The University Senate
of Michigan Technological University

Minutes of Meeting 477
9 September 2009

Synopsis:
The Senate

1. Call to order and roll call. President Rudy Luck called the University Senate Meeting 477 to order at 5:30 pm on Wednesday, September 9, 2009. The Senate Secretary Marilyn Cooper called roll. Absent were Senator Gerard Caneba and a representative of IT.

2. Recognition of visitors. Guests included Max Seel (Provost), Ulrich H. E. Hansmann (Physics), Song-Lin (Jason) Young (ME-EM), Pat Gotshalk (Office of Dean of Students), and Deb Charlesworth (Graduate School).

3. Approval of agenda. Hamlin **moved** approval of the agenda; Storer seconded the motion; it **passed** unanimously on a voice vote.

4. Presentation: Michigan Tech's 2009 Research Award Winner, Ulrich H. E. Hansmann.

Provost Seel thanked faculty and staff for a smooth start to the academic year and complimented the Senate leadership for inviting presentations from the research and teaching award winners for 2009. He then introduced Ulrich Hansmann, who has masters degrees in philosophy and in physics and a doctoral degree in physics from the Free University in Berlin and was a research associate at the Swiss Federal Institute of Technology in Zurich and a research assistant professor at the Institute for Molecular Science in Osaka before coming to Michigan Tech as an assistant professor in 1998. He was promoted to full professor in 2004. In 2005-07 he was the head of the research group in computational biology and physics at the Neumann Institute for Computing in Jülich, Germany. In 2008, his research in computational physics and biology was recognized by his appointment as a Fellow of the American Physical Society for his research in computational biology and physics.

In collaboration with a research group of post-docs and graduate and undergraduate students and colleagues in Germany, Brazil, and China, Hansmann conducts research on protein folding which is supported by NSF and NIH. The purpose of his research is to understand such things as cancer, amyloid diseases, and the degradation of drugs by using computer simulations to study the working of a cell on the molecular level, specifically to study why proteins fold and the complex interactions of molecules in a cell. The promises of the research include the design of novel drugs, a better understanding of diseases, medicine targeted to individuals, and biological technical applications such as hydrogen production and heavy metal clean-up.
        The function of proteins depends on their three-dimensional shape (the tertiary structure), and what Hansmann is most interested in is understanding the processes and mechanisms by which a protein folds into the specific structure in which it is biologically active. These processes partly arise from the genome and partly from the environment. The problem is to devise a model that is accurate enough to capture the physics of the system and to develop sampling algorithms that work faster. In Germany, he was using information from bioinformatics to guide the physics-based simulations; now he is developing software for protein simulations that runs on computers with only a few thousand processors.
          Applications of this work include the simulation of the folding mechanism in small proteins as well as studying what causes misfolding which leads to diseases such as Alzheimers; studying the interaction of proteins with other molecules and materials; and studying the reaction networks in the cell (systems biology).
        An example of one question they worked on recently was the question of why misfolding does not happen more often. Working with a protein that is especially prone to misfolding, they discovered through simulation that in the process of folding, N-terminal residues are cached in a structure that protects them from contacts with other parts of the chain until the rest of the folding process is completed, thus avoiding aggregation. This work suggests that designing a protein is simply a matter of designing the final structure; the folding process also has to be designed, for the exact sequence of the folding process is important for the proper functioning of the protein. For more information on Hansmann's research see his website: http://www.phy.mtu.edu/biophys/

Senator Wood asked whether Hansmann had given any thought to simulating what happened when the original proteins were synthesized. Hansmann said that question is too difficult because not enough is known about the original conditions.

Senator Moran asked how the complex shapes of the models can be used to characterize the sameness or differentness of protein folding configurations. Hansmann said that the pictures he showed are cartoons; instead he measures the angles of bonding in the molecules which are characteristic. The pictures are not reality, but something which guides our understanding of the molecules.

5. Approval of minutes from meeting 475 and meeting 476. Hamlin **moved** to approve both the minutes of meeting 475 and meeting 476; B. Davis seconded the motion, and it **passed** on a voice vote with no dissent.

6. President's report.
Luck welcomed all visitors, all the new senators, and those returning. He thanked Martha for the work she did as Senate President and for her advice over the summer; Janice Glime, past Secretary of the Senate, for her efforts to resolve charter

issues and for bringing the staff into the University Senate. He noted that we still need to reach resolution on charters and maintain a meaningful presence of staff in the Senate. He also thanked Bob Keen, Judi Smigowski, Stephen Wilmers, Marilyn Cooper, and Travis Pierce for their work. He thanked Provost Seel for his support and his statement that though we may disagree, we should keep open channels of communication. He noted that Seel has suggested administration contact persons for all Senate committees and urged committee members to keep these people up to date and use them as resources. Luck then demonstrated the new Senate webpage http://www.admin.mtu.edu/usenate and described the business and operating procedures of the Senate.

