

**MINUTES OF THE 315TH GRADUATE COUNCIL MEETING
UNIVERSITY OF NOTRE DAME
NOVEMBER 12, 2008**

Members present: Greg Sterling (chair), Panos Antsaklis, Philip Bess, Sunny Boyd, Tam Chantem, Greg Crawford, Umesh Garg, Sandra Gustafson, Mary Keys, Peter Kilpatrick, Larry Lamm, John LoSecco, Rebecca McCumbers, Dan Myers (for John McGreevy), Mark Noll, John Robinson (for Patricia O'Hara), John Renaud, John Welle, Bill Westfall, Roger Huang (for Carolyn Woo), Gay Dannelly (for Jennifer Younger)

Graduate School representatives present: Terry Akai, Barbara Turpin

Members absent: Robert Bernhard, Peter Burns, Laura Carlson, Cyril O'Regan, Pitt-Mann Wong

Reporter: Mary Hendriksen

Prof. Sterling opened the meeting of the Graduate Council at 3:30 p.m.

1. Approval of the minutes of the Graduate Council meeting of September 17, 2008:

After Prof. Sterling noted two minor amendments, the minutes of the meeting of the September 17, 2008, were approved unanimously.

2. News items: The news items circulated to members in advance of the meeting are attached as an appendix.

Prof. Sterling clarified that the new science and engineering stipends of Item 3 are to be funded from two donors' pledges. Departments will be informed when the pledges are fulfilled and the funds available.

Regarding the fourth item—agreements to foster enrollment of graduate students from Chile and Puerto Rico—Prof. Sterling encouraged members to inform him of connections they or others may have to faculty or institutions in either location. He has already written to faculty members he knows with ties to Chile or Puerto Rico.

Prof. Sterling also encouraged members to attend the GSU's first research symposium. Funded by the Graduate School, it will be held in McKenna Hall on November 21.

Prof. Sterling introduced Larry Lamm, the new representative from the research faculty.

3. Announcements: Prof. Sterling made three announcements:

(a) Language training: The Graduate School has received funding from the President's Circle to fund summer language training for doctoral students in all fields, including science and engineering. The funds are intended to support the acquisition of a language that is critical for a student's research. Dr. Turpin informed members that she has already received several inquiries from students about the funds. She explained that each student who receives funding is eligible for summer training at a cost not to exceed \$10,000. The Graduate School hopes to accommodate 12 or 13 students in the program's first year. Students need not go abroad to access the funds. Middlebury College, for example, runs an excellent summer language institute.

Prof. Myers asked about the possibility of predicating an award from the program on a future fellowship application—for example, a Fulbright. Prof. Sterling said that the Graduate School would wait until this year's committee on instituting a grantwriting/fellowship application requirement submits its report but was personally receptive to the idea.

(b) REU Programs: A second new Graduate School program, Research Experiences for Undergraduates (REUs), also funded by the President's Circle, is designed to increase diversity among Notre Dame's graduate student population. Dr. Akai explained that the program will target members of underrepresented groups for summer experiences in Notre Dame labs. The University has run a pilot program the last few years for McNair students from Florida International University. Two students who participated in this pilot program are now at Notre Dame pursuing a doctoral degree. The plan is to host six to ten Ph.D. prospects each summer for the next three years.

(c) Recruitment funds: Prof. Sterling explained that he has notified all departments and programs that they are eligible for one-time funding of \$3,000 to jumpstart efforts to establish feeder schools for their graduate program. The intent is strategic recruitment. Most departments draw students from a wide array of institutions. These funds are intended to help them target institutions that will increase diversity or attract a known cohort of high-caliber students.

4. Posthumous degree proposal: The Registrar has proposed to refine and formalize the University's current policy for awarding degrees posthumously to graduate students. The proposal included in members' packets as Attachment C contains several changes to Dr. Pace's original draft—both changes recommended by Graduate School staff and by members of the Graduate School's executive committee. It provides for award of posthumous master's and Ph.D. degrees in instances, for example, when a student has completed coursework or passed a candidacy examination.

