University of Wisconsin-Madison
Graduate Faculty Executive Committee
1:30 p.m. – 3:30 p.m., Room 52 Bascom Hall
January 12, 2018

AGENDA

Introduction

1:30 Introduction of New Members (William Karpus)

1:30 Automatic Consent approval of the minutes from December 1, 2017 GFEC20180112.01

Approvals

1:35 Request to approve the following actions for the Capstone Certificate in Leadership for Population Health Improvement from the Department of Population Health Sciences (Barbara Duerst, Andrea Poehling) GFEC20180112.02
   - Suspend admissions effective Fall 2018
   - Discontinue effective Fall 2019

1:40 Request to discontinue the Zoology M.A. effective Fall 2018 from the Department of Integrative Biology (Lauren Ritters) GFEC20180112.03

1:45 Request to approve the following actions for the Capstone Certificate in Geographic Information Systems from the Department of Geography (Lisa Naughton) GFEC20180112.04
   - Suspend admissions effective Fall 2018
   - Discontinue effective Spring 2020

1:50 Request to approve a new Capstone Certificate in Data Analytics for Decision Making from the School of Library and Information Studies, effective Spring 2019 (Kristin Eschenfelder) GFEC20180112.05

Program Reviews and Updates

2:10 Ten-Year Review of the M.A., Ph.D., Specialist Certificate and Doctoral Minor in Educational Leadership and Policy Analysis (Fernando Tejedo-Herrera) GFEC20180112.06

2:35 Ten-Year Review of the Molecular and Environmental Toxicology M.S./Ph.D./Doctoral Minor (Nicole Perna) GFEC20180112.07

3:00 Ten-Year Review of the Medical Physics M.S./Ph.D./Doctoral Minor (Caroline Alexander) GFEC20180112.08

2017-2018 Meeting Schedule
February 9, March 9, April 13, May 11, June 8
1:30 p.m. – 3:30 p.m.
52 Bascom Hall
University of Wisconsin-Madison
Graduate Faculty Executive Committee
1:30 pm – 3:30 pm, Room 52 Bascom Hall
December 1, 2017

MINUTES

Members Present: Caroline Alexander, Lara Collier, Kristin Eschenfelder, Michael Graham, Yu Hen Hu (arrived after first three voting items), William Karpus, Steffen Lempp, Christopher Livanos, Lisa Martin, Christa Olson, Nicole Perna, John Pfotenhauer, Parmesh Ramanathan, Tracy Schroepfer (left before final voting item), Leslie Smith III, Steph Tai (arrived after first three voting items)

Members Absent: Monica Turner, Earlise Ward, Kirsten Wolf

Guests: Jeremy Foltz, Jocelyn Milner, Sarah Pfatteicher, Makayla Schuchardt

Staff: Marty Gustafson, Elena Hsu, LaRuth McAfee, Emily Reynolds

Dean William Karpus called the meeting to order.

Dean Karpus introduced Associate Professor Leslie Smith III as a new member of the GFEC.

The minutes of November 10, 2017, were approved as a matter of automatic consent.

Approvals:

1. Dean Karpus introduced Professor and Chair of the Department of Agricultural and Applied Economics Jeremy Foltz, who presented a request to move the named option “Resource and Energy Demand Analysis” (REDA) from the M.A. Agricultural and Applied Economics to the M.S. Agricultural and Applied Economics, discontinue the M.A., and create a new named option “Agricultural and Applied Economics” in the M.S. These changes would mean students who receive the REDA named option would be earning a more typical degree for the subject matter, in line with peer programs. They are also part of an effort to reclassify the graduate programs in Agricultural and Applied Economics to a STEM-designated CIP code, which would be of great benefit to its students for funding and job opportunities.

Motion: Moved and seconded to move the Named Option “Resource and Energy Demand Analysis” from the M.A. to the M.S. The motion was passed unanimously.

Motion: Moved and seconded to discontinue the M.A. in Agricultural and Applied Economics. The motion was passed unanimously.

Motion: Moved and seconded to create a new Named Option “Agricultural and Applied Economics” in the M.S. The motion was passed unanimously.

Approval Updates:
2. Associate Dean Ramanathan presented the Three-Year Progress Report Check-in of the M.S. Computer Sciences Named Option “Professional Program” and the Capstone Certificate in Computer Sciences for Professionals. These revenue-model programs are robust and meeting enrollment targets. The committee examined the program’s tuition structure to make sure it fits the market and can support instruction. The program’s lack of underrepresented minority students is mirrored by the M.S./Ph.D. programs in Computer Sciences total student enrollment.

3. Associate Dean Ramanathan presented the Three-Year Progress Report Check-in of the Capstone Certificate in Infant, Early Childhood and Family Mental Health. This strong revenue-model program serves the community and meets enrollment goals. The program is committed to providing access to for underserved populations and is looking at funding options.

4. Associate Dean Ramanathan presented the Three-Year Progress Report Check-in of the Capstone Certificates in Clinical Nutrition and Clinical Nutrition – Dietetic Internship. The programs have met enrollment goals, and as planned have lower enrollment this year due to a new online master’s degree in Clinical Nutrition that attracts the same target audience. A graduate degree in this field is an accreditation requirement for professionals beginning in 2024. However, the program anticipates the capstones will continue to have some interest and will continue since they do not require additional resources to maintain.

Program Reviews and Updates
5. Associate Dean Ramanathan introduced a discussion of an update from the Department of Population Health Sciences regarding the Population Health M.S./Ph.D./Doctoral Minor Ten-Year Program Review. The Graduate School plans to continue a discussion with the program on first-year funding for students.

6. GFEC Member Nicole Perna introduced the Institutional (10-Year) Review of the M.S./Ph.D./Doctoral Minor in Agronomy. Perna noted the strengths of the program, including faculty research excellence, good job prospects for program graduates, and a national and international network of alumni. Perna also discussed challenges to the program, including low enrollment with very little sense of student community, and few dedicated graduate-level courses, with only 3.1 teaching FTEs among 19 faculty (most of whom had large non-teaching UW-Extension appointments). Perna noted review committee recommendations, including exploring if admissions practices and enrollment levels are consistent with plans, program resources and career outcomes; improving frequency of students meeting with their committees; developing and teaching new courses; holding an “Agronomy” weekly seminar to build program cohesion; increasing faculty communication with the program coordinator; and how these issues all impact long-term sustainability. Perna reported that despite the problems, students reported good career prospects, as there is a need for agronomy graduates. The GFEC stressed the importance that the program address the review committee’s recommendations and carefully consider its graduate programs during current strategic planning efforts. The GFEC commends the program on its strengths and strongly recommends it engage in efforts to address the review committee’s concerns.

Motion: Moved and seconded to accept the Institutional (10-Year) Review of the Ph.D./Doctoral Minor in Agronomy. The motion was passed unanimously.

7. GFEC Member Nicole Perna introduced the Institutional (10-Year) Review of the M.S./Ph.D./Doctoral Minor in Environmental Chemistry and Technology. Perna noted the strengths of the program, including high faculty productivity, high student satisfaction and job opportunities, effective cross-disciplinary training, and curricular relevance to students from other programs. Perna also discussed challenges to
the program, including a lack of senior faculty, shared laboratories rather than dedicated space, confusion over the handbook and no strategic plan. Perna noted review committee recommendations, including updating the student handbook and clarifying the role of program in the Department of Civil and Engineering that may help increase senior faculty participation. The GFEC commends the program on its strengths and recommends it engage in efforts to address the review committee’s concerns.

**Motion:** Moved and seconded to accept the Institutional (10-Year) Review of the Ph.D./Doctoral Minor in Environmental Chemistry and Technology. The motion was passed unanimously.

8. GFEC Member John Pfotenhauer introduced the Institutional (10-Year) Review of the Transportation Management and Policy Graduate/Professional Certificate. Pfotenhauer noted the strengths of the program, including its interdisciplinary nature exposing students to a wide breadth of careers in transportation, a required practicum course that gives students practical experience on transportation projects, and a required internship. Pfotenhauer noted that students in the certificate program are well trained for a highly employable field. Pfotenhauer also discussed challenges to the program, namely that its primary source of funding, a grant from the National Center for Freight and Infrastructure Research and Education (CFIRE), was not renewed. Other challenges include the need to find a new faculty director, low enrollment and lack of advertising, non-functional faculty governance, a lack of information on a website and no student handbook, and no implemented program assessment. Pfotenhauer noted that the program was highly aligned with CFIRE and doesn’t have a clear fit in the Nelson Institute, so is in need of a new administrative home that can provide a director and other student support services. The GFEC expressed concern that the program has informally stopped admitting students without going through a formal admissions suspension process. The GFEC commends the certificate program on its strengths and recommends it engage in efforts to address the review committee’s concerns on its sustainability.

**Motion:** Moved and seconded to accept the Institutional (10-Year) Review of the Graduate/Professional Certificate in Transportation Management and Policy. The motion was passed unanimously.

**Adjournment:**

**Motion:** Moved and seconded to adjourn. The motion passed unanimously.
December 20, 2017

Sarah C. Mangelsdorf, Ph.D.  
Provost and Vice Chancellor for Academic Affairs  
150 Bascom Hall  
- campus -

William Karpus, Ph.D.  
Dean of the Graduate School  
333 Bascom Hall  
- campus -

Sent electronically

Re: Suspension of Admissions and Discontinuation of the Capstone Certificate for Population Health Improvement

Dear Provost Mangelsdorf and Dean Karpus:

On behalf of the School of Medicine and Public Health, I endorse the request by the Department of Population Health Sciences that the Capstone Certificate for Population Health Improvement suspend admissions effective Summer 2017 and be discontinued effective Fall 2019. The request is attached. SMPH Academic Planning Council members unanimously approved this request at their meeting on December 20, 2017. *Amended to suspend admissions for Fall 2018 (next active cycle)*

Thank you for your consideration of this request. If you require additional information, please do not hesitate to contact Andrea Poehling.

Sincerely,

Robert N. Golden, M.D.  
Robert Turell Professor in Medical Leadership  
Dean, School of Medicine and Public Health  
Vice Chancellor for Medical Affairs  
University of Wisconsin-Madison

Copies to:
Barb Duerst, Department of Population Health Sciences  
Maureen Durkin, Department of Population Health Sciences  
Thomas Oliver, Department of Population Health Sciences  
Pat Remington, Department of Population Health Sciences  
James Keck, School of Medicine and Public Health  
Richard Moss, School of Medicine and Public Health  
Rachel Niles, School of Medicine and Public Health  
Elizabeth Petty, School of Medicine and Public Health
Andrea Poehling, School of Medicine and Public Health
Parmesh Ramanathan, Graduate School
Marty Gustafson, Graduate School
Emily Reynolds, Graduate School
Jocelyn Milner, Academic Planning and Institutional Research
Sarah Kuba, Academic Planning and Institutional Research

Attachment: Request from Department of Population Health Sciences
Proposal for Suspending Admissions to and Discontinuing Capstone Certificate for Population Health Improvement

November 2017

Program Overview and Background Information:
The Certificate in Leadership for Population Health Improvement was developed in 2014 and has been offered completely on-line to provide learners with knowledge and skills in identifying the social determinants of health and well-being, developing strategies for system change, and exercising effective leadership within and across organizations to promote population health through a series of four required courses. Learners complete 12-credits of on-line course work to fulfill the requirements of the certificate.

The certificate, as originally envisioned, was to be completed over a one-year period. However, we struggled to fill our classes with certificate students and found that for many students who were receiving tuition from their employers, they were only able to take one course per semester. Thus, we modified our schedule to offer two courses each academic year, allowing students to complete our certificate over a two-year period. During the 2016-17 academic year we marketed the certificate program to a new target audience and transitioned back to offering the students the option of completing the certificate in a one-year period, while continuing to offer the option of being able to complete the certificate at a slower pace, over a two or more year period. Despite our marketing efforts, student enrollment in the certificate remained low.

In May 2017, the University of Wisconsin’s Graduate Faculty Executive Committee (GFEC) reviewed the Certificate Program’s three-year report and expressed concern related to an unsustainable number of students participating in the certificate program since its inception as well as a lack of faculty to teach the courses. The GFEC recommended that the program re-evaluate the strategic need for this certificate in the light of the low awards earned in this program.

Based on discussions with the School and Capstone Certificate’s leadership, it was decided to suspend admissions to the program beyond Summer of 2017. Staff will work with the current students to complete the courses and certificates by August 2018. We request that the certificate be discontinued on July 1, 2019.

1. Explanation of Rationale for Proposal:
Balancing faculty and staff teaching loads and responsibilities between new and existing programs has been a challenge. While many potential students have inquired about the certificate, few have enrolled or completed the certificate program. Potential students cite cost as a barrier to enrollment. After three years, we will only have our first graduates in 2017. Three of the original instructors of the certificate courses have left the University and we are struggling to find additional faculty to teach the courses. Small class sizes that result in limited
revenue make it difficult to be able to hire additional faculty and staff to teach our courses and provide recruitment and student services.

2. Efforts to Notify Affected Parties
As of November 1, 2017, there are seven active students in the certificate program. Three of the students will graduate upon completion of the Fall 2017 course, POP HLTH 785: Health Systems, Management, and Policy. The remaining four students have been informed that the certificate is being discontinued. They are being advised regarding their options to complete the certificate.

3. Teach-out Plan:
The four remaining students are currently planning to complete the sequence of classes as outlined below.

<table>
<thead>
<tr>
<th>Course</th>
<th>Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>POP HLTH 785: Health Systems, Management, and Policy</td>
<td>Fall 2017</td>
</tr>
<tr>
<td>POP HLTH 780: Public Health Principles and Practice</td>
<td>Spring 2018 (8 weeks)</td>
</tr>
<tr>
<td>POP HLTH 714: Leadership for Population Health Improvement</td>
<td>Spring 2018 (8 weeks)</td>
</tr>
<tr>
<td>POP HLTH 879: Politics of Health Policy</td>
<td>Summer 2018</td>
</tr>
</tbody>
</table>

4. Stopped out Students:
Three students who enrolled in the program in Spring 2015 but did not complete it have no responded to our efforts to contact them or have enrolled in a different certificate program. One student who enrolled in the Summer 2017 completed the initial course but did not enroll in the subsequent course in the sequence and has not responded to our numerous inquiries. We do not anticipate that any of these students request to re-enroll in the certificate program.

5. Proposal for Suspending Admissions:
We suspended admissions for the certificate program effective August 1, 2017. We removed all information from our websites and from the University’s “Advance Your Career” website at that time.

6. Time-line and Advance Communication Plan:
We have openly communicated with our current students our plans to discontinue the certificate, effective August 2018. We have continued to communicate with them each semester about the offering of the subsequent courses in our teach-out plan. We continue to individually advise the students on their options for completion. We have removed all
materials from our website and communicated and collaborated with our partners in the Division of Continuing Studies.

We have also shared our plans to discontinue our certificate program with the Department of Nutritional Sciences. We had previously developed a memorandum of understanding to allow their MS students to take some of our courses as electives. Nutritional Sciences students will be able to take the courses that we are offering in our teach-out plan through August 2018 and will have adequate time to make arrangements for additional elective courses in other departments.

7. Suspension/Discontinuation of Related Programs
No related programs will be suspended or discontinued as a result of the discontinuation of the capstone certificate.
21 November 2018

TO: Sarah Mangelsdorf, Provost

FROM: John Karl Scholz, Dean

RE: Request to Discontinue Unused MA-Zoology (MA 995L&S)

CC: Marty Gustafson, Assistant Dean, Graduate School
    Jeff Hardin, Professor and Chair, Integrative Biology
    Elaine M. Klein, Associate Dean for Academic Planning
    Sarah Kuba, Academic Planner, Academic Planning and Institutional Research
    Lisa Martin, Associate Dean, Graduate School
    Jocelyn Milner, Vice Provost and Director, Academic Planning and Institutional Research
    Parmesh Ramathan, Associate Dean, Graduate School
    Eric Wilcots, Associate Dean for the Natural and Mathematical Sciences, L&S

On 21 November 2017, the L&S Academic Planning Council considered and unanimously approved the Department of Integrative Biology’s request to discontinue an academic program that has never been awarded and which has no students enrolled in it.
November 17, 2017

To: Dean Karl Scholz  
cc: Eric Wilcots, Elaine Klein, and Marty Gustafson  
Re: Discontinuation of the M.A. in Zoology

The Department of Integrative Biology is requesting that the Master of Arts degree in Zoology be discontinued (program code MA 995L&S). No student is currently enrolled or has ever enrolled in the MA program, thus there is no teach-out plan and no parties will be affected by this change. The department has a Master of Science degree in Zoology that has the same curriculum and is a suitable option for students previously interested in an MA degree. We request to make the discontinuation effective immediately.

Discontinuation of the MA degree was unanimously approved by the program faculty in the Department of Integrative Biology at the Nov 7, 2017 faculty meeting.

