I.1. Education Committee

10:45 a.m. Education Committee Thursday, August 21, 2014
UW-Oshkosh
Sodexo Grand Ballroom AB
Oshkosh, WI 54901

a. Consent Agenda:

1. Approval of the Minutes of the June 5, 2014, Meeting of the Education Committee;

2. UW-Madison: Approval of an M.S. in Biomedical Informatics; and
   [Resolution I.1.a.(2)]

3. Announcement of the adjusted proffer from the Trustees of the William F. Vilas Trust Estate for support of scholarships, fellowships, professorships, and special programs in arts and humanities, social sciences, biological sciences, physical sciences, and music at UW-Madison.
   [Resolution I.1.a.(3)]

b. UW-Superior: First Reading of the Proposed Mission Revision.

c. UW-Stout: Approval of an Addendum to the Mission.
   [Resolution I.1.c]

   [Resolution I.1.d]

e. UW-Oshkosh Presentation, “Developing and Delivering Academic Programs that Address the Needs of the Greater Northeastern Wisconsin Community,” - Lane Earns, Provost and Vice Chancellor for Academic Affairs.

f. Report of the Senior Vice President:

1. Remedial/Developmental Education
   a. Action Plans

2. Academic and Student Affairs Updates from the UW Institutions.
Program Authorization (Implementation)
M.S. in Biomedical Informatics at
UW-Madison

EDUCATION COMMITTEE

Resolution I.1.a.(2)

That, upon the recommendation of the Chancellor of the University of Wisconsin-Madison and the President of the University of Wisconsin System, the Chancellor be authorized to implement the M.S. in Biomedical Informatics.
BACKGROUND

This proposal is presented in accordance with the procedures outlined in Academic Planning and Program Review policy (ACIS 1.0, Revised August 2012, available at http://www.uwsa.edu/acss/planning/). The new program proposal for a Master of Science in Biomedical Informatics at the University of Wisconsin-Madison is presented to the Board of Regents for consideration. The institution has submitted the authorization document and a letter of institutional commitment from the university’s Provost.

REQUESTED ACTION

Approval of Resolution I.1.a.(2), authorizing the implementation of the Master of Science in Biomedical Informatics degree program at the University of Wisconsin-Madison.

DISCUSSION

The proposed Master of Science (M.S.) in Biomedical Informatics is intended to serve baccalaureate-prepared students in data sciences, as well as health professionals and clinicians. Students will learn how to effectively use biomedical data in biomedical research and in the delivery of health care. The 31-credit program will cover core concepts in biomedical informatics, as well as allow for concentrated coursework in both methodology and application. The goal of the program is to prepare graduates to (1) understand and apply key concepts and methodologies from computer science and statistics, (2) demonstrate knowledge of biological, biomedical, and population health concepts and problems, and (3) contribute to the solutions of the central computational problems in biomedicine, using methods from computer science, statistics, and engineering.

RECOMMENDATION

The University of Wisconsin System recommends approval of Resolution I.1.a.(2), authorizing the implementation of the Master of Science in Biomedical Informatics at the University of Wisconsin-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
MASTER OF SCIENCE DEGREE IN BIOMEDICAL INFORMATICS
AT UW-MADISON
 PREPARED BY UW-MADISON

ABSTRACT

The University of Wisconsin-Madison proposes to establish a Master of Science in Biomedical Informatics (M.S.-B.M.I.). Biomedical informatics is the interdisciplinary field that encompasses the study and pursuit of the effective uses of biomedical data, information, and knowledge for scientific inquiry, problem-solving, and decision-making, driven by efforts to improve human health. Biomedical informatics investigates and supports reasoning, modeling, simulation, experimentation, and translation across the spectrum, from molecules to individuals to populations. Potential students include both baccalaureate-prepared students in data sciences, as well as health professionals and clinicians (e.g., students possessing an M.D., Pharm.D. or a D.N.P.). Establishing the program will allow students to learn how to effectively use biomedical data, information, and knowledge in biomedical research and in the delivery of health care. The proposed program focuses on key concepts and methodologies at the intersection of computer science, statistics, and the biomedical sciences. The 31-credit program will cover core concepts in biomedical informatics, as well as allow for concentrated coursework in both methodology and application. The goal of the program is to prepare graduates to (1) understand and apply key concepts and methodologies from computer science and statistics; (2) demonstrate knowledge of biological, biomedical, and population health concepts and problems; and (3) contribute to the solutions of the central computational problems in biomedicine, using methods from computer science, statistics, and engineering.

PROGRAM IDENTIFICATION

Institution Name
University of Wisconsin–Madison

Title of Proposed Program
Biomedical Informatics

Degree/Major Designation
Master of Science in Biomedical Informatics

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

Projected Enrollments by Year Five
As shown in Table 1, enrollment of five new students per year is anticipated, for a total of 20-25 in the first five years of the program, and nine enrollees on average per year. Expansion in enrollment will be considered as the program evolves over time; perhaps up to 15-18 students at a given time, as with similar programs at peer institutions (e.g., Columbia University and the University of Utah).
Table 1: Projected Enrollment

<table>
<thead>
<tr>
<th></th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Student Headcount</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Continuing Student Headcount</td>
<td>0</td>
<td>4*</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

* The data presented in this table assume that there will be an attrition rate of one student per year.

**Tuition Structure**

Students enrolled in the program will pay standard graduate tuition, according to the rates approved by the Board of Regents. For the current 2013-14 academic year, the residential tuition and segregated fees total $5928.80 per semester for a full-time student who is enrolled in 8-12 or more credits per term. Of this amount, $565.00 is attributable to segregated fees, and the remainder is tuition.

**Department or Functional Equivalent**

The proposed program will reside in the Department of Biostatistics and Medical Informatics.

**College, School, or Functional Equivalent**

The proposed program will be housed within the School of Medicine and Public Health.

**Proposed Date of Implementation**

Fall 2015.

**INTRODUCTION**

**Rationale and Relation to Mission**

In 1997, the Department of Biostatistics at UW-Madison became the Department of Biostatistics and Medical Informatics (“the department”). With that change, the department embarked on a long-term mission to develop scholarly programs in biomedical informatics in the School of Medicine (now known as the School of Medicine and Public Health; SMPH). The programs were initially focused on bioinformatics and medical image analysis, with a strong methodological emphasis on machine learning. Activities were closely tied to the Department of Computer Sciences (CS), through which many current graduate students are trained. More recently, research in the department has expanded to embrace clinical informatics and population/public health informatics. Faculty have been enormously successful at establishing robust and rich research and teaching programs, and are now in a position to lead a new graduate program.

The program will be in broad support of the University's research mission and of the University’s mission to strengthen interdisciplinary studies and to pioneer new fields of learning. Programs in biomedical informatics will be instrumental in advancing interdisciplinary biomedical research and practice in maximal service to the needs of society. As biomedical data are proliferating, rigorous and broadly applicable quantitative approaches to handling such data play a unifying and integrating force in interdisciplinary science.

The research and teaching program in biomedical informatics has over the past 16 years evolved into a mature and nationally-recognized research program. The department has 34
faculty who can contribute to training in informatics, either through teaching or mentored
research. More than 20 students are currently training in biomedical informatics through existing
programs with these faculty. Existing training in informatics through the Department of
Biostatistics and Medical Informatics involves ten courses, including seminars and workshops.
Additional courses are in development. The department has all of the elements for an effective
program, and the proposed M.S.-B.M.I. fills a current gap and offers a cohesive system for
recruiting and training new researchers and professionals in this area.

Need as Suggested by Current Student Demand

Audiences for training in biomedical informatics now extend beyond computer sciences
and industrial engineering to include individuals trained as clinicians and biomedical scientists.
There are many individuals in these areas who are in need of training in biomedical informatics,
but who do not have the interest in pursuing training in computer sciences and in industrial and
systems engineering. Between five and ten individuals contact the department about such
training each semester. These individuals are in need of a more direct means of learning
computational methods that they can apply in the biomedical world.

In addition, there is an intense and growing need for graduate students to support the
faculty's increasingly broad and complex research programs. An M.S. program will give the
department and the SMPH a stronger competitive position for recruiting graduate students as
compared to other major research universities that offer programs specifically in bioinformatics,
computational biology, and/or biomedical informatics.

Need as Suggested By Market Demand

Nationwide, the biomedical research community is struggling to manage, share, analyze,
and fully exploit expanding quantities of data in the biomedical sciences. The need for a
workforce capable of innovating, implementing, and using methods from biomedical informatics
is widely recognized. According to the Bureau of Labor Statistics, employment of statisticians, a
closely related occupation, is projected to grow 27 percent from 2012 to 2022, much faster than
the average for all occupations. Growth is expected to result from more widespread use of
statistical analysis to make informed business, healthcare, and policy decisions. Employment of
computer and information research scientists is projected to grow 15 percent from 2012 to 2022,
farther than the average for all occupations. Market demand data are not currently available
specifically for bioinformatics professionals because this academic area is an emerging field.

The demand for training specifically in bioinformatics has been driven by several factors:

- High-throughput biological experimentation (e.g., next-generation sequencing,
  microarrays, and single nucleotide polymorphism arrays) has transformed biology into a
data-intensive science.
- Biomedical studies and clinical decision-making are integrating and making inferences
  with varied types of data (genotypes, molecular profiles, images, electronic health
  records, and population-based data), heightening the need for sophisticated computational
  methods.
- Incentives, such as those specified by the U.S. Health Information Technology for
  Economic and Clinical Health (HITECH) Act, are accelerating the adoption and
broadening functionality of electronic health records, including application in the important area of comparative effectiveness research.

The National Institutes for Health (NIH) has clearly identified biomedical informatics as a priority area for increased training in order for clinical and translational research to take full advantage of the tremendous output of scientific and clinical data. In a recent report, the Data and Informatics Working Group of the NIH Director's Advisory Committee made a specific recommendation to "build capacity by training the work force in the relevant quantitative sciences such as bioinformatics, biomathematics, biostatistics and clinical informatics." (acd.od.nih.gov/Data and Informatics Working Group Report.PDF). Following this report, the NIH formally recognized the need to expand the quantitative sciences workforce and methodology through its "Big Data to Knowledge" (BD2K) initiative (http://bd2k.nih.gov), which has called for innovative new research and training programs focused on the management and analysis of biomedical data.

In the past several years, the use of electronic medical records in partner clinical organizations has become widespread. Recently, the SMPH hired a Chief Research Information Officer to spearhead the development of a clinical data warehouse, among other pieces of computational infrastructure. As these resources grow, training in biomedical informatics will be increasingly critical to the SMPH's interest in leveraging them. The Institute for Clinical and Translational Research (ICTR) at the University of Wisconsin-Madison has embraced biomedical informatics and has made its growth and development at the SMPH one of its central areas of emphasis. ICTR is highly supportive of a formal graduate program in biomedical informatics at UW-Madison.

Also acknowledging this new discipline and the need for a specialized workforce, the American Board of Medical Specialties has recently added Clinical Informatics as a certified subspecialty for physicians. In addition, the Accreditation Council for Graduate Medical Education has released draft requirements for Clinical Informatics fellowship subspecialty programs, which will comprise one of the requirements for physicians who want to take the subspecialty board exam. It is likely that fellows will be taking selected courses in the proposed program or completing the entire M.S.-B.M.I. program in order to prepare for the board examination. There is substantial interest in receiving board certification. Over 400 physicians passed the board certification exam last year when it was first offered. This is only a small subset of those who are currently seeking training in informatics.

DESCRIPTION OF PROGRAM

General Structure of the Program
Institutional Program Array

The proposed program relates to, and contrasts with, four existing programs on campus: those in Biostatistics, in Industrial and Systems Engineering, in Clinical Investigation, and in Computer Sciences.

M.S.- and Ph.D.-named options in Biostatistics are provided through a close relationship between the Department of Biostatistics and Medical Informatics and the Department of
Statistics. The proposed program will emphasize statistical reasoning but will not ask the students to pursue work in statistical theory or in development or application of modeling methods. Rather, it will emphasize approaches to biomedical sciences based more on data structures and algorithms from computer science. Hence, relative to (bio)statistics, the proposed program represents an alternative set of quantitative methodologies for contributing to and advancing biomedical science.

The relationship and contrast to industrial and systems engineering lies along the axis running between the invention of new systems, processes, and devices for clinical care to the development of new algorithms and computational approaches for biomedical and clinical research. The proposed program emphasizes these newly developed approaches and the connections to research design. It also provides greater emphasis on bioinformatics and image analysis. The Department of Biostatistics and Medical Informatics has a strong relationship to the Department of Industrial and Systems Engineering, and as can be seen, the proposed curriculum includes shared courses with this department, courses for which both departments are full partners in staffing and maintaining.

The M.S. program in Clinical Investigation shares some overlap with the proposed program in intended audience and in its emphasis on quantitative research methodologies. It completely lacks a formal informatics component, however, and such material could only be taken in a limited way as a set of electives.

