered 300 or above taken as a UW–Madison Special student. Coursework earned five or more years prior to admission to a master’s is not allowed to satisfy requirements.

Probation

A semester GPA below 3.0 will result in the student being placed on academic probation. If a semester GPA of 3.0 is not attained during the subsequent semester of full-time enrollment (or 12 credits of enrollment enrolled part-time) the student may be dismissed from the program or allowed to continue for 1 additional semester based on advisor appeal to the Graduate School.

The Graduate School regularly reviews the record of any student who earned grades of C, C-, D, or F, or incomplete in a graduate course (300 or above), or grade of U in research credits. This review could result in academic probation with a hold on future enrollment or in being suspended from the Graduate School.

Probation is based on student status. The status of a student can be one of three options:

- Good standing (progressing according to standards; any funding guarantee remains in place).
- Probation (not progressing according to standards but permitted to enroll; loss of funding guarantee; specific plan with dates and deadlines in place in regard to removal of probationary status).
- Unsatisfactory progress (not progressing according to standards; not permitted to enroll, dismissal, leave of absence or change of advisor or program).

ADVISOR / COMMITTEE

All students are required to conduct a yearly progress report meeting with their advisor, scheduled by December 31 and completed by April 30. Failure to do so will result in a hold being placed on the student's registration.

CREDITS PER TERM ALLOWED

15 credits

Time Constraints

The M.S. degree should be completed within three years. For additional time constraints, please consult the Graduate School Academic Policies and Procedures.

Other

n/a

Discuss expected progress to degree and time to degree. For undergraduate programs discuss considerations for supporting students to complete the degree in four academic years. Typically 2.5 years.

Program Learning Outcomes and Assessment

Parent Program Learning Outcomes

| Research Program or Professional Program | Acquisition of a broad foundation of knowledge contained in our graduate-level core courses. |
| Research Program | Have the historical origin and significance of certain issues central to the field by conducting original research. |
| Research Program or Professional Program | Have developed a good problem-solving skill that prepares them to become efficient, supporting scientists for research institutions or effective careers. Atmospheric professionals in operational units of government or commercial institutions. |
(Research Program): Articulate, critique, or elaborate the theories, research methods, and approaches to inquiry or schools of practice in the field of study.

(Research Program or Professional Program): Recognize and apply principles of ethical and professional conduct.

(Professional Program): Gain practical hands-on experience in professional atmospheric science careers.

Summarize the assessment plan.

Assessment plan is up to date and modified to reflect two named options.

Student faculty advisor ensures that all MS requirements have been met before requesting the final MS warrant.

Students form a MS committee made up of their advisor and at least two faculty members. MS students successfully conduct research and write a thesis under the guidance of their advisor and thesis committee.

MS students present their thesis to the departmental faculty, graduate students and visitors during the weekly departmental colloquium. Participation in department activities, colloquia, seminars, annual events. Students complete a department exit survey.

Faculty are informed of the presentation of the MS students and are informed of statistics of graduating students at faculty meetings.

Assessment committee provides report to faculty and college annually.

Commitsments
New Proposal

Date Submitted: 08/13/19 9:48 am

Viewing: MS - Environmental Remediation and Management

Last edit: 08/13/19 9:48 am

Changes proposed by: kmwassarman

Request Type: Notice of Intent (new degree/major)
Home Department: Soil Science (SOIL SCI)
School/College: College of Agricultural and Life Sciences
Title: MS - Environmental Remediation and Management
Request Details: Notice of intent to plan a Master of Science in Environmental Remediation & Management

Program Details
Degree name/major: MS/ Environmental Remediation & Management
Academic home: Department of Soil Science, College of Agricultural and Life Sciences
Mode of delivery: Face-to-face
Primary faculty contact: Alfred Hartemink, Professor and Chair, Dept. Soil Science

The planning for this new program was driven by the need for trained individuals to oversee the environmental assessment, remediation, and redevelopment of abandoned commercial and industrial sites with unknown levels of soil and water contamination. The program will provide in-depth physical science knowledge related to soil and groundwater and, through coursework in project management, provide a foundation for rising to project management and business development level positions within the field of environmental remediation. We are enthusiastic for the opportunity to be leaders in offering this professional training to our students.

Upload Form: Approval to Plan_MS Env Rem final copy.pdf
Dean’s Memo_Transmittal to Provost - Environmental Remediation NOI.pdf
Approval to Plan_MS Env Rem_072219 copy.docx

Supporting Documents: 131 Program Model-Env Rem_rev_Mar_4 copy - no macros.xlsx

Key: 20

In Workflow
1. SOIL SCI Dept. Approver
2. ALS College Approver
3. APIR Admin
4. GFEC Approver
5. UAPC Approver
6. APIR-UW System

Approval Path
1. 08/13/19 3:39 pm
   Melissa Rose
   Schultz
   (mrschultz3):
   Approved for SOIL SCI Dept. Approver
2. 08/13/19 3:40 pm
   Melissa Rose
   Schultz
   (mrschultz3):
   Approved for ALS College Approver
3. 08/13/19 3:42 pm
   Michelle Young
   (meyoung):
   Approved for APIR Adm

https://next-guide.wisc.edu/courseleaf/approve/?role=GRAD SCH Dept. Approver
Approval to Plan

Master of Science in Environmental Remediation & Management

Program Details

Degree name/major: MS/ Environmental Remediation & Management
Academic home: Department of Soil Science, College of Agricultural and Life Sciences
Mode of delivery: Face-to-face
Primary faculty contact: Alfred Hartemink, Professor and Chair, Dept. Soil Science

Program Description

In the US and internationally, thousands of abandoned commercial and industrial sites exist that have unknown levels of soil and groundwater contamination presenting complex situations for public and private interests. In addition to their potential for affecting community health, these sites present significant barriers to the growth and revitalization of urban neighborhoods. As outlined in the US Environmental Protection Agency roadmap, remediation and redevelopment of these sites involves understanding state and federal regulations, conducting site assessments and investigations, and, if required, selecting soil and groundwater remediation or containment technologies to achieve case closure.

Many phases of environmental assessment, remediation, and redevelopment work are within the purview of environmental scientists within consulting companies driven to efficiently meet regulatory compliance for their clients prior to property transfer or redevelopment. This work often requires a diverse skillset to meet not only the technical requirements of environmental compliance but also to address community concerns, understand and facilitate funding opportunities for site cleanup and redevelopment, and manage field personnel and projects. To address these needs, the program will provide advanced training in the technical aspects of environmental assessment and remediation, address the need for effective written and oral communication, and provide personnel and project management training. The program will provide in-depth physical science knowledge related to soil and groundwater and, through coursework in project management, provide a foundation for rising to project management and business development level positions within the field of environmental remediation. Additionally, Occupational Safety and Health Administration (OSHA) Hazardous Waste Operations and Emergency Response (HAZWOPER) 40-hour training, required for workers involved in remediation work, will be provided as part of the program, streamlining the hiring and training process for employers.

Need for Program

There is strong national market demand for the environmental science skills proposed within this program. The UW-Madison Division of Continuing Studies (DCS) performed an analysis using Burning Glass Technologies real-time job market analytics software and found over 9,000 jobs that require one or more of the environmental remediation-related skills and that are open to applicants with a Master’s degree. These jobs are in a variety of occupations and industries and most of those occupations are projected to grow between 2016 and 2026. In general, there are a greater number of job postings within CA, TX, VA, NY, and NJ, than in the Midwest. However, within Wisconsin, Madison has an approximately four times higher demand than the national average, while at the same time, there is a gap in graduate
programs specializing in environmental remediation in the Midwest (see below), indicating that the Madison-Milwaukee area should be a strong market for the degree.

According to the National Center for Education Statistics, there has also been growing interest in environmental technology/science Master’s degrees since 2012 as seen by increasing degree conferrals. In keeping with this trend, UW-Madison’s Environmental Sciences BS degree conferrals have doubled over the last 5 years to 61 conferrals in 2017-18 and we anticipate recruiting from this major. Master’s level conferrals are also seeing growth. DCS performed a competitive market analysis for other existing Master’s degree programs based on degree name, degree conferred, curriculum, and model similarity. Although over 93 institutions offer programs in environmental health and engineering-related fields, market share is spread out and most institutions are located on the east and west coasts indicating a lack of market saturation in the Midwest or leadership from an online institution. Therefore, the proposed program will capitalize on the Midwest market and also stands alone offering field, project management, and communication experience through professionally-driven case studies.

Professional practitioners from within environmental consulting and engineering firms (SCS Engineers, True North Consultants, TRC Companies, Ayers and Associates, Cornerstone Environmental, Pace Analytical, WPS, Jacobs Consultancy, Cascade Environmental) and the Wisconsin Department of Natural Resources Remediation and Redevelopment Program have shown support and enthusiasm for the initial program design. Input from practitioners identified in-demand skills often lacking in new employees including field experience, OSHA 40-hour HAZWOPER training, regulatory knowledge, written and oral communication skills, and personnel and project management skills. We plan to develop the curriculum to include these skills and intend to maintain a working relationship with environmental professionals and regulators throughout the development and delivery of the program.

Complement to existing offerings within the UW system

No existing programs serve graduates with BS degrees outside of engineering by offering the in-depth technical, project management, and communications focus specific to a specialization in environmental assessment and remediation. Programs of interest within UW System include:

- Master of Natural Resources, UW-Stevens Point: A program focused on ecological principles of natural resources management and not the assessment and remediation of environmental contaminants. The program offers only one course (NRES 776) that is a potential overlap with the proposed program curriculum.
- MS in Environmental Science & Policy, UW-Green Bay: This program includes four areas of emphasis, including environmental policy and administration and environmental technology and analysis. The technology and analysis area prepares students to design and conduct scientific investigations, interpret data to make responsible decisions that solve environmental problems, and communicate effectively. Students can study concepts of environmental modeling and remediation, waste transformation, utilization and disposal as a part of their curriculum. This is a traditional two-year program and does not include field-based characterization and monitoring coursework, nor does it emphasize the project management and communication skills sought by environmental consulting hiring managers.
- MS in Civil and Environmental Engineering, UW-Milwaukee: This program requires a B.S. in engineering from an Accreditation Board for Engineering and Technology (ABET) accredited program, and allows students to take coursework in the environmental engineering and water resources specialty area. While environmental engineers do often work in environmental
remediation, they represent only a subset of the discipline. The proposed program will primarily serve students with BS degrees outside of engineering.

- **Professional Science Master’s in Conservation Biology from UW-Stout**: This program focuses on the sustainability of biodiversity, and includes information on environmental laws and regulations with respect to ecosystems and does not provide training in environmental contamination or remediation.
- **MS in Sustainable Management, collaboration between UW-Green Bay, UW-Oshkosh, UW-Parkside, UW-Stout, and UW-Superior**: This program is primarily a non-technical management degree and does not include the technical assessment, remediation and compliance outcomes of the proposed program. The curriculum includes a single course in waste management and resource recovery.

Several UW-Madison programs focus on environmental issues and we expect to partner with many of these programs by incorporating courses into the proposed program, and offsetting revenue per credit. These programs include:

- **MS in Environmental Conservation, Nelson Institute**: This program offers two professional master’s degree options, Environmental Observation and Informatics (EOI) and Environmental Conservation. The conservation option focuses on conservation planning, land use policy and professional skills, while the EOI option offers earth sensing technology, data analytics and modeling, and geospatial analysis. We have discussed the proposed program with the Nelson Institute and have confirmed that there is no overlap in the curriculum and that there are many opportunities for synergistic collaboration between students in both programs.
- **MS in Environment and Resources, Nelson Institute**: This program allows students to pursue a broad range of environmental studies incorporating physical or biological science research with social sciences and humanities. The program does not include specific depth areas, but allows flexibility for students to create a course plan suited to address environmental problems identified in their individual research. This is an interdisciplinary thesis-based research program and does not offer the technical, communication, and management skills in the proposed program.
- **MS in Landscape Architecture, College of Letters and Science**: This program offers a specialization in Restoration Ecology and Ecological Design, which focuses on natural landscaping and plant community restoration and not the identification, assessment, and remediation of environmental contamination.
- **Master of Engineering in Civil and Environmental Engineering (online) and MS in Civil and Environmental Engineering, named option “Environmental Science and Engineering” (on campus) from the College of Engineering**: These programs offer coursework in the engineering design and analysis remediation and waste management technologies and require a B.S. in engineering from an ABET accredited program. Although there is some overlap in learning outcomes between these programs, the proposed program will not focus on engineering design and analysis skills. As such, the proposed program will be open to applicants with BS degrees outside of engineering and, therefore, will serve a currently untapped market. Through revenue sharing agreements, the proposed program will potentially incorporate two courses from these programs.

The mission of the College of Agricultural and Life Science is to advance and share knowledge, discover solutions and promote opportunities in food, agriculture, bioenergy, health and environment, and human wellbeing. A specific focus for healthy ecosystems is managing landscapes to help provide clean
water and air, mitigate climate change and promote biodiversity while building communities and offering economic gain. Similarly, CALS is committed to safe healthy food supply by ensuring runoff from soils and water supplies and the impact on human health. Lastly, economic and community development promotes the increasing ways our local economy is influenced by global markets. This brings both challenges and opportunities that affect people, businesses, communities and the environment. This strategic priority informs the Environmental Remediation degree by helping communities advance social and economic development while also being aware and knowledgeable of the policy and environmental impacts of proposed solutions. The proposed program will support CALS mission by preparing environmental scientists to apply technical and collaborative decision-making skills to promote community and economic development.

**Curriculum and learning outcomes**

Upon completing the program, students will be able to:

1. Identify the nature, source, and mobility of environmental contaminants.
2. Demonstrate understanding of the regulatory requirements pertinent to the assessment, investigation and remediation of environmental contamination.
3. Create reports for the assessment, investigation, and closure of environmentally contaminated sites.
4. Collect environmental samples, prepare samples for analysis, and interpret analytical data.
5. Assess contaminated soil and groundwater remediation strategies.
6. Communicate project information to technical and non-technical stakeholders.
7. Manage projects in environmental assessment, investigation, and remediation.

The program is a 30-credit accelerated program with a duration of 12 months to include a fall, spring, and summer semester. The program staff will assist with internship placement to the extent of fostering relationships with internship companies and offering those connections to students. The program will work closely with students and placement partners to identify and match goals and expected outcomes.

**Required Courses: (New courses in bold)**

* Courses carry a 50% graduate course attribute

- Toxicants in the Environment: Sources Distribution and Fate (Soil Science 631)
- Assessment of Environmental Impact (Soil Science 575)*
- Scientific Writing (LSC 560)*
- Risk Communication (LSC 625)*
- Project Management (EPD 784)
- Presentation for Professionals (EPD 702)
- Financial and Business Acumen (EPD 781)
- Remediation Geotechnics (CEE/GLE 635)*
- Hydrogeology (Goesci/GLE 627)*
- HAZWOPER Training (existing online training or may incorporate as a 1-credit soil sci. course)
- Colloquium (new 2-credit course in soil science)
- Soil Science for Environmental Professionals (new 3-credit course in soil science)*
- Characterization and Monitoring Technologies (new 3-credit course in soil science)*
Faculty and Staff

An Executive Program Committee with participation from the Department of Soil Science faculty will provide governance over program and academic issues. The core faculty and staff supporting development of this program include:

- Professors Alfred Hartemink, Joel Pedersen, and Steve Ventura, Department of Soil Science. Edward Boswell, Geoff Siemering, Department of Soil Science.
- Professors Steven Loheide, Matthew Ginder-Vogel, and Jim Tinjum, College of Engineering.
- Professor Troy Runge, Biological Systems Engineering.

Letters of Support

Letters of support from departments, schools/colleges, and other units with a substantial interest in the program are included in Appendix A.

Funding

This program is expected to be self-funded through tuition revenue within three years of development. Enrollment will begin with 15 students and increase until at least 50 students are supported each cohort. Revenue captured will be used to support tuition discounts and waivers, teaching assistantships, professional development, and new faculty hires within the department.

| Table 1. Enrollment, direct program costs, and revenue projections for the proposed MS in Environmental Remediation and Management from development (2018-20) through five years of operation (2020-25). |
|---|---|---|---|---|---|---|
| Enrollment | 0 | 15 | 20 | 30 | 40 | 50 |
| Credits taught | 0 | 450 | 600 | 900 | 1,200 | 2,000 |
| Tuition revenue | 0 | $495,000 | $660,000 | $990,000 | $1,320,000 | $1,650,000 |
| CALS + Campus tax | 0 | ($99,000) | ($125,400) | ($178,200) | ($237,600) | ($297,000) |
| Cost of instruction | 0 | ($277,500) | ($364,500) | ($538,500) | ($712,500) | ($886,500) |
| Dept. instruction (cost savings) | 0 | $90,000 | $120,000 | $180,000 | $240,000 | $300,000 |
| Other costs | (12,000) | ($120,322) | ($138,297) | ($144,747) | ($174,947) | ($179,897) |
| Revenue | (12,000) | 88,178 | 151,803 | 308,553 | 434,953 | 586,603 |

Funding for program development is supported by CALS and DCS. The College will utilize standard Memoranda of Agreement for participating schools and colleges to share tuition revenue with participating departments and instructors. DCS has also completed market research and analysis, including a market demand study, competitive survey and naming study, and will build out marketing strategy and execution plans for program launch in 2020. The DCS Recruitment Team will create and implement program-specific recruiting plans, and support development of websites and other communication materials.
To Parties Concerned:

I write in my capacity as de facto chair of the Academic Programs in support of the proposal to obtain permission to plan the program: **Master of Science in Environmental Remediation.** Overall we think that will be useful addition to the offerings at UW Madison. In its present form we see it as compatible with our own professional programs. I note the disclaimer that this support is issued without detailed consideration the appropriate governance bodies in Nelson. This is done in the expectation of the opportunity to conduct a thorough review of the proposal when it will become available in Lumen.

We have met with Dr. Ed Boswell to discuss this proposal. We explored potential areas of competition and collaboration. In the balance, the Nelson Institute believes that the proposed program and our professional programs in Environmental Conservation are more likely to be collaborative than competitive.

The collaborative prospects for the proposed program arise because of intersection in at least two areas. The technical issues of soil remediation are relevant to many EC students interested in ecological restoration who could benefit from a soils expertise that is not presently part of the curriculum of EC. The named option in EC, Environmental Observation and Informatics (EOI), emphasizes the applied aspects of GIS and remote sensing, both topics that will of interest to students in the proposed program. We discussed the possibility of synergisms for example: sharing guest speakers, EC students doing laboratory visits to learn about how the detailed work of remediation is conducted, remediation students perhaps taking EOI courses or participating with EC students in field visits to areas of conservation interest, and the like.

We discussed that if in the future they drift toward a field generally known as “ecological restoration” there could be issues. This field is more general and of interest to a significant number of our current EC students. It has an emphasis on complete ecosystem restoration including the manipulation of macroscopic organisms (plants, animals) whereas the proposed degree would focus more on the soils, soil biota, and topography. We were assured that such a shift will not happen in the short run and if considered in the future would not be undertaken without in-depth consultation.

Sincerely,

Paul H. Zedler  
Associate Director for Research and Education
8 April 2019

To: Kate Vanden Bosch, Dean, CALS
Karen Wassarman, Associate Dean, CALS

From: John Karl Scholz, Dean

Re: Request for L&S Comment on Notice of Intent to Offer, MS-Environmental Remediation

Thank you for offering the College of Letters & Science an opportunity to review and offer comment on the CALS plan to develop and offer a new Master of Science Program in Environmental Remediation. We circulated this proposal to our departments in L&S that might be interested in this endeavor, to afford them an opportunity to offer counsel from their positions of expertise in plant biology, geoscience, landscape design and remediation, etc. These colleagues offered no comment, and when I discussed the proposal with the L&S Academic Planning Council, members noted the distinction made between Landscape Architecture’s work with respect to “natural landscaping and plant community restoration” and the proposed program’s focus on remediation of environmental contamination. Though these approaches intersect, they are certainly different, and that difference is essential to the distinct nature of the programs.

The L&S Academic Planning Council recommended that L&S support CALS’ proposal of this new program, and we look forward to seeing the more detailed Request for Authorization to Implement it. We wish you success in the next stage of the process.

CC: Ken Cameron, Professor and Chair, Botany
Greg Downey, Associate Dean for the Social and Behavioral Sciences
Ken Genskow, Professor and Chair, Planning & Landscape Architecture
Elaine M. Klein, Associate Dean, Academic Planning
Gloria Mari-Beffa, Associate Dean for the Natural Sciences
Joseph Mason, Professor and Chair, Geography
Greg Tripoli, Professor and Chair, Geoscience
Dear Dr. Hartemink,

The Department of Civil and Environmental Engineering (CEE) has reviewed the proposal and offers our general support for the development of a professional Master of Science degree within the Department of Soil Science on the topic of environmental remediation. We have reviewed the Approval to Plan and are pleased with its collaborative direction. The proposed MS program appears to support the broad CALS mission to meet the demand for new educational programming in collaboration with institutional and industry partners, to provide healthy ecosystems, to promote health and wellness, and to stimulate economic development. Unless significant changes to the Approval to Plan are made during the campus governance process, our general support extends through the full proposal stage.

There are however a number of items that CEE would like to see addressed if this proposal moves forward. Specifically, CEE offers the following additional conditions of support:

- Please consider changing the name/title of the degree program. A degree title comparable to “Science and Management of Environmental Remediation” or “Environmental Remediation Science and Management” or “Practice of Environmental Remediation Science” is suggested. CEE currently has a MS degree program in Geotechnical Engineering in which many of the same courses can be taken. It is important to CEE that there is a clear differentiation between the CEE and Soil Science degree programs. A name change will potentially help better inform the planning process and detailed curriculum requirements as well as clearly differentiate the degree programs.
- Please add the “Geotechnical Engineering” named option MS degree program to the list of degree options in CEE.
- Please add the “Geological Engineering” MS degree program to the list of degree options in CEE.
- If your proposal is approved by campus, CEE requests that the following items be addressed during the planning process:
  - The plan lists a number of employers who are supportive of such a degree program. Provide documentation of this support including a discussion of which types of employees they see taking the new program versus one of our current and relevant engineering programs.
  - Develop a detailed plan for sharing of revenue for those programs expected to provide seats in classes.
Develop a curriculum that emphasizes science with supplemental coursework in engineering and management.