Sincerely,

Jeff Hardin  
Professor and Chair  
Department of Integrative Biology
20 November 2017

TO: Sarah Mangelsdorf, Provost

FROM: John Karl Scholz, Dean

RE: Request to Suspend Admissions to, and Discontinue, GIS Capstone Certificate

CC: Greg Downey, Associate Dean for Social Science, L&S
Marty Gustafson, Assistant Dean, Graduate School
William Karpus, Dean, Graduate School
Elaine Klein, Associate Dean for Academic Planning, L&S
Sarah Kuba, Academic Planner, Academic Planning and Institutional Research
Lisa Martin, Associate Dean, Graduate School
Jocelyn Milner, Associate Provost and Director, Academic Planning and Institutional Research
James Montgomery, Associate Dean for Fiscal Initiatives, L&S
Lisa Naughton, Professor and Chair, Geography
Parmesh Ramanathan, Associate Dean, Graduate School
Nancy Westphal-Johnson, Associate Dean for Academic Administration
Eric Wilcots, Associate Dean for the Natural and Mathematical Sciences

On November 7, 2017, the L&S Academic Planning Council considered the attached request concerning the Capstone in GIS (Program Code UNCS 358) be suspended effective Fall 2018 and discontinued altogether no later than Spring 2020. Two new capstone certificates, in “GIS Fundamentals” and in “Advanced GIS,” as well as a new named option in the existing MS-Cartography/GIS, create multiple pathways of professional study through the GIS program that render this program obsolete. Students currently enrolled in the program, as well as students who are admitted prior to program suspension, will be able to complete the program to which they were admitted; they will also be offered the opportunity to transfer into the new program, in the event that the less costly, less credit intensive certificate programs, or the master’s degree, better serves their needs.

The L&S APC approved this request, which complements and completes previous actions taken.
To: Elaine Klein, Associate Dean for Academic Planning, College of L&S; Greg Downey, Associate Dean for Social Science, College of L&S; Karl Scholz, Dean of the College of L&S

cc: Ian Muehlenhaus and Brittney Markle, GIS Professional Programs, Geography; Jocelyn Milner, Vice Provost of Academic Affairs and Director, Academic Planning and Institutional Research; Keith Woodward, Faculty and Chair of Graduate Affairs Committee, Geography

Re: Suspension and Discontinuation of Existing In-Residence GIS Capstone

October 24, 2017

The Department of Geography is requesting that admission to the in-residence Capstone in GIS be suspended beginning Fall 2018 and that the program be discontinued altogether no later than Spring Semester 2020.

Geography is in the process of launching two new, 12-credit, online GIS capstones in Fall 2018. We also plan to launch a 30-31 credit, in-residence Accelerated Non-Thesis Master's Option in Cartography and GIS starting Fall 2018.

There are currently 23 students enrolled in the in-residence Capstone program with completion dates ranging from Fall 2017 to Spring 2019, contingent upon part-time/full-time status. Additionally, we are accepting applications for Spring 2018 admissions. Discontinuation of the Capstone at the end of the Spring 2020 semester allows sufficient time for all current and spring ’18-admitted students to complete the program. Capstone students will also be offered the opportunity to apply directly into the Accelerated or Online Master's Programs.

The Department of Geography will provide clear communication via email, websites, and advising to prospective and current students regarding the suspension and discontinuation timeline of the Capstone. We will also use the same means to advertise the option for students to transfer into one of our Professional Master's Programs.

Geography’s Graduate Affairs Committee approved this request on Oct 18, 2017.

Thank you for considering our request.

Lisa Naughton
Chair of the Department of Geography
20 November 2017 - CORRECTION

TO:    Sarah Mangelsdorf, Provost
FROM:  John Karl Scholz, Dean
CC:    Greg Downey, Associate Dean for Social Science, L&S
      Kristin Eschenfelder, Professor and Director, School of Library and Information Studies
      Marty Gustafson, Assistant Dean, Graduate School
      William Karpus, Dean, Graduate School
      Elaine Klein, Associate Dean for Academic Planning, L&S
      Sarah Kuba, Academic Planner, Academic Planning and Institutional Research
      Lisa Martin, Associate Dean, Graduate School
      Jocelyn Milner, Associate Provost and Director, Academic Planning and Institutional Research
      James Montgomery, Associate Dean for Fiscal Initiatives, L&S
      Parmesh Ramanathan, Associate Dean, Graduate School
      Yazhen Wang, Professor and Chair, Statistics
      Nancy Westphal-Johnson, Associate Dean for Academic Administration
      Eric Wilcots, Associate Dean for the Natural and Mathematical Sciences
      Michael Xenos, Professor and Chair, Communication Arts

On November 7, 2017, the L&S Academic Planning Council considered the attached request to create a new graduate level capstone certificate program in “Data Analytics for Decision Making.” This nine-credit professional program will be coordinated by the School of Library and Information Studies, which will work with the Department of Computer Sciences to present this program to working professionals who seek to become “data savvy managers” rather than data scientists or statisticians. The part-time program will be delivered online to students, in cohorts that begin in any term in which LIS 705 will be taught. Students will enroll in three courses (one per term) over three terms, and should easily be able to complete the program within a calendar year. Our colleagues have worked closely with the Division of Continuing Studies, which has supplied market research that suggests that this non-pooled tuition program will be able to enroll students at levels that will allow it to be self-supporting; SLIS has extensive experience with such programs, and we are confident that the program will be well administered and students will be well served.

All details related to program design, student services, assessment of student learning, and more are provided in the attached proposal, which the L&S APC unanimously and enthusiastically approved. We hope subsequent approvals and timely implementation might allow the first cohort to be admitted in Spring 2019.
INSTRUCTIONS FOR PROPOSING CAPSTONE CERTIFICATES and USE OF PROPOSAL FORM

A Capstone certificate program is a designated set of for-credit courses focused upon a specific topic or theme that give students the opportunity to pursue a subject of interest in a formalized way that is documented on the transcript. Capstone certificates are designed to offer a focused educational experience in a format that is friendly to working professionals. The curriculum may represent a more practice-oriented subset of an existing graduate discipline or field of study.

PLANNING THE CAPSTONE CERTIFICATE

- Planning starts with idea development among the program faculty and staff.
- Begin to fill out the Capstone Certificate Proposal Form.
- When your ideas are starting to take shape, consult with your school/college dean’s office. Non-pooled Capstone certificates should also contact the school/college budget officer. If you aren’t sure who to talk to in your school/college dean’s office or if you have questions and want to discuss your plans, contact Jocelyn Milner, Director of Academic Planning and Institutional Research.
- When you have a full draft of a completed Capstone Certificate Proposal Form, and ideally before school/college approval, send the proposal to Jocelyn Milner and Graduate School Assistant Dean Marty Gustafson for a check-in and proposal review. This will help make sure that the certificate meets all components of the UAPC guidelines and will identify any implementation questions.

APPROVAL STEPS FOR CAPSTONE CERTIFICATES

1. The program faculty who are sponsoring the Capstone certificate program (most often the faculty or executive committee in a department) formally approve the certificate proposal.
2. The school/college that houses the certificate considers the certificate for approval, usually at the school/college Academic Planning Council.
3. After school/college approval, the dean forwards the proposal to the provost and the dean of the Graduate School with a copy to the director of Academic Planning and Institutional Research and the Graduate School Assistant Dean for Academic Planning and Assessment.
4. The Graduate Faculty Executive Committee considers the certificate for approval.
5. The provost will seek a recommendation for approval from the University Academic Planning Council.

FOR INFORMATION AND FORMS: http://apir.wisc.edu/certificates.htm
At this URL you will find links to the following information:

- Detailed instructions and the Capstone Certificate Proposal Form
- Capstone Certificate Guidelines, which is the policy framework for the proposal form (adopted April 2013)
- Certificate Knowledge Base - The KB houses certificate forms and frequently asked questions.

QUESTIONS: Sarah Kuba, Academic Planner, APIR (sarah.kuba@wisc.edu )
Jocelyn Milner, Director, Academic Planning and Institutional Research (jocelyn.milner@wisc.edu )
PROPOSAL FORM
CAPSTONE CERTIFICATE PROGRAMS

Capstone certificates are available to University Special (non-degree seeking) students who hold a bachelor’s degree or equivalent credential from an accredited college or university and are designed to offer a focused professionally oriented educational experience. This form is to be used in concert with the Capstone certificate guidelines. Complete the form and save as a Microsoft Word document.

1. **Capstone certificate name and academic home**
   1.1. Capstone certificate name: Data Analytics for Decision Making (ADM)
   1.2. Home Department/Academic Unit (Name/UDDS): Information School/A485100
   1.3. Home School/College: Letters and Science, College of
   1.4. Additional Department(s)/Academic unit(s) information, if relevant:
       affiliate departments:
   1.5. Faculty director of the Capstone certificate program (name, title email): Kristin Eschenfelder, Professor and Director Information School, eschenfelder@wisc.edu
   1.6. Primary Capstone certificate program contact (name, title, email): Jenny Greiber, Certificates Coordinator, jgreiber@wisc.edu
   1.7. Primary school/college dean’s office contact (name, title, email): Elaine Klein, Assistant Dean, elaine.klein@wisc.edu
   1.8. Date form completed: 3/18/2016

2. **Approval, Implementation, and Review**
   2.1. School/College Approval Date: Click here to enter a date.
   2.2. GFEC Approval Date: Click here to enter a date.
   2.3. UAPC Approval Date: Click here to enter a date.
   2.4. Expected first term of student enrollment (usually 2-3 terms after UAPC approval; typically the following Fall term): Spring 2019
   2.5. Year of three year progress report to GFEC (3 years after first student enrollment): Spring 2022.
   2.6. Year of first program review (5 years after first student enrollment): Spring 2024.
   2.7. Are all academic programs in the home academic unit are up to date for program review? Yes
       - If no, please provide an explanation:
         n/a

   **Information to be completed by RO and APIR:**
   - Plan Code (assigned by the Registrar’s Office):
   - CIP Code (assigned by Academic Planning and Institutional Research):
   - Primary Divisional Disciplinary Assignment (assigned by APIR for analysis purposes only):

3. **Purpose, rationale, justification**
Describe the purpose, rationale, and justification for the Capstone certificate:

3.1. What is the purpose of the Capstone certificate program? How does it contribute to the mission of the sponsoring unit(s)?

Describe the purpose of the Capstone certificate here. (1000 word limit)

Purpose: Data Analytics for Decision Making (ADM) is a revenue generating capstone certificate degree aimed at online audiences of working professionals from a wide variety of backgrounds. The goal of the certificate is to create data savvy managers rather than data scientists or statisticians. The certificate will provide entry level, applied knowledge of data analysis, data visualization, data communications, data management and data mining methodologies framed within the context of practical organizational decision making. The certificate will emphasize using data from social media sources, publicly available data sets, and identifying and critiquing data sets from student’s own organizations. The certificate will prepare working professionals to be wise consumers of data by increasing their understanding of the limits and assumptions of data sets, data analysis tools, and statistical tests. It will also prepare them to develop introductory to intermediate data products, and to work with statistical/data science professionals on more advanced projects.

The target audience for ADM is working adults who cannot leave their jobs and family to relocate for educational purposes but who seek to increase their education and skills in order to advance their careers or switch fields. The ADM certificate can be completed online, with weekly participation, within one calendar year allowing for balance of education, work and life. The certificate is a smaller commitment than a full masters degree, and in contrast to many existing analytics degrees, the ADM certificate does not have any statistical, math or computer science prerequisites.

The curriculum is customized to the audience of working adults and will emphasize use of data and data analysis for organizational management and planning purposes. The curriculum will prepare students to: develop answerable research questions that will address current organizational strategic goals, ongoing challenges, or common industry benchmarks; find and understand the limits of current organizational, public or commercial data sources; apply a range of commonly used quantitative and qualitative data collection and analysis methodologies (including those that draw on social media data); develop better data management processes in order to support future data driven activities, and explore and summarize large datasets using data visualization tools with text and graphics to support organizational decision making.

As described further below in the competitive analysis section, the ADM certificate is aimed at students who do not meet the math, programming or statistical prerequisites required by other programs. The certificate is not appropriate for students who wish to become data scientists, a path which requires more math, programming and statistical prerequisites.

Relation to mission: ADM will draw on expertise of faculty affiliates from departments on campus with expertise in data analysis (both qualitative and quantitative), data mining, data management and communication of data to audiences.

For non iSchool faculty/staff, the iSchool will employ MOUs to ensure clarity about program instructional expectations and compensation for instruction or curricular development (see attached example). It is standard L&S practice for 131 instructional programs to employ MOUs in this way. All MOUs are to be developed in consultation with L&S Administration, and will necessarily involve consultation with departments (and when courses are recruited from outside L&S, dean’s offices of other schools/colleges as needed).
The combination of faculty/staff expertise from across academic units will generate a unique educational experience by bringing together teaching expertise in statistics, organizational planning, assessment, information visualization and communications, data management and introductory data mining. This set of educational opportunities is not currently available in any one department. The iSchool currently has agreements with Communication Arts and Biometry to field instructors in ADM and co-promote ADM. Conversations with the School of Business about participation in the certificate are ongoing.

The iSchool will run the certificate, but consult with program affiliates who teach or developing curricular materials, on changes to the following:

- The academic vision,
- Pedagogical and instructional guidelines,
- Learning outcomes of the certificate,
- Major changes to the curriculum, the learning outcomes, or changes to courses that impact the overall learning outcomes or the content of other courses, and
- Budgets, tuition, enrollment levels, instructor recruitment processes and levels of TA or grader support.

Participation in the certificate will provide participating faculty access to new students who would not otherwise attend UW-Madison and new contacts in a variety of organizations. These increased connections may increase employment opportunities for campus students and give faculty new connections for research.

Participation in the certificate will give partner departments an opportunity to learn about online revenue generating programs, online classes and fielding classes for part-time professional audiences.

Participating faculty will earn revenue for their departments from courses they field in the program based on the ADM revenue sharing model, or if their department fields an alternative instructor (see MOU). Exact revenue earned by will vary based on enrollments and instructional costs of the class. Affiliates can also earn revenue by developing and maintaining instructional materials, or appearing as an occasional guest lecturer in a course, even if they do not act as instructor of record.

The ADM certificate could serve as a pipeline to other graduate programs on the UW-Madison campus as graduate credits earned in ADM are potentially transferable into a masters degree. The iSchool curriculum committee voted to accept credits earned in the ADM program into the iSchool MA program (for students who are accepted into the MA) on March 1, 2017. The iSchool Executive Committee approved this action on April 12, 2017.

3.2. What is the evidence that there is a student demand for the Capstone certificate program?

Division of Continuing Studies contracted for a market study by Hiebing in summer 2014 to investigate market demand for ADM. The report compared (a) intent to enroll and (b) willingness to pay of the ADM certificate compared with three existing successful UW Madison certificates in Geographical Information Systems, Actuarial Science and Clinical Nutrition. Results of the Heibing study for ADM showed strong interest and intent to enroll and a high willingness to pay compared to the existing successful benchmarks.
In addition, Eschenfelder spoke with representatives from American Family Insurance who expressed interest in supporting employees to pursue the certificate as it would directly benefit work at the organizations. They reported that several current Am Fam employees are pursuing the UW-System Data Analytics online masters degree (http://datasciencedegree.wisconsin.edu/). The ADM certificate would offer a shorter and cheaper alternative for Am Fam staff than the System complete masters degree that requires programming prerequisites.

The iSchool conducted a market analysis in summer 2015, 2016 and spring 2017 of online analytics certificate programs that offered graduate credit (transferrable into a Masters) and found that comparable certificates are priced between $600 and $900 per credit. For this reason, we propose to begin with the $800 per credit tuition level. If market demand supports increasing the tuition to $1,100 per credit we will do so in the second or third year.

Online Graduate capstone certificates listed from least to most expensive per credit:
1. Indiana University Bloomington, College of Informatics Certificate in Data Science
   $650 a credit (listed at $1300 a credit but website advertises that everyone who applies gets a 50% discount)
   12 credits or $7800 total cost of program
2. University of Maryland, Continuing Studies, Certificate in Business Analytics
   $694 per credit
   12 credits or $8328 total cost of program
3. Penn State, World Campus, Certificate in Business Analytics
   $930 per credit
   9 credits or $8370 total cost of program
4. Oklahoma State, Certificate in Data Mining
   $429 in state and $1044 out of state per credit
   12 credits or $12,528 total cost of program out of state
5. Stanford Certificate in Data Mining and Applications
   $1120 per credit
   9 credits or $10,080 total cost of program

Peer programs report significant competition from the numerous very inexpensive non credit options in introductory analytics. Non credit certification is available from UC Irvine, University of Washington, Northwestern, and Michigan State. Conversation with program chair at IU Bloomington confirmed that non credit programs are their largest competitor with many students preferring a lower price and no graduate credit.

We also examined full masters degrees in Data Analytics. Pricing for full masters degrees is highly variable with the UI Bloomington and UW System masters on the low end and the UC Berkeley programs on the high end.