Finally, for most students, the M.S. program in Computer Sciences will not be sufficiently concentrated in the arenas of biomedical or clinical science to move them from basic interest and background knowledge to functional skills in biomedical or clinical informatics. For the typical clinician, a program is needed that builds on his/her existing clinical training and knowledge, while at the same time recognizing that the quantitative background going into the program may not be as strong as that of the typical graduate student in computer sciences or a similar program. For the individual with a stronger undergraduate background in computer sciences, a program is needed that provides appropriate background in biomedical problems, processes, and systems so that technical and methodological material is appropriately contextualized. The proposed program brings all these needs together to provide clinicians, and those with undergraduate degrees in computer sciences and other similar areas, with the training needed to contribute informatics expertise both to biomedical research and to clinical care and processes.

Other Programs in the University of Wisconsin System

The University of Wisconsin-Milwaukee is the only UW System institution that has a closely related program – a Master of Science in Health Care Informatics. This program focuses on systems analysis and design, database and project management, decision support, network design, and health care applications and procurement. This valuable and well-run program is designed for individuals who seek careers in health care systems implementation and delivery, managed-care organizations, and as health care system vendors. In contrast to the UW-Milwaukee program, the proposed program places greater emphasis on biomedical informatics as a body of research methodology that may or may not be clinical, and that embraces the imaging, public health, and bioinformatics aspects of the field.
Collaborative Nature of the Program

The M.S. in Biomedical Informatics is inherently collaborative at UW-Madison due to its interdisciplinary nature. The program curriculum is a convergence of a number of different disciplines: computer science, industrial and systems engineering, biostatistics, bioinformatics, and health informatics. In addition, research conducted within the field of informatics is also inherently collaborative. Studies involve data from research in the fields of biology, biomedicine, and/or public health. Researchers in biomedical informatics bring to bear their expertise in computational and quantitative methodology, and combine it with domain area knowledge to produce novel solutions to some of the most difficult problems in those domain areas. Collaborations with other UW institutions are not planned.

Diversity

The Department of Biostatistics and Medical Informatics is committed to diversity in its curriculum, faculty, and students. In terms of the curriculum, there is a specific set of elective courses to choose from that will cover the responsible conduct of research, which will include discussions of how to deal with diverse populations in research settings. More clinically-related issues in ethics and diversity will be covered in courses such as Health Informatics, where students will learn about policies, regulations, and ethics, including the Health Insurance Portability and Accountability Act.

In the fields of biostatistics and biomedical informatics, it is extremely difficult to recruit a truly diverse group of faculty. The primary faculty in the Department of Biostatistics and Medical Informatics is currently made up of 15 males and seven females: thirteen individuals are white, seven are Asian, one is Turkish, and one is Brazilian. This issue is important to the department, and time and resources have been committed to the effort. During recent faculty searches, advertisements were posted on specific diversity-related web sites including, but not limited to, the Society for Chicanos and Native Americans in Science and the Association for Women in Science.

The department also supports the recruitment of diverse student populations, sponsoring the undergraduate summer research program in Computation Biology and Biostatistics (CBB) and the Summer Institute for Biostatics (SIBS). The CBB is a mentor-based research program designed to bring under-represented groups of students to campus to pursue research in fields at the nexus of biomedicine and quantitative methods. Many of the students from this program have applied to and joined current graduate programs in biostatistics, population health, industrial and systems engineering, and computer science. This pool of students will now have the opportunity to pursue an M.S. in Biomedical Informatics when the program opens. The SIBS program is a six-week program introducing undergraduates to the field of biostatistics, and each year has been successful in recruiting a diverse group of students from across the country.

Student Learning Outcomes

This M.S.-B.M.I. degree program will allow students a significant amount of flexibility in the design of their curriculum. However, even with the diverse array of course sequences possible for each student, all graduates will be expected to achieve a certain set of standards. At the end of the program, all graduates completing this degree program will be able to:
• Understand, apply, and evaluate common informatics theories, methods, and tools related to biological and biomedical problems, health care, and public health.
• Apply, adapt, and validate an existing approach to a specific biomedical and health problem.
• Produce solutions that address academic or industrial needs, using informatics tools and knowledge.
• Evaluate the impact of biomedical informatics applications and interventions.
• Understand the challenges and limitations of technological solutions.
• Adhere to the professional and legal standards of conduct in biomedical informatics.
• Demonstrate scholarly oral and written presentations.

Assessment of Student Outcomes
• Coursework: The curriculum has been designed to accomplish the outcomes outlined above. The students begin with the core courses, building a basic foundation in biomedical informatics. It should be noted that many outcomes are covered in more than one course, thereby helping to cement the concepts for the students. As students make progress through the program, they focus their learning in a concentrated area of biomedical informatics, adding depth to their knowledge. All of the objectives are covered in three of the core courses: Introduction to Bioinformatics, Medical Image Analysis, and Health Informatics. The Introduction to Biostatistics course more specifically addresses the second and fourth objectives listed above.
• Annual Committee Evaluations: At the end of each year, a unique committee will be created to meet, discuss, and evaluate individual student performance.
• Final Presentations: Students pursuing the research track will complete a research project that will be presented during their final semester in the program. This project will be presented to a group of their peers and departmental faculty (seminar style). This project will be assessed by the individual student’s faculty advisor, who will provide summary statements.
  • Indirect assessments: Following graduation and for as long as contact information is available, students will be sent an annual questionnaire requesting information about the following: Job placement (or admission to other graduate programs)
  • Publication records
  • Certifications and licenses acquired
  • Other awards or honors of note

Program Objectives
This M.S.-B.M.I. degree program will take a broad view of biomedical informatics in terms of the range and scale of biomedical problems that are addressed, and also in terms of the quantitative and computational methodologies that are covered. The proposed program adheres to national standards for graduate training in biomedical informatics established by the American Medical Informatics Association (AMIA). As such, the program has several objectives:
• Train all students in a common core curriculum covering the breadth of challenges, scales, and methods in biomedical informatics.
• Offer students a curriculum covering the spectrum from analyzing molecular-level data to analyzing populations of individuals in pursuit of biomedical research and novel clinical processes. That is, it will encompass the subfields of bioinformatics, imaging informatics, translational bioinformatics, clinical informatics, clinical research informatics, public health informatics, and consumer health informatics.
• Offer students a curriculum featuring rigorous training in a range of informatics methods, including but not limited to: artificial intelligence (including computer vision, machine learning, and natural language processing), databases, human-computer interaction, optimization, and security. This curriculum will surpass that of peer programs in terms of depth of training in computational and quantitative methodology.
• Impart to students a fundamental knowledge of, and competence in, computer science, statistics, and the biomedical sciences.
• Enroll students who are professionals capable of independent thinking, of bringing novel strategies and new ideas to their professional work environment, and of becoming leaders in healthcare, academia, and industry.
• Enroll students possessing core competencies as defined by the AMIA standards for M.S.-level training in biomedical informatics.

The targeted student outcomes and proposed curriculum are designed to meet these program objectives.

Assessment of Program Objectives
As part of standard procedure at UW-Madison, evaluations provide information about the quality of the teaching and materials with which the students are presented. The program will be reviewed annually by conducting student interviews and surveys to determine if the program is meeting the needs of the students. Data will be collected about student outcomes, both during the program and post-graduation. A successful program will be one in which students are able to fulfill the requirements of the program and meet the associated core competencies. Job placement, additional degrees, and publication records will also be used as evidence of successful post-graduation outcomes.

The program will be continuously reassessed in terms of the competency areas. The Associate Director of the proposed program, Dr. Eneida Mendonça, currently is a member of the Education Committee of AMIA, which addresses curriculum and competency areas in biomedical informatics education. The proposed program will be assessed by comparing it with similar programs and published recommendations by national and international institutions and professional/academic organizations. In addition, faculty will be surveyed about their views and perspectives on curriculum content and need for changes.

Program Curriculum

| Requirements for an M.S. in Biomedical Informatics |
|-----------------------------------------------|------|
| Core Courses                                  | 12 Credits |
| BMI 576: Introduction to Bioinformatics       | 3    |
| BMI 567: Medical Image Analysis (In Development) | 3    |
| BMI XXX: Health Informatics (In Development)  | 3    |
| BMI 541, 551 or 571: Introduction to Biostatistics | 3    |
| Concentration Electives                       | 6 Credits |
In consultation with their faculty advisor, students will select electives in an area of concentration within biomedical informatics. Examples include (but are not limited to):

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMI 776</td>
<td>Advanced Bioinformatics</td>
<td>3</td>
</tr>
<tr>
<td>BMI 877</td>
<td>Statistical Methods for Molecular Biology</td>
<td>3</td>
</tr>
<tr>
<td>BMI 767</td>
<td>Computational Methods for Medical Image Analysis</td>
<td>3</td>
</tr>
<tr>
<td>BMI 768</td>
<td>Statistical Methods for Medical Image Analysis</td>
<td>3</td>
</tr>
<tr>
<td>ISyE 417</td>
<td>Introduction to Health Systems Engineering</td>
<td>3</td>
</tr>
<tr>
<td>ISyE/BMI 617</td>
<td>Health Information Systems</td>
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**Computer Sciences Electives**

In consultation with their faculty advisor, students will select two courses as electives in computer sciences, a discipline that is foundational in biomedical informatics. Coursework of high relevance includes the following areas:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 577, CS 787</td>
<td>Algorithms</td>
<td>3/course</td>
</tr>
<tr>
<td>CS 766</td>
<td>Computer Vision</td>
<td>3</td>
</tr>
<tr>
<td>CS 564, CS 764</td>
<td>Databases</td>
<td>3/course</td>
</tr>
<tr>
<td>CS 570, CS 770</td>
<td>Human-Computer Interaction</td>
<td>3/course</td>
</tr>
<tr>
<td>CS 540, CS 760, CS 761</td>
<td>Machine Learning</td>
<td>3/course</td>
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<tr>
<td>CS 545, CS 769</td>
<td>Natural Language Processing</td>
<td>3/course</td>
</tr>
<tr>
<td>CS 425, CS 525, CS 635, CS 720</td>
<td>Optimization</td>
<td>3/course</td>
</tr>
<tr>
<td>CS 642</td>
<td>Security</td>
<td>3</td>
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</table>

**Track Electives**

The curriculum has two tracks with substantial overlap*. The Professional Track is intended for students who have an undergraduate degree in computer science, engineering, biology, or a health-related field, and are interested in a terminal M.S. degree that will equip them to work as biomedical informatics professionals in industry (e.g., Epic, DNAStar), a hospital, or a research lab. The Research Track is for students who have an advanced degree in a clinical field, and are interested in doing research that has a significant biomedical informatics component.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tr>
<td>Genetics 466</td>
<td>General Genetics</td>
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</tr>
<tr>
<td>BioMolChem 314</td>
<td>Introduction to Human Biochemistry</td>
<td>3</td>
</tr>
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</table>

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Responsible Conduct of Research (e.g., Nursing 802)</td>
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<td></td>
</tr>
<tr>
<td>Research Project**</td>
<td>3-6</td>
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</tr>
<tr>
<td>Research Oriented Elective</td>
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</table>

**Total Credits**

**Prerequisites and Admission**

Although candidates who have a wide range of undergraduate backgrounds will be considered, it is expected that all admitted candidates will have demonstrated an aptitude for computer science and math, fundamental programming skills, knowledge of data structures and algorithms, and have completed at least two semesters of college calculus. Candidates who do not meet these requirements may still be considered for admission, but they will be expected to address these deficiencies immediately upon entering the program. Prospective students will be expected to meet the same standard as that of the graduate school.
It is anticipated that prospective students will broadly fall into three groups: (1) those who have completed an undergraduate degree in computer science, or a related area, and who now want to have a quantitative, biomedical emphasis in their graduate studies; (2) clinicians who want to prepare for a career that involves a heavy emphasis on biomedical informatics, either for research or for clinical practice; and (3) those who have completed undergraduate degrees in the biological sciences and want to prepare for a career in bioinformatics. It should be noted that the prospective students in groups (2) and (3) who do not have undergraduate degrees in a quantitative field will need to demonstrate that they have sufficient preparation for a rigorous curriculum that includes a number of computer science and statistics courses.

Instruction in Ethical Issues Pertaining to Biomedical Informatics

All students in the program will receive instruction covering the ethical issues that arise in managing and analyzing biomedical data. Several lectures in the core course, Health Informatics, will be devoted to this topic. Additionally, students in the Research Track will receive additional training in the ethical conduct of research by taking one of the appropriate courses on campus.

Projected Time to Degree

Most students should be able to complete the M.S.-B.M.I. degree in two academic years (four fall/spring semesters). Core courses and most electives will be offered at least once per year. Faculty advisors will be available to support student progress every semester. Most faculty in the department are on 12-month appointments and often support student projects over the summer.

Program Review Process

Institutional Review

According to the UW-Madison program review policy, the provost, in collaboration with the dean of the School of Medicine and Public Health, will initiate program review five years after the program is first implemented. Success and quality will be evaluated based on the program goals outlined in this proposal. Subsequently, the M.S. in Biomedical Informatics degree will be included in the 10-year review of the programs in the Department of Biostatistics and Medical Informatics, following standard UW-Madison program review guidelines that require all programs be reviewed at least once every ten years.

