BOARD OF REGENTS OF THE UNIVERSITY OF WISCONSIN SYSTEM

I.1. Education Committee

Thursday, September 10, 2015
10:45 a.m. - 12:15 p.m.
UW-Whitewater
James R. Connor University Center
Room UC 275
Whitewater, Wisconsin

a. Approval of the Minutes of the June 4, 2015 meeting of the Education Committee.

b. Report of the Senior Vice President:
    1. Remedial/Developmental Education Update;
    2. Program Actions;
    3. Status of the Recruitment of the Vice President of Academic and Student Affairs;
    4. Status of UWS 4, 7, 11, and 17 Revisions.

c. Academic Program Approvals:
    1. UW-Madison: Approval of a B.S. and a B.A. in Neurobiology;
        [Resolution I.1.c.(1)]
    2. UW-River Falls: Approval of a B.S. in Agricultural Engineering;
        [Resolution I.1.c.(2)]
    3. UW-Stevens Point: Approval of a B.S. in Chemical Engineering;
        [Resolution I.1.c.(3)]
    4. UW-Stevens Point: Approval of a Flexible Option M.S. in Geodesign and GIS Technologies in Collaboration with UW-Extension; and
        [Resolution I.1.c.(4)]
    5. UW-Milwaukee: Approval of a Master of Healthcare Administration (M.H.A.).
        [Resolution I.1.c.(5)]

d. Review and Approval of UW System Accountability Metrics Required by the 2015-17 Biennial Budget: Educational Performance Accountability Measures.
        [Resolution I.1.d.]

e. First Reading of a Proposed Change to the UW-Stevens Point Mission Statement.

f. Presentation by John Stone, Interim Provost and Vice Chancellor for Academic Affairs: *UW-Whitewater's High-Impact Educational Practices (HIPS): Engines of Integrative Learning.*

g. First Reading of a Proposed Change to the UW-Extension Mission Statement.

h. Approval of the Reappointment of UW-Madison Professor James Bennett and the Appointment of Professor David Mladenoff to the Natural Areas Preservation Council.
        [Resolution I.1.h.]

EDUCATION COMMITTEE

Resolution I.1.c.(1):

That, upon recommendation of the Chancellor of the University of Wisconsin-Madison, as well as the President of the University of Wisconsin System, the Chancellor is authorized to implement the Bachelor of Science and the Bachelor of Arts in Neurobiology at UW-Madison.

NEW PROGRAM AUTHORIZATION
BACHELOR OF SCIENCE AND A BACHELOR OF ARTS IN NEUROBIOLOGY
UNIVERSITY OF WISCONSIN-MADISON

BACKGROUND

This proposal is presented in accordance with the procedures outlined in Academic Planning and Program Review (ACIS 1.0, Revised August 2012, available at http://www.uwsa.edu/acss/planning/). The new program proposal for a Bachelor of Science (B.S.) and a Bachelor of Arts (B.A.) in Neurobiology at the University of Wisconsin-Madison is presented to the Board of Regents for consideration. UW-Madison's Provost submitted an authorization document and a letter of institutional commitment.

REQUESTED ACTION

Adoption of Resolution I.1.c.(1), approving the implementation of the Bachelor of Science and the Bachelor of Arts in Neurobiology degree program at the University of Wisconsin-Madison.

DISCUSSION

The University of Wisconsin-Madison proposes to establish a B.S. and a B.A. in Neurobiology to be housed in the College of Letters and Science, in the Department of Zoology. The proposed neurobiology academic degree program emerges from the neurobiology option (track) within the existing biology major at UW-Madison. The neurobiology option in the biology major will be phased out after the approval and implementation of the proposed program.

Students in the proposed neurobiology degree program will be able to: (1) describe and apply concepts in molecular, cellular, biological systems, and cognitive neuroscience, (2) describe current scientific techniques for revealing neural function, and (3) conduct experiments to test neuroscience hypotheses and present their results in writing and orally to a scientific audience. Students in the program will also be grounded in the basic sciences and mathematics (e.g., chemistry, physics, and statistics) needed to understand neuroscience concepts and experimental approaches.

Establishing the neurobiology degree program at UW-Madison will satisfy the growing demand for a program that provides breadth and depth in neuroscience, an interdisciplinary field which collaborates with chemistry and biochemistry, genetics, psychology, physics, computer science, engineering, linguistics, mathematics, and allied disciplines such as philosophy, economics, education, and law. Graduates with a rigorous education in neuroscience principles will be well-equipped for graduate and professional degree programs in health-related, academic, and other careers that overlap with neuroscience.

Over the course of five years, the university expects that there will be an average of 240 students per year enrolled in the major with a total of 400 students who graduate with a degree in neurobiology.

Students enrolled in the program will pay standard undergraduate tuition according to the rates approved by the Board of Regents. For the 2014-15 academic year, the residential tuition and segregated fees total $5,205.12 per semester for a full-time student who is enrolled in 12-18 credits per term.

The program managers will make focused efforts to reach out to underserved students with an interest in biology or pre-health careers. Among others, the College of Letters and Science will work closely to associate the neurobiology major with institution-wide initiatives and programs designed to promote interest in science for women through the Women in Science and Engineering programs, as well as with underrepresented minorities in general through the Wisconsin Alliance for Minority Participation.

RECOMMENDATION

The University of Wisconsin System recommends adoption of Resolution I.1.c.(1), approving the implementation of a Bachelor of Science and a Bachelor of Arts in Neurobiology at UW-Madison.

RELATED REGENT AND UW SYSTEM POLICIES

Regent Policy 4-12: Academic Program Planning, Review, and Approval in the University of Wisconsin System.

Academic Information Series #1 (ACIS 1.0, Revised August 2012): Statement of the UW System Policy on Academic Planning and Program Review.

**REQUEST FOR AUTHORIZATION TO IMPLEMENT A BACHELOR OF ARTS AND
A BACHELOR OF SCIENCE DEGREE IN NEUROBIOLOGY
AT UW-MADISON
PREPARED BY UW-MADISON**

ABSTRACT

The University of Wisconsin-Madison proposes to establish a Bachelor of Arts (B.A.) and a Bachelor of Science (B.S.) in Neurobiology to be housed in the College of Letters and Science. The proposed neurobiology major emerges from the existing Neurobiology option (track) within the biology major at UW-Madison, which serves more than 350 students (approximately 25% of the enrollment in the biology major). Establishing the neurobiology degree program will satisfy the growing demand for a program that provides breadth and depth in neuroscience, an interdisciplinary field which collaborates with medicine (e.g., neurology, psychiatry, neurosurgery, and anesthesiology), chemistry and biochemistry, genetics and epigenetics, psychology, physics, computer science, engineering, linguistics, mathematics, and allied disciplines such as philosophy, economics, education, and law. Graduates with a rigorous education in neuroscience principles will be well-equipped for graduate and professional degree programs in health-related, academic, and other careers that overlap with neuroscience.

PROGRAM IDENTIFICATION

Institution Name
University of Wisconsin-Madison

Title of Proposed Program
Neurobiology

Degree/Major Designations
Bachelor of Arts and Bachelor of Science

As with other majors in the College of Letters and Science, students may combine these major requirements with degree requirements for either a B.A. or a B.S. The chief difference between these two degrees is that students who choose a B.A. degree must complete more courses in foreign language, with fewer credits in mathematics and science, and students who choose a B.S. degree must complete more specific coursework in mathematics, computer science or statistics, as well as in the biological and physical sciences. Most of the students enrolling in this academic program are expected to complete the requirements for the B.S. degree.

Mode of Delivery
Single institution; on-campus, face-to-face delivery

Projected Enrollments by Year Five
Currently, there are 350 students enrolled in the neurobiology option within the biology degree program at UW-Madison, which has steadily grown in the past ten years. This level of enrollment demonstrates strong interest among students. Based on past enrollment trends, the

university anticipates that most junior and senior students (approximately 200 students) who are currently enrolled in the neurobiology option will transfer into the proposed neurobiology major as the neurobiology option will be phased out once the new major has been established.

Table 1 below reflects a projected enrollment in the first year of 250 students, which includes the 200 students who will transfer from the neurobiology option and an additional expected 50 students who will choose the proposed major as new freshmen or as continuing students who will switch from other programs. Eighty of those 250 students will graduate in the first year. In the second through fifth years, the university anticipates that 80-90 students will join the major each year and that nearly all other students in the program will continue on with the major. A 5-6% expected attrition rate is factored into Table 1.

Table 1: Projected Program Enrollment

	1st Year	2nd Year	3rd Year	4th Year	5th Year
New students admitted	250	80	85	90	90
Continuing students	0	160	155	150	150
Total enrollment:	250	240	240	240	240
Graduating students	80	80	80	80	80

Over the course of five years, the university expects that there will be an average of 240 students per year enrolled in the major with a total of 400 students who graduate with a degree in neurobiology. This high rate is due to the careful alignment of the proposed major with the currently available option, which will allow some students to declare the program and graduate without affecting their time to degree.

Tuition Structure
Students enrolled in the program will pay standard undergraduate tuition according to the rates approved by the Board of Regents. For the 2014-2015 academic year, the residential tuition and segregated fees total $5205.12 per semester for a full-time student who is enrolled in 12-18 credits per term. Of this amount, $568.44 is attributable to segregated fees and the remainder is tuition.

Department or Functional Equivalent
The proposed program will reside within the Department of Zoology.

College, School, or Functional Equivalent
The proposed program will be housed within the College of Letters and Science.

Proposed Date of Implementation
September 2016

INTRODUCTION

Rationale and Relation to Mission

The biology major is one of the largest undergraduate programs at UW-Madison, with enrollments in excess of 1,500 students. The neurobiology option within the biology major was created to allow students to focus on neuroscience-related courses, laboratory courses, seminars, and research experiences. In the fall 2014 semester, 361 (24%) of the 1534 students in the biology major were enrolled in the neurobiology option. The proposed neurobiology major will: (1) increase focus on learning goals associated with neuroscience outside the constraints of the biology major, (2) establish community and peer support among undergraduates interested in neuroscience, (3) satisfy the growing demand among entry-level students for a rigorous, interdisciplinary undergraduate program that provides breadth and depth in neuroscience, (4) establish solid and sustainable support for faculty teaching the foundational neuroscience courses, and (5) establish administrative mechanisms for supporting and expanding neuroscience laboratory courses.

Need as Suggested by Current Student Demand

The 350 students enrolled in the current neurobiology option make the program one of the largest among biology-related majors at UW-Madison. In a recent survey of neurobiology option students, 88% of 150 respondents said that they would prefer a neurobiology major over the option because evidence of their accomplishments in neuroscience would be more transparent to graduate and professional schools. The demand for the neurobiology option has been sustained at 350 students for several years, and there is every indication that as many or more students will be interested in the stand-alone major as are interested in the current option within the biology major.

Need as Suggested by Market Demand

Principles derived from neuroscience research are used in medicine, education, law, economics, computer science, and artificial intelligence. Commercial and government resources are increasingly being devoted to neuroscience-related problems and diseases. Students in the proposed neurobiology major will be well-positioned to pursue health-related careers (e.g., physician, physician assistant, veterinarian, dentist, neuroimaging technician, counseling psychologist, drug rehabilitation counselor, physical therapist, academic careers (e.g., college and university faculty, research scientists, lab technicians, K-12 teachers), and careers in pharmaceutical and biotech industries, venture capital and scientific consulting firms, medical and scientific journals, intellectual property law, nonprofit organizations and foundations, and government agencies. Accordingly, most of these neuroscience-related careers require further training in professional, graduate, and technical schools.

In graduation surveys from the past two years, students who completed the neurobiology option indicated that they planned to attend graduate school or professional school (35-44% of respondents) or planned to be employed in a job closely related to their major (36-39% of respondents). Once advanced training is completed, neuroscience-related job opportunities are abundant. For example, at the national level, projections for the category of "Medical Scientists" (which includes bachelor's level neuroscientists) estimate that the field is predicted to grow by 13.3% between 2012-2022 (available at http://www.bls.gov/ooh/life-physical-and-social-

science/medical-scientists.htm; Occupational Outlook Handbook, 2014-15 Edition from the Bureau of Labor Statistics, U.S. Department of Labor). In Wisconsin, medical scientists ranked eighteenth on the list of High Growth Occupations (available at http://worknet.wisconsin.gov/worknet/joblist_highgrow.aspx?menuselection=js; Wisconsin Department of Workforce Development; WORK.net webpage).

DESCRIPTION OF PROGRAM

Institutional Program Array
The proposed neurobiology major will be one of several biological science programs available to UW-Madison undergraduates, but it will be the only major focused on the field of neurobiology and neuroscience. The existing neurobiology option in the biology major will be phased out after the implementation of the proposed program. The neurobiology major will be similar to the neurobiology option, but will have more flexibility and focus. The number of students enrolled in the biology major is expected to decrease because the neurobiology option will be phased out and students will migrate to the new major. The decrease in enrollment in the biology major will be a welcome reduction as the program will be better able to serve students at a slightly smaller size. Other UW-Madison majors are not expected to be affected by the proposed major because there are no other majors with this level of neuroscience-related content.

Other Programs in the University of Wisconsin System
UW-Milwaukee has 29 faculty studying neuroscience from multiple departments, including the departments of Psychology and Biological Sciences. There is no undergraduate major at UW-Milwaukee, although students in the psychology program can develop a neuroscience track by taking two core introductory neuroscience courses and other upper division neuroscience courses. At present, within the state of Wisconsin, there is only one other neuroscience program, which is at Carthage College, but this institution does not offer a major in neurobiology or neuroscience. UW-River Falls has been granted pre-authorization to plan a new academic program in neuroscience.

Collaborative Nature of the Program
The proposed neurobiology major will be housed in the Department of Zoology. The curriculum includes courses from departments within the College of Letters and Science (i.e., Zoology, Psychology, Communication Sciences and Disorders, and Biochemistry), in addition to other departments outside the College of Letters and Science (i.e., Neuroscience, Cell and Regenerative Biology, Kinesiology, and Educational Psychology). Faculty in these departments and other departments (i.e., Genetics, Neurology, Psychiatry, Biomedical Engineering, and Neurosurgery) will support research experiences for undergraduates. This face-to-face program is strongly integrated with the research activities of faculty and therefore will be offered solely through the resources of UW-Madison.

Diversity
The steering committee for the proposed program, administrative staff, and faculty will work with the College of Letters and Science and UW-Madison diversity programs to reach out and retain underrepresented students. The College of Letters and Science is home to the Center for Academic Excellence (Center), which supports the university's commitment to Inclusive

Excellence, a set of principles articulated by the Association of American Colleges and Universities (http://aacu.org/programs-partnerships/making-excellence-inclusive), and adopted by the University of Wisconsin System (https://www.wisconsin.edu/inclusive-excellence/guiding-principles/). The Center coordinates many programs and advising experiences for American Indian, African American, Chicano/a, Latino/a, and Southeast Asian American students.

Focused efforts will be made to reach out to students with an interest in biology or pre-health careers. The Undergraduate Research Scholars Program within the College of Letters and Science is designed to help first- and second-year undergraduates get hands-on experience in research, and can assist students in identifying opportunities working with faculty and research staff in neuroscience-related laboratories, thus promoting interest in and support for involvement in the neurobiology major. The College of Letters and Science will work closely to associate the neurobiology major with institution-wide initiatives and programs designed to promote interest in science for women through the Women in Science and Engineering programs, as well as with underrepresented minorities in general through the Wisconsin Alliance for Minority Participation.

Student Learning Outcomes and Program Objectives
Students in the proposed neurobiology major will generally be expected to: (1) describe and apply concepts in molecular, cellular, biological systems, and cognitive neuroscience, (2) describe current scientific techniques for revealing neural function, and (3) conduct experiments to test neuroscience hypotheses and present their results in writing and orally to a scientific audience. Students in the program will be grounded in the basic sciences and mathematics (e.g., chemistry, physics, and statistics) needed to understand neuroscience concepts and experimental approaches. Consistent with these broad goals, graduates of the major will, more specifically, be able to:

(1) Demonstrate understanding of the ionic basis for the neuronal membrane potential and action potential, and as well as the factors that determine neuronal excitability.
(2) Demonstrate understanding of the basic mechanisms for synaptic transmission, neurotransmitter release, postsynaptic effects, and modulation of pre- and postsynaptic mechanisms. Predict how specific physiological and pathological conditions alter neuronal function at the cellular and synaptic levels.
(3) Differentiate between examples of neuroplasticity at cellular, systems, and organismal levels.
(4) Demonstrate understanding of central and peripheral neuroanatomy, basic functions of brain regions, and well-known neural pathways. Predict how localized disruptions of neuronal function alter behavior, motor function, or perception.
(5) Demonstrate understanding of basic principles underlying motor function, sensory function (i.e., auditory, visual, touch, and taste), emotion, autonomic regulation, and higher order cognitive functions (i.e., language, memory, attention, and decision-making).
(6) Demonstrate how experimental tools in neuroscience are used to address experimental questions, such as intra/extracellular recording, molecular biology techniques, immunohistochemical staining, fluorescent and electron microscopy, genetic manipulation, brain imaging, and behavioral testing.

A curriculum map has been developed to link all of the required and elective courses and experiences to the learning goals listed above.

Assessment of Objectives

Educational Assessment:
Assessment and advising will be conducted by the steering committee for the neurobiology major and by the Zoology Department on a yearly basis as part of the annual report, and a comprehensive assessment will be conducted after three years of operation.

- Direct assessment - The primary mechanisms for directly assessing students in the neurobiology major with respect to the learning objectives are performance on final exams in the foundational neuroscience courses, and research laboratory performance. The final exams in the foundational neuroscience courses test many basic principles underlying neuroscience. Embedded testing in final exams will provide a direct manner in which to gauge student learning based on a shared student experience. Performance in neuroscience laboratories will be assessed by collecting student poster presentations (at local, regional, and national science meetings), as well as by collecting random samples of student papers or projects (e.g., honors and senior theses). The exam and laboratory performance will be evaluated annually against the stated goals and learning goals of the neurobiology major.

- Indirect assessment - Student evaluations of foundational courses and random upper division courses will be examined by the steering committee to determine if these courses are meeting the learning goals. Student exit surveys, such as the UW-Madison Post Graduation Plans survey, will provide information on student perception of learning, and allow the steering committee to assess if the flow of the major is conducive to student learning and identify any roadblocks students encountered during their coursework. Because one of the goals of the major is to provide students with the knowledge to compete for top neuroscience-related jobs and graduate programs, one additional assessment piece will be to survey alumni and employers. Surveying alumni will provide information that may shed light on areas in the program in need of expansion or improvement. It will also provide an intentional and meaningful way to reconnect with alumni. Surveying employers will provide information about programmatic success by seeing a snap-shot of students in the workforce and what they bring or are lacking regarding qualifications.

Program Assessment:
The assessment results based on the above protocols will be reviewed annually by the steering committee for the neurobiology major, and reports will be submitted to the College of Letters and Science and to the Office of the Provost and Academic Planning Council for discussion. The annual report will describe key findings (positive and negative), summarize recommendations for change, and include a plan for implementing changes. To supplement the annual qualitative assessment of the neurobiology major, the College of Letters and Science will review student enrollment trends, including diversity recruitment and enrollment, student retention, and graduation rates. The steering committee and the College of Letters and Science

will work together to ensure the changes are within the College of Letters and Science curriculum guidelines and the goals of the neurobiology major.

Program Curriculum

The proposed neurobiology major will require 120 credits for the degree, with 22 credits in neuroscience courses building on a solid grounding in foundational math and science. These requirements are based on the already successful curriculum for the Neurobiology Option within the biology major at UW-Madison. Students must complete introductory mathematics, statistics, chemistry (inorganic and organic), and biology courses before taking foundational neuroscience courses. Students will be required to take at least 13 additional credits in upper division neuroscience-related courses (approximately 20 such courses are available). Students will be required to take two total credits of either neuroscience-related laboratory courses or independent study in a neuroscience-related laboratory; these credits will count towards the 13 credit upper-level neuroscience coursework requirement. Students will be required to take the *Undergraduate Neuroscience Seminar*, which exposes seniors to neuroscience research at UW-Madison. No new courses are required to implement the proposed neurobiology major, although new courses may be developed in time to reflect and incorporate new developments in neuroscience.

Table 2. Requirements for the B.A./B.S. in Neurobiology	
General Education and College of Letters and Science Degree Requirements Courses designated as: Communications A (3), Communications B (3-4), Ethnic Studies (3), Humanities (12 which must include 6 credits of Literature), Social Science (12), Foreign Language (12-16) *(Note: all Quantitative Reasoning and Physical and Biological Science requirements are met via courses in the curriculum listed below)* Elective credit to achieve minimum 120 degree credits	**54 Credits**
Foundational Courses in Mathematics, Statistics, Chemistry, and Physics	**24-30 Credits**
MATH 211 - Calculus OR MATH 217 - Calculus with Algebra and Trigonometry II OR MATH 221 - Calculus and Analytic Geometry 1	5
STATISTICS 301 - Introduction to Statistical Methods OR STATISTICS 371 - Introductory Applied Statistics for Life Sciences	3
CHEMISTRY 103 - General Chemistry I AND CHEMISTRY 104 - General Chemistry II OR CHEMISTRY 109 - Advanced General Chemistry CHEMISTRY 343 - Introductory Organic Chemistry	8-12
First Introductory Course: PHYSICS 103 OR 201 OR 207 ("General Physics") OR PHYSICS 247 - A Modern Introduction to Physics Second Introductory Course: PHYSICS 104 OR 202 OR 208 OR 248 ("General Physics") OR PHYSICS 248 - A Modern Introduction to Physics	8-10
Foundational Courses in Biology and Neuroscience	**17-21 Credits**
Foundational Biology: ZOOLOGY 151 and ZOOLOGY 152 OR ZOOLOGY 101 and 102 and BOTANY 130 OR BIOCORE 381 and BIOCORE 383 and BIOCORE 485 and BIOCORE 587 and BIOCORE 382, 384 or 486	10-14
ZOOLOGY 523 – Neurobiology	3
PSYCHOLOGY 454 - Behavioral Neuroscience OR ZOOLOGY 524 - Neurobiology II: An Introduction to the Brain and Behavior	3
NEUROSCIENCE TRAINING PROGRAM 500 - Undergraduate Neurobiology	1

Table 2. Requirements for the B.A./B.S. in Neurobiology	
Seminar	
Upper-Level Neurobiology Courses	**13 Credits**
BIOCHEMISTRY 501 - Introduction to Biochemistry	3
NEUROSCIENCE TRAINING PROGRAM/Phys 610 - Cellular and Molecular Neuroscience	4
NEUROSCIENCE TRAINING PROGRAM 629 - Molecular and Cellular Mechanisms of Memory	3
NEUROSCIENCE TRAINING PROGRAM 635 - Neurobiology of Disease	2
NEUROSCIENCE TRAINING PROGRAM 670 - Stem Cells and the Central Nervous System	2-3
NEUROSCIENCE TRAINING PROGRAM 675 - Topic: "Molecular Mechanisms of Brain Damage"	1-3
NEUROSCIENCE TRAINING PROGRAM 675 - Topic: "Neuroendocrinology"	1-3
PSYCHOLOGY 411 - Topic: "Neuropharmacology"	1-3
PSYCHOLOGY 411 - Topic: "Epigenetics and the Brain"	1-3
ZOOLOGY 400 - Modeling Neurodevelopmental Disease	1-3
ZOOLOGY 625 - Development of the Nervous System	2
COMMUNICATION SCIENCES AND DISORDERS 503 - Neural Mechanisms of Speech, Hearing & Language	3
EDUCATION PSYCHOLOGY 326 - Mind, Brain and Education	3
KINESIOLOGY 531 - Neural Control of Movement	3
NEUROSCIENCE TRAINING PROGRAM 630 - Neuronal Mechanisms for Sensation & Memory in the Cerebral Cortex	3
NEUROSCIENCE TRAINING PROGRAM 675 - Topic: "Basic Sleep Mechanisms & Sleep Disorders"	1-3
NEUROSCIENCE TRAINING PROGRAM 675 - Topic: "Behavioral Neuroendocrinology"	1-3
NEUROSCIENCE TRAINING PROGRAM 675 - Topic: "Functional Brain Imaging of Cognitive Disorders"	1-3
PSYCHOLOGY 406 - Psychology of Perception	3-4
PSYCHOLOGY 556 - Hormones and Behavior	3
PSYCHOLOGY 411 - Topic: "Neuroeconomics"	1-3
PSYCHOLOGY 411 - Topic: "Neural Basis of Cognitive Control"	1-3
PSYCHOLOGY 414 - Cognitive Psychology	3
PSYCHOLOGY 504 - Affective Neuroscience	4
ZOOLOGY 619 - Biology of Mind	3
ZOOLOGY 620 - Neuroethology Seminar	2
Laboratory Courses and Independent Study Courses in Neurobiology	**2 Credits**
PHYSIOLOGY 625 - Brain Cell Cultures and Imaging: A Lab Course	4
ZOOLOGY 555 - Laboratory in Developmental Biology	3
ZOOLOGY 604 - Computer-based Gene and Disease/ Disorder Res Lab	2
NEUROSCIENCE TRAINING PROGRAM 675 - Neurobiology and Behavior Lab	3
PSYCHOLOGY 620 (2 credits apply) - Capstone Mentored Research and Seminar	1-6
PSYCHOLOGY 681-682 (2 credits apply) - Senior Honors Thesis	1-6
ZOOLOGY 681-682 (3 credits apply) - Senior Honors Thesis	1-6
ZOOLOGY 691-692 (2 credits apply) - Senior Thesis	1-6
ZOOLOGY 699 (2 credits apply) - Directed Studies in Zoology	1-6

Projected Time to Degree

The projected time to degree for students in the neurobiology major will likely be 4.0 academic years. Recent data show that students with a biology major complete degrees on average in 4.1 elapsed calendar years. Students will be provided with a plan (similar to the plan shown below) for completing their degree in four years.

