Master of Engineering Committee Minutes  
February 12, 2003 - 8:00am – 9:00am  
240 Carpenter Hall

Attendees: Graeme Bailey, James Bartsch, John Belina, Larry Cathles, Claude Cohen, Scott Coldren, Mark Eisner, David Grubb, Mike Hayes, Fred Kulhawy, Bruce Kusse, MichelLouge, Matt Miller, Mark Otis

Guests: Karen Biesecker

Absent: Bing Cady, Jim Jenkins, Larry Newman, Dawn Warren

Jim Bartsch called the meeting to order at 8:00am.

Approval of the December 11, 2002 Minutes:
The MEC reviewed the December MEC minutes, and they were approved as submitted.

Introductions:
Professor Matt Miller has been named the MEC Representative for MAE. The MEC members introduced themselves.

Jim Bartsch:
  • Thanks to John Belina for chairing the last two MEC meetings.

Update on Biomedical M.Eng. Program:
Jim Bartsch:
  • Dean Fuchs copied Jim on a letter of endorsement to the Graduate School indicating that the Biomedical Master of Engineering Program (BMEP) had been recommended by the MEC.

Plans for the Cornell Undergraduate Engineering Design Institute (CUEDI):
Michel Louge distributed a Draft proposal of the CUEDI’s Overall Goals.

Michel Louge:
  • The CUEDI started as a corridor conversation between Professors Raff D’Andrea, Al George and Michel. We were reflecting on the fact that the College has a number of very successful student teams (undergraduates as well as M.Eng. students) that operate in an ad hoc way. They are largely dependent on the will of individual faculty members and if the faculty members leave for sabbatical the teams would be at risk of disappearing for a year or be forced to take a hiatus. Some of these team projects have reached considerable notoriety and are a great instrument for the College to recruit undergraduate students (and by extension, M.Eng. students). We thought it would be good to think of some sort of a vision for a center or an institute. We prepared a memo to Associate Dean Terry Jordan
and she brought it to the attention of Dean Fuchs. The Dean is very interested in this in the context of the upcoming fundraising campaign.

- The idea is to come up with an institute that would systematize the procedures that the undergraduates and the M.Eng. students go through when they begin a real design project. The building would include facilities (particularly electrical and mechanical) that would be shared by many and would allow students to put together real projects.
- Qualified technical personnel would be available to advise the students and ensure that they satisfy safety rules, etc. An administrative structure would be included that would consist of a Director (someone with technical competence and the wherewithal to be able to interact with students). This layer of administration will help the students to maintain a level of consistency with their projects.
- The M.Eng. program has established rules for turning in abstracts and reports on time, but the undergraduates have no such rules. We lack rules regarding safety guidelines for the undergraduate projects, and in the event that an undergraduate project proposal was submitted, we have no resources for space allocation. Currently this is all handled on an ad hoc basis.
- Departments that involve design have found that students really want to do projects that are hands-on. They are greatly motivated to learn that way, and it reinforces what they do in class.
- We feel that this idea will be of great interest to alumni who are always interested in undergraduate projects. Additionally, it will ensure visibility for the College with a structure that will have responsibility for broadcasting the successes of the projects as well as ensuring continuity.
- The memo that was submitted to Associate Dean Jordan contained cost estimates. A preliminary meeting was held a few weeks ago between Deborah Cox, Terry Jordan, and the progenitor’s of this idea, and they decided to move forward in the traditional phase.
- The M.Eng. students are fully expected to participate in this Center, and I would appreciate your comments and support.

John Belina:
- I like the idea, and I’ve got two helpful comments:
  - All of these large rooms use electronics and there isn’t money in the equipment budget for that. We have many large projects running and we have tried to put them in common space with common equipment, but it hasn’t worked. The teams don’t like to disassemble what they’ve got working at the end of the day. I think it’s a good idea to have an electronic shop where the students can make stock measurements. I think you need to factor into the planning some electronic test equipment costing between $5-6,000 per team.

Michel Louge:
- This document was a quick draft, but we did intend to have a stronger electronic component. As you know, the RoboCup Team operates out of both ECE and MAE and they are quite involved with control systems and electronics. We tried
not to underestimate what it would cost. However, given the alumni’s interest in this sort of activity, it is quite likely that they will be receptive to funding/endow this.