- Provide CVs and expected roles of core faculty and staff to ensure that experience is appropriate and that capacity is available.

CEE would also like to make you aware of the MS and PhD degree program in Environmental Chemistry and Technology which is offered by CEE and makes a significant contribution in this space. CEE is happy to contribute addressing the needs for professionals with the technical, communication, and project management skills actively sought by national and international employers.

Finally, CEE offers to provide one or more members of our faculty to serve on your planning committee as you move forward. Please reach out when future meetings are scheduled. I fully support my faculty colleagues participating in the program planning, course development, executive committee leadership, and teaching associated with the new MS program.

Please contact me at (608) 265-1882 if I can be of further assistance.

Sincerely,

David A. Noyce, Ph.D., P.E., F.ASCE
April 30, 2019

Dear David,

Thank you for your letter of April 12th and support for the development of a professional Master of Science degree on the topic of environmental remediation within the Department of Soil Science. We appreciate your concerns about how the proposed plan differs from existing CEE degree offerings, and in particular the naming of the program. In the past year, we have discussed the naming extensively within the Department and the Division of Continuing Studies and have tried to adequately and succinctly describe the program and to differentiate it from offerings in the Nelson Institute or the College of Engineering.

In meetings with CEE faculty, the naming of “Water Resources Management” and “Water Resources Engineering” was used as an example of a satisfactory distinction between a non-engineering and an engineering degree program. With that in mind, we propose the program name as

“MS in Environmental Remediation and Management”

The name reflects the program and is distinctly different from the Geotechnical Engineering named option and the Geological Engineering MS degree program so as to not confuse prospective students or employers. Additionally, the name conveys our curriculum goals and reflects the professional vs. research focus of the program.

We have been mindful of your concerns throughout the description of the proposed program in our Approval to Plan, and will continue to maintain a clear message regarding the students that our program will serve as we progress through the planning process. We trust that you find this name acceptable, and thank you again for your support.

Yours sincerely,

Alfred Hartemink
Chair, and Professor of Soil Science
Vilas Distinguished Achievement Professor
From: Alfred Hartemink
To: Edward Boswell, Karen Wassarman
Attachments: David signature.JPG

Subject: FW: MS degree
Date: Tuesday, May 14, 2019 at 1:41:19 PM Central Daylight Time
From: Alfred Hartemink
To: Edward Boswell, Karen Wassarman
Attachments: David signature.JPG

Subject: FW: MS degree
Date: Tuesday, May 14, 2019 at 1:41:19 PM Central Daylight Time
From: Alfred Hartemink
To: Edward Boswell, Karen Wassarman
Attachments: David signature.JPG

From: David Noyce
Sent: Tuesday, May 14, 2019 1:39 PM
To: Alfred Hartemink <alfred.hartemink@wisc.edu>
Subject: MS degree

Alfred:

I have talked with my faculty and they support the name change you mentioned. Please proceed.

Thanks!

David

--

David A. Noyce, Ph.D., P.E., F.ASCE
Dr. Arthur F. Hawnn Professor and Chair
Department of Civil and Environmental Engineering
University of Wisconsin - Madison
1415 Engineering Drive
2205 Engineering Hall
Madison, WI 53706
P: (608) 265-1882
www.engr.wisc.edu/cee
www.topslab.wisc.edu
January 22, 2019

Alfred Hartemink, PhD
Professor and Chair
Department of Soil Science
College of Agricultural and Life Sciences
University of Wisconsin-Madison

Dear Dr. Hartemink,

The Department of Life Sciences Communication (LSC) offers our continued support for the development of a professional Master of Science in Environmental Remediation within the Department of Soil Science. We have reviewed the Approval to Plan and are pleased with its collaborative direction. Unless significant changes to the Approval to Plan are made during the campus governance process, our support extends through the full proposal stage.

LSC is eager to contribute to addressing the need for professionals with the technical, communication, and project management skills actively sought by national and international employers. This program will support the broad CALS mission to meet the demand for new educational programming, in collaboration with institutional and industry partners, to provide healthy ecosystems, promote health and wellness, and to stimulate economic development.

LSC fully supports the efforts of our faculty colleagues to participate in the program planning, course development, executive committee leadership and teaching associated with the new Environmental Remediation program. We look forward to offering this exciting new program with you in the future.

Sincerely,

[Signature]

Dominique Brossard, Ph.D.
Professor and Chair
Department of Life Sciences Communication
January 14, 2019

Alfred Hartemink, PhD  
Professor and Chair  
Department of Soil Science  
College of Agricultural and Life Sciences  
University of Wisconsin-Madison

Dear Dr. Hartemink,

The Department of Biological Systems Engineering offers our continued support for the development of a professional Master of Science in Environmental Remediation and Management within the Department of Soil Science. We have reviewed the Approval to Plan and are pleased with its collaborative direction. Unless significant changes to the Approval to Plan are made during the campus governance process, our support extends through the full proposal stage.

The Department of Biological Systems Engineering is eager to contribute to addressing the need for professionals with the technical, communication, and project management skills actively sought by national and international employers. This program will support the broad CALS mission to meet the demand for new educational programming, in collaboration with institutional and industry partners, to provide healthy ecosystems, promote health and wellness, and to stimulate economic development.

In summary, we fully support the efforts of my faculty colleagues to participate in the program planning, course development, executive committee leadership and teaching associated with the new Environmental Remediation program. We look forward to offering this exciting new program with you in the future.

Sincerely,

Troy Runge  
Associate Professor and Chair  
Biological Systems Engineering  
115E Ag Engineering | 460 Henry Mall | Madison, WI 53706
January 15, 2019

Alfred Hartemink, PhD
Professor and Chair
Department of Soil Science
College of Agricultural and Life Sciences
University of Wisconsin-Madison

Dear Dr. Hartemink,

The Department of Planning and Landscape Architecture in the College of Letters and Sciences offers our continued support for the development of a professional Master of Science in Environmental Remediation within the Department of Soil Science. We have reviewed the Approval to Plan and are pleased with its collaborative direction. Unless significant changes to the Approval to Plan are made during the campus governance process, our support extends through the full proposal stage.

While we offer a MS in Landscape Architecture, with a specialization in Restoration Ecology and Ecological Design, we believe the proposed MS in Environmental Remediation will complement more than compete with our Restoration program. We will be happy to explore potential collaborations to provide restoration expertise and courses as desired.

We support your efforts addressing the need for professionals with the technical, communication, and project management skills actively sought by national and international employers. The Environmental Remediation program will support the broad CALS mission to meet the demand for new educational programming, in collaboration with institutional and industry partners, to provide healthy ecosystems, promote health and wellness, and to stimulate economic development.

I fully support the efforts of my faculty colleagues to participate in the program planning, course development, executive committee leadership and teaching associated with the new Environmental Remediation program. We look forward to offering this exciting new program with you in the future.

Sincerely,

Ken Genskow, Department Chair
Date: August 5, 2019

To: John Karl Scholz, Provost  
    William Karpus, Dean, Graduate School

From: Kathryn A. VandenBosch, Dean, CALS

Subject: Notice of Intent to Plan: MS in Environmental Remediation & Management

On April 14, 2019 the CALS Academic Planning Council met and unanimously approved a notice of intent to plan a profession MS in Environmental Remediation & Management. On Feb 20, 2019, a campus 131-budget review meeting, which included academic and financial representatives from the provost’s office, the vice chancellor’s office, the graduate school, CALS, and the department of Soil Science, also approved the proposed budget for this program. I understand this proposal requires action by GFEC and UAPC and ask that it be placed on their agendas at the earliest possible time.

The planning for this new program was driven by the need for trained individuals to oversee the environmental assessment, remediation, and redevelopment of abandoned commercial and industrial sites with unknown levels of soil and water contamination. The program will provide in-depth physical science knowledge related to soil and groundwater and, through coursework in project management, provide a foundation for rising to project management and business development level positions within the field of environmental remediation. We are enthusiastic for the opportunity to be leaders in offering this professional training to our students.

The notice of intent to plan proposal is attached along with supporting documentation. Please feel free to contact me or Associate Dean Wassarman if you have any questions.

Cc: Alfred Hartemink, Professor and Chair, Soil Science  
    Edward Boswell, Program Director  
    Jocelyn Milner, Associate Provost and Director, APIR  
    Nicole Wiessinger, Academic Planner, APIR  
    Parmesh Ramanathan, Associate Dean, Graduate School  
    Karen Wassarman, Associate Dean, CALS  
    Sarah Barber, Assistant Dean, CALS  
    Mark Rickenbach, Senior Associate Dean, CALS
Instructions

**Step 1 - Use the "Is 131 the Best Option?" tab to determine whether a 131 is best for you.**

**Goal:** Determine whether a program should be a 131 program. 131 programs result in net new enrollment and revenue growth to campus. They must be self-supporting instructional programs that have not been budgeted through UW-Extension and are outside the tuition pool, and they must not compete with, or draw student away from, existing programs. Examples of these non-pooled programs include professional master’s and capstone certificate programs.

**How to use:**
Fill out the Yes/No column with the appropriate answer to each question. The result will appear in the Result box below. Read the information to the right. If your result is a 131 program, continue filling out the subsequent tabs of

**Step 2 - If yes, fill out green boxes on all subsequent tabs.**

**131 Program Summary**
This tab aggregates the detailed information on subsequent tabs into a summary of total costs per year

**How to use:**
Fill out the green boxes to specify the general details about the program, such as its name, department, year of implementation, credits, price, and enrollment

**Submodels**

**Curriculum**
This tab breaks down the costs of developing and maintaining course content. The standard cost for course development is $30,000, and course maintenance is frequently 15% of the development cost, although variance is possible.

**How to use:**
Fill in the development cost for each course for each year. The course maintenance column will automatically calculate the requested salary.

**Salaries & Wages**
This tab breaks down the compensation for each person working for the program and allows people to be classified as either Instructional, Support, or Program Development – Startup.

**How to use:**
Fill in each green column for each person. The base salary should be entered in the column headed by the year, and the appropriate pay basis, months, and effort should be inputted to allow the actual requested salary to appear in the Requested Salary column. Then enter the fringe rate in the specified column, which will calculate the fringe benefit expense and total cost. Make sure to click on the + sign to expand each year.

**Tuition Remission**
This tab calculates costs of tuition remission for Project Assistant and Research Assistant students involved in the program each year.

**How to use:**
Fill in each green box with the number of PA/RAs the program will require for each year and semester.

**Sub-Agreements**
This tab calculates the cost of sub-agreements with other schools, categorizes the expense as either instructional or support, and identifies the payment type as either fixed rate or per credit.

**How to use:**
Fill in the name of the entity the sub-agreement is with, the type, the payment type, and the amount (ex: $ per credit, or the total fixed amount). The following two columns will calculate based on the payment type and

**Supplies & Services**
This tab allows users to list and describe all purchases, and identify them as instructional, support, or program development.

How to use:

Investing the Margin
This tab allows users to describe in detail how the residual money will be spent, categorized by department salaries, new faculty lines, additional TA positions or scholarships, professional development, and other.

How to use:
Fill in the category type, describe the cost, and list the amount for each year.
Program Change Request

Date Submitted: 04/12/19 11:00 am

Viewing: MR : Marketing Analytics and Insights Market Research
Parent Plan: MAJ: Bus: Marketing MBA
Last approved: 09/25/18 5:23 pm
Last edit: 08/14/19 10:23 am
Changes proposed by: smkahn

Catalog Pages Using this Program
Business: Marketing: Market Research, MBA

Approval Path
1. 04/12/19 11:05 am
Sharon M Kahn
{smkahn}: Approved for MARKETING Dept. Approver
2. 04/18/19 1:39 pm
Sharon M Kahn
{smkahn}: Approved for BUS School Admin Reviewer
3. 04/18/19 1:44 pm
Sharon M Kahn
{smkahn}: Approved for BUS School Approver
4. 08/05/19 1:59 pm
Nicole Wiessinger
{wiessinger}: Rollback to BUS School Approver for APIR Admin
5. 08/16/19 11:52 am
Ella Mae Matsumura
{emmatsum}: Approved for BUS School Approver
6. 08/16/19 12:13 pm
Nicole Wiessinger
{wiessinger}: Approved for APIR Admin

In Workflow
1. MARKETING Dept. Approver
2. BUS School Admin Reviewer
3. BUS School Approver
4. APIR Admin
5. GFEC Approver
6. UAPC Approver
7. APIR Admin
8. Registrar
9. Publication Ready

Name of the school or college academic planner who you consulted with on this proposal.

Proposal Abstract/Summary:
The terms 'Market Research' and even 'Marketing Research' are outdated terms for the area of marketing we focus on as well as the industry our graduates enter for their careers. This proposal is to update the name of our program as well as to update curriculum to support the new name.

If approved, what term should the proposed change be effective?
Fall 2020 (1212)

Select yes if this proposal is only to add, remove, or rearrange curricular requirements, and will change less than 50% of the curriculum.
No

Basic Information

Program State: Active
Type of Program: Named Option
Parent Program: MAJ: Bus: Marketing MBA
Parent Audience: Graduate or professional
Parent Home Department: MARKETING
School/College: School of Business

The program will be governed by the home department/academic unit as specified. Will an additional coordinating or oversight committee be established for the program?
No

Parent is in the Graduate School: Yes
SIS Code: MR
SIS Description: Marketing Research

History
Marketing Analytics and Insights

Will this name change apply to all enrolled students in the same term (turn-key)?
Yes

Named Options:  
MR: Marketing Research
PRODGM: Product Management

Does the parent program offer this as an additional major as well?
No

Roles by Responsibility: List one person for each role in the drop down list. Use the green + to create additional boxes.

<table>
<thead>
<tr>
<th>Role Type</th>
<th>Name (Last, First)</th>
<th>Email</th>
<th>Phone</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty Director</td>
<td>Arora, Neeraj</td>
<td><a href="mailto:arora@wisc.edu">arora@wisc.edu</a></td>
<td>608/262-1990</td>
<td></td>
</tr>
<tr>
<td>Primary Contact</td>
<td>Branch, Kristin</td>
<td><a href="mailto:kjbranch@wisc.edu">kjbranch@wisc.edu</a></td>
<td>608/262-9116</td>
<td></td>
</tr>
<tr>
<td>Department Chair</td>
<td>Oguinn, Thomas Clayton Gibson</td>
<td><a href="mailto:oguinn@wisc.edu">oguinn@wisc.edu</a></td>
<td>608/630-2404</td>
<td></td>
</tr>
</tbody>
</table>

List the departments that have a vested interest in this proposal.

<table>
<thead>
<tr>
<th>Departments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marketing (MARKETING)</td>
</tr>
</tbody>
</table>

Are all program reviews in the home academic unit up to date? Yes
Are all assessment plans in the home academic unit up to date? Yes
Are all assessment reports in the home academic unit up to date? Yes

Mode of Delivery: Face-to-Face (majority face-to-face courses)

Will this program be part of a consortial or collaborative arrangement with another college or university? No
Will instruction take place at a location geographically separate from UW-Madison? No
Parent has outside accreditation: Yes

Parent Guide
Accreditation tab

Accreditation
AACSB International—The Association to Advance Collegiate Schools of Business
Graduates of parent program seek licensure or certification after graduation. No
Year of three year check-in to GFEC (3 years after first student enrollment): 2023-24
Year of first program review (5 years after first student enrollment): 2025-26

If this proposal is approved, describe the implementation plan and timeline.
We aspire to gain campus approval fall semester in 2019. If this is accomplished, we will activate most implementation steps in summer of 2020. This will include updating the School of Business website and marketing materials in hopes of having all updates fully ready by the time fall 2020 starts and we begin recruiting an incoming class.

Rationale and Justifications
https://next-guide.wisc.edu/courseleaf/approve/?role=GRAD SCH Dept Approver
How does the named option relate to the major and to other named options in the major, if relevant?

The parent degree - MBA in Marketing has two named options: Market Research, which is the one we are updating, and Product Management. The two are 'sister programs' and do some events together but largely are independent. The update to 'Marketing Analytics and Insights' is not likely to impact the other Named Option. The management team of the other Named Option has been fully a part of the long term planning process that accompanied this name and curriculum change.

What is the rationale for this change?

Our current name of 'Market Research' is outdated and doesn't indicate the recent shift to the more analytical nature of marketing. The updated name and curriculum more accurately reflect what the industry is expecting of our graduates and align with how the industry refers to our niche within marketing.

What evidence do you have that these changes will have the desired impact?

The desired impact is to be more current with industry as well as indicate the analytical nature of our curriculum. We do anticipate this being positively reflected in our number of applications to our program, which we should see in the application process for the Class of 2022.

What is the potential impact of the proposed change(s) on enrolled students?

Students entering the program this fall of 2019 (Class of 2021) will fully execute the degree plan impacted by this new name and curriculum. The students who are currently in the program (Class of 2020) will execute the Degree Plan currently in place. Those students will be encouraged to take the new required classes as electives.

What is the potential impact of the proposed change(s) on faculty and staff?

This proposal does not impact current A.C. Nielsen Center faculty & staff. We will no longer be requiring the EdPsych 773 class. The new classes we are adding were developed for the recently approved Business Analytics masters program. We are requiring three of those classes to be added to our degree plan: 1. Data Visualization for Business Analytics (GEN BUS 720) 2. Experimentation and Causal Analysis for Business Insight (GEN BUS 740) 3. Data Technology for Business Analytics (GEN BUS 760). Currently we have <10 students/year in this degree plan. Given the current projections for the business analytics masters program, the three classes above should be able to absorb our MBA students.

Faculty and Staff Resources

Confirm that the program advisor(s) or coordinator(s) have been consulted and reviewed this proposal.

Resources, Budget, and Finance

Is this a revenue program? Yes

What is the tuition structure for this program?

Profession-specific tuition, Regent-approved

Given considerations associated with the proposed change, describe the academic unit's fiscal capacity to support the instructional and curricular requirements, academic and career advising, student support services, technology needs, and relevant assessment of student learning and program review requirements. Is there sufficient capacity in the curricular and academic support services to meet the additional workload? For research graduate programs, include information on how the program will be administered and how student funding will be handled. For undergraduate programs, include information on academic advising, career advising, student support services.

All program administration will remain the same as currently structured in the A.C. Nielsen Center.

Does the program or change require substantial new resources other than those just described? Describe the needs. Confirm that the dean is committed to providing the resources.

The three classes we are now requiring exist in the Business Analytics masters program. Given the current projections for the business analytics enrollment, these classes have room to accommodate the additional ~10 students in this named option.

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**Curriculum and Requirements**

If you are proposing a change to the curriculum, what percentage of the curriculum is changing? Less than 30% of the curriculum will change

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Parent Plan Admissions/How To Get In Requirements

Admission consideration for the MBA Program requires a four-year undergraduate degree or the equivalent, in any discipline, from an accredited institution. The School of Business seeks a minimum of two years of full-time work experience along with a strong undergraduate performance. In addition to academic credentials, GMAT or GRE scores, work experience, personal achievements, motivation, communication skills (written and oral), and recommendation letter(s) are considered in the admission process.

*Note:* The Graduate Management Admission Test (GMAT) or the Graduate Record Exam (GRE), taken within five years of the starting term, is required of all applicants to the School of Business; All applicants whose native language is not English must submit scores from the Test of English as a Foreign Language (TOEFL), the Pearson Test of English (PTE), Intensive English as a Second Language (IELTS), or show the completion of an Interlink program. A minimum IBT TOEFL score of 100 or equivalent, obtained within two years of the intended start term, is required. International applicants who have completed a degree at an institution whose primary language of instruction was English may request a waiver of this requirement on the application.

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**How to Apply**

Students interested in Business degrees do not apply through the Graduate School application system and should instead refer to the [School of Business Admissions page](https://next-guide.wisc.edu/courseleaf/approve/?role=GRAD SCH Dept Approver).

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Guide Admissions/How to Get In tab

Admission consideration for the MBA Program requires a four-year undergraduate degree or the equivalent, in any discipline, from an accredited institution. The School of Business seeks a minimum of two years of full-time work experience along with a strong undergraduate performance. In addition to academic credentials, GMAT scores and work experience, personal achievements, motivation, communication skills (written and oral), international exposure and recommendation letters are considered in the admission process at both the master’s and doctoral levels.

*Note:* The Graduate Management Admission Test (GMAT), taken within five years of the starting term, is required of all applicants to the School of Business; the Graduate Record Exam (GRE) may be an acceptable alternative on a case by case basis. All applicants whose native language is not English must submit scores from the Test of English as a Foreign Language (TOEFL), the Pearson Test of English (PTE), Intensive English as a Second Language (IELTS), or show the completion of an Interlink program. A minimum IBT TOEFL score of 100 or equivalent, obtained within two years of the intended start term, is required. International applicants who have completed a degree at an institution whose primary language of instruction was English may request a waiver of this requirement on the application.

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**How to Apply**

Students interested in Business degrees do not apply through the Graduate School application system and should instead refer to the [School of Business Admissions page](https://next-guide.wisc.edu/courseleaf/approve/?role=GRAD SCH Dept Approver).

Those who are not familiar with using the html editor fields may upload a document with information about the curriculum for use by those who will format and edit the content that will appear in the Guide.

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Parent Requirements
Approved Shared Content from /shared/graduate-minimum-degree-requirements-and-satisfactory-progress/

Minimum Graduate School Requirements

Review the Graduate School minimum academic progress and degree requirements, in addition to the program requirements listed below.

Major Requirements

Note: The major is currently non-admitting. Students are admitted through one of the named options (sub-majors) below.

MODE OF INSTRUCTION

<table>
<thead>
<tr>
<th>Face to Face</th>
<th>Evening/Weekend</th>
<th>Online</th>
<th>Hybrid</th>
<th>Accelerated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Mode of Instruction Definitions

Approved Shared Content from /shared/graduate-school-mode-instruction-definitions/

**Evening/Weekend:** These programs are offered in an evening and/or weekend format to accommodate working schedules. Enjoy the advantages of on-campus courses and personal connections, while keeping your day job. For more information about the meeting schedule of a specific program, contact the program.