Table 3. Example of a Four-Year Plan for the Neurobiology Major		
Year	Fall Semester	Spring Semester
First Year	Comm A (3 cr) Math 211, 217 or 221 (5 cr) Chemistry 103 (4 cr) Ethnic Studies (3 cr) Total Credit Load ~ 15	Comm B (3 cr) Zoology 151 (5cr) Chemistry 104 or 109 (5 cr) Literature (3 cr) Total Credit Load ~ 16
Second Year	Organic Chemistry 343 (3 cr) Physics 103 (4 cr) Zoology 152 (5 cr) Literature (3 cr) Total Credit Load ~ 15	Biochemistry 501 (3 cr) Physics 104 (4 cr) Foreign Language I (3 cr) Social Science (3 cr) Literature (3 cr) Total Credit Load ~ 16
Third Year	Neurobiology I 523 (3 cr) Foreign Language II (3 cr) Statistics (301 or 371) (3 cr) Elective (3 cr) Elective (3 cr) Total Credit Load ~ 15	Neurobiology II 524 or Psychology 454 (3 cr) Foreign Language III (3 cr) Neurobiology Upper Level (3 cr) Elective (3 cr) Elective (3cr) Total Credit Load ~ 15
Fourth Year	Neurobiology Upper Level (2 cr) Neurobiology Upper Level (3 cr) Neurobiology Lab Course (2 cr) Directed Studies (1 cr) Elective (3 cr) Elective (3 cr) Total Credit Load ~ 14	Neurobiology Upper Level (4 cr) Neurobiology Upper Level (3 cr) Neurobiology Upper Level (3 cr) Neurobiology Seminar (500) (1 cr) Elective (3 cr) Total Credit Load ~ 14

Program Review Process

Institutional Review

In accordance with UW-Madison requirements, a program review will be conducted after five years. Thereafter, the neurobiology major will be incorporated into the regular ten-year review process. Because the major will be housed in the Zoology Department, the timing of the reviews will be aligned with the review of other academic programs in that department.

Accreditation

No accreditation is required for the proposed neurobiology major.

University of Wisconsin-Madison
Cost and Revenue Projections for the Undergraduate Degree Program in Neurobiology

	Items	Projections - Neurobiology				
		2015	2016	2017	2018	2019
		Year 1	Year 2	Year 3	Year 4	Year 5
I	Enrollment (New Student) Headcount	250	80	85	90	90
	Enrollment (Continuing Student) Headcount	0	160	155	150	150
	Enrollment (New Student) FTE	250	80	85	90	90
	Enrollment (Continuing Student) FTE	0	160	155	150	150
II	Total New Credit Hours (# new sections x credits per section)	0	0	0	0	0
	Existing Credit Hours (Est 15 cr per FT student X 2 [fall/spring])	7500	7200	7200	7200	7200
III	FTE of New Faculty/Instructional Staff	0	0	0	0	0
	FTE of Current Fac/IAS (Note 3)	11.8	11.8	11.8	11.8	11.8
	FTE of New Admin Staff	1.75	1.75	1.75	1.75	1.75
	FTE Current Admin Staff (Note 3)	0	0	0	0	0
V	New Revenues					
	From New Tuition	$0	$0	$0	$0	$0
	From Fees	$0	$0	$0	$0	$0
	Program Revenue - Grants	$0	$0	$0	$0	$0
	Program Revenue - Other	$0	$0	$0	$0	$0
	Reallocation (Note 1, 2)	$1,460,000	$1,460,000	$1,481,150	$1,502,617	$1,524,407
	Total Revenue	$1,460,000	$1,460,000	$1,481,150	$1,502,617	$1,524,407
VI	New Expenses					
	Salaries plus Fringes					
	Faculty/Instructional Staff	$0	$0	$0	$0	$0
	Other Staff	$120,000	$120,000	$121,800	$123,627	$125,481
	Continuing Expenses					
	Faculty and Instructional Academic Staff (Note 4)	$1,410,000	$1,410,000	$1,431,150	$1,452,617	$1,474,407
	Administrative Staff (Note 5)					
	Other: Supplies and Expenses	$50,000	$50,000	$50,000	$50,000	$50,000
	Total Expenses	$1,460,000	$1,460,000	$1,481,150	$1,502,617	$1,524,407
VII	Net Revenue	$0	$0	$0	$0	$0

Narrative: Explanation of the Numbers and Other Ongoing Commitments that will Benefit the Proposed Program

1. This program has no new revenue; the program will enroll full time undergraduates, most of whom would have previously enrolled in the Biology major.

2. All budget allocated to the existing Neurobiology option in the Biology major will be reallocated to the new Neurobiology major.

3. Reallocation will fund a full time program manager and 0.75 FTE of an advisor, which is shared with the Molecular Biology major.

4. An estimated 11.8 FTE of faculty and instructional academic staff will contribute to instruction and faculty oversight of the program; instruction will include individual instruction in research projects. More than 50 faculty are expected to contribute at least some time to program instruction.

4. Faculty and Instructional Academic Staff salaries are estimated from average salaries; projection is for no salary increase in the first year and a 1.5% salary increase in future years.

5. Administration staff salaries are estimated; projection is for a 1.5% annual salary increase in year 2 and beyond.

Signature by the Provost: ___ __*Sarah C. Mangelsdorf*_____

Date: 6/17/2015

Date: June 17, 2015

To: Ray Cross, President, University of Wisconsin System

From: Sarah C. Mangelsdorf, Provost and Vice Chancellor for Academic Affairs *SCM*

RE: Authorization Proposal: Undergraduate major in Neurobiology

In keeping with UW System and Board of Regent Policy, I am sending you a proposal for a new undergraduate major in Neurobiology at University of Wisconsin–Madison. This major will be associated with the Bachelor of Science and Bachelor of Arts degrees in the College of Letters and Science.

The program has been designed to meet UW–Madison's definition and standards of quality and to make a meaningful contribution to the institution's overall academic plan and program array. Students will be required to meet all the requirements of other UW-Madison bachelor's degree requirements.

There is institution-wide support for the program, including faculty governance approval. In keeping with UW–Madison policy, this program has been reviewed and endorsed by the faculty of the Department of Zoology, the College of Letters and Science, and approved by the University Academic Planning Council.

The program faculty have established a robust plan for curriculum delivery, student support, assessment of student learning, and program review. Because this program already exists as an option within the undergraduate major in Biology, it will be funded through a carefully managed reallocation of resources. Funds have been reallocated through reorganization of the Biology major for a program manager and an advisor (shared with another program). The College of Letters and Science will continue to provide support for this successful and important program. The necessary financial and human resources are in place and are committed to implement and sustain the program. The faculty plans to implement the new major in September 2016.

I am pleased to give this proposal my support.

Attached is a draft of documents for Board of Regent consideration. We are expecting this proposal can be scheduled for consideration at the September 10-11, 2015, Board of Regents meeting. Please contact Jocelyn Milner (jocelyn.milner@wisc.edu) for additional information and development of these materials.

Attachments

Copies:
Rebecca Blank, Chancellor, UW–Madison
Stephen Kolison via UWSA Academic Affairs (afgp@uwsa.edu)
David J. Ward, Senior Vice President, UW System Administration
Laura Anderson, Academic Planner, UW System Administration
Carmen Faymonville, Academic Planner, UW System Administration
John Karl Scholz, Dean, College of Letters and Science
Elaine Klein, Assistant Dean, College of Letters and Science
Jeff Hardin, Chair, Zoology Department
Stephen Johnson, Professor of Veterinary Medicine
Jocelyn Milner, Director, Academic Planning and Institutional Research
Sarah Kuba, Academic Planner, APIR

EDUCATION COMMITTEE

Resolution I.1.c.(2):

That, upon recommendation of the Chancellor of the University of
Wisconsin-River Falls, as well as the President of the University of
Wisconsin System, the Chancellor is authorized to implement the
Bachelor of Science in Agricultural Engineering at UW-River Falls.

NEW PROGRAM AUTHORIZATION
BACHELOR OF SCIENCE IN AGRICULTURAL ENGINEERING
UNIVERSITY OF WISCONSIN-RIVER FALLS

BACKGROUND

This proposal is presented in accordance with the procedures outlined in Academic Planning and Program Review (ACIS 1.0, Revised August 2012, available at http://www.uwsa.edu/acss/planning/). The new program proposal for a B.S. in Agricultural Engineering at the University of Wisconsin-River Falls is presented to the Board of Regents for consideration. UW-River Falls' Provost submitted an authorization document and a letter of institutional commitment.

REQUESTED ACTION

Adoption of Resolution I.1.c.(2), approving the implementation of the Bachelor of Science in Agricultural Engineering degree program at the University of Wisconsin-River Falls.

DISCUSSION

The University of Wisconsin-River Falls proposes to establish a 130-credit hours Bachelor of Science (B.S.) in Agricultural Engineering to be housed in the College of Agriculture, Food, and Environmental Sciences. This program responds to the strategic direction of the university, to student and alumni interest, and to regional employer and employee interest in a stand-alone baccalaureate program in agricultural engineering. The degree program will create an important opportunity for partnering with industry, as evident, for example, in the current outreach efforts of the Dairy Learning Center, the applied research partnerships of the Center for Innovation and Business Development, and the product development work of the Dairy Pilot Plant.

Establishing the agricultural engineering program will provide students with a high-quality degree that runs parallel to the existing UW-River Falls undergraduate program in Agricultural Engineering Technology, though requiring higher-level mathematics, more theoretical work, and a focus on conceptual design. The program will be grounded in the university's liberal education core and supporting courses drawn from the university's Science, Technology, Engineering, and Mathematics (STEM) programs as well as courses delivered by UW-River Falls' Northwest Wisconsin Engineering Consortium (NWEC) partners, UW-Eau Claire and UW-Stout.

Establishing the program will provide students with a high-quality degree in a biosystems engineering field with high demand and prospects for graduates regardless of whether they choose entering the workforce or seeking graduate or professional school opportunities. The goal of the program will be to provide students with the skill and knowledge sets required to work in solution-oriented contexts across a number of professional fields.

Using the 2014-15 resident undergraduate tuition rate, the cost to the student is $267.85 per credit and the plateau tuition (for 12-18 credits) is $3,214.20 per semester ($6,428.40 for the academic year). Students majoring in the B.S. in Agricultural Engineering will see their tuition rise by $700 per semester in their junior and senior years, thus taking their annual tuition rate to $7,828.40.

RECOMMENDATION

The University of Wisconsin System recommends adoption of Resolution I.1.c.(2), approving the implementation of a Bachelor of Science in Agricultural Engineering at UW-River Falls.

RELATED REGENT AND UW SYSTEM POLICIES

Regent Policy 4-12: Academic Program Planning, Review, and Approval in the University of Wisconsin System.

Academic Information Series #1 (ACIS 1.0, Revised August 2012): Statement of the UW System Policy on Academic Planning and Program Review.

**REQUEST FOR AUTHORIZATION TO IMPLEMENT A
BACHELOR OF SCIENCE IN AGRICULTURAL ENGINEERING
AT UW-RIVER FALLS
PREPARED BY UW-RIVER FALLS**

ABSTRACT

The University of Wisconsin-River Falls proposes to establish a Bachelor of Science (B.S.) in Agricultural Engineering. This program responds to the strategic direction of the university, to student and alumni interest, and to regional employer and employee interest in a stand-alone baccalaureate program in agricultural engineering. The creation of this program is a natural extension of the programming and partnerships available through the university's College of Agriculture, Food and Environmental Sciences. Establishing the agricultural engineering program will provide students with a high-quality degree that runs parallel to the existing UW-River Falls undergraduate program in Agricultural Engineering Technology, though requiring higher-level mathematics, more theoretical work, and a focus on conceptual design. The proposed program will be grounded in the university's liberal education core and supporting courses drawn from the university's high quality Science, Technology, Engineering, and Mathematics (STEM) programs as well as courses delivered by UW-River Falls' Northwest Wisconsin Engineering Consortium (NWEC) partners, UW-Eau Claire and UW-Stout. The proposed curriculum will run 130 semester credit hours, inclusive of all program, college, and university requirements.

PROGRAM IDENTIFICATION

Institution Name
University of Wisconsin-River Falls

Title of Proposed Program
Agricultural Engineering

Degree/Major Designations
Bachelor of Science

Mode of Delivery
Single institution/collaborative (part of the NWEC) using face-to-face instruction supplemented by hybrid courses and online delivery of shared courses.

Table 1: Projected Enrollments by Year Five

Year	Implementation Year	2nd year	3rd year	4th year	5th year
New students admitted	15	15	20	20	25
Continuing students	0	12	22	38	48
Total enrollment	15	27	42	58	73
Graduating students	0			10	12

Table 1 above identifies the projected enrollment patterns for the program, and attempts to capture variations in first- to second-year retention, first- to third-year retention, and graduation rate. The most closely related program to the proposed agricultural engineering degree is the agricultural engineering technology degree program, which has had nearly an 80% first- to second-year retention rate, and the majors have grown by 33% (to 83 by fall of 2015) since 2010. There will be some elasticity related to graduation rate and time to degree predicated on students entering with credits earned via dual enrollment or other forms of college credit, as well as the potential for students to elect a different engineering major within the NWEC, as they move through core courses.

The model does not include transfer students, as articulation agreements have not yet been fully developed, or any dual-degree options in discussion with select international university partners.

Tuition Structure
UW-River Falls has used standard undergraduate tuition pricing and revenue to calculate the tuition structure for the new program. Using the 2014-15 resident undergraduate tuition rate, the cost is $267.85 per credit and the plateau tuition (for 12-18 credits) is $3,214.20 per semester ($6,428.40 for the academic year). Students majoring in the B.S. in Agricultural Engineering will see their tuition rise by $700 per semester in their junior and senior years, thus taking their annual tuition rate to $7,828.40. There will be variance in the tuition rate, depending on the number of students who graduate within four academic years and those who would stay in either junior or senior class rank for more than two semesters (in each rank).

At present, segregated fees for all full-time undergraduate students at UW-River Falls is $666.91 per semester for 2015-16. Depending on actual courses taken, there may be additional individual course or lab fees.

Department or Functional Equivalent
The proposed program will be managed within the Department of Agricultural Engineering Technology. The department will likely be renamed pending approval of this degree program, and the head of the department will be charged with coordinating efforts with the NWEC partners.

College, School, or Functional Equivalent
College of Agriculture, Food and Environmental Sciences

Proposed Date of Implementation
Fall 2016

INTRODUCTION

Rationale and Relation to Mission
The undergraduate program in agricultural engineering is a natural outgrowth of the programs and activities associated within the College of Agriculture, Food and Environmental Sciences. The faculty members of the Department of Agricultural Engineering Technology have

been part of university-wide discussion on Science, Technology, Engineering and Mathematics (STEM) program development since 2008. The focused analysis concerning engineering degree delivery began with the university's new strategic plan, called *Pathway to Distinction,* in 2012. To support various planning initiatives, the university contracted for a number of market studies related to high-demand programs, allied health options, and opportunities in undergraduate engineering. Among the studies was a focus analysis on mechanical engineering, one on systems/industrial engineering, and a broader study on biosystems engineering (which included agricultural engineering). As a result of these conversations, the focus on agriculture was a natural fit and progression for the university, the college, and the Department of Agricultural Engineering Technology.

Parallel to these efforts, and in keeping with the university's strategic plan (goal two: innovation and partnerships), conversations about the development of an agricultural engineering degree began with regional businesses and industry sectors connected to the university and the department. These conversations influenced the development of the program and its design. As well, the academic leadership of UW-River Falls, UW-Stout, and UW-Eau Claire began discussing and designing a partnership connecting the respective engineering programs in January of 2014. These efforts evolved into the NWEC, which was presented as a cost-effective collaborative opportunity to UW System Administration and the Board of Regents in the fall of 2014.

The agricultural engineering program proposal clearly fits with the foci of the university's strategic plan—particularly goals one (distinctive academic excellence) and two (innovation and partnerships). The university sees the program not only as appropriately broadening the academic program array related to agriculture and traditional STEM offerings but also as creating an important opportunity for further partnering with industry, an activity highly valued at UW-River Falls, and visible in, for example, the outreach efforts of the Dairy Learning Center, the applied research partnerships of the Center for Innovation and Business Development, and the product development work of the Dairy Pilot Plant. The advancement of engineering, particularly within the context of agriculture industries, reinforces key economic drivers of the state and this region and the already existing work of the faculty and staff of the College of Agriculture, Food and Environmental Sciences at UW-River Falls.

In addition to its academic home and any curricular connections to the existing agricultural engineering technology major, the proposed agricultural engineering program will be facilitated by outstanding programs, courses, and faculty in other programs at UW-River Falls (physics, mathematics, computer science, environmental science, etc.) and colleagues at the other NWEC institutions.

Because of the program's academic home and that college's current role in delivering undergraduate programs across the basic, applied, and technological sciences, the addition of the agricultural engineering major is a natural next step. Further, the proposed program is mission-congruent as UW-River Falls' Select Mission, as approved by the Board of Regents, is to "offer programs and degrees in the agricultural sciences, agribusiness, and agricultural teacher education" with "the university continu[ing] to develop interinstitutional relationships in

cooperative research, graduate training and undergraduate programs within the state, region and world."

Need as Suggested by Current Student Demand

Student interest in a B.S. in agricultural engineering can be inferred from the relatively robust and increasing enrollments in the agricultural engineering technology degree program. The agricultural engineering degree would be the only one of its kind in a nearly two hundred-mile radius of UW-River Falls, and the university would compete for students regionally with larger and more expensive research-intensive universities in the Dakotas, Iowa, and Minnesota.

In 2012-13, Hanover Research identified five-year growth in agricultural engineering degree completions at nearly 69% nationwide and a relative gap in biosystems engineering degrees conferred in Wisconsin. The Hanover Research report states that demand for degrees in related fields is rising, and that therefore "the lack of biosystems engineering conferrals in Wisconsin may present an opportunity for the University of Wisconsin-River Falls to provide a program for a niche market" (p. 9). As the enrollment targets suggest, UW-River Falls is not identifying a large five-year goal, as the fifth year would bring engineering enrollment to a level similar to the existing engineering technology program.

Further, the regional pull that will be created through establishing the proposed agricultural engineering program is intended as means of keeping Wisconsin students on the eastern side of the border with Minnesota and to pull student talent into Wisconsin. This will help broaden the appeal of the program and draw potential graduates closer to regional business and industry partners in the St. Croix Valley region.

The enrollments at Iowa State and the Dakota universities appear to be strong and consistent. Students may prefer an alternative option, i.e., a smaller, more intimate comprehensive university whose mission is focused on high-quality undergraduate education. Since the creation of the NWEC was announced and the UW System Administration pre-authorization to plan an agricultural engineering degree program at UW-River Falls was made public, applicant inquiries have increased, and suggest that the first-year cohort goal of fifteen students should be reachable.

In addition to first-year demand, the home department has identified a select group of two-year colleges in Wisconsin and Minnesota that can provide a pool of transfer students, including UW System two-year institutions and Wisconsin technical colleges, not otherwise accounted for in the program projections.

Need as Suggested by Market Demand

During the fall of 2014, the University of Wisconsin System Administration and the Board of Regents received letters of support and attestation as to the need, relevance, and value of the various engineering degree programs being developed by the NWEC universities. UW-River Falls has received support, encouragement, and insights from a varied group of connected

companies (e.g., Oxbo, ParkerHanifin, Cargill Kitchen Solutions, and Toro) that have influenced the development of the proposed program.

The above-cited Hanover Research report took note of agricultural engineering's close association with biosystems engineering, for which there is statewide and national demand. It also took note of the academic connection to power machinery and processing, both programs that have been consolidated in the region surrounding UW-River Falls, as well as the connections to environmental engineering and sciences. The above-mentioned academic array is a logical connection point for UW-River Falls given its existing academic and research resources in the university's environmental science program and biotechnology programs. The Hanover Research study noted that there was an 8.7% increase in jobs nationally for graduates in agricultural engineering between 2008 and 2012, with positive projections extending out to 2020, and there appears to be growing demand for biosystems engineering-related programs across Wisconsin.

Further, the Hanover Research study noted that the 2010-20 national projections predict a 9.1% job growth for agricultural engineers. The study also noted that at the point of the study's analysis (August 2013) there would be limited state-wide job growth. The U.S. Bureau of Labor Statistics' 2012-22 projections predict a 5% occupational growth, with a median annual salary of $74,000. According to Recruiter.com "demand for agricultural engineers is expected to go up, with an expected 1,040 new jobs filled by 2018" (https://www.recruiter.com/careers/agricultural-engineers/outlook/), reflecting the cyclical trend one might find in engineering.

The regional data, including the Twin Cities metropolitan statistical area data (which comprises River Falls and Hudson, Wisconsin) is more positive, showing an 8.7% increase in jobs from 2010 through 2020. Wisconsin industry leaders in the region see the added value of the NWEC in attracting talent and enabling desired industry growth by filling needed jobs and creating capacity—an important element for the St. Croix Valley region given its demographics and expanding population and economic base.

DESCRIPTION OF PROGRAM

Institutional Program Array

The proposed program will fit well with the university's STEM program focus. UW-River Falls has a long-standing undergraduate dual-degree program in physics and engineering (offered through other universities such as UW-Madison and University of Minnesota-Twin Cities), typically focused on mechanical and electrical engineering; an existing degree program in agricultural engineering technology, and related degree programs (e.g., environmental science, biotechnology, and applied physics for industry and engineering); and a strong partnership in the context of engineering with UW-Eau Claire and UW-Stout through the Northwest Wisconsin Engineering Consortium. Agricultural Engineering fits neatly within the College of Agriculture, Food and Environmental Sciences' foci on biosystems, solutions-oriented education, and industry collaborations.

Other Programs in the University of Wisconsin System

As one of four universities with an agriculture focus within the UW System, UW-River Falls is uniquely positioned to offer the proposed degree program, which has some curricular overlap with UW-Madison's biological systems engineering program.

There are no other agricultural engineering programs (with a focus on power and machinery) within a 150-mile radius of UW-River Falls. The geographically closest programs are at UW-Madison, North Dakota State, South Dakota State, and Iowa State.

Collaborative Nature of the Program

The development of the program coincided with the discussions and subsequent development of a regional engineering initiative. The NWEC offers a coordinating umbrella for UW-River Falls, UW-Eau Claire, and UW-Stout to share academic and curricular resources, collaborate with industry, leverage and share specialized facilities and/or equipment, and create seamless connections for students interested in a range of engineering degree options. The agricultural engineering proposal is regionally unique but complementary to the offerings of other NWEC institutions and, therefore, the partnership provides a regionally-focused broad array of options to prospective students interested in engineering. The consortium will:

- establish ashared engineering program with an efficient management model;
- design a curriculum that provides flexibility for students within the consortium both in the first-year curriculum and in upper-level electives;
- eliminate institutional barriers to provide students a seamless experience (to the students, the consortium will look and feel like any other academic college);
- enhance the ongoing collaborative efforts and identify opportunities that will benefit the students outside of the consortium;
- strengthen the connections with local industries and build a strong engineering community in western Wisconsin; and
- coordinate outreach activities.

Diversity

The faculty members involved in the program are committed to inclusivity and diversity and will work with undergraduate admissions to partner with schools that have a high potential for multicultural and disadvantaged student enrollments in the program. UW-River Falls is actively seeking to diversify its student population, and will connect students not only to the program but also to the recruitment and support structures (NSF-funded access and success initiatives in mathematics and the sciences, the *Pathways* programs for domestic students with English as a second language, a STEM-focused McNair scholars program, summer individualized research experiences, and a multicultural and economically disadvantaged retention specialist).

Student Learning Outcomes

Upon completion of the program, students will demonstrate:

6

- comprehensive understanding of mathematics, basic sciences, and agricultural sciences related to engineering;
- knowledge of research design and interpretation of data;
- mastery of effectiveness in collaboration, critical thinking, and problem-solving expertise in engineering process and design related to power and machinery;
- effective and ethical behavior appropriate for a professional engineer; and
- professional standards in communication appropriate to industry.

Students will be well-grounded in the building blocks necessary to be effective agricultural engineers. This grounding will be tested and reinforced by practical application in classrooms and laboratories and especially through internship experiences.

The development and refinement of learning objectives and assessment will be informed by and consistent with Accreditation Board for Engineering and Technology (ABET) guidelines.

