

Baylor University
School of Engineering and Computer Science
Board of Advocates
Fall Meeting – October 8, 2004
Baylor University

Board members attending: Mike Ingram, Larry Johnson, Robert Kincaid, Rick Maule, Bill Mearse, Craig Nickell, Clell Oravetz, Bill Ratfield, Dan Richter, Brian Sheets, Steve Smith, Harold Spangler, Doug Verret, Trent Voigt, Matt Watson, and Mike Yates.

Board members absent: Jeff Moody, Rita Patterson, Shawn Sedate, Dean Swisher

Others attending: Dr. Walter Bradley and Cindy Dougherty (afternoon session), Steve Eisenbarth, Dean Ben Kelley, Jim Farison, Don Gaitros, Leigh Ann Marshall, Cheryl Tucker and various faculty from the School of Engineering and Computer Science. Additionally, Jerry Knight, a computer science graduate student made a project presentation to the Board.

Welcome

Following a continental breakfast, Bill Mearse convened the meeting. He introduced the new Board members (Mike Ingram, Larry Johnson, Bill Ratfield, and Rick Maule), and he presented an award to Clell Oravetz for hosting the Spring meeting at SBC Communications in San Antonio, Texas.

Following Mr. Mearse's remarks, Mr. Rishi Sriram, ECS Student Success Specialist, introduced Dr. Frank Shushok, Dean for Student Learning and Engagement. Dr. Shushok welcomed the Board members to "a changing culture at Baylor, from living room to living-learning center." He reported Baylor's large entering class this fall has the highest SAT average in the University's history, and he continued, "Baylor can be the first-rate evangelical Christian university: distinctly Christian and highly academic." He spoke of the partnership between the School of Engineering and Computer Science and the Student Life Division, as the two University units work across lines of understanding and using "pockets of information that everyone has." The North Village, where the meeting was being held, symbolizes the formalized relationship between ECS and Campus Living & Learning (a division within Student Life). He relayed that studies have shown that students who have more interaction with faculty outside the classroom (as in the ECS Living-Learning Center, within the North Village) have better academic performance and higher retention. He concluded by saying, "The partnership is a challenge, but the rewards will be great."

Dean's Report

Dean Kelley began the morning's academic presentations. His presentation outline and those of the additional faculty presenter are attached to these meeting notes. Presenters included:

Dean Kelley.....Dean's Report
Dr. Robert J. Marks IIDistinguished Professor of Engineering and Graduate Program Director

Summary: Topics within the focus of the Dean's presentation included: introduction of new board members, U.S. News & World Report Ranking, Strengths, Weaknesses, Opportunities, and Threats overview, North Village ECS LLC, ECS personnel and organization, ECS enrollment and recruitment plans, graduate and research opportunities, expanding initiatives, and culture and moving improvement forward.

Following the Dean's report, Dr. Marks gave the Board a first look at the new engineering graduate programs. The degrees include MS in Mechanical Engineering, MS in Electrical Engineering, MS in Biomedical Engineering, Master's in Engineering, Dual Engineering Degrees, and Master's of Engineering/MBA Degree. Dr. Marks profiled the graduate engineering class, faculty research grants, engineering graduate program recruiting initiatives, and immediate program goals.

Morning Breakout Sessions

Computer Science Session

Advocates present: Larry Johnson, Matt Watson, Trent Voigt, Bobby Kincaid, Harold Spangler, Bill Mearse

CSI faculty and staff present: Michael Aars, Erich Baker, Jeff Donahoo, Don Gaitros, Paul Grabow, Greg Hamerly, Pete Maurer, Bill Poucher, Greg Speegle, Dan St.Andre, David Sturgill, Sharon Humphrey, Pat Hynan

1) Dr. Poucher, chair of Assessment Committee, presented a slide presentation of the 2003 Assessment Committee Report to the Computer Science Faculty. (See attached handout)

2) Presentations by Assessment Committee Chairs

a) Dr. Donahoo-Undergraduate Curriculum Committee (See attached handout-slides). Phasing in of new curriculum may require petitions for substitutions for exiting students.

