Proposal to rename the "Center for Advanced Computational Imaging" to the "Center for Advanced Embedded Systems"

March 2, 2015

A. Proposed Name:

Center for Advanced Embedded Systems

(changing from Center for Advanced Computational Imaging)

B. Brief description, purpose and justification

The Center for Advanced Embedded Systems will advance scholarship, research, and education in the area of advanced embedded systems, with a particular focus on computational imaging (including medical imaging modalities) and intelligent embedded systems.

The center's purpose is to coordinate and facilitate UWM's research and instructional efforts in embedded systems. Activities of the center will include:

• Facilitating and promoting Catalyst grants sponsored by industrial and foundation sponsors, in collaboration with the UWM Research Foundation. Currently, the Center helps manage and promote the GE Healthcare Catalyst Grant Program, which is entering its third year;

• Promoting collaboration among scholars and researchers in their efforts to work singly and jointly to obtain additional extramural research funding in a wide variety of embedded systems areas. In particular, to organize substantial collaborative grant proposals to prestigious national research programs, such as NSF's I/UCRC, IGERT, or Engineering Research Center programs.

• Designing and administering curricular innovations in advanced embedded systems, such as the already-approved Graduate Certificate in Advanced Computational Imaging. Initial planning is beginning for a Graduate Certificate in Embedded Systems, which will take advantage of some of the courses developed for the computational imaging certificate.

• Promoting the curricular innovations and recruiting students for them, including linking UWM courses to corporate educational programs such as the GE Edison Program.

• Facilitating partnerships with companies, including GE Healthcare, Rockwell Automation, Johnson Controls, and Astronautics, who will benefit from embedded systems research.

• Facilitate joint UWM-Industry forums and seminars and host related speakers.

This proposal is to rename the existing Center for Advanced Computational Imaging in order to expand its relevance beyond a specific part of the healthcare domain to cover the entire embedded systems domain. Medical imaging devices can be thought of as very complex embedded systems, so the Center's scope will continue to include computational imaging. But embedded systems can be found throughout our world in homes (e.g. the Nest Thermostat), in automobiles (ignitions, anti-lock brakes, hybrid engine controls, dashboards, entertainment systems), oil platforms (Rockwell Automation power control
systems), airplanes (cockpit systems for pilots), and large buildings (Johnson Controls heating and ventilation systems). The Upper Midwest has extensive activities in the embedded systems area, so the topic has particular regional relevance.

Our research finds that there are few embedded systems research centers in the US and none in the Chicago-to-Minneapolis corridor. Milwaukee’s location makes UWM a good site for such a center.

C. Organizational structure and assessment

The center will have a Director, appointed by the Dean of CEAS for a three-year term. The Director's responsibilities are to manage all activities of the Center that are described in the section above. Based on consultations with the CEAS Dean, the Center may also have additional Associate Directors.

The work of the Center will be assessed at least every five years by the CEAS Dean's Office and the CEAS Academic Planning Committee (APC). The Center was formally approved in 2014, so its first review will be made no later than 2019.

D. Resources to be committed to the center

CEAS will provide the following:

- Modest summer salary support for the Center's Director, provided the Director is active and effective.
- Summer salary support for other faculty leaders of the Center, as considered suitable by the CEAS Dean's Office and the Center Director.
- Staff support using existing staff positions
- A modest supply and expense budget allocation. Initially, this has been $3000.
- Appropriate matching of Catalyst grant research funding, to be negotiated with each sponsoring organization.

GE Healthcare has committed $1,000,000 in research funding to UWM for the Center, starting in 2013 and continuing until at least 2017. In addition, GE Healthcare has committed additional funds up to $2,000,000 to support participation by their employees in curricular programs.

