

Minutes of the University Materials Council Meeting Agenda – Fall 2000  
October 8, Regal Riverfront Hotel, Jefferson D, St. Louis, Mo

Minutes prepared by:

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Attendees: Slade Cargill, Lehigh; Krish Chawla, U of Alabama; Alan Craub, Carnegie Mellon; Jim Economy, U Ill; Takeshi Egami, Penn; Ron Gordon, Alfred; John Halloran, U Mi; Jay Jayaraman, U. Cincinnati; Alex King, Purdue; Hugo Lopez, Wisconsin; John Morral, U Conn; Greg Olson, Northwestern; Henry Rack, Clemson; Ashok Saxena, Georgia Tech; Linda Schadler, RPI; Bob Snyder, Ohio State; Raghu Srinivasan, Wright State Univ.; Patrick Taylor, Tennessee; Cal White, Mi Tech; Dave Williams, Lehigh; (attendance list was left at the scene so I missed a couple late walk-ins).

11:30 – 12:15 Lunch

12:15 – 12:25 Introductions and approval of minutes from the last meeting

12:25 – 1:00 Benchmarking survey results and discussion Ashok Saxena

1:00 – 2:30 Best practices in Computational Materials Science & Eng.  
Courses- Panel organized by Kathy Faber

- Computational Methods for Materials Science: An Introduction to Computer-Based Techniques at the Sophomore Level" D. Williams, R. Vinci, Lehigh University
- "Computational Materials Design" G. B. Olson, Northwestern University
- "An Integrated Education Program on Thermodynamics, Kinetics and Materials Design" Z.-K. Liu, Pennsylvania State University
- Discussion Session (Additional 1-transparency descriptions invited)

2:30 – 2:40 Break

2:40 – 3:10 Discussion of ABET Related Issues Slade Cargill

3:10 – 3:40 How are MSE Departments Funded? Bob Snyder

3:40 - 3:50 NMAB/ UMC Interactions Saxena

3:50 – 3:55 FMS Liaison report Aris Christou

3:55 – 4:00 UMC Business

Saxena

4:00 Adjourn

1. The minutes of the Spring 2000 meeting were approved.
2. Benchmarking survey results – we have 95 materials programs
  - a. Ashok Saxena presented the results of the 2000 UMC survey of MSE departments. The results are available in hard and e-copy to all of the departments that participated. We look to get as high a participation level as possible.
  - b. The demise of MSU's department was regretted.
  - c. Average faculty size – 14.1 and very top heavy with full Profs.
  - d. MSE departments are among the most research intensive in all universities. (\$305K per faculty member on Average)
  - e. Average salary Asst. Prof \$71.2, Assoc Prof \$85.0K, Prof \$100,300
  - f. About 18.5 BS students graduated per year
  - g. About 10 MS per year
  - h. About 7.5 PhDs per year.
  - i. Maximum stipend allowed is \$1,370 MS and \$1,560 PhD
  - j. 50% of U Penn students used to go to grad school now its 10%.
  - k. Increasing the stipends from \$1,600 per month to higher does increase yield.

Discussion:

1. A faculty retirement causes all the salary to be left with MSE at UI vs. entry level at OSU vs. full re-justification at many other departments.
  2. We should collect data on the number of courses per semester that we teach.
3. Best practices in Computational Materials Science & Eng. Courses  
Panel organized by Kathy Faber

- Computational Methods for Materials Science: An Introduction to Computer-Based Techniques at the Sophomore Level"  
by D. Williams, R. Vinci, Lehigh University

Lehigh has a required 2-credit "Computational Methods in Materials Science" course in the sophomore year. PowerPoint presentation available from Dave Williams.

- "Computational Materials Design" G. B. Olson, Northwestern University.

The 300 yearlong age of scientific discovery is over. We now are into an era of new technology development driven by industry with little

input from academe. The development of our New Economy will come from engineers creating it by design not by discovery.

NWU has a 4-course sequence 1. Freshman Engineering Design and Communication (modern product design). 2. Junior Materials Design (computational design). 3. Senior Process Design (statistical methods for experimental process optimization). 4. Senior Project (experimental research and design validation).

- "An Integrated Education Program on Thermodynamics, Kinetics and Materials Design" ZiKui Liu, Pennsylvania State University

They are proposing a new Materials Research Institute to coordinate all Materials research activities at Penn State (>200 faculty). MRL would be one component of this structure.

- Discussion Session (Additional 1-transparency descriptions invited)

Takeshi Egami showed some of the procedures in place at Penn. How do we convince HS students to come to Materials. His presentation is attached.

#### 4. Discussion of ABET Related Issues

Slade Cargill

How do we migrate to the outcomes based ABET 2000 criteria?

Abet results from last year: 17 programs were reviewed last year 11 got 6 years, 3 got interim report status, 2 got interim visit status. Those that got IR status were principally because of the lack of proper feedback loops being put in place. IVs were do to formal processes which were lacking.

2000-2001 10 programs will be evaluated. 3 programs have withdrawn their request for accreditation apparently with the intent of giving up a materials program.

- We were all reminded that the MSE chairs have informally agreed to insure that at least two of their faculty would act as program accreditors per six years in order to ensure a steady supply of qualified evaluators.
- Does the UMC believe that PE registration is relevant to materials engineering? If you put this in as a goal of your program then ABET will insist you show the preparation for it.

#### 5. How are MSE Departments Funded?

Bob Snyder

A general discussion of how departments are funded was held. The models vary quite widely causing little take away.

#### 6. NMAB/ UMC Interactions

Saxena

There will be a second materials forum to be held in DC on Sept 19-20 2001 sponsored by the IMC/NMAB . There is a slide attached from Ashok.

7. FMS Liaison report

Aris Christou

8. UMC Business

Saxena

Kathy Faber will chair the nominating committee for 2001-2001 officers.  
Next meeting will be May 16 in Washington DC.

Linda Schadler requested that the Dept chairs encourage a member of their faculty to become active in TMS education. The committee has a growing role in on-line activities and needs ideas and expertise.

Also, if UMC would like a report from the TMS education committee, they could ask Vicki Koebnick to send either the education committee chair or education director to the next UMC meeting.