Indiana Bloomington MS in Data Science, 30 credits, total cost of program $21,457.00 ($715 per credit) Prerequisites: none listed
UW System Cooperative MS in Data Science, 39 credits, total cost of program $29,700 ($761 per credit) Prerequisites: elementary statistics, introductory computer programming, and introduction to databases.

UC Berkeley School of Information MS in Information and Data Science, 27 credits, total cost of program $ 62,991 ($2333 per credit) Prerequisites: knowledge of a high-level object-oriented language such as Python, Java, or C++.

3.3. What is the evidence that there is a market demand for graduates of the Capstone certificate program?

The Division of Continuing Studies (DCS) market report found that occupations related to analytics and data analysis are expected to grow faster than the average of all occupations in the United States. For example, market research analysis positions are expected to increase by 32% by 2022. Bureau of Labor Statistics reports that Management Analyts positions will rise by 9%.

DCS interviews with employers emphasized the need for employees with applied research skills such as "using statistics in a business setting" and "understanding if data are credible" and data communications skills such as information visualization and how to "persuade and influence" using data.

Proposals for new Capstone certificates must provide a demonstrated need for such a program: this provision must be defined in terms of external markets (i.e. external demand for the skills associated with such a certificate) and must describe how the Capstone certificate program will attract new student enrollments.

4. Curriculum

4.1. Delivery modality:

☐ Face-to-face
☒ Distance

Distance-delivered programs are those certificate or degree programs in which 50% or more of the required courses may be taken as distance-delivered courses.

4.2. Provide a complete list of requirements.

The capstone certificate will consist of 3 required courses (705, 706, 707). 705 must be taken before 706 and 707. Students can take 706 and 707 in any order. On completion of the three courses, the student will complete the certificate. Students are admitted on a rolling basis each time 705 is taught. We plan to run 705 twice a year and admit starting students in both the fall and spring. The certificate will allow students with prior approved coursework to apply to opt out of 705 and move directly to 706 and 707.

The courses have received all required approvals from related departments and all the courses were passed by L&S curriculum committee. 705 has completed the campus level approval process and is pending catalog import. 706 and 707 are in the queue at the University Curriculum Committee.

LIS 705: Introductory Analytics for Decision Making (3 credits): The entry course in certificate, 705 introduces students to the learning objectives of the certificate and the year long capstone project. Students increase their capacities to frame questions that can be informed by data, identify and assess the quality of existing data sources and plan a structured inquiry. Students learn about and apply...
major data collection methodologies and are introduced to the basics of quantitative and qualitative analysis approaches.

LIS 706: Data Mining Planning and Management (3 credits - prereq 705): Prepares students to plan, manage and assess a data mining project in light of organizational strategic goals. Introduces stages of a data mining project, organizational data audits, metadata and data management concepts, data preparation techniques, data project evaluation and principles of data ethics. Students learn and apply introductory data mining tools and techniques for data clustering, dividing data into classes, making predictions, and identifying networks.

LIS 707: Data Visualization and Communications for Decision Making(3 credits - prereq 705): Students will gain competency with data visualization and communication to support decision making in organizational environments. They will master contemporary visualization tools to summarize, analyze and communicate about data. They will analyze stakeholders information and communications needs and preferences in order to develop effective data products. Students will be able to explain the limitations and challenges of using visualization techniques, understand and apply basic principles of design to create effective visualizations, and choose appropriate types of visualization(s) based on source data, audience, and goal. Students will evaluate visualizations created by others for effectiveness and bias. To complete the certificate capstone project, as part of this class students will apply data analysis, data visualization and data communications techniques learned in the certificate in order to plan and create a portfolio in which they employ data, texts, infographics and visualizations to help analyze and understand data in order to solve an organizational problem.

Program requirements should provide content that leads to the completion of Capstone certificate learning goals. See section 8 Assessment.

4.3. Chart student progression through the curriculum.

<table>
<thead>
<tr>
<th>Semester students will take the course</th>
<th>Department</th>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
<th>Instructor</th>
<th>Semester &amp; year last taught</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring 1</td>
<td>LIS</td>
<td>705</td>
<td>Introductory Analytics for Decision Making</td>
<td>3</td>
<td>Kim or TBD</td>
<td>n/a</td>
</tr>
<tr>
<td>Fall 1</td>
<td>LIS</td>
<td>706</td>
<td>Data Mining Planning and Management</td>
<td>3</td>
<td>Eschenfelder or TBD</td>
<td>n/a</td>
</tr>
<tr>
<td>Summer 1</td>
<td>LIS</td>
<td>705</td>
<td>Introductory Analytics for Decision Making</td>
<td>3</td>
<td>Mares or TBD</td>
<td>n/a</td>
</tr>
<tr>
<td>Summer 1</td>
<td>LIS</td>
<td>707</td>
<td>Data Visualization and Communication</td>
<td>3</td>
<td>Masemann or TBD</td>
<td>n/a</td>
</tr>
</tbody>
</table>

4.4. Total credits required: 9 credits.

Capstone certificate programs are usually 9 to 12 credits and may not be more than 15 credits.

4.5. Semesters to completion: The program can be completed in one calendar year: 2 regular semesters (fall/spring) and one summer session.
4.6. Describe the student progression (one-course per semester for several semesters, all courses taken in one intensive semester, other:

☒ Part-time (< 8 credits fall and spring semesters, < 4 credits summer term)
Students will take one course per semester for three semesters including a 14 week summer session.
☐ Full-time, time-compressed, intensive
Describe full-time format here. (100 word limit)
☒ Other
The courses will be online and will not require the student to travel to campus.

Checklist for Verification of Curricular Policy Requirements*
You will have an opportunity to provide explanation and rationale for any Curricular Policy Requirements that have not been affirmed in the text box that follows the check list, below.

☒ Courses for the Capstone certificate are numbered 300 or higher.
☒ Courses are offered on a regular basis (as identified in student progression chart in section 4).
☒ Courses have enrollment capacity for students in the Capstone certificate program.
☐ Courses in the proposed Capstone certificate have been approved.
☒ All of the Capstone certificate credits must be earned “in residence” (which includes on campus and distance-delivered courses) at UW-Madison while enrolled in the Capstone certificate program. Because a Capstone certificate is comprised of just a few courses, it is not appropriate for students who already have completed the same or similar coursework at UW-Madison or another institution.
☒ Students must earn a minimum grade of C on all attempted Capstone certificate coursework.
☒ Courses in which a student elects the pass/fail option will not meet Capstone certificate requirements.
☒ All Capstone certificate program requirements must be met; waiving requirements is not permitted.
☒ Units must maintain Capstone certificate requirements so that they are up-to-date; all curriculum changes must be approved through the appropriate school/college academic planning council (APC) or curriculum committee. The school/college APC or curriculum committee will notify the Office of the Registrar, the Graduate School, and DCS-ACSSS about approved curricular changes to the certificate. Typically, any changes in requirements will be effective no sooner than the fall semester after approval.

*Provide explanation and rationale for any Curricular Policy Requirements that have not been affirmed.
Proposed courses have been submitted to the course proposal system. 705 and 707 are approved. 706 is currently under review at the campus level (approved by L&S).

5. Student Services & Advising

5.1. List the names of Capstone certificate program advisor(s) with title and departmental affiliation(s).
Ms. Jenny Greiber, Certificates Coordinator at the Information School will act as advisor. The position will be a program coordinator position as course choice advising will be light due to the lockstep nature of the program.

5.2. How will the resource load of the additional student services support and advising be met?
The certificate program coordinator will provide admissions, recruiting, student services and advising. The lockstep nature of the program will reduce course selection advising, but the program coordinator will provide career related advising and general student support. Advising about online learning will occur through the program community of practice site employing materials developed by DoIT.
academic technologies and piloted through the UX certificate program. A certificate TA will provide additional student support related to online learning technologies.

Do the individuals or offices have the capacity to add student services support for the Capstone certificate program? Does the program have the resources to support all aspects of advising and student support?

5.3. ☒ Confirm that program advisor(s) have been consulted and reviewed this proposal.

6. Admissions

6.1. Minimum bachelor’s degree GPA for admission to the Capstone certificate program (if relevant):
   A minimum undergraduate grade-point average (GPA) of 3.00 on the equivalent of the last 60 semester hours (approximately two years of work).

6.2. List additional admission criteria:
   Prior bachelors degree in any field.
   English language proficiency examinations for non-native English speaker, current Graduate School minimums required
   No prior coursework in statistics or research methods is required
   No prior coursework in computer science is required
   No GRE or MCAT is required

   In order to provide greater flexibility and meet the needs of specific target student populations, each Capstone certificate program shall identify any tests and minimum scores (for example GRE and TOEFL where applicable), and other similar criteria required of applicants to the program. These elements must be clearly communicated to applicants and students. In planning, programs should give special attention to English-language proficiency for non-native English speakers and consider how proficiency will be determined in the admission process; ESL support is not generally available to students in Capstone certificate programs.

Checklist for Verification of Admission Policy Requirements*

You will have an opportunity to provide explanation and rationale for any Admission Policy Requirements that have not been affirmed in the text box that follows the checklist.

☒ Degree-seeking students may not be concurrently enrolled in a Capstone certificate program.
☒ To be eligible for admission to a Capstone program, a student must hold an earned bachelor’s degree or equivalent credential from an accredited college or university.
☒ Prospective Capstone certificate students apply to the University and are admitted through the Adult Career and Special Student Services office in the Division of Continuing Studies (DCS-ACSSS) in consultation with the Capstone certificate faculty program director or designee. Once admitted, Capstone certificate students carry a University Special student classification (UNCS). University Special students apply via an online application system by selecting the Capstone certificate program of choice from a program list on the application. DCS-ACSSS codes the applicant for that program and defers final admission until a decision is made by the Capstone program faculty/staff. DCS-ACSSS serves as the advising, admissions, and academic dean's office for all University Special students.

*Provide explanation and rationale for any Admission Policy Requirements that have not been affirmed in the above checklist.

n/a
7. Enrollment Planning and Marketing

7.1.Projected annual enrollment: The ADM certificate aims for an initial student pool of 40 per year. If demand is sufficient, the certificate will increase enrollment to up to 60 students per year.

*Capstone certificates that will be supported by non-pooled tuition should project enrollments of at least 30 students; experience shows this is the threshold for generating sufficient revenue to meet direct program costs.*

7.2. Maximum enrollment that can be supported with existing instructional and student services resources: 40, or up to 60 with additional TA support.

7.3. Describe plans for supporting enrollments that are much higher or much lower than the anticipated enrollment.

Lower enrollments: The program has a 4 year plan. If enrollment targets are not met within three years, then the program will stop admissions and teach out any remaining students in the fourth year.

Higher enrollments: The program could support higher enrollments through the hiring of additional TAs to support the course instructors. If enrollment demand is higher than expected, we will seek to increase the certificate tuition to $1,100 per credit.

7.4. Will this Capstone certificate enroll international students? Yes

*Programs who will seek to enroll international students must plan accordingly. International students (any student who needs a UW I-20 for a student visa) may only enroll in a program if the Capstone certificate is offered full-time, if students are enrolled full-time, and if the program has been approved to receive international students by the US government. That approval process is conducted through the Office of International Student Services and can be initiated after academic approvals are complete; such approvals may take up to a year. Note that fully online programs are not subject to this restriction because international students do not need a visa.*

7.5. What is the marketing plan for the Capstone certificate?

The certificate staff will work with DCS to build a social media strategy including: an AYC landing page with analytics and auto-responses, Google ads, Linked In ads, Facebook ads, Twitter ads.

Website: the certificate will build a website, friendly to international audiences, that contains relevant program and contact information.

Alumni networks: the certificate will advertise itself through the alumni networks and newsletters of the partner programs that are fielding instructors and therefore have an interest in revenue generation.

Conferences: The certificate will advertise via relevant professional conferences and professional associations including professional associations (SLA, DAMA, AMIA)

Brochures: The certificate will print paper brochures that can be distributed to state businesses. The Advisory Council of the certificate will assist in advertising the program to other businesses through social networks and word of mouth.

8. Assessment

8.1. ☒ Attach an assessment plan when submitting this proposal.

*See the Basic Assessment Plan for Capstone Certificates for instructions and the accompanying template. The Basic Assessment Plan and Template are minimum expectations for this information. Programs that have developed plans that exceed what is specified in the basic plan may provide that information.*

8.2. Provide a summary of the Capstone certificate’s assessment plan, including learning goals, key methods and assessment approaches, and how assessment information will be reviewed and acted on.

Learning Goals:
1. Students can formulate questions related to existing organizational goals or challenges, identify sources of data to answer those questions, and design and implement a data analysis plan to answer the questions.

2. Students will demonstrate competency with a range of data collection and analysis techniques and tools appropriate to organizational decision making and assessment including the basics of data mining and visualizations.

3. Students can effectively communicate the rationale for a data project and the results of their analysis across different types of media and using best practices of textual and visual communications.

4. Students can articulate the possible information value and the limitations of data and analytics projects based on understanding of data quality, data availability, metadata functionality and other data management issues.

Key Methods and Assessment Approaches:
The Certificate Coordinator is responsible for ensuring the assessment occurs and is reported in conjunction with the Certificates Director (faculty).

The primary means of direct assessment will be a portfolio which includes the major assignments from each of the three classes. An assessment team of instructors and the Certificates Coordinator will score each portfolio on the degree to which it shows evidence of each learning outcome. Summary data from assessment will be compiled and shared with instructors. The Coordinator and Certificates Director will use the data to propose improvements to the certificate.

9. Related Programs

9.1. This Capstone certificate will be offered as a: Capstone certificate only.

   Students may not earn a Capstone certificate and Graduate/Professional Certificate of the same name. If the Capstone certificate will be offered as a Capstone certificate and a new Graduate/Professional certificate, a Graduate/Professional certificate proposal form must be completed.

9.2. Specify any other major/degree or certificate program that is related to this Capstone certificate.

This certificate is aimed at a more entry level and applied audience than students in the MS Statistics option Data Science and the proposed Masters of Engineering in Applied Computing and Engineering Data Analytics. The ADM certificate aims at an applied managerial audience and aims to produce data savvy managers, while the Statistics and Engineering programs aim to produce statisticians and engineers. The ADM certificate would not pull students from these programs as the ADM target market would not be qualified to enroll in those two programs.

Related programs include those that share a student audience, represent a closely related area of study, or have program names that are similar. These programs must provide a supporting memo (see required attachments). Capstone certificates supported using non-pooled tuition cannot compete with or draw students away from existing programs that support the central tuition pool.

10. Governance & Faculty

10.1. The Capstone certificate is governed by:

   ☒ Existing department and school/college governance committees
   ☐ New Capstone certificate governance committees

   If the Capstone certificate is governed by a new committee, define and outline governance structures and procedures for the certificate program.
Provide information on how program faculty are identified and provisions for transition in the faculty program director. Who will appoint the director and to whom will the director report?

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

Certificate managers:
Kristin Eschenfelder, Professor and Director Information School, Faculty Director of the Certificate
Jenny Greiber, Certificates Coordinator, Information School

iSchool faculty/instructional staff participating in delivery of the program:
Kyung Sun Kim, Professor, Information School
Bronwen Masemann, Faculty Associate Information School
Louise Mares, Professor, Communication Arts

In addition, ADM plans to cultivate long term teaching relationships with expert practitioners who could contribute teaching to the program. The expertise and industry connections of these instructors will add value to student experience and contacts for employment. ADM will recruit these instructors through the social networks of the core faculty and staff and partner program alumni and board members.

11. Progress & Certificate Completion
11.1. ☒ Using ISIS, the faculty program director and staff will be able to identify University Special students enrolled in the Capstone certificate program.
11.2. ☒ Using DARS, the faculty program director and staff will monitor students’ progress in the Capstone certificate program.
11.3. ☒ The faculty program director will notify the degree audit department in the Registrar’s Department and DCS/ACSSS by email (degreeaudit@em.wisc.edu, kthomas@dcs.wisc.edu) when a student has completed all of the requirements for the Capstone certificate.

When the certificate is completed, the program faculty director or designee must notify the Registrar’s Office in order for the Capstone certificate to be recorded on the official student record and for it to print to the transcript. If the program wishes to provide a physical certificate of completion for the student, they may do so.

11.4. Identify standards for good academic standing.
C grades must be earned on all coursework for the certificate program to complete the certificate. Pass/fail and audit options are not permissible. Incomplete (I) grades are unsatisfactory if they are not removed during the subsequent semester of enrollment; however, the instructor may impose an earlier deadline.

At a minimum, C grades must be earned on all coursework attempted for the certificate program. Academic standing is verified by the program faculty and staff. (Only graduate-level work from the Capstone certificate that is earned with a grade of B or better is eligible for subsequent application to a UW-Madison graduate degree minimum graduate-level credit requirement.)