John Belina:
  o Also, some of the companies who would like their equipment to be the equipment in this lab will sometimes offer discounts up to 80%. The 5 rooms that you have designated as labs might be able to have equipment installed in as well. And then you could have the central lab in addition to having the equipment in the individual labs.

Bruce Kusse:
  • Wouldn’t the machine shop in Rhodes Hall be available? I see that you list equipment for a machine shop in the proposal – would that be an independent shop from Rhodes?

Michel Louge:
  • Not necessarily. At this point, there is no particular plan one-way or the other. In the interim, the College is using the Rhodes Hall machine shop. I want to stress that this proposal is being pushed as a College facility. It’s a possibility that everything will be housed in the Emerson shop. These ideas need to be flushed out further. The first responsibility of the first Director of the Institute will be to come up with a plan that makes sense.

Bruce Kusse:
  • If the Emerson shop weren’t big enough it could be expanded, but setting up two independent shops doesn’t seem to be efficient.

Michel Louge:
  • You are absolutely right; it could be to either expand the Emerson shop or to set up a new one.

Fred Kulhawy:
  • Most of the student projects, especially undergraduate ones, occur over a fairly short time period every year and we are talking full time personnel and commitment of majority [*cough*]. How is that spread out over the year when there is a demand for only 4 or 5 months?

Michel Louge:
  • Some of the team projects are virtually around-the-clock, 24/7. The idea is that this should be able to serve a gambit of these -- students working on short-term projects, students proposing new projects and the student teams will all be served. The student teams won’t necessarily abandon their current mode of operation. The Institute would be able to facilitate some of the administrative tasks and make it easier for the faculty in charge to operate these projects.
Fred Kulhawy:
- I don’t dispute anything that you’ve said, but I’m looking at the timing. You’ve got the entire summer period (4-months) where there is very little activity going on, the intersession period with little going on, the beginning of the fall semester has a relatively small amount going on. If you add all those pieces up, you have a very small period of time where the demand for space is a problem, but you would have all of this infrastructure and human resources committed.

Michel Louge:
- The summer would probably be a slower period, but there are student teams that continue through the summer and there are several M.Eng. students who finish their projects during that time. There is also maintenance involved.

David Grubb:
- If you run an undergraduate lab during the summer, it’s a welcome time when you need all of the human resources to help get things in order.

Mike Hayes:
- I also saw embedded in this an opportunity for an NSF REU. That would be a great summer project.

Mark Eisner:
- If the projects are going to be moved in and out, you will need some storage areas within the facility. The other thing that might be included in your video would be a more formal conference facility for meetings with external clients.

David Grubb:
- I was talking with representatives from the Architecture College last week, and they have students doing projects who are looking for interaction with engineers regarding material choices, etc. There are several departments outside of the College of Engineering who would be potential users of the facility.

Graeme Bailey:
- Providing enough meeting space for the students is essential for productive interaction.

Larry Cathles:
- Is this for a proposal for future fundraising to construct a building?

Michel Louge:
- Assuming the departments support the idea, it is likely to be part of the College’s strategic planning as a college-wide facility.

Larry Cathles:
- I think this is a very good idea. Another aspect of it that hasn’t been mentioned is that it could encourage cross-discipline across departments. From an Earth and
Atmospheric Sciences standpoint, I can see a lot of projects that involve other groups that we couldn’t do alone.

Claude Cohen:
  • The Ward Lab space could be an ideal location for this type of facility.

Jim Bartsch:
  • What do we do next?

Michel Louge:
  • I would appreciate it if everyone would share this information with your Department Chairs. I suspect they have already been briefed on the idea, but they don’t know that it also has an M.Eng. component.

Jim Bartsch:
  • Are you going to compile the notes? How are we going to capture the information? Are you volunteering to look after this?

Michel Louge:
  • Yes, and if you have additional ideas I would appreciate having them forwarded to me. There will be a planning process – Deborah Cox is at the center of it.
  • It would be good if participants from other departments and schools got involved in this process. Right now it’s three MAE professors.