Prof. Kilpatrick spoke in favor of the proposed policy.

Given members' consensus of approval, Prof. Sterling said that he will send the proposal to Dr. Pace. It will then proceed to the Academic Council.

5. Proposal for approval of the Engineering, Science, Technology Entrepreneurship Excellence Master's Program (ESTEEM): This proposed professional master's program is a joint effort of the Colleges of Science, Engineering, and Business. As explained in the document included as Attachment D of members' packets, the aim of the 30-credit-hour degree program is to "respond to the growing need in our increasingly complex, technologically oriented economy to train scientists and engineers to manage human, financial, and technological capital." The proposed ESTEEM program is for individuals who hold a bachelor's degree in science or engineering. It is a one-year master's program that includes courses in technology business basics, technology and operations management, and science or engineering. A major part of the curriculum is an internship in which, guided by a faculty mentor, each student develops a project idea into a business plan.

In his overview of the ESTEEM program, Prof. Kilpatrick explained that many holders of engineering and science bachelor's degrees would benefit from refining their training in the areas of business fundamentals, innovation, entrepreneurship, and pursuing commercial aspects of science and engineering. Training in the ESTEEM program is intended to be almost orthogonal to traditional Ph.D. training. Very few programs focused on innovation and entrepreneurship exist nationally. The few that do are at Duke, Brown, Dartmouth, George Washington, and a nascent program at Cal Tech. The program's designers know of no similar program in the Midwest.

Prof. Crawford added that the National Academies of Science and Engineering have recently stated that, in today's increasingly technological world, a bachelor's degree in science or engineering is no longer a terminal degree. Science and engineering are undergoing a transformation similar to those that occurred in medicine and law decades ago. Prof. Crawford continued by saying that the ESTEEM program is *not* an MBA program. He emphasized the connection the program and its students will make with the University's Innovation Park. Student work should help facilitate economic development in the city of South Bend and the surrounding region by the great potential it represents for an infusion of jobs.

Prof. Huang outlined some of the many differences between the University's MBA program and the ESTEEM program. In addition to coursework, in ESTEEM, students will produce something they can market.

Prof. Gustafson asked how the program relates to the University's efforts in the field of technology transfer. Prof. Crawford explained that ESTEEM will help increase the *volume* of potential products. Volume, he emphasized, is the key to success in the technology transfer area. The huge one-hit success stories—for example, Gatorade—in which a university makes an enormous profit from only one product, are few and far between.

Prof. Kilpatrick noted that the primary intent of the program is education. Technology transfer will be a secondary benefit, not a goal, of the master's program.

Prof. Antsaklis asked about the program's metrics, especially for the twelve-hour internship. How will instructors declare a student's project a success?

Prof. Kilpatrick answered that projects could be assessed on the clarity and comprehensiveness of the student's business plan or its plausibility of success. He expects that details of assessment will be worked out by the director in piloting the program its first year.

Members raised questions as to whether the program is top-heavy in administrative structure, especially in proposing to have a director, an associate director, and an executive assistant. Profs. Kilpatrick and Huang replied that the administrators will also be teaching in the program and advising students on their individual projects. Prof. Huang pointed out that the associate director oversees recruitment and marketing; the director is the academic director. They are distinct roles; both are necessary—and this is true even with 25 students, although 60 students in three years is the goal.

Prof. Renaud, on the other hand, wondered if the director and associate director may be stretched too thin, particularly if they are advising 60 students, each working on a 12-credit research project. Prof. Kilpatrick clarified that there will be a “constellation” of people who advise students—adjuncts, small business owners, etc. The associate director will coordinate the projects and their advisers—not advise each student personally.