12. Fiscal Structure and Ongoing Commitment
12.1. The Capstone certificate program will be supported using non-pooled tuition
12.2. For programs that will be supported using standard general purpose revenue, what resources are allocated or reallocated to the Capstone certificate program?

n/a

Is there a source of new funding? If the funding is from reallocation, what activities will be reduced as a result? Both the proposal from the program faculty and the school/college dean’s office cover memo should specify that the resource commitment is being made to the program.

12.3. For programs supported using non-pooled tuition, what resources are allocated to the Capstone certificate program?

To fund the start of the program, the iSchool will be investing start up funds earned from a different non-pooled tuition program (MA Library and Information Studies - Distance Option) the iSchool will also seek start up funds from DCS.

Programs supported using non-pooled tuition must also submit the attachments listed in the required attachments section.

12.4. For programs supported using non-pooled tuition, planned enrollment is expected to generate enough paid tuition to cover instructional costs, direct student support costs, and any other fixed or required costs. Although detailed fiscal plans are not required in the academic program proposal, it is helpful to provide the following summary taken from the non-pooled tuition budget:

Fiscal Annual Summary
Planned enrollment: 40 per year with the potential to go up to 60
  Estimated paid tuition: $288,000 (800 a credit @9 credits *40 students)
Core Instructional costs:
  Direct student support costs: $136,239( $49,839 of instruction costs ( $16,612 academic staff salary +fringe * 3 courses) + $86,400 local administration)
  Overhead assessment/allocation: 32% tax ($80,640)
Total costs: $216,879
Excess tuition available for reinvestment: $71,121
  Briefly list planned reinvestment uses: scholarships for program students, support ongoing departmental needs.

12.5. The department or program will consider students enrolled in the Capstone certificate for departmental financial aid.

Capstone certificate students cannot receive federal financial aid.

12.6. ☒ Students enrolled in Capstone certificate programs are NOT eligible for teaching assistant (TA), research assistant (RA), project assistant (PA) nor graduate fellowship support. Programs must disclose this program policy to Capstone certificate students in the recommendation of admission letter, program website, program handbook, and program orientation.

12.7. ☒ The Capstone certificate program faculty are responsible for seeking appropriate governance approval for significantly altering the Capstone certificate’s curriculum, suspending admissions or discontinuing the certificate program.

12.8. ☒ The faculty/staff will make a three-year progress report to GFEC three years after first student enrollment.

12.9. ☒ The faculty/staff will engage in program review five years after implementation and at least once every ten years after that.

12.10. ☒ The program faculty/staff will ensure the program is encoded into DARS and will work with the Registrar’s Office DARS liaison to keep approved revisions to the curriculum current.
12.11. ☒ The program faculty/staff will ensure the program website and Advance Your Career materials are current and consistent across all locations where information is provided.

**Required attachments**

☒ Supporting letters/memos

*Provide letters or memos from other academic units that will have overlapping interest. This will include departments/schools/colleges that provide courses for the certificate, share a student audience, represent a closely related area of study, have overlapping faculty, or have program names that are similar.*

☒ Assessment plan

*See the Basic Assessment Plan and Template for Capstone Certificates for detail. The Basic Assessment Plan for Capstone Certificates and the Template are posted at http://apir.wisc.edu/certificates.htm*

Programs supported using non-pooled tuition must attach:

☒ Core Criteria Checklist

☒ Additional Requirements Checklist

*See the current “Non-pooled Program Requirements Process” document posted at http://apir.wisc.edu/academicplanning.htm*
This assessment plan template is meant to outline a systematic approach to reviewing the student learning experience for your capstone certificate program. A simple, straightforward assessment plan includes:

- **What** – What are students expected to learn?
- **Where** – Where in the curriculum are students expected to learn and apply the knowledge and skills specified as the learning goals?
- **How** – How do program faculty know (what is the evidence) that students are learning what they expect them to?
- **So What** – After reviewing the assessment activity findings (evidence), are students meeting the expectations? Validate or consider ways to improve.


**Capstone Certificate Program Name:** Data Analytics for Decision Making (ADM)
**Faculty Director Name, Contact information, Title:** Kristin Eschenfelder, Professor and Director Information School (eschenfelder@wisc.edu)
**Primary Program Contact Name, Contact information, Title:** Jenny Greiber, Certificates Coordinator, Information School (jgreiber@wisc.edu)
**Date this Assessment Plan was adopted by the iSchool program faculty:** May 2016

**Student Learning Goals (What)**
Generally, capstone certificates have 3 to 5 learning goals. List the learning goals for this capstone certificate program below.

1. Students can formulate questions related to existing organizational goals or challenges, identify sources of data to answer those questions, and design and implement a data analysis plan to answer the questions.
2. Students will demonstrate competency with a range of data collection and analysis techniques and tools appropriate to organizational decision making and assessment including the basics of data mining.
3. Students can effectively communicate the rationale for a data project and the results of their analysis across different types of media and using best practices of textual and visual communications.
4. Students can articulate the possible information value and the limitations of data and analytics projects including data mining projects based on understanding of data quality, data availability, metadata functionality and other data management issues.

**Curriculum Map (Where)**
- **Learning Goals** – Enter the capstone certificate learning goals identified in the previous section on the top row of the following chart.

- **Capstone Certificate Program Courses** – List all capstone certificate requirements. Feel free to add rows as needed.

- Indicate where the course or learning experience contributes to each of the learning goals. Courses may contribute to multiple learning goals.

<table>
<thead>
<tr>
<th>Curriculum Map (Where)</th>
<th>Enter certificate-level learning goals and mark which course contributes to which learning goal.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Capstone Certificate Program Courses</strong></td>
<td>Learning Goal #1: Formulate, plan, implement</td>
</tr>
<tr>
<td>705 Introductory Analytics for Decision Making</td>
<td>X</td>
</tr>
<tr>
<td>706 Data Analysis and Data Mining Concepts</td>
<td>X</td>
</tr>
<tr>
<td>707 Data Visualization and Communications</td>
<td>X</td>
</tr>
</tbody>
</table>

*Add additional rows as needed to capture all requirements.*

<table>
<thead>
<tr>
<th>Assessment Planning (How)</th>
<th>Learning Goal #1: Formulate, plan, implement</th>
<th>Learning Goal #2: Data collection and analysis</th>
<th>Learning Goal #3: Data communications</th>
<th>Learning Goal #4: Data management and value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Method for assessing learning (at least one direct method required)</td>
<td>Portfolio consisting of final projects from the three required classes</td>
<td>Portfolio consisting of final projects from the three required classes</td>
<td>Portfolio consisting of final projects from the three required classes</td>
<td>Portfolio consisting of final projects from the three required classes</td>
</tr>
<tr>
<td>Timetable for assessment activity (at least one activity each year; all goals reviewed in a 3-year cycle)</td>
<td>Once per year for all students completing the certificate</td>
<td>Once per year for all students completing the certificate</td>
<td>Once per year for all students completing the certificate</td>
<td>Once per year for all students completing the certificate</td>
</tr>
</tbody>
</table>

*For examples of direct and indirect methods of assessment, see: [http://provost.wisc.edu/assessment/doing-assessment.htm](http://provost.wisc.edu/assessment/doing-assessment.htm).

**Assessment Review and Reporting (So What)**

1. **Who is responsible for assessment?** (Identify a team, including at least one faculty member, who will coordinate the implementation of the plan on an annual basis):

The Certificate Coordinator is responsible for ensuring the direct measure assessment occurs and is reported in conjunction with the Certificates Director (faculty).
2. **What is the plan for review of the assessment information?** (At minimum, review will take place at an annual meeting of the program faculty and staff; note that at this meeting the program may want to review enrollment information, course progression, completion, and other features of the student experience. This is also a good time to review and update the certificate proposal or implementation form):

The primary means of direct assessment will be a portfolio in which students will include the final projects from each of the three classes. An assessment team of instructors and the Certificates Coordinator will score each portfolio on the degree to which is shows evidence of each learning outcome. Summary data from assessment will be compiled and shared with the certificate Program Committee.

3. **What is the plan for production of annual summary report?** (A summary of the materials forms the basis of the discussion at the annual meeting, the content of the discussion, and any recommendations):

The Certificate Coordinator and Director will produce a summary report for review by the ADM Program Committee that will contain draft recommendations. Annually, the ADM Program Committee will meet, review data and consider proposed changes to courses or the certificate structure or certificate goals. Program Committee members may also motion for other changes during the meeting based on their review of the data. Each year the data will include: PLO achievement, enrollments/progression/completion data, and surveys of employment of past year’s graduates. At least every other year the Program Committee will seek input from its industry advisory board.

4. **How will recommendations be implemented?** (explain the general process by which recommendations will be implemented):

Recommendations will be implemented by the ADM Program Committee voting to: change the content or courses or assignments, change the requirements for the capstone project and presentation, change marketing materials, change student support procedures. It will be the responsibility of the Director of the Certificate to ensure that the changes are implemented.

Use this form in conjunction with the “Basic Assessment Plan for Capstone Certificates” guidelines.
For information on Capstone certificates see: [http://apir.wisc.edu/certificates.htm](http://apir.wisc.edu/certificates.htm)
For information on assessment see [http://provost.wisc.edu/assessment/](http://provost.wisc.edu/assessment/)
APPENDIX A. CORE CRITERIA CHECKLIST
FOR ACADEMIC PROGRAMS WITH NON-POOLED TUITION

1.  New and Additional Student Enrollments to Support Program Costs

X The program must bring in NEW and ADDITIONAL students. Overall enrollment in all other school/college programs must not be eroded. The program cannot compete with or draw students away from existing programs that support the central tuition pool.

X Faculty/staff must plan for sufficient enrollments to have enough tuition to cover instructional, direct student support costs, and any other fixed or required costs. Experience shows that enrollments of at least 30 students are necessary to have enough tuition to meet direct program costs.

X School/college Budget Officers must be involved in planning and must approve plans and budgets for these programs before the program is submitted to the school/college APC for academic approval.

2.  Designed for Non-Traditional Students

X Has an applied, practice-oriented curriculum, or integrates practice with theory

X Is offered in a modality that allows non-traditional audiences to attend (evening, weekend, online, intensive, or some combination)

X Has demonstrated a workforce demand for the program graduates

X Has defined learning goals that are oriented to market considerations

X Has a clearly defined curriculum that is “self-contained”, meaning that program students are confined only to courses from the approved, prescribed curriculum

X Has a clearly defined (often lockstep) curriculum with few options or electives that follows a predictable timeline for offerings and completion

3.  Distinctly Identifiable Program (Code) With Governance Approval

X The program must be distinctly identifiable in the student record system, either as a degree/major or as an option of a degree/major, or as a Capstone certificate.

X The program must develop a proposal for the academic approval process, during which it must demonstrate that the school/college Dean and Budget Officer are aware and supportive of the program being run on a non-pooled tuition model.
APPENDIX B. ADDITIONAL REQUIREMENTS CHECKLIST 
FOR ACADEMIC PROGRAMS WITH NON-POOLED TUITION

Use this checklist in conjunction with the Core Criteria Checklist

If core criteria are met, the program must adhere to the additional requirements below.
Note: Not all new programs are suited for the non-pooled program requirements. New programs that seek to take advantage of a wide range of course and curricular/program offerings on campus and are not market-oriented should be developed under traditional (101) pooled tuition funding models.

1. Fiscal Requirements:
   X School/college budget officer has approved the budget and fiscal plan.
   X School/college dean and budget officer are committed to assuming fiscal responsibility for costs not covered by non-pooled tuition to the program. The school/college will back up the budget with a commitment to cover any costs not met from tuition from other sources.
   X The program structure fits within standard academic administrative structures and allocates expenses of the program so that the program does not create additional burdens on traditional/101 program resources or student services such as advising, ESL, Registrar’s Office, Bursar’s Office, Graduate School and other support services.
   X Programs have two options for tuition. One option is to charge standard graduate tuition according to the UW-Madison tuition schedule. This includes standard rates for WI resident, MN, and non-resident students and any compulsory fees that apply. Or, for fully online programs, they have the option of charging all students one of tuition tiers (Appendix D). Although not currently allowed, it is potentially possible in the future the tiered tuition may be available to face-to-face programs.
   X Because students who have graduate assistantships receive tuition waivers, some non-pooled tuition graduate degree programs choose to prohibit students from accepting a graduate assistantship (RA/TA/PA). If a program allows their students to take graduate assistantships they it must forgo the tuition revenue. To ensure full receipt of non-pooled tuition and to counter challenges from students, the program must adhere to the following:
   X The program faculty/staff must disclose this program policy to students in the recommendation of admission letter, program website, program handbook, and program orientation.
   X Please see Appendix E for links and Appendix F for a sample of a specific non-pooled program template for a recommendation of admission letter and a general template for a program handbook. The program faculty/staff must provide details on this and any other program policies the program
handbook in at least the following areas: satisfactory progress (good standing) requirements, any ways to return to good standing, and a program grievance process if done does not already exist.

2. Requirements for International Students:

X Programs may not admit students who need ESL services without building sufficient ESL support into their fiscal model, and having an explicit MOU with the ESL provider about funding to support the ESL services.

X Graduate degree/major programs must use Graduate School standards for English Proficiency. Capstone certificates should be designed so that admission requirements ensure that ESL support is not needed.

X If the program is NOT completely online and admits international students, the program is responsible for honoring federal visa regulations related but not limited to: length of stay requirements for visa requests, online course restrictions for visa holders, and waiting for federal program approval (up to a year) if the program represents a new degree type or capstone certificate previously not offered at UW-Madison.

3. Requirements for Program/Course Enrollment:

X Non-pooled tuition program students can only be enrolled in one program at a time; enrollment in a second major, named option, certificate program, or courses beyond the prescribed program curriculum is not permitted. Non-compliance with this requirement will jeopardize the receipt of tuition for a non-pooled program. Regular audits will be conducted to ensure these requirements are met.

X To ensure full receipt of non-pooled program tuition and to counter challenges from students who want to be dually enrolled, the program must adhere to the following:

X The program must provide information to students about prohibitions on concurrent program enrollment and out-of-program course enrollment. Programs must note this in recruiting materials, in recommendations of admission, on the program website, program handbook, and program orientation.

X Please see Appendix E for links and Appendix F for language for a specific non-pooled program template for a recommendation of admission letter and a general template for a program handbook. The program faculty/staff must provide details on this and any other program policies in the program handbook in at least following areas: satisfactory progress (good standing) requirements, ways to return to good standing, and a program grievance process if one does not already exist.
X The program communicates to students each semester prior to course enrollment the expectation that students can enroll only in program courses and not in courses outside the approved, prescribed curriculum.

X For students who enroll in the non-pooled program and then decide they want to pursue traditional/101 programs that allow dual enrollment, the program must help the student transfer to a different program(s) that allow such activity.
September 18, 2017

To whom it may concern,

Please accept the support of the Department of Communication Arts for the development of a new online capstone certificate in Data Analytics for Organizational Effectiveness (name tentative). My understanding is that the Department of Communication Arts will have the opportunity to provide a course in the program and generate revenue from that course.

The certificate will meet the needs of practicing professionals looking for skills in introductory applied research, data analysis and data mining. The program’s target of online students will also provide our participating faculty with new students and additional connections to industry.

As an active participant, I understand that most administrative functions of the certificate will be managed by the Information School. Communication Arts participation in teaching for the certificate will be managed by L&S approved MOA such as the example attached. It is my understanding that the chair of Communication Arts will have the opportunity to review and approve each MOA. Within these guidelines, I am pleased to offer our department’s full support of this initiative.

Sincerely,

Michael A. Xenos
CAPs Professor and Department Chair
Department of Communication Arts
Affiliate Faculty, Department of Life Sciences Communication
Affiliate Faculty, School of Journalism and Mass Communication
Editor, Journal of Information Technology and Politics
University of Wisconsin-Madison
6110 Vilas Communication Hall
821 University Avenue
Madison, WI 53706
I am writing on behalf of the Department of Statistics to support the proposed online capstone certificate on Analytics for Decision Making. Data Science is the study of the generalizable extraction of knowledge learnt from data. It requires statistical data analysis, computing skills and domain science knowledge. Statistics Department launched a professional master degree on data science three year ago and has merged as a leading master data science program in UW-Madison. Your proposed certificate program is a useful addition to the broader data science offerings of UW-Madison, and we anticipate mutual benefits from the cooperation between our two programs.

Sincerely,

Yazhen Wang
Professor and Chair
Department of Statistics
University of Wisconsin-Madison
Email: yzwang@stat.wisc.edu
October 31, 2017

Kristin Eschenfelder
Vilas Distinguished Achievement Professor
Director, School of Information
4217 HC White Hall, 600 N. Park Street
University of Wisconsin-Madison
Madison, WI 53706

Dear Kristin,

Please accept the support of the Wisconsin School of Business (WSB) for the development of the new online capstone certificate in Analytics for Decision Making (ADM). My understanding is that WSB will have the opportunity to provide a course for the program and generate revenue from that course. Further, as outlined in the Instructor Memorandum of Agreement, I understand that WSB will retain the right to use for other purposes any online course materials developed by a WSB instructor for the ADM.

