Baylor University

School of Engineering and Computer Science

Board of Advocates

Fall Meeting – October 3, 2003

First Baptist Church-Waco

Board members attending: Bob Finner, Robert Kincaid, Jeff Moody, Craig Nickell, Clell Oravetz, Rita Patterson, Dan Richter, Shawn Sedate, Brian Sheets, Steve Smith, Harold Spangler, Jeff Church representing Gary Stripling, Dean Swisher, Trent Voigt, Matt Watson, and Mike Yates.

Board members absent: Rob Auld, Doug Holberg, Ed Maggio, Bill Mearse, and Doug Verret

Others attending: 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, five engineering students made project presentations to the Board.

Welcome

Following a continental breakfast, Steve Smith convened the meeting. He spoke of his experience with the beginning of the bioinformatics program with Dean Emeritus Bargainer. He introduced the new Board members (Robert Kincaid, Clell Oravetz, Rita Patterson, Dan Richter, Matt Watson), and he presented an award to Shawn Sedate for hosting the Spring meeting at the HEB facility in Austin, Texas.

Following Mr. Smith's remarks, Dr. David L. Jeffrey, Assistant Vice President and Provost, addressed the Board. Dr. Jeffrey welcomed the Board to a meeting concerning the School of Engineering and Computer Science, a "treasure of the University." He announced his approval for planning of four new masters programs in engineering the previous day. Dr. Jeffrey complimented the "quality of mind and heart of my colleagues in the School of Engineering and Computer Science. He stated, "There are promising people in the School of Engineering and Computer Science." The school is "poised to move outward and develop from the inside."

He then spoke to some "general things about the University," especially relating to Baylor's summer. He said that the events of the summer related to some "compound problems." These problems related to (1) long standing issues with governance and (2) scandal, murder and athletics abuse. These and other stress fractures together created a situation of vulnerability. The Baylor Family demonstrated "tremendous character, quality; and a willingness to 'hunker down' and do prayerful work needed and support one another." He went on to say, "We're finally beginning to come through to the other side, although the problems are not finished." He said that Baylor's athletics program continues to be a constant source of financial loss. Further, to be a part of athletic culture, we're involved in responding to things in athletic culture that aren't what they're supposed to be. Baylor is working to sort out the way in which to deal with the "two cultures phenomenon" in athletics.

Regarding the issues with governance, Baylor is working on much needed refurbishment with some "necessary internal examination." He said this examination and resulting change will bring about "unmitigated good." Baylor will become "stronger by the process of self-examination." It is important that we keep moving forward. Baylor will meet these challenges, and the School of Engineering and

Computer Science will be great strength to Baylor, and Baylor will be strength to higher education. Dr. Jeffrey said, "Baylor is a school that hasn't refurbished from within as quickly as other schools. Now, we're experiencing major renovation, and it's happening all at once. We're 'building to catch up' to expectations of our constituents." The Board of Advocates will see fruits of that. The young faculty hired is capable of adding to strengths to make Baylor a great school. The Board of Advocates gets to play a part. Input and innovation from the Board is very valuable and a pooling of resources.

Dean's Report and Supplemental Presentations

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

Dean Kelley .....Dean's Report
Dr. Walter L. Bradley .....Research in ECS: New Developments

Summary: Topics within the focus of the Dean's presentation included: Publicity issues (athletics-predominately basketball; Baylor Family Dialog; Faculty Senate no-confidence vote; Board of Regents confidence vote), New faculty (R. Duren, R. Marks, R. Jean, D. St. Andre), New staff (M. Aars, N. Jordan), Advocate Board Endowed Scholarship (book value = $20,198), Rogers Building (status of office/lab moves and renovations), North Village ECS Living Learning Center, US News engineering ranking (Baylor #19), Statistics (enrollment & faculty/staff numbers), Assessment, Initiatives (program educational objectives, expected graduate outcomes, course learning objectives), Advocate Board encourage initiatives, and Future initiatives. Dr. Bradley's presentation focused on research areas in the Departments of Computer Science and Engineering including: Research areas in computer science (genome; text passages; chip components; peer-to-peer; parallel algorithms…), 2004 new CS faculty Greg Hamerly's research area (clustering), Proposed masters program in engineering (ECE, ME, BME and MSE) including Appropriate Technology Center and joint engineering/MBA program and requested human and financial resources, Research interest of new faculty (R. Duren, R. Marks, R. Jean), Applied research in engineering, and Areas in which the Board can help the School in research..