Assessment of Objectives
Students will be assessed via course-embedded assessments and cumulative assessments as they move through the foundational courses and into the general engineering core. The upper division courses central to agricultural engineering will follow ABET models and practices to assure outcomes and enable successful accreditation.

Program Curriculum
General Education and University Requirements: 36-42 credits

Engineering Major: Core Courses (36 credits)
AET 251 Introduction to Instrumentation (3 credits)*
AET 325 Alternative Energy Systems (3 credits)
AET 350 Applied Electricity (3 credits)
AET 361 Farm Machinery Management (3 credits)*
AGEN 440 Soil and Water Conservation (4 credits)
AGEN 352 Food and Process Engineering (3 credits)
GENG 121 Engineering Drawing (3 credits)*
GENG 135 Introduction to Engineering (2 credits)*
GENG 316 Engineering Thermodynamics (3 credits)*
GENG 336 Engineering Fluid Mechanics (3 credits)*
GENG 450 Engineering Project Management (3 credits)
ENGL 367 Technical Writing (3 credits)

Engineering Major: Support Courses (33 credits)
CSIS 161 Programming I (3 credits)
SOIL 120 Intro to Soil Science (3 credits)
MATH 167 Calculus I (4 credits)
MATH 266 Calculus II (3 credits)
MATH 331 Differential Equations (3 credits)
PHYS 132 Calculus Based Physics II (3 credits)
PHYS 250 Statics (3 credits)

PHYS 252 Dynamics (3 credits)
PHYS 254 Mechanics of Materials (3 credits)
MATH elective chosen from 300/400 level courses in statistics, numerical analysis or modeling (3 credits)

Engineering Major: Power and Machinery (19 credits)
AET 320 Internal Combustion Engines (3 credits)
AGEN 451 Systems Instrumentation (3 credits)*
AGEN 461 Off-Road Vehicle Engineering (3 credits)*
AGEN 465 Fluid Power Systems (3 credits)
GENG 305 Machine Design Lab (3 credits)*
GENG 345 Machine Design I (3 credits)*
GENG 346 Machine Design II (3 credits)*

*denotes new or significantly redesigned course

Projected Time to Degree

The projected time to degree for full-time students is four years, and students should be able to complete all university and program requirements in 130 semester credit hours. Students will have to take more than 15 credits per semester to earn the degree in four years but there are also summer and January term options to keep a student on track.

Institutional Review

In accordance with UW-River Falls' policy, the program audit and review committee will review the program every six years. In addition, annual assessment reports will be reviewed by the Provost's Office and the university's assessment committee; and annual performance data, including enrollment, revenue, and costs, will be uploaded into the university's program prioritization process and system, which is regularly reviewed by the Provost and Deans' Council.

Once a program is approved for planning, the normal governance and leadership review processes occur. UW-River Falls employs a rigorous approach to course and program proposals. Substantive course changes and new course proposals emanate from departments and go through appropriate college curriculum committee review before being evaluated by university-level general education and/or undergraduate curriculum committees. New programs are reviewed at the college level before going to the curriculum committee and subsequently to the academic program and planning committee. The Faculty Senate then reviews and votes on all program proposals before being approved by the Provost and, ultimately, the Chancellor.

The UW-River Falls' academic deans and the Chancellor's cabinet reviewed the specific proposal for the B.S. in Agricultural Engineering at the UW System Administration Notice of Intent approval stage, and all parties were involved in the preliminary discussions about engineering programs and appropriate options at the university.

Accreditation

The academic department, supported by the relevant academic dean and the provost, will seek ABET accreditation for its programs.

University of Wisconsin System

Cost and Revenue Projections For Newly Proposed Program: B.S. in Agricultural Engineering at UW-River Falls

	Items	Projections				
		20 16	20 17	2018	20 19	2020
		Year 1	Year 2	Year 3	Year 4	Year 5
I	Enrollment (New Student) Headcount	15	15	20	20	25
	Enrollment (Continuing Student) Headcou	0	12	22	38	48
	Enrollment (New Student) FTE	15	15	20	20	25
	Enrollment (Continuing Student) FTE	0	12	22	38	48
II	Total New Credit Hours (# new sections x	22	22	22	22	22
	Existing Credit Hours	66	66	66	66	66
III	FTE of New Faculty/Instructional Staff	0	1	0	1	0
	FTE of Current Fac/IAS	2.5	2.5	3.5	3.5	4.5
	FTE of New Admin Staff	0	0	0	0	0
	FTE Current Admin Staff	1	1	1	1	1
IV	New Revenues					
	From Tuition (new credit hours x FTE)	$96,420	$173,556	$313,632	$412,024	$518,244
	From Fees	$0	$0	$0	$0	$0
	Program Revenue - Rsearch and Program(	$0	$50,000	$65,000	$65,000	$65,000
	Program Revenue - Other-Contracts	$0	$50,000	$60,000	$60,000	$60,000
	Reallocation	$800,000	$200,000	$100,000	$100,000	$0
	Total New Revenue	$896,420	$473,556	$538,632	$637,024	$643,244 captures tuition differential noted below.
V	New Expenses					
	Salaries plus Fringes					
	Faculty/Instructional Staff	$245,000	$375,000	$425,000	$425,000	$505,000
	Other Staff	$24,000	$24,000	$24,000	$24,000	$24,000
	Other Expenses					
	Facilities	$250,000	$0	$0	$0	$0
	Equipment	$250,000	$60,000	$60,000	$60,000	$65,000
	Other:					
	Total Expenses	$769,000	$549,000	$509,000	$509,000	$594,000
VI	Net Revenue	$127,420	-$75,444	$29,632	$128,024	$49,244

Narrative: Explanation of the Numbers and Other Ongoing Commitments that will Benefit the Proposed Program
Much like similar high student profile programs UW-River Falls is modeling a one-to-one headcount to FTE ratio.
Faculty salary is calculated based on $75,000 \
UW-River Falls' reserve spending plan that was established
Upper division engineering students will be subject to a $1,400/year tuition differential, this difference is captured in years 3, 4, 5.

a - Number of students enrolled

b - To be based on 12 credits at the undergraduate level and 7 credits at the graduate level

c - Number of faculty/instructional staff providing significant teaching and advising for the program

d - Number of other staff providing significant services for the program

Signature by the Provost
1-Jul-15

June 30, 2015

Ray Cross, Ph.D., President
University of Wisconsin System
1720 Van Hise Hall
1220 Linden Ave
Madison, WI 53706-1559

Dear President Cross,

On behalf of the university I am submitting a proposal to establish a Bachelor of Science in Agricultural Engineering degree at UW-River Falls. The development of this proposal is well known within UW System given the time, energy, and attention we have collected paid to the question of engineering programs in Northwestern Wisconsin. On campus the discussion regarding engineering has deliberate, thoughtful and far-reaching. Faculty and administrators from five academic departments and three colleges have, at various times, participated in these conversations with the Chancellor and the Provost. We have spent time analyzing our resources facilities, and curriculum to understand what both a short-term and a long-term picture for engineering at UW-River Falls could look like. Finally, we have asked Hanover Research to conduct a series of studies, regarding particular areas of engineering, between 2012 and 2014; the results have informed the strategies and focal points related to undergraduate engineering at UW-River Falls.

The university is justifiably proud the College of Agriculture, Food and Environmental Sciences and its commitment to undergraduate education and partnership with relevant industry sectors in Wisconsin and especially the St. Croix Valley region. I believe that enhancing the college's and university's profile in engineering makes incredible sense for both the academic programming of the institution but also to further enable to UW-River Falls to effectively partner with the region's business and build an appropriate talent pool and innovate products and development. I would predict very positive outcomes related to economic development and deeper domestic and international cooperative opportunities for UW-River Falls, which already has a very fruitful relationship with DATCP and WEDC.
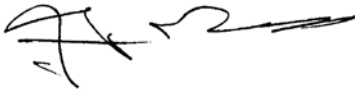
In terms of preparation, the time we have spent discussing engineering across the UW System has afforded the campus to plan and allocate financial resources for renovations and equipment and I believe the college is well situated to launch this program. I have discussed enrollment projections, course needs, and faculty expertise and we have captured the necessary scale of additions to carry the program, and its associated agricultural engineering technology degree, through its initial delivery and assured a sustainable model for a high-quality program moving forward.

Finally, I need to highlight an important feature of engineering in our region. The Northwestern Wisconsin Engineering Consortium is far more than a brochure or a response to political pressure. The idea was developed and carried forward by the academic leadership of UW-Eau Claire, UW-River Falls, and UW-Stout long before the broader discussions occurred. This collaboration was seeded the moment we collectively understood that our intention was to build program capacity that

was both mission appropriate and a fundamental addition to drive the economy forward in our region. The faculty, deans, and provosts of our three institutions are deeply committed to having this consortium function well and we are supported by Chancellors who are highly engaged in broad conversations about economic development and regional cooperation.

I am confident that the agricultural engineering program, when it is approved, will further enable UW-River Falls to offer a strong STEM focused program array that expands our opportunities to reach students, employers, and communities in our region—making a marked and positive difference for all parties concerned.

Sincerely,

Fernando Delgado
Provost and Vice Chancellor for Academic Affairs

EDUCATION COMMITTEE

Resolution I.1.c.(3):

That, upon recommendation of the Chancellor of the University of Wisconsin-Stevens Point, as well as the President of the University of Wisconsin System, the Chancellor is authorized to implement the Bachelor of Science in Chemical Engineering at UW-Stevens Point.

NEW PROGRAM AUTHORIZATION
BACHELOR OF SCIENCE IN CHEMICAL ENGINEERING
UNIVERSITY OF WISCONSIN-STEVENS POINT

BACKGROUND

This proposal is presented in accordance with the procedures outlined in Academic Planning and Program Review (ACIS 1.0, Revised August 2012, available at http://www.uwsa.edu/acss/planning/). The new program proposal for a Bachelor of Science (B.S.) in Chemical Engineering at the University of Wisconsin-Stevens Point is presented to the Board of Regents for consideration. UW-Stevens Point's Provost submitted an authorization document and a letter of institutional commitment.

REQUESTED ACTION

Adoption of Resolution I.1.c.(3), approving the implementation of the Bachelor of Science in Chemical Engineering degree program at the University of Wisconsin-Stevens Point.

DISCUSSION

The University of Wisconsin-Stevens Point proposes to establish a Bachelor of Science in Chemical Engineering in response to the need for additional chemical engineers in Wisconsin. There is currently only one chemical engineering baccalaureate program in the state. The 2014 National Center for Higher Education Management Systems (NCHEMS) study commissioned by UW System Administration identified a need for a second chemical engineering program in the state.

Students will be provided with an ABET-accredited degree program that will prepare them for careers as process engineers in manufacturing facilities. The B.S. in Chemical Engineering was developed as a logical extension of the baccalaureate Paper Science and Engineering program that has been offered at UW-Stevens Point for forty years. Paper Science and Engineering is a specialization within chemical engineering, and the more broadly conceived chemical engineering degree program will prepare students for careers in a wider variety of Wisconsin industries.

The proposed program will be comprised of 120 credits which will be completed by students on campus. The university expects that 236 students will have enrolled in the program and 72 students will have graduated from the program by the fifth year of operation.

For students enrolled in the Chemical Engineering program, standard tuition and fee rates will apply. For the current academic year, the residential tuition and segregated fees total $3,834.39 per semester for a full-time student who is enrolled in 12-18 credits per term. Of this amount, $594.63 is attributable to segregated fees and $3,239.76 is attributable to tuition.

RECOMMENDATION

  The University of Wisconsin System recommends adoption of Resolution I.1.c.(3), approving the implementation of a Bachelor of Science in Chemical Engineering at UW-Stevens Point.

RELATED REGENT AND UW SYSTEM POLICIES

Regent Policy 4-12: Academic Program Planning, Review, and Approval in the University of Wisconsin System.

Academic Information Series #1 (ACIS 1.0, Revised August 2012): Statement of the UW System Policy on Academic Planning and Program Review.

REQUEST FOR AUTHORIZATION TO IMPLEMENT A
BACHELOR OF SCIENCE DEGREE IN CHEMICAL ENGINEERING
AT UW-STEVENS POINT

ABSTRACT

The University of Wisconsin-Stevens Point proposes to establish a Bachelor of Science degree in Chemical Engineering in response to the need for additional chemical engineers in Wisconsin as described in the narrative below. There is currently only one chemical engineering baccalaureate program in the state. The proposed program strongly supports major themes in the university's strategic plan, particularly the focus on prosperous and sustainable communities. Establishing the program at UW-Stevens Point will provide students the opportunity to obtain a chemical engineering degree at a smaller campus, a distinction that is important to many potential students in the state. The goal will be to provide students with an excellent accredited program that will prepare them for careers as process engineers in manufacturing facilities in Wisconsin. The program will be comprised of 120 credits which will be completed on campus.

PROGRAM IDENTIFICATION

Institution Name
University of Wisconsin-Stevens Point

Title of Proposed Program
Chemical Engineering

Degree/Major Designations
Bachelor of Science in Chemical Engineering

Mode of Delivery
Single institution

Projected Enrollments by Year Five
Figure 1 below represents an enrollment estimate for students in the proposed chemical engineering program over the next five years. The university expects that 236 students will have enrolled in the program and 72 students will have graduated from the program by Year 5. These projections assume that:

- Because students from all regions in the state have matriculated in Paper Science and Engineering (PS&E) at UW-Stevens Point (see Figure 2 below), there is recognition of engineering at the university and recruiting new students into the proposed program should be easily accomplished;
- Driven by focused recruitment efforts with the UW-Stevens Point Office of Admissions and with faculty support, the number of new freshmen majoring in chemical engineering is predicted to increase from approximately 20 students to 50 students by Year 3;

- Approximately 75 percent of students are retained in the program from freshman to the sophomore year (consistent with the retention rate for the existing PS&E program); and
- Many current PS&E sophomores, juniors, and seniors will add chemical engineering as a second major (based on a survey described below under "Need as Suggested by Current Student Demand").
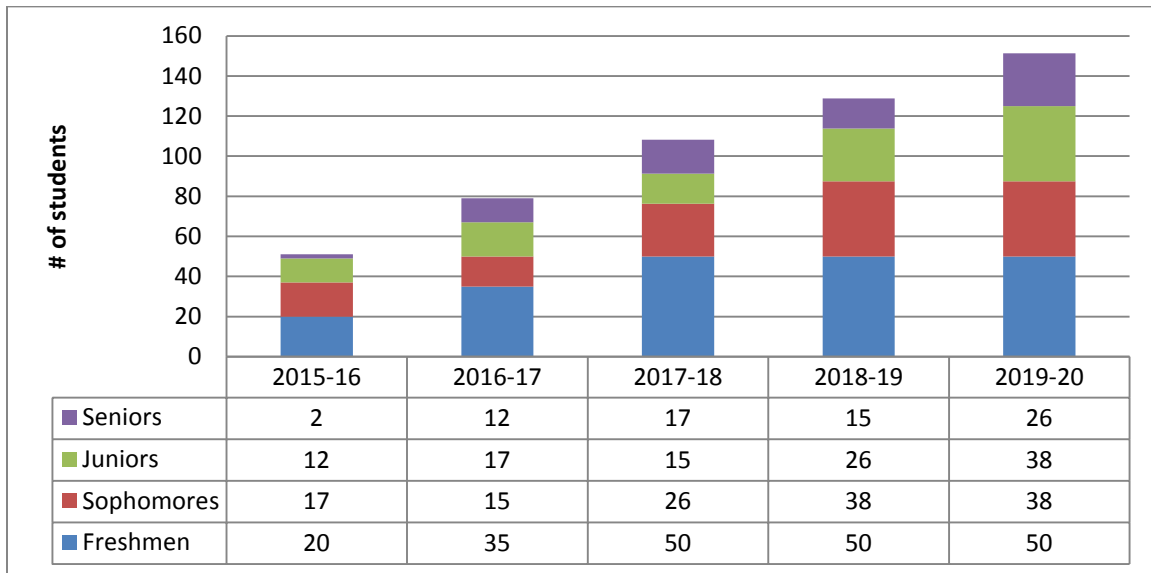

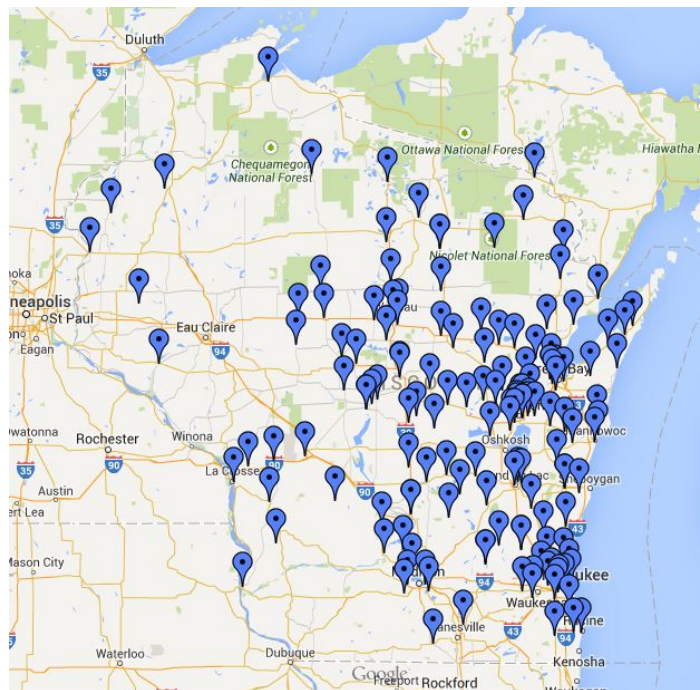| # of students	2015-16	2016-17	2017-18	2018-19	2019-20
■ Seniors	2	12	17	15	26
■ Juniors	12	17	15	26	38
■ Sophomores	17	15	26	38	38
■ Freshmen	20	35	50	50	50

Figure 1. Enrollment projections

Figure 2. High schools of origin for PS&E UW-Stevens Point students, 2000-2014

Tuition Structure

For students enrolled in the Chemical Engineering program, standard tuition and fee rates will apply. For the current academic year, the residential tuition and segregated fees total $3,834.39 per semester for a full-time student who is enrolled in 12-18 credits per term. Of this amount, $594.63 is attributable to segregated fees and $3,239.76 is attributable to tuition. Segregated fees include the University Center fee, the student activity fee, the text rental fee, the student health fee, the municipal services fee, the Health Enhancement Center fee, and the United Council fee. Some courses have special course fees that will be charged, such as access fees for online materials.

For students enrolled part-time in the program, the residential cost of tuition and segregated fees is $379.09 per credit.

Department or Functional Equivalent

The proposed program will reside within the current Department of Paper Science and Engineering. The name of the department will be changed to the Department of Engineering early in the 2015-16 academic year to reflect the presence of multiple engineering majors (after approval of the proposed program by the UW System Board of Regents).

College, School, or Functional Equivalent

The proposed program will be housed within the College of Natural Resources.

Proposed Date of Implementation

January 2016

INTRODUCTION

Rationale and Relation to Mission

The B.S. in Chemical Engineering will provide an important and more generalized addition to the baccalaureate PS&E program that has been offered at UW-Stevens Point for 40 years. The existing PS&E program is accredited by the Accreditation Board for Engineering and Technology (ABET). Paper science and engineering is a specialization within the discipline of chemical engineering. The broader proposed chemical engineering degree will prepare students for careers in a wider variety of Wisconsin industries.

The proposed chemical engineering program contributes directly to the mission of the UW System by developing the human resources needed for a vibrant industrial presence in the state.

A recent revision of the select mission of UW-Stevens Point has been approved by the UW-Stevens Point Faculty Senate and is presented for a first reading at the September 2015 meeting of the Board of Regents. The following statement appears in this revised select mission:

> Our commitment to helping communities thrive requires that we provide education, research and outreach in a wide array of disciplines, with particular emphases at the baccalaureate level in integrated natural resources management and environmental

education; in the performing and visual arts; and in areas such as business, health and wellness professions, communicative disorders, design, select engineering programs, family and consumer sciences, information science, paper science, social work, and teacher education.

This statement both articulates and exemplifies UW-Stevens Point's commitment to providing engineers to meet the needs of Wisconsin's industries, including the existing institutional program that has historically been focused on the $5 billion paper industry.

The proposed program at UW-Stevens Point also strongly supports major themes in the university's Strategic Plan, especially the focus on prosperous and sustainable communities. Chemical engineers from the proposed program will be well-compensated members of their communities, contributing to the prosperity of those communities. As engineers educated within the College of Natural Resources with a focus on sustainability for industrial operations, they will have a favorable and direct influence on the environmental performance of their industrial facilities.

Need as Suggested by Current Student Demand

The department faculty currently perform academic advising for students that are declared as "pre-chemical engineering." Students choosing the "pre-chemical engineering" track currently must transfer to UW-Madison if they wish to complete a chemical engineering degree. Over the past ten years, only one student has chosen to transfer to UW-Madison; the remaining students decide to stay at UW-Stevens Point and declare a PS&E major. However, the majority of these students would prefer to major in chemical engineering. A survey of current paper science and engineering majors was conducted in March 2015. Fifty-six students were emailed the survey and 42 responded. All of the students who responded would add chemical engineering as an additional major. It is not known how many students from other majors would have an interest in chemical engineering

Need as Suggested by Market Demand

The UW System contracted with the National Center for Higher Education Management Systems (NCHEMS) to determine "the extent and nature of shortages on engineers needed in the Wisconsin workforce, if any." The final report, entitled "Baccalaureate and Master's Engineering Degree Supply and Demand in Wisconsin" provides some insights into the state's engineering workforce. The majority (56.5 percent) of engineers employed in Wisconsin work in the manufacturing sector; the proposed program will reside in a department that has focused on preparing engineers for manufacturing careers for the past 40 years. The report also identified a need for a second chemical engineering program in the state. Figure 3 below shows a map from the report, indicating the areas of need for chemical/process engineers (green colors indicate areas in which there is need).
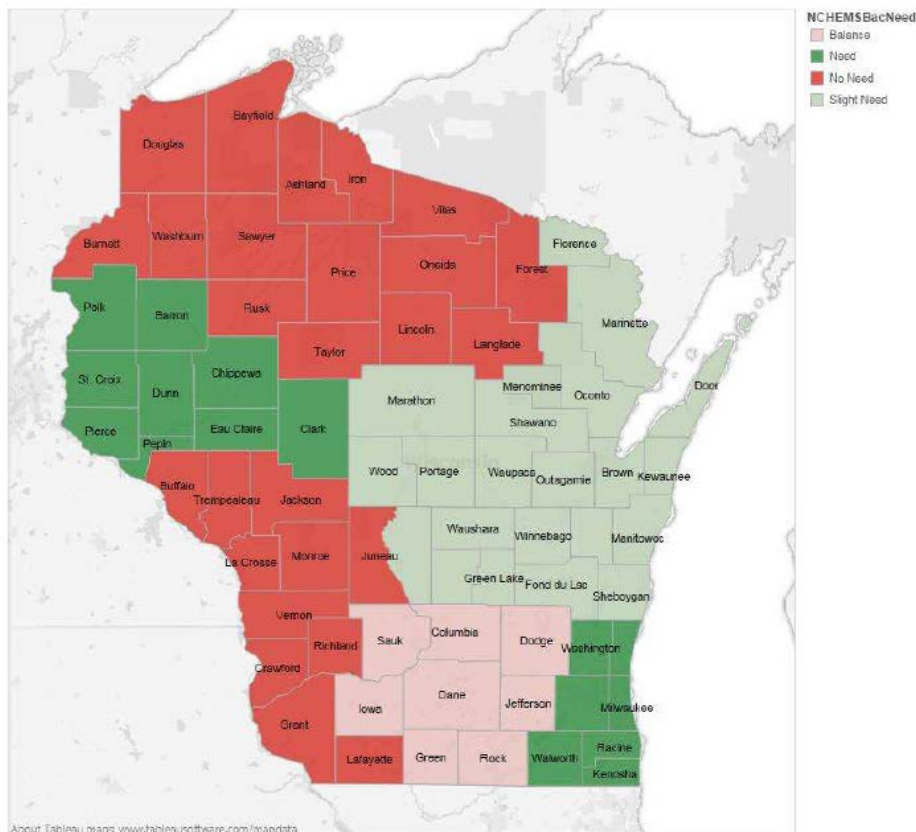
Figure 3. Need for chemical/process engineers (NCHEMS report)

A follow up search of data from Burning Glass (http://burning-glass.com, the source of the demand data for the NCHEMS report) performed by the institutional researcher at UW-Stevens Point in February 2015 showed postings for chemical engineering jobs in Wisconsin and in the surrounding region (including Wisconsin, Minnesota, Iowa and Illinois). Results are shown in Table 1. Of the 435 total postings in Wisconsin, 249 required a bachelor's degree with 0-5 years of experience. This level of demand far exceeds the output of the current chemical engineering program in the state (76 B.S. degrees in 2014-15). The proposed B.S. in Chemical Engineering will help to address this demonstrated demand.