The certificate will meet the needs of practicing professionals looking to increase their applied data and analytic decision making skills. The program’s target of online students does not compete with existing audiences for Business courses. Further, teaching in the program will give participating WSB faculty and staff access to new students and experience teaching fully online courses.

As an active partner in the program, WSB will send a voting representative to the certificate program advisory committee (to be named) and will suggest members for the certificate advisory board. We understand that most administrative functions of the certificate will be managed by the Information School.

We look forward to moving ahead with you in this endeavor.

Sincerely,

Anne P. Massey
Albert O. Nicholas Dean
Wisconsin School of Business

Office of the Dean
Wisconsin School of Business  4300 Grainger Hall  975 University Avenue  Madison, WI 53706
www.wsb.wisc.edu
Date: June 16, 2017

To: Sarah Mangelsdorf, Provost and Vice Chancellor for Academic Affairs

From: Diana Hess, Dean

Re: Final Summary and Department Response of Review for:
   - MS-Educational Leadership and Policy Analysis
   - PhD-Educational Leadership and Policy Analysis

The program review of the graduate programs in Educational Leadership and Policy Analysis was completed by a review committee chaired by Gerardo R. Lopez, Loyola University, with members: Rebecca Ropers-Huilman, University of Minnesota; and Steven Tozer, University of Illinois-Chicago in April 2015. A GFEC member was not available to meet with this review team and the supplemental review team was able to submit a final report in May 2017. The supplemental review team was chaired by Jim Escalante, Professor-Art, with members, Stacey Lee, Professor-Educational Policy Studies, and Fernando Tejeda-Herrero, Associate Professor-Spanish and Portuguese (GFEC). The review teams were charged with assessing the strengths and weaknesses of the program and making recommendations for future directions. The supplemental review committee’s report and department’s response was presented to the School of Education Academic Planning Council (APC). The following is an executive summary of the program review and department response:

Area Strengths:

- The department has been actively making adjustments to the programs since the external review report in April 2015.
- The program has begun to change the informal tracks of K-12 Leadership; Higher, Postsecondary and Continuing Education; and Educational Policy into named options of the degree programs. Lead professors have been identified for each option and the formal documentation and requests of the named options will be made in AY 2018. During the development phase, the department will consult with Educational Policy Studies regarding the proposed Educational Policy named option.
- Students report feeling supported by the programs and faculty. The department is proactive in diversity and campus climate discussions allowing students to feel supported.
- The department offers strong support and mentoring for all students and offers a course (ELPA 825) which introduces students to best practices for job market
training, proposal writing, professional socialization, and other career development topics.

**Challenges/Recommendations:**

- The Education Specialist Certificate which is most often sought by students seeking a school superintendent license, has seen a decline in numbers in the program due to a lack of student interest, and increased competition from other institutions. The program will hold discussions regarding the future of this program.

- The program continues to seek creative funding opportunities for graduate students (particularly MS-degree students) given that the department does not serve undergraduate students, limiting the possibility of teaching assistantships within the department. As a professional program that offers courses on evenings and weekends, many ELPA students are working professionals who do not seek funding. Nevertheless, increasing student exposure to on-campus graduate student funding opportunities and off-campus work opportunities should be explored.

- Student progress, particularly of MS-degree students and part-time students, should be monitored to develop supports for student success.

On behalf of the School of Education, I want to thank the External Review Team, the Supplemental Review Team, and the Educational Leadership and Policy Analysis program for all their hard work in preparing this report and response.

**Attachments:**
Review Committee Report
Supplemental Committee Report
Program Response

**Copies:**
Eric Camburn, Chair, Curriculum and Instruction
William Karpus, Dean, Graduate School
Carolyn Kelley, Senior Associate Dean, School of Education
Beth Janetski, Policy and Planning Analyst, School of Education
Marty Gustafson, Assistant Dean, Graduate School
Jocelyn Milner, APIR
Sarah Kuba, APIR
June 13, 2017

To whom it may concern:

The Department has reviewed the GFEC supplemental review. We appreciate the Committee’s thoughtful comments and suggestions. The Department has begun implementing many of the suggestions made by the external review team and by the GFEC sub-committee. The Department will give the Committee’s remaining feedback serious consideration in its ongoing efforts to improve Departmental operations.

Sincerely,

[Signature]

Eric Camburn
Professor and Chair
Department of Educational Leadership & Policy Analysis
Educational Leadership and Policy Analysis  
School of Education  

Supplemental Review Report  
May 30, 2017  

In the spring of 2015 the Department of Educational Leadership and Policy Analysis (ELPA) conducted their ten-year program review. As part of the review, ELPA conducted a self-study and a team of external reviewers visited the department. A GFEC member was unable to be assigned to accompany this external review team, so a supplemental review team was formed. Our role was to provide a supplemental overview of the ten-year review process that ELPA conducted in 2015 to be sure that the review was sufficiently comprehensive for the department to use in future planning. Since ELPA only awards graduate degrees we did not have any undergraduate programs to include in our discussions. The members of the supplemental review team are: Jim Escalante, Professor, Art Department, Supplemental Review Committee Chair; Fernando Tejedo-Herrero, Associate Professor, Spanish and Portuguese Department; and Stacey Lee, Professor, Educational Policy Studies.

The Supplemental Review took place in the fall of 2016. The delay was due to scheduling problems in GFEC and the School of Education’s Dean’s office. In October 2016, Jim Escalante was asked to assume the chair of the supplemental review team.

In conducting our review we were provided the following documents:  
ELPA 2015 Self Study Report  
ELPA 2015 Department Response  
ELPA 2015 External Report  
ELPA 2015 Composite  
ELPA Co-op with UW Whitewater  
ELPA Exit Interview  
ELPA MS Global Education enrollment data  
ELPA MS degree enrollment data  
ELPA PhD degree enrollment data  
ELPA Specialist certificate enrollment data  
ELPA Wisconsin Idea Executive PhD enrollment data  

In their 2015 Self-Study report ELPA wrote about their department. “ELPA offers the M.S. and Ph.D. degrees and a Specialist Certificate in Educational Leadership and Policy Analysis. The department’s programs are organized around three tracks: Higher, Postsecondary and Continuing Education, focused on the effective administration of postsecondary institutions; K-12 Leadership, emphasizing the effective administration of primary and secondary institutions; and Educational Policy, stressing effective formation and analysis of policies governing the administration of all educational institutions. All three degrees offered by the department are intended
to provide graduates with professional knowledge and skills essential for educational leadership, and to prepare persons for leadership positions at all levels of education: preschool, elementary, secondary, special education, vocational and technical schools, and colleges and universities, both public and private.”

In executing its mission, ELPA pursues the following strategic directions:
- Expand and enhance the focus on equity, diversity, and difference in instruction, as well as within the faculty, staff, and student body.
- Provide professional development opportunities and research-based support to the profession that advances the quality of administrative practice and policy.
- Continue to build on and integrate our strengths in research productivity, extramural funding, and high quality teaching, including the expanded use of technology in administrative practice.

The External Review from the 2015 visit reported they reached consensus on key issues that are elaborate in their report. Below are some points taken from the Executive Summary of the External Report
- **ELPA is a nationally recognized leader among departments of its kind, supporting academic programs and research productivity that are also nationally recognized for their excellence, housed in a top-tier School of Education.**
- **We take as a guide to our recommendations ELPA’s stated mission, which appears to be authentically endorsed by the faculty and administration:**
  “To create, evaluate, exchange, and apply knowledge about leadership, learning, and organizational performance to prepare scholars and scholar practitioners who cultivate equity and educational opportunity in a diverse and changing world.”
- **We believe that the key concerns raised in the self-study, concerns that we affirm, are located in the Department’s authentic striving to make this admirable mission live consistently and optimally in practice.**
- **ELPA’s 2015 Self Study Evaluation Report surfaced, in one way or another, nearly every issue that we identify for attention in this report.**

**ELPA mission and degrees offered**
The Department of Educational Leadership and Policy Analysis (ELPA) is a graduate program in the School of Education at the University of Wisconsin-Madison. According to ELPA’s mission statement, the department seeks to “create, evaluate, exchange, and apply knowledge about leadership, learning, and organizational performance to prepare scholars and scholar practitioners who cultivate equity and educational opportunity in a diverse and changing world.” The department advances this mission through a comprehensive set of graduate programs, faculty scholarship, and a wide variety of faculty service activities. ELPA offers the M.S. and Ph.D. degrees and a Specialist Certificate in Educational Leadership and Policy Analysis. The department has recently formalized these three tracks: (1) Higher, Postsecondary and Continuing Education, focused on the effective administration of
postsecondary institutions; (2) K-12 Leadership, emphasizing the effective administration of primary and secondary institutions; and (3) Educational Policy, stressing effective formation and analysis of policies governing the administration of all educational institutions. Their plan is to have each of these three made into named options. During the spring semester, faculty will be formally assigned as Lead Faculty for each of the tracks.

Students in the Master’s of Science program must complete at least 30 credits of course work according the track (or strand) the student selects: (1) K-12 Leadership, (2) Education Policy, (3) Higher, Postsecondary and Continuing Education, and (4) Global Higher Education. The requirements for each of the strands is clearly staged to allow them to be met promptly, but with flexibility.

Doctoral students have to work through 75 credits of course work that aim at students gaining both breadth and depth of knowledge. The requirements are distributed across seven categories: Introduction to the field (6 crs.), Core Knowledge (12 crs.), Program Depth (9 crs.), Electives (15 crs.), Minor (12 crs.), Research Methods and Design (12 crs.) and Research/Thesis (9 crs. minimum). These requirements are carefully and clearly explained on the Department’s webpage and in the Graduate Student Handbook (available online).

At the time this review took place, the M.S. program includes the named options titled “Cooperative Program with UW-Whitewater” and “Global Higher Education.” The Ph.D. program also includes the named option titled “Wisconsin Idea Executive Ph.D. Cohort.”

ELPA has two non-pooled programs: a Master’s degree in Educational Leadership with an emphasis on Global Higher Education and a Ph.D. in Educational Leadership with a focus on District-Level Leadership.

All of the degrees offered by the department are intended to provide graduates with professional knowledge and skills essential for performing educational leadership and policy analysis and research in these broad areas. The department prepares persons for leadership positions at all levels of education: preschool, elementary, secondary, special education, vocational and technical schools, and colleges and universities, both public and private.

**Time to degree**
The university’s official time-to-degree document (covering fall 2010-spring 2013 and given to us with the department’s self-study) lists 6.3 years as the median time to degree for students in the Doctoral program. This value is considerably better than the one shown for peer institutions (7.1 years), and a testament of the faculty’s and the Student Services Coordinator’s commitment to students’ excellence in mentoring and advising. As regards the M.S. program, the large majority of students —approximately half of which are enrolled as part-time students— complete their degree within the minimum standards established by the department. Students
must complete their M.S. degree within five years from their admission date. According to data provided by the Chair, out of 62 students who enrolled in the program in 2012, 50 had completed their degree by December 2016 (81%).

**Supplemental Review Process**

In addition to the review of the self study documents, we held three meetings: the first with Professor Carolyn Kelley, who answered questions about admissions, advising and other administrative and curricular issues; the second with Department Chair, Professor Eric Camburn; and the third with a group of ELPA Ph.D. students.

**On October 25, 2016** the supplemental review team met with Eric Camburn, chair of Educational Leadership and Policy Analysis to discuss the ELPA 2015 Self Study Report, the External Report and the Department Response.

- Professor Camburn shared progress on department initiatives since the external report in 2015. He confirmed that beginning in Spring of 2017, lead faculty in each of the tracks will begin their roles as was suggested by the external reviewers. One staffing challenge for the department is that two of ELPA’s senior faculty are serving in the Dean’s office, which has limited the number of available faculty. Additionally next year, three faculty will be on sabbatical leave. The department remains committed to their mission and goals and is evaluating how to best address some of the other suggested opportunities given the current budget and staffing demands.

- The Department values many of the recommendations in the external report and provided thoughtful responses in the *Department Response*. Professor Camburn confirmed that ongoing conversations with leadership in EPS regarding the ELPA policy strand have begun and will continue. This is extremely important so that current and future graduate students are able to identify which department is best suited to their academic needs.

- The Department schedules town halls with graduate student groups every semester. These meetings have provided insight into concerns that students have in the department and across campus.

- A shrinking graduate student market and competition with private schools has created a decline in some enrollments. One area is the Educational Specialist area. ELPA values the program, as it is an important connection with school superintendents and principals. Maintaining a network for faculty research and graduate placement is important as it provides connections to state and national professional organizations. The department plans to continue its study on efficient ways to keep the program viable.

- The department appears to be responsive to student advising and professional development. Upon arrival to the program, a graduate advisor is assigned to first year students, but students are free to change advisors if they find one more suited to their area of study.
On November 1, 2016 five students (all full-time PhD students) met with us to discuss their experience in the department. The department invited full and part-time students to attend. The department made efforts to schedule the meeting when full and part-time students were made to attend. However, only full-time students attended the session. Students spoke in positive terms about their academic experiences in the department.

- Students discussed a desire to find more opportunities to collaborate with each other. It is especially hard for part-time students. In our discussion they were not sure of the best programmatic changes required to provide greater opportunities, and recognized that it might be difficult to create an ideal situation given the range of programs in the department.
- Students shared that faculty are approachable and that they were proactive to student concerns. They also reported that the department scheduled regular forums and that these meetings provide opportunities to give feedback. Primarily full-time students attend student forums. At a recent session, students shared that the department’s website needed more information about the program. The department added the requested information quickly. Students were genuinely appreciative of the quick action by the department.
- The students also shared that faculty provide them with necessary information for degree planning. They shared that the department has a department handbook for students. Most said they do not need to use it as they have other ways of getting the information they need.
- Students commented that faculty have reached out to them to provide support and addressed racial incidents on campus.
- Funding for graduate study is on everyone’s mind. Students mentioned that some students do not secure major funding for their graduate study. Teaching Assistantships are limited since the department does not offer undergraduate courses that hire Teaching Assistants.
- Students shared that funding for master degree students is hard to find, and they shared that the level of funding likely has a significant impact on their experiences in the program. Those that have funding seemed please with their work supervisors. Students also spoke positively about the ability to change academic advisors.
- The students shared that the department continues to seek ways to create community for them. The faculty and students are united that they are working to build a community that is inclusive of the various degree programs and both part and full-time students. One example they have tried is the student faculty gatherings during WISCAPE lectures and events. Yet no single time slot is idea for everyone.
- Students shared that the Students Services Coordinator, Shari Smith, serves as the first point of contact for questions.
- One suggestion is that the department could compile more information for off campus opportunities such as internships and other partners.
One student suggested the department consider creating tutorial sessions for quantitative classes similar to the ones offered in the Sociology department.

Students asked about office space for all enrolled students. Those with funded positions often receive space to do their assigned work. It was not clear to the students in attendance if space was available for everyone. The department continues to look for space for students to work but does not see a solution to offer dedicated office space to every ELPA student.

**New initiatives since the 2005 self-study.**

1) The Department is planning to explore having the three strands made into named options. The Department has already voted to move forward with having the HPCE (Higher-Ed) strand turned into a named option. Any movement on adding a named option in educational policy analysis should involve consultation and cooperation with EPS.

2) With respect to the policy strand, ELPA is organizing existing approved courses into a logical sequence and communicating this sequence to students. As mentioned in the Department’s self study response they are planning to add a core course that will orient students to key ideas in educational policy analysis. They are working with EPS to make sure that this course does not overlap with any existing EPS courses. They have also begun to identify EPS courses that ELPA students can take as electives in this strand.

3) The Global Higher Education masters program was approved in 2012 and is a new revenue generating degree program. It is the only new program since the last self-study. The ELPA Co-Op with University of Wisconsin-Whitewater and the Ph.D. Cohort are the other two revenue-generating programs in the department.

4) Since the last self-study the Wisconsin Center for the Advancement of Postsecondary Education (WISCAPE) founded in 2001, was moved into ELPA in 2016. Professor Clif Conrad is the new Faculty Director and Noel Radomski is the Managing Director and Associate Researcher. Through partnerships, events, and programs, the work of WISCAPE is intended to provide additional support to the academic programs in ELPA’s higher education strand and enhance the identity, quality, and visibility of the work of HPCE faculty, ELPA, the School of Education, and the University of Wisconsin-Madison.