**Online:** These programs are offered primarily online. Many available online programs can be completed almost entirely online with all online programs offering at least 50 percent or more of the program work online. Some online programs have an on-campus component that is often designed to accommodate working schedules. Take advantage of the convenience of online learning while participating in a rich, interactive learning environment. For more information about the online nature of a specific program, contact the program.

**Hybrid:** These programs have innovative curricula that combine on-campus and online formats. Most hybrid programs are completed on-campus with a partial or completely online semester. For more information about the hybrid schedule of a specific program, contact the program.

**Accelerated:** These on-campus programs are offered in an accelerated format that allows you to complete your program in a condensed time-frame. Enjoy the advantages of on-campus courses with minimal disruption to your career. For more information about the accelerated nature of a specific program, contact the program.

CURRICULAR REQUIREMENTS

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Credit Requirement</td>
<td>54 credits</td>
</tr>
<tr>
<td>Minimum Residence Credit Requirement</td>
<td>42 credits</td>
</tr>
<tr>
<td>Minimum Graduate Coursework Requirement</td>
<td>Half of degree coursework (27 credits out of 54 total credits) must be completed graduate-level coursework; courses with the Graduate Level Coursework attribute are identified and searchable in the university's Course Guide (<a href="https://registrar.wisc.edu/course-guide/">https://registrar.wisc.edu/course-guide/</a>).</td>
</tr>
<tr>
<td>Overall Graduate GPA Requirement</td>
<td>3.00 GPA required.</td>
</tr>
<tr>
<td>Other Grade Requirements</td>
<td>The Graduate School requires an average grade of B or better in all coursework (300 or above, not including research credits) taken as a graduate student unless conditions for probationary status require higher grades. Grades of Incomplete are considered to be unsatisfactory if they are not removed during the next enrolled semester.</td>
</tr>
<tr>
<td>Assessments and Examinations</td>
<td>Contact the program for information on required assessments and examinations.</td>
</tr>
<tr>
<td>Language Requirements</td>
<td>Contact the program for information on any language requirements.</td>
</tr>
</tbody>
</table>

Required COURSES

Select a Named Option for courses required.

Named Options (Sub-Majors)
A named option is a formally documented sub-major within an academic major program. Named options appear on the transcript with degree conferral. Students pursuing the MBA in Business: Marketing must select one of the following named options:

**Business: Marketing: Market Research, MBA**

**Business: Marketing: Product Management, MBA**

Guide Requirements tab

Approved Shared Content from /shared/graduate-minimum-degree-requirements-and-satisfactory-progress/

Minimum Graduate School Requirements

Review the Graduate School minimum academic progress and degree requirements, in addition to the program requirements listed below.

Named Option Requirements

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</table>
### Required COURSES

**Course List**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Year One</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Fall Semester = 15 Credits</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GEN BUS 704</td>
<td>Data to Decisions</td>
<td>2</td>
</tr>
<tr>
<td>ACCT 15700</td>
<td>Financial Accounting</td>
<td>2</td>
</tr>
<tr>
<td>FINANCE 700</td>
<td>Introduction to Financial Management</td>
<td>2</td>
</tr>
<tr>
<td>MARKETING 700</td>
<td>Marketing Management</td>
<td>2</td>
</tr>
<tr>
<td>OTM 700</td>
<td>Operations Management</td>
<td>2</td>
</tr>
<tr>
<td>MHR 706</td>
<td>Leading and Working in Teams</td>
<td>1</td>
</tr>
<tr>
<td>MARKETING 710</td>
<td>Marketing Research</td>
<td>3</td>
</tr>
<tr>
<td>MARKETING 765</td>
<td>Contemporary Topics</td>
<td>½</td>
</tr>
<tr>
<td>MARKETING 840</td>
<td>Current Topics in Marketing Analytics &amp; Insights</td>
<td>1</td>
</tr>
<tr>
<td><strong>Spring Semester = 13 Credits</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MHR 723</td>
<td>Business Strategy</td>
<td>2</td>
</tr>
<tr>
<td>OTM 732</td>
<td>Economics for Managers</td>
<td>2</td>
</tr>
<tr>
<td>GEN BUS 710</td>
<td>Ethics, Integrity and Society</td>
<td>1</td>
</tr>
<tr>
<td>MATH/STAT 803</td>
<td>Experimental Design I</td>
<td>3</td>
</tr>
<tr>
<td>GEN BUS 725</td>
<td>Consulting Practicum</td>
<td>1</td>
</tr>
<tr>
<td>MARKETING 737</td>
<td>Creating Breakthrough New Products</td>
<td>3</td>
</tr>
<tr>
<td>MARKETING 815</td>
<td>Marketing Analytics</td>
<td>3</td>
</tr>
<tr>
<td>MARKETING 765</td>
<td>Contemporary Topics</td>
<td>½</td>
</tr>
<tr>
<td>MARKETING 840</td>
<td>Current Topics in Marketing Analytics &amp; Insights</td>
<td>1</td>
</tr>
<tr>
<td><strong>Year Two</strong></td>
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<td></td>
</tr>
<tr>
<td><strong>Fall Semester = 13 credits</strong></td>
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</tr>
<tr>
<td>GEN BUS 720</td>
<td>Data Visualization for Business Analytics</td>
<td>1</td>
</tr>
<tr>
<td>GEN BUS 740</td>
<td>Experiments and Causal Methods for Business Insights</td>
<td>2</td>
</tr>
<tr>
<td>GEN BUS 760</td>
<td>Data Technology for Business Analytics</td>
<td>3</td>
</tr>
<tr>
<td>MARKETING 840</td>
<td>Current Topics in Marketing Analytics &amp; Insights</td>
<td>1</td>
</tr>
<tr>
<td>Electives</td>
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<td>6</td>
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<tr>
<td>MARKETING 765</td>
<td>Contemporary Topics</td>
<td>½</td>
</tr>
<tr>
<td><strong>Spring Semester = 13 credits</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EDPSYCH 773</td>
<td>Factor Analysis, Multidimensional Scaling and Cluster Analysis</td>
<td>3</td>
</tr>
<tr>
<td>MARKETING 805</td>
<td>Qualitatively-Based Marketing Insights</td>
<td>3</td>
</tr>
<tr>
<td>MARKETING 765</td>
<td>Contemporary Topics (Topic: Consumer Insights) Consulting Practicum</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MARKETING 765</td>
<td>Contemporary Topics</td>
<td>½</td>
</tr>
<tr>
<td>MARKETING 770</td>
<td>Marketing Consulting Practicum</td>
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<tr>
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<td></td>
<td>6</td>
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<td>Total Credits</td>
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</table>

Total credits required: 54
Approved Shared Content from /shared/graduate-school-policies/

Graduate School Policies

The Graduate School’s Academic Policies and Procedures provide essential information regarding general university policies. Program authority to set degree policies beyond the minimum required by the Graduate School lies with the degree program faculty. Policies set by the academic degree program can be found below.

Major-Specific Policies

Graduate Program Handbook

A Graduate Program Handbook containing all of the program’s policies and requirements is forthcoming from the program.

Prior Coursework

Graduate Work from Other Institutions
   No credits of prior coursework are allowed to satisfy requirements.

UW–Madison Undergraduate
   No credits from a UW–Madison undergraduate degree are allowed to count toward the degree.

UW–Madison University Special
   No credits of prior coursework are allowed to satisfy requirements.

Probation

The Graduate School regularly reviews the record of any student who earned grades of BC, C, D, F, or Incomplete in a graduate course (300 or above), or grade of U in research credits. This review could result in academic probation with a hold on future enrollment or in being suspended from the Graduate School.

ADVISOR / COMMITTEE

Every graduate student is required to have an advisor. To ensure that students are making satisfactory progress toward a degree, the Graduate School expects them to meet with their advisor on a regular basis.

An advisor generally serves as the thesis advisor. In many cases, an advisor is assigned to incoming students. Students can be suspended from the Graduate School if they do not have an advisor. An advisor is a faculty member, or sometimes a committee, from the major department responsible for providing advice regarding graduate studies.

A committee often accomplishes advising for the students in the early stages of their studies.

CREDITS PER TERM ALLOWED

15 credits

Time Constraints

Master’s degree students who have been absent for five or more consecutive years lose all credits that they have earned before their absence.

Individual programs may count the coursework students completed prior to their absence for meeting program requirements; that coursework may not count toward Graduate School credit requirements.

Other

Students must be enrolled full time.
Approved Shared Content from /shared/graduate-school-policies/

Graduate School Policies

The Graduate School’s Academic Policies and Procedures provide essential information regarding general university policies. Program authority to set degree policies beyond the minimum required by the Graduate School lies with the degree program faculty. Policies set by the academic degree program can be found below.

Named Option-Specific Policies

Graduate Program Handbook

A Graduate Program Handbook containing all of the program’s policies and requirements is forthcoming from the program.

Prior Coursework

Graduate Work from Other Institutions

No credits of prior coursework are allowed to satisfy requirements.

UW–Madison Undergraduate

No credits from a UW–Madison undergraduate degree are allowed to count toward the degree.

UW–Madison University Special

No credits of prior coursework are allowed to satisfy requirements.

Probation

The Graduate School regularly reviews the record of any student who earned grades of BC, C, D, F, or Incomplete in a graduate course (300 or above), or grade of U in research credits. This review could result in academic probation with a hold on future enrollment or in being suspended from the Graduate School.

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Other

Students must be enrolled full-time.

Program Learning Outcomes and Assessment
**Parent Program Learning Outcomes**

Design and manage marketing research studies to answer specific research questions. (Marketing Analytics & Insights Named Option)

Articulate a business problem and translate it into a set of marketing research questions. (Marketing Analytics & Insights Named Option)

Effectively communicate and defend business recommendations using consumer insights from the marketing analytics and insights they design and discover. (Marketing Analytics & Insights Named Option)

Demonstrate a knowledge of how to grow business profitably through marketing analytics and insights. (Marketing Analytics & Insights Named Option)

Understand and adopt suitable qualitative and quantitative methodologies for the studies they design. (Marketing Analytics & Insights Named Option)

Perform business analytics used to improve a brand’s business results. (Product Management Named Option)

Develop key elements of a brand’s business plan that drive growth. (Product Management Named Option)

Demonstrate professional protocols for succeeding in the corporate environment. (Product Management Named Option)

Effectively communicate in order to drive growth for their brand’s business. (Product Management Named Option)

Understand how to lead a cross-functional brand and product team to achieve a goal or an objective. (Product Management Named Option)

Summarize the assessment plan.

**Commitments**

All required courses are approved through the school/college level.

Yes

Courses are offered on a regular basis to allow timely completion.

Yes

Courses have enrollment capacity.

Yes

Students may complete only 1 named option within a plan code.

Yes

The program faculty/staff will ensure the program website, Advance Your Career materials if applicable, and other presentations are consistent with the Guide information for this program.

Yes

**Supporting Information**

List name and department of those who are in support of this proposal.

If those supporting the proposal provided a letter or email of support upload here. A letter is NOT required. Upload any other explanatory information about support from other UW-Madison units.

Additional Information:

**Approvals**
Department Approval - This proposal has been approved by the faculty at the department/academic unit level. The program faculty confirm that the unit has the capacity and resources (financial, physical, instructional, and administrative) to meet the responsibilities associated with offering the program, including offering the necessary courses, advising students, maintaining accurate information about the program in the Guide and elsewhere, conducting student learning assessment and program review, and otherwise attend to all responsibilities related to offering this program.

Enter any notes about approval here:
Approved, Marketing Dept (3/28/2019)
Approved, WSB Master’s Curriculum Committee (4/3/2019)
Approved, WSB APC (4/11/19)

Entered by: Sharon Kahn  Date entered: 4/12/2019

School/College Approval - This proposal has been approved at the school/college level and it is submitted with the Dean's support. The Dean and program faculty confirm that the unit has the capacity and resources (financial, physical, instructional, and administrative) to meet the responsibilities associated with offering the program, including offering the necessary courses, advising students, maintaining accurate information about the program in the Guide and elsewhere, conducting student learning assessment and program review, and otherwise attend to all responsibilities related to offering this program.

Enter any notes about approval here:
Approved, WSB Faculty (4/15/2019)

Entered by and date:
Sharon Kahn  4/18/2019

GFEC Approval - This proposal has been approved by the Graduate Faculty Executive Committee and the Dean of the Graduate School.

Enter any notes about the approval here:

Entered by:  Date entered:

UAAPC Approval - This proposal has been approved by the University Academic Planning Council and the Provost.

Enter any notes about approval here:

Entered by:  Date entered:

For Administrative Use

Admin Notes:

Guide URL:

Effective date:

SIS Short Market Res

Description:

Other plan codes associated with this program:

Educational Innovation Program:

Distance Education Program:

Non Traditional Program:

Special Plan Type:
<table>
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<th>Reviewer</th>
<th>Comments</th>
</tr>
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<tbody>
<tr>
<td>Sharon M Kahn (smkahn) (04/18/19 1:39 pm)</td>
<td>Several courses referenced here are in the course proposal process, either as new courses or course changes. These courses are on the agenda for the WSB faculty meeting on 4/29/19. If approved, they will be forwarded to UCC at that time.</td>
</tr>
<tr>
<td>Nicole Wiessinger (wiessinger) (08/05/19 1:59 pm)</td>
<td>Rollback: Rolling back per email with Ella Mae to adjust effective dates to Fall 2020.</td>
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Three-Year Check-In for New Programs – Nurse Educator Capstone Certificate Program

Report completed 17 June 2019

The creation and maintenance of graduate programs and certificates represents significant resource commitments by faculty and staff. Given these investments, in 2014 the Graduate Faculty Executive Committee (GFEC) established a “check in” process for newly approved programs and certificates prior to their first formal university review (which occurs in the fifth year.) Through this “check-in,” the GFEC hopes program faculty and staff will assess the implementation of their new program and determine what mechanisms may be needed for sustained student success.

Progress reports will be included on GFEC agendas, and program representatives may be asked to attend GFEC if additional information is requested. In the interest of brevity, please keep responses to 300 words or less.

Program Name

Nurse Educator Capstone Certificate

Term of First Enrollments

Fall 2016

Check-In Completed By

Dan G. Willis, Associate Dean for Academic Affairs
Karen E. Mittelstadt, Assistant Dean for Academic Affairs

Date Completed

17 June 2019

Academic Quality and Student Success

1. Provide an update on any changes to the program’s curriculum and learning outcomes. Include a description of the program’s typical course modalities (face-to-face, online, asynchronous discussion, team or individual assignments) and if courses have evolved based on faculty or student feedback.

The Nurse Educator Capstone Certificate Program is for working, master’s-prepared nurses who are currently teaching and would like to improve their skills, or for those who’d like to begin their teaching careers. Students not currently enrolled in a nursing doctoral program at UW–Madison enroll in the capstone certificate. Nursing PhD and Doctor of Nursing Practice (DNP) students are also eligible to complete the graduate/professional certificate courses to earn the Nurse Educator Certificate. To date, certificate enrollments have been from current UW–Madison PhD and DNP students. Students who complete the certificate
are eligible to sit for the National League for Nursing (NLN) Certified Nurse Educator Examination.

There are three courses required in the certificate:
   a. NURSING 785 Foundations of Curriculum Development and Evaluation in Nursing Education (3)
   b. NURSING 786 Foundations of Teaching and Learning in Nursing (3)
   c. NURSING 787 Nursing Education Practicum (3)

This 9-credit program of study includes graduate-level foundational and practicum work. The three required courses cover the foundation of teaching/learning and curriculum in nursing education, with an emphasis on evidence-based teaching. Courses are delivered in a blended learning format—coursework is completed primarily online, with regularly scheduled class sessions on campus. The program can be completed in one year, January–December, during a spring, summer and fall terms.

The certificate’s curriculum (i.e., the three courses) has remained unchanged since launch. The courses themselves have evolved based on faculty innovation, student feedback, and changes in nursing education. NURSING 787, the practicum, has perhaps seen the most innovation as the course has evolved to provide students with the opportunity to apply the knowledge and skills in the nurse educator role in selected educational environments.

2. Briefly explain the program’s learning outcomes assessment plan and discuss how you are or how you plan to evaluate student learning. Summarize any data collected to date showing evidence of student learning.

The Nurse Educator Capstone Certificate program has six learning outcomes. Students who complete the three courses in the certificate are assessed against these outcomes. The school conducts course evaluations for each course in the certificate program, which gauge student learning relative to both the course- and program-level outcomes. The course-level aggregate data relative to learning outcomes achieved for AY 2018–19 was a 4 out of 5.

3. The GFEC is interested to learn how departments balance faculty and staff teaching loads and responsibilities between new and existing programs. Discuss how the department or program is achieving balance, and what challenges supporting multiple programs may have created for teaching, student services, advising or funding. Also of interest is information on what if any assets are shared between programs, or additional benefits that have been realized.
The School of Nursing is a school that essentially runs as a department. It offers graduate and undergraduate degrees (BS-Nursing, DNP, PhD) and three certificate programs. In recent years, there has been programmatic growth in the school, with the implementation of an Accelerated BSN program in May 2018 and in-process work to create two new named options in the DNP program. This growth has been supported by additional staff and faculty roles in the school, funded by revenue generated from the non-pooled Accelerated BSN program, as well as campus investments in the school.

4. **Please describe how your program has ongoing and broad faculty commitment, including governance, to ensure its continued success.** If applicable, reflections from faculty and staff can be included here or as an appendix. Also consider if implementation of this program is supporting the Department and/or School/College’s current strategic goals.

Nurse educators are critical players in assuring quality educational experiences that prepare the nursing workforce for a diverse, ever-changing health care environment. As interest in nursing careers continues to grow throughout the country, institutions (including UW–Madison) are struggling to fill faculty positions with enough educators to meet the demand. As such, programs like the Nurse Educator Capstone Certificate are very important to the future of nursing education and the profession.

With this background, the School of Nursing and its faculty are committed to offering and growing the Nurse Educator Certificate program. The mission of the school is to develop leaders for the profession and society—we make discoveries, enhance systems, and improve health through research, education and practice. Without nurse educators, the school cannot achieve its mission or strategic goals.

**Operations and Administration**

5. **Illustrate how the program has either brought in NEW and ADDITIONAL students (required for non-pooled programs), and/or how overall enrollment in your related programs has remained steady.** If unanticipated overlap with existing programs has resulted, discuss steps to mitigate the overlap.

The School of Nursing is aware that the capstone certificate has not generated new enrollments as desired. It recently appointed a member of the faculty, Dr. Wendy Crary, Certified Nurse Educator (CNE), to serve as the Nurse Educator Certificate Coordinator, replacing the former coordinator who retired. It is the expectation that Dr. Crary will work with the school’s admissions and recruitment team, along with the Division of Continuing Studies, to create new enrollments in the program.
6. Funding Considerations

a. For traditional/pooled programs – How is the program successfully funding its students?

b. For non-pooled programs – Provide a brief summary of projected vs. actual revenues and expenses. Does the program have sufficient enrollment for sustainability? Discuss the current market outlook compared to the original marketing study and plans to grow or change the program to become sustainable.

As noted earlier, enrollments in the Capstone Certificate have not been as projected. The Nurse Educator Certificate courses regularly enroll 5–10 students, but these are typically nursing PhD and DNP students wishing to add the graduate/professional certificate to their degree programs. These enrollments make the course offerings worthwhile, especially as the school works to increase the nurse faculty workforce, but clearly the school needs to do more to enroll non-degree-seeking students in the Capstone Certificate. The school’s Office of Academic Affairs will partner with new certificate coordinator Dr. Wendy Crary to consider avenues and opportunities to recruit would-be nurse educators into the program. It is expected that this will include outreach to regional schools of nursing, recruiting enrollments from currently faculty who are not already certified nurse educators.

7. If the program admits international students, describe how program processes address length of stay visa issues, online course restrictions, and needing ESL services.

The Nurse Educator Capstone Certificate Program does not admit/enroll international students.

8. Are there any issues impacting the program’s long-term sustainability? If so, what support would you like to help you succeed?

As shared, the school is pleased with the number of current PhD and DNP students completing the graduate/professional Nurse Educator Certificate, but enrollments into the capstone certificate have lagged. The school and its faculty are committed to this program and will be taking steps in the coming year to identify opportunities to market the program and recruit additional students.
Three-Year Check-In for New Programs

The creation and maintenance of graduate programs and certificates represents significant resource commitments by faculty and staff. Given these investments, in 2014 the Graduate Faculty Executive Committee (GFEC) established a “check in” process for newly approved programs and certificates prior to their first formal university review (which occurs in the fifth year.) Through this “check-in,” the GFEC hopes program faculty and staff will assess the implementation of their new program and determine what mechanisms may be needed for sustained student success.

Progress reports will be included on GFEC agendas, and program representatives may be asked to attend GFEC if additional information is requested. *In the interest of brevity, please keep responses to 300 words or less.*

Program Name
MS Statistics: Data Science

Term of First Enrollments
Fall 2015

Check-In Completed By
Sara Rodock and Derek Bean

Date Completed
June 13, 2019

*Academic Quality and Student Success*

1. **Provide an update on any changes to the program’s curriculum and learning outcomes.** Include a description of the program’s typical course modalities (face-to-face, online, asynchronous discussion, team or individual assignments) and if courses have evolved based on faculty or student feedback.

   The MS Statistics: Data Science (MSDS) program continues to be a face-to-face program with the same learning goals. Courses include a mix of lecture, team and individual projects, and a practicum, with an eye towards preparing students for the skills necessary to be successful data scientists.