Table 1. February 2015 postings for chemical engineers (Burning Glass)

Total postings – Wisconsin	435
Southern WI	241
Fox River Valley	62
Wisconsin River Valley	24
Western WI	15
Total postings – four state region	3,031 (1,919 included a specific industry)

According to the Economic Modeling Specialists International projections for chemical engineering jobs in 2024, Wisconsin is likely to see increasing demand (see Table 2 and Figure 4). These projections are consistent with the data presented in the NCHEMS report. Of

particular interest in Figure 4 is the overlap between the areas of need for chemical engineers and the high schools of origin for students in the existing PS&E program (Figure 2).

Table 2. Projected chemical engineering jobs in top five counties

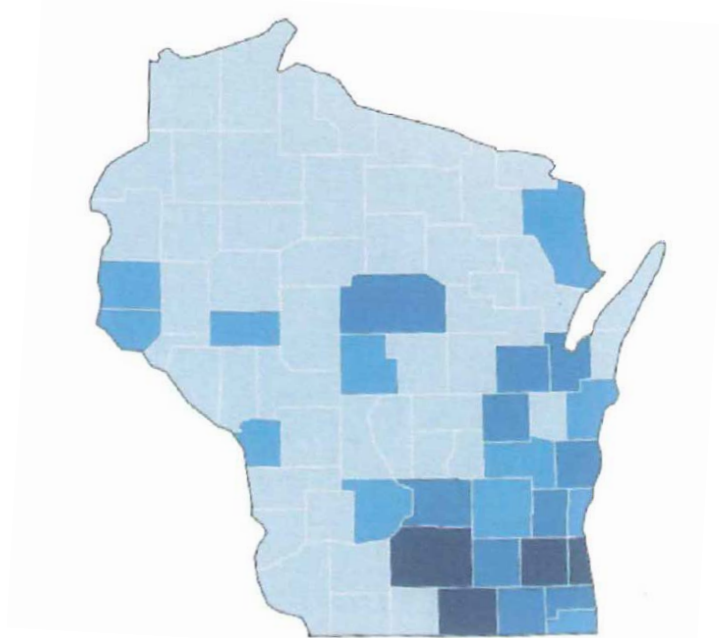| County	Projected Jobs in 2024
Dane County , WI	129
Milwaukee County , WI	54
Rock County , WI	36
Waukesha County , WI	30
Sheboygan County , WI	23

Figure 4. Projected chemical engineering jobs; darker blue counties have more projected chemical engineering jobs in 2024 (source: Economic Modeling Specialists International).

DESCRIPTION OF PROGRAM

Institutional Program Array

The program will fit well with other STEM programs at UW-Stevens Point. All required courses in chemistry, physics and mathematics are currently taught by their respective departments. Only one new engineering course will be created for the proposed program; the rest of the required engineering courses are taught annually by the Paper Science and Engineering Department faculty.

Other Programs in the University of Wisconsin System

There is currently only one chemical engineering program in the UW System, located at UW-Madison. The proposed program at UW-Stevens Point will be attractive to students who are interested in a career in chemical engineering, but who may be reluctant to attend a university as large as UW-Madison. All classes at UW-Stevens Point are taught by professors; there are no teaching assistants.

Collaborative Nature of the Program

The resources in the current engineering program at UW-Stevens Point are sufficient to support the proposed chemical engineering program. The department will reach out to the UW-Colleges and Wisconsin Technical Colleges to develop transfer guides and articulation agreements to help students begin their education at these institutions and complete a chemical engineering degree at UW-Stevens Point.

Diversity

Engineering is a profession that has significant deficiencies in workforce diversity. The engineering faculty at UW-Stevens Point are committed to recruiting and retaining a diverse student body. The faculty will continue to work with the Office of Admissions and the Diversity and College Access Office to accomplish this goal. Among the strategies employed are:

- direct communication with high-ability prospective students via email (department)
- raising awareness of engineering at UW-Stevens Point among high school guidance counselors via email newsletters (admissions)
- focused visits to high schools with high numbers of underrepresented groups (department)
- invitations to students to visit campus and tour labs, sit in on classes, etc. (admissions)
- providing materials describing career opportunities for admissions counselors to distribute at college fairs (department and admissions)

The student body in the PS&E major is currently comprised of less than 10% minority and female students. Our goal is to attain 25% minority and female students in the chemical engineering student body by year five.

Student Learning Outcomes

Student learning outcomes for the proposed chemical engineering program are as follows. Graduates of the Chemical Engineering program at the University of Wisconsin-Stevens Point will be able to:

- demonstrate comprehensive knowledge and problem-solving ability in chemistry, math and physics
- apply their knowledge of science and math to the design, analysis, and control of chemical and physical processes
- demonstrate their familiarity with industrial process hazards and with methods to prevent catastrophic events that lead to loss of life and/or damage to equipment
- conduct themselves in accordance with ethical and professional standards

7

- communicate complex ideas effectively, both orally and in writing

Program Objectives

To be consistent with ABET accreditation requirements, the Program Objectives for the proposed program must state what the graduates of the program should be able to achieve during the first three to five years after their graduation. These objectives will be reviewed periodically with the Academic Advisory Committee (AAC) for their suitability and connection to the Student Learning Outcomes (another ABET requirement). The objectives are:

During their early career years, graduates of the proposed B.S. Chemical Engineering program will be able to:
- Make significant contributions to the safe, efficient and profitable operation of chemical manufacturing facilities
- Take on leadership and supervisory responsibilities when needed
- Develop innovative solutions to operational problems

Assessment of Learning Outcomes

The proposed Chemical Engineering program will have a comprehensive assessment plan that will meet ABET requirements and ensure program quality. The process is described as follows, and it is important to note that there are opportunities to adjust the process and curriculum to keep the assessment process sustainable and to continually improve the level of student achievement of the learning outcomes.

1. Each year, a faculty meeting is dedicated to the discussion of Student Learning Outcomes, including the utility of the rubrics associated with those outcomes. In addition, the assessment process itself is reviewed for its ability to provide actionable information and for sustainability.

2. The senior design course bears the responsibility for collection of the evidence of student learning. In this course, several key assignments are given.

   a. The Outcomes Portfolio requires each student to select examples of their work that represent their best efforts for each of the Student Learning Outcomes. Students are required to write a brief reflection on the example that they chose, indicating why they think it is a good example. Faculty members evaluate these portfolios using the rubrics for the program's Student Outcomes.
   b. Engineering ethics case studies are presented and discussed in class. This class activity is followed by a writing assignment requiring the students to analyze the case in more depth. This assignment requires the use of both the NSPE and AIChE Codes of Ethics as context for the analysis. The students then take an assessment quiz on the NSPE Code of Ethics.
   c. Finally, students present their design projects at the annual meeting of the AAC, the industry advisory board for the program. Representatives from industry who attend the meeting evaluate each student's presentation skills, as well as the performance on the design projects (using rubrics for design projects and oral communication).

3. Faculty evaluation of all evidence gathered in the senior design course then follows, usually during the week after spring finals.

    a. All faculty evaluate the senior portfolios independently, then meet to discuss the rubrics, coming to an agreement on each student's performance.
    b. The instructor for the senior design course compiles the rubric data for the ethics assignments and quiz. This data is shared and discussed with the entire faculty.
    c. Results from the AAC evaluations are collated and discussed.

4. The discussion of the assessment results shown in (3) identifies changes that are needed in the curriculum to improve student achievement on the outcomes. The ABET Liaison writes an annual report on the assessment activity (Assessment Summary Report).

5. The faculty implement changes in their courses that have been identified as necessary.

Program Curriculum
120 credits are the minimum required for graduation.

Chemical Engineering Support Courses:
Freshman and Sophomore English	6 credits
Fundamental Chemistry (two semesters)	10 credits
Quantitative Analysis	4 credits
Organic Chemistry (two semesters)	8 credits
Physical Chemistry	4 credits
Calculus (three semesters)	12 credits
Differential Equations	3 credits
University Physics (calculus based, two semesters)	10 credits

General Education Courses Required for Graduation:
Humanities	3 credits
Arts	3 credits
Historical Perspectives	3 credits
Social Sciences	3 credits
U. S. Diversity [1]	0-3 credits
Environmental Responsibility [1]	0-3 credits
Global Awareness [1]	0-3 credits
Wellness	1 credit

Chemical Engineering Major Courses:
Intro to Process Engineering Calculations	4 credits
Engineering Statistical Design and Analysis	3 credits
Fluid Mechanics and Hydraulics	3 credits
Heat Transfer	3 credits
Chemical Kinetics and Reactor Design [2]	3 credits
Systems Engineering and Simulation	3 credits
Mass Transfer Operations	3 credits
Industrial Thermodynamics	3 credits
Process Dynamics and Control	3 credits
Engineering Design I	2 credits
Engineering Design II	3 credits
Industrial Environmental Management	3 credits
Approved Electives [3]	8-14 credits (as needed to attain 120 credits total)

Footnotes

[1] The U. S. Diversity, Environmental Responsibility, and Global Awareness General Education Program (GEP) requirements may be satisfied with courses that also satisfy other GEP requirements. This possibility results in the credit ranges being reported here as 0-3 credits.

[2] Chemical Kinetics and Reactor Design is the only new course needed for the Chemical Engineering major.

[3] These electives may include paper technology courses currently taught for the PS&E program or environmental science courses within the College of Natural Resources (Water Resources, Waste Management, Sustainable Energy).

Projected Time to Degree
The degree can be completed in four years by a full-time student taking an average of 15 credits per semester. All required courses will be regularly offered.

Institutional Review
The new Chemical Engineering program will be subject to review by UW-Stevens Point governance organizations from many perspectives.

1. Governance committees involved in the review include two subcommittees of the Academic Affairs Committee: the Department Review Subcommittee and the Assessment Subcommittee. These committees oversee quality of the program and the process by which student achievement of learning outcomes is measured. The Department Review Subcommittee requires a complete self-study for all degree programs within a department every ten years, covering all aspects of departmental operation. The Assessment Subcommittee requires a complete report of assessment activity every five years. Both of these subcommittees will accept self-studies that are prepared for external accrediting agencies (such as ABET) to satisfy their requirements.

2. The first external review of the proposed program will be the ABET evaluation in the fall of 2020 (this is the earliest possible date for ABET review). A report of the results of this review will be sent to the UW System Associate Vice President for Academic, Faculty, and Global Programs.

3. An existing industrial advisory board for the Paper Science and Engineering program, the Academic Advisory Committee, meets once per year to review senior engineering design projects and discuss the program curriculum. This group is particularly concerned with maintaining alignment between the program curriculum and industry needs. This advisory board will review the chemical engineering program as well.

Accreditation
Upon approval of the program by the Board of Regents, the proposed program will be included for review by ABET for accreditation concurrently with the next scheduled review of Paper Science and Engineering, in the fall of 2020. The requirements for ABET accreditation are extensive, and may be viewed at www.abet.org. The current program in Paper Science and Engineering has successfully completed two site visits by ABET evaluation teams, and is therefore prepared to conduct the required activities for the new chemical engineering program.

University of Wisconsin System
Cost and Revenue Projections For UW-Stevens Point B.S. in Chemical Engineering

	Items	Projections				
		2015-16	2016-17	2017-18	2018-19	2019-20
		Year 1	Year 2	Year 3	Year 4	Year 5
I	Enrollment (New Student) Headcount	20	35	50	50	50
	Enrollment (Continuing Student) Headcount (Note 1)	31	44	58	79	102
	Enrollment (New Student) FTE	20	35	50	50	50
	Enrollment (Continuing Student) FTE	31	44	58	79	102
II	Total New Credit Hours (# new sections x credits per section)	3	3	3	3	3
	Existing Credit Hours	45	45	45	45	45
III	FTE of New Faculty/Instructional Staff (Note 2)	0	0	0	0	0
	FTE of Current Fac/IAS (Note 3)	5	4	4	4	4
	FTE of New Admin Staff	0	0	0	0	0
	FTE Current Admin Staff	0.5	0.5	0.5	0.5	0.5
IV	New Revenues					
	From Tuition (new credit hours x FTE) **(Note 4)**	330,456	511,882	699,788	835,858	984,887
	From Fees					
	Program Revenue - Grants					
	Program Revenue - Other					
	Reallocation					
	Total New Revenue	330,456	511,882	699,788	835,858	984,887
V	New Expenses					
	Salaries plus Fringes (Note 5)					
	Faculty/Instructional Staff	376,799	285,149	285,149	285,149	285,149
	Other Staff	22,461	22,461	22,461	22,461	22,461
	Other Expenses (Note 6)					
	Facilities	0	0	0	0	0
	Equipment	0	0	0	0	0
	Other:	0	0	0	0	0
	Total Expenses	399,260	307,610	307,610	307,610	307,610
VI	Net Revenue	-68,804	204,272	392,178	528,248	677,277

Narrative: Explanation of the Numbers and Other Ongoing Commitments that will Benefit the Proposed Program

Note 1	Continuing students include current Paper Science and Engineering majors who will add Chemical Engineering as a second major.
Note 2	No new faculty or staff are required.
Note 3	If proposed 2016-17 budget cuts are implemented as planned, the department will lose a faculty position. This will not affect ability to support the proposed program.
Note 4	The revenue values here are: (Total student FTE) X (annual full time tuition of $6479.52). This calculation excludes all segregated fees.
Note 5	The salary and fringe costs reported here are for the faculty and IAS currently serving the existing Paper Science and Engineering program.
Note 6	Existing facilities and equipment are adequate to support the proposed program.

Signature by the Provost: *Greg Summers* _____

Date: 8/10/2015

To: Ray Cross, President, University of Wisconsin System
From: Greg Summers, Provost and Vice Chancellor for Academic Affairs
Re: Authorization to Implement: B.S. in Chemical Engineering
Date: July 13, 2015

I write to make clear the firm commitment of the University of Wisconsin-Stevens Point to the proposed B.S. in Chemical Engineering for which we are presently seeking authorization.

The chemical engineering degree was developed as a logical extension of the Paper Science and Engineering program that has been offered at UW-Stevens Point for forty years. The existing ABET-accredited Paper Science and Engineering program at UW-Stevens Point is, at its core, a chemical engineering program. However, the newly proposed chemical engineering program will more broadly train students as engineers and will prepare them for careers in a wider variety of Wisconsin industries.

We submit that this broader degree program will augment and expand upon the successes of our Paper Science and Engineering program where virtually 100% of the graduates from our Paper Science and Engineering program are employed in process-engineering positions immediately after graduation. Starting salaries for these graduates averaged $69,000 for the class that graduated in May 2013.

The proposal for our Chemical Engineering program leverages existing resources and strengths throughout our College of Natural Resources and, specifically, our faculty and resources in the Department of Paper Science and Engineering. Our existing engineering program has extensive facilities already in place, with the capacity to handle more students. We hasten to add that both the UWS-commissioned National Center of Higher Education Management Systems (NCHEMS) report and our additional research of data from Burning Glass (referenced in our authorization proposal) indicate an existing, and predicted increasing, demand for chemical engineers in Wisconsin. We submit that our proposed program will address this demand while producing graduates that are more likely to stay within Wisconsin after graduation.

As indicated in the authorization proposal, the proposed program aligns well with UW-Stevens Point's new strategic plan, our Partnership for Thriving Communities. It similarly is supported by the recently submitted revisions to our select mission to offer specific degree programs in paper science and engineering. We look forward to continued work with our community and industry partners as we train future students as chemical engineers.

Finally, like our existing Paper Science and Engineering program, the proposed Chemical Engineering program will be ABET-accredited and fully integrated into our existing campus assessment and program review procedures. This will ensure its academic quality, regular evaluation, and continuous improvement.

Please let me know if you need further information. I look forward to receiving authorization from the Board of Regents for this important program. Thank you.

Program Authorization (Implementation)
Flexible Option M.S. in Geodesign and GIS Technologies
UW-Stevens Point with Support from UW-Extension

EDUCATION COMMITTEE

Resolution I.1.c.(4):

That, upon recommendation of the Chancellor of the University of Wisconsin-Stevens Point, as well as the President of the University of Wisconsin System, the Chancellor is authorized to implement the Flexible Option Master of Science in Geodesign and GIS Technologies at UW-Stevens Point.

NEW PROGRAM AUTHORIZATION
FLEXIBLE OPTION MASTER OF SCIENCE IN GEODESIGN AND GEOGRAPHIC
INFORMATION SYSTEMS (GIS) TECHNOLOGIES
UNIVERSITY OF WISCONSIN-STEVENS POINT
(WITH SUPPORT FROM UW-EXTENSION)

BACKGROUND

This proposal is presented in accordance with the procedures outlined in Academic Planning and Program Review (ACIS 1.0, Revised August 2012, available at http://www.uwsa.edu/acss/planning/). The new program proposal for a Master of Science (M.S.) in Geodesign and GIS Technologies at the University of Wisconsin-Stevens Point is presented to the Board of Regents for consideration. UW-Stevens Point's Provost submitted an authorization document and a letter of institutional commitment.

REQUESTED ACTION

Adoption of Resolution I.1.c.(4), approving the implementation of the Master of Science in Geodesign and GIS Technologies degree program at the University of Wisconsin-Stevens Point.

DISCUSSION

The University of Wisconsin-Stevens Point, with support from UW-Extension, proposes an online, direct assessment and competency-based M.S. in Geodesign and GIS Technologies delivered through the UW System Flexible Option program. This is the first new degree program submitted for consideration by the Board in the Flexible Option delivery mode (all existing Flex Options were conversions of existing degree programs at UW System institutions to the competency-based format).

Students will gain competency in five knowledge areas that will enable them to: (1) conceptualize spatial problems, opportunities, and design solutions; (2) design and implement a geospatial data model to represent geographic features and phenomenon; (3) analyze spatial patterns, trends, relationships and evaluate alternative design solutions; (4) communicate spatial information, problems, opportunities and solutions to various audiences; and (5) manage complex geodesign projects and systems and engage collaboration among professionals and stakeholders.

The content is delivered through 24 directly-assessed competencies, with over 250 sub-competencies. Each competency is equivalent to approximately 1.5 semester credits. A single competency consists of a series of sub-competencies in which students have well-defined and transparent learning objectives. Each sub-competency has an assessment tool to test for mastery. For further information on this competency-based model, please see http://flex.wisconsin.edu/faqs/.

Students can initiate their studies at the beginning of any month of the year. They have two enrollment options: (1) "all-you-can-learn" subscription periods, and (2) single competency

enrollment. During the subscription period, a student enrolls in one or more competencies that should be completed by the end of the subscription period. In the "all-you-can learn" subscription period, students may access as much content and as many assessments as they wish. Students may re-enroll continuously, or they may take breaks in one-month increments between their subscription periods. A single competency enrollment consists of finishing only one competency during a three-month period. Each student has an academic success coach who provides general academic and administrative guidance through the degree program.

The degree is targeted at non-traditional professionals who have a bachelor's degree and who need to expand their knowledge base and skill sets to further their careers. By using the conceptual foundation of geodesign intertwined with geospatial technology, the proposed program will meet the demand of professionals who need to advance their skills in order to find lucrative positions in national security, scientific research, environmental management, transportation, retail trade, utilities, agribusiness, human system computer design, and government.

Recent market studies (e.g., by the Education Advisory Board, 2012) highlighted job openings (10,500) nationwide for a wide range of potential employers including multinational corporations and government agencies that need well-educated GIS-trained employees. The total geospatial sector currently supports 500,000 jobs. The U.S. Department of Labor predicts an annual growth rate of 35% (United States Department of Labor Employment and Training Administration, 2015.)

Program tuition is based on graduate-level pricing for the UW Flexible Option in which students may enroll in a three-month subscription period that opens at the beginning of each month. Tuition for the three-month subscription period is $1,700 for a student enrolling in a single competency or $3,250 for a student enrolling in multiple competencies with no competency limit. The $3,250 fixed rate is based on the UW-Extension Flexible Option online fee structure.

It is estimated that 25% of enrolled students will complete the degree in 24 months, 50% of students will complete in 36 to 42 months, and 25% will graduate within 48 to 52 months.

RECOMMENDATION

The University of Wisconsin System recommends adoption of Resolution I.1.c.(4), approving the implementation of a Master of Science in Geodesign and GIS Technologies at UW-Stevens Point.

RELATED REGENT AND UW SYSTEM POLICIES

Regent Policy 4-12: Academic Program Planning, Review, and Approval in the University of Wisconsin System.

Academic Information Series #1 (ACIS 1.0, Revised August 2012): Statement of the UW System Policy on Academic Planning and Program Review.

**REQUEST FOR AUTHORIZATION TO IMPLEMENT
A FLEXIBLE OPTION MASTER OF SCIENCE DEGREE
IN GEODESIGN and GIS TECHNOLOGIES
AT UW-STEVENS POINT
(WITH SUPPORT FROM UW-EXTENSION)
PREPARED BY UW-STEVENS POINT AND UW-EXTENSION**

ABSTRACT

The University of Wisconsin-Stevens Point, with support from UW-Extension, proposes to develop an online, direct assessment and competency-based Master of Science (M.S.) in Geodesign and GIS Technologies. UW-Stevens Point will deliver this direct assessment competency-based program through the UW System Flexible Option program. By using the conceptual foundation of Geodesign intertwined with geospatial technology, the proposed program will meet the demand of professionals who need to advance their skills in a rapidly evolving society that is increasingly dependent on geospatial data. This degree program is intended to fill the growing demand for integrated geospatial design skills in today's job market, including positions in national security, scientific research, environmental management, transportation, retail trade, utilities, agribusiness, human system computer design[1], and government. The proposed program will provide a practical, experiential project-based curriculum consisting of 24 directly-assessed competencies, with over 250 sub-competencies that are drawn from national competency paradigms including the U.S. Department of Labor's Geospatial Competency Model, the Geographic Information Science and Technology Body of Knowledge, and the Landscape Architecture Body of Knowledge Study. Students will graduate from the program as professionals with well-developed planning and problem-solving abilities and possess expertise, knowledge, and skills in a variety of specialized geospatial discipline areas.

PROGRAM IDENTIFICATION

Institution Name
University of Wisconsin-Stevens Point

Title of Proposed Program
Master of Science in Geodesign and GIS Technologies

Degree/Major Designations
Master of Science in Geodesign and GIS Technologies

Mode of Delivery
Direct assessment competency-based through the UW-Stevens Point online Flexible Option degree program in partnership with UW-System Extension, Outreach and e-Learning

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[1] Human System Computer Design is the study and practice of modeling human interactive systems and solving human-related problems using software and other technology. Design components include need identification, user requirements, observation, analysis, prototype development and user feedback that are planned and executed within interactive computer systems.

Projected Enrollments by Year Five

Table 1 represents enrollment and graduation projections for students entering the program over the next five years and is based, in part, on experience with initial University of Wisconsin Flexible Option programs. Because enrollments in the proposed program are based on three-month subscriptions, it is anticipated that students will enter and leave the program in a more fluid manner, as compared to students enrolled in typical semester-based programs.

Therefore, the enrollment headcounts approximated in Table 1 may not directly correspond to the conservative approximations articulated in the attached budget spreadsheet. Given these caveats, UW-Stevens Point predicts robust enrollments with over 200 students enrolling in the program and 85 students having graduated from the program by the end of year five. The average time period for completion of the program is three years, with an estimate of 25% finishing in 2 years, 50% in three years and 25% in four years. However, if almost all of the students are working professionals, then the average completion time might need to be readjusted to 3.5 years. While time to degree may vary given the Flexible Option subscription period model, it is expected that all students who remain in the program after their first year of enrollment will complete the program.

Table 1: Five-Year Projected Student Enrollments

Students/Year	Year 1	Year 2	Year 3	Year 4	Year 5
New	20	36	48	60	72
Continuing		16	29	38	48
Total	20	52	77	98	120
Graduating		4	15	28	38

Tuition Structure

Program tuition is based on graduate-level pricing for the UW Flexible Option. Students may enroll in a three-month subscription period that opens at the beginning of each month. Tuition for the three-month subscription period is $1,700 for a student enrolling in a single competency or $3,250 for a student enrolling in multiple competencies with no competency limit. The $3,250 fixed rate is based on the UW-Extension Flexible Option online fee structure. This amount represents an all-inclusive tuition, and students will not be charged any additional fees (such as segregated fees) as part of the program, except for degree-seeking students who will be required to purchase a customized laptop computer ($1,250) with licensed software after the first three months of enrolling in the program. The customized laptop and software is an essential tool that will enable students to complete substantial geographic data processing requirements of the program, and will alleviate remote computer access resource problems. Other materials (e.g., digital lab manuals) are included in the program costs. There is no tuition differential for out-of-state students. If students live near UW-Stevens Point and wish to pay segregated fees for the use of recreational and other facilities, they may voluntarily do so.

Department, College, School, or Functional Equivalent
Department of Geography and Geology

The UW-Extension Division of Continuing Education, Outreach and E-Learning will provide administrative and financial support for the program.

Proposed Date of Implementation
October 2015

INTRODUCTION

Rationale and Relation to Mission

Through the discovery and dissemination of knowledge, UW-Stevens Point stimulates intellectual growth, providing a liberal education that prepares students for a diverse and sustainable world. Offering an online competency-based M.S. in Geodesign and GIS Technologies advances UW-Stevens Point's mission to provide graduate level programs that emphasize the institution's academic strengths as well as cooperating with UW-Extension in expanding programs that provide lifelong learning and professional development.