**Commendations**

- National rankings remain high for the department, especially in Educational Administration.
- The department appears to be working hard to make adjustments to future directions of their program and has used input from the external review report.
- The department has been very responsive to racial incidents on campus. They have done a great deal to address climate and diversity. The student make up is diverse and students expressed support for the department and the efforts they have undertaken with respect to campus climate.
• ELPA 825, the department’s seminar appears to keep pace with best practices for job market training, proposal writing, professional socialization and other career development topics.
• ELPA appears to offer strong support and mentoring for all students.
• We did not seek actual placement statistics, however, students from ELPA regularly find faculty appointments and placement in educational administration, both K-12 and higher education. As pointed out on the ELPA’s Department webpage, students earning a degree with them find positions as faculty members at research universities, researchers in research centers and consulting firms, policy analysts for non-profit organization, University administrators, a University President, and policy analysts at the federal and state levels.
• They have developed an impressive up-to-date Graduate Student Handbook.

Challenges
• Leadership appointment in the department remain a challenge since two of ELPA’s senior faculty are serving in the Dean’s office and next year three faculty will be on sabbatical leave. The department remains committed to their mission and goals and is evaluating how to best address some of the other suggested opportunities given the current budget and staffing demands.

Recommendations
• As mentioned above in the New initiatives since 2005 self-study portion, it is important that ELPA continue to work with EPS in developing a named option in policy.
• Given the decreasing number of degrees awarded in the Specialist Certificate (none since AY 2014-2105), the Department should consider having a discussion about its future, possible need for revamping it, or leaving it as is, but communicating to the Graduate School the reasons for maintaining it.
• Continue study on the fiscal stability of the Higher Education Global Studies Masters degree.
• Continued effort to expose graduate students about possible resources available in the Graduate School.
• While students showed satisfaction about their mentors and advisers from their assigned advisers and individual faculty members, it became clear during the conversation with students that common issues among graduate students or potential initiatives did not find a forum either as graduate representatives or, perhaps, scheduled meetings from these representative with the chair (or, in the absence of a Graduate Studies Director, with another faculty member).
• As reflected by comments from students, it seems clear that, given the mixed group of full-time and professional part-time students, the lack of opportunities for developing a cohort sense or creating additional opportunities for full-time and professional students to interact. It would
also be important to develop a survey directed to professional students to gauge their opinion on the program.

- Develop an annual department-wide evaluation of students. It was not clear if ELPA Department has a system in place to follow Master’s students progress. While the set of courses students need to take is well described and students seem to be well informed, It is not clear how the department can help identify students who might need additional help or whose progress might not be adequate and perhaps might be falling through the cracks.
Ph.D. Apps, Admits, Enrolls

Applicants, Admits and New Enrollments

This visualization was created by the Graduate School. Questions should be directed to Peter Kinsley, peter.kinsley@wisc.edu.
Total Enrollment - Diversity

Enrollment

Select a Topic
Diversity

- Domestic Targeted Minorities
- Domestic Non-Targeted
- International

Period
Fall Term

Division
All

School/College
All

Degree Level
All

Academic Major
Multiple values

Named Option
All

This visualization was created by the Graduate School. Questions should be directed to Peter Kinsley, peter.kinsley@wisc.edu.
Ph.D. Funding

Students with an Appointment of 33% or Higher

This visualization was created by the Graduate School. Questions should be directed to Peter Kinsley, peter.kinsley@wisc.edu.
Ph.D. Time to Degree
(Total time as a Doctoral Student in Program)

PhD Time-to-Degree Metrics, Peer Comparison

This visualization was created by Academic Planning and Institutional Research (APIR), Office of the Provost, UW-Madison. Questions should be directed to Sara Lazenby, sara.lazenby@wisc.edu.
November 10, 2017

Sarah C. Mangelsdorf, Ph.D.                      William Karpus, Ph.D.
Provost and Vice Chancellor for Academic Affairs  Dean of the Graduate School

Sent electronically

Re: Review of the Molecular and Environmental Toxicology MS and PhD degree programs and doctoral minor

Dear Provost Mangelsdorf and Dean Karpus:

On behalf of the School of Medicine and Public Health, I endorse the ten-year review of the Molecular and Environmental Toxicology MS and PhD degree programs and doctoral minor.

After discussion at the September 20, 2017 meeting of the SMPH Academic Planning Council, APC members unanimously approved the report of the review committee, the recommendations of the committee for implementation, and the response of program leadership to the review committee’s report. Those reports are attached. The review has also been approved by the Academic Planning Councils of the College of Agricultural and Life Sciences and the School of Pharmacy (see attached letters).

Strengths include the program director; program administrator; a consistent trainee pool with a high acceptance rate by students admitted to the program; a strong record of URM recruitment, which is facilitated in part by a National Institutes of Health Summer Research Program R25 grant; strong courses and student satisfaction with the curriculum; many opportunities for diverse career training; and many community building events within the graduate program (e.g., annual retreat, weekly seminars, outreach, toxicology society meetings, and student representation on program committees).

The committee suggested areas of opportunities, and the program has responded:

1. Ensure continuity in leadership. The program has since developed a leadership transition plan: a current associate director would serve as interim director until a permanent director is named.

2. One administrator may not be sufficient for the program’s efforts. The program has since started working with SMPH Fiscal Shared Services and Human Resources Shared Services. The program also belongs to the SMPH’s Biomedical Graduate Program Consortium, which recently hired an additional student services coordinator, who has relieved the Molecular and Environmental Toxicology coordinator of some responsibilities.

3. Program handbook needs updating. With the recent addition of a new staff member, the coordinator will have time to update the handbook.
4. **Funding may become more difficult with challenges to the program’s T32.** The program submitted a T32 application in May, and the results will be known before the end of the year. The program acknowledges that funding provided by the SMPH’s Biomedical Graduate Program Consortium for five rotators per year is a significant and stable source of support, as are additional funds provided by the SMPH, the Graduate School, and the Office of the Vice Chancellor for Research and Graduate Education. The program is also aware that the SMPH provides short-term financial support should an emergency arise.

5. **A more formal mechanism for trainer recruitment is needed.** The program will bring this matter to its executive committee for consideration.

6. **Teaching experiences vary significantly among students in the program.** The program is implementing a mechanism for supporting TA and PA positions.

7. **Possible curriculum changes that incorporate toxicology risk assessment should be considered.** The program has amplified risk assessment in a required course, M&ENVTOX 626: Toxicology II. Risk assessment was the theme of the 2017 program retreat. Future course additions to more permanently include risk assessment will be considered.

8. **A low percentage of students are graduating with PhDs.** Graduate School data showed that 62% of students from the past 10 years have PhDs whereas the program reported this to be 70% (AAU institution average is 73%). The program’s analysis of student graduation data from 2006 to 2016 shows that only a small number of students have left the program with no degree (2 students, 3%) or with an MS (8 students, 10%), whereas the remainder are either in training (36 students, 47%) or have their PhD (33 students, 43%).

Both the SMPH Academic Planning Council and I concur with the review committee’s recommendation to continue the programs. We recommend that the next review occur in ten years.

Thank you for your consideration. If you require additional information, please do not hesitate to contact Andrea Poehling.

Sincerely,

Robert N. Golden, M.D.
Robert Turell Professor in Medical Leadership
Dean, School of Medicine and Public Health
Vice Chancellor for Medical Affairs
University of Wisconsin-Madison
Copies to:
Chris Bradfield, Molecular and Environmental Toxicology Graduate Program
Mark Marohl, Molecular and Environmental Toxicology Graduate Program
James Keck, School of Medicine and Public Health
Richard Moss, School of Medicine and Public Health
Andrea Poehling, School of Medicine and Public Health
Kathryn VandenBosch, College of Agricultural and Life Sciences
Richard Straub, College of Agricultural and Life Sciences
Sarah Pfatteicher, College of Agricultural and Life Sciences
Nikki Bollig, College of Agricultural and Life Sciences
Steven Swanson, School of Pharmacy
Parmesh Ramanathan, Graduate School
Marty Gustafson, Graduate School
Emily Reynolds, Graduate School
Jocelyn Milner, Academic Planning and Institutional Research
Sarah Kuba, Academic Planning and Institutional Research

Attachments:
  1) College of Agricultural and Life Sciences APC approval
  2) School of Pharmacy APC approval
  3) Program response
  4) Review committee report
November 7, 2017

TO: Sarah Mangelsdorf, Provost
Bill Karpus, Dean of the Graduate School

FROM: Sarah Pfatteicher, Associate Dean of Academic Affairs, CALS

CC: Nikki Bollig, Assistant Dean, CALS Admin - UW-Madison
Chris Bradfield, Professor, Director of MET
Marty Gustafson, Assistant Dean, Graduate School
Sarah Kuba, Academic Planner, APIR
Jocelyn Milner, Director, Academic Planning and Institutional Research
Dick Straub, Senior Associate Dean, CALS
Kathryn VandenBosch, Dean, CALS

RE: Program Review of Molecular and Environmental Toxicology MS, PhD

We are pleased to report that the College of Agricultural and Life Sciences has completed the first stages of the program review for the Molecular and Environmental Toxicology master’s of science and doctoral degrees. The Academic Planning Council accepted the report as complete and thorough.

The CALS APC met on October 17th to hear from Professor Shigeki Miyamoto, who chaired the review committee, and Professor Sharon Long, the CALS representative on the review committee. APC discussion continued on November 7th with the director of the program, Professor Chris Bradfield, who shared with the council several ways in which the program has responded to the review in recent months, including creation of a leadership succession plan, and formalization of the teaching experience requirement. We are pleased to hear of this continued improvement to two already strong academic programs.

We appreciate the significant work of the committee and program in completion of the review process and look forward to working with campus leadership, GFEC, and the UAPC on the next stage of this review.
Oct 16, 2017

Sarah C. Mangelsdorf, Ph.D.  
Provost and Vice Chancellor for Academic Affairs

William Karpus, Ph.D.  
Dean of the Graduate School

Sent electronically

Re: Review of the Molecular and Environmental Toxicology MS and PhD degree programs and doctoral minor

Dear Provost Mangelsdorf and Dean Karpus:

On behalf of the School of Pharmacy, I endorse the ten-year review of the Molecular and Environmental Toxicology MS and PhD degree programs and doctoral minor.

After discussion at the October 6, 2017 meeting of the SOP Academic Planning Council, APC members unanimously approved the report of the review committee, the recommendations of the committee for implementation, and the response of program leadership to the review committee's report.

Both the SOP Academic Planning Council and I concur with the review committee's recommendation to continue the programs. We recommend that the next review occur in ten years.

Thank you for your consideration. If you require additional information, please do not hesitate to contact me.

Sincerely,

Steven M. Swanson, PhD  
Dean and Professor

Steven M. Swanson, PhD  
Dean and Professor

777 Highland Avenue  
Madison, WI 53705-2222  
(608) 262-1414  
steve.swanson@wisc.edu
Friday, August 18, 2017

To: James Keck, Associate Dean of Basic Science (SMPH)
Cc: Andrea Poehling, Director of Academic Program Development & Evaluation (SMPH)
From: Christopher Bradfield, Director, Molecular & Environmental Toxicology

RE: Response to Ten Year Review Comments

**Program Response to Ten Year Review Comments from Molecular & Environmental Toxicology Program**

**Directorship Transition Policy:**
The Molecular & Environmental Toxicology Program is currently headed by Professor Christopher Bradfield. There are two Associate Directors, Dr. Wei Xu (Professor Oncology) and Dr. William Hickey (Professor of Soil Sciences). These two faculty members represent Molecular Toxicology and Environmental Toxicology, respectively.

In matters where Dr. Bradfield is not available, the appropriate associate director will provide guidance. (for example, if it is an issue from a student in the environmental track, Dr. Hickey would intervene; Dr. Xu would for a student from the molecular track) This established “chain of command” will serve in matters, such as if Dr. Bradfield were to be on sabbatical.

In addition, these Associate Directors would be able to seek the advice and counsel of the current Executive Committee members to assure that the best courses of action for the Program are enacted.

Should Dr. Bradfield step-down from the directorship, Dr. Xu is presumed to move into the (interim) directorship role. This is appropriate, given the amount of funding that SMPH provides to the Program; a faculty member affiliated with SMPH should serve as the Program Director.

From this juncture, it would be a decision of the SMPH Deans’ Office as to whether or not Dr. Xu would continue in this role permanently, or if a new director (from either an internal or external search) should be identified.

**Additional Staff; Handbook:**
In addition to the Shared Services provided by SMPH, the Biomedical Graduate Program Consortium has recently hired an 80% time employee. Among other duties, this candidate will be the dedicated coordinator for the Physiology Graduate Training Program. This will relieve Mr. Marohl of some of his responsibilities and enable him to provide full focus on MET.

With this further focus, he will be able to work on developing new initiatives for the Center and Consortium. This will include a focus and dedication to developing a more functional handbook.
Continued Financial Support for MET, Formalizing Teaching Experiences:
The Program’s T32 Training Grant was submitted 05/25/17 and we expect to hear back by the New Year about whether or not to have received a renewal (yrs 41-45). Should the proposal not be funded, we will go in again in the May 2018 call.

In the past year, through funding rules changes from the Graduate School, the Center has participate in a massive spend-down exercise, which has included the transfer of upwards of nearly $200,000. Conversations with Dr. Moss’ Office have alluded to the possibility of a “pay it forward” situation, in which our Center will be granted those funds back from the Deans Office because they were not used in the previous year. This money, when combined with MAMA, School & College Exercises (led by Tracy Cabot), Deans’ Office rotation funds, and support from the Graduate School (presuming steady support) have been estimated to provide solvency to the Program in terms of emergency student support, the funding of Center operations, and the development of a TA / PA funded program for at least three years.

By being able to provide funding for students to serve as preceptors in our core courses, we will be able to a) Provide funding so that faculty PI’s do not “lose a semester” when student are serving a preceptors, as part of their Program requirements; b) Provide funding opportunities for our students in the environmental sciences; and c) Allow us formalize the requirements and expectations of the preceptor roles, leaving it to the Program, not the individual instructors, to make the decisions.

New Risk Assessment Opportunities:
The desire of the students to have more risk assessment training has been well documented. We have implemented the following and plan to implement the following methods:
   a) Devotion of lectures to risk assessment in MET 626 (ongoing)
   b) MET 2017 Retreat’s theme was “Risk Assessment” and included four talks on “What is Risk Assessment,” and Risk Assessment in Academia, Industry, and Government. These talks were given by either MET faculty or alumni. (May 25,2017)
   c) A curriculum review during the director’s sabbatical may lead to the development of a more focused risk assessment class or module during a core course (future)
   d) Request for speakers to present more insights at the MET 800 seminar during 2017-18 academic year (future)

Recruitment and Training of New Trainers:
Training new affiliates for MET can be a difficult balancing act. On one hand, our faculty members teach out of dedication to the program, versus any other method, as we cannot provide any compensation, save for a training grant slot to a graduate student. Additionally, the home departments of faculty members may because “possessive,” were we to start implementing training of their faculty.

That said, the need is there.

This is certainly a discussion to be had with the Executive Committee, as well as perhaps incorporating the directors of the other programs in the Consortium, as they are all interdisciplinary programs and a service such of this could be advantageous to all.

Low reported percentages of graduate students with PhD’s:
With assistance from Kelly Haslam and Sara Lazenby, we obtained the names used in developing the statistics from the Graduate School. Thirty-nine names were listed, twenty-five of
whom obtained PHD’s, a rate of 64%. This is 2% higher than listed in the report. This could be a result of a PHD being awarded following the calculation.

The listing had students entering the PHD program at a range from Summer 1999-Fall 2003. These students are all outside of a ten-year (entry) window and were not included in our program review. Furthermore, some of the students included initially joined the program earlier than Summer 1999. We have added an analysis of the names and displayed it in a table similar to one used in the Program Review.

<table>
<thead>
<tr>
<th>Academic Year</th>
<th>Admitted</th>
<th>Left Program</th>
<th>MS</th>
<th>PHDs</th>
<th>%-age PHD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td>2+</td>
<td></td>
<td>2</td>
<td>2</td>
<td>100%</td>
</tr>
<tr>
<td>1997</td>
<td>2+</td>
<td></td>
<td>2</td>
<td>2</td>
<td>100%</td>
</tr>
<tr>
<td>1998</td>
<td>2+</td>
<td></td>
<td>2</td>
<td>2</td>
<td>100%</td>
</tr>
<tr>
<td>1999</td>
<td>12</td>
<td>1</td>
<td>2</td>
<td>9</td>
<td>75%</td>
</tr>
<tr>
<td>2000</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>33%</td>
</tr>
<tr>
<td>2001</td>
<td>5</td>
<td>1</td>
<td>4</td>
<td></td>
<td>80%</td>
</tr>
<tr>
<td>2002</td>
<td>8</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>50%</td>
</tr>
<tr>
<td>2003</td>
<td>5</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>20%</td>
</tr>
<tr>
<td>TOTALS</td>
<td>39+1</td>
<td>9 (23%)</td>
<td>5 (13%)</td>
<td>25 (64%)</td>
<td>70% (ave)</td>
</tr>
</tbody>
</table>

We think that the numbers displayed in the MET Program Review (Table 9) more accurately depict a ten year entry and departure rate. Additionally, this corresponds with the tenure of the Program Director and accurately reflects what he has accomplished with the classes that entered under his leadership. Below is an updated version of Table 9, reflecting recent graduates.