   We have modified some of the courses and added newly approved, more relevant courses, and provided better clarification about what courses count for what requirements. Here is our current curriculum as of Fall 2019

   **Core Courses (15 cr)**
• STAT 601 Statistical Methods I (4 cr)
• STAT 602 Statistical Methods II (4 cr)
• STAT 610 Introduction to Statistical Inference (4 cr)
• STAT 615 Statistical Learning (3 cr) – this course has replaced STAT 609 Mathematical Statistics I to provide students with a foundation in statistical/machine learning instead of probability

Professional Skills Courses (6 cr)

• STAT 605 Data Science Computer Project (3 cr) – previous offered for 2 credits as STAT 679 Special Topics in Statistics, now has a permanent number and offered for 3 credits to reflect the amount of work in the class
• STAT 627 Professional Skills in Data Science (1-3 cr) – currently offer a Career Development topic under this number
• STAT 628 Data Science Practicum (3 cr)

*Students may substitute STAT 605 or 615 with STAT 609 with advisor approval

Data Science Elective Courses (9 cr)

• Students may count up to 3 credits of Statistics undergraduate electives including: STAT 349, 351, 411, 421, 456, 461, 471, 479, or 575 (3 cr) – previously these specific courses were not defined
• Students may count up to 3 credits of 600-level or above coursework taught outside of Statistics with advisor approval, including courses cross listed with Statistics but taught by other departments (3 cr)
• Students must have at least 3 credits of coursework at the 600-level taught within Statistics including: STAT 641, 642, 679, 701, 709, 710, 732, 741, 760, 761, 771, 775, 803, 809, 811, 834, 840, 841, 860, 877 (3 cr) – previously these specific courses were not defined

Students in MSDS must submit an online course plan through Qualtrics at the start of each semester to confirm what courses they plan to take and receive approval from the student services coordinator.

2. Briefly explain the program’s learning outcomes assessment plan and discuss how you are or how you plan to evaluate student learning. Summarize any data collected to date showing evidence of student learning.

   Since all MSDS students are required to take STAT 628 Data Science Practicum, we have developed a rubric, using the program learning goals, and will be assessing the final
product from the course using the rubric. Spring 2019 was the first year that this was completed. We will evaluate this method for assessment after completing the first year.

3. The GFEC is interested to learn how departments balance faculty and staff teaching loads and responsibilities between new and existing programs. Discuss how the department or program is achieving balance, and what challenges supporting multiple programs may have created for teaching, student services, advising or funding. Also of interest is information on what if any assets are shared between programs, or additional benefits that have been realized.

   Faculty and instructional staff teaching loads are balanced on an individual basis by taking into account myriad factors, including the instructors’ expertise, enrollment levels in the instructors’ class, and so forth. Balancing among programs seldom poses a serious challenge relative to these other factors, at least on an individual basis. The challenge is a systematic one, at the Department level; the shifting of certain instructors from one program to another has created vacancies that necessitate the hiring of many short term instructors (and some new permanent instructors) to complete our teaching mission; the process of hiring these personnel can be challenging and time consuming semester-to-semester. However, the revenue generated from our 131 programs has allowed us to hire these personnel, as well as in some cases buttressing the instructional resources available to some courses that serve existing programs--usually in the form of extra TA support coming from 131 funding, and focusing on courses that serve students from several of our programs.

4. Please describe how your program has ongoing and broad faculty commitment, including governance, to ensure its continued success. If applicable, reflections from faculty and staff can be included here or as an appendix. Also consider if implementation of this program is supporting the Department and/or School/College's current strategic goals.

   The implementation of the MSDS program is fully incorporated with the strategic plan of the Statistics Department. As mentioned above, we have been fortunate to use funds from the MSDS program to hire new faculty that add to all dimensions of the mission of the department. Additionally, this year we were able to hire a student services coordinator to oversee the day-to-day management of the program.

**Operations and Administration**

5. Illustrate how the program has either brought in NEW and ADDITIONAL students (required for non-pooled programs), and/or how overall enrollment in your related programs has remained steady. If unanticipated overlap with existing programs has resulted, discuss steps to mitigate the overlap.
Enrollments in Statistics has dramatically increased through the MSDS program. Here are our enrollment numbers for the Statistics MS since Fall 2014 (the year before MSDS began):

<table>
<thead>
<tr>
<th>Program Option</th>
<th>Fall 2014</th>
<th>Fall 2015</th>
<th>Fall 2016</th>
<th>Fall 2017</th>
<th>Fall 2018</th>
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<td>MSDS</td>
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<td>All</td>
<td>28</td>
<td>55</td>
<td>68</td>
<td>68</td>
<td>81</td>
</tr>
</tbody>
</table>

We have continued to increase enrollment in MSDS since the creation of the program as we expand instructional faculty and staff. For Fall 2019 we anticipate an enrollment of about 90 students. Part of this increase is because, in Fall 2018, we began admitting “direct MSDS” students. In prior years all students in MSDS had previously been enrolled as Visiting International Scholars Program (VISP). This new admission model is diversifying our student pool, with an additional incoming cohort of 15-20 students who enroll for a total of 3-4 semester (depending on their preferred course pace).

We do have a number of students who apply to both our traditional and MSDS program, and we have improved our marketing material to communicate clearly that the admissions process for MSDS is separate from the Statistics and Biostatistics MS options. We also have been fortunate to recruit a few outstanding MSDS students to our Statistics PhD program.

6. Funding Considerations

a. For traditional/pooled programs – How is the program successfully funding its students?
   NA for MSDS at this time, but see considerations below.

b. For non-pooled programs – Provide a brief summary of projected vs. actual revenues and expenses. Does the program have sufficient enrollment for sustainability? Discuss the current market outlook compared to the original marketing study, and plans to grow or change the program to become sustainable.
   Tuition model was initially identical with pooled programs, but migrated in 2018-19 to $1600 per credit. The program is fully sustainable, based on past and near-term projected enrollments, covering all costs and enabling the department to grow its staff and faculty.

   There are now more programs on the market, but we remain competitive, particularly for international students. There is some question whether our domestic pricing at $1600 per credit is too steep; we plan to study the market during the upcoming year to consider revision to diversify enrollment. We would like to modify MSDS to make it accessible financially to URM students.
7. If the program admits international students, describe how program processes address length of stay visa issues, online course restrictions, and needing ESL services.

   To date, the majority of students in our program are international students. We communicate with them regularly, via email, our website, and the online program handbook, about all of the requirements, specifically those for international students. Most of this communication is handled now by our student services coordinator.

8. Are there any issues impacting the program’s long-term sustainability? If so, what support would you like to help you succeed?

   There are two things that we would like to address as we move forward to help ensure the long-term sustainability and diversity of our program. These include
   - How do we provide partial tuition to increase matriculation rates, especially among populations where we would like to see increased enrollment (URM, domestic students, etc.)?
   - How can we best publicize our program to attract highly qualified applicants? How do we also increase our matriculation rate (for students paying full tuition)? This must be done in a way that maintains the quality of the student pool, as this program is very challenging technically, and relies heavily on prerequisite training in mathematics.
June 20, 2019

TO: James Henderson, Interim Provost
    Bill Karpus, Dean of the Graduate School

FROM: Kathryn VandenBosch, Dean, CALS

CC: Patricia McManus, Chair, Department of Plant Pathology
    Amanda Gevens, In-coming Chair, Department of Plant Pathology
    Jocelyn Milner, Director, Academic Planning and Institutional Research
    Nicole Weissinger, Academic Planner, APIR
    Karen Wassarman, Associate Dean for Academic Affairs, CALS

RE: Program Review of Plant Pathology BS, MS, PhD, and PhD minor

We are pleased to report that the College of Agricultural and Life Sciences has completed the first stages of the program review for the Plant Pathology bachelor’s, master’s of science, and doctoral degrees (program code 796). The self-study prepared by the program and the report of the review committee are attached to this memorandum.

The CALS APC met on Feb 19th and again on Mar 5th to hear from Prof. Carrie Laboski, who chaired the review committee, and from Prof. Patricia McManus, the chair of the Plant Pathology Department. After discussion, the APC voted unanimously to accept the review as complete, with comments and recommendations as outlined below.

As noted by the review committee and echoed by the APC, the graduate MS and PhD programs in Plant Pathology are very strong, recruiting some of the top students in the country and placing them in professional positions after degree completion. The department is well-known for and should be applauded for their commitment to diversity and building an inclusive environment.

The program review notes three areas of challenge. First is the recognition that Russell Laboratories is an old building with substandard facilities. I note that CALS will be working with Facilities, Planning and Management on a master plan to help address and prioritize facilities needs across the college. While major change to the department’s facilities is probably a ways off, the master planning process will help us identify short term needs that could be addressed. Second is that graduate stipends are lower than some other programs. The department is well aware of this discrepancy and will continue to monitor the situation and take advantage of any opportunities for students, while being cognizant of the research funding climate. Third, students in the Plant Pathology graduate programs appear to take a higher number of formal courses compared to other graduate students in biological science PhD programs on campus. The department revisits the question of requirements on a regular basis, but we further encourage them to consider the possibility of lowering this course number, perhaps by decreasing the number of topics covered in depth. With the ever-increasing amount of information...
available, it is no longer possible to teach all our students everything related to their fields of interest, but instead must focus on providing them examples of how to seek that depth of knowledge for future interests. A fourth consideration of note is the low enrollment in the Plant Pathology PhD minor. However, the PhD minor has been used by several students in the past few years, and this is an example of where there truly is no additional cost to the program to maintain this option. Additionally, the PhD minor, when used, is a key mechanism to fulfill department and college interests in demonstrating interdisciplinary interests for our students. Thus, the department, supported by the college, requests to maintain the PhD minor.

The program review also notes the undergraduate program in Plant Pathology, which provides a strong educational experience to students who wish to specialize in the discipline. The main areas of concern for the undergraduate program are the relatively low number of students enrolled in the major, which results in many lower enrollment courses. The Plant Pathology department is engaged with several other CALS departments in planning a new, interdisciplinary major (currently envisioned as Agroecosystem Science). The department is encouraged to focus energies on future opportunities, including development of the new major, which is expected to submit documentation for a Notice of Intent to Plan in fall of 2019. I expect that the future of the Plant Pathology major should be discussed seriously in the next couple years as the new, interdisciplinary major continues to develop.

We applaud the department’s interest in continuous improvement and their engagement in enhancing opportunities for their students.

We look forward to working with campus leadership, GFEC, and the UAPC on the next stage of this review.
November 28, 2018

To: Richard Straub, Senior Associate Dean

From: Professor Cameron Currie, Bacteriology
       Professor Carrie Laboski, Soil Science (Chair review committee)
       Professor Nicole Perna, Genetics (GFEC Representative)
       Professor David Stoltenberg, Agronomy

Re: Review of academic programs in the Department of Plant Pathology

Review Process
The review committee evaluated the charge to the committee, the Department of Plant Pathology’s self-study documents, and degree program statistics from the interactive Graduate School Explorer. The committee then met with the department chair, faculty (two different times to accommodate schedules, 16 attended, including affiliate faculty), instructional academic staff (4 attended), graduate affairs/admissions committees (4 attended), curriculum committee (6 attended), graduate students (17 attended) and undergraduate students (1 attended). These meetings occurred over a two week time period in July with the exception of the undergraduate meeting which occurred in September.

Overall Assessment
We feel that the Department of Plant Pathology is fulfilling its teaching and learning mission through a vibrant graduate program that supports students on their quest to become scientists. The collegiality and respect among and between graduate students and faculty is exemplary. While the undergraduate program may be considered to have low enrollment, the faculty are committed to providing undergraduate education in plant pathology that emphasizes research experience and are doing so in a commendable manner. All academic programs have benefited from the very skillful advising of a student services coordinator, who recently left for a new position. We feel that it is imperative for the department to fill this position with an equally competent person so that they can maintain excellence in academic advising.

Refilling the vacant senior student services coordinator position is a critical need facing all academic programs in the department and the Russell Labs administrative hub. This position serves multiple roles, all which revolve around students and curriculum, including undergraduate and graduate student advising, coordinating academic programs among departments, and assisting with curricular management within each department. The senior student services coordinator has also played an important role in providing training to faculty advisors in the advising gateway, the degree audit reporting system (DARS), the advisor notes system (ANS), and solution-focused brief therapy to help advisors demonstrate empathy during difficult conversations. If this position is not refilled, student advising will expectedly decrease in quality.
Plant Pathology Graduate Programs (M.S. and Ph.D.)

Strengths
The Department of Plant Pathology oversees two very strong graduate programs. The Ph.D. program is one of the top Plant Pathology programs in the US. The success of the M.S. program is illustrated by the placement of students into high quality professional positions in plant pathology at a very high rate; students are typically recruited prior to graduation. The student body is very diverse. The program has an impressive array of graduate course offerings. These include both standing courses that are highly regarded by the students, and regularly offered variable topic 875 courses that provide students exposure to specialized areas of cutting edge plant pathology research. All departmental faculty members actively participate in teaching, including extension faculty with zero teaching appointments. It is clear that graduate students in the department receive high quality mentoring and training. Extension faculty members are an important and integral part of the program. The engagement of these faculty in both formal and informal ways contributes significantly to the program.

The climate within the program is extremely positive. Faculty provide an outstanding amount of leadership and model mutual respect and support. Departmental decision making and operation is shared with graduate students. This transparency is illustrated and achieved through inviting graduate students to faculty meetings and emailing minutes. Student representatives serve on other departmental committees including curriculum and admissions. Students, including those from trainer labs outside of Russell labs, expressed a strong sense of community. The students and postdocs organize their own Friday lunch seminar (SAPS), and the department provides support for lunch.

As part of their graduate program, students obtain strong teaching experience, including weekly training in teaching when in service as a teaching assistant. There is a strong culture for graduate student mentoring of undergraduate students in the lab. This provides important opportunity for graduate students to gain experience mentoring.

Graduate students in the Department of Plant Pathology have been supported by an outstanding graduate coordinator. This is a critical position to the success of the program. The student handbook is comprehensive and it is clear from students that they use it. The graduate students are active in outreach, and receive significant support for the department. The department provides financial support for students, including bridge funding, as well as funding their initiatives and activities.

Weaknesses
As detailed above, our assessment of the Plant Pathology graduate programs are that they are outstanding. Nevertheless, we did identify a few areas of weakness. It is clear that the building facilities of Russell Labs are substandard. Although it is difficult to determine, it is a concern that this is impacting the recruitment of top graduate students. For example, several students mentioned that they decided to come to be in the Department of Plant Pathology at UW despite the conditions of the facilities. Another challenge is that of the graduate stipend. It is currently $24,000 per year for both M.S. and Ph.D. students. Although this has recently been
increased, it is still $3,000 to 5,000 per year lower than other similar graduate programs at UW and at peer institutions. Another area of concern is the course load for students. There are a significant number of required courses in the Ph.D. program. Further, students often have to take pre-requisite courses that they did not have prior to enrollment, particularly since many of the students did not major in Plant Pathology as undergraduates. Finally, there has been a reduction in applicants to the graduate program. Despite career opportunities, recruitment of students for the M.S. program has not been a high-priority, which is attributed to exclusion of these students from University Fellowships.

Opportunities
Replacement of the student services coordinator with someone who will provide the same level of support for the graduate (and undergraduate) students is a high priority. We recommend that the department further increase their RA stipends, especially for doctoral students. For the Ph.D. program, graduate students are typically taking their prelim exam after their third year. The department should consider adjusting this so that students do their preliminary exam closer to the end of their second year. This would decrease the length of time to graduation as well as provide an opportunity to obtain more faculty feed-back on their project earlier in their research program. In our discussion with current Plant Pathology students, regarding earlier prelims, they expressed concerns due to the current expectations for significant preliminary data being included. Therefore, associated with changes in the timing of prelim should be accompanied with a focus more on research plans, as opposed to accomplishments. A reduction in course requirements should be considered, which would allow more opportunity for students to take relevant offerings in emerging areas, such as bioinformatics.

Plant Pathology Undergraduate Program (B.S.)

How well is the department fulfilling its mission of undergraduate teaching and learning?
Our assessment is that the Department of Plant Pathology is fulfilling its mission of undergraduate teaching and learning in an exemplary manner. Two tracks are offered in the plant pathology B.S. major, meeting diverse interests of students. The plant-microbe biology track is geared toward students who desire a broad education in the basic sciences and/or plan to pursue a graduate or professional degree. The plant health and industry track serves students who intend to enter the workforce upon earning their B.S. degree. Through our meetings with the department chair, faculty, curriculum committee, instructional academic staff, and students, it is clear that the department has a very strong teaching culture and is dedicated to and places a priority on high quality teaching and student learning. This is evidenced in part by the department’s history of directing resources and personnel toward their academic programs. Specifically, the department made the decision many years ago to redirect state 101 dollars from individual faculty programs to the department’s teaching programs, and to be among the first departments to hire a full-time student services coordinator. The department continues to prioritize support for academic programs, using non-faculty 101 dollars to support two instructional specialists (1.5 FTE) and additional instructional support staff.
Are there specific areas of the B.S. program that are exemplary?

We think that the department’s B.S. program is exemplary as noted above. Standout areas include excellence in advising, a vibrant first-year interest group (FIG) experience in global food security, ample opportunities for hands-on learning, emphasis on independent research and capstone research experiences, in addition to numerous approaches and opportunities for career and graduation school preparation. Further, it is evident to us that the faculty embraces modern approaches to teaching such as blending, developing and delivering on-line courses, and FIGs. It was our assessment that the plant pathology FIG has played a key role in increasing the number of undergraduate students enrolled in the major and has fostered a strong learning community among new students. An additional benefit of the FIG is its help in facilitating success of underrepresented students. Related to this effort, the department’s general course PL PATH 123 (Plants, Parasites, and People) offers a weekly study skills section, which is, in part, designed to help at risk students close the achievement gap.

Independent undergraduate research and the department’s capstone research experience are viewed by students, staff, and faculty as highlights of the undergraduate learning experience. All students are strongly encouraged to participate in research throughout their undergraduate career and are required to participate in a research or diagnostic clinic opportunity for their degree. Through these experiences students are able to learn more about research, the broader field of plant pathology, and graduate school.

Are there a sufficient number of students in the B.S. program and are the students of high caliber?

The number of undergraduate students enrolled in the plant pathology B.S. program is low relative to some departments in CALS, averaging 25 students per year from 2013 to 2017. However, this number is in the mid-range of average annual enrollment in several peer departments over the same time period: 12 students in entomology, 12 students in soil science, 31 students in horticulture, and 36 students in agronomy. Nevertheless, the number of B.S. degrees granted in plant pathology is low, averaging seven degree’s per year from 2012 to 2016. This number appears to be insufficient to meet employment and graduate school demand, but at the same time, the high level of placement of plant pathology graduates suggests that these students are of high caliber. Additionally, it is important to note that these students play a critical role in the department’s mission and support of graduate student and faculty research. With teaching budget allocations increasingly tied to course enrollment, the department clearly recognizes the need to increase undergraduate enrollment, and is exploring the possibility of new courses, including summer courses, and strategies to increase enrollment in existing courses.

Is B.S. student advising functioning well?

It is the review committee’s assessment that advising is a strength of the B.S. program. Both faculty and staff advise undergraduate students. Faculty advisors are typically assigned one to three students. Additionally, all students are advised by the senior student services coordinator. This two-advisor, team-based approach appears to work well. Faculty advisors
provide guidance on content specific to the field of plant pathology and related fields, whereas
the staff advisor provides more detailed information on campus requirements, referrals to
campus services, career advising, and 4-year plans. Every semester students have an enrollment
hold placed on their record and can only have the hold removed after they meet with one of
their two assigned advisors.

Students are strongly encouraged to participate in exit interviews with the student services
coordinator and/or department chair. One metric indicative of successful advising is time to
degree which is typically less for the B.S. program in plant pathology (3.89 years from 2012 to
2016) than for many other CALS majors. The review committee also found it notable that the
department, in collaboration with The Department of Entomology, offers a 1-credit course in
career and graduate school preparation every spring semester.

Are student learning goals clear? How is learning evaluated and used for program
improvement?
We found that the six undergraduate student learning goals are clear. The curricula
requirements to meet these goals are clearly displayed on the department’s web page and are
complemented with 4-year roadmaps and other supporting information provided by advisors.

The department evaluates their B.S. degree annually using two instruments: a retrospective
review of an independent student project in PL PATH 300 (Introduction to Plant Pathology), and
a retrospective review of final documents (including papers, posters, or presentations) from
undergraduate capstone projects. The PL PATH 300 project is used as a direct assessment of
three of the six learning goals. This assignment is evaluated annually. The review of capstone
projects is used as a direct assessment for five learning goals. Additionally, capstone agreement
forms, which are filled out by the student and faculty mentor for the capstone project prior to
the start of the project, are used as an indirect assessment of a learning goal. Capstone projects
are assessed on a 3-year cycle. Preliminary assessment data suggests that the majority of plant
pathology undergraduate majors are meeting the program’s learning objectives.

Are there areas of the B.S. program that need improvement?
As noted above, many courses required of undergraduate (and graduate) students in plant
pathology have relatively low enrollment. Although these courses are essential to plant
pathology academic programs, they do not translate into large CFI used to allocate CALS
teaching resources. One factor that likely contributes to low course enrollment (and CFI) is that
many plant pathology courses have laboratory components with capped enrollment. One
solution to increase enrollment would be to increase allocation of teaching resources, thus
enabling the department to increase enrollment caps and/or offer more laboratory sections
with its courses. Another solution would be to decouple lecture and laboratory components of
courses and offer for credit separately. This would potentially increase enrollment in lecture
courses and maintain enrollment in laboratory courses. However, such a change would require
careful assessment to determine potential impacts on quality of the learning experience and
achievement of learning outcomes. Concurrently, the department could revive the significant
role that it once had in advising students in the biology major and actively recruit students to
the plant pathology major. Faculty, instructional staff, and students conveyed to the review committee that there was little if any recognition of the plant pathology major by students in the biology major. This represents an important pool of potential students for recruitment, particularly if employment and graduate school opportunities are aggressively conveyed to those students.

The department was transparent about the relatively high percentage of undergraduate students on probation. In the past 6 years, 15 students were on probation, seven who were dropped (for either one semester or one year), and one that was dismissed. However, we found that this situation was due in large part to the number of students who enter the program via on-campus transfer or declaration. Some of these students had struggled in other majors and had come to the plant pathology major already on probation. It is our assessment that the department has been very attentive to these students and has an established, effective procedure to address probation issues.