The M.S. in Geodesign and GIS (Geographic Information Systems) Technologies augments student access to learning resources by applying a flexible, online and competency-based curricular model promoting student inquiry and intellectual growth. Using GIS technologies and skill sets as its backbone, Geodesign draws from, and integrates, the natural and cultural sciences, information sciences and technologies, graphical arts, and communications to solve societal problems and design alternative futures for the global community. In a complex and diverse world, Geodesign and GIS technologies are necessary to plan for a progressive and sustainable future. The degree is targeted at non-traditional professionals who have a bachelor's degree and who need to expand their knowledge base and skill sets to further their careers.

Need as Suggested by Current Market Demand

The geospatial technology sector in the U.S. generates approximately $73 billion (2011) in revenue per year ($1.6 trillion byproduct gains). Jobs are centered in many fields, including aerospace, national security, scientific research, environmental management, transportation, utilities, agribusiness, human system computer design, and government.

The proposed master's degree program is intended to fill the growing demand for integrated geospatial design skills in today's job market. Recent market studies (e.g., Education Advisory Board, 2012) highlighted job openings (10,500) nationwide for a wide range of potential employers including multinational corporations such as IBM, SAIC, URS, AECOM, and government agencies that need well-educated GIS-trained employees. The total geospatial sector currently supports 500,000 jobs. The U.S. Department of Labor predicts an annual growth rate of 35% (United States Department of Labor Employment and Training Administration, 2015). The field encompasses technologies such as Geographic Information Systems (GIS), Global Positioning Systems (GPS), Remote Sensing, and Mobile Mapping. This demand is likely to increase as additional geospatial technologies, such as Unmanned Aerial Vehicles (UAV's), are introduced over the next few years.

Need as Suggested by Current Student Demand

Limited access to appropriate education and training has been identified as one of the key barriers to advanced uses of geospatial technology in design. Organizations and businesses also know that geospatial technology is not being used to its full capacity for solving complex design problems, understanding complex systems, or evaluating the consequences of design alternatives.

It is anticipated that student consumer demand for this program will be significant given the emerging nature of the field and the unique competency-based delivery model. Many professionals in the field need to broaden their knowledge and skills, and they need the flexibility of self-paced, competency-based education. A market viability report commissioned by UW-Extension indicated that graduate students in degree programs outside of GIS/geography departments are increasingly taking coursework in geospatial analysis and technologies. Many were seeking advanced proficiency and skillsets in GIS to further their careers and to transition to new employment that demanded geospatial expertise.

An online marketing study by UW-Madison's Division of Continuing Studies indicated that Geodesign is an underserved and fast-growing field. Consequently, while there are a number of geospatial-related programs in the U.S., the combination of Geodesign and Geospatial Technologies will be unique and powerful. Furthermore, the creation of the UW Flexible Degree Option and the online education expertise of UW-Stevens Point GIS faculty and staff now provide a unique opportunity to further advance geospatial technology and capabilities in our state. By using the conceptual foundation of Geodesign intertwined with geospatial technology, this new online and competency-based degree will help meet the demand of professionals who need to advance their skills in a rapidly evolving society dependent on geospatial data.

DESCRIPTION OF PROGRAM

General Structure

The pedagogical tenet of the program is a competency-based approach in which mastery of the subject is the main determinant of progress, and continual assessment is embedded in the learning process. For further information on this competency-based model, please see http://flex.wisconsin.edu/faqs/. It is an ideal paradigm for working professionals who are seeking a master's degree.

Students can initiate their studies at the beginning of any month of the year. They have two enrollment options: (1) "all-you-can-learn" subscription periods and (2) single competency enrollment. The subscription period begins on the second day of any month, and ends the last day of the third month of the subscription. During the subscription period, a student enrolls in one or more competencies that should be completed by the end of the subscription period. Any unfinished competencies may be completed during the next three-month subscription period, as long as the student pays tuition for that period. In the "all-you-can learn" subscription period, students may access as much content and as many assessments as they wish. Students may re-enroll continuously, or they may take breaks in one-month increments between their subscription periods. A single competency enrollment consists of working on, and finishing, only one competency during a three-month period. Each student has an academic success coach that provides general academic and administrative guidance through the degree program.

Institutional Program Array

Although there are several excellent face-to-face geospatial programs within the UW System at UW-Madison, UW-Milwaukee, and UW-Eau Claire, there are no UW Geodesign programs or online and/or competency-based geospatial master's programs. UW-Stevens Point is well poised to launch this new innovative degree and has been a state leader in this field for decades. UW-Stevens Point faculty have taught computer-based geospatial techniques for over 25 years, continuously modernizing programs and curricula based on technology and maturing

GIS sciences. UW-Stevens Point has educated thousands of students in geospatial techniques. The introductory GIS class averages over 350 enrolled students each academic year, and the program has cultivated highly successful GIS graduates.

In 2008, UW-Stevens Point received a $ 1.75 million curriculum grant from the USDA with the purpose of establishing the UW-Stevens Point Geographic Information Systems Education and Research Center, creating a multi-track GIS Certificate Program and advancing research in geospatial technologies. The grant was centered on growing its traditional undergraduate program aimed at building a skilled geospatial workforce and also expanding GIS educational opportunities for non-traditional and professional students. Many of UW-Stevens Point's GIS programs and courses now exist in an online format and are arranged into sequenced competencies to provide greater graduate and certificate opportunities for these students.

Collaborative Nature of the Program
This program will be offered in collaboration with UW-Extension, Outreach and e-Learning. Programs offered in the Flexible Option format are currently operated by UW-Extension.

UW-Stevens Point faculty will be responsible for developing an online comprehensive, quality curriculum for students whose mastery is tested through the establishment of rigorous competency assessment tools. UW-Stevens Point also will appoint a part-time program academic director. UW-Extension will provide administrative and financial support as well as key academic and student services. UW-Extension will assign academic success coaches to work with students in the program. The academic director will coordinate key support service offices between UW-Stevens Point and UW-Extension as well as provide general program information, problem resolution, and career advising online, by phone, or in person. The academic director will be in close contact with enrolled students and support faculty to improve program efficiency. Students will receive academic advising regarding admission and graduation requirements through UW-Stevens Point. Students will receive financial aid counseling through UW-Extension. Faculty and academic advisers will offer virtual office hours and online chat capabilities, and they will be accessible by telephone and email. Students will have online resources through UW-Extension D2L software and UW-Stevens Point digital library resources. Computer software will be available on students' required laptops or a UW-Stevens Point remote lab.

Diversity
UW-Stevens Point and UW-Extension strive to achieve inclusive excellence by enrolling, retaining, and graduating students from underrepresented populations. Advertisements in traditional academic and trade sites and minority-focused websites and periodicals will be employed to promote the program. Since this degree will be offered online, search engine optimization tools will be used to engage and attract diverse populations. Students will be targeted from across the U.S. as well as key global locations. Furthermore, Geodesign and GIS professionals can be found across the world in all continents and countries, so they are within the target audience, and represent the multiplicity of GIS and how it is used across different cultures and peoples. Concomitantly, the Geodesign and GIS curriculum has a multitude of exercises and projects that span disparate geographies and showcase the interaction of various cultures and environments. An interactive lecture on using Global Positioning Systems (GPS) may showcase examples from around the world. For example, a student might learn how to use GPS and GIS to

track elephants in Kenya, utilize Geodesign to build communities in Uganda, or discover the interactions of different plant species using GIS overlay analysis in Guatemala. In each case, students gain a greater understanding and appreciation of our global environment.

Once enrolled in the program, students will be provided support services by an academic success coach. Academic success coaches work closely with each student to develop strategies that best serve students' program needs. UW-Extension will maintain online student environments that allow individuals from diverse ethnic backgrounds to connect with other students to build points of commonality and understanding. Academic success coaches will provide highly proactive academic advising, content support and program guidance. Social media opportunities will also be available that aid in peer and mentor engagement as well as help students in their career advancement (e.g., Facebook, LinkedIn).

Program Objectives and Student Learning Outcomes
The Geodesign and GIS Technology Master's Degree is composed of 24 competencies and over 250 sub-competencies that are drawn from national competency paradigms including the U.S. Department of Labor's Geospatial Competency Model, the Geographic Information Science and Technology Body of Knowledge, and the Landscape Architecture Body of Knowledge Study. Graduates will leave the program as professionals with expertise in a number of specialized geospatial knowledge areas that include a wide breadth of advanced technical concepts and skills as well as planning and problem-solving abilities.

Competencies are strategic learning outcomes. Each competency is structured within Bloom's Taxonomy to depict how student understanding is applied in context. There are 24 competencies in the proposed master's program organized under five main themes:
(1) conceptualize spatial problems, opportunities and design solutions; (2) design and implement a geospatial data model to represent geographic features and phenomenon; (3) analyze spatial patterns, trends, relationships and evaluate alternative design solutions; (4) communicate spatial information, problems, opportunities and solutions to various audiences; and (5) manage complex Geodesign projects and systems and engage collaboration among professionals and stakeholders.

Upon completion of this program, students will have demonstrated mastery relative to the following competencies:

1. Explain the foundations of Geodesign.
2. Describe the nature of geographic information.
3. Evaluate Geodesign process frameworks.
4. Distinguish among different types of data structures to design geographic representation models.
5. Describe and evaluate vector and network data models and how they represent geographic features.
6. Create vector data and network data models to represent geographic features.
7. Represent geographic features from remotely-sensed data.
8. Describe and evaluate the Raster data model and how it represents geographic features.
9. Describe and evaluate the surface data model and how it represents geographic features.
10. Assess geospatial data for accuracy and scale.
11. Evaluate the symbiosis of Geodesign and Geospatial Models.

12. Query, measure, and infer geographic information.
13. Apply and interpret geospatial, geometric, and Boolean analytical operations.
14. Generate and evaluate terrain and surface models.
15. Conduct network analyses and appraise geocoding methods.
16. Conduct analyses using geospatial and Geodesign modeling schemes.
17. Implement and evaluate an integrated Geodesign and geo-spatial design model.
18. Explain the importance of maps and their use in spatial communication.
19. Determine the appropriate map projections and coordinate systems for a given purpose.
20. Design effective maps using germane cartographic principles.
21. Produce paper and digital maps in a variety of media formats.
22. Engage the community in Geodesign and GIS activities.
23. Manage a Geodesign project and GIS system.
24. Design, plan, implement, present, and evaluate a Geodesign project.

Each competency is equivalent to approximately 1.5 semester credits based on the number of hours students are expected to devote to the assigned materials. A single competency consists of a series of sub-competencies in which students have well-defined and transparent learning objectives. Each sub-competency has an assessment tool to test for mastery, and the competency (or competency set) has a comprehensive mastery assessment. For example, in the Geodesign and GIS Technologies Master's Degree program, competency #15 "Conduct network analyses and appraise geocoding methods" has nine sub-competencies:

1. Define and compute routing analysis with GIS.
2. Execute three different optimal route analyses.
3. Compute resource allocation problems with a GIS.
4. Describe applications of network analyses using geodemographics.
5. Explain the utility of network analysis in alternative site selection.
6. Explain and create a network with dynamic segmentation.
7. Define and outline standard geocoding techniques.
8. Create an address locator using national address style standards.
9. Evaluate the impacts and importance of network analyses on decision models.

Each sub-competency includes an array of learning materials including background information, internet readings, software exercises, and self-assessments. A final mastery assessment is administered for each competency.

Assessment of Objectives
All competencies will be assessed through a sequence of performance measures that may include quizzes, tests, short essays, reports, laboratories, exercises, oral presentations, poster presentations, demonstrations, online discussions, and interactive video presentations. In addition, students will be required to complete a capstone project and presentation. All students will be given a numeric score (0-100) that will indicate the degree of mastery of the competency material. Students must pass each competency with a score of 90 or above (mastery level). Students will be able to re-enroll in a competency if a mastery score is not achieved.

Academic program assessment will be conducted by a team of UW-Stevens Point faculty and academic staff who also serve as the oversight and decision-making body of the program. This team will identify and define all academic standards and establish clear and transparent

rubrics for each competency. Program graduates will be surveyed to identify opportunities for program improvement, and assessments will be evaluated and potentially re-defined each year. UW-Extension will monitor data on enrollments, retention rates, and graduation rates. The assessment team will also compile these various data and complete an annual report summarizing the data, the assessment of the data, and decisions regarding improvements to the curriculum, structure, and program delivery. The assessment team is responsible for ensuring that recommendations for improvement are implemented. Impacted UW-Stevens Point student support services, the Registrar, UW-Stevens Point Business Affairs, UW-Extension Flexible Option administration personnel, and UW-Stevens Point M.S. Geodesign and GIS Technologies Degree faculty will meet annually to review processes and concerns, and to make adjustments as necessary.

Program Curriculum

Geodesign integrates knowledge from the disciplines and professions of physical and natural sciences, cultural sciences, human values and ethics, information sciences, and design and planning to better understand and communicate the complex patterns, trends, and relationships for solving real world problems. The M.S. in Geodesign and GIS Technologies program represents a fixed set of 24 competencies that includes a capstone competency. The total program is equivalent to 36 semester credits. Aptitude tests (GRE, GMAT, or other) will not be required for program admittance. Students must have completed a baccalaureate degree with college-level algebra and statistics, or equivalent. To illustrate, an abbreviated list (eight competencies) with approved catalog designations and descriptions is summarized in Table 2.

Table 2: Sample curriculum

Competency (Set)	Title	Catalog description
GEOG 700X	Geodesign Foundations	Study of foundational Geodesign concepts, theories, skills, and their application for problem-solving in geographic space. Exploration of historical and modern Geodesign processes and appraisal of their societal interdisciplinary contributions.
GEOG 703X	The Nature of Geographic Information	The theories, concepts and characteristics of geographic information including: space, place, time, attributes, representations, abstraction, and measurement. Students will explore the abstraction-modeling process and the functions of a Geographic Information System (GIS) as applied to interdisciplinary geographic issues.
GEOG 705X	Geodesign Process Frameworks	Investigation and application of the scientific method in decision-making and problem solving. Systematic exploration and assessment of Geodesign process models for analyzing, allocating and evaluating social, economic, and environmental resources.
GEOG 710X	Spatial Communication and Geovisualization	Assess maps and spatial representations used to store and disseminate knowledge and illustrate persuasive views. Explanation of cartographic techniques to articulate spatial information.
GEOG 715X	Cartographic Principles for Geodesigners	The map-making process; including rationale, data collection, generalization, symbolization, graphic structure, design, and production.
GEOG 717X	Web Mapping and Mashups	Examination of digital map production and publication techniques. Manufacture of maps using web, interactive, animation, mobile, and cloud computing resources.

GEOG 719X	Geographic Data Structures	Differentiation of geographic data structures and their representation. Application of the abstraction modeling process for handling geographic data. Compare and contrast GIS data models used for decision-making and problem solving.
GEOG 725X	Vector and Network Data Models	Examine characteristics of vector and network data models. Investigation of the representation and measurement of geographic phenomena within vector and network models.

Projected Time to Degree

It is assumed that the majority of the program clientele are working professionals. Hence, it is likely that program completion time will vary. It is estimated that 25% of enrolled students will complete the degree in 24 months, 50% of students will complete in 36 to 42 months, and 25% will complete within 48 to 52 months.

Program Review Process

Program assessment and evaluation will occur on a more frequent schedule than in traditional academic programs. The M.S. in Geodesign and GIS Technologies will go through an informal program and fiscal review three years following degree implementation. Based upon those discussions, recommendations will be made related to the continuation of the program. Additionally, the program will engage in a five-year review for UW-Stevens Point Program Assessment. Program evaluation regarding the collaborative nature of the model will help assess practices critical to the success of the alliance, such as the financial model, student recruitment and advising, admission and enrollment processes and trends, and curriculum design.

Institutional Review

At UW-Stevens Point the program review will be accomplished by the Department of Geography/Geology Review Subcommittee which will report its evaluation to the Department Review Subcommittee of the Academic Affairs Committee under the Common Council. Normally programs are reviewed at five-year intervals, based on the reporting cycles of the Assessment Subcommittee and the Department Review Subcommittee.

Accreditation

There are no specific professional credentialing agencies for the proposed degree program; however, authorization will be secured from the Higher Learning Commission (HLC) for approval of the M.S. in Geodesign and GIS Technologies as an online direct assessment degree program. UW-Stevens Point and UW-Extension both are currently under the Higher Learning Commission defined threshold for national accreditation of online program offerings.

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University of Wisconsin System
Cost and Revenue Projections For UW-Stevens Point Flexible Option MS in Geodesign & GIS Technologies

	Items	Projections				
		FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
		Year 1	Year 2	Year 3	Year 4	Year 5
I	Enrollment (New Student) Headcount	20	36	48	60	72
	Enrollment (Continuing Student) Headcount (Note 1)	16	29	38	48	58
	Enrollment (New Student) FTE	36	65	86	108	130
	Enrollment (Continuing Student) FTE		16	45	83	131
II	Total New Credit Hours (# new sections x credits per section)	N/A	N/A	N/A	N/A	N/A
	Existing Credit Hours	0	0	0	0	0
III	FTE of New Faculty/Instructional Staff					
	FTE of Current Fac/IAS	2.250	0.750	1.000	1.250	1.500
	FTE of New Admin Staff					
	FTE Current Admin Staff	3.100	2.050	2.550	3.450	4.100
IV	New Revenues					
	From Tuition (new credit hours x FTE)	$98,400	$221,400	$357,550	$518,450	$711,850
	From Fees					
	Program Revenue - Grants					
	Program Revenue - Other					
	Reallocation					
	Total New Revenue	$98,400	$221,400	$357,550	$518,450	$711,850
V	New Expenses					
	Salaries plus Fringes					
	Faculty/Instructional Staff	$154,153	$51,425	$96,681	$138,972	$183,969
	Other Staff	$236,156	$168,372	$227,934	$299,022	$377,721
	Other Expenses					
	Facilities					
	Equipment					
	Other:	$44,000	$79,200	$105,600	$132,000	$158,400
	Total Expenses	$434,309	$298,997	$430,215	$569,994	$720,090
VI	Net Revenue (Note 2)	-$335,909	-$77,597	-$72,665	-$51,544	-$8,240

Narrative: Explanation of the Numbers and Other Ongoing Commitments that will Benefit the Proposed Program

Note 1 There are Continuing Students in Year 1 since students enroll in 3-month periods and any new student in their 4th month is classified as 'Continuing.'

Note 2 Program will be PR-funded from one-time funding received from UW-Extension until sufficient program revenues are available to pay for program expenses.

Signature by the Provost: _Greg Summers_ _____

Date: ___7/15/2015___

To: Ray Cross, President, University of Wisconsin System
From: Greg Summers, Provost and Vice Chancellor for Academic Affairs
Re: Authorization to Implement: M.S. in Geodesign and GIS Technologies
Date: July 15, 2015

I write to make clear the firm commitment of the University of Wisconsin-Stevens Point to the proposed M.S. in Geodesign and GIS (Geographic Information Systems) Technologies for which we are presently seeking authorization.

This degree was developed in cooperation with UW-Extension and will be delivered online via the competency-based UW Flexible Option format. The M.S. in Geodesign and GIS Technologies will augment student access to learning by applying a flexible, online and competency-based curricular model that promotes student inquiry and intellectual growth. Using GIS technologies and skill sets as its backbone, Geodesign integrates the natural and cultural sciences, information sciences and technologies, graphical arts, and communications to solve societal problems and design alternative futures for the global community. The proposed degree is targeted at non-traditional, professionals who already possess a bachelor's degree who need to expand their knowledge and skill sets to further their careers. The proposed program will offer a practical, experiential, project-based curriculum to provide the skills needed across a spectrum of geospatial contexts focusing on design and planning solutions using geospatial technology. By using the conceptual foundation of Geodesign intertwined with geospatial technology, the proposed program will help meet the demand of professionals who need to advance their skills in a rapidly evolving society dependent on geospatial data.

We submit that the proposed graduate program will capitalize upon the successes of our existing baccalaureate programs (B.A. and B.S.) in Geographic Information Science and Cartography (GISc). The proposal for our Geodesign and GIS Technologies program will also leverage existing resources and strengths throughout our institution and, specifically, our faculty and resources in the Geographic Information Systems Center in the College of Letters and Science. Collaborating with UW-Extension, our institution possesses the faculty expertise, resources, and capacity to serve graduate students pursuing this new degree.

As indicated in the authorization proposal, the proposed program aligns well with UW-Stevens Point's and UW-Extension's missions to offer programs that emphasize our strengths while also expanding programs that provide opportunities for lifelong learning and professional development. The recent creation of the UW Flexible Option coupled with the online education expertise of UW-Stevens Point's GIS faculty and staff provides a unique opportunity to further develop geospatial technology and capabilities in our community, region, state, and beyond.

Finally, like our existing GISc baccalaureate program, the proposed M.S. in Geodesign and GIS Technologies will be fully integrated into our existing campus assessment and program review procedures. This will ensure its academic quality, regular evaluation, and continuous improvement.

Please let me know if you need further information. I look forward to receiving authorization from the Board of Regents for this important program. Thank you.

EDUCATION COMMITTEE

Resolution I.1.c.(5):

That, upon recommendation of the Chancellor of the University of Wisconsin-Milwaukee, as well as the President of the University of Wisconsin System, the Chancellor is authorized to implement the Master of Healthcare Administration at UW-Milwaukee.

NEW PROGRAM AUTHORIZATION
MASTER OF HEALTHCARE ADMINISTRATIONN
UNIVERSITY OF WISCONSIN-MILWAUKEE

BACKGROUND

This proposal is presented in accordance with the procedures outlined in Academic Planning and Program Review (ACIS 1.0, Revised August 2012, available at http://www.uwsa.edu/acss/planning/). The new program proposal for a Master of Healthcare Administration (M.H.A.) at the University of Wisconsin-Milwaukee is presented to the Board of Regents for consideration. UW-Milwaukee's Provost submitted an authorization document and a letter of institutional commitment.

REQUESTED ACTION

Adoption of Resolution I.1.c.(5), approving the implementation of the Master of Healthcare Administration degree program at the University of Wisconsin-Milwaukee.

DISCUSSION

The University of Wisconsin-Milwaukee (UWM) requests authorization to implement a professional Master of Healthcare Administration (M.H.A.) degree program in the Department of Health Informatics and Administration within the College of Health Sciences, which will provide evidence-based interprofessional training to advance the health of individuals and communities at the local, national, and international levels. It is a campus-based program consisting of classroom-, technology-, and laboratory-based instruction and some online instruction. The department has offered a B.S. in Healthcare Administration since 2000.

The curriculum addresses four broad competency domains as defined by the Commission on Accreditation Healthcare Management Education (CAHME). The proposed M.H.A. program is comprised of 39 credits and will serve both traditional and non-traditional students by functioning as a terminal professional degree to prepare students for immediate employment in the healthcare industry; or a seamless step from undergraduate study in Health Care Administration and related fields to Ph.D. study of Health Services Research and Informatics through the Health Science Ph.D. in the College of Health Sciences.

Graduates will understand the complex interrelationships between health organizations, societal and cultural contexts, and biological systems, with an emphasis on improving the well-being of the individuals and populations affected by these complex interrelationships. The program will address workforce training needs of Wisconsin that have grown out of the recent federal mandates that healthcare providers demonstrate improved healthcare outcomes and meaningful use of electronic health record systems.

UWM's research indicates that the job market in Wisconsin for health services managers is very promising. For example, a search on August 5, 2015, of the job site

indeed.com, returned a total of 104 current job openings. The Wisconsin Department of Workforce Development occupational data projected a 15.7% growth in the "Medical and Health Services Manager" occupation between 2012 and 2022, and estimated 227 total openings per year within that period.

Students enrolled in the program will pay standard graduate tuition and fees. For the 2015-16 academic year the residential tuition and segregated fees will total $5,862.36 per semester for a full-time student who is enrolled in 8-12 credits per term. Of this amount $5,193.36 are attributable to tuition. Additional fees may apply to students who enroll in online courses. These fees include $275.00 for a three-credit online course; the fee is pro-rated for two- and one-credit online courses.

RECOMMENDATION

The University of Wisconsin System Administration recommends adoption of Resolution I.1.c.(5), approving the implementation of a Master of Healthcare Administration at UW-Milwaukee.

RELATED REGENT AND UW SYSTEM POLICIES

Regent Policy 4-12: Academic Program Planning, Review, and Approval in the University of Wisconsin System.

Academic Information Series #1 (ACIS 1.0, Revised August 2012): Statement of the UW System Policy on Academic Planning and Program Review.

**REQUEST FOR AUTHORIZATION TO IMPLEMENT A
MASTER OF HEALTHCARE ADMINISTRATION DEGREE
AT THE UNIVERSITY OF WISCONSIN-MILWAUKEE
PREPARED BY UW-MILWAUKEE**

ABSTRACT

The University of Wisconsin-Milwaukee (UWM) requests authorization to implement a Master of Healthcare Administration (M.H.A.) program which will provide evidence-based inter-professional training to advance the health of individuals and commuties, local, national, and international. The curriculum addresses four broad competency domains as defined by the Commission on Accreditation Healthcare Management Education (CAHME). The proposed M.H.A. program is comprised of 39 credits and will serve both traditional and non-traditional students by functioning as a terminal professional degree to prepare students for immediate employment in the healthcare industry or as a seamless step from undergraduate study in Health Care Administration and related fields, to Ph.D. study of Health Services Research and Informatics through the Health Science Ph.D. in the College of Health Sciences.