b) Dr. Speegle-Capstone Committee (See attached handout-slides)
Called a Capstone Experience-not as team driven like 4390 will be as a capstone course. Objectives-see handout. Advocate Board member Matt Watson commented that objective #4 Apply time, personnel and financial management techniques is an extremely important one. The Board members agree that QM, Project Management is very valuable. They are interested in attending classes to present seminars to the Database course.
Petition possibilities for capstone course: Honors, Internships, Research, Other?
Section 0.1 of assessment handout: EGO's 1,2,3,4,7,8 and 9: 4390 contributes to these. An example syllabus is in progress.

c) Dr. Maurer-Theory

(See attached handout-slides). For accreditation theory must be covered in some core topics. Board members agree that theory is of great value in problem-solving. Again board members expressed interest in coming to campus or having some outside person come in to speak to classes on value of theory.

d) Dr. Grabow-Software Design, Practice, and Experience (SDPE) Task Force

(See attached handout-slides). Presented the task forces' charge and timeline. Related existing courses are CSI 3342 and CSI 4344. Possible new courses are Software I (soph. level) and Software II (junior level). Software I objectives are listed in the handout.

3. Comments by Dr. Gaitros

Dr. Gaitros brought up a topic discussed in a previous board meeting on outsourcing and the possibility of our students working on a project with students from other cultures. He asked Michael Aars to share his summer experience with the Maastricht program. This next summer our students will go there and some of their students will be inserted into ours. This past summer at Baylor one of CSI majors worked on a project with their students.

Engineering Session

Attendance

Advocates (9): Mike Ingram, Rick Maule, Craig Nickell, Clell Oravetz, Bill Ratfield, Brian Sheets, Steve Smith, Doug Verret, Mike Yates

Faculty members (9): Dick Campbell, Bob Doty, Russ Duren, Steve Eisenbarth, Jim Farison, Brian Garner, Randall Jean, Mike Thompson, Ken Van Treuren

A. Introductions

With the number of new Board and faculty members, Dr. Jim Farison invited all in attendance to introduce themselves, with name, position and brief background.

B. BU Engineering Programs and Accreditation Overview

Dr. Farison gave a presentation including the Department mission, the curricula of the three B.S. programs (ECE, ME, and Engineering), and an overview of ABET and its accreditation purposes and processes, noting that ABET defines the following terminology:

Program objectives - statements that describe the expected accomplishments of graduates during the first several years following graduation from the program

Outcomes - statements that describe what students are expected to know or be able to do by the time of graduation from the program.

C. Engineering Program Objectives

In this context, and with the specific request for Board response, Dr. Farison then reviewed the current program objectives for each of the three B.S. programs. Subsequent discussion focused primarily around two aspects of the objectives.

First, Doug Verret observed that two of the sets of program objectives (ECE and EGR) were worded to focus toward what faculty will do, while one (ME) is focused on what students will do. After confirming the nature of objectives (subsequent graduate performance) versus outcomes (students at time of graduation), he asked, “Do we test what faculty provided or what students achieved?” Since the answer in both cases is “students/graduates” rather than the faculty, board members uniformly recommended that the wording of the ME objectives better reflects the appropriate focus and could be used as a model for the other programs.

Second, Dr. Farison asked the Board for their comments about the way we currently reflect Baylor’s Christian mission and atmosphere in our department mission statement and program objectives.

On this subject, the board members seemed generally to agree with the explicit reference in the department mission statement (even though it could naturally be inferred from the University’s mission).

About repeating a Christian context statement explicitly in each set of objectives, there was considerable and wide ranging comment that included most of the board members. Following is a sampling of the comments.

As an expression of the professional ethics thereby implied, it is positive.

Omit “Christian” and simply state the professional and ethical goals.

On other hand, statement is mild, and is just truth in advertising.

Companies will see graduate as employee, not Baylor University graduate.

Issue depends on purpose of statements and intended audience.

Emphasize more that teaching of ethics and integrity follows naturally from Christian mission.

UT and A&M could say “ethical integrity” but it’s not the same as BU.

We try to draw based on the professional “culture” of the graduates. But customers don’t ask what culture led to great products.

Our company, following mergers, will be recruiting multi-nationally. Desired ethics may come from different (or no) religious contexts.