Are there challenges facing the B.S. Program?
Termination of the plant pathology B.S. program is a major challenge. Even though the department has proposed the development of and participation in a new agricultural ecosystems collaborative (consisting of entomology, horticulture, soil science, and yet to be determined agronomy) in the context of the CALS redesign effort that would replace the plant pathology undergraduate major, the committee perceived very strong push back from the faculty and its dissatisfaction with this potential outcome. A common sentiment conveyed to the review committee was that closure of the undergraduate major was not warranted at this time. Rather, a viable agricultural ecosystems major should first be developed, implemented, and evaluated before the department should consider shuttering its major. Importantly, the department thinks the closure of the undergraduate major will likely negatively impact the plant pathology graduate programs because of decreased student enrollment in several classes also are taken by graduate students, reduced visibility of the discipline of plant pathology among undergraduates, and reduced opportunity for graduate students to mentor undergraduate students. Further, the department perceives that a new agricultural ecosystems major may suit undergraduate students interested in plant production and who view the B.S. as a terminal degree, but may not be appropriate for those students interested in plant-microbe interactions or for those who aspire to graduate or professional school. In short, the department perceives few if any benefits associated with the plan to eliminate the plant pathology B.S. major as a component of the CALS redesign.
We have a few corrections to the committee's report:

p. 2, second to last paragraph, it should read: ...and receive significant funds from the department (rather than for the department)

p. 3, 4th line under Opportunities, it should read: ...graduate students are typically taking their prelim exam during their third year (rather than after their third year).

p. 3, last sentence, change to: ...using non-faculty 101 dollars to support two instructional specialists (1.5 FTE) and 0.1 FTE in additional staff (Brian Hudelson, Director of the Plant Disease Diagnostics Clinic).

Not a correction, but an observation: there is no information in the report on our PhD minor. Perhaps this is because of the small numbers, but we were required to include information in our self-study.
May 1, 2018

Professor Cameron Currie, Bacteriology  
Professor Carrie Laboski, Soil Science (Chair)  
Professor Nicole Perna, Genetics (GFEC Representative)  
Professor Dave Stoltenberg, Agronomy  

Sent electronically

Dear Professors Currie, Laboski, Perna, and Stoltenberg:

Thank you for agreeing to serve on the committee reviewing the academic programs in the department of Horticulture. The committee is chaired by Carrie Laboski. The programs due for review are as follows:

- Plant Pathology, BS  
- Plant Pathology, MS  
- Plant Pathology, PhD  
- Plant Pathology, Doctoral Minor

We expect your work to take place over the next few months and would appreciate receiving your report by November 1, 2018. We will forward your final report to the department chair to review for errors of fact and then to the CALS and University Academic Planning Councils as well as the Graduate Faculty Executive Committee.

The self-study document prepared by the program will serve as your main reference for organizing the review. The committee should work with the department chair, Patricia McManus, to coordinate meetings with the program’s faculty, staff, and students and to tour the facilities, if appropriate.

The chair of the committee will be responsible for scheduling and convening committee meetings, setting the meeting agendas, making specific assignments to committee members, getting feedback from the committee, overseeing the writing process, and submitting the final report to academicaffairs@cals.wisc.edu with attention to Nikki Bollig and Dick Straub.

The review committee final report should provide a summary of the programs’ strengths and challenges as well as recommendations for improvement or focused attention.

The most important question for the committee to consider is the most general: how well is the department fulfilling its mission of teaching and learning? Are there areas that are exemplary? Are there areas that need improvement? If the latter, do you have particular recommendations for steps the department should take to strengthen its performance? Paying attention to the following particular issues may help you address the more general questions:

1. How well are the academic programs functioning? Are there a sufficient number of students in each program and are the students of high caliber? Is student advising functioning well?
2. Should the department be taking any steps to improve the quality of its educational programs? Are student learning goals clear? How is learning evaluated and used for program improvement? How well does the
learning assessment plan measure student achievement of learning goals? Are the curricula clear and appropriately designed to achieve the learning goals?

While the focus for the review is the academic programs, it may be useful to briefly address the following questions that provide context surrounding the functioning of the academic programs:

3. What is the standing of the department within its disciplinary base and within the University of Wisconsin-Madison? Is it in need of strengthening? If so, what can be done to improve its standing?
4. How effectively does the department satisfy its outreach and research missions and are these recognized strengths of the department? Are resources deployed in a way that satisfies its stakeholders?
5. Is the climate in the department one that encourages productivity and feelings of inclusiveness by staff, students, and faculty?
6. Are there issues concerning the department's functions or interactions within CALS that should be considered as part of the College’s ongoing strategic planning process?

Please do not hesitate to contact me or Nikki Bollig, Assistant Dean for Academic Programs and Planning, if you have any questions as you proceed. We will represent the dean’s office to assist you in the review process.

Thank you again for taking time on this important task. You are performing a valuable service to the department and CALS, and we all appreciate your efforts. I look forward to seeing your final report.

Sincerely,

Richard Straub
Senior Associate Dean

cc: Nikki Bollig
Sarah Kuba
Patricia McManus
Jocelyn Milner
Parmesh Ramanathan
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A. Response to previous program review recommendations

The most recent program review for the Department of Plant Pathology took place during the 2010-11 academic year (see Appendix A for full committee report). The committee’s recommendations from that review were summarized in four areas: research/department standing; teaching; extension/outreach; and climate. The recommendations and our response/action taken follow.

Research and department standing

**Recommendations:** In the near term, the review committee encourages Plant Pathology to continue aggressively pursuing at least one mycologist FTE (preferably two), despite the University’s current financial woes. A joint hire (split appointment) with the Botany Department appears to be one of the most potentially promising strategies. As a means of further enhancing the position’s appeal to CALS and L&S administration, the Department(s) may want to consider committing a portion of the FTE (e.g., 10%) to instructional efforts in introductory biology (e.g., Zool 151, 152). The committee also feels that the Department would benefit from a serious discussion with USDA-ARS and CALS administration about the future of ARS scientist positions in Plant Pathology, with careful consideration of alternative models that appear to have worked well at peer research universities.

**Response:** In summer of 2012 we were granted permission to recruit a mycologist. Assistant Professor Mehdi Kabbage was selected from among an extraordinarily strong pool of candidates and joined us in March 2013. One of our faculty, Professor Doug Rouse, has long been engaged in BIOLOGY 151/152. Given the important role that he has played in Introductory Biology and the strong emphasis on CFI in campus and CALS budget allocation, we are eager to remain engaged in BIOLOGY 151/152 after Prof. Rouse retires. We also would welcome discussion on reestablishing a USDA-ARS faculty presence in our department.

Teaching

**Recommendations:** The review committee hopes that the faculty will continue its efforts to optimize graduate course offerings with an emphasis on enhanced breadth and field experience for both MS and PhD students. We also support the department’s evolving vision to implement a new professional MS degree, as a way to both serve state needs and acquire additional tuition resources. Whenever possible (and permissible), the Department should provide interested PhD students and post-docs with a full-fledged, “marketable” teaching experience, such as the design/revamp and implementation of a set of course lectures or alternative learning activities. The Department should also consider a collaborative effort with F&WE and Entomology (and/or other departments) to train graduate students in research thesis, manuscript and grant proposal writing. With regard to the undergraduate program, the committee believes that, regardless of potential near-term improvements in student enrollment, CALS administration should provide the Department with a clearer understanding of the consequences surrounding possible elimination of its undergraduate major.

**Response:** Since the last review, we added two new courses to add breadth and to make best use of faculty and staff expertise. First, Plant Disease Diagnostics Clinic Director Dr. Brian Hudelson will offer PL PATH 355, *Plant Disease Diagnostic Practicum* (1 credit) for the first time in summer of 2018, after offering it as a Special Topics course every summer since 2014. While not required for undergraduate or graduate students, PL PATH 355 will provide hands-on, practical experience with the major groups of plant pathogens. Many students have taken advantage of the Special Topics offering and report that it
was an extremely valuable opportunity. We expect that PL PATH 355 will provide breadth that was the intended goal of PL PATH 558, *Biology of Plant Pathogens*, a lecture/lab course that was discontinued in 2015. The department is committed to offering PL PATH 355, although our efforts are being questioned by CALS administration since this relatively low-revenue generating course is not a good fit for the Summer Term budget model. The second new course is PL PATH 315, *Plant Microbiomes*, which was first taught by Professor Rick Lankau as PL PATH 375 in Spring 2017 and will be taught every spring. This is the only microbiome course on campus that includes a lab. It provides a unique opportunity for students to conduct research on the role of the microbiome in plant health.

Since the last review we have not seriously considered developing a professional MS degree. While the MS in Plant Pathology is a highly marketable degree, the current campus expectation of professional MS degree programs is to enroll at least 100 students, a number that the plant pest management market likely could not sustain. Instead, we are discussing ways to increase enrollment in our regular, research thesis-based MS program. Our MS recipients land excellent jobs, sometimes months before they graduate.

In 2012, Murray Clayton (Plant Pathology) and Claudio Gratton (Entomology) team-taught a special topics course on scientific writing, in fulfillment of an NSF IGERT grant led by Volker Radeloff (Forest and Wildlife Ecology). The course was rated highly; however, enrollment was limited to students in the IGERT program. If Plant Pathology, Entomology, and Forest & Wildlife Ecology partner in a new CALS division, this might spur further collaboration on courses of mutual interest to our graduate programs. For example, Caitlyn Allen is proposing a joint course on research and workplace ethics, as this increasingly is required for students supported by federal grants.

Results of the Graduate School Exit survey (Fall 2012 through Summer 2017) indicate that 94% of Plant Pathology graduate students received training in instructional methods compared to 50% for all biological sciences. This is because our instructional faculty and staff have embraced modern approaches to teaching and require it of our students when they serve as TAs. Graduate students interested in careers in extension are provided opportunities for extension teaching and engagement.

We welcome discussion with CALS administration regarding our undergraduate major, especially as CALS undergoes reorganization. Because we teach no courses specifically to serve our major, the only costs are administrative and political. These costs, while real, must be weighed against the benefits of the major. The Plant Pathology undergraduate major, though small, is consistently more popular than the Plant Biology Option in the Biology major. It would be a disservice to students to discontinue our major without first identifying a suitable alternative.

**Extension and outreach**

**Recommendations:** *If and when the campus fiscal climate improves, the Department should consider advocating for the hire of an additional “hub” staff person committed solely to administrative/clerical support of the extension faculty and staff in Plant Pathology, F&WE and Entomology. The committee also suggests that the Department’s visibility and stature in WI and the Midwest could be further enhanced if strategies were identified for investing in growth of the Plant Disease Diagnostics Clinic, so that its capacity and capabilities are on par with those of other prominent labs around the nation. On this same front, the committee commends Department leadership for its recent efforts to create a firmer funding base for the Diagnostician’s salary, and hopes that additional progress can be made.*
Additionally, the Department may be able to address some of the extension faculty’s resource limitations by encouraging and facilitating submission of AFRI grant proposals, which typically must include a significant extension component.

Response: Since it was formed in 2008, the number of Russell Labs Administrative Service Center (aka, RL hub) support staff has decreased from 19 to 15 FTEs, while the programs and activities served by the staff have remained approximately constant. The three Russell Labs chairs and the faculty hub director have strongly advocated for additional support (not specifically for extension), given that the RL hub serves more people than any other administrative unit in CALS, and the programs in Russell Labs have diverse missions that encompass an extremely broad range of research, teaching, and outreach.

The department has been supportive of the Plant Disease Diagnostics Clinic and its director to the extent that resources permit. In 2015, the clinic director, Dr. Brian Hudelson, was reclassified as a Faculty Associate, in recognition of his significant role in teaching and advising students, as well as ongoing excellence in clinic operations and outreach to diverse audiences. Extension faculty aggressively seek extramural funds, and their programs are among the best funded in the department.

Climate

Recommendations: The committee recommends continued vigilance on the part of leadership regarding opportunities to enhance staff employment conditions, such as fostering rolling horizon appointments, detecting and modifying academic staff overloads, and ensuring that instructors have appointments consistent with their listed percentages in the instructional budget. Additionally, the Department should continue to encourage and support efforts on part of hub administration to establish and maintain effective lines of communication with faculty, staff and students, and bring them all up to speed on new procedures, etc. The committee also suggests that leadership further explore the potential use of safety concerns (such as poor air quality resulting from inadequate HVAC) to bring about much-needed renovation in the building. Perhaps, as a basis for this exploration, the Space, Equipment Safety Committee could administer a comprehensive survey of faculty, staff and students to identify departmental safety issues.

Response: Faculty and two voting academic staff representatives annually review and approve the “teaching grid” that lays out teaching expectations for the next three years for all instructional faculty and our instructional staff (1.6 staff FTE spread over three people). Since the last department review, the RL hub underwent its own review. Several recommended changes have been implemented, including the development of on-line Knowledge Bases to make administrative procedures clear.

Regarding safety concerns, the department chair has raised concerns several times with CALS administration about the crumbling infrastructure of Russell Labs that ranges from embarrassing (e.g., toilets out of order the day we are trying to recruit graduate students), to inconvenient (e.g., having to traverse several flights to find a working autoclave and then wait in line to use it), to dangerous (malfunctioning elevators). The response is that there are no state funds to maintain buildings. However, we are taking advantage of one-time funds to upgrade the Russell Labs air handling system for purposes of energy efficacy, and our expectation is that the new system will improve safety as well. We are bearing considerable inconvenience during these upgrades, which are proceeding much more slowly than promised, but we see this as a rare opportunity to improve our physical climate which impacts worker health and overall workplace climate.
B. Overview of the program

Mission
In January of 2018, the Department of Plant Pathology unanimously approved an updated statement of mission and purpose:

*Our vision is to continue as a world leader in research, teaching, and extension involving plant health, while serving the changing needs of society, the environment, and the University.*

*Our collective success depends upon creating and maintaining a supportive and collegial environment.*

*Our effectiveness as a Department depends on recruiting diverse people and accepting and using their work styles, expertise, skills, personalities, and outlooks.*

*Our ability to solve multifaceted problems requires contributions from, and mutual respect for our collective activities in research, teaching, and extension/outreach.*

*Our ability to establish and to preserve excellence at the forefront of our changing field depends on innovation, creativity, risk-taking, collaboration, and growth.*

*Our research goal is to understand microbes, plants, and their interactions in the environment in order to provide effective approaches by which plant diseases can be controlled and beneficial interactions can be maximized.*

*Our instructional goals are to offer superior education in plant pathology and plant-microbe interactions and to broaden the perspectives of plant and microbial biology in undergraduate, graduate, and public education.*

*Our extension and outreach goals are to integrate and extend knowledge and provide services that foster an understanding of plant diseases and that enhance plant health, food safety, profitable and sustainable agriculture and other plant production industries, and stewardship of the environment.*

This mission statement serves as a collection of guiding principles for the department’s planning and operations, and it fits well with priorities established by the College of Agricultural and Life Sciences. Our mission provides the foundation for all of our educational, research, and outreach activities. We turn to our mission statement in directing these activities toward the mission of UW-Madison and the needs of society. We also strive to align with our funding partners’ goals for serving the public and advancing effective and equitable improvements to social welfare.

Relationship to other departments and programs
The UW-Madison Department of Plant Pathology is the only home for the Plant Pathology academic programs under review, and ours is the only department of its kind within the state of Wisconsin. However, there are a number of academic programs and units at UW-Madison with which we collaborate and share resources.
We welcome faculty from other UW-Madison departments to be affiliate faculty specifically for the purpose of training Plant Pathology graduate students (see Appendix B for list of Plant Pathology faculty and trainers and their CVs), and most students’ thesis committees include at least one person from outside the department. Likewise, many Plant Pathology faculty are affiliates in other UW-Madison departments and advise students in their graduate programs; these include Microbiology Doctoral Training Program, Cellular and Molecular Microbiology, Plant Breeding and Plant Genetics, Genetics, Agroecology, Entomology, and Molecular Biology Training Grant. Most of our courses are cross-listed with other departments, and some of our faculty have formal teaching assignments in other departments. Professors Ahlquist and Handelsman have formal, budgeted appointments with other units. We collaborate efficiently with Entomology and Forest & Wildlife Ecology for administrative services through the Russell Labs Administrative Services Center.

The Department of Plant Pathology has a history of directing resources and personnel toward our academic programs. In the 1990s, the faculty decided to divert state 101 dollars from individual faculty research programs to the department-wide teaching and graduate training programs. In 1997, ours was among the first departments to hire a full-time student services coordinator, a position now held by Sara Rodock and shared with Entomology and Forest & Wildlife Ecology. It was also in the late 1990s that we used 101 funds previously provided to individual faculty to launch our PhD rotational program. We have converted underutilized spaces into a classroom (295 RL) and a reading room (584 RL) that is a popular gathering space for both academic and social activities. In times of dwindling state support, Plant Pathology has prioritized support for academic programs, with all available non-faculty 101 dollars supporting two instructional specialists (1.5 FTE), part of a faculty associate (0.1 FTE), and the PhD rotational program. In recent years, new faculty with instructional appointments have applied for and been accepted into the Madison Teaching and Learning Excellence program where they acquire and practice modern teaching methods with their counterparts from across campus.

**Governance and succession planning**

The department is administered by the Executive Committee and by the Department, which as a governing body consists of all faculty plus two academic staff representatives with voting rights. The Plant Pathology Graduate Student Colloquium sends a representative to department meetings, and graduate students have a representative on major committees, including faculty search/screen committees. Student representatives do not have a formal vote, but they are encouraged to speak up at meetings and often take part in straw ballots ahead of official, binding votes. The responsibilities of the Chair, the Executive Committee, and the Department are defined by Faculty Policies & Procedures (FPP). Roughly speaking, the Executive Committee is responsible for all personnel actions, while the departmental governing body is responsible for curricular, program, space, and workplace climate matters.

For at least the last few instances, the department chair has been chosen through a fairly elaborate process. Specifically, when the outgoing chair announces that he/she will step down, he/she appoints an ad hoc succession committee. Committee members survey the faculty and staff, asking: “Do you consider yourself a candidate for chair? Whom do you consider to be a candidate for chair?” The results are summarized and reported to the department, and sometimes an informal vote is taken. This process does not obviate the need for the formal process stipulated by FPP, but it does allow the department and the outgoing chair sufficient time to make a smooth transition.
Committees
The department has several standing committees. All committees have faculty majorities but may include one or more academic staff and graduate student representatives. The graduate students are responsible for choosing their representatives for the various committees. Each summer, faculty are asked to indicate their preferences for committee service, and appointments are made by the chair. Ad hoc committees for special purposes are usually appointed by the chair in consultation with other faculty. The chair also appoints mentoring committees for assistant professors in consultation with the assistant professor and potential committee members. Often these committees include a faculty member from outside the department whose scholarly expertise aligns with that of the assistant professor.

In the past several years, it has been the practice to appoint first year assistant professors to either the Curriculum Committee or the Graduate Affairs (aka, graduate admissions) committee, as these committees provide the best opportunities to learn about and influence our degree programs.

Current degree/major requirements
Bachelor of Science
All students completing the Plant Pathology major must complete both the University General Education requirements and the CALS BS degree requirements. Listed below are the specific requirements for the two tracks in the Plant Pathology major. The Plant-Microbe Biology track is geared toward students who desire a broad education in the basic sciences and/or plan to pursue a graduate or professional degree. The Plant Health and Industry track serves students who intend to enter the workforce upon earning their BS degree.

<table>
<thead>
<tr>
<th>Track</th>
<th>Plant-Microbe Biology</th>
<th>Plant Health &amp; Industry</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mathematics</strong></td>
<td>- algebra and trig: MATH 112/113, 114, or 171 - calculus: MATH 211, 217, or 221 - additional calculus or statistics: MATH 222, STAT 301, or 371</td>
<td>- algebra and trig: MATH 112/113, 114, or 171 - or students have the option of completing MATH 112 and another math course above 200, a statistics course or computer science</td>
</tr>
<tr>
<td><strong>Chemistry</strong></td>
<td>- general chemistry: CHEM 103/104 or 109 - organic chemistry: CHEM 341/342 or 343/344/345</td>
<td>- general chemistry: CHEM 103/104 or 109</td>
</tr>
<tr>
<td><strong>Biology</strong></td>
<td>- introductory biology: BIOLOGY 151/152, ZOOLOGY 101/102 &amp; BOTANY 130, or BIOCORE 381/382/383/384 - genetics and microbiology: MICRO 303/304 &amp; GENETICS 466 or two of three from BIOCORE 485, 486, and/or 587</td>
<td>- introductory biology: BIOLOGY 151/152, ZOOLOGY 101/102 &amp; BOTANY 130, or BIOCORE 381/382/383/384 - genetics: GENETICS 466</td>
</tr>
<tr>
<td><strong>Physics</strong></td>
<td>- general physics: PHYSICS 103/104, 201/202, or 207/208</td>
<td>- general physics: PHYSICS 103, 201 or 207</td>
</tr>
<tr>
<td><strong>Plant Pathology Core</strong></td>
<td>- introductory plant pathology: PL PATH 300 - mycology: PL PATH/BOTANY 332 - plant physiology: BOTANY 500 - advanced plant pathology: another PL PATH course above 300 (not including special topics or independent study)</td>
<td>- introductory plant pathology: PL PATH 300 - mycology: PL PATH/BOTANY 332 - advanced plant biology: PL PATH 559 or BOTANY 500 - advanced plant pathology: another PL PATH course above 300 (not including special topics or independent study)</td>
</tr>
<tr>
<td><strong>Track Electives</strong></td>
<td>- 5 credits from BIOCHEM 501, BOTANY 300, 400 or 401, 460, ENTOM 302 or any PL PATH course above 300 not used elsewhere</td>
<td>- 24 credits of Plant health and industry electives from departments such as ARONOMY, BOTANY, ENTOM, F&amp;W ECOL, HORT, MICRO, SOIL SCI, and/or PL PATH - 6 credits of business/economics electives</td>
</tr>
<tr>
<td><strong>Capstone</strong></td>
<td>- independent study/research: PL PATH 590</td>
<td>- independent study/research: PL PATH 590</td>
</tr>
</tbody>
</table>
Master of Science

Note that these are the requirements, verbatim, that have been submitted for the 2018/2019 Guide update.

Minimum Graduate Degree Credit Requirement: 30 credits

Minimum Graduate Residence Credit Requirement: 16 credits

Minimum Graduate Coursework (50%) Requirement: At least 50% of credits applied toward the graduate degree credit requirement must be in graduate-level coursework; courses with the Graduate Level Coursework attribute are identified and searchable in the university's Course Guide.