Accreditation

There are no requirements for accreditation for this program.

Resources and Fiscal Considerations

All faculty in the Department of Biostatistics and Medical Informatics will be available to support the program when it is implemented. These 34 faculty members, including affiliated faculty from other departments, are qualified to teach courses in the curriculum and/or provide projects for students. Department faculty also teach some of the key elective courses (e.g., Computer Science 540, 760, 766, and Industrial and Systems Engineering 617) that are "owned" by other departments. The department currently has sufficient staffing for the development and maintenance of this new graduate program and for the provision of student services; the
administrative tasks will be closely monitored so that the need for additional staffing can be identified. The department is in the process of expanding its available space in the Medical Sciences Center, and some of this newly available space will be dedicated to housing students in this program.

The faculty in the Department of Biostatistics and Medical Informatics have well-funded research programs that receive competitive grants from the National Institutes for Health, the National Science Foundation, and other agencies. The department faculty were awarded more than $21 million during 2010-12. Some of this funding may be available to newly-enrolled students as stipends for program assistantships or research assistantships to help defray the cost of their participation in the program. Other sources of funding are also available to students, including teaching assistantships and clinical fellowships from sponsoring departments.

During the inaugural year of the program, enrollment will be small, with only a few newly-enrolled students. Thus, enrollment will be easily accommodated by the current faculty and staff. Courses should also be of sufficient capacity to accommodate the newly-enrolled students. Growth will be measured to ensure available resources will not be exceeded.
<table>
<thead>
<tr>
<th>Items</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enrollment (New Student) Headcount</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Enrollment (Continuing Student) Headcount</td>
<td>0</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Enrollment (New Student) FTE</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Enrollment (Continuing Student) FTE</td>
<td>0</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Total New Credit Hours (new sections x credits per section)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Existing Credit Hours (Est 12 cr per FT graduate student per Fall/Spring)</td>
<td>135</td>
<td>243</td>
<td>243</td>
<td>243</td>
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<tr>
<td>FTE of New Faculty/Instructional Staff</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>FTE of Current Fac/IAS (Note 3)</td>
<td>1.4</td>
<td>1.4</td>
<td>1.4</td>
<td>1.4</td>
<td>1.4</td>
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<tr>
<td>FTE of New Admin Staff</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>FTE Current Admin Staff (Note 3)</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
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<tr>
<td>New Revenues</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>From New Tuition</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>From Fees</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Program Revenue - Grants</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Program Revenue - Other</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
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<tr>
<td>Reallocation (Note 1, 2)</td>
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<td>$266,390</td>
<td>$268,804</td>
<td>$271,242</td>
<td>$273,704</td>
</tr>
<tr>
<td>Total Revenue</td>
<td>$259,000</td>
<td>$266,390</td>
<td>$268,804</td>
<td>$271,242</td>
<td>$273,704</td>
</tr>
<tr>
<td>New Expenses</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salaries plus Fringes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Faculty/Instructional Staff</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Other Staff</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Continuing Expenses</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Faculty and Instructional Academic Staff  (Note 4)</td>
<td>$224,000</td>
<td>$226,240</td>
<td>$228,502</td>
<td>$230,787</td>
<td>$233,095</td>
</tr>
<tr>
<td>Administrative Staff (Note 5)</td>
<td>$15,000</td>
<td>$15,150</td>
<td>$15,302</td>
<td>$15,455</td>
<td>$15,609</td>
</tr>
<tr>
<td>Other: Supplies and Expenses</td>
<td>$20,000</td>
<td>$25,000</td>
<td>$25,000</td>
<td>$25,000</td>
<td>$25,000</td>
</tr>
<tr>
<td>Total Expenses</td>
<td>$259,000</td>
<td>$266,390</td>
<td>$268,804</td>
<td>$271,242</td>
<td>$273,704</td>
</tr>
<tr>
<td>Net Revenue</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
</tbody>
</table>

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

1. This program has no new revenues or expenses; the program effort is based on reallocation.
2. All faculty and staff who support the program are already on campus and supporting the research and instructional mission. The program will be small in enrollment, make use of mostly existing courses, and offer new courses that are of interest to students in other disciplines.
3. An estimate of 1.4 FTE faculty and instructional academic staff and 0.3 FTE administrative support staff is based on estimates of proportional contributions of the program director, instructional activity, and faculty advisors for students. It also includes a share of 1 administrative staff person who contributes to the program. In the first five years, no more than 8-10 faculty of the 22 departmental faculty are expected to serve as program advisors at any one time.
4. Faculty and Instructional Academic Staff salaries are estimated from actual salaries; projection is for a 1% salary increase per year.
5. Administration Staff salaries are estimated from actual salaries; projection is for a 1% annual salary increase.

Signature by the Provost

Date: 7/8/2014
EDUCATION COMMITTEE

Resolution I.1.a.(3):

That, upon recommendation of the Chancellor of the University of Wisconsin-Madison and the President of the University of Wisconsin System, the Board of Regents accepts the adjusted proffer of $7,853,718.00 for UW-Madison made by the Trustees of the William F. Vilas Trust Estate for the fiscal year July 1, 2014 to June 30, 2015, as provided by the terms of the William F. Vilas Trust, for Support of Scholarships, Fellowships, Professorships, and Special Programs in Arts and Humanities, Social Sciences, Biological Sciences, Physical Sciences, and Music.
ANNOUNCEMENT OF THE ADJUSTED PROFFER TO UW-MADISON FROM THE TRUSTEES OF THE WILLIAM F. VILAS TRUST ESTATE FOR SUPPORT OF SCHOLARSHIPS, FELLOWSHIPS, PROFESSORSHIPS, AND SPECIAL PROGRAMS IN ARTS AND HUMANITIES, BIOLOGICAL, PHYSICAL, AND SOCIAL SCIENCES, AND MUSIC

BACKGROUND

The terms of the Deed of Gift and Conveyance of the estate of William F. Vilas, subsequently validated and accepted by an act of the Legislature of Wisconsin, provide in part that the Trustees of the Estate may proffer in writing to the Board of Regents funds for the maintenance of scholarships, fellowships, professorships, with their respective auxiliary allowances, and other like endowments specifically enumerated, defined, and provided for by the Deed.

The Board of Regents approved the adjusted UW-Madison request totaling $7,853,718.00 at the June 7, 2014, meeting. Following that approval, UW System President Cross sent the formal request to the Trustees. In July, the Board of Regents received the adjusted proffer issued by the Vilas Trustees of the funding available to UW-Madison for 2014-15.

REQUESTED ACTION

Approval of resolution I.1.a.(3), accepting the adjusted proffer in the sum of $7,853,718 from the Trustees of the William F. Vilas Trust Estate.

RECOMMENDATION

The University of Wisconsin System Administration recommends approval of Resolution I.1.a.(3), accepting the adjusted proffer in the sum of $7,853,718 for UW-Madison from the Trustees of the William F. Vilas Trust Estate.
July 11, 2014

The Regents of the University of Wisconsin
1860 Van Hise Hall
1220 Linden Drive
Madison, WI  53706-1557

Dear Regents:

The fiscal year of the William F. Vilas Trust Estate ended on March 31, 2014. The Trustees met on Monday, April 21, 2014, and considered the annual audited financial statements and the revised request for funding for the Madison campus, as set forth in Chancellor Rebecca M. Blank's letter of April 18, 2014, to President Ray Cross. Our audit confirmed that the Trust realized net income of $7,974,769.99 this year. After considering the requests for funding, the Trustees have resolved to fund the fixed annual expenditures described in paragraphs (A), (B), (C) and (D) of Article 4 (Fourth) of the Trust, as described in the April 18 letter of Chancellor Blank. However, the funding of programs for the encouragement of merit and talent and promotion of appreciation for the art of music in paragraph (B) is limited to one-tenth of one percent of the capital of the estate, as shown on the Trust Estate's preceding inventory ($85,936.62), and the original requests totaled $88,269.00. The Trustees reduced the request of the Madison campus by $2,332.00 to $27,667.00. The Trustees have also resolved to fund the College of Engineering Start-up Package Funds described in B.1.; the supplement to Vilas Professor Gregg Mitman's auxiliary allowance for his Liberia Film Project, as described in B.2; Vilas Distinguished Achievement Professorships described in B.3.; Vilas Life Cycle Professorship program described in B.4.; Vilas Research Investigator Awards described in B.5.; Vilas Faculty Young/Mid-Career Investigator Awards described in B.6.; and an expanded number of undergraduate scholarships and fellowships described in B.7 of Chancellor Blank's letter. In accordance with the provisions of the Will of William F. Vilas, the Trustees proffer to the Regents of the University of Wisconsin for the University of Wisconsin – Madison, the sum of $7,853,718.00 for its fiscal year July 1, 2014, to June 30, 2015, to be expended in the following manner:

A. CONTINUATION OF APPROVED PROGRAMS

1. Continuation of 10 Vilas Undergraduate Scholarships for the 2014-2015 academic year at $400.00 each
   $ 4,000.00

2. Continuation of 10 Graduate Fellowships for the 2014-2015 academic year:
   a. 5 resident Fellowships at $600.00 each $ 3,000.00
   b. 5 traveling Fellowships at $1,500.00 each 7,500.00
      10,500.00
3. **Continuation of the salaries and the respective allowances of fifteen (15) Vilas Research Professorships:**

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>College</th>
<th>Salary</th>
<th>Auxiliary Allowance</th>
<th>Total Allowance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vernon Barger</strong></td>
<td>Vilas Research Professor of Physics</td>
<td>College of Letters and Science, Madison</td>
<td>10,000.00</td>
<td>50,000.00</td>
<td>60,000.00</td>
</tr>
<tr>
<td><strong>David Bethea</strong></td>
<td>Vilas Research Professor of Slavic Languages</td>
<td>College of Letters and Science, Madison</td>
<td>10,000.00</td>
<td>50,000.00</td>
<td>60,000.00</td>
</tr>
<tr>
<td><strong>Susan Coppersmith</strong></td>
<td>Vilas Research Professor of Physics</td>
<td>College of Letters and Science, Madison</td>
<td>10,000.00</td>
<td>50,000.00</td>
<td>60,000.00</td>
</tr>
<tr>
<td><strong>William Cronon</strong></td>
<td>Vilas Research Professor of History and Geography</td>
<td>College of Letters and Science and Gaylord Nelson Institute for Environmental Studies, Madison</td>
<td>10,000.00</td>
<td>50,000.00</td>
<td>60,000.00</td>
</tr>
<tr>
<td><strong>Richard Davidson</strong></td>
<td>Vilas Research Professor of Psychology and Psychiatry</td>
<td>College of Letters and Science and Medical School, Madison</td>
<td>10,000.00</td>
<td>50,000.00</td>
<td>60,000.00</td>
</tr>
<tr>
<td><strong>Steven Durlauf</strong></td>
<td>Vilas Research Professor of Economics</td>
<td>College of Letters and Science, Madison</td>
<td>10,000.00</td>
<td>50,000.00</td>
<td>60,000.00</td>
</tr>
<tr>
<td><strong>Morton Gernsbacher</strong></td>
<td>Vilas Research Professor of Psychology</td>
<td>College of Letters and Science, Madison</td>
<td>10,000.00</td>
<td>50,000.00</td>
<td>60,000.00</td>
</tr>
<tr>
<td><strong>Judith Kimble</strong></td>
<td>Vilas Research Professor of Biochemistry and Medical Genetics</td>
<td>College of Agricultural and Life Sciences and Medical School, Madison</td>
<td>10,000.00</td>
<td>50,000.00</td>
<td>60,000.00</td>
</tr>
</tbody>
</table>
Ching Kung – Vilas Research Professor of Genetics, College of Agricultural and Life Sciences, Madison
Salary 10,000.00
Auxiliary Allowance 50,000.00 60,000.00

Gregg Mitman – Vilas Research Professor of History of Science, College of Letters and Science, Madison
Salary 10,000.00
Auxiliary Allowance 50,000.00 60,000.00

Emiko Ohunki-Tierney – Vilas Research Professor of Anthropology, College of Letters and Science, Madison
Salary 10,000.00
Auxiliary Allowance 50,000.00 60,000.00

Elliott Sober – Vilas Research Professor of Philosophy, College of Letters and Science, Madison
Salary 10,000.00
Auxiliary Allowance 50,000.00 60,000.00

Karen Strier – Vilas Research Professor of Anthropology, College of Letters and Science, Madison
Salary 10,000.00
Auxiliary Allowance 50,000.00 60,000.00

Erik Olin Wright – Vilas Research Professor of Sociology, College of Letters and Science, Madison
Salary 10,000.00
Auxiliary Allowance 50,000.00 60,000.00

Sau Lan Wu – Vilas Research Professor of Physics, College of Letters and Science, Madison
Salary 10,000.00
Auxiliary Allowance 50,000.00 60,000.00

4. Creation of salaries and the respective allowances of six (6) new Madison Vilas Research Professorships: 360,000.00

5. a. Continuation of fifty (50) additional undergraduate scholarships at $400.00 each 20,000.00

b. Continuation of fifty (50) additional graduate fellowships at $600.00 each 30,000.00 50,000.00
6. Continuation of eighty (80) additional undergraduate scholarships at $400.00 each under the provisions of Paragraph (3), Article Fourth of the Deed of Gift and Conveyance: 32,000.00

As to the one hundred thirty (130) additional Vilas Scholarships and the fifty (50) additional Vilas Fellowships provided for in paragraphs 5 and 6 above, the Regents shall bear in mind the provisions of the Will regarding that the additional Fellowships shall be (a) awarded to graduates of the University of Wisconsin, and (b) the further provisions of the Will that "for at least one-fifth of these scholarships and fellowships, the Regents shall prefer in appointment among worthy and qualified candidates those of Negro blood, if such present themselves. Otherwise than as aforesaid, they shall be governed by the Regents in like manner as those first above provided for."