Morning Breakout Sessions

Engineering Session:
Present:

1. Randall Jean
2. Mike Yates
3. Craig Nickel (1986 grad of dept)
4. Clell Oravetz
5. Russ Duren
6. Jim Farison
7. Brian Sheets (son Michael 2001 grad of dept)
8. Bob Finner
9. Jeff Church for Gary Stripling
10. Robert Marks
11. Rita Patterson (1984 grad of dept)
12. Steve Smith
13. Dan Richter (daughter in program now)
14. Walter Bradley
15. Carolyn Skurla
16. Brian Thomas
17. Mike Thompson
18. Richard Campbell

Jacob Counts gave a presentation to the Board:

- has interned in Houston
- thinks it's good for students to intern
- got to know lots of managers and HR people
- helped Steven Potter find job
- he and Steven Potter began to brainstorm about forming network of engineers willing to be

contacts for students to help find them jobs, which would in turn help the dept.: **B**aylor **E**ngineering **A**lumni **R**esource
- encouraged all board members to help
- slowly trying to integrate w/Career Services
- encouraged entire senior design class to go to Career Fair
- all senior engineering students are registered w/Career Services
- Bill Booth still has responsibility of interning students – engineering dept trying to get engineering faculty to take responsibility for the internship course
- asked if board members would be willing to be a contact person to screen inquiries/requests
    - board member discussion about making student resumes available on
        i. web site
        ii. Career Services

Dr Farison spoke about
- ASME, IEEE, SWE, HKN and work toward getting honor society for ME (as HKN is for ECE
    - Steve Smith asked about Tau Beta Pi honor society for engineering in general? – Farison replied that we are just now becoming eligible
- master's program:
    - has been submitted and has been approved to date, has another approval session to meet
    - earliest we could offer to *our* students would be spring 04
    - 136 hrs now in bachelor's program
    - integrated program will incorporate some of the bachelor's credits
- accreditation criteria
- program specific requirements
- draft of proposed changes for next accreditation
- presented opportunity for board members to be ABET examiners
- BU mission statement
- School mission statement (To provide a superior education through instruction, scholarship and service that prepares graduates for professional practice and responsible leadership with a Christian Worldview.)
- current catalog pages
- summary of board members previous input
- to determine how board members can most effectively contribute to engineering dept today, primary focus needs to be on the educational program objective
- discussion of educational program objective:
    - desire for more business connection
    - 1 course from business school
    - what do board members want as topics from business area:
        - accounting
        - internal rate of return
        - customer relations
            - management
            - marketing
        - finance
            - understand basic financial statement
            - formalize and incorporate into senior design project
        - project management/justification
        - take English, math, business, writing classes/dept and form subset for engineering program

- business law course(s):
    - patent process
    - copyright
    - C corporations
    - S corporations
    - contracts
    - entrepreneurial
    - computational finance
- is there a market for a BSE? – yes because of engineers problem solving abilities
- discussion of foreign language in degree requirements – is foreign language useful? The Board did not support the current foreign language requirement for meeting the goal of making graduates more capable of participating in a global community.
- what are job opportunities for master of science vs. master of engineering
    - look at the person rather than the degree
    - focus on engineering courses person has had
- explain intern/coop program:
    - no formal coop program (although a few students do coop on their own)
    - intern course can be done during semester or summer
        - students get some class prep before begin job
        - report back weekly
- miscellaneous discussion on various topics:
    - interviewees must have ***passion!***
    - look at our curriculum, see something you wonder why it's required (or why something's *not* required), send email
    - tell us about the graduates in your company
    - senior design projects are sponsored by companies and we're always on the look-out for new sponsors
    - also interested in finding:
        - speakers for dept
        - plant trips
        - technical people to give interview training
    - keep in mind our faculty members as well as the students for consulting and R & D work

Computer Science Session:
Present: Board Members: Harold Spangler, Bobby Kincaid, Matt Watson, Trent Voigt, Dean Swisher, Jeff Moody, Shawn Sedate
CSI faculty and staff: Don Gaitros, Marlene Tyrrell, Erick Baker, Paul Grabow, Greg Speegle, Cindy Fry, Roxana Girju, Bill Booth, David Sturgill, Pete Maurer, Matt Aars, Sharon Humphrey

I. Introduction of board members and faculty and staff-Dr. Gaitros
II. Summary of Accreditation Actions for 2002-2003

- Went through the accreditation Cycle
- Dr. Gaitros presented the Response to the Preliminary Statement for Review and Comment 2002-2003 Evaluation.
- Discussion with Board regarding simplifying assessment and Program Educational Objectives (PEO's)-narrow down.
- Measures should be more about student rather than activities. Independent, external surveying vs. self-evaluation. Employer survey-does not seem to work. Maybe get perception information.