E. Individuals associated with the center

Ethan Munson, Center Director, and Professor and Co-Chair, Computer Science
Jun Zhang, Center Associate Director for Research, and Professor, Electrical Engineering
Brian Armstrong, Professor, Electrical Engineering
Ilya Avdeev, Assistant Professor, Civil Engineering and Mechanics
Jason Bacon, Systems Programmer, CEAS
Michael Krauski, Director of Corporate Relations, CEAS
Adel Nasiri, Professor, Electrical Engineering
Ramin Pashaie, Assistant Professor, Electrical Engineering
Mahsa Ranji, Associate Professor, Electrical Engineering
Guangwu Xu, Associate Professor, Computer Science
Zeyun Yu, Associate Professor, Computer Science
F. Long-term future and long-range plan

The medium-term goals for CAES are

• To maintain and strengthen the Graduate Certificate in Advanced Computational Imaging as a robust graduate educational offering and to strengthen the connection between the certificate and other relevant UWM degree programs, such as the MS and PhD in Engineering and the MS in Computer Science.
• To similarly develop and establish a new Graduate Certificate in Embedded Systems as a popular and valuable program.
• To encourage increased research activity at UWM in the areas of Computational Imaging and Intelligent Embedded Systems. This means working with faculty to develop research plans that can successfully garner extramural research funds from sources beyond the Catalyst grant programs.
• To pursue joint funding opportunities with industrial partners and other academic institutions such as the Medical College of Wisconsin and other CTSI partners.
• Establish an advisory board composed of representatives of industrial partners, other Catalyst sponsors, and academic collaborators.

The long-term vision is to establish UWM as an internationally recognized center of innovation and education in Embedded Systems. In the long run, this requires the establishment of a well-defined research cluster with a high-level of activity, including successful graduate students, active research, and extensive research funding. To make this happen, CAES will begin to build links with researchers at MCW, local industry, and other institutions in order to create the kinds of interdisciplinary teams that are required to create large research centers.

Goals for the long term include:

• 10 certificates in embedded systems and computational imaging granted per year
• 5 certificate students commencing MS or PhD programs per year
• $1,000,000 per year in research expenditures for embedded systems research from non-Catalyst sources
THE UNIVERSITY OF WISCONSIN-MILWAUKEE
College of Engineering and Applied Science

FACULTY MEETING

Friday, February 27, 2015  1:45 p.m.   EMS E190

MINUTES

The meeting was called to order at 1:55 p.m. with Dean Brett Peters presiding. Forty-seven faculty members were present:

EXCUSED:  Professors Amano, Armstrong, Boyland, Bravo, Cuzner, Dhingra, Dumitrescu, Hanson, Helwany, Liao, Nambisan, Nosonovsky, Qu, Renken, Titi, Venugopalan, Wornyoh, Yuan

ABSENT:  Professors Liu, Pashaie

GUESTS:  K. Birney, S. Korolev, M. Richter

I. ANNOUNCEMENTS

A. Prof. Campbell-Kyureghyan informed the faculty of some of the policies being considered by the Research Policy and Advisory Committee. A policy on shared facilities was approved and has been forwarded to the Faculty Senate, while policies on export control, data security, shared equipment, and fixed price contracts are under consideration. Faculty are encouraged to provide their input and views on the proposed policies.

B. Kristin Birney and Svetlana Korolev from the UWM Golda Meir Library made presentations on (1) the new book search system for the library, which is linked to all UW System libraries, (2) the availability of databases at the library, and (3) the data management services and the data storage guidance available at the library. Faculty were directed towards dmptool.org as a resource for helping to create data management plans for proposals.

C. Dean Peters announced that the draft report on the accreditation of the undergraduate programs from ABET has been received, and that we still have approximately 2 and a half weeks to provide a response in the 30-day due process period.

D. The Biomedical Engineering Department-like body began operation this semester, with Rudi Strickler as chair of the augmented executive committee, and Dev Misra as vice chair.