<table>
<thead>
<tr>
<th>Academic Year</th>
<th>Admitted</th>
<th>Left Program</th>
<th>MS</th>
<th>PHDs</th>
<th>Still in Program</th>
<th>%-age PHD</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>6</td>
<td>1</td>
<td>0</td>
<td>5</td>
<td>0</td>
<td>83%</td>
</tr>
<tr>
<td>2007</td>
<td>8</td>
<td>1</td>
<td>1</td>
<td>6</td>
<td>0</td>
<td>75%</td>
</tr>
<tr>
<td>2008</td>
<td>11</td>
<td>0</td>
<td>1</td>
<td>10</td>
<td>0</td>
<td>91%</td>
</tr>
<tr>
<td>2009</td>
<td>7</td>
<td>0</td>
<td>2</td>
<td>6</td>
<td>0</td>
<td>86%</td>
</tr>
<tr>
<td>2010</td>
<td>5</td>
<td>0</td>
<td>5</td>
<td></td>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td>2011</td>
<td>9</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>0</td>
<td>44%</td>
</tr>
<tr>
<td>2012</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>N/A</td>
</tr>
<tr>
<td>2013</td>
<td>6</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>5</td>
<td>0%</td>
</tr>
<tr>
<td>2014</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>6</td>
<td>0</td>
<td>N/A</td>
</tr>
<tr>
<td>2015</td>
<td>6</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>5</td>
<td>0%</td>
</tr>
<tr>
<td>2016</td>
<td>9</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>9</td>
<td>N/A</td>
</tr>
<tr>
<td>TOTALS</td>
<td>77 (100%)</td>
<td>2 (3%)</td>
<td>8 (10%)</td>
<td>36 (47%)</td>
<td>33 (43%)</td>
<td>80% (ave)</td>
</tr>
</tbody>
</table>

1 The start date for some of the students included does not agree with program records; likely, they were admitted to the program, completed a masters, and then reenrolled for a PHD. They should not be included in a later year; rather, the year that they initially started.
2 Student was a transfer in and transferred out one year later
3 One of the students entered as a terminal masters, was successful, and then continued in the program for a successful PhD, so is counted twice
4 Of these two, one successfully completed and MS Degree in one lab before funding issues required a move to another lab. The second student was admitted as a terminal masters
5 Two students have defenses scheduled for Summer 2017; we anticipate that they will be successful.
6 One student will deposit at end of summer; is not currently being counted.
7 Two of these students are enrolled as terminal MS
8 “Early Return” 0% (2013, 2015) not included in calculation.
As this table illustrates, for classes entering in the past ten years, 43% are still studying and 47% of our students have graduated with PHD’s. This equates to 55% having left with higher degrees to this point.

The table below puts focus on classes that have no remaining participants. (numbers same from above; please see corresponding footnotes)

<table>
<thead>
<tr>
<th>Academic Year</th>
<th>Admitted</th>
<th>Left Program</th>
<th>MS</th>
<th>PHDs</th>
<th>Still in Program</th>
<th>%-age PHD</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>6</td>
<td>1</td>
<td>0</td>
<td>5</td>
<td>0</td>
<td>83%</td>
</tr>
<tr>
<td>2007</td>
<td>8</td>
<td>1</td>
<td>1</td>
<td>6</td>
<td>0</td>
<td>75%</td>
</tr>
<tr>
<td>2008</td>
<td>11</td>
<td>0</td>
<td>1</td>
<td>10</td>
<td>0</td>
<td>91%</td>
</tr>
<tr>
<td>2009</td>
<td>7</td>
<td>0</td>
<td>2</td>
<td>6</td>
<td>0</td>
<td>86%</td>
</tr>
<tr>
<td>2010</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td>TOTALS</td>
<td>37 (100%)</td>
<td>2 (5%)</td>
<td>4 (11%)</td>
<td>32 (86%)</td>
<td>0 (0%)</td>
<td>87% (ave)</td>
</tr>
</tbody>
</table>

It should be emphasized here: For the five entering (and fully completing) classes listed here, 97% of our students have left with a higher degree.

Respectfully submitted,

Christopher Bradfield, Ph.D.
Professor of Oncology & Director, Molecular and Environmental Toxicology Center
March 8, 2017

To:     Dr. Richard Moss  
        Senior Associate Dean of Basic Science, Biotechnology and Graduate Studies  
        University of Wisconsin School of Medicine and Public Health

From:  Review Committee for the Molecular Environmental Toxicology MS and PhD degree programs

The following report summarizes our review of the Molecular Environmental Toxicology graduate program.

Summary of activities and materials reviewed:
Our committee [Karen Cruickshanks, Chuck Lauhon, Sharon Long, Shigeki Miyamoto (chair), Nicole Perna (GFEC representative), with support from Andrea Poehling] met on December 13th 2016 to review the Molecular Environmental Toxicology (MET) self-study and materials provided. In this first meeting, our committee (Karen was unable to attend but submitted questions by email) discussed the overview of the review process, discussed the contents of the materials provided, determined the agenda for the site visit, and prepared requests and questions for the site visit. Much of our discussion focused on our impressions of the MET graduate program based on the self-study and materials provided, noting strengths and weaknesses, and selecting requests and questions to be addressed further during our visit.

Our site visit took place on February 14, 2017. We met with the MET graduate program Director (Dr. Chris Bradfield); five members of the MET Steering Committee; representatives of the MET junior faculty and faculty who are not T32 trainers but who have had students in their labs; graduate program coordinator (Mark Marohl); two groups of current trainees (four early-stage and four late-stage students); and ending with a final meeting with Dr. Bradfield and Mr. Marohl. The overall conclusion from our review and site visit is that MET is an excellent graduate program, with outstanding leadership from the director and program coordinator, an engaged core of faculty, and strong students. A full critique of the program is provided below, including a number of recommendations from our review committee that we feel could improve an already strong program.

Program strengths:
The committee was impressed with multiple aspects of the MET graduate program. The trainees and trainers who participated in the site visit were generally very strong advocates of the program and in particular students were clearly satisfied with many aspects of the program, especially the program director and coordinator, and opportunities for career development activities, including teaching. They also uniformly praised the value of the annual retreats, focused topics covered during retreats and openness and receptiveness of the director and coordinator for feedback.

- Excellent leadership: The director of the program (Dr. Bradfield) was uniformly viewed by the students, faculty and the program coordinator as exceptional in his commitment, dedication, helpfulness and receptiveness to any concerns that students and faculty may have. In particular, his role in helping students who changed their thesis labs was viewed as very positive by the students who went through this potentially stressful process. He also spends considerable effort in identifying, recruiting and cultivating new trainers for the program. The faculty in leadership positions within MET seemed dedicated to programmatic improvements, such as career development initiatives and curriculum updating. All committees meet at least annually and the Steering Committee meets additionally as needed.
• **Excellent program coordinator:** The program coordinator (Mark Marohl) is clearly a strong asset to the program. All students interviewed invariably conveyed the excellent help that he provides to the students. He also carries out a considerable level of duties in addition to assisting existing students, including making sure the students meet milestones, facilitating relationships with PIs, making sure students are paid, and maintaining training grant appointments, progress reports, and HR appointments. In addition, he assists with T32 and R25 grant renewals, Superfund proposals, and responsibilities related to the Biomedical Graduate Program Consortium, including assisting with the early stage and advanced Responsible Conduct of Research courses. He is also the point of contact for prospective students and guides them through the admissions process. He is involved in campus recruitment events such as Biosciences Opportunities Preview Program (BOPS), and maintains contacts with about 100-150 alumni annually, organizing a social event at the national annual conference. He also initiated a monthly newsletter, which was noted by the students and faculty to be an effective method for disseminating relevant information. As recently as 18 months ago, the MET was supported by 2.5 employees. At present, Mr. Marohl is the only staff person dedicated to the program. He indicated that there are times when he does not have sufficient time to do everything he would like. The SMPH Dean’s Office has facilitated program support for fiscal services and human resources from SMPH Shared Services. The MET program is also supported by a team of student hourlies who work ~15 hours per week.

• **Consistent trainee pool:** The number of trainee admissions varied between 4-12 students over the past 10 years. While the number of applicants declined somewhat in the last three years (from mid-40’s-low 50’s from 2006-2013 to 28 in 2015-2016), the percentage of admitted students that enrolled is strong varying from 58-71% in the last three years. The success of recruiting reflects the effectiveness of the program-specific recruiting efforts but also seems to reflect the efficiency of the joint recruiting effort with three other programs (ERP, MCP, PGTP). This joint recruitment brings in ~40 students over two visits where visiting students are able to make meaningful connections with the current students and a broad array of faculty. The program director noted that there is little competition among the four programs for recruitment. The target class size is five new students per year. Funding for rotations in the first semester is provided by the SMPH Dean’s office. Beginning in the second semester all students are funded by the long-standing T32 NIEHS training grant, research grants held by the advisor, or through SciMed-GRS funding. Students noted that the rotations provide a valuable introduction to a variety of research areas and helped them identify appropriate mentors for their dissertation research. The average time-to-completion for PhDs is very good at 5.3 years.

• **Excellent record of underrepresented minority student recruitment:** The enrollment of domestic targeted minorities is substantial with 31% and 30% in Fall of 2014 and 2015, respectively. The general trend is increasing over the last 10 years. This has been achieved through a new NIEHS R25 grant, which will likely be renewed, partnership and funding from SciMed-GRS, Graduate School grants, and increased outreach. The MET program has had over 100 URM undergraduate students attend summer program since 1995. Seven of these students have been recruited to the graduate program, with four currently in training.

• **Strong core courses for student training:** The MET program provides 13 credits of core courses that lay the foundation for molecular toxicology and environmental toxicology. The program also requires seven elective credits, which typically include ecotoxicology series and statistics. Although this is a high level of course work, the students were appreciative of course work for improved knowledge base for their future careers. The chair of the curriculum committee indicated that the emphasis of the training is on problem solving. The program
website shows curriculum requirements clearly. Overall, the review committee felt that the program core curriculum was very strong.

• **Commitment to preparing trainees for diverse careers:** Many previous MET alumni have found positions in academia and government, but in the last ten years there has been an increasing trend toward industry careers. To meet this changing landscape, the program provides many opportunities for trainees to learn about diverse careers throughout their training. Foremost among them is the annual retreat where the program invites MET alumni speakers, including those from industry and teaching colleges, reflecting students' inputs on the types of career paths that they are interested in learning. The director, program faculty and the program coordinator further provide career advice. Mark Marohl is particularly helpful at connecting students with MET alumni for career advice. In addition, the program requires all students to gain teaching experience through a one-day seminar on teaching and serving as TA or preceptor for at least one semester. Students appreciate teaching experiences, although the level of teaching load and experiences are currently uneven (see below). Those students who wish to improve their teaching experiences are encouraged to participate in Delta program. Finally, each student prepares a 13-page Annual Individual Development Review/Progress Report for the annual thesis committee meeting. Students also discuss their reports with their advisors one-on-one annually. This process is well received by the students as a way to learn about their progress toward the PhD and identify opportunities for preparing for their career paths.

• **Excellent sense of community among MET trainees:** The committee felt that the MET program has done a good job of building a program-specific community through several mechanisms. The weekly seminar series brings together students and core faculty members for face-to-face interaction on a regular basis. The annual retreats bring together students and faculty trainers for a longer period of time and have been highly successful in building MET community where students and faculty can provide feedback to the program. Students have opportunities to participate in outreach on campus and K-12 via the Student Liaison Committee. Many students also attend the annual toxicology society meeting to expand connections with the MET alumni community nation-wide. The larger community of MET alumni who are in academia, government agencies and industry clearly represents a unique strength of the program. MET provides travel funds or helps students to successfully find funding to enable conference participation. Inclusion of the student representatives in all of the program committees (except those that involve personnel issues) further promotes the ownership of the program by the students in addition to gathering input for program function.

• **Other strengths:** The Graduate Achievement Committee makes sure that students meet milestones and considers curriculum exceptions. If a student decides to leave with an MS, it is usually initiated by the student. Program-level learning goals, learning assessments and expectations are clearly articulated on the website and students are well aware of such information. Students are continuously funded via the T32 NIH training grant, student fellowships (~10% success rate), and/or faculty grants. The students and faculty are well informed of the transparent process of selecting T32 trainees.

**Program weaknesses and review committee recommendations:**
Through our committee's review of the MET self-study and our site visit, we have identified potential vulnerability and areas of weaknesses that MET should consider to improve its program.

• **Directorship transition policy:** The committee was fully made aware of the recognition of Dr. Bradfield as an exceptional director for MET program. Dr. Bradfield mentioned a possible
upcoming sabbatical. Given the fundamental importance that the current director plays in the running and future of the MET, the committee felt the need for clear written plans for managing the program during a sabbatical and for transitioning to the next director. This policy could include the timeline and process for reviewing the director, and the process for reappointing the director. A smooth transition process is critical to minimize impact on students, staff and trainers.

• Additional staff: As noted above, Mark Marohl is a significant asset to the program who has a large and diverse set of responsibilities for this program and others. The committee recommends that the program hire additional staff to alleviate Mr. Marohl’s workload.

• Continued financial support for MET: The committee generally felt concerned with the financial future of the MET program. While the program currently has an NIEHS T32 training grant to fund 6 or 8 predocs and 2 postdocs, the director indicated that this may not get renewed because UW-Madison does not have a sufficiently large pool of NIEHS investigators to support such a training grant any more. Once this grant expires, all students have to be funded as RAs by PIs. This will limit the number of PIs who can take the students. This is particularly of concern for many students who are interested in environmental toxicology where funding is scarce. Other university units besides SMPH that currently receive benefits from the T32 and SMPH-funded rotations should commit long-term financial support for MET in the event of the loss of T32 or change of the directorship; rather than being a program-specific concern, this exemplifies a broader need for campus to provide guidance on how to achieve long-term financial and leadership stability for trans-disciplinary cross-college programs.

• Recruitment and training of new MET trainers: The current process of new trainer recruitment depends primarily on the director’s personal engagement/recruitment. New trainers are also recruited through teaching commitments in the core courses. An additional formal process of recruiting new trainers should be incorporated to maintain the strength of the trainer pool in the future. There appears to be no formal process for training the trainers that is specific to the MET program. Incorporation of a trainer training mechanism for MET should be considered.

• Formalizing teaching experiences: Teaching experiences and training currently vary considerably among students. The TA assignments are based on the number of students who are taking the course rather than the work load, which varies dramatically from course to course. A formalized process to reduce uneven teaching experiences will improve the learning outcomes in teaching, including a minimum set of expectations (e.g., lecturing).

• Curriculum change metrics: MET is undergoing a curriculum revision process to streamline curriculum and make it more interactive to improve learning experiences. Students interviewed felt that the current curriculum is demanding but the learning outcomes are well worth the extra class load. Students also indicated that more risk assessment should be taught in the curriculum or via speakers. This is a large part of toxicology which is not currently part of course work. Students also wished to have opportunities to interact with industry and/or government through externships or other mechanisms. The committee was generally unclear of the process and measure of success of curriculum change. The curriculum revision should accompany specific metrics to measure the successful outcomes of such changes.

• Low reported percentage of graduate students with PhDs: Data from the Graduate School showed that only 62% of students are graduating with PhD from MET in the last 10 years (compared to 73% at other AAU institutions). The program self-study indicates 10-year graduation rate of 79% in the last 10 years. During the site visit, the source of this discrepancy was not identified. Thus, this discrepancy needs to be clarified.
• *Updating handbook:* The committee noted that the MET student handbook is not up to date and needs to be updated to the Graduate School handbook template.

In summary, our committee recommends that the MET graduate program continue and that the next program review occur in ten years.