Rick Maule, father of two current Baylor engineering students, said, “Sons sent here for Christian culture and quality education. Baylor University is a Christian institution. What are

we trying to accomplish with our objectives? 1) Meet ABET requirements, and 2) Communicate to world about our product. We don't want to convey that proselytizing edges out priority of quality education. Let students speak for their own faith. Think of the audience of our objectives; don't let them be a liability. He added that Baylor will succeed because of quality students - technically and character. Be sensitive to issue, but "don't lose recipe." The product is most important.

D. National Ranking

With regard to our USN&WR ratings, Charles Maule asked, "What things keep us from getting from 3.2 to 4.4 in rating? Should we not make greater effort to achieve those things (visibility, networking, etc.), if they help our leverage, funding, etc."

Dr. Farison explained that the numbers come from invited deans and professors at engineering schools, who are asked to rate each school's engineering program on a scale from 1 to 5 based on their judgment of the quality of the program. Responses are averaged and rounded to nearest tenth. He added that he is undertaking an analysis of the characteristics of the programs most highly ranked under this rating system.

Lunch Presentation

Mr. Jerry Knight presented his work in the graduate computer science program on computer graphics lighting and animation.

Afternoon Session

Following lunch, the Board reconvened the meeting. Dean Kelley led the discussion on setting Board priorities. The proposed topics to be prioritized were:

1. Experiential, vocational and career learning
 - Promoting summer internships within board member organizations
 - Identifying senior design projects (computer science and engineering) for capstone experiences
 - Assisting students with resource needs associated with discipline-specific missions
 - Participating in Baylor career fair and on-campus interviews
2. Contact within ECS academic community
 - Student Forum: dessert reception with upper-level and graduate students Friday evening of fall Board meeting
 - ECS Alumni Day: utilizing Board members or their company representatives physically on campus during (Friday before BU Homecoming).
 - Student groups/organization: Interface with student groups/organizations on technical topics, corporate recruiting, and career advice
3. Prospective student recruitment
 - Identifying outstanding prospective students and notifying Baylor
 - Writing a "promotion" letter to a prospective student on behalf of ECS
 - Hosting a small gather of prospective students at Board member's home, business, or restaurant

- Participating in Board's Spring Event (evening before spring Board meeting)

4. Resource development

- ECS Advocate Board Endowed Scholarship (Yea!)
- Individuals/families personally providing resources and scholarships
- Assisting with opportunistic resource garnering (labs, endowed labs, professorships, scholarships)
- Leveraging Board-member relationships/contacts for strategic projects
- Taking on special opportunities, i.e., CNC machine is current need

5. Research & development

- Assessing internal academic-appropriate research opportunities
- Sponsoring a research project conducted by ECS faculty and students
- Outsourcing elements of larger research projects to ECS faculty and students
- Identifying senior design projects (computer science and engineering) for capstone experiences

6. Corporate foundations

- Identifying/verifying internal or external foundation relationships
- Assessing potential of association with BU ECS initiative
- Providing insight into process, relationships, and other needs
- Leveraging relationship/influence to create BU ECS opportunity

When asked if he'd set any priorities among these, Dean Kelley responded that ECS would like to work on all of them, and it is difficult to prioritize this list. He asked the Board to set the priorities. Doug Verret suggested that the Board identify its collective expertise. After some discussion about some of the topics, Dean Kelley asked for a show of hands indicating the topics where each Board member could best contribute. The top three priorities of the list are experiential, vocational and career learning, Board contact within ECS academic community, and prospective student recruitment. A list was circulated among the Board members, who were asked to indicate their specific areas of involvement in this list of 6 topics.

More discussion regarding internships followed. Rick Maule suggested that Baylor should partner with organizations in Texas with established internship programs. Good internship experiences will lead to hiring. He continued by saying if Baylor works with established intern programs, there will be no barrier, as there is with some companies who do not recruit graduates from Baylor.

Discussion followed concerning ECS financial status and outlook. Dean Kelley reported that seventy-eight percent of Baylor's revenue is from tuition. Beyond scholarships, ECS has no other endowments. Dr. Gaitros added the possibilities of endowment for professorships and chairs. The Board members were curious about coordination between ECS and University Development relating to donor-, individual foundation-, and corporation foundation-seeking opportunities. Cindy Dougherty outlined the structure of partnership between ECS, University Development, and the Office of Sponsored Programs.