PROGRAM IDENTIFICATION

Institution name
University of Wisconsin-Milwaukee

Title of proposed program
Master of Healthcare Administration

Degree/major designation
Master of Healthcare Administration

Mode of delivery
Campus-based program consisting of classroom-, technology-, and laboratory-based instruction; some online instruction.

Single institution or collaboration
Single institution

Projected enrollment by year five of the program

Table 1: Projected enrollees and graduates over five years

Students/Year	Year 1	Year 2	Year 3	Year 4	Year 5	Total
New	30	32	35	38	41	176
Continuing		30	32	35	38	
Total	30	62	67	73	79	
Graduating		30	32	35	38	135

Tuition structure
Students enrolled in the program will pay standard graduate tuition and fees. For the 2015-16 academic year the residential tuition and segregated fees will total $5,862.36 per semester for a full-time student who is enrolled in 8-12 credits per term. Of this amount $5,193.36 is attributable to tuition. Additional fees may apply to students who enroll in online courses. These fees include $275.00 for a three-credit online course; the fee is prorated for 2- and 1-credit online courses.

Department or functional equivalent
Department of Health Informatics and Administration

College, School, or functional equivalent
College of Health Sciences

Proposed date of implementation
Spring 2016

INTRODUCTION

Rationale and relation to the mission
　　The development of the Master of Healthcare Administration (M.H.A.) program will serve students and advance the study of the management of healthcare and health-related organizations, groups, and individuals. Graduates will understand the complex interrelationships between health organizations, societal and cultural contexts, and biological systems, with an emphasis on improving the well-being of the individuals and populations affected by these complex interrelationships. The program will address workforce training needs of Wisconsin that have grown out of the recent federal mandates that healthcare providers demonstrate improved healthcare outcomes and meaningful use of electronic health record systems. The proposed M.H.A. program may function as a terminal professional degree to prepare students for immediate employment in the healthcare industry. This intention is congruent with UWM′s mission "...as a major urban doctoral university [meeting] the diverse needs of Wisconsin's largest metropolitan area." Its select mission specifically "requires the University of Wisconsin-Milwaukee to provide a wide array of degree programs, a balanced program of applied and basic research, and a faculty who are active in public service."

　　The proposed M.H.A. program is aligned with the institution's overall strategic plan in three ways: First, through the development of community and business partnerships, the program will increase the institutional support for the Milwaukee community. Second, the program will contribute to improving health outcomes. The M.H.A. program will contribute to the generation of discoveries and scholarly outcomes that will impact society, locally to globally. Third, the M.H.A. program will contribute to the institution's goal of graduating highly-skilled individuals at all levels, from undergraduate to doctoral, through its linkage of undergraduate to Ph.D. study.

Need as Suggested by Current Student Demand

Beginning in mid-Spring 2014, UW-Milwaukee faculty and staff informally discussed the possibility of this program with students in the undergraduate Health Care Administration program, as well as with members of the Health Informatics and Administration Advisory Committee. UW-Milwaukee receives on average two inquiries per week from current students and possibly new students interested in the program.

Need as Suggested by Market Demand

The reputation of the UWM Department of Health Informatics and Administration (formerly the Healthcare Administration and Informatics program in the Department of Health Sciences), will support both market and student demand. The department has offered a B.S. in Healthcare Administration since 2000. Since its inception, the B.S. in Healthcare Administration program has graduated students who have become highly sought-after practitioners within the marketplace of healthcare administration. Notwithstanding the success of our undergraduate program, findings of the U.S. Bureau of Labor Statistics indicate:

> "[…] a bachelor's degree is [only] adequate for some entry-level positions in smaller facilities, at the departmental level within healthcare organizations, and in health information management. Physicians' offices and some other facilities hire those with on-the-job experience instead of formal education. [A] master's degree in health services administration, long term care administration, health sciences, public health, public administration, or business administration is the standard credential for most generalist positions in this field. …Nationally, [e]mployment of medical and health services managers is expected to grow 16 percent from 2008 to 2018, faster than the average for all occupations. The healthcare industry will continue to expand and diversify, requiring managers to help ensure smooth business operations."[1]

Empirical evidence suggests that the job market in Wisconsin for health services managers is very promising. For example, a search on August 5, 2015, of the job site *indeed.com*, returned a total of 104 jobs openings. Wisconsin Department of Workforce Development occupational data projected a 15.7% growth in the "Medical and Health Services Manager" occupation between 2012 and 2022, and estimated 227 total openings per year within that period.[2]

There are various market segments served by the proposed M.H.A. For example, Pharmacy Administration Fellows at Froedert Health will enroll in the proposed M.H.A. program as a required course of study, with two or more new Fellows expected each year. The national market for Pharmacy Administration is, according to anecdotal evidence, very

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[1] U.S. Bureau of Labor Statistics. Occupational Outlook Handbook, 2010-11 Edition [http://www.bls.gov/oco/ocos014.htm#projections_data]

[2] Wisconsin Department of Workforce Development, Office of Economic Advisors Long Term Employment projections 2012-22. Retrieved from http://worknet.wisconsin.gov/worknet/ .

promising. In addition, Aurora Health Care is willing to provide summer internships as well as post-graduate fellowships at its facilities.

Innovativeness of the Program
        The increasingly complex healthcare milieu requires healthcare managers who can manage people and organizations in a rapidly changing world of interdisciplinary care, interprofessional practice and education, translational research and practice, and technological advances in systems that are products of bioengineering and biomedical informatics. Healthcare managers must somehow hold these strands of progress together and make them work for the good of individual patients. Genomic medicine, family medicine, community nursing, blood supply management, outbreak control, and species jumping diseases are but a few aspects of healthcare that must be within the healthcare manager's conceptual reach, if not his or her grasp. The M.H.A. program UWM proposes will train students to take up this challenge.

DESCRIPTION OF PROGRAM

General Structure
        The proposed M.H.A. will be designed for accreditation by the Commission on Accreditation Healthcare Management Education (CAHME). The purpose of CAHME is "[t]o serve the public interest by advancing the quality of healthcare management education by: (1) setting measurable criteria for excellent healthcare management education; (2) supporting, assisting and advising programs which seek to meet or exceed the criteria and continuously improve; (3) accrediting graduate programs that meet or exceed the criteria; (4) and making this information easily available to interested constituencies."[3]

        The proposed M.H.A. program will serve both traditional students and non-traditional students by: (1) functioning as a terminal professional degree to prepare students for immediate employment in the healthcare industry; or, depending on the student's interest, (2) providing for a seamless step from undergraduate study in Health Care Administration and related fields, to Ph.D. study of Health Services Research and Informatics through the UWM Health Science Ph.D. in the College of Health Sciences.

Other Programs within the UW System, in Wisconsin, and outside Wisconsin
        The proposed M.H.A. program is not duplicative of any existing programs in the University of Wisconsin System. The M.H.A. program is designed strictly in accordance with accreditation requirements of the Commission on Accreditation Healthcare Management Education (CAHME). It utilizes a competency model addressing four broad competency domains as defined by CAHME. The competency model used in the UWM M.H.A. is based on the Healthcare Leadership Alliance (HLA) Competency Directory (*www.healthcareleadershipalliance.org*). While the UWM Lubar School of Business has a Master of Business Administration (M.B.A.) program with a concentration in Healthcare, it is not designed for CAHME accreditation.

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[3] Commission on Accreditation of Health Care Management Education. Information can be located at http://www.cahme.org/Mission.html.

There are no comparable programs in Wisconsin. A number of for-profit programs that are web-based are advertised in Wisconsin; however, they are not CAHME-accredited. There are CAHME-accredited M.H.A. programs outside of Wisconsin. CAHME is the national standard for accreditation of M.H.A. programs, with 76 M.H.A. (or similar M.B.A., the Master of Public Health (M.P.H.) or Master of Science (M.S.)) programs with CAHME accreditation, including the University of Illinois-Chicago, Governors State University, the University of Minnesota, the University of St. Thomas, Boston University, John Hopkins University, the University of California-Los Angeles, Pennsylvania State University, and George Washington University, to name a few. In fact, currently students from Wisconsin, particularly from the UWM undergraduate H.C.A. program, have to pursue M.H.A.-level study outside of Wisconsin. The establishment of a CAHME-accredited program in Wisconsin is necessary to provide the citizens of Wisconsin with a serious alternative to studying at non-Wisconsin institutions.

Collaborative Nature of the Program
The proposed M.H.A. program will take advantage of opportunities for informal collaboration between the M.B.A. program in the UWM Lubar School of Business, the Health Policy and Administration division in the School of Public Health, and the interdisciplinary Biomedical and Health Informatics Ph.D. program in (CEAS).

Diversity
A critical aspect of health care is the need for managing communication among diverse cultural communities, both professional and more traditional ethno-social communities. Students will be taught the importance of properly managing inter-professional communication as well as patient-professional communication. These topics will be approached as threads running through the entire curriculum, but also as topics of specific courses in ethics and communication, addressed via case studies and discussion.

Program Objective and Student Learning Outcomes
Students with an undergraduate degree in healthcare administration or a related field will qualify for the program. In addition to meeting the standard admission requirements of the UWM Graduate School, each application will be reviewed by the program coordinator to determine whether or not a student is qualified and ready for the program. Students may be required to take some bachelor's level courses if the undergraduate program did not provide adequate preparation in the discipline.

Each admitted student will be assigned an advisor who will work with the student on his or her program of study. The advisor will also monitor students' progress towards the degree. The program coordinator will have overall responsibility for all aspects of the program including placement in internships.

The proposed M.H.A. program will address the four CAHME competency domains through a competency model based on the HLA Competency Model. The four domains are as follows, direct quotations drawn from CAHME guidelines are italicized:

1. The program curriculum will develop students' competencies in communications and interpersonal effectiveness.

   "Communications" includes competencies associated with giving and receiving of information between an individual and other individuals or groups. "Interpersonal effectiveness" involves competencies associated with developing and maintaining effective working relationships with others.

2. The program curriculum will develop students' competencies in critical thinking, analysis, and problem solving.

   This domain includes competencies related to the appropriate use of information, data, and judgment to inform sound management decisions.

3. The program curriculum will develop students' competencies in management and leadership.

   This domain includes competencies related to a student's ability to successfully pursue organizational goals that involve getting things done through and in collaboration with others.

4. The program curriculum will develop students' competencies in professionalism and ethics.

   This domain includes competencies that relate to upholding high professional and ethical standards.

Assessment of Objectives

The proposed program will continuously assess student learning both at the individual course level and at the curriculum level. At the individual course level, student learning will be continuously assessed through case study analysis, group interaction and leadership assessment, oral argumentations, and evaluation of written essays. Student learning at the curriculum level will be assessed in two ongoing ways: First, student learning at the curriculum level will be assessed by ongoing consideration of prerequisite competencies. The second way in which student learning at the curriculum level will be assessed is by a final, required, oral exit exam.

Additionally, students will complete surveys in each course and an exit survey to provide useful information about the program and the learning that takes place. Student placement data will be gathered annually. When the alumni of the program reach a sufficient number, they will be surveyed to reflect on the preparation received in the program.

Program faculty will be involved in the assessment activities. The faculty member with the responsibility to coordinate the program will be responsible for gathering and analyzing the assessment data. The coordinator will bring the information for general discus-

sion among the program faculty to identify actions needed to improve student learning and the effectiveness of the program.

Program Curriculum

The program requires 39 graduate credits for completion.

Required Courses (30 credits)
1. HIA 801: Design of Health and Human Service Systems (3)
2. Kin 702: Statistical Analysis in the Health Sciences (3)
3. HIA 821: Operations Management in Healthcare Organizations (3)
   OR Bus Adm 755 Health Care Administration and Delivery Systems (3)
4. HIA 822: Human Resource Management in Health Care Organizations (3)
5. HIA 823: Strategic Planning in Health Care Organizations (3)
   OR Bus Mgmt 720 Strategic Management in Health Care Organizations (3)
6. HIA 865: Financial Management for Health Care Organizations (3)
7. HIA 866: Leading Change and Innovation in Systems (3)
8. HIA 867: Leading Strategic Innovation in a Competitive Global Marketplace (3)
9. HIA 813: Health Regulatory Policy and Politics (3)
10. Bus Mgmt 727: Health Care Accounting, Law, and Ethics (3)
    OR HIA 721: Law for Health Care Consumers and Professionals (3)
    OR HCA: Legal, Ethical and Social Issues in Health Care Informatics (3)

Required Internship (3 credits)
1. HIA 680: Internship in Health Management and Informatics (3)

Electives (6 credits from the following course options)
1. HIA 844: Data and Text Mining (3)
2. HIA 815: Consumer Health Informatics (3)
3. HCA 700: Introduction to Health Care Informatics (2)
4. HIA 860: Topics in Health Management and Biomedical and Health Informatics (3)
5. HIA 803: Epidemiology for the Health Sciences II (3)
6. HIA 804: Information Security (3)
7. Bus Adm 783: Supply Chain Management (3)
8. Bus Adm 785: Project Management and Innovative Operations (3)
9. HIA 814: Health Regulatory Science (3)
10. HIA 850: Healthcare Quality Management (3)
11. HCA 760: Biomedical and Healthcare Terminology and Ontology (3)
12. HIA 761: Biomedical Ontologies and Controlled Terminologies II (3)
13. Bus Adm 757: Managed Care and Integrated Health Networks (3)
14. HCA 742: Computational Intelligence in Health Informatics (3)
15. HS 917: Seminar in Health Outcomes Assessment (3)
16. HIA 843: Health Data Analytics (3)

Projected Time to Degree
     The university anticipates that the average full-time student will be able to complete the program in two nine-month academic years and one summer semester. Below is a sample course of study.

Fall Semester 1: credit hours = 9
HIA 866: Leading Change and Innovation in Systems (3) [*required*]
HIA 801: Design of Health and Human Service Systems (3) [*required*]
Kin 702: Statistical Analysis in the Health Sciences (3) [*required*]

Spring Semester 1: credit hours = 9
HIA 867: Leading Strategic Innovation in a Competitive Global Marketplace (3) [*required*]
HIA 865: Financial Management for Health Care Organizations (3) [*required*]
HIA 813: Health Regulatory Policy and Politics (3) [*required*]

Summer Semester: credit hours = 3
HIA 680: Internship in Health Management and Informatics (3) [*required*]

Fall Semester 2: credit hours = 9
HIA 821: Operations Management in Healthcare Organizations (3) [*required*]
HIA 822: Human Resource Management in Health Care Organizations (3) [*required*]
HS 917: Seminar in Health Outcomes Assessment (3) [*elective*]

Spring Semester 2: credit hours = 9
HIA 721: Law for Health Care Consumers and Professionals (3) [*required*]
HIA 823: Strategic Planning in Health Care Organizations (3) [*required*]
HIA 814: Health Regulatory Science (3) [*elective*]

Program Review Process
     The program will undergo the normal UWM graduate program review process. The initial review will be conducted in Year five based on a self-study document following established guidelines. After the initial review, the normal review cycle will be 10 years, unless the Graduate Faculty Committee requires more frequent reviews. Additionally, the program will be reviewed periodically by CAHME using that organization's accreditation standards. UWM's graduate program review process can be found at:
http://www.graduateschool.uwm.edu/faculty-staff/governance/graduate-program-reviews/

     Aspects of the program to be evaluated will include, but not be limited to:

- Student performance (grades and thesis quality);
- Diversity of studies (range of issues and courses taken by students);
- Student evaluations of the faculty and program;
- Diversity of participation in the program from different types of students and career objectives; and
- Outside observations from persons involved in the field.

The review will examine the range of issues addressed by students, the background of students who enter the program, and the types of jobs and activities in which students engage after completing the program.

External Accreditation

There is no requirement that the proposed M.H.A. program be accredited by an external body. However, the marketplace demands accreditation by CAHME, the national standard for accrediting M.H.A. programs. The proposed program will seek CAHME accreditation.

		Projections				
		2016	2017	2018	2019	2020
		Year 1	Year 2	Year 3	Year 4	Year 5
I	Enrollment (New Student) Headcount *see Narrative paragraph 1*	30	32	35	38	41
	Enrollment (Continuing Student) Headcount	0	30	32	35	38
	Enrollment (New Student) FTE *see Narrative paragraph 1*	30	32	35	38	41
	Enrollment (Continuing Student) FTE	0	30	32	35	38
II	Total New Credit Hours (# new sections x credits per section) *see Narrative paragraph 2*	630	1212	1311	1428	1545
	Existing Credit Hours	0	0	0	0	0
III	FTE of New Faculty/Instructional Staff	0	0	0	0	0
	FTE of Current Fac/IAS *see Narrative paragraph 3*	10	10	10	10	10
	FTE of New Admin Staff	0	1	0	0	0
	FTE Current Admin Staff	1	2	2	2	2
V	New Revenues					
	From Tuition (new credit hours x FTE) see attached Narrative paragraph 4	$417,622	$802,773	$862,305	$936,448	$1,013,709
	From Fees					
	Program Revenue - Grants	$0	$0	$0	$0	$0
	Program Revenue - Other	$0	$0	$0	$0	$0
	Reallocation	$0	$0	$0	$0	$0
	Total New Revenue *see attached Narrative paragraph 4*	$417,622	$802,773	$862,305	$936,448	$1,013,709
VI	New Expenses					
	Salaries plus Fringes					
	Faculty/Instructional Staff					
	Ad Hocs Salary *see attached Narrative paragraph 5*	$16,800	$33,600	$33,600	$33,600	$33,600
	Fringe	$1,310	$2,621	$2,621	$2,621	$2,621
	Total	$18,110	$36,221	$36,221	$36,221	$36,221
	HS PhD student TAs Salary *see attached Narrative paragraph 6*	$0	$27,442	$41,163	$41,163	$54,884
	Fringe	$0	$6,723	$10,085	$10,085	$13,447
	Total	$0	$34,165	$51,248	$51,248	$68,331
	Course Assistants (2) Salary *see attached Narrative paragraph 7*	$7,840	$7,840	$7,840	$7,840	$7,840
	Fringe	$314	$314	$314	$314	$314
	Total	$8,154	$8,154	$8,154	$8,154	$8,154
	Other Staff (1) Salary *see attached Narrative paragraph 8*	$0	$30,000	$30,000	$30,000	$30,000
	Fringe	$0	$13,950	$13,950	$13,950	$13,950
	Total	$0	$43,950	$43,950	$43,950	$43,950
	Other Expenses					
	Facilities see attached Narrative paragraph 9	$30,000	$5,000	$5,000	$10,000	$5,000
	Equipment see attachedNarrative paragraph 10	$20,000	$5,000	$5,000	$5,000	$5,000
	Other: student scholarships see attached Narrative paragraph 11	$20,000	$20,000	$40,000	$40,000	$40,000
	Accreditation costs see attached Narrative paragraph 12	$0	$20,000	$0	$0	$0
	Total Expenses	$96,264	$172,490	$189,572	$194,572	$206,655
VII	Net Revenue	$321,358	$630,283	$672,733	$741,876	$807,054

Narrative: Explanation of the Numbers and Other Ongoing Commitments that will Benefit the Proposed Program

see attached.

Signature by the Provost:

Date: August 7, 2015

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Academic Affairs

August 3, 2015

To: Ray Cross, President, University of Wisconsin System

From: Johannes J. Britz, Provost and Vice Chancellor

Re: Authorization to implement a Master of Healthcare Administration (M.H.A.)

Per UW System guidelines for new program development, I am writing to you to assure the support of the University of Wisconsin – Milwaukee for the proposed Master of Healthcare Administration (M.H.A.).

The proposed program fills a gap in the program array in healthcare administration at UWM by offering a master's level program that allows students to pursue a terminal professional degree to prepare students for immediate employment in the healthcare industry. The program will address workforce training needs of Wisconsin that have grown out of the recent Federal mandates for healthcare providers to demonstrate improved healthcare outcomes and meaningful use of electronic health record systems. The proposed MHA program will also provide for a seamless step from undergraduate study in Health Care Administration and related fields, to PhD level study of Health Administration and Health Services Research in the Health Science PhD in the College of Health Sciences.

The authorization document has been vetted through campus faculty governance processes – at the department, school, and campus levels. The proposal meets all of the UWM standards and expectations for quality and rigor at the master's level. Upon implementation, the program will be reviewed at the five year mark and subsequently according to the regular campus program review process.

Based on ongoing discussions between faculty and professionals in the healthcare industry, we project a healthy, thriving program that has the potential to meet workforce needs in Wisconsin and also to expand to potential students outside the borders of the State. The financial projections indicate that the program will generate sufficient revenues to sustain itself into the future.

I am excited to send this request for authorization for approval with my strong support. If you have any questions, please contact Vice Provost Dev Venugopalan.

c: Stephen Kolison, Sr., Associate Vice President, UWSA Academic and Student Affairs
     David Ward, Interim Sr. Vice President, UWSA Academic and Student Affairs
     Carmen Faymonville, Spl. Asst. to Sr. Vice Pres., UWSA Academic and Student Affairs
     Ron Cisler, Interim Dean, College of Health Sciences
     Dev Venugopalan, Vice Provost, UWM Academic Affairs

EDUCATION COMMITTEE

Resolution I.1.d.

That, upon the recommendation of the President of the University of Wisconsin System, approval be granted for the adoption of the following educational performance accountability measures as required by the 2015-17 biennial budget: (1) Graduation Rates; (2) Equity Gap; and (3) Degrees Awarded.

UW SYSTEM EDUCATIONAL PERFORMANCE
ACCOUNTABILITY MEASURES

BACKGROUND

The University of Wisconsin (UW) System has annually published detailed accountability reports since 1993. The UW System was among the first in the nation to issue a system-specific accountability report. In addition, the 2011-13 biennial budget legislated over 40 accountability measures in an annual report from the UW System Board of Regents regarding all UW System institutions other than UW-Madison, and a separate annual report from the Chancellor of UW-Madison. These required items are now provided through a combination of the UW System Accountability Dashboard and supplemental items available on the dashboard website.

This year, the State Legislature has directed the UW System to identify additional accountability measures. The 2015-17 biennial budget states:

Accountability: Require the Board of Regents to identify accountability measures in the following four areas: (a) financial management; (b) administrative management; (c) educational performance; and (d) research and economic development. Specify that the accountability measures identified by the Board would be submitted to the appropriate standing committee in each house by October 1, 2015, for approval by those committees.

REQUESTED ACTION

Adoption of Resolution I.1.d., approving the following educational performance accountability measures as required by the 2015-17 biennial budget: (1) Graduation Rates; (2) Equity Gap; and (3) Degrees Awarded.

DISCUSSION

In response to this mandate, UW System Administration evaluated accountability measures based on how well they fulfilled the following criteria:

a) Importance to UW strategic goals and priorities;
b) Degree to which the UW System can influence the outcome measured; and
c) Consistent data over time including available benchmarks and comparisons.

After careful consideration and consultation with subject-area experts, three accountability measures are proposed in the area of educational performance.

1) Graduation Rates—measures include four-year and six-year graduate rates at the same UW institution where a student started and at any UW institution in the System. Graduation rates are a core indicator of how successful institutions are at guiding students

through to the on-time completion of their educational goals. Four years is the standard baccalaureate program length, although some programs cannot be completed in four years. Internships, study abroad programs, dual majors, and similar programs which enhance the student experience may also increase the time to graduation. Six years is the national standard for computing and disclosing completion rates to current and prospective students legislated by the Federal Student-Right-to-Know and Campus Security Act of 1990. This measure is sensitive to actions such as changes in selectivity and graduation requirements.

2) <u>Equity Gap</u>—measures pertain to closing the gap in new freshman 6-year graduation rates between underrepresented minority (URM) and non-URM students and Federal Pell Grant recipients and non-Pell Grant recipients. The UW System is committed to the educational success of all its students. Toward this end, the UW System aims to increase the graduation rate of URM students and lower income students to be more in line with the graduation rate of their peers. As with the overall graduation rate, this measure is sensitive to changes in selectivity and graduation requirements.

3) <u>Degrees Awarded</u>—measures pertain to the number of degrees awarded by degree level. The UW's commitment to degree attainment is demonstrated by maintaining the educational quality of its academic programs, keeping college affordable, and effectively guiding students toward degree completion. The UW System provides the state with the graduates needed for a competitive workforce and growing economy. Increasing the number of college degree holders yields higher personal incomes, greater economic productivity, and a variety of social and civic benefits.

Along with the more extensive measures available on the new UW System Accountability Dashboard, the measures identified here will reinforce the UW System's commitment to continuous improvement, transparency, and service to the state.

RELATED REGENT AND UW SYSTEM POLICIES

No applicable Regent Policy Documents.