7. Retirement benefits for nine (9) Vilas Professors at $2,500.00 each: Berkowitz, Bird, Brock, Hauser, Hermand, Keisler, Mueller, Vansina and Weinbrot 22,500.00

8. 14 Vilas Associates in the Arts and Humanities 487,714.00

9. 11 Vilas Associates in the Social Sciences 466,579.00

10. 17 Vilas Associates in the Physical Sciences 788,320.00

11. 11 Vilas Associates in the Biological Sciences 355,638.00

12. Continuation of support for encouragement of merit and talent or to promote appreciation of and taste for the art of music:

   a. Madison: Continuation of support for encouragement of merit and talent or to promote appreciation of and taste for the art of music 27,667.00

TOTAL CONTINUATION REQUEST $3,504,918.00

The foregoing Continuation Request is fully supported by the income earned by the Vilas Trust Estate. In addition, in response to the written request from Chancellor Blank, the Trustees are able to support the following one-time only program allocations described below.
B. ONE-TIME ONLY PROGRAM ALLOCATION

1. College of Engineering Start-up Package Funds to support newly-hired faculty trans-disciplinary institute initiative, to be spent within two years for professional research expenses, but not for summer salary support: $850,000.00

2. Supplemental funds for Vilas Research Professor Gregg Mitman for Liberia Film Project with the Center for Culture, History and the Environment: $154,000.00

3. Sixteen (16) Vilas Distinguished Achievement Professorships funded for two years, in the amount of $50,000.00 for each professor: $800,000.00

4. Continuation of 1998 and 2002 Expansion of Approved Programs:
   a. 840 additional undergraduate scholarships at $400.00 each pursuant to Article 4, Sections A and E of the Deed of Gift and Conveyance $336,000.00
   b. 400 additional fellowships at $600.00 each, pursuant to Article 4, Sections A and E of the Deed of Gift and Conveyance $240,000.00
   c. 52 Traveling Graduate Fellowships at $1,200.00 each, pursuant to Article 4, Section A, para. 3 of the Deed of Gift and Conveyance: $62,400.00

5. Renewal of Vilas Life Cycle Professorship program created in 2005 $372,000.00

6. Vilas Research Investigator Awards (up to $30,000 per award) pursuant to Article 4, Section (E), as described in part B, paragraph 5 of Chancellor Blank's letter of April 18: $90,000.00

7. Vilas Faculty Young/Mid-Career Investigator awards (up to $50,000 per award per year for one or two years) pursuant to Article 4, Section (E) as described in part B, paragraph 6 of Chancellor Blank's letter of April 18: $1,350,000.00
8. Supplemental funds for Vilas Research Professor Susan Coppersmith for purchase of Tektronic AWG70002A Arbitrary Waveform Generator: 94,400.00

TOTAL ONE-TIME ONLY ALLOCATION $4,348,800.00

TOTAL PROFFER FOR 2014 – 2015 $7,853,718.00

Very truly yours,

Robert R. Stroud
Secretary of the Trustees

RRS/gh
cc: President Ray Cross
    Chancellor Rebecca M. Blank, UW-Madison
    Sr Vice President David J. Ward
    Kristy Gorman
    Sandy Shackelford
    Carmen Faymonville, Ph.D.
**REVISED MISSION STATEMENT**
**UNIVERSITY OF WISCONSIN-SUPERIOR**
**(FIRST READING)**

**BACKGROUND**

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."

The University of Wisconsin-Superior requests a first reading for its proposed revised mission statement. The revised statement is the result of the development of a five-year strategic plan begun in April 2013 and of extensive discussion with members of the University, the local community, and alumni. The intent of this revision is to make more visible the existing commitment of university resources to the community and the region. Other wording changes were made to be more reflective of current terminology and of constituencies served.

As part of the strategic planning process, the steering committee hosted an all-campus forum on February 12, 2014. Eight select teams created the revised wording and the additions to the mission statement during the Fall semester of 2013. In February 2014, a draft of the mission statement revision was presented to a group of 20 community and business leaders. In April 2014, the draft was presented to alumni and foundation board members in a joint meeting.

Based on all received feedback, the final draft of the proposed revised mission statement received formal acceptance by the Faculty Senate on May 20, 2014, by the Classified Staff Senate on May 28, 2014, by the Academic Staff Senate on May 22, 2014, and by the Student Senate on June 27, 2014.

**REQUESTED ACTION**

First Reading. No action is required.

**DISCUSSION**

Below are the current UW-Superior mission statement, the proposed revision with tracked changes highlighted, and a clean version of the new mission.

UW-Superior’s current mission statement reads as follows:

The University of Wisconsin-Superior fosters intellectual growth and career preparation within a liberal arts tradition that emphasizes individual attention and embodies respect for diverse cultures and multiple voices.

To accomplish these ends, the University will:
1. Provide students with a carefully articulated and comprehensive foundation in liberal studies as a base for all degree programs.
2. Award baccalaureate degrees in selected fields in education, the arts and the humanities, in the sciences and social sciences, and in business.
3. Offer graduate programs in areas associated with its undergraduate emphases and strengths.
4. Extend its undergraduate and graduate resources beyond the boundaries of the campus through distance learning programs.
5. Expect scholarly activity, including research, scholarship and creative endeavor, that supports its programs at the associate and baccalaureate degree levels, its selected graduate programs, and its special mission.
6. Engage in appropriate inter-institutional relationships to enhance educational and service opportunities.
7. Foster, with University of Wisconsin-Extension, the development of cooperative and general outreach programming and the integration of the Extension function with that of this institution.

UW-Superior’s proposed revised mission contains some additions shown as bolded and wording changes marked by strike-throughs, and would read as follows:

The University of Wisconsin-Superior fosters intellectual growth and career preparation within a liberal arts tradition that emphasizes individual attention, embodies respect for diverse cultures and multiple voices, and engages the community and region.

To accomplish these ends, the University will:

1. Provide students with a carefully articulated and comprehensive foundation in liberal studies as a base for all degree programs.
2. Award associate and baccalaureate degrees and pre-professional programs in selected fields in education, the arts, and the humanities, the sciences, and social sciences, pre-professional programs and business, and pre-professional programs.
3. Offer graduate programs in areas associated with its undergraduate emphases and strengths.
4. Extend its undergraduate and graduate resources beyond the boundaries of the campus through distance learning alternative delivery of programs.
5. Expect scholarly activity, including research, scholarship and creative endeavor, that supports its programs at the associate and baccalaureate degree levels, its selected graduate programs, and its special mission.
6. Maintain an inclusive campus community that challenges students to develop their intellectual, personal, cultural, and social competencies.
7. Engage in appropriate inter-institutional relationships and community partnerships to enhance educational and service opportunities.
8. Foster, with University of Wisconsin-Extension, the development of cooperative and general outreach programming and the integration of the Extension function with that of this institution.
The clean version reads as follows:

The University of Wisconsin-Superior fosters intellectual growth and career preparation within a liberal arts tradition that emphasizes individual attention, embodies respect for diverse cultures and multiple voices, and engages the community and region.

To accomplish these ends, the University will:

1. Provide students with a carefully articulated and comprehensive foundation in liberal studies as a base for all degree programs.
2. Award associate and baccalaureate degrees in selected fields in education, arts, humanities, sciences, social sciences, business, and pre-professional programs.
3. Offer graduate programs in areas associated with its undergraduate emphases and strengths.
4. Extend its undergraduate and graduate resources beyond the boundaries of the campus through alternative delivery of programs.
5. Expect scholarly activity, including research, scholarship and creative endeavor, that supports its programs at the associate and baccalaureate degree levels, its selected graduate programs, and its special mission.
6. Maintain an inclusive campus community that challenges students to develop their intellectual, personal, cultural, and social competencies.
7. Engage in appropriate inter-institutional relationships and community partnerships to enhance educational and service opportunities.
8. Foster, with University of Wisconsin-Extension, the development of cooperative and general outreach programming and the integration of the Extension function with that of this institution.
The University of Wisconsin-Superior seeks approval of a change in the wording of its mission statement. Background information for the impetus of this change and the scope of coverage are provided below.

In April 2013, UW-Superior began the development of a five-year strategic plan through a collaborative approach which involved members of the University, local community, and alumni. Initially, the strategic planning steering committee did not intend to modify the mission statement. However, as the strategic planning activity began to take shape, it became clear that a change in the mission would more strongly signal the commitment of the University to community and regional vitality. Significant University resources had already been committed to community-based initiatives including economic development, applied research, and academic service learning. The intent of this revision was solely to formally codify what had been occurring and was to continue into the future. A more inclusively focused mission statement meant that it could be incorporated more fully into UW-Superior’s budgeting, planning, and processes for initiative evaluation. Other minor wording changes were made to be more reflective of current terminology and of constituencies served and do not affect the substance of the mission.

As part of the strategic planning process, the steering committee hosted an all-campus forum on February 12, 2014. The proposal for a change in mission statement was first raised at this forum. The new text was based on research conducted by 8 teams of inquiry, populated by more than 45 involved people, during the Fall Semester of 2013. Provided during this time was a two-week long commentary period that was open to the campus population. In February 2014, a draft of the mission text revision was presented to a group of 20 community and business leaders. In April 2014, the draft of the mission was presented to Alumni and Foundation board members in a joint meeting.

Based on all received feedback, the final-draft mission statement was developed. This mission statement was presented at an all-campus meeting in April 2014. A two-week period for commentary followed. The finalized mission statement was presented at an all-campus meeting on May 17, 2014. The mission statement received formal acceptance by Faculty Senate on May 20, 2014, by Classified Staff Senate on May 28, 2014, by Academic Staff Senate on May 22, 2014, and by Student Senate on June 27, 2014.
As a regional university, the University of Wisconsin-Superior is committed to ensuring that it contributes to the vitality of the greater community. A change in the wording of the mission signals to all that the University does so actively and with purpose.

Sincerely,

Renee M. Wachter, Ph.D.
Chancellor
Addendum to the Mission Approved in 2009
University of Wisconsin-Stout

EDUCATION COMMITTEE

Resolution I.1.c

That, upon recommendation of the Chancellor of University of Wisconsin-Stout and the President of the University of Wisconsin System, the Board of Regents approves the addendum to the University of Wisconsin-Stout mission approved by the Board of Regents in 2009.
ADDENDUM TO MISSION STATEMENT
UNIVERSITY OF WISCONSIN-STOUT

BACKGROUND

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."

The University of Wisconsin-Stout requests approval for its mission addendum. A UW System Administration review of UW institutions’ mission statements revised after 2009, revealed that some missions were no longer compliant with s. 36.09(1)(b), Wis. Stats. Board leadership asked Senior Vice President Nook and General Counsel Stafford to work with UW-Stout and other UW institutions to make appropriate changes so that their mission statements would again be in alignment with s. 36.09(1)(b), Wis. Stats. UW-Stout was asked to add a statement to its current mission that delineated the specific program responsibilities and degrees offered.

The revised mission statement addendum has been reviewed and approved by the appropriate governance bodies at UW-Stout. UW System Administration recommends the addendum for approval by the Board of Regents.

REQUESTED ACTION

Approval of Resolution I.1.c., approving the addendum to UW-Stout’s mission statement.

DISCUSSION

Below are the Pre-2009 select mission statement and the proposed revision of the addendum.

UW-Stout’s Pre-2009 mission statement delineating specific program responsibilities and degrees reads as follows:

The university offers undergraduate and graduate programs leading to professional careers in industry, commerce, education and human services through the study of technology, applied mathematics and science, art, business, industrial management, human behavior, family and consumer sciences, and manufacturing-related engineering and technologies.

Below is the revised version with tracked changes. Bolded words are newly-added terms. Strikethroughs represent deletions:

The university offers undergraduate and graduate programs leading to professional careers in industry, commerce, education and human services through the study of technology, applied mathematics and science, art, business, industrial management, social and behavioral sciences, education and design, human behavior,
family and consumer sciences, and manufacturing-related select engineering programs, and applied technologies, select health studies, and technical communication.

