

**MILWAUKEE SCHOOL OF ENGINEERING
B.S. COMPUTER ENGINEERING
INDUSTRY ADVISORY COMMITTEE
Friday, November 1, 2019**

Attendees

Industry Members

Mr. Ryan Barnett, Collins Aerospace
Ms. Elyse Hobson, Johnson Controls
Mr. Joe Izzo, Rockwell Automation (retired)
Mr. Tom Kraus, GE Healthcare
Mr. Nick LaBonte, Milwaukee Tool
Mr. Dave Neuman, Brady Corporation
Ms. Cyndi Przybylski, Rockwell Automation
Mr. Jon Ubert, Sharp Packaging
Mr. Jeff Zingsheim, IAC Chair, SysLogic

Student Representatives

Mr. Cameron Bush, MSOE '23
Ms. Joy Cross, MSOE '22
Mr. Jaden DeFields, MSOE '21
Mr. Jack Haek, MSOE '22
Mr. Robert Hinner, MSOE '23

MSOE Faculty and Staff

Dr. Eric Durant, Professor and Program Director
Dr. Darrin Rothe, Associate Professor
Ms. Laura Schmidt, Director of Corporate Relations

Recorded by: Dr. Durant

Meeting called to order at approximately 9:00 a.m.

Note: All items on the agenda were discussed, but several informational items are not repeated in these minutes.

Welcome and Introductions

IAC Chair Mr. Zingsheim thanked Mr. Ubert for hosting the meeting and tour. The chair then welcomed the members and invited everyone present to introduce themselves.

Previous Minutes

Dr. Durant asked the members to review the previous meeting minutes, which are available on the website, and to send him any corrections or additions in the next few days.

Enrollment and Retention Data

Follow up with Dr. Jill Meyer on underrepresented student data by MSOE and/or by CE program.

Exchange Programs: Czech Technical University and Victoria University of Wellington

Mr. DeFields said that he was one of 3 CEs who participated in the CTU exchange this year. He said that the curriculum track adjustments when coming back weren't well defined. He had only four classes transfer back but expected six. Dr. Durant will follow up for details and to award any missing credit; there is a modified curriculum plan and many CTU courses are pre-approved and present in the transfer manual; we want to make sure students are aware of these resources.

One student participated in New Zealand exchange. More this year from CE are in the pipeline.

Milwaukee Tool Event on Tuesday, October 1

Mr. LaBonte said that there was great turn out. Many alumni also showed up. It was a good touch point for Milwaukee Tool to see students again that they saw at the Career Fair and other events. Mr. DeFields said the keynote speaker was very engaging. Students talked about the exchange programs and senior design projects. There were prize drawings and dinner.

Upcoming Events

Op Computer

This will be in Diercks Hall this year. This gives us more space and lets us overflow the final presentation (traditionally a limiting factor) to the atrium from the auditorium.

Accepted student days (ASDs)

Mr. Haek found ASD helpful in deciding to come to MSOE since one can't get a good feel online. Mr. Hinner agrees.

Google Hackathon

Ms. Schmidt noted that there is one of these offsite that our students are invited to on 11/2. There will also be one on the MSOE campus in Diercks Hall on 11/9. Google Vision and others are involved. 60 students out of maximum of 100 are registered for 11/9.

Career Fairs

Ms. Schmidt described two additional career fairs beyond MSOE's fall event. In January there will be an all-department career fair building on the success that CAECM has had with their January event for many years. This was an initiative of the new Career Services director. IAC members with interest should check website or contact Career Services.

Midwest Instructional and Computing Symposium (MICS)

Ms. Schmidt described this April event, which is open to faculty, industry, and students. At the end there will be an EECS career fair at Diercks Hall. Dr. Durant will follow up with Dr. Riley for details. MICS targets faculty and students across the Midwest on how we teach and approach computational thinking.

Corporate Relations Update

Ms. Schmidt gave an overview of her position, which was created as a result of the recent strategic planning process. The position's purpose is to coordinate industry engagement with academic departments and Career Services. It is a resource for adding to or expanding existing collaborations. Ms. Schmidt has regular contact with most of the current members present from the CE IAC. We reviewed the <https://www.msOE.edu/community-partnerships/> page. A common industry question is how to get involved with senior design and other senior projects; Ms. Schmidt is launching the first version of that page presently. Sometimes she can help connect industry partners to people at their company who already have MSOE connections. We reviewed the <https://www.msOE.edu/community-partnerships/corporate-engagement/> page, which contains an initial list of companies who have interest in working widely across programs at MSOE. We're engaging this group on how they do internships. Dedicated Computing has space in Diercks Hall that is being used to engage interns. This is like the Direct Supply model at a smaller scale. Also, MSOE was the first university to join the Wisconsin IoT council, which is coordinated out of Stevens Point; we're working on growing it in Milwaukee. MSOE's STEM office also can work with industry partners on K-12 engagements. MSOE is launching a 10,000 ft.² space on campus to support this. MSOE's STEM office serves 5000 students per year, many from underrepresented communities. This group recently had a visioning meeting and determined the outcomes for this new space.