REVISED MISSION STATEMENT
UNIVERSITY OF WISCONSIN-STEVENS-POINT
(FIRST READING)

BACKGROUND

At the recommendation of its Chancellor, Bernie Patterson, the University of Wisconsin-Stevens Point requests approval for its newly revised mission. Section 36.09(1)(b), Wis. Stats., requires that "the Board, after public hearing at each institution, shall establish for each institution a mission statement delineating specific program responsibilities and types of degrees to be granted." Regent Policy Documents 1-1 (UW System Mission) and 1-2 (Approval of Mission Statements) and ACIS-1.0 indicate that in addition to the UW System mission, the University of Wisconsin-Stevens Point establish a select mission.

Section 36.09(1)(b), Wis. Stats., also requires that UW institution select missions include a listing of the general degrees offered by the institution. In addition, university missions must coincide with Higher Learning Commission (HLC) Criteria for Accreditation Mission Components (effective January 1, 2013), available at *http://www.ncahlc.org/Information-for- Institutions/criteria-and-core-components.html*.

REQUESTED ACTION

No action is requested at this time. If the Board agrees after this first reading, a public hearing presided over by a Regent will be scheduled. Following that hearing, the proposed revision of the select UW-Stevens Point mission statement, including any changes made in response to the input from stakeholders at the hearing, will be brought before the Board for final approval.

DISCUSSION

The proposed revisions to UW-Stevens Point's select mission are the result of a comprehensive consulting process with institutional governance and were approved by the UW-Stevens Point Faculty Senate on February 4, 2015. The mission was thoroughly revised and restructured in order to better reflect UW-Stevens Point's new strategic plan, and in particular its desire to better serve regional needs. The academic program array approved by the Board is presented in more detail, making more visible the breadth of professional undergraduate and graduate programs. The term "select engineering programs" was added to the programs listed as it is expected that UW-Stevens Point will also offer chemical engineering (after approval by the Board at the September meeting) in addition to its paper science and engineering program.

Mission revision documents

Listed below for comparison are the current select mission of UW-Stevens Point, a revised version with tracked changes, and a clean version of the mission as it would read in its final form.

Current UW-Stevens Point select mission statement:

The select mission of UWSP is to

- provide a broad foundation of liberal studies and degree programs in the fine arts, humanities, natural sciences, and social sciences, imparting the heritage of human civilization, critical intelligence, and the skills necessary for a lifetime of learning and upon which education in the professional fields may be built;
- provide undergraduate professional programs in communicative disorders, teacher education, natural resources, home economics, the visual and performing arts, paper science, and natural resources with emphasis on the management of resources;
- provide graduate programs in teacher education, communicative disorders, natural resources, home economics, communication and other select areas clearly associated with this university's undergraduate emphases and strengths;
- provide programs in wellness and health promotion;
- provide quality undergraduate and graduate instruction through innovative methods utilizing print and non-print library resources, computing, communications technology, and direct student assistance;
- expect scholarly activity, including research, scholarship and creative endeavor, that supports UWSP's programs at the associate and baccalaureate degree levels, its selected graduate programs, and its select mission; and
- cooperate with UW-Extension in the development and coordination of statewide outreach programming, integration of the extension function into the institution, and appropriate and adequate recognition of those involved in research activities.

Revised UW-Stevens Point mission statement (strike out):

~~The select mission of UWSP is to~~

- ~~provide a broad foundation of liberal studies and degree programs in the fine arts, humanities, natural sciences, and social sciences, imparting the heritage of human civilization, critical intelligence, and the skills necessary for a lifetime of learning and upon which education in the professional fields may be built;~~
- ~~provide undergraduate professional programs in communicative disorders, teacher education, natural resources, home economics, the visual and performing arts, paper science, and natural resources with emphasis on the management of resources;~~
- ~~provide graduate programs in teacher education, communicative disorders, natural resources, home economics, communication and other select areas clearly associated with this university's undergraduate emphases and strengths;~~
- ~~provide programs in wellness and health promotion;~~
- ~~provide quality undergraduate and graduate instruction through innovative methods utilizing print and non-print library resources, computing, communications technology, and direct student assistance;~~
- ~~expect scholarly activity, including research, scholarship and creative endeavor, that supports UWSP's programs at the associate and baccalaureate degree levels, its selected graduate programs, and its select mission; and~~

- cooperate with UW-Extension in the development and coordination of statewide outreach programming, integration of the extension function into the institution, and appropriate and adequate recognition of those involved in research activities.

Revised UW-Stevens Point mission statement (clean copy)

In addition to the Core Mission of the University Cluster Institutions, the select mission of UW-Stevens Point is to provide programs that help communities become more vibrant, healthy, prosperous, and sustainable. We accomplish this by providing a broad foundation in the fine arts, humanities, natural sciences, and social sciences for associate and baccalaureate degrees.

Our commitment to helping communities thrive requires that we provide education, research and outreach in a wide array of disciplines, with particular emphases at the baccalaureate level in integrated natural resources management and environmental education; in the performing and visual arts; and in areas such as business, health and wellness professions, communicative disorders, design, select engineering programs, family and consumer sciences, information science, paper science, social work, and teacher education.

UW-Stevens Point provides select master's programs in business, communication, communicative disorders, health care, health promotion, natural resources, teacher education, wellness, and other select areas clearly associated with this university's undergraduate emphases. UW-Stevens Point provides a clinical doctoral program in audiology, as well as professional doctoral programs in select areas of strength at the master's level.

UW-Stevens Point puts special emphasis on promoting inclusivity, advancing human wellness, providing excellent academic support resources, offering extensive study abroad and international programs, and providing a robust array of UW-Extension programs.

University of Wisconsin-Stevens Point Degree Programs

Associate Degree (A.D.)

The Associate Degree (A.D.) is a liberal arts foundational degree for many college majors and is confirmation of an important accomplishment on the path to a bachelor's degree. The Associate Degree requires the completion of a minimum of 60 credits and the General Education Program (except for the Communication in the Major and the Capstone Experience in the Major).

Baccalaureate Degrees (B.A., B.S., B.F.A., B.M., B.A.S., & B.S.N.)

Accounting	History
American Studies	Individually Planned Major
Art	Interior Architecture
Arts Management	International Studies
Athletic Training	Jazz Studies
Biochemistry	Mathematics
Biology	Music Education
Business Administration	Music Literature
Chemistry	Music
Clinical Laboratory Science	Natural Science
Communication Sciences and Disorders	Nursing (RN-BSN)
Communication	Organizational Leadership
Computer Information Systems (CIS)	Paper Science and Engineering
Dance	Performance
Dietetics	Philosophy
Early Childhood Education	Physical Education for Teacher Certification
Economics	Physics
Elementary Education	Political Science
English	Psychology
Family and Consumer Sciences	Public Administration and Policy Analysis
Fisheries and Water Resources	Resource Management
Forestry	Social Science
French	Social Work
Geography	Sociology
Geoscience	Soil and Waste Resources
German	Spanish
Health and Wellness Management	Special Education
Health Information Management and Technology	Theatre Arts
Health Promotion/Wellness	Web and Digital Media Development (WDMD)
Health Science	

Graduate Degrees (M.A., M.M., M.S., M.S.T., & Au.D.*)

Biology

Communication

Clinical Doctorate in Audiology*

Community and Organizational Leadership

Data Science

Education

English

History

Music

Natural Resources

Sustainable and Resilient Food Systems

* The Clinical Doctorate in Audiology (Au.D.) is a joint program offered with the Department of Communication Sciences and Disorders at UW-Madison.

April 6, 2015

Ray Cross, President
University of Wisconsin
System 1720 Van Hise
Hall
1220 Linden Dr.
Madison, WI

53706 Dear

President

Cross:

On behalf of the faculty, staff, and students of the University of Wisconsin-Stevens Point, I
respectfully request that the attached proposed revisions to the UW-Stevens Point Mission
Statement be placed on the Board of Regents' meeting agenda for initial review. These proposed
revisions are the result of a comprehensive campus process where we gathered input and
feedback from our university governance groups. The proposed revisions were approved by our
Faculty Senate on February 4, 2015, and the enclosed documents provide additional background
and a detailed account of the proposed changes.

Please feel free to contact me if you have any questions. Thank you for your

consideration. Sincerely,

Bernie L.
Patterson
Chancellor

Enclosure: Mission statement revisions

REVISED MISSION STATEMENT
UNIVERSITY OF WISCONSIN-EXTENSION
(FIRST READING)

BACKGROUND

At the recommendation of its Chancellor, Cathy Sandeen, the University of Wisconsin-Extension requests approval for its newly revised mission. Section 36.09(1)(b), Wis. Stats., requires that "the Board, after public hearing at each institution, shall establish for each institution a mission statement delineating specific program responsibilities and types of degrees to be granted." Regent Policy Documents 1-1 (UW System Mission) and 1-2 (Approval of Mission Statements) and ACIS-1.0 indicate that in addition to the UW System mission, the University of Wisconsin-Extension establish a select mission.

Section 36.09(1)(b), Wis. Stats., also requires that UW institutions' select missions include a listing of the general degrees offered by the institution. In addition, university missions must coincide with Higher Learning Commission (HLC) Criteria for Accreditation Mission Components (effective January 1, 2013), available at
http://www.ncahlc.org/Information-for- Institutions/criteria-and-core-components.html.

REQUESTED ACTION

No action is requested at this time. Pending further instructions by the Board of Regents (Board), after this first reading, a public hearing presided over by a Regent will be scheduled. Following that hearing, the proposed revision of the select UW-Extension mission statement, including any changes made in response to the input from stakeholders at the hearing, will be brought before the Board for final approval.

DISCUSSION

Higher education in Wisconsin and across the U.S. is rapidly changing, and is under increasing pressure to adjust to new competitors, new technologies, and new student and market needs, all within the context of reduced state funding. Internal challenges and external pressures require new delivery models and approaches to address unmet needs for quality education in the state and beyond. The UW-Extension is requesting a change in select mission to meet these needs by offering specific types of degrees and credit-bearing credentials such as certificates in the academic area of business and management. The following sections provide context for UW-Extension's proposed select mission change, including high-level evidence for the overall market need and student demand for the business and management programs included as part of the request for degree-granting authority. For additional information and data, see UW-Extension's Appendix document.

UW-Extension requests Board approval of the proposed select mission that will provide UW-Extension with degree-granting authority for select degrees. If adopted, the language would permit UW-Extension to seek authorization to offer professionally focused and cross-disciplinary, direct assessment, competency-based credit-bearing certificates, associate degrees, and

baccalaureate degrees in the area of business and management.

UW-Extension aims to deliver academic programs that will improve service to the large segment of nontraditional students who need high-quality professionally oriented degrees in alternative formats. These degrees will be offered exclusively in the competency-based format. UW-Extension degrees will be offered collaboratively with other UW institutions using similar partnership arrangements as UW-Extension's current, successful, collaborative degrees (see http://ce.uwex.edu/campus-partnerships).

Based on student and market data collected since the inception of the UW Flexible Option Program, UW-Extension identified the bachelor's level business and management disciplinary area to be the academic programs highest in demand by current and potential student populations. If the proposed select mission is approved by the Board, UW-Extension will seek from the Board authorization to offer credit-bearing credentials in this disciplinary area at multiple undergraduate degree levels. Based on program assessment findings, data indicating student and market demand, and the outcomes of institutional strategic and academic planning processes, UW-Extension may seek from the Board approval of further expansions to the mission that would permit the institution to offer additional degree levels and curricular areas in the future.

Advancement of the proposed mission, and subsequent offering of new academic programming approved by the Board, will leverage the substantial investment that UW System and UW-Extension have made in the UW Flexible Option Program to build new systems, processes, and staff required to operate non-term, collaborative, direct-assessment, and competency-based programs. These new systems and processes span the entire student lifecycle – from marketing, recruitment, and admissions; to registration, financial aid and bursar functions; to student record-keeping; to advising; to instructional design; and to learner-support systems. The delivery of these services in a direct assessment, competency-based format does not exist at any other UW institution.

Prior to its request for degree-granting authority, UW-Extension sought partners from other UW institutions to collaboratively offer academic degree programs in business and management in the UW Flexible Option format, following the successful model of Flex programs at UW-Milwaukee, UW Colleges, UW-Parkside, UW-Stevens Point, and UW-Madison. This process did not result in sufficient interest or commitment, whereupon UW-Extension moved forward with its mission revision.

On June 3, 2015, UW-Extension shared governance groups endorsed expanded mission revision language to include degree-granting authority for a broad array of program areas up to the level of a Master's degree. This former version of the proposed mission change was reviewed by UW System Administration and resulted in a revised document, limiting the scope of the proposed changes to the select mission and limiting the curricular areas for degree delivery to business and management academic programs. UW-Extension's shared governance groups voted to endorse the proposed select mission language on September 1, 2015.

UW-Extension will not request additional financial resources from UW System Administration or from the State of Wisconsin to develop and implement new academic degree programs, delivery infrastructure, and/or credentials. All new degree programs

presented for authorization to the Board will be designed as program-revenue, cost-recovery programs. Tuition for the proposed academic degree programs will be set, as for all UW System institutions, by the Board of Regents. (These new programs will not be based on credits or semesters, therefore necessitating a different tuition structure.)

The American Council on Education finds that only 15% of undergraduates are "traditional" students: younger than 25, enrolled full time, and living in or near a university. ACE considers the remaining 85% of undergraduates "nontraditionals," or students who are not necessarily a good match to UW-Extension's traditional model of full-time residential education. Additional information regarding the attributes of nontraditional learners may be found at http://www.acenet.edu/news-room/Documents/Post-Traditional-Learners.pdf.

In Wisconsin alone, recent census data indicate that 21% (or over 800,000) of the state's adult citizens 25-years-old and over acquired some college credits. (http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_13_5YR_S1501&prodType=table). It is this nontraditional population that UW-Extension and other UW institutions seek to serve through options that combine full-time employment with credentialing and degree-completion opportunities. This market is served to some degree by existing programs within the UW System, including online programs in business and management. UW institutions and various systemwide initiatives over the past few years have targeted students seeking degree-completion in flexible formats. UW-Green Bay, UW-Oshkosh, UW-River Falls and others received Board approval for Bachelor of Applied Studies degree-completion programs directed at adult working students that make use of asynchronous online and hybrid delivery. There are also other flexible and customized formats offered by UW institutions, including prior learning assessment, adaptive technologies, self-paced courses, flexible start dates, personal learning pathways, test-outs, as well as flexible acceptance of transfer credits for learning outside the classroom and for professional experience (such as military service).

This nontraditional population is seeking educational models with a high degree of customization and personalization. (See Kamenetz, A. (2010). *DIY U: Edupunks, Edupreneurs, and the Coming Transformation of Higher Education*. Chelsea Green Publishing; Laitinen, A. (2012). *Cracking the Credit Hour*. New America Foundation.) Competency-based Education (CBE) is one such model, but is not the panacea. For example, the July 2015 Educational Advisory Board report, *Three Myths about Competency-Based Education: Separating Fact from Fiction*, reports that "CBE programs across the board report low levels of student demand for CBE, higher costs than anticipated, and deep challenges to student persistence and completion." The market research conducted by UW-Extension focuses on student demand for flexible online programs and identifies a large population in Wisconsin currently being served not by UW institutions but, rather, by the for-profit sector.

Using data from the U.S. Department of Education's Integrated Postsecondary Education Data System (IPEDS), UW-Extension found that UW institutions combined only awarded a total of 3% of bachelor's degrees and 2% of master's degrees in the areas of business and technology in 2011-12 and 2012-13 academic years and delivered online in a six-state region comprising Illinois, Indiana, Iowa, Michigan, Minnesota, and Wisconsin. UW System institutions do not focus on providing academic programs online. In contrast, for-profit institutions conferred 48% and 49% (bachelors and masters, respectively) of these same degrees.

According to the State of Wisconsin's Education Approval Board (EAB), about 23,000 Wisconsin residents enroll each year in a for-profit institution. This figure reflects 12-month Wisconsin resident enrollment in in-state or out-of-state for-profit institutions including non-degree programs (i.e., less than two-year in duration). Students who enroll in these programs pay tuition that can be as high as four times the average UW institution in-state tuition rate. Furthermore, a staggering 43% of students enrolled in for-profit institutions drop out within their first two years of enrollment. The full report may be found at http://eab.state.wi.us/resources/outcomes/outcomesreport2015.pdf.

In its request for degree-granting authority, UW-Extension seeks to serve these nontraditional students – currently enrolling in business and management programs at for-profit institutions – and seeks to improve services, retention, and degree completion rates for this student population.

Not only does it appear that a large segment of the nontraditional-age student population of students is generally not being well served by for-profit institutions of higher education, but the data also suggest that this potential student population is not accessing existing UW System degree programs and/or delivery options to meet their needs. This is not due to program quality – UW System programs are consistently ranked highly in regional and national rankings. It is also not because UW institutions do not offer enough face-to-face and online programs across the state – virtually every one of the UW System institutions offers business and management degrees, which are two degree areas in highest demand. According to UW-Extension analysis, the primary reason the UW is not serving more of the growing sector of nontraditional students is that the UW System does not attract adult students through a sufficient number of degree options in the flexible and customized formats that many adult students are expecting and accessing through the for-profit higher education sector.

The degrees that UW-Extension will develop are specifically aimed at "growing the pie," offering the types of degrees and delivery options that will attract nontraditional students who are not currently enrolled in any UW institution. UW-Extension will not target for recruitment students currently enrolled or served at another UW System institution also offering adult and nontraditional degree-credentialing options. In fact, UW-Extension will pursue and implement collaborative degrees and academic program partnerships that build on UW System collaborative opportunities and structures. Academic programs will be designed in collaboration between UW-Extension's non-term and competency-based education and operational systems and the faculty and curricular resources from across the UW System. In this way, UW-Extension will not duplicate resources currently found within the UW System, but will leverage existing academic resources located on UW System campuses alongside UW-Extension's unique capacity to offer non-term competency-based degree programs. Academic programs will be designed to complement, rather than compete with, existing programs on the UW campuses.

New UW-Extension academic degree programs and certificates will be designed to expand the market of students drawn to UW institutions, just as the UW Flexible Option Program has done. As of June 30, 2015, UW Flex has enrolled just under 500 students (unique headcount, no duplicates) since January 2014. On average, since program launch in 2014, 25 new students have enrolled each month and taken one or more subscriptions for direct asssessments. Partnering UW institutions currently report no decline in student enrollment in their brick-and-mortar equivalent

programs.

Operationally, new curricular and academic oversight practices, policies, and systems will be created within UW-Extension and incorporated into UW System shared governance practices. In addition, new practices, policies, and systems will be established to align competency-based oriented record keeping, financial aid, and other regulated processes with UW System, state, and federal reporting and accountability regulations. The specialized degrees to be developed are aimed at an audience that desires delivery of an educational program that fits into a 12-month, 24/7 world. Because UW-Extension operates fully on a 12-month calendar, the institution is positioned to build these new academic and reporting policies and practices expressly for nontraditional-age students.

Accreditation from the Higher Learning Commission (HLC) will be sought following final Board of Regents approval of the proposed select mission. HLC will require UW-Extension to specify the new academic approval and oversight policies and procedures that will govern these new credit-bearing credentials. UW-Extension leaders already have begun discussions with HLC.

Mission Revision Documents

Listed below for comparison are the current select mission of UW-Extension, a revised version with tracked changes, and a clean version of the mission as it would read in its final form.

Current Mission (revised September 10, 2004)

Through the University of Wisconsin-Extension, all Wisconsin people can access university resources and engage in lifelong learning, wherever they live and work.

Fundamental to this mission are UW-Extension's partnerships with the 26 UW campuses, the county and tribal governments, and other public and private organizations. Fulfilling the promise of the Wisconsin Idea, UW-Extension extends the boundaries of the university to the boundaries of the state and helps the university establish mutually beneficial connections with all its stakeholders.

For millions of Wisconsin individuals, families, businesses and communities, UW-Extension is the doorway to their public university, enabling them to:
- Achieve personal growth, professional success and organizational effectiveness through formal and informal learning;
- Address the changing needs of the state and society by applying relevant university research; and
- Gain greater access to educational, cultural and civic resources through the use of technologies.

In addition, UW-Extension supports the University of Wisconsin System mission by:
- Providing strong leadership for the university's statewide public service mission;
- Integrating a scholarly approach to outreach across many academic disciplines; and
- Addressing the specific educational needs of under-served disadvantaged and nontraditional students.

Revised Mission (with mark-up)

Through the University of Wisconsin-Extension, ~~all Wisconsin people~~ <u>people of Wisconsin and beyond</u> can access university resources and engage in ~~lifelong~~ learning, wherever they live and work.

Fundamental to this mission are UW-Extension's partnerships with the 26 UW campuses, the county and tribal governments, and other public and private organizations. Fulfilling the promise of the Wisconsin Idea, UW-Extension extends the boundaries of the university to the boundaries of the state and helps the university establish beneficial connections with all of its stakeholders.

~~For millions of Wisconsin individuals, families, businesses and communities, UW-Extension is the doorway to their public university, enabling them to:~~
<u>For Wisconsin individuals, families, businesses and communities, UW-Extension fulfills its mission by:</u>

- ~~Achieve~~ <u>Supporting</u> personal growth, professional success and organizational effectiveness through formal and informal learning.
- <u>Offering professionally-focused and cross-disciplinary competency-based certificates, associate degrees, and baccalaureate degrees in the area of business and management.</u>
- ~~Address~~ <u>Addressing</u> the changing needs of the state and society by <u>conducting,</u> applying<u>, and conveying</u> relevant university research.
- ~~Gain~~ <u>Building</u> greater access to educational, cultural and civic resources through the use of technologies.

In addition, UW-Extension supports the University of Wisconsin System mission by:

- Providing strong leadership for the university's statewide public service mission.
- Integrating a scholarly approach to outreach across many academic disciplines.
- Addressing the specific educational needs of under-served, disadvantaged and nontraditional students.

Revised Mission (clean)

Through the University of Wisconsin-Extension, people of Wisconsin and beyond can access university resources and engage in learning, wherever they live and work.

Fundamental to this mission are UW-Extension's partnerships with the 26 UW campuses, the county and tribal governments, and other public and private organizations. Fulfilling the promise of the Wisconsin Idea, UW-Extension extends the boundaries of the university to the boundaries of the state and helps the university establish beneficial connections with all of its stakeholders.

For Wisconsin individuals, families, businesses and communities, UW-Extension fulfills its mission by:
- Supporting personal growth, professional success and organizational effectiveness through formal and informal learning.
- Offering professionally-focused and cross-disciplinary competency-based certificates, associate

degrees, and baccalaureate degrees in the area of business and management.
- Addressing the changing needs of the state and society by conducting, applying, and conveying relevant university research.
- Building greater access to educational, cultural and civic resources through the use of technologies.

In addition, UW-Extension supports the University of Wisconsin System mission by:

- Providing strong leadership for the university's statewide public service mission.
- Integrating a scholarly approach to outreach across many academic disciplines.
- Addressing the specific educational needs of under-served, disadvantaged and nontraditional students.

Provost Aaron Brower
aaron.brower@uwex.edu

**Appendix Submitted by UW-Extension to Support its
Mission Change Proposal to the Board of Regents**

What problem are we addressing?

Higher education in Wisconsin and across the U.S. is rapidly changing, and it is under
increasing pressure to adjust to new competitors, new technologies, and new needs, all
within the context of reduced state funding. Internal challenges and external pressures
require new delivery models and new approaches to address unmet needs for quality
education in the state and beyond.

According to the American Council on Education, only 15% of undergraduates are
"traditional:" younger than 25, attending full time, and living on or near a university;
85% of undergraduates are better described as "nontraditional" students.[1] In Wisconsin
alone, recent census data indicate that 21% (or over 800,000 adults) of its citizens fit this
nontraditional description.[2]

Yet UW System institutions are not meeting the higher education needs of this growing
population (see Tables 1a and 1b below). Table 1a shows that within the six-state
Midwest region (Illinois, Indiana, Iowa, Michigan, Minnesota, and Wisconsin), all UW
institutions combined award only 9% of all bachelor's degrees and 5% of all master's
degrees. Table 1b focuses on those programs that returning, nontraditional students are
most likely to take – those programs that are offered both at a distance and face-to-face –
and shows that all UW institutions combined award only 7% of the bachelor's degrees
and 3% of the master's degrees.

The market share of UW institutions is even smaller if one looks at online business and
information technology degrees (see Table 2 below). In the same six-state Midwest
region, all UW institutions combine to award only 3% of these bachelor's degrees and
2% of these master's degrees. Importantly, business and technology represent 8 of the
top 10 occupations requiring a bachelor's degree that are projected to grow the most in
the next decade (see Table 3 below). In contrast, for-profit institutions award 48% of the
bachelor's degrees and 49% of the master's degrees in business and technology (Table 2).
*The State of Wisconsin's Education Approval Board reports that about 23,000 Wisconsin
residents enroll each year in a for-profit institution, paying tuition that can be as high as
four times the tuition at the UW. A staggering 43% of them drop out within their first 2
years.* [3] This growing population of nontraditional, higher-education-seeking students is
not well served by for-profit enrollment.

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[1] http://www.acenet.edu/news-room/Documents/Post-Traditional-Learners.pdf
[2] http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_13_5YR_S1501&p
    rodType=table
[3] http://eab.state.wi.us/resources/outcomes/outcomesreport2015.pdf

What is our solution?

