

THE UNIVERSITY OF WISCONSIN-MILWAUKEE
College of Engineering and Applied Science

FACULTY MEETING

Friday, October 4, 2019 10:30 a.m. EMS E180

MINUTES

The meeting was called to order at 10:30 a.m. with Dean Brett Peters presiding.

PRESENT: Professors Abu-Zahra, Amano, Armstrong, Avdeev, Boyland, Bravo, Church, Cuzner, Dhingra, D'Souza, Dumitrescu, El-Hajjar, Ghorbanpoor, Goyal, Graettinger, Hanson, Helwany, Hosseini, Hu, Jang, Kouklin, Law, Liao, Liu, Mali, Misra, Munson, Niu, Nosonovsky, Otieno, Patrick, Petering, Peters, Pillai, Priyatha, Qu, A.Rahman, M.Rahman, Ranji, Reisel, Rohatgi, Salowitz, Seifoddini, Sobolev, Stern, Sung, Suzuki, L.Wang, W.Wang, Y.Wang, Xu, D.Yu, J.Yu, Z.Yu, Zhang, J.Zhao, T.Zhao

EXCUSED: Professors Cheng, McRoy, Qin, Titi, Venugopalan

GUESTS: S. Aylesworth, J. Broskowski, J. Goodman, J. Opitz

I. DEAN UPDATE- See Attachment 1

During the last year, Professors Qin, Stern, and Titi were promoted to professor. Additionally, several faculty were recognized for receiving positive post-tenure reviews.

The university's primary points of emphasis continue to be Student Success, Research Excellence, and Community Engagement.

CEAS needs to give thought to how to move forward to become a Top-100 Engineering college. Big Goals of \$25 million in annual research expenditures and producing 525 BS graduates from CEAS each year (with a 70+% 6-year graduation rate) were proposed and discussion on these goals is welcome.

To achieve these goals, considerable thought and planning on the curricula in the college is needed, as well as new plans on how to grow the size of the faculty and increase collaboration between faculty to generate more external research funding.

Increasing the challenges associated with reaching these goals are budget realities, including an expected 5% decrease in UWM's budget in FY21, the need of CEAS to cover 30% of the expected pay increases, and the implementation of the new budget model which currently requires CEAS to be supported by other units on campus through budget adjustments. Furthermore, the ability to carry forward cost savings from one year for use in future years has mostly ended. More positive budget impacts are likely to be seen with the UW System Freshwater Collaboration, the outcomes-based funding approved by the legislature's JFC, and \$500,000 in funds to plan for a new engineering building.

II. INTRODUCTIONS

A. Faculty

1. Andrew Graettinger, Associate Dean for Research, Professor, CEE
2. Priyatha Premnath, Assistant Professor, Biomedical Engineering
3. Jacob Rammer, Assistant Professor, Biomedical Engineering

B. Staff

1. Steven Anderson, Academic Support and Retention Coordinator
2. Michelle Boehm, Marketing Specialist and Event Coordinator

III. ANNOUNCEMENTS

A. Development Update – Jean Opitz

The UWM Comprehensive Campaign has ended, with a total of \$251.5M raised from 21,000 donors.

In CEAS, \$16.5M was raised for CEAS and \$3.85M for the Connected Systems Institute.

There were 1156 donors to CEAS, with 83% of the total gifts being from alumni and other individuals. Regarding the value of the gifts, 43% of the amount donated was from corporations and 31% from alumni.

In CEAS, roughly 50% of the funds were for student success, and 50% for research.

B. UITS – Multi-factor authentication – John Goodman

Faculty and staff should enroll in multi-factor authentication by October 31.

C. Accessibility Resource Center (ARC) – Jonathan Broskowski and Shannon Aylesworth

Federal law requires that universities provide reasonable accommodations to students with physical or mental impairments that limit their ability to engage in major life activities.

Accommodations provided include altering the environment, curriculum formatting, and providing equipment and assisting technologies.

Students need to self-identify with the ARC, and then provide documentation of a diagnosis, have an interactive meeting with a counselor, and then need to have an interactive meeting between the student and the instructor.

Generally, instructors will see accommodations such as additional time for exams and note takers.