UW-Stout’s revised addendum statement with changes incorporated would read as follows:

The University offers undergraduate and graduate programs leading to professional careers in industry, commerce, education and human services through the study of applied mathematics and science, art and design, business and management, social and behavioral sciences, education, family and consumer sciences, select engineering programs, applied technologies, select health studies, and technical communication.

RELATED REGENT POLICIES

BOR Policy 1-2 (cluster mission directives)
ACIS1.0
TO: President Ray Cross
    UW System
    c: David Ward
    Jane Radue
    Stephen Kolison
    Carmen Faymonville

FROM: Charles W. Sorensen
      Chancellor

DATE: July 28, 2014

RE: UW-Stout Mission Statement Addendum

On behalf of the administrative and governance leaders at the University of Wisconsin-Stout, I am pleased to submit a revised mission statement addendum for approval at the next Board of Regents meeting. The recommended addendum reads as follows:

The university offers undergraduate and graduate programs leading to professional careers in industry, commerce, education and human services through the study of applied mathematics and science, art and design, business and management, social and behavioral sciences, education, family and consumer sciences, select engineering programs, applied technologies, select health studies, and technical communication.

Thank you for your consideration of this request.

Attachment
UW-Stout Mission Addendum (2014)

Pre 2009 Mission Addendum describing the majors and programs of study:

The university offers undergraduate and graduate programs leading to professional careers in industry, commerce, education and human services through the study of technology, applied mathematics and science, art, business, industrial management, human behavior, family and consumer sciences, and manufacturing-related engineering and technologies.

Modification to include majors and programs of study post 2009:

The university offers undergraduate and graduate programs leading to professional careers in industry, commerce, education and human services through the study of applied mathematics and science, art and design, business and management, social and behavioral sciences, education, family and consumer sciences, select engineering programs, applied technologies, select health studies, and technical communication.
Areas of Study and UW-Stout Majors:

1. Applied Mathematics and Science
   a. B.S. in Applied Mathematics and Computer Science 1968
   b. B.S. in Applied Science 2001
   c. B.S. in Environmental Science 2013
   d. P.S.M. in Industrial and Applied Mathematics 2013

2. Art and Design
   b. B.F.A. in Graphic Design and Interactive Media 2012
   c. B.F.A. in Interior Design 2012
   d. B.F.A. in Industrial Design 2012
   e. B.F.A. in Studio Art 1964
   f. B.S. in Game Design and Development 2009
   g. M.F.A. in Design 2012

3. Business and Management
   a. B.S. in Business Administration 1965
   c. B.S. in Real Estate Property Management 2009
   d. B.S. in Golf Enterprise Management 2005
   e. B.S. in Hotel, Restaurant, and Tourism Management 1967
   f. B.S. in Management 2000
   g. B.S. in Retail Merchandising and Management 1990
   h. B.S. in Supply Chain Management 2010
   i. B.S. in Sustainable Management 2009
   j. M.S. in Hospitality Strategy 1976
   k. M.S. in Operations and Supply Management 2011
   l. M.S. in Risk Control 1974
   m. M.S. in Sustainable Management 2013

4. Social and Behavioral Sciences
   a. B.S. in Psychology 1966
   b. M.S. in Applied Psychology 1996
   c. B.S. in Applied Social Science 2010
   d. M.S. in Training and Human Resource Development 1995
   e. M.S. in School Counseling 2007
   f. M.S. Ed. in School Psychology 1969
   g. Ed.S. in School Psychology 2000

5. Education
   a. B.S. in Art Education 1964
   b. B.S. in Career, Technical Education and Training 1942
   c. B.S. in Early Childhood Education 1965
   d. B.S. in Family and Consumer Sciences Education 1918
<table>
<thead>
<tr>
<th>6. Family and Consumer Sciences</th>
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<tbody>
<tr>
<td>a. B.S. in Food Science and Technology</td>
</tr>
<tr>
<td>b. B.S. in Human Development and Family Studies</td>
</tr>
<tr>
<td>c. M.S. in Food and Nutritional Sciences</td>
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<td>-------------------------------------------------------------</td>
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<tr>
<td>7. Select Engineering Programs</td>
</tr>
<tr>
<td>a. B.S. in Computer Engineering</td>
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<tr>
<td>b. B.S. in Manufacturing Engineering</td>
</tr>
<tr>
<td>c. B.S. in Plastics Engineering</td>
</tr>
<tr>
<td>d. M.S. in Manufacturing Engineering</td>
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<td>-------------------------------------------------------------</td>
</tr>
<tr>
<td>8. Applied Technologies</td>
</tr>
<tr>
<td>a. B.S. in Apparel Design and Development</td>
</tr>
<tr>
<td>b. B.S. in Construction</td>
</tr>
<tr>
<td>c. B.S. in Engineering Technology</td>
</tr>
<tr>
<td>d. B.S. in Information and Communication Technologies</td>
</tr>
<tr>
<td>e. B.S. in Packaging</td>
</tr>
<tr>
<td>f. B.S. in Information Technology Management</td>
</tr>
<tr>
<td>g. M.S. in Information and Communication Technologies</td>
</tr>
<tr>
<td>-------------------------------------------------------------</td>
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<tr>
<td>9. Select Health Studies</td>
</tr>
<tr>
<td>a. M.S. in Clinical Mental Health Counseling</td>
</tr>
<tr>
<td>b. B.S. in Dietetics</td>
</tr>
<tr>
<td>c. B.S. in Health, Wellness and Fitness</td>
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<tr>
<td>d. B.S. in Vocational Rehabilitation</td>
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<tr>
<td>e. M.S. in Marriage and Family Therapy</td>
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<tr>
<td>f. M.S. in Vocational Rehabilitation</td>
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<td>-------------------------------------------------------------</td>
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<tr>
<td>10. Technical Communication</td>
</tr>
<tr>
<td>a. B.S. in Professional Communication and Emerging Media</td>
</tr>
<tr>
<td>b. M.S. in Technical and Professional Communication</td>
</tr>
</tbody>
</table>
To: Chancellor Charles Sorensen and Provost Joseph Bessie
From: Mark A. Nook
Re: Mission Statement

Recently, UW-Platteville requested a change in their Mission Statement. As part of our review of their proposed mission statement, we reviewed State Statue 36.09 (1) (b) – (d) and the mission statements for each institution in the system. Chapter 36.09 (1) (b) states 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.

It is my opinion and that of General Counsel, Tom Stafford, that UW-Stout’s currently approved mission does not contain language that delineates specific program responsibilities and types of degrees to be granted and is thereby not in alignment with 36.09 (1) (b). The Board of Regents leadership has asked that I work with you to make appropriate changes so that the UW-Stout mission statement is consistent with 36.09 (1) (b).

Bringing UW-Stout’s mission statement into compliance will require adding statements delineating the specific program responsibilities and specific degrees to be offered. Regent leadership has agreed that this can be done with a streamlined process as long as the added statements are identical to the statements as they appeared before the revision in 2010 with the inclusion of programs and degrees approved before February 15, 2014. These statements must also align with degrees and programs UW-Stout is approved to offer by the Higher Learning Commission. The process for making these revisions is:

a. Develop the degrees and programs statements with appropriate campus governance approvals.

b. Send the revised mission to UW System Administration for approval and preparation of background materials for submission to the Board of Regents. This mailing should include the current mission and a clean copy of the mission statement with the added statements on degrees and programs and the date at which it was approved by campus governance. It should also include a cover letter from the Chancellor addressed to the UW System President, asking that the mission revision be placed on the Board of Regents.
Regents’ agenda. The mission statements will move through the Education Committee as part of their full agenda, and then on to the full Board for final approval.

Neither a second reading of the mission at a Regent meeting nor a campus open forum are required as long as only these two statements are added, and they include only degrees and programs already approved by the Board and HLC.

If you would like to make changes beyond adding these two statements or would like to have your mission statement include other degrees or programs that you aren’t currently approved to offer, the mission statement would need to follow the standard Regent process.

Please contact my office if you have any questions about the needed changes or the process. As you develop your additions, you will work with your academic planner in the Office of Academic, Faculty, and Global Programs to prepare your final documents for the Board of Regents.

Cc: Michael Falbo
    Regina Millner
    Ray Cross
    Tomas Stafford
    Jane Radue
    Stephen Kolison
EDUCATION COMMITTEE

Resolution I.1.d.

That, upon recommendation of the President of the University of Wisconsin System, the Board of Regents approves the scope statements for the revision of Ch. UWS 4, Wis. Admin. Code, “Procedures for Dismissal of Faculty;” Ch. UWS 7, Wis. Admin. Code, “Dismissal of Faculty in Special Cases;” Ch. UWS 11, Wis. Admin. Code, “Dismissal of Academic Staff for Cause;” and Ch. UWS 17, Wis. Admin. Code, “Nonacademic Student Misconduct.”
ADMINISTRATIVE CODE SCOPE STATEMENTS FOR
CHAPTERS UWS 4, 7, 11, AND 17, WIS. ADMIN. CODE

BACKGROUND

The University of Wisconsin System (UW System) Administration seeks to modify several Board of Regents (Board) administrative rules, known as Ch. UWS 4, Wis. Admin. Code, “Procedures for Dismissal of Faculty,” Ch. UWS 7, Wis. Admin. Code, “Dismissal of Faculty in Special Cases,” Ch. UWS 11, Wis. Admin. Code, “Dismissal of Academic Staff for Cause,” and Ch. UWS 17, Wis. Admin. Code, “Nonacademic Student Misconduct.” All UW System institutions are affected by the proposed rule revisions articulated in the scope statements.

The Board of Regents has statutory authority for Chapters UWS 4 and 7, as articulated in s. 36.13(3), Wis. Stats., and s. 36.13(5), Wis. Stats.

Section 36.13(3), Wis. Stats., reads as follows:

Rules. The board and its several faculties after consultation with appropriate students shall promulgate rules for tenure and probationary appointments, for the review of faculty performance and for the non-retention and dismissal of faculty members. Such rules shall be promulgated under ch. 227.

Section 36.13(5), Wis. Stats., reads as follows:

Procedural Guarantees. Any person having tenure may be dismissed only for just cause and only after due notice and hearing. Any person having a probationary appointment may be dismissed prior to the end of the person’s contract term only for just cause and only after due notice and hearing. The action and decision of the board in such matters shall be final, subject to judicial review under ch. 227. The board and its several faculties shall develop procedures for the notice and hearing which shall be promulgated by rule under ch. 227.

The Board has statutory authority for Chapter UWS 11. Section 36.15(3), Wis. Stats., reads as follows:

Procedural Guarantees. A person having an academic staff appointment for a term may be dismissed prior to the end of the appointment term only for just cause and only after due notice and hearing. A person having an academic staff appointment for an indefinite term who has attained permanent status may be dismissed only for just cause and only after due notice and hearing. In such matters the action and decision of the board, or the appropriate official authorized by the board, shall be final, subject to judicial review under ch. 227. The Board shall develop procedures for the notice and hearing which shall be promulgated as rules under ch. 227.
The Board also has statutory authority for Chapter UWS 17 under s. 36.35, Wis. Stats., which reads as follows: “The board shall promulgate rules under ch. 227 governing student conduct and procedures for the administration of violations.”

Approval from the Education Committee and the full Board for scope statements pertaining to the above-named chapters are requested to recognize U.S. Department of Education guidance to institutions of higher education for how they should address and respond to sexual misconduct and sexual assault allegations involving a student or an employee.

Regent approval of the scope statements will result in the creation of three drafting committees consisting of legal staff, faculty, academic staff, and student representatives, as well as UWSA staff and others, as appropriate, to determine any changes in wording or substance of Chapters UWS 4, 7, 11, and 17.

REQUESTED ACTION


DISCUSSION

The modifications that the scope statements describe and delimit would reflect, among other things, changes in Chapters UWS 4, 7, 11, and 17 that could alter the standard of proof in disciplinary processes and the role of a complainant in both employee and staff disciplinary processes. The Governor has approved these scope statements. The proposed edits and changes will be vetted by Chancellors, Provosts, and governance bodies at each UW institution. The timeframe for bringing drafting committee recommendations to the Board for a first reading would be spring 2015.

Chapter UWS 4 provides a disciplinary process for pursuing dismissal of faculty for just cause and Chapter UWS 7 for pursuing dismissal of faculty in special cases of serious criminal misconduct, including sexual assault. Chapter UWS 11 provides a similar process for pursuing dismissal of academic staff in cases of serious criminal misconduct, such as sexual assault.

The U.S. Department of Education has reaffirmed that Title IX protects students from sexual harassment and sexual violence. The U.S. Department of Education has issued guidance which establishes the federal agency’s expectations for institutions of higher education that receive federal funding. This guidance is being enforced by the U.S. Department of Education through the Office of Civil Rights.
Modifications to Chapter UWS 17 would potentially include a new section that would provide a process under which such allegations would be handled by UW institutions. Published first in 1996, and amended in 2009, Chapter UWS 17 provisions underscore the educational emphasis of the nonacademic student disciplinary process. Individual UW System institutions’ Chapter UWS 17-related policies and procedures may need to be revised to align better with federal expectations.