Ms. Dannelly noted that the Library offers a course titled *Competitive Intelligence* that is one week long and offered to MBA and Executive MBA students. It deals with competitive information—both how to find it and how to use it—and is extremely useful in areas of entrepreneurship and product or service development. It is offered by the Libraries via the Business Information Center and has received great support from the Dean's office and faculty who teach in the two programs. She would suggest that ESTEEM planners consider this course or a variant of it as a potential element in their curriculum. Mr. Steven Hayes, the University's business librarian, can provide a complete description of the course.

As for questions on whether faculty will be willing to mentor students enrolled in the program, Prof. Crawford said that at Brown, the program has more mentors than students. He noted that as at Brown, faculty participation at Notre Dame in this professional master's program will be voluntary.

Prof. Kilpatrick said that such incentives as additions to faculty members' discretionary funds might be added to the program's budget.

Prof. Robinson said that the ESTEEM program could benefit from inviting Law School faculty with expertise in intellectual property—for example, Profs. Joseph Bauer and Patricia Bellia. Likewise, in the ethics field, there are Philosophy professors who may be happy to contribute their expertise as well.

Prof. Sterling closed discussion by stating his support for the program on four grounds. First, it is impressive in its aim to help society through technological innovation. Our local community could be a significant beneficiary. Second, this is the direction in which science and engineering are moving as disciplines. The National Research Council has just released a report on *Science Professionals: Master's Education for a Competitive World* urging the formation of such programs. Third, the program is a model of collaboration among three colleges. Fourth, he thinks that this is healthy for the doctoral programs as well. The professional program will require students to pay tuition. This provides a healthy alternative to the current situation in which some students use Ph.D. programs for professional training and opt out once they have a master's degree. Prof. Sterling did ask that the ESTEEM prospectus state explicitly that Ph.D. students may not migrate into it. It is healthy for both ESTEEM and the University's Ph.D. programs to establish a very sharp boundary line. He also supports the view of Prof. LoSecco that the prospectus for the program should provide for more opportunities for review. He would suggest an internal review after three years. That review may be by the Deans' Council or the Graduate Council. He indicated a desire to discuss some financial issues with the sponsoring deans privately.

Prof. Sterling asked for a vote on the proposed ESTEEM program. Members voted unanimously in favor, with no abstentions. The next step will be for the Deans of the three colleges to seek approval of the program from the Academic Council.

6. Discussion of the review of the Graduate School by Council of Graduate Schools consultants. In mid-September, Deans Sheila Bonde (Dean of the Graduate School, Brown University) and Lew Siegel (Dean Emeritus of the Graduate School at Duke University) visited Notre Dame to assess the administrative structure of the Graduate School and provide advice on possible restructuring. Prof. Sterling circulated their report as Attachment E in members' meeting packet. He asked at the meeting for members' reaction to the report.

When Prof. Crawford turned the question around and asked for *his* reaction to the report, Prof. Sterling said that several of the consultants' recommendations were already being implemented. For example, a joint committee of the Graduate Council and Directors of Graduate Studies is in place for the 2008-2009 academic year to develop a formula for stipend allocation. He endorsed other recommendations such as annual departmental evaluations of all graduate students and an increase in student stipends.

Discussion then turned to the necessity of increasing the number of graduate students at Notre Dame from underrepresented populations—which was another recommendation of the consultants. Prof. Gustafson noted that recruitment of minority faculty, graduate students, and undergraduate students is a continuing challenge. All three are interrelated and should be addressed as a whole