Luck referred to President's Mroz's goal stated in his July 20, 2009, address of transforming Michigan Tech. Luck commented that with that guidance Senate committees should seize the opportunity to consult the administration liaisons appointed by the Provost to obtain their opinions and insights on the issues they address. He reviewed the financial data presented by the President in the July 20 address which projected a surplus of $288,000 for the academic year. He then compared that data with data from the audited budget report online at http://www.admin.mtu.edu/acct/reports/audited.php and stated that Senate committees should consult this data instead, as the President's data does not contain sufficient information to enable one to ascertain where the institution is going. He also noted that he could not understand how the figures from the President's report could be derived from the data in the audited report. Looking at this report, Luck observed that over the past eight years (2001-08) tuition revenue has increased from $32,929,000 to $54,820,000 while instructional costs have fallen from $53,556,000 to $51,995,000. Revenue has increased, most notably the revenue from research which has more than doubled, from $20,773,000 to $44,955,000. He voiced concern over the income loss before other revenues (money received from tuition, research, and state appropriations less expenses) that shows a deficit of $42,151,000 over the past eight years. He noted that the decrease in student financial support from $8,326,000 to $5,459,000 is of special concern, as Michigan Tech should be about the transformation of the children of hard-working people in the state of Michigan to get a university degree. He urged the finance committee to look into the consequences of the dwindling of support and into how it could be increased. He explained that the total non-current liabilities of $52,991,000 are the result of a series of bonds issued from 2003 to 2008, and that the bonds are of some concern, but Michigan Tech is not too bad in this regard in comparison to other universities in the state: Michigan Tech owes only 30% of its net assets (Moody reviewed bonds/net assets) compared to Western Michigan which owes 140% (Wayne State owes 20%, Michigan State owes 32%, and U of Michigan owes 15%). Compared to other Michigan universities, Michigan Tech does even better, as Northern Michigan owes 94%, while Eastern Michigan owes 273%. He observed that this data supports a conclusion that Michigan Tech is fairly conservative in approving these bonds. (**For more detail on finances, see attached slides.**)

Luck also commented that the emphasis on research at Michigan Tech and the consequent increase in research funds bodes well for Michigan Tech; reported that the search for a new provost is proceeding well; and said that the Benefits Liaison Group is again working on the question of health benefits, which the Senate will hear a report on later in the year.

7. Committee reports. Luck showed the charges to the various Senate committees and commented that reports from all committees will be presented at subsequent Senate meetings.

8. Old business. There was no old business.

9. New business.

    a.   **Approval of Proposed Senate Meeting Dates for 2009-2010.** Malette **moved** approval of the proposed Senate meeting dates for 2009-2010; Hamlin seconded the motion; and it **passed** on a voice vote with no dissent.

    b.   **Approval of Senate Standing Committee list.** Luck explained that the list is not quite final as some people still need to be assigned. L. Davis **moved** approval of the standing committee list (with the exception of the committee assignment for Jeff Allen); Hamlin seconded the motion; and it **passed** by a voice vote with no dissent.

    c.   **Proposal 1-10: Proposed Revisions to the Academic Integrity Policy, presented by the Instructional Policy Committee**

      Snyder presented the proposal, which was prepared by Pat Gotshalk and Deb Charlesworth. The intent of the revision is to address integrity rather than honesty and dishonesty, to clarify that all people charged with violations have due process, and to clarify what sanctions will be imposed for violations while at the same time maintaining the prerogatives of the instructor to assign grades in cases of violations. The Instructional Policy committee reviewed the proposal and rewrote one section that was unclear and presented the proposal for consideration.

Gotshalk explained the problems with the original policy. It didn't apply very clearly to graduate students or created issues for graduate students. The second sanction of reducing the grade by a full letter grade was problematic as it interfered with the faculty prerogative to assign grades and with individual course policies. The revised policy aligns with the sanctions for the code of conduct: warning, probation, suspension, and expulsion, although the final F grade is still being retained. The revised policy puts grading back in the hands of faculty, but students still must be allowed the due process of a hearing before any sanctions are levied.

Hamlin asked whether a grade such as an R for under review could be added instead of using a missing grade when the problem of integrity arises at the end of the semester. Gotshalk said that that is an interesting idea but that it would need to be addressed by the registrar. Boschetto-Sandoval asked whether integrity problems have been increasing with international students. Gotshalk said that a survey indicated that international students seem to be slightly overrepresented but most often it's a question of negligence and lack of understanding, not intentional. Charlesworth commented that international students often

don't understand what the policies are at Michigan Tech, and that more explanation about them have been put into orientation. Gotshalk noted that the information in orientation has helped.

Gotshalk also noted that At-large Senator Solomon had requested a minor wording change: that the word "policy" be added to "Misconduct in Research Scholarly and Creative Endeavors" and the number of the policy be added.

10. Adjournment. Mullins **moved** that the meeting be adjourned; Smith seconded the motion; it **passed** on a voice vote with no dissent, and President Luck adjourned the meeting at 6:42 pm.

Respectfully submitted
by Marilyn Cooper
Secretary of the University Senate