Prior Coursework Requirements: Graduate Work from Other Institutions: With MS committee approval and Graduate Affairs Committee approval, students are allowed to count no more than 14 credits of graduate coursework from other institutions. Coursework earned five or more years prior to admission to a master's degree is not allowed to satisfy requirements.

Prior Coursework Requirements: UW–Madison Undergraduate: Students may count up to 7 credits of coursework numbered 300 level or above upon approval of the MS committee and the Graduate Affairs Committee. Coursework earned five or more years prior to admission to a master's degree is not allowed to satisfy requirements.

Prior Coursework Requirements: UW–Madison University Special: With MS committee approval and Graduate Affairs Committee approval, students are allowed to count no more than 15 credits of coursework numbered 300 or above taken as a UW–Madison special student. Coursework earned five or more years prior to admission to a master’s degree is not allowed to satisfy requirements.

Credits per Term Allowed: 15 credits

Program-Specific Courses Required: Additional information regarding program-specific courses can be found on the department’s handbook and forms webpage (http://plantpath.wisc.edu/graduate-handbook).

Student must complete at least 9 credits of plant pathology, including PL PATH 300 Introduction to Plant Pathology (or equivalent), at least 1 credit of PL PATH 875 Special Topics, and only 1 credit of PL PATH 923 Seminar. The remaining 21 credits may include any other course work taken as a graduate student at UW-Madison numbered 300-level or above and taken for credit. Additionally, up to 15 credits of PL PATH 990 Research may count for these remaining credits.

Overall Graduate GPA Requirement: 3.00

Other Grade Requirements: The Graduate School requires an average grade of B or better in all coursework (300 or above, not including research credits) taken as a graduate student unless conditions for probationary status require higher grades. Grades of Incomplete are considered to be unsatisfactory if they are not removed during the next enrolled semester.

Probation Policy: The Graduate School regularly reviews the record of any student who earned grades of BC, C, D, F, or Incomplete in a graduate course (300 or above), or grade of U in research credits. This review could result in academic probation with a hold on future enrollment or in being suspended from the Graduate School.
Advisor / Committee: Every graduate student is required to have an advisor. To ensure that students are making satisfactory progress toward a degree, the Graduate School expects them to meet with their advisor on a regular basis.

An advisor generally serves as the thesis advisor. In many cases, an advisor is assigned to incoming students. Students can be suspended from the Graduate School if they do not have an advisor. An advisor is a faculty member, or sometimes a committee, from the major department responsible for providing advice regarding graduate studies.

A committee often accomplishes advising for the students in the early stages of their studies.

Assessment and Examinations: Plant Pathology MS students must complete their coursework certification paperwork, present annually, and prepare, publicly present, and defend a thesis.

Time Constraints: Master’s degree students who have been absent for five or more consecutive years lose all credits that they have earned before their absence. Individual programs may count the coursework students completed prior to their absence for meeting program requirements; that coursework may not count toward Graduate School credit requirements.

Language Requirements: Contact the program for information on any language requirements.

Doctoral
Note that these are the requirements, verbatim, that have been submitted for the 2018/2019 Guide update.

Minimum Graduate Degree Credit Requirement: 51 credits

Minimum Graduate Residence Credit Requirement: 32 credits

Minimum Graduate Coursework (50%) Requirement: At least 50% of credits applied toward the graduate degree credit requirement must be in graduate-level coursework; courses with the Graduate Level Coursework attribute are identified and searchable in the university's Course Guide.

Prior Coursework Requirements: Graduate Work from Other Institutions: For well-prepared advanced students, the program may accept prior graduate coursework from other institutions toward the minimum graduate degree credit and minimum graduate coursework (50%) requirement. The minimum graduate residence credit requirement can be satisfied only with courses taken as a graduate student at UW–Madison. Coursework earned ten or more years prior to admission to a doctoral degree is not allowed to satisfy requirements.

Prior Coursework Requirements: UW–Madison Undergraduate: For well-prepared advanced students, the program may decide to accept up to 7 credits numbered 300 or above completed at UW–Madison toward fulfillment of minimum degree and minor credit requirements. This work would not be allowed to count toward the 50% graduate coursework minimum unless taken at the 700 level or above. Coursework earned ten or more years prior to admission to a doctoral degree is not allowed to satisfy requirements.

Prior Coursework Requirements: UW–Madison University Special: The program may decide to accept up to 15 University Special student credits as fulfillment of the minimum graduate residence, graduate degree, or minor credit requirements on occasion as an exception (on a case-by-case basis). UW–
Madison coursework taken as a University Special student would not be allowed to count toward the 50% graduate coursework minimum unless taken at the 700 level or above. Coursework earned ten or more years prior to admission to a doctoral degree is not allowed to satisfy requirements.

Credits per Term Allowed: 15 credits

Program-Specific Courses Required: Additional information regarding program-specific courses can be found on the department's handbook and forms webpage (http://plantpath.wisc.edu/graduate-handbook).

Students must complete the foundation requirements; the expectation is that a majority of these are met through undergraduate coursework. These courses include 3 of 4 from Genetics, Plant Anatomy/Morphology, Plant Physiology, and General Ecology; 2 semesters of General Chemistry, Organic Chemistry (including a lab), and Biochemistry; 2 semester of General Physics (including electricity and light); and Introductory Calculus and Statistics.

Major requirements include the courses listed below. The remaining credits to fulfill the credit minimum are electives in consultation with the student's advisor and committee.

PL PATH 300 Introduction to Plant Pathology (4 credits)
PL PATH/BOTANY/ENTOM 505 Plant-Microbe Interactions: Molecular and Ecological Aspects (3 credits)
PL PATH 559 Diseases of Economic Plants (3 credits)
PL PATH 602 Ecology, Epidemiology and Control of Plant Diseases (3 credits)
PL PATH 799 Practicum in Plant Pathology Teaching (2 credits)
PL PATH 875 Special Topics (1 credit; taken twice)
PL PATH 923 Seminar (1 credit; taken twice)

Doctoral Minor/Breadth Requirements: Doctoral students must complete a doctoral minor.

Overall Graduate GPA Requirement: 3.00

Other Grade Requirements: The Graduate School requires an average grade of B or better in all coursework (300 or above, not including research credits) taken as a graduate student unless conditions for probationary status require higher grades. Grades of Incomplete are considered to be unsatisfactory if they are not removed during the next enrolled semester.

Probation Policy: The Graduate School regularly reviews the record of any student who earned grades of BC, C, D, F, or Incomplete in a graduate course (300 or above), or grade of U in research credits. This review could result in academic probation with a hold on future enrollment or in being suspended from the Graduate School.

Advisor: Every graduate student is required to have an advisor. An advisor is a faculty member from the major department responsible for providing advice regarding graduate studies. An advisor generally serves as the thesis advisor. In many cases, an advisor is assigned to incoming students. Students can be suspended from the Graduate School if they do not have an advisor.
To ensure that students are making satisfactory progress toward a degree, the Graduate School expects them to meet with their advisor on a regular basis.

Assessment and Examinations: Students in the Plant Pathology PhD must complete certification paperwork to outline their coursework, pass a departmental written qualifying exam, pass an oral preliminary examination, and prepare, publicly present, and defend a dissertation.

Time Constraints: Doctoral degree students who have been absent for ten or more consecutive years lose all credits that they have earned before their absence. Individual programs may count the coursework students completed prior to their absence for meeting program requirements; that coursework may not count toward Graduate School credit requirements.

A candidate for a doctoral degree who fails to take the final oral examination and deposit the dissertation within five years after passing the preliminary examination may be required to take another preliminary examination and to be admitted to candidacy a second time.

Language Requirements: Contact the program for information on any language requirements.

Doctoral Minor

Doctoral candidates in other majors seeking a doctoral minor in Plant Pathology must complete a minimum of 9 graduate-level course credits in plant pathology (a minimum of 8 at UW–Madison) including PL PATH 300, Introduction to Plant Pathology and no more than 2 credits of independent study or PL PATH 923, Seminar, while enrolled in a graduate program, and have a Plant Pathology faculty member serve as the minor professor on their research committees (oral preliminary exam committee and final exam committee).

Additional information can be found on the department's handbook and forms webpage (http://plantpath.wisc.edu/graduate-handbook).

Approved learning goals

Bachelor of Science

1. Define and explain major concepts in the biological sciences including Plant Pathology.
2. Appropriately use biological instrumentation and laboratory techniques.
3. Explain and apply the scientific method including designing and conducting experiments and testing hypotheses.
4. Recognize the relationship between structure and function at all levels: molecular, cellular, organismal, and ecological.
5. Demonstrate a style appropriate for communicating scientific results in written and oral form.
6. Integrate math, physical sciences, and technology to answer biological questions using the scientific method.

Master of Science

Knowledge and Skills

1. Demonstrate an understanding of the basic biology of microorganisms that are symbiotic with plants including fungi, bacteria, viruses, oomycetes, and nematodes.
2. Demonstrate a basic understanding of: a. the basic processes of pathogenesis, plant defense, and defense circumvention at the molecular, genetic and physiological level for each of the
major groups of plant pathogens and other plant associated microorganisms.
b. the etiology, ecology, and epidemiology of economically significant diseases caused by the major groups of plant pathogens and be able to apply the understanding from a. and/or b. above in research.

3. Conduct project related to the discipline of Plant Pathology that requires specifying a problem, designing and conducting experiments, analyzing the resulting data, and reporting results/solutions.

Professional Conduct

4. Convey scientific knowledge to fellow scientists in a variety of formats

Doctoral
Knowledge and Skills

1. Demonstrate an understanding of the basic processes of pathogenesis, plant defense, and defense circumvention at the molecular, genetic and physiological level for each of the major groups of plant pathogens and other plant associated microorganisms.

2. Demonstrate an understanding of the basic biology of microorganisms that are symbiotic with plants including fungi, bacteria, viruses, oomycetes, and nematodes.

3. Demonstrate an understanding of the etiology, ecology, and epidemiology of economically significant diseases caused by the major groups of plant pathogens.

4. Construct disease management strategies for the different groups of important plant pathogens.

5. Demonstrate excellent problem solving skills and a deep conceptual understanding of the science of Plant Pathology.

Professional Conduct

6. Convey knowledge in a variety of formats to diverse audiences including the public, students, and fellow scientists.

Doctoral Minor

There are no defined learning outcomes for the Plant Pathology Doctoral Minor at this time.

C. Program assessment and evaluation

BS degree

Summary. We evaluate our BS degree annually using two instruments: a retrospective review of an independent student project in PL PATH 300 Introduction to Plant Pathology, and a retrospective review of final documents (including papers, posters, or presentations) from undergraduate capstone projects. We use the PL PATH 300 project, which is a Wikipedia page created or edited by the student for a plant disease of their choice, as a direct assessment of three of our six learning outcomes/goals (LOs 1, 4, and 5, see Appendix C for details). This assignment is evaluated annually. We use the review of capstone projects as a direct assessment for learning goals 2, 3, 4, 5, and 6. Additionally, we use our capstone agreement forms, which are filled out by the student and faculty mentor for the capstone project prior to the start of the project, as an indirect assessment of learning goal 3, as students are required to provide a description of their experimental plan at this stage. We assess capstone projects on a 3-year cycle. For more details, see the attached BS assessment plan (Appendix C).
What has the program learned through assessment of learning outcomes? Provide key evidence. We have undergone just one year of evaluation under the new assessment program, which included a review of the PL PATH 300 class project for 8 students. We determined that 100% of students had met expectations with respect to learning goals 1 and 4, and 87.5% (7/8) had met expectations for learning goal 5. While very preliminary, these data suggest that the majority of our undergraduate majors are meeting our learning objectives.

What changes have been made as a result of assessment? Given the short duration and small sample of our assessments to date, we have not made any changes to our program as of yet. We will continue to monitor student progress toward all six LOs in the coming years and make adjustments as necessary if we detect unsatisfactory progress toward one or more LOs.

MS degree

Summary. We evaluate our MS degree every three years using three instruments, an indirect assessment based on student grades in Plant Pathology courses, an indirect assessment based on the exit interview all graduating MS students undergo with our student services coordinator and/or department chair, and finally a direct assessment of the MS thesis produced by each graduating student. Each tool is used to evaluate each learning goal. The thesis assessment requires a rubric to be completed by each member of each defending MS student’s committee. The rubrics are then evaluated retrospectively by the Plant Pathology Curriculum Committee on a three year cycle. Due to the low number of graduates from this program in any one year, annual assessments are unlikely to produce enough data to provide generalizable insights while protecting anonymity of students. See attached MS assessment plan for details on learning objectives.

What has the program learned through assessment of learning outcomes? Provide key evidence. In our initial year of assessment, we did not have sufficient samples to draw any generalizable conclusions (1 graduating MS student).

What changes have been made as a result of assessment? Given the short duration and small sample of our assessments to date, we have not made any changes to our program as of yet. We will continue to monitor student progress toward all four LOs in the coming years and make adjustments as necessary if we detect unsatisfactory progress toward one or more LOs.

PhD degree

Summary. We use three instruments to evaluate student performance on our six learning objectives for the PhD degree: 1) a retrospective review of student responses to qualifying exam questions; 2) a retrospective review of PhD committee evaluations of dissertations using a standardized rubric; and 3) a retrospective review of graduating student responses in exit interviews with our student services coordinator and/or department chair. The review of qualifying exam answers is performed by the Plant Pathology Curriculum Committee every three years, and used to evaluate performance on LOs 1-4. The review of dissertation evaluations is also performed by the Plant Pathology Curriculum Committee on a 3-year cycle (offset from the review of qualifying exams), and used to evaluate performance on LOs 5 and 6. Finally, we use student responses during their exit interview as an indirect assessment of LO 6.

What has the program learned through assessment of learning outcomes? Provide key evidence. In our initial year of assessment, we had only one graduating PhD student, so we did not assess the program this year.
What changes have been made as a result of assessment? Given the short duration and small sample of our assessments to date, we have not made any changes to our program as of yet. We will continue to monitor student progress toward all four LOs in the coming years and make adjustments as necessary if we detect unsatisfactory progress toward one or more LOs.

Emerging changes. New plant diseases are always being discovered, and formerly insignificant diseases are emerging as pathogens evolve, move across and among continents, expand their range due to climate change, or as advances in agricultural practices create conditions favorable for disease. Some emerging areas in which we conduct research and teach: determining the role of plant microbiomes in plant health, including bioinformatics to analyze large data sets; advanced pathogen diagnostics and detection, such as hyperspectral remote sensing; the role of human pathogens on produce; organic agriculture; and toxicology of fungicides used on turfgrass. Our faculty embrace modern approaches to teaching such as developing and delivering online courses, First Year Interest Groups (FiGs), Course-based Undergraduate Research Experiences (CUREs), and citizen science.

Possible opportunities for growth and improvement:

- If we are allowed to fill the vacant faculty position associated with the Wisconsin Seed Potato Certification Program, the new hire might develop an interdisciplinary Senior Capstone course based on potato seed production and distribution, entailing not just biology but regulatory and economic aspects as well. The nationally recognized WSPCP exemplifies the Wisconsin Idea, has been used to leverage millions of research dollars, and holds untapped potential for undergraduate and graduate education. There is a demand for more capstone courses.
- There is a strong market for the Plant Pathology MS degree. We see an opportunity to expand this program, perhaps with support from industries that hire our graduates. We note, however, that the Graduate School has institutional biases in their practices and metrics that favor training PhD students over MS students.
- Professors Jo Handelsman and Doug Rouse have offered the Small World Initiative, a laboratory experience in antibiotic discovery, to BIOLOGY 152 students in Fall 2017 and Spring 2018. We are planning to offer this course in summer through Plant Pathology.
- Enrollment in the Plant Biology Option of the Biology major is in the single digits. Plant Pathology might revive the significant role that it once had in advising Biology majors by actively recruiting students to study plant-microbe interactions.

We gain feedback from industry and government leaders on the success of our graduate program and future directions for the program at national and international scientific meetings, directly from our alumni working in industry and government, and through our service and outreach work in scientific societies and USDA National Institute for Food and Agriculture. We consistently hear that employers want students trained broadly in plant pathology, specifically knowledge of and hands-on experience with the four main groups of pathogens (fungi, bacteria, viruses, nematodes). We also hear that knowledge of experimental design, both in the lab and in the field, is critical.
D. Recruitment, admission, and enrollment

Admission practices

Undergraduate

Plant Pathology will admit into its BS program any student who meets the standards for admission to the college and major declaration. The majority of students who enter the Plant Pathology major do so as an on-campus transfer/declaration and are required to meet with the Senior Student Services Coordinator before being able to declare. Students are also welcome to declare the major at SOAR. In that case students either will meet with the Senior Student Services Coordinator at SOAR or shortly after the semester begins.

Post-baccalaureate

Students can be admitted either through direct admission (required for MS students, optional for PhD students) or admission to the rotational program (PhD option). All applicants are encouraged to contact potential advisors when they apply to the department (http://plantpath.wisc.edu/graduate-apply). The vast majority of students are admitted to start in the fall or summer term, and we have a January 2 application deadline. After the deadline, applicants are split into two groups: domestic (applicants currently residing in the US, Canada, and Mexico) and abroad (applicants residing outside the continent). Those in the domestic pool are reviewed by the whole department, and then the Graduate Affairs Committee decides whom to invite to campus for a recruiting weekend in February. The majority of invited students participate in the departmental recruitment weekend. Prospective students who are not able to attend this weekend may have either an individual visit or Skype/phone interviews. Promising international applicants are also invited to interview by Skype. Throughout this process applicants meet with faculty members, staff, and current students. At the end of the process the Graduate Affairs committee collects information from faculty about the candidates, including whom they would like to admit (either rotation or direct), others in the department who met with candidates, and from the candidates themselves on their preference, should they be recommended for admission. Based on this information the Graduate Affairs Committee decides to make a recommendation of admission, not admit, or hold for further information.

Students who are recommended for admission will either have an identified advisor (required for MS, optional for PhD) or be admitted for rotational PhD admission. Some PhD students are made an offer of either rotational or direct admission, depending on their preference. Students admitted to the rotational program work with the chair of the Graduate Affairs committee to identify three rotation labs; these assignments typically are made in August. The recommendation of admission is expected to include funding for the student, and the vast majority of our students are funded through research assistantships or fellowships (see Section J, Funding). Rotational students are funded by the department in the first semester and then subsequently by their advisor.

The number of students recruited is tied directly to funding available through faculty and department resources. We make a concerted effort to not over-enroll the program and have a long history of providing support for students throughout their graduate studies (see Section J, Funding).

All students are expected to participate in the Russell Labs new graduate student orientation (joint with Entomology and Forest & Wildlife Ecology) at the end of August. During this orientation we present
information on campus resources for students, have a small group discussion with current students about strategies for success in graduate school, review programmatic requirements and discuss departmental culture, and end with lunch with faculty members and students leaders. Additional optional orientation events are described in Section F, Program Community and Climate.

Plant Pathology is very attentive to the career outcomes available to our graduate students who seek both academic and non-academic career paths. We address this topic in greater depth in Section H, Career Services and Post-Graduation Outcomes.

Overall, the department feels that the strength of our applicant pool, those invited to visit, and those who matriculate, along with success that our students exhibit in their research, publications, and career outcomes, indicate that we have a strong graduate program. Our program size is appropriate for the field of Plant Pathology.

Diversity initiatives

Data in Appendix D show an upward trend in the percentage of self-identified minorities in our graduate student body. On average, Plant Pathology has a greater percentage of minority students enrolled than other graduate programs in the biological sciences in CALS and in biological sciences as a whole at UW-Madison.

The department participates in a number of pre-recruitment programs such as the NSF-Research Experience for Undergrads and Bioscience Opportunities Preview programs. Through these we hope to engage with students before the application process to get them interested in the field of plant pathology and meet with our faculty and students. While we no longer have our own REU-like program, our faculty are still active within the biological sciences REU programs.

Underrepresented minority students meet with SciMed GRS staff during recruitment. When we succeed in recruiting high caliber underrepresented students, we are frequently successful in obtaining Advanced Opportunities Fellowships through SciMed GRS. The SciMed GRS program has been instrumental in our ability to recruit and retain these students. Staff attend national level conferences such as SACNAS and MANNRS to recruit student, meet with prospective graduate students to educate them about the SciMed GRS program, and provide community and programming for students once they are here.

At the undergraduate level, the department participates in a number of activities that are designed to help underrepresented students be successful at UW-Madison. In particular, Professor Jeri Barak leads a First Year Interest Group (FIG) in global food security. A high percentage of groups within Division of Diversity, Equity & Educational Achievement (DDEEA) either require or strongly recommend that their students participate in a FIG their first semester. In general education courses such as PL PATH 123, Plants, Parasites, and People, we offer a weekly study skills section, which is, in part, designed to help at risk students close the achievement gap.

E. Advising and student support

Undergraduate

Both faculty and staff advise undergraduates in Plant Pathology. In general, faculty advisors are assigned one to three students and any remaining students are assigned to Professor Jeri Barak, the lead
undergraduate advisor. Advisors include Drs. Allen, Barak, Gevens, Hudelson, Kabbage, Koch, Lankau, McManus, and Rouse. Additionally, all students are advised by the Russell Labs Senior Student Services Coordinator, Sara Rodock.

Students declare the major either at Student Orientation, Advising, and Registration (SOAR) or once they are on campus. Students who declare at SOAR are first assigned to the Senior Student Services Coordinator and later have a faculty advisor assigned. Students who declare when on campus are required to meet with the Senior Student Services Coordinator and are assigned a faculty advisor after they declare. Students are able to request a change in faculty advisor through the Senior Student Services Coordinator, though this happens very rarely.

Every semester students have an enrollment hold placed on their record and can only have the hold removed after they meet with one of their two assigned advisors. Students are encouraged to meet with both advisors each term.

Serving as a faculty advisor is voluntary, and all new advisors are expected to work with the Senior Student Services Coordinator to learn the curriculum and tools. All advisors are provided with a copy of the Plant Pathology Advising Guide (https://kb.wisc.edu/russell/internal/page.php?id=55387). This document is updated every two years and is maintained on the Russell Labs Knowledge Base. Additional information regarding specific course offerings, changes in curriculum, etc. are sent via email to advisors before enrollment for the next term begins.