We'll be sharing some materials with you on senior design, etc. Please let us know how we can improve these materials to better help you. Ms. Schmidt will be working with PDs to incorporate this feedback.

Diversity and inclusion are other major parts of MSOE's strategic plan. NC WIT (?) is a national organization dedicated to women in engineering-related disciplines. This helps support female students, so they know they're part of a larger community of female engineers and see that many workplaces are inclusive. This also drives us to work on our campus to create and educate our students more about having an inclusive environment. We had 110 high school girls who will be awarded an aspiration in engineering award. They will be honored at the Kern Center along with their influencers (parents and teachers).

We've been working with many faculty members to determine how we can connect MSOE female students to national events like the Grace Hopper conference. Ms. Przybylski mentioned that she has participated in Rockwell's booth there and it is an outstanding event.

Ms. Schmidt also discussed professional education such as reskilling existing teams. It would be interesting, now that we have new competencies through Diercks Hall. For example, what does this mean for companies who want to reskill their employees through summer or other programs? We would like to have a conversation to learn more about what these needs are. Ms. Schmidt would like to work on this within EECS since we have many great, new resources. Mr. Ubert noted that reskilling interests him since his company has new people who would like

to get an overview of new control styles, machine learning, etc. This would be useful to our engineers. We should discuss this further.

MSOE will have the first undergraduate CS program that has a focus on AI and machine learning. But we don't really brand it that way on student transcripts and their resumes. Members asked if it would be valuable to students and others to package this way.

Program Educational Objectives

The members reviewed and discussed PEOs and SOs.

Mr. Zingsheim said that we might add "security" to safety, welfare, health. We're already doing this. Not putting it in SOs misses taking credit for something we're already doing.

Ms. Przybylski said that at career fairs it is hard to find students who even list security on their resume. If they have interest or experience, they should list that they took the class. Ms. Hobson said that students might also consider adding certifications. MSOE's required information security course, CS4920, is in the spring of senior year, so students won't have typically had it by the time they're at the senior career fair. Ms. Schmidt gave the example that some AI internships lead students to assume AI knowledge is needed, but often it isn't; naming/portraying internship title more broadly might attract the students you want better. Mr. DeFields said that many students see the internship "requirements" as a test of their knowledge and will be turned off if they don't have the specific experience. Advisors should continue to emphasize this; this is an important message at the EECS Forum, too. Mr. Zingsheim said that he employs four students now and he makes it clear to them that his company understands they're students and not yet experts on what they'll need to do; time will be scheduled to learn what they need. Interns are hired for **both** what they can learn and the knowledge base they bring in. Mr. Izzo noted that if a student finds a company that doesn't want to invest, they might not want to work for that company. Mr. Kraus said that MSOE does a great job on teaching students how to be lifelong learners, so students should partner with companies who believe in this. Also, position descriptions are for the **ideal** candidate; students should apply anyway; companies can always hire lower and develop but can't do the reverse from the HR perspective. Mr. Zingsheim said this is true after graduation, too. Required skills are the gatekeeper things that are at the broader discretion of the hiring manager. Ms. Przybylski said that the interaction and discussion at the career fair is for determining fit and that follow up is then needed.

Mr. Neuman suggested that, regarding retooling for security, MSOE could consider offering a certificate in this to professionals consisting of perhaps two to three courses. This could be both a nationally recognized credential and MSOE's credential and packaging. It could be a technical variant of why some people pursue an MBA, but short of a whole degree. Mr. Neuman said that the Cisco and Microsoft certifications don't have much value and are primarily focused on passing a test at the end. Something that MSOE offers and factors out of an already ABET-accredited program is of interest. Mr. Zingsheim said that the credential doesn't need to be something with postnominals but should recognize the value of the program content. Ms.

Przybylski noted that UW-Parkside advertised a certificate in this, but it was almost as heavyweight as getting a BS degree. The SANS Cyber Security training is good, but expensive and must be on-site at training locales.

The IAC reviewed PEOs (CE Program Educational Objectives) and agreed that they are in line with MSOE's updated vision and mission and that they remain relevant to CEs at their companies.

Welcome From Sharp Packaging President

President Mike Menz welcomed the group. He has been with the company for 25 years and has been president since 2011. The business started in 1984 and this facility has been operating since 2016. Sharp is a system and solution business. You'll see this on the tour. They follow the razor and razorblade model; they help their customers become more efficient in the packaging process. They have about 2500 employees at this 24/7 operation. In 2017, they became part of Pregis, a packaging company out of Deerfield, IL. They are a protective packing business, which is different than Sharp, forming synergy. Products are widely varied including how screws, nuts, and bolts are packaged at Harley Davidson. Sharp grew a lot with Express Scripts; they also supply to CVS Prescriptions, United HealthCare's business, and many others. Also, eCommerce retail customers include Kohls and Amazon. Sharp's focus is on items that are shipped in bags. Mr. Menz introduced Ms. Chris G. Her responsibilities include Sharp's safety initiatives.

Adjournment

At approximately 11:00 AM the meeting was adjourned, and the members split into groups for tours of several parts of the facility.