Accessibility training is available for instructors through the ARC website.

D. New CEAS Millionaires Club Members

Profs. Lingfeng Wang and Robert Cuzner were welcomed into the Millionaires Club.

E. CEAS Award Recipients

Outstanding Teaching Award for the 2018-2019 Academic Year:
Iftexharuddin Khan

Outstanding Faculty Research Award for the 2018-2019 Academic Year:
Junjie Niu

IV. INFORMAL REPORTS – See Attachment 2

V. DETERMINATION OF THE PRESENCE OF A QUORUM FOR FACULTY MEETING

As 56 voting faculty members were present, a quorum was present.

VI. AUTOMATIC CONSENT BUSINESS

A. Minutes of the April 26, 2019 Meeting

B. New Courses – See Attachment 3

C. Computer Engineering Program Change – See Attachment 4

VII. NEW BUSINESS

A. Integrated BS/MS Program Change – See Attachment 5

**CEAS FAC.DOC.
NO. 261**

Prof. Suzuki moved the Program Change for the Integrated BS/MS Program.

Prof. J. Zhao moved to amend the motion to allow up to 15 double-counted Credits, and that “The remainder (3-15 credits) may be backward-counted.

The motion to amend was seconded, and failed on a vote of 14-18.

The original motion passed on a voice vote.

B. Doctoral Program Committee Change – See Attachment 6

***CEAS FAC.DOC.
NO. 262***

Prof. Suzuki moved to accept the proposed doctoral program committee change.

The motion passed on a voice vote.

VIII. GENERAL DISCUSSION – None

X. ADJOURNMENT

Meeting Adjourned at 12:11 p.m.

John R. Reisel, Secretary
CEAS Faculty

JRR
Attachments

Faculty and Staff Meeting

October 2019



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Promotions – Congratulations!

Xiao Qin - Professor, Civil and Environmental Engineering

Nathaniel Stern - Professor, Mechanical Engineering and
Art & Design (PSOA)

Hani Titi - Professor, Civil and Environmental Engineering



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Post-tenure Review – Congratulations!


Brian Armstrong, EE
Hector Bravo, CEE
Amol Mali, CS
Susan McRoy, CS
Dev Misra, EE (& BME)
Mahsa Ranji, EE
Hamid Seifoddini, IME
Tian Zhao, CS

UWM Strategic Directions

- Diversity, Equity and Inclusion
- Outstanding Learning Environment
- Research Excellence
- Community Engagement and Talent Pipeline
- Sustainable Future for the Campus
 - Enrollment Management Actions
 - Fiscal Actions
 - Brand, Visibility and Image

College Strategic Goals

1. Make CEAS an outstanding environment in which to learn and to work
2. Create a dynamic environment and infrastructure to enhance innovative research
3. Anticipate and respond to market demands in order to produce graduates who are prepared to address and adapt to the changing needs of the marketplace and society
4. Build partnerships with stakeholders and enhance awareness of CEAS strengths and accomplishments

 **Move into the Top 100 Colleges of Engineering**



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Good to Great (Collins)

Big Hairy Audacious Goals (BHAG)

- \$25 Million in Research Expenditures
- 525 BS graduates/year with 70% six-year graduation rate
 - Other things are important complements, but these are the driving goals
- *Genius of the AND* – embrace both extremes of multiple dimensions at the same time
- *Confront the Brutal Facts* – be realistic but keep the faith
- *Hedgehog Concept* – Areas of Focus
- *Preserve the Core/Stimulate Progress* – remain true to fundamentals; innovate to drive growth
- *Fire Bullets then Cannonballs* – focused experiments first then go all in
- *Flywheel Effect* – relentless action eventually yields incredible results



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What do you want?

Top 100 College

Elevated research activity (\$25M in funding)

Strong, vibrant program (525 successful graduates)

These have to be your goals; you have to want them; and you have to believe we can achieve them!

How do we get there?