Subsequent to Board approval of these scope statements, in order to meet the expectations of the U.S. Department of Education, modifications to Chapters UWS 4, 7, 11, and 17 may be considered by drafting committees.

RECOMMENDATION

The President of the UW System recommends that the Board approve the scope statements and authorize drafting committees to proceed with the revision-drafting process.
STATEMENT OF SCOPE FOR ADMINISTRATIVE RULES

BOARD OF REGENTS OF THE UNIVERSITY OF WISCONSIN SYSTEM

Rule No.: Chapter UWS 4 and Chapter UWS 7

Relating to: Procedures for Dismissal of Faculty/Dismissal of Faculty in Special Cases

Rule Type: Permanent

1. Finding/nature of emergency (Emergency Rule only):

N/A

2. Detailed description of the objective of the proposed rule:

The Board of Regents of the University of Wisconsin System ("Board") seeks to modify Chapter UWS 4, Procedures for Dismissal of Faculty, and Chapter UWS 7, Dismissal of Faculty in Special Cases, to recognize published guidance from the U.S. Department of Education. In the guidance, the Department of Education has addressed expectations for higher education institutions to respond to sexual misconduct allegations involving school employees, including allegations of sexual assault.

3. Description of the existing policies relevant to the rule, new policies proposed to be included in the rule, and an analysis of policy alternatives:

The current version of Chapter UWS 4 provides a disciplinary process for pursuing dismissal of faculty for just cause. The current version of Chapter UWS 7 provides a disciplinary process for pursuing dismissal of faculty in special cases of serious criminal misconduct, including sexual assault.

The U.S. Department of Education has issued guidance related to sexual assaults at higher education institutions and has reaffirmed that Title IX protects students from sexual harassment carried out by school employees. Some of the expectations of the U.S. Department of Education may require modifications to the provisions under the current Chapters 4 and 7 in order for them to be met.

The modifications contemplated by this rulemaking would incorporate into law some of the published expectations of the U.S. Department of Education. In particular, the new provisions would reflect the evidentiary burden of proof and the role of a complainant in the process.

If modifications are not made to Chapter UWS 4 and Chapter UWS 7, UW institutions will continue to adhere to the provisions of Chapter UWS 4 and Chapter UWS 7 and the federal guidance, but only to the extent that a conflict does not arise. Further, following both policy guidance and the law may lead to confusion.

4. Detailed explanation of statutory authority for the rule (including the statutory citation and language):
Wis. Stat. § 36.13(3): “Rules. The board and its several faculties after consultation with appropriate students shall promulgate rules for tenure and probationary appointments, for the review of faculty performance and for the non-retention and dismissal of faculty members. Such rules shall be promulgated under ch. 227.”

Wis. Stat. § 36.13(5): “Procedural Guarantees. Any person having tenure may be dismissed only for just cause and only after due notice and hearing. Any person having a probationary appointment may be dismissed prior to the end of the person’s contract term only for just cause and only after due notice and hearing. The action and decision of the board in such matters shall be final, subject to judicial review under ch. 227. The board and its several faculties shall develop procedures for the notice and hearing which shall be promulgated by rule under ch. 227.”

5. Estimate the amount of time that state employees will spend developing the rule and other resources necessary to develop the rule:

50 hours

6. List with description of all entities that may be affected by the proposed rule:

All 13 four-year University of Wisconsin System institutions, all 13 UW Colleges and the University of Wisconsin Extension.

7. Summary and preliminary comparison with any existing or proposed federal regulation that is intended to address the activities to be regulated by the proposed rule:

Title IX of the Education Amendments of 1972 provides that “[N]o person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving Federal financial assistance.” Currently, there are no federal regulations interpreting this law with respect to addressing allegations of sexual misconduct; however, the U.S. Department of Education has issued guidance through Dear Colleague Letters which establish the federal agency’s expectations for institutions of higher education that receive federal funding. This guidance is being enforced by the U.S. Department of Education through the Office for Civil Rights.

8. Anticipated economic impact of implementing the rule (note if the rule is likely to have a significant economic impact on small businesses):

There is no anticipated economic impact of the proposed rule.

Contact Person: Tomas Stafford, General Counsel, 608-262-2995

Authorized Signature Date 6/19/14
STATEMENT OF SCOPE FOR ADMINISTRATIVE RULES

BOARD OF REGENTS OF THE UNIVERSITY OF WISCONSIN SYSTEM

Rule No.: Chapter UWS 11

Relating to: Dismissal of Academic Staff for Cause

Rule Type: Permanent

1. Finding/nature of emergency (Emergency Rule only):

   N/A

2. Detailed description of the objective of the proposed rule:

   The Board of Regents of the University of Wisconsin System ("Board") seeks to modify Chapter UWS 11, Dismissal of Academic Staff for Cause, to recognize published guidance from the U.S. Department of Education. In the guidance, the Department of Education has addressed expectations for higher education institutions to respond to sexual misconduct allegations involving school employees, including allegations of sexual assault.

3. Description of the existing policies relevant to the rule, new policies proposed to be included in the rule, and an analysis of policy alternatives:

   The current version of Chapter UWS 11 provides a disciplinary process for pursuing dismissal of academic staff, including cases of serious criminal misconduct, such as sexual assault.

   The U.S. Department of Education has issued guidance related to sexual assaults at higher education institutions and has reaffirmed that Title IX protects students from sexual harassment carried out by school employees. Some of the expectations of the U.S. Department of Education may require modifications to the provisions under the current Chapter 11 in order for them to be met.

   The modifications contemplated by this rulemaking would incorporate into law some of the published expectations of the U.S. Department of Education. In particular, the new provisions would reflect the evidentiary burden of proof and the role of a complainant in the process.

   If modifications are not made to Chapter UWS 11, the UW institutions will continue to adhere to the provisions of Chapter UWS 11 and to the federal guidance, but only to the extent that a conflict does not arise between the two. Further, following both policy guidance and the law may lead to confusion.
4. Detailed explanation of statutory authority for the rule (including the statutory citation and language):

Wis. Stat. § 36.15(3): “Procedural Guarantees. A person having an academic staff appointment for a term may be dismissed prior to the end of the appointment term only for just cause and only after due notice and hearing. A person having an academic staff appointment for an indefinite term who has attained permanent status may be dismissed only for just cause and only after due notice and hearing. In such matters the action and decision of the board, or the appropriate official authorized by the board, shall be final, subject to judicial review under ch. 227. The board shall develop procedures for the notice and hearing which shall be promulgated as rules under ch. 227.”

5. Estimate the amount of time that state employees will spend developing the rule and other resources necessary to develop the rule:

50 hours

6. List with description of all entities that may be affected by the proposed rule:

All 13 four-year University of Wisconsin System institutions, all 13 UW Colleges and the University of Wisconsin Extension.

7. Summary and preliminary comparison with any existing or proposed federal regulation that is intended to address the activities to be regulated by the proposed rule:

Title IX of the Education Amendments of 1972 provides that “[N]o person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving Federal financial assistance.” Currently, there are no federal regulations interpreting this law with respect to addressing allegations of sexual misconduct; however, the U.S. Department of Education has issued guidance through Dear Colleague Letters which establish the federal agency’s expectations for institutions of higher education that receive federal funding. This guidance is being enforced by the U.S. Department of Education through the Office for Civil Rights.

8. Anticipated economic impact of implementing the rule (note if the rule is likely to have a significant economic impact on small businesses):

There is no anticipated economic impact of the proposed rule.

Contact Person: Tomas Stafford, General Counsel, 608-262-2995

Authorized Signature

Date

June 18, 2014
STATEMENT OF SCOPE FOR ADMINISTRATIVE RULES

BOARD OF REGENTS OF THE UNIVERSITY OF WISCONSIN SYSTEM

Rule No.: Chapter UWS 17

Relating to: Nonacademic Student Misconduct

Rule Type: Permanent

1. Finding/nature of emergency (Emergency Rule only):

N/A

2. Detailed description of the objective of the proposed rule:

The Board of Regents of the University of Wisconsin System ("Board") seeks to modify Chapter UWS 17 regarding Student Nonacademic Misconduct to recognize the guidance that the U.S. Department of Education has published in regard to the manner in which higher education institutions should address and respond to sexual misconduct allegations involving a student, including sexual assault. Specifically, the Board seeks to amend Chapter UWS 17 by creating a new section that would provide a process under which such allegations would be handled by University of Wisconsin System institutions.

3. Description of the existing policies relevant to the rule, new policies proposed to be included in the rule, and an analysis of policy alternatives:

The current version of Chapter UWS 17 provides a student disciplinary process under which allegations of a violation of those rules, including allegations of sexual misconduct, is handled. This process has been fair and effective since it was first published in 1996. In 2009, the Chapter was amended through the administrative rule-making process to update the Chapter and modify certain provisions to underscore the educational emphasis of the nonacademic student disciplinary process. The Chapter authorizes each institution of the University of Wisconsin System to adopt consistent policies and procedures.

In response to the guidance issued by the U.S. Department of Education in the last few years, the University of Wisconsin System Administration provided written guidance to UW institutions to acknowledge the U.S. Department of Education’s expectations for the manner in which institutions handle sexual misconduct on campus. This guidance, however, was developed with the acknowledgment that it does not supersede Chapter UWS 17. Consequently, some of the expectations of the U.S. Department of Education cannot be met because they would conflict with certain provisions under the current Chapter, such as certain rights afforded only to an accused student.

The modifications contemplated by this rulemaking would incorporate into law what now exists in the System’s Guidance and thus reflect best practices as well as the expectations of the U.S. Department of Education. Further, the modifications would permit the University to incorporate those expectations which now are inconsistent with the existing rule. Institutions would adopt policies consistent with the new Chapter.
The alternative would be to continue to operate with both Chapter UWS 17 and the
guidance. This, however, would be less effective and could lead to confusion. Instead of one
single policy that is intended to be easily understood by students, the current framework includes
UWS 17, the internal guidance provided by the University of Wisconsin System Administration,
and guidance provided by the U.S. Department of Education.

4. Detailed explanation of statutory authority for the rule (including the statutory
citation and language):

Wis. Stat. § 36.35: “The board shall promulgate rules under ch. 227 governing student
conduct and procedures for the administration of violations.”

5. Estimate the amount of time that state employees will spend developing the rule and
other resources necessary to develop the rule:

50 hours

6. List with description of all entities that may be affected by the proposed rule:

All 13 four-year University of Wisconsin System institutions, all 13 UW Colleges and the
students thereof.

7. Summary and preliminary comparison with any existing or proposed federal
regulation that is intended to address the activities to be regulated by the proposed rule:

Title IX of the Education Amendments of 1972 provides that “[N]o person in the United
States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or
be subjected to discrimination under any education program or activity receiving Federal
financial assistance.” Currently, there are no federal regulations interpreting this law with respect
to addressing allegations of sexual misconduct; however, the U.S. Department of Education has
issued guidance through Dear Colleague Letters which establish the federal agency’s
expectations for institutions of higher education that receive federal funding. This guidance is
being enforced by the U.S. Department of Education through the Office for Civil Rights.

8. Anticipated economic impact of implementing the rule (note if the rule is likely to
have a significant economic impact on small businesses):

There is no anticipated economic impact of the proposed rule.

Contact Person: Tomas Stafford, General Counsel, 608-262-2995

Authorized Signature

June 18, 2014

Date
Remedial/Developmental Education Strategy

Working Group Report

- Provosts
- Gates Grant #1
- Research & Development Group

- Recommendations
- Moving Up Strategy
- Alternative/New Models

- Solutions
- Pilots
- Testing

- Implementation
- Gates Grant #2 ? Or other?
- Scale

- EMPT Letter
- Regional Meetings K-12 and UW Professors

- K-12/DPI Dialogue

- Reduce Demand for Remedial Development
- Increase Student Success in Instruction Remedial/Developmental Education
- Reduce Time to Degree
- Reduce Costs
- Multiple Approaches for Multiple Audiences
GENERAL INSTRUCTIONS:

You will have 90 minutes to complete the mathematics practice test. Work rapidly but carefully. Do not spend too much time on any one question. If you have time after you have finished the test, you may go back and review your answers.

PLEASE NOTE that the use of a non-graphing calculator on this test is optional. No question on this test requires the use of a calculator. GRAPHING CALCULATORS ARE NOT ALLOWED. You may not share a calculator.