Faculty advisors also receive training in tools such as the Advising Gateway, the Degree Audit Reporting System (DARS), and the Advisor Notes System (ANS). Our Senior Student Services Coordinator, Sara Rodock, is one of two departmental trainers on campus for the Advisor Notes System, so she is able to provide training to our faculty for this tool. All advisors in the department are asked to document their significant interactions with students using the Advisor Notes System. In the past few years Ms. Rodock has provided group training for faculty on Solution Focused Brief Therapy to help advisors demonstrate empathy during difficult conversations. She also has worked one-one-one with faculty advisors with specific student situations. Additionally, Ms. Rodock is active within the larger advising community and provides regular updates for our faculty when campus policies change.

The two-advisor, team-based approach works well. Faculty advisors mentor students in content specific to the field of plant pathology and biological sciences more broadly. The staff advisor provides more detailed information on campus requirements, referrals to campus services, career advising, and 4-year plans. Above and beyond the assigned advisors, students are encouraged to, and often do, find additional mentors through research labs (including faculty, staff, and graduate students) and the Plant Pathology Undergraduate Club.

The Senior Student Services Coordinator serves multiple roles within Russell Labs, all which revolve around students and curriculum. This includes advising for the Plant Pathology, Entomology, Forest Science, and Wildlife Ecology majors, coordinating the corresponding graduate programs, and assisting with curricular management for each department. We have included a brief CV for the Senior Student Services Coordinator (Appendix L).

While we do not have any direct measures of assessment for our advising, students are strongly encouraged to participate in exit interviews with the student services coordinator and/or department
chair, in which they are asked about their overall experience in the major. Comments and feedback from these are used to identify program strengths and areas in need of improvement.

Post-baccalaureate
All students in either the MS or PhD program are required to have a faculty advisor who is either tenured or tenure-track in Plant Pathology or an approved affiliate from another department. We have outlined above the admission process and how that is tied to advising.

The department provides several online resources for students. This includes the New Student Information webpage (http://plantpath.wisc.edu/graduate-welcome), which is updated before April 1 each year and includes information targeted at incoming students. We also have a handbook and forms webpage (http://plantpath.wisc.edu/graduate-handbook). The documents on this page are updated annually, usually before the start of fall semester.

When a situation arises in which a student needs to change advisors, we handle it on an individual basis. In many cases the department will help the student identify a new advisor in the program and usually assists financially to ease the transition for both the student and the new advisor.

Satisfactory progress is monitored by the advisor and thesis committee for each student. Students are required to submit their course certification paperwork before they are able to request a graduation or preliminary exam warrant. Beginning in 2017-2018 the department instituted a procedure for PhD students to monitor satisfactory progress and for faculty to monitor impacts of advising. Every year, a PhD student’s thesis committee will complete a form to summarize the student’s progress (http://www.plantpath.wisc.edu/sites/default/files/annual_progress_report.doc). We look forward to reviewing this new procedure in the coming year and will make adjustments as necessary.

F. Program community and climate

Efforts to welcome, orient, and retain new students. New MS and PhD students are required to participate in a half-day orientation led by the Student Services Coordinator in late August. The department provides support for a graduate student retreat at Kemp Station in northern Wisconsin in September. Students report that this experience helps them bond and build trust, which reduces the stress that can accompany the first semester of graduate school. New students and staff are also welcomed to the department and introduced to emeritus faculty and staff at a fall picnic.

In Fall 2017, a student-led survey (Appendix F) indicated that some students were confused about resources available to them. Graduate students requested that the department consider a mentoring system whereby new students are paired with senior students during their first year. This is under discussion, and we likely will implement it in Fall 2018. Finally, the chair of the Graduate Affairs committee, who coordinates and oversees PhD rotations, checks in with rotational students several times during their first semester here. In surveys conducted by students in Spring 2016 and Fall 2017 (Appendix F), 27 of 28 (2016) and 30 of 34 students agreed or strongly agreed with the statement, “I feel welcome in the Plant Pathology department.”

Community building among students. In addition to the events described above, several initiatives and activities that promote a sense of community within the Plant Pathology academic programs and department are described below. Many of these activities were conceived by and are led entirely by Plant Pathology graduate students.
• **Student and Postdoc Seminar (SAPS).** Several years ago, graduate students launched SAPS, an informal Friday lunchtime gathering to allow students and postdocs learn from one another and share ideas freely without faculty interference. The department provides lunch, while students are responsible for choosing topics and inviting speakers. Topics are wide ranging and often focus on professional development, networking, workplace climate, inclusion, and well-being (see Appendix H for the 2017-2018 schedule). Speakers are usually local experts, and sometimes students themselves present. For example, graduate students Katelyn Butler and Michelle Marks presented on the imposter syndrome at SAPS. It went over so well that they presented a workshop for the 2017 American Phytopathological Society meeting, which in turn prompted an invited article for the International Society for Molecular Plant-Microbe Interactions [https://www.ismpmi.org/members/Interactions/Lists/Posts/Post.aspx?ID=178](https://www.ismpmi.org/members/Interactions/Lists/Posts/Post.aspx?ID=178).

In Spring 2016, 79% of graduate students working in Plant Pathology labs, including students from other degree programs, responded that they attend SAPS weekly. Students view SAPS as a vital professional development and community building activity. From a 2015 assessment of SAPS, one student wrote: “SAPS is a fantastic program. I definitely think the Department of Plant Pathology should continue to support it. It has provided an informal educational and valuable social experience for me that I probably could not find anywhere else on campus.”

• **Plant Pathology Graduate Colloquium (PPGC).** PPGC is comprised of elected officers that oversee many student activities within the department, including social and community-building events such as the fall retreat at Kemp Station, Choctoberfest, Gradsgiving, White Elephant gift exchange, and the Pi (pie) Day bakeoff. In student-led surveys (Appendix F), 26 of 28 (Spring 2016) and 32 of 34 (Fall 2017) students agreed or strongly agreed with the statement, “I feel there is a good community among the graduate students.”

• **Outreach programs.** The Plant Pathology graduate students have developed outreach programs to promote plant pathology within Madison and nationally. For example, the program “What’s Eating My Plants?” is an interactive, action-packed demonstration of pathogen dispersal and infection. This has been presented at local elementary schools in both English and Spanish. A few years ago, the Plant Pathology band, “The DeBarytones,” performed at the American Phytopathological Society annual meeting and later released a CD, *Faster than the Speed of Blight*, which features covers of popular tunes with plant pathological lyrics. The department provided funding for travel and funds to match a grant that covered production of the CD.

• **Friday at Four.** In addition to a weekly formal departmental seminar, Plant Pathology has a long-standing informal seminar, “Friday at Four.” This is intended to be a platform for informal presentation of recent results, research problems, and emerging ideas. On a rotating basis, the event is hosted by faculty research groups, with the host lab providing refreshments.

The department chair and Graduate Affairs committee chair meet with students once per year (more often if requested) to update them on current and upcoming departmental issues and to hear student concerns and ideas. As a result of concerns raised by students in Fall 2017, the chair asked CALS administration for a description of policies and procedures related to student dismissal due to lack of satisfactory progress. In additional discussions, students requested a program on microaggressions. In
February of 2018, the department hosted Caitlyn LoMonte, a Social Justice Educator with the UW-Madison Multicultural Student Center, who conducted a workshop, *Social Justice and the Self: Exploring Identity and Microaggressions*. The workshop was well attended by faculty, students, and staff. The department also co-sponsored with Horticulture, Agronomy, and Plant Breeding/Plant Genetics, a full-day workshop on sexual harassment in Fall 2016.

In 2015, Plant Pathology invested resources to convert our under used department library into a multipurpose library/reading room/conference room/social gathering space. This space has proved hugely successful as a venue for SAPS, Friday at Four, individual and group study, and social gatherings in the department and among Russell Labs inhabitants.

**Efforts to enhance faculty/staff representation of underrepresented groups.** The Department of Plant Pathology stands out locally and nationally for its longstanding commitment to diversifying its faculty and staff. The department hired its first women faculty in the early 1980s, and by the mid 1990s, one quarter of the faculty were women. By the early 2000s this fraction had risen to one third, and for the past few years it has been about one half. We know of no other agricultural science department in the nation that can rival our strides in gender diversity. Indeed, visitors to our department, especially prospective graduate students, notice and comment favorably on our demographics. Many of our current and former faculty have acted as facilitators in WISELI workshops and/or chaired equity and diversity committees and task forces at the local and national levels dating back to the 1990s, and these experiences have influenced department culture. Thus, when we have the opportunity to recruit and hire faculty, we not only have the tools but also the mindset to conduct rigorous, inclusive searches.

**G. Degree completion and time to degree**

**Metrics and comparison**

Tables and charts related to both undergraduate and graduate time-to-degree and degree completion rates are available in Appendix G. Below is a summary of the past 5 years for undergraduate and graduate students.

### Undergraduate

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Recipients</th>
<th>Time to Degree</th>
<th>Total Enrollment</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>2</td>
<td>3.24 yrs</td>
<td>15</td>
</tr>
<tr>
<td>2013</td>
<td>4</td>
<td>4.72</td>
<td>18</td>
</tr>
<tr>
<td>2014</td>
<td>6</td>
<td>3.77</td>
<td>27</td>
</tr>
<tr>
<td>2015</td>
<td>8</td>
<td>3.67</td>
<td>34</td>
</tr>
<tr>
<td>2016</td>
<td>15</td>
<td>4.06</td>
<td>30</td>
</tr>
</tbody>
</table>

### Graduate

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Recipients</th>
<th>PhD Time to Degree</th>
<th>Total Enrollment</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>7 (1/4/2)</td>
<td>5.3 yrs</td>
<td>29</td>
</tr>
<tr>
<td>2013</td>
<td>6 (0/3/3)</td>
<td>6.4</td>
<td>28</td>
</tr>
<tr>
<td>2014</td>
<td>8 (1/4/3)</td>
<td>5.0</td>
<td>31</td>
</tr>
<tr>
<td>2015</td>
<td>8 (1/3/4)</td>
<td>5.3</td>
<td>28</td>
</tr>
<tr>
<td>2016</td>
<td>7 (2/4/1)</td>
<td>5.7</td>
<td>29</td>
</tr>
</tbody>
</table>

(Minority/non-minority/all international)
Doctoral Minor
We have had four students complete the Plant Pathology Doctoral Minor since Fall 2011. Here is a listing of those students.

<table>
<thead>
<tr>
<th>Term</th>
<th>Name</th>
<th>Major</th>
<th>Advisor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summer 2013</td>
<td>Bruan, Sarah</td>
<td>Plant Breeding and Plant Genetics</td>
<td>Jansky, Shelley</td>
</tr>
<tr>
<td>Summer 2015</td>
<td>Dalsing, Beth</td>
<td>Microbiology</td>
<td>Allen, Caitilyn</td>
</tr>
<tr>
<td>Spring 2016</td>
<td>Marburger, David</td>
<td>Agronomy</td>
<td>Conley, Shawn</td>
</tr>
<tr>
<td>Spring 2016</td>
<td>Ramirez Madera, Axel</td>
<td>Plant Breeding and Plant Genetics</td>
<td>Havey, Michael</td>
</tr>
</tbody>
</table>

Efforts to improve
Undergraduate
Plant Pathology regularly has a shorter time-to-degree than our AAU peers (Appendix G). Each student is required to have a one-on-one meeting with the Senior Student Services Coordinator to create an individual plan to graduation. This plan takes into account previous coursework completed, appropriate load and distribution of courses, additional factors (such as study abroad), and the student’s desired time-to-degree. The base 4-year plan is available in Appendix G.

Over the years we have identified bottlenecks, particularly courses required for students that are not taught by Plant Pathology. We have worked with units such as Botany to get priority enrollment in BOTANY/PL PATH 332, Fungi, and we allow our students to take the lecture-only (no lab) version of BOTANY 500, Plant Physiology.

CALS has begun a new initiative for a 3-year graduation. The department plans to participate in this initiative and has provided a 3-year plan for students in this program.

Undergraduate retention is difficult to track because students are encouraged to explore majors and change their field of study as it develops over time. Our Senior Student Services Coordinator tracks this information in house, and we can see that among students who declared but did not graduate with a BS degree in Plant Pathology, four students withdrew, dropped, or were dismissed and did not return, while nine students changed to other majors in the past 5 years.

The department is attentive to students who are placed on academic probation. In the past 6 years we have had 15 students placed on probation, seven who have been dropped (for either one semester or one year), and one who was dismissed. When students are placed on probation they are invited to meet with the Senior Student Services Coordinator multiple times during the subsequent semester. Usually this involves an initial meeting to discuss the probation policies, reasons for not being academically successful, and plans for success including transition to a new field, better study habits, and seeking professional help. Students are then asked to check in within the first few weeks to confirm if their schedule is working well and review what changes they have made. Then, before the 8-week drop deadline students are asked to report their grades for each course and review if dropping a course or withdrawing would be necessary. The goal when working with students is to help them feel supported while they take ownership of the changes necessary to be academically successful. If that is not possible, then conversations turn to taking a break so that students can deal with their issues and hopefully return to school when they are ready, rather than being dropped.
At the end of the semester, the Senior Student Services Coordinator follows up with students on their new status (good standing, continued probation, or dropped). Students in good standing and continued probation are asked to reflect on what worked well so that they continue on this path and do not oscillate on and off of probation. Dropped students are encouraged to meet with the coordinator to discuss the drop process and possibility of an appeal to the CALS Scholastic Actions and Policy Committee.

Graduate
For time-to-degree, Plant Pathology is about average to slightly higher than our CALS peers and also slightly higher than AAU peers. However, some of these numbers are not reflective of actual PhD time-to-degree, because some students complete both and MS and PhD degrees in the department. For such students, the Graduate School considers PhD time-to-degree to be the sum of time in our MS program plus time in the PhD program. Moreover, if a student takes a break, for example to work, between the MS and PhD, that time between degrees is also included in the Graduate School’s calculation of PhD time-to-degree. Overall the department does not feel that our average time-to-degree is a problem. We take each student’s situation into account to ensure that their graduate tenure is appropriate given their background, specific research project (which may require multiple field seasons), professional development goals, and family situation.

We have had a few students who have not been retained (see retention table, Appendix G). Some reasons students have left the PhD program include unexpected job opportunities, changing from PhD to MS (which usually is not discouraged or seen as a negative in our program or peer Plant Pathology programs nationwide), or a changing graduate programs (again, not discouraged or seen as a negative). We strive for a collegial and supportive environment, and that sometimes entails standing by students as they make a difficult decision to withdraw from our PhD program.

H. Career services and post-graduation outcomes
Career preparation
Plant Pathology is attentive to the career outcomes available to our undergraduate and graduate students, both in academic and non-academic career paths. Above and beyond the scientific training gained in classes and laboratories, we provide our students with many opportunities for professional development. Undergraduate students are strongly encouraged to explore career outcomes from their first day in the major. Graduate students are strongly encouraged to create an Individual Development Plan to help them identify which professional development opportunities and resources best suit their needs.

Resources
Undergraduate Student Resources
Handouts and web based resources. All students who declare the Plant Pathology major are given a career exploration handout (Appendix H) and provided information online (http://plantpath.wisc.edu/student-internships-jobs).

Faculty mentors. As mentioned above, students have both a faculty and staff advisor. Faculty advisors are encouraged to act as a mentor for students and help with internship, career, and graduate school exploration.
**Plant Pathology Undergraduate Club.** Students are strongly encouraged to participate in events hosted by the Plant Pathology Undergraduate Club ([https://win.wisc.edu/organization/ppuc](https://win.wisc.edu/organization/ppuc)) which has a very strong career and professional development mission.

**PL PATH/ENTOM 375, Career and Graduate School Prep.** Every spring semester the department offers a 1-credit course in career and graduate school preparation. Sara Rodock, the Senior Student Services Coordinator, assists in this class which is taught by either a Plant Pathology instructor, Dr. Amanda Gevens in even years, or an Entomology instructor, P.J. Liesch in odd years. The spring 2018 syllabus is available in Appendix H.

**Independent study and PL PATH 590, Capstone.** Students are strongly encouraged to participate in research throughout their undergraduate career and are required to participate in a research or diagnostic clinic opportunity for their degree. Through these experiences students are able to learn more about research, the broader field of plant pathology, and graduate school. Information regarding the requirements of each experience are available online in our agreement forms (independent study, [http://www.plantpath.wisc.edu/sites/default/files/IS_agreement_form_pp.doc](http://www.plantpath.wisc.edu/sites/default/files/IS_agreement_form_pp.doc) and capstone, [http://www.plantpath.wisc.edu/sites/default/files/capstone_agreement_form.doc](http://www.plantpath.wisc.edu/sites/default/files/capstone_agreement_form.doc)).

**Individual advising appointments.** Students are welcome to make individual advising appointments with the Senior Student Services Coordinator to discuss career and internship options, review resumes, prepare for interviews, and discuss graduate school.

**Campus resources.** The department has a strong collaborative relationship with CALS Career Services ([https://cals.wisc.edu/academics/undergraduate-students/career-services/](https://cals.wisc.edu/academics/undergraduate-students/career-services/)). Students are regularly sent emails regarding events, open positions, and resources available through CALS Career Services.

**Graduate Student Resources**

**Seminars and speakers.** Students have weekly opportunities for professional development such as the departmental seminar, meeting with outside speakers, Friday@4 seminar, and Student and Postdoc Seminar (SAPS, see Appendix H for a listing of recent SAPS seminar topics).

**Mentoring.** Graduate students are regularly expected to participate in mentoring undergraduates in research labs. This can be an informal arrangement within the lab where a graduate student is given the responsibility, or students are able to enroll in mentoring training through DELTA ([https://delta.wisc.edu/Courses_and_Programs/RMT.html](https://delta.wisc.edu/Courses_and_Programs/RMT.html)).

**Teaching.** All PhD students are required to teach as a part of their curriculum; MS students are given the opportunity but are not required to do so. Students enroll in 2 credits of PL PATH 799, *Teaching Practicum* and then assist in PL PATH 123, *Plants, Parasites, and People* (see Appendix H for details). Beyond this requirement, students have additional opportunities to teach in BIOLOGY 151/152, *Introductory Biology* or PL PATH 300, *Introduction to Plant Pathology*, and to participate in teaching professional development courses through DELTA ([https://delta.wisc.edu/Courses_and_Programs/spring2018.html](https://delta.wisc.edu/Courses_and_Programs/spring2018.html)).

Graduate School Exit Survey data indicate that Plant Pathology provides a high quality teaching experience. The percentage of recent graduates answering “very helpful” to the question “How helpful was your TA experience with respect to professional development?” was 73% for Plant Pathology compared to 53% for the biological sciences as a whole. The percentage answering “yes” to the question
“Did you receive training in instructional methods at any time in your graduate studies?” was 94% for Plant Pathology compared to 50% for the biological sciences.

**National and regional conferences.** Students are strongly encouraged to attend regional and national conferences to present their research, build professional networks, and take part in professional development workshops. The department provides funds to offset travel costs, and most advisors also provide some support ([http://labs.russell.wisc.edu/application-to-apply-for-a-plant-pathology-travel-scholarship/](http://labs.russell.wisc.edu/application-to-apply-for-a-plant-pathology-travel-scholarship/)).

**Web based resources.** We provide information on the departmental website ([http://plantpath.wisc.edu/student-internships-jobs](http://plantpath.wisc.edu/student-internships-jobs)) and through the Plant Pathology Graduate Colloquium (PPGC, [http://labs.russell.wisc.edu/ppgc/professional-development/](http://labs.russell.wisc.edu/ppgc/professional-development/)) on professional development events and resources.

**Individual advising appointments.** Students are welcome to make individual advising appointments with the Senior Student Services Coordinator to discuss career options, review resumes, and prepare for interviews.

**Campus resources.** Students are strongly encouraged to participate in campus level activities and professional development opportunities through both the Graduate School and CALS. Students are given information on these resources at orientation, links are posted on a number of the above web based resources, and we send emails to the students about specific events.

**Career outcomes**

Plant Pathology graduates land diverse careers upon graduation (Appendix H). In Graduate School Exit Surveys, the percentage of recent graduates who indicated that they had signed a contract or made definite commitments for work was 78% for Plant Pathology compared to 63% for all biological sciences at UW-Madison. Since Fall 2011 we have had 24 students finish the PhD and 17 finish the MS (2 students continued from MS to PhD) for a total of 39 individuals, *all of whom are currently employed in an area related to plant pathology*. Of these alumni, 18% are now in tenure-track positions (29% of the PhD alumni), 31% work with a university in a research position, 23% work in large industry, 10% work in government (state and federal), and the remaining 18% percent work in non-profit organizations, small industry, or extension.

**I. Overall analysis of the self-study and the state of the program**

This self-study has brought into focus key strengths and challenges of the Plant Pathology BS, MS, and PhD programs, as well as areas in which we think we should concentrate efforts in the future. The information we provide in this report and data from campus sources support our conclusion that the Plant Pathology MS and PhD programs are meeting, and in most cases exceeding, college and campus expectations for graduate programs. Our BS major is small by college and campus standards. However, because we teach no courses specifically to serve our major, the only costs are administrative and political. These costs, while real, must be weighed against the benefits of the major. If the Plant Pathology BS major is discontinued, it likely will decrease the numbers of students in several classes that also are taken by graduate students, reduce the visibility of the discipline of plant pathology among undergraduates, and negatively impact the mentoring experience for our graduate students who enjoy mentoring “kindred spirit” plant pathology undergraduates.
Strengths

- The range and quality of research, teaching, and extension/outreach conducted by Plant Pathology faculty and trainers is great. This excellence attracts top applicants from around the country and world and makes our graduates highly qualified for a wide range of jobs.

- The Plant Pathology PhD program is unique in its flexibility, by allowing incoming students to rotate through labs or be admitted directly into a lab. In fact, we are aware of no other Plant Pathology program in the nation that has a PhD rotational option. Once in the program, students have great latitude to tailor their education to meet their career goals. The department has resources to international research/outreach and a variety of professional development activities.