Sincerely,

Shigeki Miyamoto, Professor of Oncology (chair)
Karen Cruickshanks, Professor of Population Health Sciences
Chuck Lauhon, Professor of Pharmacy
Sharon Long, Professor of Soil Sciences
Nicole Perna, Professor of Genetics (GFEC representative)
Ph.D. Apps, Admits, Enrolls

Applicants, Admits and New Enrollments

<table>
<thead>
<tr>
<th>Period</th>
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This visualization was created by the Graduate School. Questions should be directed to Peter Kinsley, peter.kinsley@wisc.edu.
Total Enrollment - Gender

Enrollment

Period
Fall Term

Division
All

School/College
All

Degree Level
All

Academic Major
Multiple values

Named Option
All

Select a Topic
Gender

Female
Male

Fall, 2006: 13 Female, 13 Male
Fall, 2007: 14 Female, 16 Male
Fall, 2008: 15 Female, 15 Male
Fall, 2009: 15 Female, 15 Male
Fall, 2010: 19 Female, 19 Male
Fall, 2011: 19 Female, 19 Male
Fall, 2012: 17 Female, 19 Male
Fall, 2013: 17 Female, 17 Male
Fall, 2014: 16 Female, 16 Male
Fall, 2015: 16 Female, 16 Male
Fall, 2016: 16 Female, 16 Male

This visualization was created by the Graduate School. Questions should be directed to Peter Kinsley, peter.kinsley@wisc.edu.
Ph.D. Funding

Students with an Appointment of 33% or Higher

Division
All

School/College
All

Degree Level
All

Academic Major
Molecular & Environmental Toxicology

Named Option
All

Gender
All

Diversity
All

Fellows
Trainees
Research Assistants
Teaching Assistants
Other Funding

Fall, 2006
Fall, 2007
Fall, 2008
Fall, 2009
Fall, 2010
Fall, 2011
Fall, 2012
Fall, 2013
Fall, 2014
Fall, 2015
Fall, 2016

This visualization was created by the Graduate School. Questions should be directed to Peter Kinsley, peter.kinsley@wisc.edu.
Ph.D. Time to Degree
(Total time as a Graduate Student)

PhD Time-to-Degree Metrics, Peer Comparison

Select UW-Madison Program
Molecular & Environmental Toxicology
Select Time-to-Degree Metric
Time at UW-Madison as a Graduate Student

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<td>2016</td>
<td>5.7</td>
<td>5.0</td>
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August 17, 2017

Sarah C. Mangelsdorf, Ph.D.
Provost and Vice Chancellor for Academic Affairs

William Karpus, Ph.D.
Dean of the Graduate School

Sent electronically

Re: Supplemental review of the Medical Physics MS and PhD degree programs and doctoral minor

Dear Provost Mangelsdorf and Dean Karpus:

On behalf of the School of Medicine and Public Health, I endorse the supplemental program review of the Medical Physics MS and PhD degree programs and doctoral minor, which was undertaken soon after the programs were reaccredited by CAMPEP.

After discussion at the August 16, 2017 meeting of the SMPH Academic Planning Council, APC members unanimously approved the report of the review committee, the recommendations of the committee for implementation, and the response of program leadership to the review committee’s report. Those reports are attached.

The strengths of the program are many. The program has a rich history, beginning with its founding in 1958. It was the first U.S. program of its kind to receive accreditation, in 1988, and it has since been continuously accredited. Training goes well beyond accreditation requirements. Recent revisions to the core curriculum allow students to focus on specialized training. Students are well represented in governance of the program. Student progress is well assessed. The program supports diverse career goals, and career placement is outstanding. The program has an exceptional record of obtaining funding, which is often used to invest in state-of-the-art instrumentation that students use in their training. A conscientious effort has been made to educate a larger number of under-represented minority and women students.

The committee suggested areas of opportunities, and the program has responded:

1. Reduction of time devoted to a core curriculum may come at a cost of preparation of fundamentals. The program has noted that this observation by the review committee may be due to an error in the CAMPEP letter, which was rectified at a meeting of program leaders and CAMPEP. Only a small number of students who require remediation enroll in the program.

2. Protect time for clinical faculty to teach.

3. Consider eliminating or increasing enrollment in the doctoral minor, which has been awarded 12 times in the past ten years. The program does not plan to actively increase enrollment, but will continue to support the minor.

4. Develop strategies for the possibility of decreased funding.
Both the SMPH Academic Planning Council and I concur with the review committee's recommendation to continue the programs. We recommend that the next review occur in ten years.

Thank you for your consideration. If you require additional information, please do not hesitate to contact Andrea Poehling.

Sincerely,

Robert N. Golden, M.D.
Robert Turell Professor in Medical Leadership
Dean, School of Medicine and Public Health
Vice Chancellor for Medical Affairs
University of Wisconsin-Madison

Copies to:
Edward Jackson, Department of Medical Physics
JoAnn Kronberg, Department of Medical Physics
Jennifer Smilowitz, Department of Medical Physics
Deb Torgerson, Department of Medical Physics
Tomy Varghese, Department of Medical Physics
John Vetter, Department of Medical Physics
James Keck, School of Medicine and Public Health
Richard Moss, School of Medicine and Public Health
Andrea Poehling, School of Medicine and Public Health
Parmesh Ramanathan, Graduate School
Marty Gustafson, Graduate School
Emily Reynolds, Graduate School
Jocelyn Milner, Academic Planning and Institutional Research
Sarah Kuba, Academic Planning and Institutional Research

Attachments:
1) Review committee report
2) Program response
May 25, 2017

James Keck, PhD
Associate Dean for Basic Sciences
School of Medicine & Public Health
4119 Health Science Learning Center
750 Highland Avenue
Madison, WI 53705

Dear Jim:

I received the report of the Supplemental Program Review Committee for Medical Physics MS and PhD Degree Programs (and Doctoral Minor) dated April 7, 2017. The report has been reviewed by myself and the Chair of the Graduate Committee for the program. We greatly appreciate the efforts of the committee and the thoroughness of their supplemental review and suggestions. In general, we agree with the contents of the report. However, there are two clarifications we would like to make.

First, it is stated on page three that “There are two trends appearing over recent years… The first is that matriculating students appear to be less well-grounded in the basics of medical physics (24/110 of students in the last 5-year period needed remedial physics)…” The origin of the “24/110 of students” statement by the CAMPEP Site Visit Team is unclear, and this was noted by the CAMPEP Board of Directors when it reviewed the documentation and approved our reaccreditation. We chose not to challenge the statement as the program has clear policies in place, as confirmed by CAMPEP, to address such students. Furthermore, since 2013 only four students have entered the program without having all undergraduate physics prerequisite courses required by CAMPEP for graduates who intend to pursue certification by the American Board of Radiology. Finally, it is important to note that our program has two tracks: one for students who wish to have an attestation of completion of the CAMPEP Core Curriculum and another for students who do not wish such an attestation. The minimum undergraduate physics prerequisites strictly apply to the former, but not to the latter. Therefore, a small fraction of our students have undergraduate degrees in biomedical engineering, electrical engineering, computer science, chemistry, or mathematics rather than physics or nuclear engineering. In general, we support a diverse entering class, but because of the CAMPEP requirements ensure that any student who wishes to receive the CAMPEP Track attestation have the necessary undergraduate physics prerequisite courses or complete such courses while enrolled in the program.

Second, it was noted that the Doctoral Minor is a “low-enrollment minor (12 minors awarded in the last decade)…” and “It may be time to reconsider how this option is used and perhaps consider ways to increase enrollment”. The Program only awards a Doctoral Minor if requested by a UW-Madison PhD student in another field of study. It is supported at the request of students in these other programs and is not an option for which we wish to increase enrollment. As it is sometimes requested, however, we have no plans to terminate the option unless we are requested to do so by the school or university.
Again, we appreciate the careful review by the review committee and their recommendations for improvement. Those recommendations have been relayed to the Program Faculty and will be addressed during the coming academic year.

Sincerely,

Edward F. Jackson, PhD
Professor and Chair, Department of Medical Physics
Professor, Departments of Human Oncology and Radiology
Director, Medical Physics Graduate Program
April 7th 2017

To: Richard L. Moss, Senior Associate Dean, Basic Research, Biotechnology and Graduate Studies  
From: Supplemental review committee: Caroline Alexander (Chair, GFEC representative), Sterling Johnson (Dept Medicine) and Vikas Singh (Dept Biostats and MedInfo); assisted by Andrea Poehling (SMPH administration)  
Re: Report from Supplemental Program Review Committee for Medical Physics MS and PhD degree programs (and doctoral minor)

Summary of activities and materials reviewed:
We have completed our review of the Medical Physics MS and PhD program; this was considered a supplemental review, since this program is reviewed every 5 years by the professional accreditation committee, CAMPEP (Committee on Accreditation of Medical Physics Education Programs, Inc). This review has been completed recently (Nov 15th 2016); the programs were found to be fully compliant, and indeed the report was laudatory. The accreditation is in effect through 31st Dec 2021.

Our review was processed as follows: we (the committee, with Andrea Poehling’s coordination) met to review self-study documents from Medical Physics (dated 5th July 2016; 800 pages) together with CAMPEP review on March 2nd, 2017. The documentation included a full review of the CAMPEP site visit. The committee submitted questions for further clarification to the Program Director, Dr. Edward Jackson (Professor and Chair, Medical Physics), and answers were received on March 22nd 2017. We did not identify any issues that would require further site visit interview; hence this report is prepared on the materials described above.

The CAMPEP review rates the following categories: Program goal and objectives, program structure and governance, program director, program faculty, institutional support, educational environment, scholarly activities and curriculum, each with separate sub-sections.

Program description:
There has been a Radiological Sciences training program in the Medical Physics Department for 38 consecutive years, and the research and training reputation of this Department is exceptional. Professor Edward F. Jackson has been the Director of the training program and Department Chair since 2013. The training options have undergone some streamlining and simplification, to eliminate the previous choice of three tracks (General Medical Physics, Image Science or Health Physics), in favor of the CAMPEP (which is directed towards medical application) and non-CAMPEP (directed towards research). The standards for graduation have been clarified (manuscript submission, committee formulation, annual meeting agenda, timeline for graduate career milestones, career option discussion). The Departmental faculty is renewing with the retirement of long standing faculty and recruitment of several junior faculty (3 filled, 2 open).
The primary objectives of the training program are to provide a rigorous core education in graduate-level medical physics, in-depth research training for students interested in a spectrum of related applications, and coursework applicable to becoming a qualified medical physicist. The standards represented by the training goes above and beyond the CAMPEP standard. Over the past four decades, the graduate theses from this Department comprise a remarkable collection of contributions to the advancement of medical physics.

The diverse applications of this program are represented by the cross-appointments of faculty in numerous other Departments, such as Radiology, Human Oncology, Medicine, Psychiatry and Neurology.

In addition to the Director, the Program leadership includes a Chair, vice Chair and Chair of Admissions; this group meets monthly to discuss arising issues together with a group of 4 student representatives.

Within the last decade, the Department has been consolidated into state-of-the-art space on the Hospital campus, at WIMR and elsewhere, around the extensive instrumentation resources.

A dedicated group of faculty are committed to education and training, and also to the competitive funding of these efforts by extramural support. They are also supported by their administrative team and by the SMPH.

The enrolment and graduation rates are summarized below in Table 1.

<table>
<thead>
<tr>
<th>Academic Year</th>
<th>Number of Students Matriculated</th>
<th>Number of Students Enrolled (PhD)*</th>
<th>Number of Students Enrolled (MS)*</th>
<th>Number of Students Who Graduated with a PhD</th>
<th>Number of Students Who Graduated with a Terminal MS</th>
<th>Number of Students Who Switched from PhD to Terminal Masters</th>
<th>Number of Students Who Left Program Without a Degree</th>
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*In fall term of each academic year
**As of March 22, 2017

**Program strengths:**

**Summary.** This has been an exceptional program since 1958, accredited since 1988, and indeed was the first program in the US to be accredited. It is one of the most highly respected programs in the field of medical physics, consistently graduating students of very high quality who are well prepared for careers in research, teaching and clinical work. It is well renowned for its scholarly activities and innovation. The program is housed in the basic science Department of Medical Physics.

**Curriculum is evolving.** The program continues to move forward and to evolve to meet student’s needs. In particular, the core curriculum has recently been reviewed to reduce the number of credit hours that are required within the core, to allow more time for advanced specialized topics.
Integration of student opinion and needs. The student body is represented by a 4-member Graduate Student Representatives body, at monthly faculty meetings, and as needed, with the Program Director/Department Chair. This generates an early alarm system for student concerns.

Implementation of ongoing assessment of student progress. Based on student feedback, the program has reacted to perceived shortcomings on career information. Starting in Fall 2016, annual reviews of progress and discussion of career options have been instituted for pre-dissertators, until the Preliminary Exam is completed successfully. This committee then evolves into the Preliminary Exam Committee (meeting annually as required since Fall 2015). Deliberations provide summary feedback on research progress and career development.

Continuing excellence in career opportunities and placement. The career opportunities chosen by graduates fall into many different categories, including Medical Physics residency programs, post-doctoral research training, industry positions and other entrepreneurial opportunities (particularly fostered by the UW D2P program). The accomplishments of previous trainees as they progress in their careers is exceptional: they are represented across the nation, and across the world, and have expertise in many diverse areas, from academia to applied diagnostics to faculty positions where they are faculty trainers themselves. Nearly 60% of graduates are employed as research physicists and/or faculty.

There has been a clearer discrimination of the “CAMPEP” track, which includes more rigorous adherence to core curriculum suitable for medical applications. The students on the non-CAMPEP track can diversify into other areas of interest. This process has been made more transparent for the student body, and helps to qualify applicants for the highly competitive Medical Physics residency positions (which this program competes for very successfully).

Exceptional funding record. This program capitalizes on extramural research funding that provides the majority of student and significant faculty support. Of particular note, the equipment is constantly renewed, recently to include a 3T PET/MR instrument, a GMP radiopharmaceutical production facility, a ViewRay MR-guided therapy system, expansion of the Treatment Planning System Lab, installation of a Varian 21EX linear accelerator and many other updates and replacements. This Department has a 10-year comprehensive research agreement with GE Healthcare, which provides access to state-of-the-art imaging equipment for basic, translational and clinical research. Although a number of faculty have retired since the previous accreditation round, many remain active, and the program is actively recruiting new faculty members.

Active efforts at matriculation of URM and female students. Dr. Wakai, the Graduate Admissions Chair attends National Society meetings for URMs, in order to raise the profile of the UW program; this has successfully recruited 3 prospective students who have offers of AOF fellowships. The statistics for the recruitment of URM candidates and women compare to peer Institutions. The program is aware of the recent decline in diversity and inclusion climate across the UW-Madison campus, and is actively participating in campus-wide meetings to consider suggestions for improvements. Departmental leadership is aware of the importance of role models for trainees, and is intent on increasing the number of faculty from minority origins.

Program weaknesses and review committee recommendations:

Accelerating advanced level learning: pluses and minuses. There are two trends appearing over recent years that are at odds. This may become an issue for the next accreditation review. The first is that matriculating students appear to be less well-grounded in the basics of medical physics (24/110 of students from the last 5-year period needed remedial physics); the other is that the graduate work covered by the coursework reflects the increasing complexity of the discipline and career options of medical physics. In order to accommodate the increasing complexity, and to generate more career options, the core curriculum is covered in fewer credits (and less time). The CAMPEP committee noted some areas of overlap between courses, and it may be particularly important to eliminate redundancy as this streamlining effort goes ahead. It may also take some strategic planning to avoid student dissatisfaction and success (more terminal MS degrees or dropouts). We would recommend that the program trainers take time to consider these changes and how best to accommodate them. Note some course evaluations averaged less than 4.0 in many categories (including key
areas such as achieving expectations, clarity and organization); perhaps this could be applied to any reorganization.

**Protecting instructor time.** Clinical faculty are mandatory trainers for CAMPEP certification (some program faculty should be licensed and/or board-certified medical physicists). However, time of clinicians is difficult to schedule effectively into the coursework, due to clinic work and other responsibilities. The SMPH may be able to protect more time for this essential training activity.

**Doctoral Minor.** This is a low-enrolment minor (12 minors awarded in the last decade), which has been awarded to students from other programs who have a mentor in Medical Physics. It may time to reconsider how this option is used and perhaps consider ways to increase enrolment.

**Overcoming the flat-line funding (or worse) from Federal and local sources.** Funding for training, recruitment, retention and research has become tight, both from the University of Wisconsin and Federal sources, so there may need to be consideration of some proactive additional strategies to maintain the Department’s status on the forefront of new discovery and faculty and curriculum development.

In summary, our committee recommends that the Medical Physics graduate program continues, and that the next program review occurs in coordination with the CAMPEP review in 10 years.

Sincerely

Caroline Alexander, Professor of Oncology
Sterling Johnson, Professor of Medicine
Vikas Singh, Associate Professor of Biostatistics
Master’s Apps, Admits, Enrolls

Applicants, Admits and New Enrollments

<table>
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<tr>
<th>Period</th>
<th>Fall Term</th>
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<tr>
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<td>Diversity</td>
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</table>

- New Enrollments
- Admits
- Applicants

This visualization was created by the Graduate School. Questions should be directed to Peter Kinsley, peter.kinsley@wisc.edu.
Total Enrollment - Gender

Enrollment

Period
Fall Term

Division
All

School / College
All

Degree Level
All

Academic Major
Multiple values

Named Option
All

Select a Topic
Gender

• Female
• Male

This visualization was created by the Graduate School. Questions should be directed to Peter Kinsley, peter.kinsley@wisc.edu.
Ph.D. Funding

Students with an Appointment of 33% or Higher

1/2/2018
UNIVERSITY OF WISCONSIN
Ph.D. Time to Degree (Total time as a Graduate Student)

PhD Time-to-Degree Metrics, Peer Comparison

Select UW-Madison Program
Medical Physics

Select Time-to-Degree Metric
Time at UW-Madison as a Graduate Student