When you take the official Math Placement Test, your placement will be based on three math scores which will be used in combination to determine your optimal math placement. In order to get the most accurate assessment using this practice test, you should try to duplicate the actual testing situation as closely as possible. When taking the test, you should not use any additional materials or look up the answers to the questions. You should only allow yourself 90 minutes to take this test and should take the entire test in one sitting. If possible, take the test in a quiet room where you will not be interrupted. When you have completed the test, you should score your test using the answer key and scoring instructions provided on the last page.
1. $5(a + b) + 2(a + c) - 4(b + c) =$
   a) $3(a + b + c)$
   b) $7a + b - 2c$
   c) $7a - 3b + 2c$

2. 120% of 360 is
   a) 3
e) 432
   b) 72
c) 300

3. The area of triangle XYZ is
   a) 20
e) 40
   b) 22
c) 28

4. $\frac{2^3 \times 2^5}{2^4}$
   a) 2
e) 32
   b) 4
c) 8

5. $(2x - 3)^2 =$
   a) $-12x$
   b) $4x^2 + 9$
   c) $4x^2 - 5x + 9$

6. What is the area of the given figure?
   a) 15
e) 30
   b) 23
c) 25

7. In which triangle is the sum of the measures of the angles the greatest?
   a) MNO
e) None of these
   b) RST
c) UVW
8. Fifteen ounces of concentrate is mixed with 45 ounces of water to make 60 ounces of orange juice. What percent of the orange juice is concentrate?
   a) 3   d) 30
   b) 4   e) $33\frac{1}{3}$
   c) 25

9. $\frac{x^{15}}{x^{12}} = $
   a) $x^{27}$   d) $x^3$
   b) $\frac{5x}{4}$   e) None of these
   c) $\frac{5}{x^4}$

10. $\frac{x}{3} + \frac{x}{2} - \frac{x}{5} = $
    a) $\frac{x}{30}$   d) 0
    b) $\frac{x}{5}$   e) $\frac{19x}{30}$
    c) $\frac{x + 5}{5}$

11. Subtracting $n$ from 4 added to three times $n$ is equal to
    a) $-2n - 4$   d) $4n - 4$
    b) $-2n + 4$   e) $4n + 4$
    c) $2n + 4$

12. Which best describes how angles $K$, $L$, and $M$ are related?
    a) $K + L = M$   d) $K + L + M = 180$
    b) $K + L > M$   e) More information needed
    c) $K + L < M$

13. $(-2)^3 + (-3)^2 = $
    a) $-17$   d) 1
    b) $-1$   e) 17
    c) 0

14. 9 square yards is
    a) 1 square foot   d) 81 square foot
    b) 3 square foot   e) 243 square foot
    c) 27 square foot
15. If \( \frac{3}{4}x = 12 - x \), then \( x = \)
   a) \( \frac{12}{7} \)  d) \( \frac{48}{7} \)
   b) \( \frac{45}{4} \)  e) 48
   c) 12

16. If \( ABCD \) is a rectangle, then
   a) \( \text{DCEA is a rectangle.} \)
   b) \( \text{DCBF is a parallelogram.} \)
   c) \( \text{DCEF is a trapezoid.} \)
   d) \( \text{DCEF is a parallelogram.} \)
   e) \( \text{DCEF is a rhombus.} \)

17. If \( d = \frac{F + 2}{p} \), then \( p = \)
   a) \( d(F + 2) \)  d) \( \frac{F + 2}{d} \)
   b) \( dF - 2 \)  e) \( \frac{d - 2}{F} \)
   c) \( \frac{d}{F + 2} \)

18. Solve for \( x \): \( x + 3(x - 5) = x - 2(x + 5) \)
   a) \( x = -1 \)  d) \( x = 3 \)
   b) \( x = 1 \)  e) \( x = 5 \)
   c) \( x = 2 \)

19. Which of the following has been reduced to lowest terms?
   a) \( \frac{26}{65} \)  d) \( \frac{49}{119} \)
   b) \( \frac{31}{128} \)  e) \( \frac{121}{352} \)
   c) \( \frac{34}{51} \)

20. \( (3a^3)^2 = \)
   a) \( 6a^5 \)  d) \( 9a^6 \)
   b) \( 6a^6 \)  e) \( 9a^9 \)
   c) \( 9a^5 \)

21. Express 0.000719 in scientific notation.
   a) \( 7.19 \times 10^{-3} \)
   b) \( 7.19 \times 10^{-4} \)
   c) \( 0.719 \times 10^{-4} \)
   d) \( 7.19 \times 10^{-4} \)
   e) \( 7.19 \times 10^{-4} \)
22. If a train travels 60 miles in 40 minutes, what is its average speed in miles per hour?
   a) 120  d) 60
   b) 100  e) 40
   c) 90

23. Find the value of \( \frac{(-1)^n(A - 2B)}{C} \) when \( n = 4, A = 5, B = -4 \) and \( C = 2 \).
   a) \(-6\)  d) \(\frac{13}{2}\)
   b) \(-\frac{13}{2}\)  e) 6
   c) \(-\frac{3}{2}\)

24. The remainder when \( x^3 - 4x^2 + x + 9 \) is divided by \( x - 2 \) is
   a) -1  d) -17
   b) 3  e) 19
   c) 15

25. If \( h(y) = \frac{4 - y^2}{3 - y} \), which of the following is not defined?
   a) \( h(0) \)  d) \( h(2) \)
   b) \( h(3) \)  e) \( h(-2) \)
   c) \( h(-3) \)

26. Right triangle \( ABC \) has \( AC = 13 \) and \( AB = 12 \). The area of triangle \( ABC \) is
   a) 78  d) 30
   b) 65  e) None of these
   c) 60

27. \( 3\sqrt{12} + 2\sqrt{75} - 5\sqrt{27} = \)
   a) \( \sqrt{60} \)  d) \( \sqrt{12} \)
   b) \( \sqrt{27} \)  e) 0
   c) \( \sqrt{3} \)

28. Which of the functions listed below has this graph?
   a) \( f(x) = 2^x \)
   b) \( f(x) = \left(\frac{1}{2}\right)^x \)
   c) \( f(x) = -2^x \)
   d) \( f(x) = \log_2 x \)
   e) \( f(x) = -\log_\frac{1}{2} x \)
29. The slope of the line with the equation \( y = -7x + 3 \) is
   a) \( 3 \)       d) \( -\frac{3}{7} \)
   b) \( 7 \)       e) \( -7 \)
   c) \( -\frac{1}{7} \)

30. \( \frac{(3y)^{-2}(9y^2)}{3y^{-4}} = \)
   a) \( 27 \)       d) \( \frac{y^4}{3} \)
   b) \( \frac{1}{9} \)   e) \( -\frac{y^4}{3} \)
   c) \( \frac{3}{y^6} \)

31. Find all values of \( x \) for which \((3x + 2)(4x - 5) = 0\)
   a) \( \frac{3}{2}, -\frac{4}{5} \)       d) \( \frac{2}{3}, -\frac{5}{4} \)
   b) \( -\frac{3}{2}, \frac{4}{5} \)       e) \( -\frac{2}{3}, -\frac{5}{4} \)
   c) \( -\frac{2}{3}, \frac{5}{4} \)

32. \( (a^{16})^{\frac{3}{4}} = \)
   a) \( a^{\frac{64}{4}} \)       d) \( a^8 \)
   b) \( a^{\frac{19}{4}} \)       e) \( a^{12} \)
   c) \( a^{\frac{67}{4}} \)

33. What fraction of the rectangle’s area is shaded?

   a) \( \frac{1}{5} \)       d) \( \frac{2}{5} \)
   b) \( \frac{1}{4} \)       e) \( \frac{2}{3} \)
   c) \( \frac{1}{3} \)

34. Which of the following represent(s) functions of \( x \)?
   a) i only       d) i and iii
   b) ii only      e) i, ii, and iii
   c) iii only
35. One factor of \(3x^2 + 6x + 3\) is
   a) \(3x + 1\)      d) \(3x - 1\)
   b) \(x + 1\)       e) \(x - 1\)
   c) \(x + 3\)

36. \((2x^2 - 3x + 4)(2x - 3) = \)
   a) \(4x^3 + 12x^2 + 17x - 12\)
   b) \(10x^5 + 15x^3 + 20x\)
   c) \(-2x^5 + 3x^3 - 4x\)
   d) \(4x^5 - 12x^3 + 17x - 12\)
   e) \(4x^3 - 12x^2 + 17x - 12\)

37. An equation of the circle with center \((-2, k)\) and radius 5 is
   a) \(\frac{x^2}{4} + \frac{y^2}{k^2} = 25\)
   b) \((x - 2)^2 + (y + k)^2 = 5\)
   c) \((x - 2)^2 + (y + k)^2 = 25\)
   d) \((x + 2)^2 + (y - k)^2 = 5\)
   e) \((x + 2)^2 + (y - k)^2 = 25\)

38. The graph of \(3x + 4y = 24\) crosses the y-axis at
   a) \(y = -\frac{4}{3}\)      d) \(y = 4\)
   b) \(y = -\frac{3}{4}\)      e) \(y = 6\)
   c) \(y = 3\)

39. When you solve the equation \(x^3 - 3x^2 + 2x = 0\), how many roots are greater than \(\frac{1}{2}\)?
   a) no root      d) three roots
   b) one root      e) all roots
   c) two roots

40. The graph of a function \(y = f(x)\) is given by

The domain of the inverse \(f^{-1}(x)\) is the set of real numbers between
   a) 0 and 3      d) \(-1\) and 3
   b) \(-1\) and 1      e) 1 and 3
   c) \(-1\) and 2
41. Find the area of the shaded region between the lines.
   a) 4
   b) 6
   c) 8
   d) 10
   e) 12

42. In lowest terms, \( \frac{x - \frac{4}{x}}{\frac{x}{2} + 1} = \)
   a) \( \frac{2(x - 2)}{x} \)
   b) \( \frac{x^3 - 8}{2x} \)
   c) \( \frac{2x - 3}{2x} \)
   d) \( \frac{(x - 4)(x + 1)}{2x} \)
   e) \( \frac{-8}{x + 1} \)

43. \(|6 + 3x| < 9\) is equivalent to
   a) \(-1 < x < 1\)
   b) \(1 < x < -5\)
   c) \(x < 1\)
   d) \(-5 < x < 5\)
   e) \(-5 < x < 1\)

44. One factor of \(4x^2 - 8x + 4\) is
   a) \(2x + 2\)
   b) \(x - 2\)
   c) \(x + 4\)
   d) \(x - 1\)
   e) \(x + 1\)

45. If \((ax + 3y)^2 = a^2x^2 - 6xy + 9y^2\), then \(a =\)
   a) 2
   b) -2
   c) 1
   d) -1
   e) -6

46. If \(3 \log x = \log 8\), then \(x =\)
   a) \(\frac{8}{3}\)
   b) 2
   c) 8
   d) \(\frac{\log 8}{3}\)
   e) \(\log \left(\frac{8}{3}\right)\)

47. \(\frac{2^{-2} + 3^{-2}}{2^{-1} + 3^{-1}} = \)
   a) \(\frac{13}{30}\)
   b) \(\frac{5}{6}\)
   c) \(\frac{6}{5}\)
   d) \(\frac{13}{5}\)
   e) \(\frac{1}{5}\)

48. Which of the following equations has the same solution as \(2 - 3x = \frac{x - 2}{3x + 1}\)?
   a) \(-6x^2 + 2x + 4 = 0\)
   b) \(-9x^2 + 2x = 0\)
   c) \(9x^2 + x - 4 = 0\)
   d) \(-9x^2 + 2x + 4 = 0\)
   e) \(-9x^2 + 4x + 4 = 0\)
49. If \( f(x) = 2x^2 + 1 \), then \( \frac{f(x + h) - f(x)}{h} \) equals
   a) 1  
   b) 2h  
   c) \( 2x + h \)  
   d) \( 2x + 2h \)  
   e) \( 4x + 2h \)

50. \((x - 2)\left(\frac{1}{x} + \frac{1}{2}\right) = \)
   a) 0  
   b) \( x - 2 \)  
   c) \( \frac{x - 2}{x + 2} \)  
   d) \( \frac{2(x - 2)}{x + 2} \)  
   e) \( \frac{x^2 - 4}{2x} \)

51. The distance between the points \((x, y)\) and \((2, 3)\) is
   a) \( \sqrt{x^2 + y^2} - (2^2 + 3^2) \)  
   b) \( |x - 2| + |y - 3| \)  
   c) \( (x - 2)^2 + (y - 3)^2 \)  
   d) \( \sqrt{(x - 2)^2 + (y - 3)^2} \)  
   e) \( \sqrt{x - 2} + (y - 3) \)

52. A \( y \) value in the solution of
   \[
   \begin{align*}
   5x^2 + y^2 &= 9 \\
   2x + y &= 0
   \end{align*}
   \]
   is
   a) 0  
   b) 1  
   c) 2  
   d) 4  
   e) 6

53. A 90-pound coil of cable is 300 feet long. If a 30-foot length is cut off, what is the weight in pounds of the remaining cable?
   a) 9  
   b) 45  
   c) 60  
   d) 80  
   e) 81

54. The number of bees, \( P \), in a colony doubles every 3 years. If \( t \) is measured in years and \( P_0 \) is the initial number of bees, then
   a) \( P = P_0 2^{t/3} \)  
   b) \( P = P_0 2^{3t} \)  
   c) \( P = P_0 2^t \)  
   d) \( P = P_0 3^{2t} \)  
   e) \( P = P_0 3^{t/2} \)
55. The function \( f(x) \) is graphed over the interval from \( x = -2 \) to \( x = 8 \). Which statement is true about \( f(x) \) over the given interval?