- Career placement is outstanding, with 100% of graduates since Fall 2011 employed in a field closely related to plant pathology. Recent Graduate Exit Surveys show that 78% of new Plant Pathology graduates have signed a contract or have a clear commitment to employment, compared to just 63% for all biological sciences at UW-Madison.

- The Plant Pathology graduate program provides a superior teaching experience, both within the department and by encouraging students to seek more specialized training in teaching. The percentage of recent graduates answering “very helpful” to the question “How helpful was your TA experience with respect to professional development?” was 73% for Plant Pathology compared to 53% for the biological sciences. The percentage answering “yes” to the question “Did you receive training in instructional methods at any time in your graduate studies?” was 94% for Plant Pathology compared to 50% for the biological sciences.

- The Plant Pathology graduate student community is strong. Facilitated by an elected Plant Pathology Graduate Colloquium, graduate students are proactive not only in sponsoring social events and organizing professional development events, but also in conducting surveys to gauge climate and identify priorities for change. In student-led surveys, 26 of 28 (Spring 2016) and 32 of 34 (Fall 2017) students agreed or strongly agreed with the statement, “I feel there is a good community among the graduate students.”

- There are equal numbers of men and women among the Department of Plant Pathology faculty and affiliated graduate trainers. On average, diversity among Plant Pathology graduate students exceeds that of other CALS and campus biology programs by large margins. Our human diversity was praised during a 2017 USDA Civil Rights Review.

Challenges

- Plant Pathology is a specialized discipline. As such, many courses required of our BS, MS, and PhD programs have relatively low enrollments. These courses are essential to the Plant Pathology academic programs but do not translate into large CFI used to allocate resources to departments. The National Association of Colleges and Employers has identified skills most desired by employers, and most of these skills are more readily obtained in small, high-impact classes rather than large lecture halls. We must continue to offer our high-impact courses to remain competitive with peer Plant Pathology departments and to turn out employable graduates.

- The CALS Organizational Redesign committee has recommended the dissolution of undergraduate majors that do not yield at least 15 degree recipients per year, with no mention of cost/benefit analysis. The Plant Pathology BS does not meet this metric, despite concerted efforts to grow the major. However, it would be a disservice to students to discontinue our major without a suitable alternative. We have discussed with Agronomy, Horticulture, and Soil Science the possibility of a joint BS major. Based on those discussions, a joint major might suit undergraduates interested in plant production and who view the BS as a terminal degree. However, it probably would not be
appropriate for undergraduates whose interests lie in plant-microbe interactions or for those who aspire to graduate or professional school. The Biology major might be more appropriate for those students, but the current low enrollment in the Plant Biology Option of the Biology major (7 of 1300 students) calls into question the quality of that offering.

- The Plant Pathology graduate program has five faculty with formal extension programs. Demand for training from these faculty is high, and students with extension experience land excellent jobs, sometimes many months before they graduate. However, the approximately 25,000 contact hours logged by Plant Pathology extension faculty and the director of the diagnostics clinic each year are not accounted for in current campus budget models focused on CFI. Without adequate budgetary recognition of extension/outreach, it will be difficult to justify extension faculty positions in the future.

- Most Plant Pathology faculty and graduate trainers are housed in Russell Laboratories, a building erected in 1961 that has undergone only minor cosmetic renovations in its 57 years. In Graduate School Exit Interviews, the percentage of graduates who rated “the adequacy of laboratory, clinical, studio, or other physical facilities” as excellent, very good, or good was 93% for the biological sciences but just 73% for Plant Pathology. Similarly, the percentage of graduates who rated “the adequacy of your personal workspace” as excellent, very good, or good was 92% for the biological sciences but just 78% for Plant Pathology. Our aging facilities present a significant challenge for attracting and retaining excellent faculty, staff, and students, and for maintaining our excellence in research, teaching, and extension/outreach.

Priorities

- **Personnel.** The Department of Plant Pathology has 13 full-time faculty and two faculty with split appointments and major administrative appointments. Currently seven faculty from other departments serve as Plant Pathology graduate trainers and provide breadth to the program. Maintaining a critical mass of faculty who can secure funding to support graduate students is essential to maintain our stature as a top Plant Pathology program nationally. The department puts a high priority on refilling faculty positions, encouraging its faculty to train graduate students, and in identifying faculty who are eager to join our program as graduate trainers.

- **Funding.** The large majority of Plant Pathology graduate students are funded on RAs their entire time in graduate school. As such it’s critical that faculty aggressively seek funding from diverse sources and work with students to help them win fellowships and scholarships.

- **Teaching.** With budget allocations increasingly being tied to classroom teaching, the Department of Plant Pathology recognizes the need to teach. We are exploring the possibility of new courses, including an additional summer course, and strategies to increase enrollment in existing courses.

- **Diversity and inclusion.** While our metrics are better than most peer programs on campus and nationally, and we have a culture of inclusiveness, we do not check off this box as “done.” Diversity and inclusion, and their impact on academic excellence and workplace climate, remain high priorities in faculty hires, student recruitment, and program operations.

- **Facilities.** An aging building and its built-in facilities such as autoclaves and growth rooms have been cited as a problem for Plant Pathology in reviews dating back to at least 1998. We look to CALS leadership for guidance on a long-term plan on maintaining the facilities we have and how to position ourselves for a new building.
J. Funding

The department of Plant Pathology admits students either as a “direct admit” student with an advisor (done at both the MS and PhD level) or as a “rotational admit” student (only at PhD level). When a student is directly admitted, the advisor supports that student at the outset. Students admitted as rotational PhD students are funded as research assistants through department resources for the first semester and subsequently by the selected advisor. Faculty do not accept a student unless they are committed to funding that student for the duration of their program, assuming that the student is making satisfactory progress toward the degree.

The department is fortunate to have endowments specifically for support of graduate studies in Plant Pathology. These dollars are used to bridge funding gaps when a grant is not funded, to facilitate a student’s transition into a new lab when appropriate, and to bolster faculty start-up and retention packages. Thus, the vast majority of Plant Pathology MS and PhD students are funded on Research Assistantships for the duration of their graduate studies. Data in Appendix J show that in recent years just one student was not on an RA, Fellowship, or TA; that student was fully funded through his employer. Recent Graduate School Exit Surveys indicate that 100% of Plant Pathology graduates were RAs at some time during their program. In rare instances, students are funded as Teaching Assistants for BIOLOGY 151/152, Introductory Biology or PL PATH 300, Introduction to Plant Pathology, for which CALS provides one paid Teaching Assistantship. No one in the department can recall an instance in which a Plant Pathology graduate student’s studies were halted for lack of financial support, even when students have switched advisors.

Plant Pathology graduate students are strongly encouraged to apply for fellowships and research support outside the department, and our students fare well in these competitions. In recent years, students have received fellowships and research funding from the College of Agricultural and Life Sciences Wisconsin Distinguished Graduate Fellowships, American Phytopathological Society, USDA National Institute for Food and Agriculture, National Science Foundation, USDA Sustainable Agriculture Research and Education program, Fulbright Foundation, Ford Foundation, and commodity groups such as Wisconsin Cranberry Board, Wisconsin Soybean Board, Wisconsin Potato and Vegetable Growers Association, Wisconsin Turfgrass Association, and Minnesota Grape Growers Association, among others. Additionally, some students bring significant funding from their home countries or employer. We nominate Incoming underrepresented minority students for Advanced Opportunity Fellowships through the Science and Medicine Graduate Research Scholars office and have an excellent record of success with that program.

Plant Pathology faculty voted to increase research assistant stipends from $22,080 to $24,000, effective July 1, 2017. This puts our program on a more level playing field nationally. It also narrows the gap between Plant Pathology and peer programs on campus (e.g., Microbiology, Cellular and Molecular Biology) that have greater stipends and whose students often work side by side with Plant Pathology students.

K. Professional development and breadth

Plant Pathology provides undergraduate and graduate students with a range of professional development activities. Where appropriate, the department provides financial assistance to support student participation. Some examples:
Teaching. All PhD students are required to complete one semester as a lab instructor (TA) for PL PATH 123 Plants, Parasites and People. Some MS students voluntarily TA. The department instructional specialist provides additional training and support for the graduate students. The Graduate School Exit Survey data indicate that Plant Pathology provides a high quality teaching experience. The percentage of new graduates answering “very helpful” to the question “How helpful was your TA experience with respect to professional development?” was 73% for Plant Pathology compared to 53% for the biological sciences. The percentage answering “yes” to the question “Did you receive training in instructional methods at any time in your graduate studies?” was 94% for Plant Pathology compared to 50% for the biological sciences.

Extension and outreach. The Plant Disease Diagnostics Clinic director, Dr. Brian Hudelson, provides opportunities for undergraduate and graduate students to assist in staffing booths at the annual Garden Expo and at Farm Technology Days. Many graduate students present their research findings to stakeholders through oral presentations at grower meetings and field days, in industry newsletters, and in extension bulletins.

SAPS (Students and Postdoc Seminar). All Plant Pathology graduate students, postdocs, and graduate students and postdocs from other programs who work in Plant Pathology labs, are invited to participate in this informal lunchtime seminar series that is run entirely by students and postdocs. Topics range widely and often focus on professional development (e.g., ethics, grant writing, applying and interviewing for jobs, teaching, careers outside of academia). The department provides lunch and covers costs when speakers travel from off campus. Some local faculty, staff, and students have presented at SAPS, and professionals outside academia are invited to provide their perspective from industry, government, and private practice. See Appendix H for a list of topics in 2017-18.

Travel awards. Through the generosity of donors, Plant Pathology has been able to provide $500 per year per person to support travel to conferences and workshops for undergraduate and graduate students. Additionally, the department has a strong culture of faculty providing funds to partially or fully cover the cost of travel to scientific meetings. In the recent Doctoral Exit Survey Report, 100% of Plant Pathology students reported receiving program support for off-campus travel compared to 63% for all biological sciences. The department also has funds earmarked to support students’ international travel for purposes of research, outreach, or to attend conferences.

Leadership opportunities. The Plant Pathology Graduate Colloquium (PPGC) is comprised of elected officers that oversee many student activities within the department, including social events, graduate student recruitment, and coordination of SAPS and professional development programs. PPGC officers also serve as student representatives on the major departmental committees. We also encourage students to volunteer in the American Phytopathological Society by joining committees and moderating sessions.

Plant Pathology undergraduate club. The undergraduate club was founded in 2014. The club supports its members in choosing classes and finding research opportunities on and off campus. They also invite faculty and off-campus professionals to discuss Plant Pathology careers.

Plant Pathology summer research internships. Over the years, the department has participated in various programs to engage undergraduates in research. Since about 2014, the department has sponsored its own program to award three or four paid internships for summer research. Preference is
given to Plant Pathology undergraduate majors, but majors from other programs are eligible, if the work is focused on plant pathology.

**Job searches.** The Russell Labs student services coordinator, Sara Rodock, gives a presentation for undergraduate and graduate students at least once per year on tips and hints on navigating the complex federal job application process.

**Individual Development Plans.** IDPs are not required of Plant Pathology students; our students rarely are funded by NIH or other agencies that require IDPs. Nevertheless, in Fall 2017 the student services coordinator offered a workshop for graduate students to design IDPs. Not enough students registered, however, so she cancelled the workshop.

### L. Overview of Other Aspects of Department/Program (requested by CALS)

#### Faculty engagement

Almost all faculty in the Department of Plant Pathology and faculty affiliates (Appendix B) train Plant Pathology graduate students on a regular basis. The number of graduate students per professor currently ranges from one to seven. At any time several faculty from the Department of Plant Pathology also serve as major professor to graduate students in other programs, such as Microbiology Doctoral Training Program (most common), Cellular and Molecular Biology, Entomology, Plant Breeding and Plant Genetics, Agroecology, and Nelson Institute. Eight Plant Pathology faculty and two academic staff advise Plant Pathology undergraduates.

All faculty in the Department of Plant Pathology, including those with no formal teaching appointment, teach courses in the Plant Pathology curriculum (most courses are cross-listed with at least one other department in CALS, L&S, or SMPH) and provide guest lectures in other departments. Some faculty teach courses entirely outside our department. Plant Pathology faculty embrace modern approaches to teaching such as developing and delivering online courses, flipped classrooms, First Year Interest Groups (FIGs), Course-based Undergraduate Research Experiences (CUREs), and citizen science. In recent years, new faculty with instructional appointments have applied for and have been accepted into the Madison Teaching and Learning Excellence program where they acquire and practice modern teaching methods with their counterparts from across campus. We offer no courses specifically for our BS program. Rather, Plant Pathology undergraduates enroll in many of the courses taken by our graduate students. Almost all Plant Pathology undergraduates conduct research in Plant Pathology labs, often being closely mentored by a graduate student or post-doc.

All faculty ably serve on two or more departmental committees, in addition to considerable service across campus and nationally. There is no “dead wood” in Plant Pathology, a fact that contributes to a collegial working environment, which in turn directly benefits our academic programs.

#### Resources

The Department of Plant Pathology has a history of directing resources and personnel toward our academic programs. In 1997, after redirecting state 101 dollars from individual faculty programs to the department teaching and PhD rotational programs, ours was among the first departments to hire a full-time student services coordinator, a position now held by Sara Rodock and shared with Entomology and
Forest & Wildlife Ecology. Plant Pathology continues to prioritize support for academic programs, with all available non-faculty 101 dollars supporting two instructional specialists (1.5 FTE), a small portion of a faculty associate (0.1 FTE) and the PhD rotational program. We do not have a 101 budget for teaching, but we rely on an allocation from the Russell Labs administrative budget, and we draw on flexible funds as needed to fulfill our instructional mission. We also heavily invest our flexible funds in our graduate program by providing travel awards to students, funding professional development opportunities, supporting community building and outreach activities, and filling gaps in stipend/tuition funding that arise when a grant doesn’t come through or when a student needs to change advisors. No one can recall an instance when a Plant Pathology graduate student’s studies were halted due to lack of funding.

Facilities. Most Plant Pathology faculty are housed in Russell Laboratories, a building erected in 1961 that has undergone only minor cosmetic renovations in its 57 years. In Graduate School Exit Interviews, the percentage of graduates who rated “the adequacy of laboratory, clinical, studio, or other physical facilities” as excellent, very good, or good was 93% for the biological sciences but just 73% for Plant Pathology. Similarly, the percentage of graduates who rated “the adequacy of your personal workspace” as excellent, very good, or good was 92% for the biological sciences but just 78% for Plant Pathology. With each year, our aging facilities present a greater challenge in attracting and retaining excellent faculty, staff, and students, and create serious limitations to the research and teaching that we are able to do. Nevertheless, we have been creative and proactive in directing funds to improve the facilities we have. For example, three years ago Plant Pathology converted its under utilized department library into a multi-purpose library/reading room/conference room/social gathering space. With our Russell Labs partners, Entomology and Forest & Wildlife Ecology, Plant Pathology has made it a high priority to keep our facilities and instrumentation crew well staffed, because these talented individuals save Russell Labs research programs tens if not hundreds of thousands of dollars annually (e.g., by maintaining and repairing -80 freezers and growth rooms that date back to the origins of Russell Labs). A major HVAC project in Russell Labs began in October of 2017 and is expected to continue into early 2019. While highly disruptive, and taking much longer than initially promised, we hope that this project will improve air quality, a concern raised in every department review since the early 1990s.

Research and extension/outreach missions
In the tradition of UW-Madison and CALS, the Department of Plant Pathology makes research excellence a high priority. All faculty, regardless of appointment, lead extramurally-funded research programs and publish their work in peer-reviewed journals. Graduate students are authors on the large majority of our research articles. Research in the Department of Plant Pathology is wide-ranging and includes fundamental biology of microorganisms, molecular bases of plant-microbe interactions including pathogenesis, microbial genetics, plant genetics, basic and applied microbial ecology, plant disease etiology and epidemiology, and integrated management of plant diseases in conventional and organic production systems and urban settings. Our breadth and depth in research attracts the brightest graduate students from around the world, allows us to provide them a superior educational experience, and makes them highly marketable as proven by a 100% employment rate among graduates since Fall 2011 (Appendix H).

Five faculty plus the director of the Plant Disease Diagnostics Clinic have formal extension appointments to: (i) address diseases of field and forage crops, fruit, potatoes and other vegetables, turfgrass, and ornamental plants; (ii) develop organic and sustainable crop production practices; and (iii) provide
diagnostic services to the public. County extension personnel consistently rate these award-winning specialists higher than the CALS average. Collectively, they teach about 25,000 contact hours (not counting 100s of thousands of radio and YouTube contacts) through their extension programs every year. Additional Plant Pathology faculty, despite not having an extension appointment, conduct high-profile outreach programs in Wisconsin, nationally, and internationally. Our extension and outreach programs provide many opportunities for graduate students to develop skills through public speaking, and/or writing for stakeholders. Plant Pathology is home to the Wisconsin Seed Potato Certification Program, a nationally recognized program that operates on a $1.2 million budget generated from seed sales. The WSPCP exemplifies the Wisconsin Idea, and faculty in Plant Pathology and other CALS departments have used the program to leverage millions of research dollars, most of which have directly supported graduate students. If we are allowed to hire a new faculty director, we will proceed with plans to directly link WSPCP to undergraduate teaching.

Summary
The field of plant pathology is inherently interdisciplinary. Our ability to solve multifaceted problems requires contributions from, and mutual respect for, diverse scientific expertise and our collective activities in research, teaching, and extension/outreach. We are motivated and united by a common goal of equipping the next generation of plant pathologists with the knowledge and professional skills needed to tackle “grand challenges” of today and tomorrow.

Appendices
Each section above has its own Appendix folder with related materials (https://uwmadison.box.com/s/fw660ne5vzght051sj2rzo00uqsugb9p). Since some of the appendix materials have information covered by FERPA, you must have access to view the materials. To gain access, contact Sara Rodock (rodock@wisc.edu).
September 27, 2017

TO: Patricia McManus
Chair, Department of Plant Pathology

FROM: Sarah Pfatteicher
Associate Dean of Academic Affairs

RE: Plant Pathology 10-Year Review

CC: Nikki Bollig, Sarah Kuba, Jocelyn Milner, Marty Gustafson, Dick Straub, Kathryn VandenBosch

As you know, the Board of Regents requires that all academic programs be reviewed every ten years. We would therefore like to initiate a comprehensive review of the following programs to be completed in the next two academic years:

- Plant Pathology, BS
- Plant Pathology, MS
- Plant Pathology, PhD
- Plant Pathology, Doctoral Minor

We are requesting the program conduct a self-study in preparation for the comprehensive review and prepare a single self-study document for the programs listed above. Once the self-study is completed, we will convene a cross-college review committee to review these materials, talk with you, your colleagues and students, and prepare a report to the CALS and University Academic Planning Councils and the Graduate Faculty Executive Committee. These governance bodies will discuss all of the documents and make recommendations about the program. Completion of the full review process is due to the Board of Regents by Spring of 2019. In order to meet this deadline, we ask that you please submit your self-study to academicaffairs@cals.wisc.edu by March 1, 2018.

**Purpose of the Review**

As you prepare for the review, please consult the UW-Madison Program Review Guidelines and Resources, posted at [http://apir.wisc.edu/programreview.htm](http://apir.wisc.edu/programreview.htm), and excerpted here:

*Purpose of Ten-Year Reviews:*

a. Focus on the recent past and key points over the past decade as context for present and future improvements.

b. Concentrate on the academic program and student experience.
c. Review program learning goals and assessment of learning.
d. Understand the current student experience with regard to academics, advising, climate, and career development.
e. Identify program strengths and recommendations for improvements.

The overall well-being of the administrative home is also important for the success of academic programs, particularly how the functioning of the administrative home relates to educational programs and student outcomes. As such, CALS practice has been to use the program reviews as an opportunity to summarize the departmental/programmatic trajectory and priorities. This approach provides a context to align program planning with that of the department/program overall. We encourage you to use the consultative nature of the review process to identify and resolve administrative or structural matters that affect your programs. Your self-study will draw upon all of this information to reflect more generally on the quality and future of the programs.

**Content of the Self-Study**

In preparing your self-study, please refer to the following resources:

- Self-Study Guidelines: [https://kb.wisc.edu/vesta/page.php?id=63649](https://kb.wisc.edu/vesta/page.php?id=63649)
- Self-Study Template: [https://kb.wisc.edu/vesta/page.php?id=63649](https://kb.wisc.edu/vesta/page.php?id=63649)

The CALS Dean’s Office also requests a concise overview of other aspects of the department/program, including faculty engagement, facilities, and research and Extension/outreach missions. Please include a brief discussion and assessment of these aspects in a separate section of the self-study, emphasizing not only how they affect and intersect with the academic programs under consideration, but also how they impact the overall strength of the department/program. Of particular interest in this section are how the department/program’s overall strengths and priorities align with the academic programs under review, and how any long-term trends affecting the department/program or the discipline impact the academic programs.

In addition, the Dean’s office asks that you please address the following topics in your self-study:

- We have intentionally structured the program review process to cluster reviews of similar programs at the same time in order to evaluate the relationship between like subjects. The following programs are also undergoing review:
  - Agroecology, MS
  - Biology, BS, including 5-year review of the Plant Biology Named Option
  - Horticulture, BS, MS, PhD, Doctoral Minor
  - Plant Breeding and Plant Genetics, MS, PhD, Doctoral Minor

Please comment on the relationship of your academic programs to the other programs under review, including any useful synergies that may exist.

- We are aware that conversations are underway regarding a potential new undergraduate academic program related to food systems. Please summarize these conversations to date and explain how this potential new major would affect your current undergraduate program.
Resources for Program Review

It may be helpful to include in the self-study data relevant to the program, such as program requirements, number of students declared, number of students completing the program, etc. The UW-Madison Office of Academic Planning and Institutional Research offers a wealth of data and metrics that can help with program evaluation. We strongly encourage you to consult these resources, consider them in light of similar programs, and reflect on whether or not the data reveal any issues that require attention. (For example, see http://apir.wisc.edu/students-degrees.htm; and Resources that Support Program Review: https://kb.wisc.edu/ vesta/page.php?id=56637.)

Thank you for your prompt attention to this important activity. We look forward to working with you in this process. If you have questions, please contact Nikki Bollig or myself.