The logical question to ask is why these tens of thousands of Wisconsin students are not enrolling in UW programs. It is not that UW programs are not high quality – UW programs are consistently ranked highly in regional and national rankings. It is also not that UW institutions do not offer enough programs all across the state – virtually every one of the UW institutions offers business and technology degrees, two degree areas in highest demand in the state. The reason the UW System is not serving more of the growing sector of nontraditional students is that the UW System does not offer degrees in the flexible and customized format adult students expect and need in a world connected by the internet.

A 2014 study by the higher education research firm Eduventures[4] found that the national nontraditional degree-completer market is 60 million, yet only 6 million (10%) are currently enrolled in undergraduate programs. To attract more of these students, Eduventures identified the following criteria:

- 60% of nontraditional students are driven by career advancement
- 70% are focused on lower tuition and fees
- 51% identified self-paced completion as very important
- 47% want and need credit for life/work experience through an exam
- 44% want accelerated completion options
- 43% want options to test out of courses for faster completion

This growing segment of nontraditional students lives in a 12-month, 24/7 world, and these students seek quality education that likewise is available on a 12-month, 24/7 basis. They seek educational models that are interactive and participatory, and they "mix and match" among multiple institutions. They seek education that is more like the multimodal connectivity of smart phones vs. land lines, the customization of streaming video vs. basic cable, and the interactive expanse of Google vs. encyclopedias.[5] The UW must find ways to bring high-quality, and high-demand, degrees to this segment of students on their terms – while maintaining the high quality for which the UW is famous. Operationally, the UW System must find ways to develop programs quickly to meet rapidly emerging needs, and the UW-System must find ways to quickly modify educational offerings (or disassemble them altogether) when needs change.

The UW Flexible Option[6] is one such program that is built specifically to address the needs for quality higher education for this segment of nontraditional students. As of June 30, 2015, UW Flex has enrolled just under 500 students (unique headcount), *with no decline in enrollments in the brick-and-mortar equivalent programs at the UW*

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[4] Closing the Degree Completion Gap: Challenges and Opportunities, Eduventures, May 2014.
[5] Kamenetz, A. *DIY U: Edupunks, Edupreneurs, and the Coming Transformation of Higher Education*. Chelsea Green Publishing, 2010.
  Laitinen, A. (2012). *Cracking the Credit Hour*. New America Foundation.
  https://www.newamerica.org/education-policy/cracking-the-credit-hour/
[6] flex.wisconsin.edu

institutions offering the degrees. In other words, <u>UW Flex is bringing new students into the UW</u>.

UW-Extension is asking for authority from the Board of Regents to offer degrees that are specifically aimed at the large segment of adult nontraditional students who need high-quality, professionally oriented degrees in alternative formats. These degrees will be offered in the competency-based format, and while UW-Extension will award the degrees, they will be offered collaboratively with other UW institutions, using similar partnership arrangements as the current successful collaborative degrees.[7] Specifically:

> **University of Wisconsin-Extension requests approval to offer professionally focused and cross-disciplinary competency-based credit certificates, associate degrees, and baccalaureate degrees in the area of business and management.**

The bachelor's degree in the area of business and management has consistently been the highest-demand degree level and area since the inception of the UW Flexible Option. In the future, we will seek authority from the regents to offer additional degree levels and curricular areas, as opportunities present themselves.

These new degrees will leverage the substantial investment that UW System and UW-Extension have already made in building new systems, processes, and staff that are required to operate non-term, collaborative, competency-based programs. These new systems and processes span the entire student lifecycle – from marketing, recruitment, and admissions; to registration, financial aid and bursar functions; to student record-keeping; to advising; to instructional design and learner-support systems. Non-term, CBE systems do not exist in any other UW institution.

We are not requesting additional financial resources from System or from the State of Wisconsin. All new degrees will be designed as program-revenue, cost-recovery programs.

New curricular and academic oversight practices, policies, and systems will be created within UW-Extension and incorporated into UW System shared governance practices. In addition, new practices, policies, and systems will be established that will align non-term, CBE-oriented record-keeping, financial aid, and other regulated processes with UW System and federal reporting regulations. Because UW-Extension operates fully on a 12-month calendar, our institution is ideally positioned to build these new academic and reporting policies and practices expressly for nontraditional students.

The UW-Extension degrees will be designed explicitly to complement, rather than compete with, existing programs on the UW System campuses. New degrees and certificates will be designed to expand the market of students drawn to UW institutions. The real competition for the students we seek is not from within the UW System but rather from in-state and out-of-state for-profit and not-for-profit institutions that are increasingly targeting Wisconsin students. Again, about 23,000 Wisconsin residents are

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[7] http://ce.uwex.edu/campus-partnerships/

currently enrolled in for-profit institutions. While some of these institutions are accredited and have a vital role to play in higher education, others are less credible and take advantage of students and financial aid systems without providing a viable set of skills or credentials – and in most cases, these schools are more expensive than the UW.

The new collaborative degrees to be created take advantage of "systemness" across the UW. There will be collaboration between UW-Extension's non-term and CBE systems, and faculty and curricular resources from across the UW. In this way, we will not duplicate resources within the UW System, but we will leverage existing academic resources at traditional campuses within the system along with UW-Extension's unique capacity to offer non-term CBE degrees to "grow the pie" for students, so they, too, have access to a high-quality UW education.

How will the new UW-Extension degrees operate?

1. We seek authority to offer high-demand, professionally oriented degrees that are cross-disciplinary, to be offered only in the competency-based format, and designed to operate using cost-recovery program revenue.

   a. UW-Extension degrees will be distinct within the UW System due to the methods used to deliver them. That is, while many UW institutions offer business and management degrees (including online), a UW-Extension business and management degree will be offered in a 12-month, CBE format for the nontraditional student who either does not want, or cannot take, what is currently offered throughout the UW System.

   b. Only degrees that are in high demand will be offered, and we will propose degrees only after thorough market research and analysis is undertaken.

   c. UW-Extension degrees will be designed only as cost-recovery programs; in other words, the programs must break even entirely through enrollment revenue.

   d. UW-Extension degrees will be priced competitively.

   e. The resources for start-up and development of new degrees will come from existing UW-Extension resources. We are not seeking additional financial support from the UW System or from the State of Wisconsin.

   f. *In this mission change, we are only seeking permission to offer credit-bearing credentials, up to the bachelor's degree, in the area of business & management.* This has consistently been the highest-demand degree level and area since the inception of the UW Flexible Option. We may seek authority in the future to offer additional degree levels and curricular areas, as opportunities present themselves.

2. UW-Extension degrees will be offered in collaboration with existing UW institutions to the fullest extent possible.

   a. The market for nontraditional students is very competitive – and for competitive reasons alone, we seek to maximize the UW "brand" by leveraging our existing high-quality faculty, staff, and curriculum.

   b. Our existing collaborative degrees[8] utilize faculty from across the UW System, bringing them together in "virtual departments" that will then develop the curriculum to support the program. Faculty are supported by the instructional design and D2L teams that exist within UW-Extension's Division of Continuing Education, Outreach, and E-Learning (CEOEL).

   c. In existing collaborative degrees, the partner UW institutions offer the degree. In the new model, we intend to use similar collaborative arrangements, with the primary difference that UW-Extension will offer the degree.

   d. We envision the following steps as we explore new degree opportunities:

      i. UW-Extension engages in market research and analysis to determine demand for a particular degree (area and level) from our intended student audience. We further will explore the degree opportunities that already exist for those students, including what exists across the UW System and from other institutions in the state and beyond.

      ii. If we determine that a new UW System CBE-type program is viable in this arena, we will simultaneously pursue the development of a "traditional" collaborative degree with our UW partners (i.e., one that would look very much like our existing collaborative degrees) *and* evaluate the viability of offering the degree collaboratively using UW-Extension's new degree-granting authority.

      Viability criteria will focus on time and cost to develop the new degree, comparing the two collaborative models. This includes the time and costs on faculty workload (which should be similar), on academic planning and oversight (which will differ), on operational infrastructure (which will be different), and on accreditation (if appropriate, which will differ as well).

      iii. These comparative analyses will determine which path we take towards degree development.

      iv. This process will be transparent to our UW partners and to UW System administration.

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[8] See http://ce.uwex.edu/campus-partnerships/

3. Leveraging existing faculty from across the UW System will require sustainable workload and revenue-sharing agreements. That is, faculty engaged in collaborative degrees must have workloads that are sustainable, and supportive, of their home institution's primary mission. Revenue sharing must be agreeable and fair to all parties.

   a. This is true for our existing collaborative degrees, including for UW Flex, and those arrangements can serve as the model for new collaborations that are developed.

   b. Additionally, and as we currently do with our existing UW Flex partnerships, we will negotiate with the partner institution's central administration as opposed to seeking direct arrangements with individual schools, colleges, departments, faculty or staff. It will be the responsibility of the partner institutions to negotiate their own internal arrangements, consistent with their institutional culture.

Table 1a
**2012 & 2013 Degrees Conferred among Midwest Higher Ed Institutions Offering
Bachelor's or Master's Programs of Any Kind and in Any Format[9]**

| Institutional Sector | Degrees Conferred in 2012 and 2013 | | | |
| | Bachelor's Degree | | Master's Degree | |
	Count	Percentage	Count	Percentage
Private for-profit, 4-year or above	67,553	12%	52,470	21%
Private not-for-profit, 4-year or above	179,085	31%	92,945	37%
Public 4-year or above (less UW)	284,396	49%	93,054	37%
UW 4-year institutions	53,117	9%	11,612	5%
Total	*584,151*	*100%*	*250,081*	*100%*

Table 1b
**2012 & 2013 Degrees Conferred among Midwest Higher Ed Institutions Offering
Bachelor's or Master's Programs Both Online or Face-to-Face[10]**

| Institutional Sector | Degrees Conferred in 2012 and 2013 | | | |
| | Bachelor's Degree | | Master's Degree | |
	Count	Percentage	Count	Percentage
Private for-profit, 4-year or above	60,303	28%	51,252	37%
Private not-for-profit, 4-year or above	50,084	23%	42,792	30%
Public 4-year or above (less UW)	92,183	43%	42,494	30%
UW 4-year institutions	14,095	7%	3,781	3%
Total	*216,665*	*100%*	*140,319*	*100%*

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[9] Source: NCES IPEDS, 2013 and 2012 datasets; all CIP codes for degrees delivered using any delivery method from all Midwest region institutions (IL, IN, IA, MI, MN, WI)
[10] Source: NCES IPEDS, 2013 and 2012 datasets; all CIP codes for degrees delivered both in "brick and mortar" and online from all Midwest region institutions (IL, IN, IA, MI, MN, WI)

Table 2
6-Digit CIP Degrees in CIP 52 (Business) & CIP 11 (Technology) Conferred in 2012 and 2013 Conferred among Midwest Higher Ed Institutions Offering <u>Online</u> Bachelor's or Master's Programs[11]

Institutional Sector	Degrees Conferred in 2012 and 2013			
	Bachelor's Degree		Master's Degree	
	Count	Percentage	Count	Percentage
Private for-profit, 4-year or above	25,705	48%	19,126	49%
Private not-for-profit, 4-year or above	17,363	32%	10,935	28%
Public 4-year or above (less UW)	9,257	17%	8,030	21%
UW 4-year institutions	1,698	3%	813	2%
Total	**54,023**	**100%**	**38,904**	**100%**

Table 3
Top 10 occupations in Wisconsin with highest predicted job growth that require a bachelor's degree, 2012 to 2022[12]

Rank	Description	2012 Jobs	2022 Jobs	Expected Increase*	Ave. Hourly	Regional Completions
1	Registered Nurses (Bachelor's and Associates)	55,348	64,618	9,270	$30.20	4,478
2	General and Operations Managers	30,672	36,132	5,460	$41.78	6,017
3	Software Developers, Applications	9,794	12,767	2,973	$36.78	638
4	Accountants and Auditors	20,129	22,890	2,761	$27.91	2,300
5	Computer Systems Analysts	9,487	12,099	2,612	$34.60	1,360
6	Market Research Analysts and Marketing Specialists	7,506	9,839	2,333	$25.08	1,603
7	Elementary School Teachers, Except Special Education	26,440	28,394	1,954	$27.06	2,156
8	Management Analysts	11,125	12,956	1,831	$32.23	5,689
9	Software Developers, Systems Software	2,965	4,505	1,540	$40.51	711
10	Computer and Information Systems Managers	5,884	7,137	1,253	$49.06	2,229

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[11] Source: NCES IPEDS, 2013 and 2012 datasets; all degrees with 6-digit CIP Code in categories CIP 52 (Business) and CIP 11 (Technology) delivered <u>online</u> from all Midwest region institutions (IL, IN, IA, MI, MN, WI)

[12] Source: Bureau of Labor Statistics' Quarterly Census of Employment and Wages, accessed April 2014. Uses QCEW Employees, Non-QCEW Employees & Self-Employed – EMSI 2013.4 Class of Worker.
*Expected Increase takes occupational mix, national growth, and competitive effects into account.

Regina Millner, President, UW System Board of Regents
Ray Cross, President, UW System
David Ward, Senior Vice President, UW System
1700 Van Hise Hall
1220 Linden Dr.
Madison, WI 53706

August 15, 2015

Dear Regent President Millner, President Cross, and Senior Vice President Ward,

On behalf of UW-Extension, Provost Brower and I are proud to submit materials to formally request from the UW System Board of Regents a change of its select mission. The rationale and the content of the proposed mission change will be reviewed with the Education Committee of the UW System Board of Regents at its September meeting.   UW-Extension will review the comments received and hold a public hearing requesting input from constituents and stakeholders prior to the second reading by the Education Committee.

We request a mission change that will allow UW-Extension to award credit-bearing certificates, associate's and bachelor's degrees in the academic disciplines of business and management.

We seek degree-granting authority to allow UW-Extension to offer only specific types of credit-bearing credentials that are professionally oriented and competency based, delivered primarily online and in formats specifically for nontraditional and returning adult students. These credentials are intended to "grow the pie" of enrollments into the UW – leveraging successes and infrastructure of the UW Flexible Option to provide quality education to students who are not currently served by UW System institutions.

The attached documents include UW-Extension's current mission, the proposed mission change language (with changes in red), and an Executive Summary containing the major points for this change. Note that UW-Extension's shared governance groups will vote on the new mission language on September 1, 2015. Note, too, that they already endorsed a prior, expanded, language of the proposed mission change on June 3, 2015. The prior language was subsequently reviewed by UW System Administration, resulting in the current, and narrower, mission-change request.

Thank you for your assistance and we look forward to working with you.

Sincerely,

Cathy Sandeen
Chancellor
UW-Extension & UW Colleges

Aaron Brower
Provost & Vice Chancellor
UW-Extension

EDUCATION COMMITTEE

Resolution I.1.h.

That, upon recommendation of the President of the University of
Wisconsin System, the Board of Regents approves the re-
appointment of Dr. James P. Bennett and the appointment of Dr.
David Mladenoff, for terms effective immediately, and ending July
1, 2018, as University of Wisconsin System representatives to the
Natural Areas Preservation Council.

UW SYSTEM APPOINTMENTS TO THE
NATURAL AREAS PRESERVATION COUNCIL

BACKGROUND

Established by statute in 1951, the Natural Areas Preservation Council (NAPC) advises the Wisconsin Department of Natural Resources' State Natural Areas Program on issues relating to the establishment, protection, and management of Wisconsin's natural areas. It is composed of 11 members with backgrounds in conservation biology, botany, zoology, ecology, and geology. Council members are appointed for three-year terms by their respective appointing institutions. The UW System makes four of these appointments, which must be approved by the Board of Regents. The UW System is one of five appointing institutions; others are the Wisconsin Department of Natural Resources; the Wisconsin Academy of Sciences, Arts & Letters; the Wisconsin Department of Public Instruction; and the Milwaukee Public Museum.

Dr. James P. Bennett is currently the council chair and is willing to serve for another three-year term. Dr. Bennett is editor- in-chief *of Science of the Total Environment* and Adjunct Professor of Botany in the Department of Botany at the University of Wisconsin-Madison. He has been on the council since June 2009, and his area of study is the ecology and classification of lichens. Among the council's and the chair's accomplishments since 2013 are the following:

- Instituted SNA Program Initiatives with the Bureau of Natural Heritage Conservation to engage council members as champions with bureau staff, in such areas as volunteer stewards, site assessments, scientific research, role definitions, and marketing and outreach.
- Initiated reviews of old NAPC Guidelines and drafting new ones.
- Reviewed NR 40, the Department of Natural Resources (DNR) Invasive Species rules.
- Collaborated with the DNR on the 10-year update of the Wildlife Action Plan.

Dr. David Mladenoff replaces Dr. Patrick Robinson, who had served on the council since 2009, was re-appointed to the NAPC in October 2013, and has now resigned from the council. Dr. Mladenoff is the Beers-Bascom Professor in Conversation in the Department of Forest and Wildlife Ecology at Russell Labs located at the UW-Madison. He will contribute to the council his expertise in forest and landscape ecology. From 2001-2005, he was the editor-in-chief of *Landscape Ecology* and is an honorary professor of the Chinese Academy of Science.

If approved, Dr. Bennett's and Dr. Mladenoff's terms will expire on July 1, 2018. Attached in Appendices A and B are their short-form curricula vitae.

REQUESTED ACTION

Approval of Resolution I.1.h., authorizing the re-appointment of Dr. James P. Bennett and the appointment of Dr. David Mladenoff as University of Wisconsin System representatives to the Natural Areas Preservation Council.

JAMES P. BENNETT
University of Wisconsin-Madison
Department of Botany
Email: *jpbennet@wisc.edu*

SUMMARY

> More than 40 years of experience in BOTANY, STATISTICS and AIR POLLUTION, including teaching, research, program management, and supervision.

EDUCATION

1975	PhD	University of British Columbia	Plant Science
1969	MA	University of Michigan	Botany, Conservation
1968	BA	Washington University	Botany
1963		University of Chicago	Russian

Academic Awards
   1974   Research Fellowship
           International Agricultural Center
           Wageningen, Netherlands

Specialized Training
   1986   Government Contract & Procurement Regulations
   1982   Government Contracting for Scientists
   1981   Clean Air Act PSD Permitting

EMPLOYMENT AND POST-RETIREMENT

2012-Present: Adjunct Professor
                 Department of Botany
                 University of Wisconsin
                 430 Lincoln Dr
                 Madison, WI 53706

2012-Present: Editor in Chief
                     Science of the Total Environment

2013-Present: Board Member
                     Wisconsin Natural Resources Foundation

Concurrent and Former Positions

1990-2011:   Research Ecologist & Adjunct Professor
              Biological Resources Division, U. S. Geological Survey
              Institute for Environmental Studies
              University of Wisconsin
              445 Henry Mall
              Madison, WI 53706

2003–2011:   Associate Editor
                  Science of the Total Environment
                  Elsevier, Amsterdam, Netherlands

2001-Present: Member

Editorial Board
Ecological Indicators
Elsevier, Amsterdam, Netherlands

2009–Present: Secretary/Treasurer
American Bryological and Lichenological Society

2000-2009:   Business Manager
American Bryological and Lichenological Society

2009–Present: Councilor
Wisconsin Natural Areas Preservation Council

2008–2009:   Treasurer
Botanical Club of Wisconsin

1998-2008:   Vice President
Botanical Club of Wisconsin

1988-Present: Member
Editorial Board
Environmental and Experimental Botany
Elsevier, Amsterdam, Netherlands

1996-Present: Member
Editorial Board
Physiology and Molecular Biology of Plants, An International Journal of Plant Research
Rohilkhand University, Bareilly, India

1994-Present: Member
Grants and Awards Committee
Ecological Society of America

1996-1997:   Member
Ad Hoc Committee on the World Wide Web
Division of Cooperative Research
National Biological Service

1986-1990:   Member
NAPAP Terrestrial Effects Task Group V

1985-1991:   Chairman
Natural History Collections Committee
National Park Service

1981-1990:   Ecologist
Air Quality Division
National Park Service
P. O. Box 25287
Denver, Colorado

1980-1981:   Ecologist
National Power Plant Team
U.S. Fish & Wildlife Service
2929 Plymouth Rd.
Ann Arbor, Michigan

| 1975-1980: | Assistant Professor
Department of Vegetable Crops
University of California
Davis, California |
| --- | --- |
| 1971-1975: | Research & Teaching Assistant
Department of Plant Science
University of British Columbia
Vancouver, BC, Canada |
| 1970-1971: | Instructor
School of Architecture
Pratt Institute
Brooklyn, New York |
| 1969-1970: | Senior Scientist
Hudson River Valley Commission
Tarrytown, New York |
| 1967-1969: | Research & Teaching Assistant
Department of Botany
University of Michigan
Ann Arbor, Michigan |
| 1968: | Teaching Assistant
University of Montana Biological Station
Flathead Lake, Montana |
| 1965-1967: | Research & Teaching Assistant
Department of Botany
Washington University
St. Louis, Missouri |

PUBLICATIONS

More than 85 publications in refereed journals and more than 75 other types of publications. Lists available on request.

PROFESSIONAL SOCIETIES

American Bryological and Lichenological Society
Ecological Society of America
Natural Areas Association
Botanical Club of Wisconsin

David Mladenoff, Ph.D.

Current Position

Beers-Bascom Professor in Conservation in the Department of Forest and Wildlife Ecology at Russell Labs, UW-Madison.

Expertise

Forest Ecology, Landscape Ecology

Education

Degree	Institution	Major Field	Period/Granted
B.A.	UW-Madison	Anthropology/Psychology	1969-1973
M.S.	UW-Madison	Forest Ecology	1977-1979
Ph.D.	UW-Madison	Forest Ecology	1982-1985

Professional Experience

Institution	Title	Specialization	Years
The Nature Conservancy	Program Coordinator	Ecological Invent	1979-1982
The Nature Conservancy	Stewardship Director	Ecology Research & Mgt.	1985-1988
Univ. of MN	Research Associate	Forest Ecology Research	1988-1994
WI DNR	Forest Ecologist	Forest Ecology Research	1994-1996
UW-Madison	Assistant Professor	Forest Ecology	1994-1998
UW-Madison	Associate Professor	Forest Ecology	1998-2003
UW-Madison	Beers-Bascom Professor of Conservation	Forest Ecology	2005-2010
UW-Madison	Professor	Forest Ecology	2003-pre

Honors and Awards

UW Kellet Mid-career Award, 2010-2015.
Beers-Bascom Professor in Conservation, UW-Madison, May 2006-2010.
Board of Senior Advisors, Landscape Ecology, 2006-present.
Romnes Faculty Award, University of Wisconsin-Madison, 2001.
Pound CALS Research Award, 1997.
Editor-in-Chief, Landscape Ecology, 2001-2005.
Honorary Professor, Chinese Academy of Science, 1999-present.
College of Reviewers, Canadian University Research Chairs Program, 2005-present.
Member, MacArthur Fellowships Nominating Committee, 2007-
Nominee for President, US Landscape Ecology Association, 2005, 2006. (declined)
Grad Student Dissertation Award to V. C. Radeloff. IUFRO International Congress, Sept. 2000.
Member, Governor's Task Force on Climate Change, Ag and Forests Work Group, 2007-present.
Member, Governor's Council on Forestry, Biomass Fuels Committee, 2007-present.
Member, Pacific Forest Trust, Forest Carbon Advisory Committee, 2007-present.
Member, Clean Wisconsin Climate Change Advisory Group, 2007-present.

Society/Professional Memberships

Ecological Society of America
American Institute of Biological Science
Society for Conservation Biology
International Association for Landscape
Society of American Foresters
American Association for the Advancement of Science

Selected Publications

Burton, J.I., D.J. Mladenoff, M.K. Clayton, and J.A. Forrester. 2011. The roles of environmental filtering and colonization in the fine-scale spatial patterning of ground-layer plant communities in north temperate deciduous forests. Journal of Ecology 99: 764-776.

Forrester, J.A., D.J. Mladenoff, S.T. Gower, and J.L. Stoffel. 2012. Interactions of temperature and moisture with respiration from coarse woody debris in experimental forest canopy gaps. Forest Ecology & Management 265: 124-132.

Liu, F., D.J. Mladenoff, N.S. Keuler, and L.S. Moore. 2011. Broadscale variability in tree data of the historical Public Land Survey and its consequences for ecological studies. Ecological Monographs 81(2): 259-275.

Muss, J.D., D.J. Mladenoff, and P.A. Townsend. 2011. A pseudo-waveform technique to assess forest structure using discrete lidar data. Remote Sensing of Environment 115: 824-835.

Scheller, R.M., D. Hua, P.V. Bolstad, R.A. Birdsey, and D.J. Mladenoff. 2011. The effects of forest harvest intensity in combination with wind disturbance on carbon dynamics in Lake States Mesic Forests. Ecological Modelling 222: 144-153.

Steen-Adams, M.M., D.J. Mladenoff, N.E. Langston, F. Liu, and J. Zhu. 2011. Influence of biophysical factors and differences in Ojibwe reservation versus Euro-American social histories on forest landscape change in northern Wisconsin, USA. Landscape Ecology 26(8): 1165-1178.