Jim Bartsch:
  • Spread the word and get back to Michel. We are looking for other departments to grow in and work with this.

**Honorary Fellowships to Boost Recruiting Efforts:**
Mark Eisner:
  • This may be a little late for this year, but possibly we can do something. I have been struck by the number of M.Eng. applicants who are supported by their governments/companies. When I looked further, I saw that they had applied to more than one school. We lose the ability to use financial aid as a draw for these students who are self-supported. Have other departments experienced the same situation? Is there some way that we could devise a little extra “boost” for these students that they could put on their resume that was named in such a way to draw attention. Part of the incentive for this is the Merrill Scholarship, which doesn’t seem to have a significant (if any) amount of money associated with it, but it holds great prestige. I would think we might be able to generate a little prestige. I thought that maybe the MEC could do something like this in conjunction with our three full-paid tuition awards.
  • I would like your thoughts as to whether you think this is a good idea or not.
John Belina:
- All of the undergraduate programs, like the Cornell Tradition and Undergraduate Admissions, all have the concept of a book award for people who don’t fit into the need-based system. It’s somewhere in the $500 to $750 per year range. The award holds some prestige and it has a little bit of money associated with it -- it seems to make a big difference.
- The students are given a cash award that is designated for their book purchases.

Larry Cathles:
- You’ve got two things to take into consideration with this:
  - You can use it as a recruitment tool; and
  - You’ve got an excellence recognition factor.
- It seems to me that you should separate those two very carefully. You don’t want to award people simply to get them here.
- From a company point of view, the prestige of the award could be questioned if the student applied to several other schools but accepted admission into Cornell based on the offer of an award.

John Belina:
- Is the issue that they are going to exceed the total cost of attendance?

Mark Eisner:
- The Singapore government typically gives their students $30,000/year.

John Belina:
- But we say $36,000 – we’re talking below the cost of attendance.

Mark Eisner:
- And there are other companies who are much higher than that, or continue the student on salary.
- To me, if a student comes into the program who is already supported with tuition, I would rather put the money elsewhere.

Graeme Bailey:
- Suppose we had the similar structure to that which we have for the MEC Fellowships with a name attached to it. I suppose there is a mild moral issue with regard to giving an award that doesn’t have a large pot of money attached to it.

Mike Hayes:
- I would guess that Marsha Pickens would have a pretty good marketing approach to their alums for something like this, and it wouldn’t cut into the financial aid coffers at all.
- There might be a way that Marsha could package an award such as this.
Mark Eisner:
- Graeme has expressed an interest, and if anyone else is interested in having me pursue this, I will see if I can pull something together.

Larry Cathles:
- You’ve got two parties who are involved in this process – the students who are potentially coming, and the institutions who are sending them. Probably the government/company is the more important party to cultivate. You might want to think about ways that these sponsors could be recognized for their contribution as a way to encourage them to a) see the benefit that they are getting from this, and b) encourage them to send more.

Mark Eisner:
- I don’t hear enough support behind this to try to rush something through for this year, but I’d be happy to keep the idea alive if others are interested.

Claude Cohen:
- It could be termed something like, Company-Cornell M.Eng. Fellow, and it’s already honorary.

**On-Line Project Submission, Crisis Protocol, Military Leave, and M.Eng. TA-ships:**

Mike Hayes:
- You will soon be receiving the updated Crisis Protocol procedures in the campus mail. The Protocol outlines what you need to do if you have a student in crisis. They are resources for you as a faculty member.
- There is a military leave of absence for the students that we want to inform you about. I have copied the policy for you. The GFAs were informed of this policy in their meeting with us last week.
- Cathy Long and I continue to talk about the M.Eng. TA fellowship issue. Cathy and Mary Opperman have had a conversation about creating a new category of appointments that isn’t resolved yet. I would say to you at this point, assume that there is going to be a new category of one-time appointments and proceed as we have always done. Our plan is to not use the COLTS system. I will update you as soon as we know anything.

Bruce Kusse:
- Some of our prospective M.Eng. students from Cornell have been hearing about this discrepancy, and they have already started approaching Physics and Math for a regular TA appointment. That will hurt us.