E. Dean Peters provided an update on the budget situation, emphasizing that nothing is yet official with regards to the budget and proposed public authority. The UW System is presenting to the Joint Finance Committee on March 3. While each unit on campus has been asked to prepare plans for a 5% and a 10% budget cut, it is still critical for CEAS to focus on its mission during these times. In CEAS, hiring is proceeding for an HR position, a student services position, and faculty positions in Biomedical Engineering. Other searches have been put on hold at this time.
II. INTRODUCTIONS  

A. Faculty  

1. Xiao Qin, Associate Professor, Civil and Environmental Engineering  
2. Deyang Qu, Professor, Mechanical Engineering  
3. Mohammad Rahman, Assistant Professor, Mechanical Engineering  

III. INFORMAL REPORTS – See Attachment 1  

IV. AUTOMATIC CONSENT BUSINESS  

A. Minutes of the November 21, 2014 meeting  

V. NEW BUSINESS  

A. Ph.D. Qualifying Examination Requirements (from GPSC)  

Prof. Li moved that students admitted after completion of an appropriate master’s degree must take the examination in the semester immediately following completion of a maximum of 18 credits of course work or fewer at the limit established by the individual program at UWM.  

The motion was approved on a voice vote.  

B. Renaming of the Center for Advanced Computational Imaging  

– See Attachment 2  

Prof. Munson moved to rename the “Center for Advanced Computational Imaging” as the “Center for Advanced Embedded Systems”.  

The motion was seconded and passed on a voice vote.  

C. Export Control and Effort Reporting  

Mr. Matt Richter made a presentation on some of the export control issues that his office is working on and on the effort reporting activities that must be performed by faculty working on federally-funded grants.  

D. Resolution to Endorse the UWM Faculty Senate Resolution on the Future of the UW System – See Attachment 3  

CEAS  

DOC. NO. 232  

DOC. NO. 233
Prof. Petering moved to adopt the resolution.

The motion was seconded and approved on a voice vote.

**VI. GENERAL GOOD AND WELFARE** – None

**VII. ADJOURNMENT**

Meeting Adjourned at 3:33 p.m.

John R. Reisel, Secretary  
CEAS Faculty

JRR  
Attachments
INFORMAL REPORTS

Office of Student Services – Todd Johnson
No Report

Career Services – Juli Pickering
No Report

Curriculum Committee – Prof. Tabatabai
No Report

Graduate Program Subcommittee – Prof. Li
No Report

Academic Planning Committee – Prof. Misra
In its January 2015 meeting, the Faculty Senate engaged in a long discussion regarding the proposed budget cuts and the creation of a public authority for the University of Wisconsin System. The Senate passed a resolution expressing its strong concern over the size of the budget cuts. In addition, a study on the parking and transit situation on campus was received.

In the February 2015 meeting, Regents Farrow, Pruitt, and Vásquez were present to discuss with the Faculty Senate the proposed budget cuts and the possible transition of the UW System into a public authority. These three regents indicated that it was their understanding that Chapter 36 of the Wisconsin Statutes will be encapsulated into Board of Regents policy and that subsequent discussion of modifications will then occur with input from the various governance groups. The regents also stressed that it is still early in the budget/legislative process. Many unknowns remain as to what the future of the UW System and its employees would be under a public authority.

Minutes of the Faculty Senate meetings can be found at http://www4.uwm.edu/secu/faculty/senate/minutes/. In addition, the University Committee is providing more frequent information regarding the budget situation and its other activities at http://UCNews.uwm.edu.

Graduate Faculty Committee – Prof. Campbell – Kyureghyan
Resolution to Endorse the UWM Faculty Senate Resolution Regarding the Future of the UW System

The faculty in the UWM College of Engineering and Applied Science (CEAS) endorse the January 29, 2015 UWM Faculty Senate Resolution. The CEAS faculty are committed to graduating top-level, globally-competitive engineers who will serve local industry and grow Wisconsin’s economy in the 21st century. However, the CEAS faculty are gravely concerned that the proposed UW-System budget cuts and the rush to convert the UW-System into a “public authority” without adequate research and discussion are detrimental to the CEAS teaching and research mission.