With regard to research & development, Doug Verret suggested a consortium among member corporations and the University for exclusive rights to developments and expertise. He asked about core competencies and general research areas at Baylor. Dr. Bradley responded that ECS hasn't identified specific research areas, other than those of the faculty. He said emerging areas will need to be identified.

Board Closed Session

The Board of Advocates met in closed session from 3:00-4:00 pm.

Closing Session

Following the Closed Session, the Board reconvened with ECS faculty and staff. Mr. Mearse summarized the day's meeting by saying (1) there had been better Board interaction, (2) the relationship between ECS and Student Life was rewarding to see in action, (3) the Board is pleased to see the school's graduate programs expanding. He went on to say the Board would like to see (1) a partnership develop between the Department of Computer Science and the School of Business, (2) the partnership between the Departments of Computer Science and Engineering could be strengthened, and (3) a Fast Track Graduate program ought to be considered for competitive advantage.

Mr. Mearse conveyed the Board's consensus that the new computer science curriculum is "moving in the right direction." While the Board remains concerned about the computer science enrollment drop-off, Board members want to help with recruitment.

Further, the Board is concerned about the "flat enrollment" in the engineering programs. Finally, he reported that there was not much discussion among the Board members about the bioinformatics program. Dr. Gaitros interjected that a new graduate program in bioinformatics has been approved by the Department of Computer Science, and will eventually be presented to the School of Engineering and Computer Science, the Baylor administration, and the Board of Regents for approval.

Finally, Mr. Mearse relayed the Board's preference for a list of points being added to the meeting notes and maintained by Leigh Ann Marshall.

Following Mr. Mearse's summary of the Board Closed Session, Trent Voigt asked about the percentage of international students enrolled in the graduate programs. Dean Kelly responded that about 2/3 of ECS graduate students were international students. In engineering, there are no international students, but these students are expected to enroll in the future.

Summary reports of the morning breakout sessions were presented. First, Rick Maule gave a summary of the engineering session. He reported that the group discussed (1) accreditation criteria and objectives, and (2) Board suggestions for improvement. The Board members attending the engineering session agreed on the mission statement but suggested that the focus of the mission statement be on learning, rather than on teaching. An observation of the Board is that the strong Christian wording of each engineering program be softened or removed in order

to be sensitive to multinational corporations. Further, as the focus is on the “product,” i.e., the students, and clearly the Baylor environment fosters the Christian mission, perhaps this emphasis could be less.

Dr. Bill Poucher gave a summary of the discussion from the computer science breakout session. He reported that accreditation was discussed in this group. Discussion in the session focused on curriculum. Board members volunteered to (1) speak to classes about business experience and observations for success, (2) present management models used in Board member companies, and (3) evaluate student profiles.

In the final moments of the meeting, the Board decided to hold its spring meeting April 15, 2005, in the Houston area. The annual Spring Event will be the evening before the meeting, on April 14. Dean Kelley asked for volunteer Spring Event and meeting hosts. Mr. Mearse tentatively volunteered that Accenture would be able to host, in the absence of other volunteers from the Houston area.

With the day’s business concluded, the Board members ended the day with a photograph in the prayer garden of the North Village at 4:30 pm.

Board Priorities:

1. Experiential, vocational and career learning

- Promoting summer internships within board member organizations
- Identifying senior design projects (computer science and engineering) for capstone experiences
- Assisting students with resource needs associated with discipline-specific missions
- Participating in Baylor career fair and on-campus interviews

2. Contact within ECS academic community

- Student Forum: dessert reception with upper-level and graduate students Friday evening of fall Board meeting
- ECS Alumni Day: utilizing Board members or their company representatives physically on campus during (Friday before BU Homecoming).
- Student groups/organization: Interface with student groups/organizations on technical topics, corporate recruiting, and career advice

3. Prospective student recruitment

- Identifying outstanding prospective students and notifying Baylor
- Writing a “promotion” letter to a prospective student on behalf of ECS
- Hosting a small gathering of prospective students at Board member’s home, business, or restaurant
- Participating in Board’s Spring Event (evening before spring Board meeting)