- Distributed a handout to Board members to comment on how we're accomplishing Expected Graduate Outcomes (EGO's) and rate if each is important, needed, and not important.

III. Presentation by Marlene Tyrrell on a possible Software Engineering Program to be offered by the School of Engineering and Computer Science. After going through the slide presentation, she asked the board members to comment on which package they thought would be most useful to them. Bobby Kincaid asked a question about the difference in a computer science degree and the computer engineer degree. Ms. Tyrrell explained that the SE degree has more application (not taught as a science) and the CS degree is more traditional in nature. The SE degree would not be to create new software, but rather to use tried software to get a solution. Mr. Swisher posed the question of what kind of student could be successful at this degree. Ms. Tyrrell replied that the students would be leaders to lead team design projects. This student should prove to be more valuable than a regular programmer. She added that the department was contemplating if a minor would be better than a major at this point---just to start out. The minor would consist of 7 courses—6 picked out of one of the packages described and 1 intro class. Mr. Voigt agreed that heavy emphasis on leadership development would be great for prospective employers. The possible advantage to the student is that he/she may move to management and higher salaries faster.

Luncheon Speaker

Following the morning presentations, the Board convened for lunch. Mr. Don Cannata, Interim Minister of Education, addressed the Board concerning the "Top 9 Connections between Baylor and First Baptist Church-Waco."

Afternoon Futuring Session

When lunch concluded, the Board members and faculty reconvened. Dean Swisher led the group in considering issues that are "ahead of the game:" improving competitive position and program improvement. He asked for ideas from the morning breakout sessions for consideration in this larger group. The first topic mentioned, then, was the engineering masters. In comparing Baylor to other major Texas schools or other Tier One or other *US News*-ranked programs in the area of potential employers and prospective students. Brian Sheets commented that employers consider candidates from all schools. The Board agreed that an engineering masters is a good idea for faculty, enabling research opportunities, as well as a good idea for students, enhancing undergraduate opportunities. The Board considered whether their companies would be more likely to hire masters degreed people.

The second group of topics, introduced by Bobby Kincaid, consists of trends in industrialization and automation, communication standards, globalization, efficient use of power and America's aging energy infrastructure, wireless, internet, and security. Shawn Sedate added the question, "Is the pace of student capability matching industry trends?" Dr. Bradley stated there is a tension between specialized training and fundamental education, and he said students should be employable across the spectrum. Dan Richter concluded that Baylor's responsibility is to teach students how to learn and stay current in their fields.

Trent Voigt stated that global or international sales are a current trend. Students with global experience, who understand others' worlds and that the rules of the United States aren't necessarily those of the rest of the world are likely to get ahead. Further, it was agreed, building relationships with people (including ethics) precedes building business relationships. The Board agreed that it is important to measure the time between identification of trends and Baylor's response.

Dean Kelley asked the Board concerning bio- trends. Rita Patterson responded that current bio- trends are small, although the general population is aging. Because engineers play a critical role in problem

solving, they need to learn to work as a team with other scientists. Engineers should learn to perfect teamwork and interdisciplinary communication.

The idea of advertising was introduced. Some on the board felt that we should think about advertising in *US News and World Report* or even at A&M and University of Texas. Mr. Voigt mentioned that one of our best selling points is Dean Kelley—he's a talker and doer—he goes out and sells our school.

Following this discussion, the Board heard summaries of the morning breakout sessions. Dean Swisher gave a summary of the computer science session saying it was a summary of the accreditation process and the Board's first exposure to this assessment piece. He said the measurement is driven by accreditation, and the group's first impression is to find the balance between the minimum elements and what ABET is looking for. The accreditation should not try and measure everything, and it should not require too much administration. In addition to documenting meetings, it's important to document action items and trends that can be measured.

Jim Farison reported that the engineering group discussed an engineering alumni chapter, engineering honor societies, the masters program, accreditation materials, business education aspects (enabling ECS to partner with Baylor's School of Business), and the foreign language requirement.

In Dean Kelley's concluding remarks, he thanked Board members for their participation in the day's meeting. He announced the Board of Advocates' inclusion on the School of Engineering and Computer Science website. He pointed the Board members to a recruitment letter in their meeting packets and explained how Board members could help by writing to the prospective students whose names were attached to the letter. He reminded Board members of the evening Student Forum. Finally the Board decided on the date and location of the Spring Board meeting: April 23, in San Antonio, hosted, again, by HEB. Prior to the April 23 meeting will be the annual Spring Event, hosted by ECS and the Board of Advocates. The April 22 Spring Event is a reception for San Antonio-area prospective students, ECS alumni, and other friends of the School of Engineering and Computer Science.

Following a closing prayer, the meeting adjourned at 4:10 p.m.