- a) The largest value of the function is 8.
- b) The maximum value of \( f(x) \) is \( \frac{1}{2} \).
- c) The solution to \( f(x) = 0 \) is 2.
- d) \( f(x) = 0 \) when \( x = 4 \).
- e) None of these

56. How many real numbers are solutions for \( x^2 - 5x + 7 = 0 \)?

- a) none
- b) one
- c) two
- d) three
- e) more than three

57. The function \( f(x) = \frac{3}{2} x + 4 \) multiplies the input by \( \frac{3}{2} \) then adds 4. Then \( f^{-1}(x) \), the inverse of \( f \),

- a) multiplies the input by \( \frac{2}{3} \), then subtracts 4.
- b) multiplies the input by 4, then subtracts \( \frac{3}{2} \).
- c) subtracts 4 from the input, then multiplies by \( \frac{2}{3} \).
- d) adds 4 to the input, then multiplies by \( \frac{3}{2} \).
- e) multiplies the input by \( -\frac{3}{2} \), then subtracts 4.

58. The line \( 3x - 4y - 1 = 0 \) is parallel to

- a) \( 8x = 6y - 6 \)
- b) \( 8x + 6y + 5 = 0 \)
- c) \( y = \frac{4}{3} x \)
- d) \( 4y = 3x - 7 \)
- e) \( 4x - 3y - 1 = 0 \)

59. If \( (5x + ay)^2 = 25x^2 - 10xy + a^2 y^2 \), then \( a = \)

- a) 2
- b) \(-2\)
- c) 1
- d) \(-1\)
- e) \(-10\)
60. A line not parallel to \( y - 3 = ax \) is
   a) \( x - 3 = \frac{y}{a} \)  
   b) \( x = \frac{y}{a} - \frac{3}{a} \)  
   c) \( x = ay - 3 \)  
   d) \( 2ax = 2y + 5 \)  
   e) \( ax - y = 5a \)

61. The cost, in thousands of dollars, of producing \( x \) thousand textbooks is \( C(x) = 50 + 10x - 2x^2 \). The revenue, also in thousands of dollars, is \( R(x) = 5x \). Find the profit or loss if 5 thousand textbooks are produced. (Profit = Revenue - Cost)
   a) 50 thousand dollar loss  
   b) 25 thousand dollar loss  
   c) 5 thousand dollar loss  
   d) 10 thousand dollar profit  
   e) 25 thousand dollar profit

62. The total production costs \( C \) to manufacture \( S \) skateboards are shown below for a 3-week period. Write a linear equation that represents this data.

<table>
<thead>
<tr>
<th># OF PRODUCTION</th>
<th>PRODUCTION COSTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEEK 1</td>
<td>115</td>
</tr>
<tr>
<td>WEEK 2</td>
<td>352</td>
</tr>
<tr>
<td>WEEK 3</td>
<td>408</td>
</tr>
</tbody>
</table>

\( \text{WEEK 1: } 115 \text{ skateboards cost } $18,020 \)
\( \text{WEEK 2: } 352 \text{ skateboards cost } $29,396 \)
\( \text{WEEK 3: } 408 \text{ skateboards cost } $32,084 \)

a) \( C = 48S + 11,376 \)  
   b) \( C = 48S + 12,500 \)  
   c) \( C = 48S + 18,020 \)  
   d) \( C = 156.70S + 18,020 \)  
   e) \( C = 90.86S + 12,500 \)

63. Which of the following equations has a graph that is a straight line?
   a) \( y = x^2 + 1 \)  
   b) \( 2x + 3xy = 5 \)  
   c) \( x^2 - y^2 = 3 \)  
   d) \( x - y = 3 \)  
   e) None of these

64. Let \( A, B, C \) be distinct points on a circle with diameter \( AB \). Then we may conclude that

   a) \( AC \) is longer than \( AB \).
   b) \( \text{angle } ABC \) is greater than \( \text{angle } BAC \).
   c) \( \text{angle } BAC \) is greater than \( \text{angle } ACB \).
   d) \( \text{angles } BAC \) and \( ACB \) are complementary.
   e) \( \text{angle } ACB \) is a right angle.
65. If \( \sin A = \frac{1}{3} \) and \( 0^\circ < A < 90^\circ \), then \( \cos A = \)

a) \( \frac{\sqrt{8}}{3} \)  
\( d) \frac{\sqrt{8}}{9} \) 

b) \( \frac{2}{3} \)  
\( e) \frac{\sqrt{8}}{\sqrt{10}} \) 

c) \( \frac{3}{\sqrt{8}} \) 

66. Suppose a triangle has the dimensions indicated below:

\[ b = 10 \quad \quad \quad a = 30 \]
\[ A = \frac{\pi}{4} \]

Then \( \sin B \) equals

a) \( \frac{60}{\sqrt{2}} \)  
\( d) \frac{\sqrt{2}}{6} \) 

b) \( \frac{6}{\sqrt{2}} \)  
\( e) \frac{\sqrt{2}}{60} \) 

c) \( \frac{\sqrt{6}}{2} \) 

67. \( \cos \theta \tan \theta = \)

a) \( \sin \theta \)  
\( d) \cot \theta \) 

b) \( \frac{\cos^2 \theta}{\sin \theta} \)  
\( e) \sec \theta \) 

c) \( 1 \) 

68. Let \( \theta \) be the angle formed by the line \( y = 3x \) and the positive x-axis. Then \( \sin \theta \) equals

a) \( \sqrt{10} \)  
\( d) \frac{\sqrt{10}}{3} \) 

b) \( \frac{1}{\sqrt{10}} \)  
\( e) \frac{3}{\sqrt{10}} \) 

c) \( 3 \) 

69. If \( h \) is an altitude of the triangle, then the area is

\[ \frac{1}{2}ab \sin \theta \]

a) \( \frac{1}{2}bc \)  
\( d) \frac{1}{2}ab \sin \theta \) 

b) \( \frac{1}{2}ab \)  
\( e) \frac{1}{2}ab \cos \theta \) 

c) \( \frac{1}{2}ab \tan \theta \)
70. A sketch of the graph of \( y = \tan(x) \) is

a) 
\[ \text{Graph of } y = \tan(x) \text{ (dashed line)} \]

b) 
\[ \text{Graph of } y = \tan(x) \text{ (dotted line)} \]

c) 
\[ \text{Graph of } y = \tan(x) \text{ (solid line)} \]

d) 
\[ \text{Graph of } y = \tan(x) \text{ (dashed line)} \]

e) 
\[ \text{Graph of } y = \tan(x) \text{ (dotted line)} \]

71. Given \( \triangle ABC \) with \( D \) the midpoint of side \( AC \) and \( E \) the midpoint of side \( BC \).

Then which of the following is not true?

a) \( \overline{AB} \parallel \overline{DE} \)

b) \( \overline{AB} = 2\overline{DE} \)

c) \( \angle ADE = \angle DEC \)

d) \( \angle A = \angle EDC \)

e) \( \triangle ABC \) is similar to \( \triangle DEC \)

72. If \( \cos \theta = \frac{3}{5} \) and \( 0 < \theta < 90^\circ \), then \( \cos(90^\circ - \theta) \) equals

a) \( -\frac{3}{5} \)

d) \( \frac{5}{3} \)

b) \( \frac{4}{5} \)

e) \( -\frac{5}{3} \)

c) \( -\frac{4}{5} \)

73. The cosine of the angle \( \theta \) in the figure is

\[ \left( -\frac{1}{3}, -\frac{2\sqrt{2}}{3} \right) \]

a) \( \frac{1}{3} \)

d) \( -\frac{2\sqrt{2}}{3} \)

b) \( -\frac{1}{3} \)

e) \( \frac{1}{2\sqrt{2}} \)

c) \( \frac{2\sqrt{2}}{3} \)

74. In the figure below, \( \angle ABD = 90^\circ \) and \( \angle BCD = 90^\circ \). The length of \( BC \) is

\[ \sqrt{2} \quad \frac{\sqrt{3}}{2} \quad \sqrt{3} \]

a) \( \frac{\sqrt{2}}{2} \)

d) \( \sqrt{3} \)

b) \( \sqrt{2} \)

e) \( \sqrt{6} \)

c) \( \frac{\sqrt{3}}{2} \)
75. Which of the following statements is false?
   a) All squares are similar.
   b) All congruent rectangles are similar.
   c) All equiangular triangles are similar.
   d) All equilateral triangles are similar.
   e) All right triangles are similar.

76. If \( \cos x = 0.70 \), then \( \cos(-x) = \)
   a) 0.70  
   b) 0.30  
   c) -0.70  
   d) \( \frac{1}{0.70} \)  
   e) \( \frac{1}{0.70} \)  

77. Suppose a 5 foot ladder is leaning against a vertical wall, where the bottom of the ladder is a distance of \( x \) feet from the wall. Then the angle \( \theta \) that the ladder makes with the ground is given by

   a) \( \frac{x}{5} \)  
   b) \( \cos\left(\frac{x}{5}\right) \)  
   c) \( \frac{1}{\cos\left(\frac{x}{5}\right)} \)  
   d) \( \cos^{-1}\left(\frac{x}{5}\right) \)  
   e) \( \cos^{-1}\left(\frac{5}{x}\right) \)  

78. The triangle ABC is circumscribed about a circle with P, Q, and R as the points of tangency. If AR = 10, CQ = 8, and BQ = 4, then the length of AB is

   a) 10  
   b) 12  
   c) 14  
   d) 16  
   e) 18  

79. The solutions to \( \sin^2 x = \frac{1}{4} \) in the interval \( 0 \leq x \leq 2\pi \) are

   a) \( x = \frac{\pi}{6}, \frac{5\pi}{6} \)  
   b) \( x = \frac{\pi}{3}, \frac{2\pi}{3} \)  
   c) \( x = \frac{\pi}{4}, \frac{3\pi}{4}, \frac{5\pi}{4}, \frac{7\pi}{4} \)  
   d) \( x = \frac{\pi}{3}, \frac{2\pi}{3}, \frac{4\pi}{3}, \frac{5\pi}{3} \)  
   e) \( x = \frac{\pi}{6}, \frac{5\pi}{6}, \frac{7\pi}{6}, \frac{11\pi}{6} \)
80. Let \( f(x) \) have the graph shown below:

Then \( f(x) \) could be

\[
\begin{align*}
\text{a)} & \quad 3 \sin \left( \frac{x}{2} \right) & \quad \text{d)} & \quad 2 \sin (3x) \\
\text{b)} & \quad 3 \cos (2x) & \quad \text{e)} & \quad 3 \sin (2x) \\
\text{c)} & \quad 3 \cos \left( \frac{x}{2} \right)
\end{align*}
\]

81. \( \sin^2 (3x) + \cos^2 (3x) = \)

\[
\begin{align*}
\text{a)} & \quad 9 & \quad \text{d)} & \quad \cos (6x) \\
\text{b)} & \quad 3 & \quad \text{e)} & \quad \text{None of these} \\
\text{c)} & \quad 1
\end{align*}
\]

82. In the figure below, \( AB = BD \) and \( BE \) is perpendicular to \( AC \). If \( AC = 13 \) and \( AD = 8 \), find \( AE \).

\[
\begin{align*}
\text{a)} & \quad \frac{13}{2} & \quad \text{d)} & \quad 5 \\
\text{b)} & \quad \frac{13}{3} & \quad \text{e)} & \quad \text{None of these} \\
\text{c)} & \quad 4
\end{align*}
\]

83. \( \tan 30^\circ = \)

\[
\begin{align*}
\text{a)} & \quad \frac{1}{2} & \quad \text{d)} & \quad \sqrt{3} \\
\text{b)} & \quad \frac{\sqrt{3}}{3} & \quad \text{e)} & \quad \frac{\sqrt{3}}{2} \\
\text{c)} & \quad 2
\end{align*}
\]

84. An angle of radian measure, \( x \), has degree measure of

\[
\begin{align*}
\text{a)} & \quad \frac{180}{\pi x} & \quad \text{d)} & \quad \frac{180x}{\pi} \\
\text{b)} & \quad \frac{\pi}{180x} & \quad \text{e)} & \quad \text{None of these} \\
\text{c)} & \quad \frac{\pi x}{180}
\end{align*}
\]

85. \( \sin 2\theta = \)

\[
\begin{align*}
\text{a)} & \quad 2 \sin \theta & \quad \text{d)} & \quad \sin \theta + \cos \theta \\
\text{b)} & \quad 2 \cos \theta & \quad \text{e)} & \quad \sin 2\theta - \sin \theta \\
\text{c)} & \quad 2 \sin \theta \cos \theta
\end{align*}
\]
ANSWER KEY:

The answers to this practice test are given below. Give yourself one point for each question you answered correctly and zero points for each question you answered incorrectly. Add up your points for each section: Math Basics, Algebra, and Trigonometry. An average score on Math Basics is between 11 and 19. An average score on Algebra is between 10 and 26 and an average score on Trigonometry is between 4 and 12.

Placement into a remedial level math course is determined solely by your score on the Math Basics section of the test. Therefore, you would need to score 10 or higher on the Math Basics section to test out of a remedial level math course.

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<th>Trigonometry</th>
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