Mike Hayes:
- I received a memo from Kent this week regarding significant discussion of online submission of project reports. The University is trying to do an electronic archive of dissertations, etc. across campus, and they are trying to determine how it will impact the professional degrees (specifically M.Eng.). Once I hear from Kent regarding his expectations, I will pull you into that loop.
Larry Cathles:
- Will this replace the hardcopy requirements?

Mike Hayes:
- Potentially.

CEE Petitions (2):
Fred Kulhawy:
- The first petition is for Scott Kibby. He started college in the late 80s at Purdue and he finally quit after a few years. He worked for a number of years as a technician in a ground-engineering firm. His supervisor suggested that he take a couple of courses. After 10 years of working, he returned to the University of New Hampshire to finish his BS. We would like to admit him on a provisional basis because his overall GPA is below 2.7.

A motion was made to admit Scott Kibby and was seconded. Unanimously approved.

Fred Kulhawy:
- The second petition is submitted by Mark Turnquist for Ivan Panushev. Ivan began his schooling in Bulgaria where he was a straight-A student for the first two years. Harvard offered him a full-tuition scholarship for the last two years of his B.S. degree, but he had difficulty studying in English and adjusting to his new environment. He got his degree at Harvard with a less than stellar GPA. Ivan has been working at a design/consulting firm, and his supervisor considers him one of the top people in the firm. We would like to provisionally admit him into the M.Eng. program.

A motion was made to approve his petition and was seconded. Unanimously approved.

MAE Petitions (2):
Matt Miller:
- Daniel Franco is petitioning to take more than 20 credits during the S’03 semester. He spent his F’02 semester abroad, and he needs 4 credits to complete his BS in AEP. Daniel is petitioning to take 25 credits in his S’03 semester, and he doesn’t anticipate that he will have any difficulty with the workload.
- My sense is that he can handle the work.

Bruce Kusse:
- He will have no problem with the credits, but I don’t see the one-semester in the M.Eng. program. He hasn’t finished his B.S. yet, so he is considered an undergraduate for the S’03 semester.
Matt Miller:
- Daniel was Early Admit in the S’02 semester, and then he did his semester abroad in F’02. I would do the integration between S’02 through S’03 as his one semester in the M.Eng. program.

Graeme Bailey:
- The issue being raised is that there is a formal requirement of one-semester of residency in the Graduate School.

Michel Louge:
- My recollection of this case is that Daniel was supposed to finish his B.S. in AEP. I met with him before he went abroad, and at that time the plan had satisfied all of the rules (including this one). When he returned we discovered that he had 4 unfinished undergraduate credits.

Graeme Bailey:
- Are there no credits from his study abroad that could be applied to satisfy the 4 AEP credits? He could then graduate retroactively in January ’03 with his S’03 semester being his Graduate School semester?

Michel Louge:
- He has more than 9 credits from his study abroad, and all of them are very good classes.

Bruce Kusse:
- I’ll have to check on the classes that he needs to graduate from AEP.

Jim Bartsch:
- I’m hearing that the MEC is favorably disposed to approving Daniel’s petition to take more than 20 credit hours, however, the issue of one unit of graduate residency is what is holding us back at this point.

Matt Miller:
- Is that requirement waived from time to time?

Jim Bartsch:
- I don’t believe that it has ever been waived.
- It appears that Bruce and Matt will need to talk about this further and work closely with Daniel.

Matt Miller:
- My second petition is for Margaretha Winata. She would like to take a couple of courses outside of her M.Eng. program.

A motion was made to approve Margaretha’s petition and was seconded. The motion passed with three abstentions.
MEC Full-Tuition Nominations:
Mark Otis:
- The MEC Full-Tuition nominations memo is included in your packet of materials. The Subcommittee will meet sometime around the next MEC meeting.
- The due date for the nominations will be extended to Monday, February 24th.
- The MEC Subcommittee members are Mark Eisner, John Belina, Graeme Bailey and Larry Newman.

The tape ended at this point. Please let Dawn know if anything needs to be included in these minutes.

The meeting adjourned at 9:00am.