We have to think and act very differently

- Bigger and bolder
- Fundamentally redesign our activities
 - *Do more with less* - not just by working harder but by changing what we do and how we do it
 - For example, produce more graduates while teaching fewer courses so faculty can spend more time on research
 - Pareto analysis – what is really critical in our curriculum? Where is the 25% that is nice but not absolutely necessary?
 - Not lower standards but streamline
 - Provide students with fundamentals and set them up for life-long learning
 - Where are there inefficiencies/redundancies within a major and across majors?
 - Where is 80% sufficient?

Academic Plan

Research Leads the Way

- Research growth and enhancement is the path to fulfilling the strategic goal of being top 100 College of Engineering
- Grow externally funded research
- Grow visible, well-regarded, impactful research
- Grow prestigious, scholarly publications
- Enhance visibility of our faculty
- Grow and enhance PhD program

Research Activities

Build larger research initiatives in key areas

Departments contemplating research clusters as a means to foster research focus and leverage

Help each faculty member reach next level of activity

- Reinvestment and stimulus program
- Expand avenues to explore collaborative opportunities
- Faculty workload allocation to support increased research activity
 - On-going discussions in departments about flexible models and approaches

Strengthen and expand partnerships

- Increase probability of success on research proposals by targeting right opportunities with right partners
- Industry; National Labs; Universities

Academic Plan

Education is our Foundation

- Attract, retain, and graduate increasing numbers of well prepared students
- Departments reviewing curricula
 - Focus on the essential; Add limited set of compelling opportunities
 - Considering revising curricula to develop and leverage common set of courses in first year (pre-calc) and second year
 - Help our students be successful
 - Free up faculty time
- Engage the students in meaningful activities
 - Undergraduate research, engineering design, innovation and entrepreneurship
 - Early and consistent involvement with departments, faculty, and upper class and graduate students



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Budget *(Confront the Brutal Facts)*

Not good; Not getting better in short-term

- University anticipating 5% decline for FY21

Pay plan is expected! 🙌

- 2% + 2%; 90% based on solid performance
- *But* University (which means College) must fund 30% of the increase

New Budget Model uncertainty

- College is heavily dependent on adjustment process
 - FY20: \$12.8M → \$16.5M
- Extra expenses and responsibilities are still being revealed
- Carry-forward has largely been taken; still need permission (year in advance) to spend what is left



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Path Forward

Freshwater Collaborative

- Looks promising; funding across UW System with UWM as lead
- Should include funding for water-oriented faculty hires in engineering (~2-5 ?)

UW System Outcomes-based Funding

- Approved by JFC; \$22.5M in one-time FY'20; \$22.5M in base FY'21
- Details yet to be specified; but Engineering should benefit

New Engineering Building

- \$500K for planning; working to convince UW System to move project forward
- May present significant fund-raising opportunity

Plan for New Faculty

- Emulate model of Freshwater Collaborative with Engineering focus
- Build regional collaboration with other campuses and tech colleges (SEWETEC)
- Major expansion of capacity (faculty, staff, technicians)
- {Funding for salary adjustments}



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Summary

We are **Good** but struggling for adequate resources

Let's be **Great** and take resource matters into our own hands

Significant Research Growth

Significant Improvements in Student Success

**BE THE UNDISPUTED SECOND #1 IN WISCONSIN
BECOME TOP 100 IN NATION
GET POSITIONED TO ADVOCATE FOR PARITY**



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INFORMAL REPORTS

Office of Student Services – Todd Johnson
No Report

Career Services – Juli Pickering
No Report

Curriculum Committee – Prof. A. Rahman
No Report

Graduate Program Subcommittee – Prof. Suzuki
No Report

Academic Planning Committee – Prof. ?
No Report

Faculty Senate – Prof. Reisel

Following the Chancellor's Plenary Address, the Senate conducted mostly routine business. The primary item of business was the modification of the Post Tenure Review policy. The modifications concentrated on clarifying the document in various areas, specifying a final responsible party for the creation of remediation plans, and specifically integrating the unit's review criteria into the review process.