Members next discussed the optimal size of the Graduate School. Prof. Sterling said that he has never fully accepted the idea that Notre Dame's Graduate School should be "small but superb." The *size* of a graduate school has a role in rankings because it has

a direct effect on impact. Size is considered as a factor in most assessments of programs. The latest almanac issue of *The Chronicle of Higher Education* reported the number of doctorates awarded by institution (see *The Chronicle of Higher Education* 55.1 [April 29, 2008], p. 20). There is a correlation between the size of the institution and its place in the landscape of American higher education. He will do everything possible to grow the Graduate School. For the moment, his primary concern is to solidify the current infrastructure: we need to be more competitive in stipends and health insurance support. He is hopeful that the three joint committees he has established this year [see Item 2 of the Appendix (News Items)] will increase the impact of the Graduate School. For example, if one of the joint committees recommends institution of a grantwriting/fellowship application requirement and Notre Dame students begin to win more Fulbrights, the University's reputation will rise. Their grants will also provide some additional funding for the graduate program as a whole. Prof. Sterling added that the Graduate School will need to be strategic in how it increases in size. The main driver will be the research programs of the faculty.

The final subject of discussion was the need to raise students' stipends. Prof. Gustafson asked: What *is* the obstacle to an increase? Prof. Sterling said that each stipend requires annual funding rather than one-time funding. When stipends were raised at the University a few years ago, the increase was realized only by incoming students. This was done because the funds that were allocated were not large enough to cover increases for all students. Thus, the stipends of some ABD students are lower now than those of first-year graduate students. Prof. Sterling is optimistic that in the long run we will be able to address funding adequately. His confidence is based on the support of three key administrators: Provost Burish, Executive Vice-President Affleck-Graves, and Fr. Jenkins have all pledged support for helping the Graduate School. He also thanked the deans of the colleges for their public and repeated support of the Graduate School: Deans Crawford, Kilpatrick, and McGreevy have all been very supportive. The current economic downturn will slow our advance, but there is a consensus that we need to expand our support of graduate students.

There being no further business, Prof. Sterling adjourned the meeting at 5:00 p.m.

Appendix: News Items from the Graduate School

Graduate Council Meeting of November 12, 2008 News Items

(1) New Website: The Graduate School launched its new website in mid-October: <http://graduateschool.nd.edu/>.

Graduate School staff will continue to add new features to this constantly evolving tool. Dean Sterling is exploring with DGSs what information the site should contain about selectivity, yield, average GRE scores of matriculants, undergraduate GPAs of

matriculants, time to degree, etc. Some graduate schools provide this type of information for prospective students.

(2) Joint DGS/Graduate Council Committees for 2008-09: The Executive Committee of the Graduate Council worked with Dean Sterling to construct joint committees of the Graduate Council and DGSs to explore three important issues during the 2008-2009 academic year:

- completion rates;
- whether the Graduate School should require all doctoral students to apply for an external grant during their time at Notre Dame; and
- appropriate stipend allocation formulas.

Every faculty member asked to serve accepted the assignment.

(a) How can the University improve doctoral completion rates?

Currently, the University spends \$4.5 million on students who do not complete their degrees. This committee will explore such questions as: are there identifiable factors that would help us recognize high-risk students? Are there departmental or program practices that encourage completion? What can the Graduate School itself do to improve completion rates?

Members: Sunny Boyd, Umesh Garg, Matt Ashley, Mark McCready, Sharon Hu, Bill Carbonaro, Rebecca McCumbers, Barbara Turpin

(b) Should the Graduate School institute a requirement that every Ph.D. student write (not necessarily submit) an external fellowship or grant application during his or her time at Notre Dame?

Such a requirement would help students develop a critical professional skill, provide greater resources to those who secure a grant, enhance Notre Dame's reputation, and help all students financially by freeing up funding for students overall. This proposed requirement has the support of the Provost and all college deans.

Members: Panos Antsaklis, Dan Lapsley, Mary Keys, Brian Baker, Chris Hamlin, Patricia Blanchette, Caitlyn O'Shea, Terry Akai

(c) What should the formula be for stipend allocation?

The task of this committee is to develop a calculus for allocating funds for graduate student stipends. Some factors that might come into play: the quality of students, as measured by metrics; the number of students

externally funded; faculty participation; and the quality of program administration.

Members: Greg Sterling, Greg Crawford, Patricia Maurice, Dan Myers, Remie Constable, Kathie Newman, Laura Carlson, Tam Chantem

(3) Development news: New Stipends: The University has received pledges from two donors, both alumni of the Graduate School, for new graduate student stipends. The first, in the amount of \$100,000, is designated for engineering students. The second pledge, in the amount of \$500,000, is designated for students in Chemistry, Biochemistry, and Molecular Biology. The relevant departments will receive more information soon.

(4) Agreements to Foster Enrollment of Chilean and Puerto Rican Graduate Students:

(a) Chile: In October, the University signed an agreement with the government of Chile that will facilitate the opportunity for students in that country to earn graduate degrees at Notre Dame and for doctoral students and faculty to engage in exchanges. For more information, see the news story on the front page of the Graduate School web site:

<http://graduateschool.nd.edu/news/1254-notre-dame-joins-chilean-initiative>

(b) Puerto Rico: José Fernandez, a member of Notre Dame's Board of Trustees, has provided funding for up to five doctoral students a year from Puerto Rico to attend Notre Dame. The stipend levels will be \$22,000 per year.

Later this month, Deans Sterling, Crawford, and Kilpatrick will travel to Puerto Rico to help foster recruitment efforts for these stipends. Dean Sterling will then continue on to Chile for two days to begin building relationships there.

(5) Naughton Graduate Student Exchange Program with Irish Universities (Science and Engineering Students)

A University benefactor, Martin Naughton, has provided funds for an exchange program between Notre Dame and select Irish universities for students in three broad areas of study:

- Biomedical sciences and bioengineering
- Energy-related research
- Nanoscience and technology

Students will spend one or two years of their doctoral program at the host institution but still obtain a doctoral degree from their home institution. The program provides a nationally competitive stipend for five years, plus a living stipend for the one to two years the student is at the host institution. The Graduate School is developing a brochure and web site page. We expect that there will be one student from Notre Dame and one from Trinity College the first year.

(6) Graduate Student Union (GSU) Research Symposium

The GSU, funded by the Graduate School, is hosting the University's first Graduate Research Symposium later this month: November 21, McKenna Hall, 3:00-5:00 p.m. The symposium provides an excellent opportunity to display the original research of our graduate students. Research will be presented in each of the divisions of the Graduate School (Architecture, Engineering, Humanities, Science, Social Sciences) as well as one panel devoted to the Notre Dame forum topic on "Sustainable Energy."

See the GSU web site for further information, including the names of presenters: <http://www.gsu.nd.edu/?q=symposium>

(7) Workshops:

(a) Fulbright Information Session: On September 25, Joanne Forster of the Chicago office of the Institute of International Education traveled to campus to speak to students and advisers about the application process for graduate students for Fulbrights.

(b) Ethics and Compliance Issues: On October 30, Tracy Poston, Director of Compliance in Notre Dame's Office of Research, led a workshop for science and engineering graduate students on legal and ethical issues involved in research. Ms. Poston identified top concerns in this area and provided direction on how students can access the range of resources available to them on compliance issues.

(c) College of Science Grant-writing Workshop: Gregory Crawford, Dean of the College of Science, will lead a workshop on Science grant writing: Friday, November 14, from 2:00 to 3:00 p.m. in 310 Jordan Hall of Science.

(d) Social Science Grantwriting: Next semester, Prof. Dan Myers, Associate Dean, College of Arts and Letters, will hold a workshop for social science students on grantwriting.

(8) DeBartolo Performing Arts Center events for Graduate Students: A total of 250 graduate students, DGSs, and Graduate Council members attended a

performance of *The Hot Club of San Francisco* (jazz and silent films) on October 3 at the DeBartolo Performing Arts Center. Given the success of the evening, the Graduate School will host a second event for graduate students in the Spring semester: The Kronos Quartet: Friday, March 27, 2009, 7 pm.

(9) New Elected Representative from the Research Faculty

Larry Lamm, Physics, is the new elected representative from the Research Faculty. He replaces Angelina Lay.