NEW COURSES

- BME 437 INTRODUCTION TO BIOMEDICAL IMAGING, 3 cr., U/G
Biomedical imaging modalities and underlying principles: X-radiography, computerized tomography, Radon transforms; image reconstruction techniques; ultrasonic imaging; nuclear medicine; magnetic resonance imaging; experimental techniques. BME 437/ELECENG 437 are jointly offered and count as repeats of each other.
Prereq: sr st, BME 310 (P) or ELECENG 310 (P)
- BME 439 INTRODUCTION TO BIOMEDICAL OPTICS, 3 cr, U/G
Tissue Optical Properties, Light Transport, Fourier Transforms in Spatial Domain, Wave theory, Spectroscopy, Optical imaging, Laser-Tissue interaction, Photoconversion, Photodynamic Therapy, Microscopy, Fluorescence imaging, and OCT. BME439/ELECENG 439 are jointly offered and count as repeats of each other.
Prereq: sr st, BME 310 (P) or ELECENG 310 (P)
- ELECENG 437 INTRODUCTION TO BIOMEDICAL IMAGING, 3 cr., U/G
Biomedical imaging modalities and underlying principles: X-radiography, computerized tomography, Radon transforms; image reconstruction techniques; ultrasonic imaging; nuclear medicine; magnetic resonance imaging; experimental techniques. BME 437/ELECENG 437 are jointly offered and count as repeats of each other.
Prereq: sr st, BME 310 (P) or ELECENG 310 (P)
- ELECENG 439 INTRODUCTION TO BIOMEDICAL OPTICS, 3 cr, U/G
Tissue Optical Properties, Light Transport, Fourier Transforms in Spatial Domain, Wave theory, Spectroscopy, Optical imaging, Laser-Tissue interaction, Photoconversion, Photodynamic Therapy, Microscopy, Fluorescence imaging, and OCT. BME439/ELECENG 439 are jointly offered and count as repeats of each other.
Prereq: sr st, BME 310 (P) or ELECENG 310 (P)

COMPUTER ENGINEERING PROGRAM CHANGES

The following are the program changes for the Computer Engineering BS program:

- 1) Set total number of credits to 120.
- 2) Remove CompSci 240 and MechEng 101 and CompSci 469 from the list of required courses.
- 3) Add CompSci 469 to the technical elective group A.

INTEGRATED BS/MS PROGRAM CHANGE

Motion: That the BS/MS program be changed to allow up to 9 double-counted credits, of which no more than 6 can be forward-counted. The remainder (3-9 credits) can be backward-counted.

————— Original Catalog Text —————

Admission

An Integrated BS-MS program is available for exceptional undergraduate students. In this program, students take 6 graduate credits while completing the BS degree.

Minimum admission requirements:

- 3.2 GPA.
- 36 credits or less remaining for the BS.
- Approval from their major department.

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————— Proposed Catalog Text —————

Admission

An Integrated BS-MS program is available for exceptional undergraduate students. In this program, students may take up to 9 credits that count in both the BS degree and the MS degree. Up to 6 graduate credits may be taken while completing the BS degree. For the remaining 3-9 credits, students may be admitted to the MS program prior to completing the BS degree, in accordance with UWM Graduate School rules.

Minimum admission requirements:

- 3.2 GPA.
- 36 credits or less remaining for the BS when enrolling in graduate credits during BS studies, and
- 3-9 credits or less remaining for the BS at the time of admission to the MS program, depending on the number of double-counting credits that will be taken during the MS.
- Approval from their major department.

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DOCTORAL PROGRAM COMMITTEE CHANGE

_____ Original Catalog Language _____

Doctoral Program Committee

The Doctoral Program Committee is proposed by the major professor in consultation with the student and the department. The Committee must include at least five graduate faculty (three from major area, one from minor area, and one from another area). The member from another area may be a person from outside the University (such as another university, a research laboratory, or a relevant industrial partner), provided that person meets Graduate School requirements. The Committee may have more than five members, provided that the majority of the Committee members are from the student's major field.

_____ Proposed Catalog Language _____

Doctoral Program Committee

The Doctoral Program Committee is proposed by the major professor in consultation with the student and the department. The Committee must include at least five graduate faculty (three from major area, one from minor area, and one from any area, including the major and minor areas). The last member may be a person from outside the University (such as another university, a research laboratory, or a relevant industrial partner), provided that person meets Graduate School requirements. The Committee may have more than five members, provided that the majority of the Committee members are from the student's major field.
