

Baylor University
School of Engineering and Computer Science
Board of Advocates
Fall Meeting – October 2, 2009
Baylor University

Board members attending: Stephen Butt, Mark Cannata, Beth Casteel, Joe Cestari, Larry Johnson, Fred Logan, Rick Maule, Bill Mearse, Jim McDonough, Harold Rafuse, Bill Ratfield, Ken Ross, Shawn Sedate, Steve Smith, Harold Spangler, Andy Spencer, Dean Swisher, Trent Voigt, Matt Watson, and Jim Wiethorn

Board members absent: Craig Nickell and Richard Willis

Others attending: Dean Ben Kelley, Don Gaitros, Bill Jordan, Kwang Lee, Kevin Ludlum, Greg Davis, Dusty Bedwell, Leigh Ann Marshall, Cheryl Tucker, and various faculty, staff, and students from the School of Engineering and Computer Science

Welcome

Following a continental breakfast, Bill Mearse convened the meeting. He introduced Mr. Randy Woodruff, Assistant Vice President for Video & Electronic Communications and Assistant Vice President for Internet Services. Mr. Woodruff gave a little history of his association with Baylor, beginning with his student experience in 1978. He then told the Board about how Baylor University's endowment and recruitment efforts are going. He said that both are currently strong, and Baylor's 2012 goals are successful.

Challenges that Baylor faces include (1) Baylor being "tuition dependent," (2) the quality of the freshman class, and (3) endowment performance that is dependent on investment.

Mr. Woodruff shared some statistics relating to the University's total number of faculty and staff, operating expenditures, and student "list price" (including tuition, fees, etc.). He said that larger student classes and the economy puts pressure on class quality, and that causes a potential problem for new student recruitment.

Mr. Swisher asked about the basis of Mr. Woodruff's cost trend figures, and Mr. Woodruff answered that Baylor's cost trends mirror the trends of higher education in general.

Baylor's student recruitment focus will continue to be larger incoming, higher quality student classes with a higher percentage of male students. Recruitment for ECS will naturally support these focus areas, although women are sought after in high tech industry.

Mr. Woodruff also spoke about a high school junior survey conducted by Baylor where the priority communication channels for high school students are the web and visiting campus. Key messages that Baylor uses in recruiting students are academic excellence, strong Christian faith, a caring com-

munity, a vibrant campus community, and wonderful facilities. Finally, Mr. Woodruff gave some examples of image advertising that Baylor uses, including the [Baylor homepage](#) focused on student recruiting, [Campus Visits' virtual tour](#), campus pageantry (banners on light poles, for example), Baylor Premier events, Baylor's printed "Points of Pride," and other technology examples.

Dean's Report

Following Mr. Woodruff's remarks, Dean Kelley gave the Dean's Report. He introduced new Board members: Stephen Butt, Beth Casteel, and Jimmy Wiethorn. He gave an overview of the upcoming meeting day and updated the Board on ECS facts and faculty, undergraduate and graduate enrollment, the overall morale of the University, ECS rankings in US News and World Report (#12!), the progress of the Ph.D. proposal and other curriculum developments as well as how things are progressing in extracurricular areas, such as accreditation, ECS co-curricular activities, and enrollment challenges. He talked about current projects within the School of Engineering and Computer Science, his participation in Viet Nam, and strategic planning progress.

Board Vision Statement

Following Dean Kelley's report, Bill Mearse led the Board in a review of the proposed Board of Advocates Vision Statement. This statement will replace the current statement printed in the annual Board of Advocates' directory.

"The Board of Advocates for the School of Engineering and Computer Science supports the faculty and administration in preparing students for the global marketplace according to the mission of Baylor University. Board members share market insights, participate in promotional activities, and provide funding to enable students to develop technical and analytical skills, business acumen, interpersonal skills, and cultural awareness for the global economy."

Some comments by Board members included complements for capturing the collective Board of Advocates' thoughts, although it seemed to be more of a mission statement than a vision statement. Some suggested emphasizing the Christian mission. Board members asked Dean Kelley for his opinion of whether the statement was "on track," and Dean Kelley responded that it is. Because the Board brings an external perspective to the School of Engineering and Computer Science, it's important to communicate the mission of preparing students through a well-rounded experience.

ECS Strategic Planning Panel, Phase 2

Dean Kelley, Drs. Harold Rafuse, Steve Eisenbarth, David Sturgill, and Ken Van Treuren gave an update on the ECS Strategic Planning progress. They reviewed the history of the current strategic planning process and the progress made to date. In Phase 2, the Strategic Steering Committee has been enlarged to include participants outside of the School of Engineering and Computer Science, such as Dr. Rafuse (representing the Board of Advocates), faculty from Baylor Hankamer School of Business, the Office of the Provost, an ECS student, and an academic external to Baylor. The timeline of the process will conclude in January 2010 when the document will be submitted to the Provost. The five aspirations were discussed by members of the panel. The aspirations are:

1. **Live out our Christian Mission.** The Board of Advocates generally agreed that this aspiration was "on target."

2. **Provide an excellent undergraduate experience that promotes high academic and learning achievement.** Some of the Board members commented that the language of this aspiration might be made more concise. Also, some thought that portions of the longer statement relating to “liberal education” were misleading, although the intent was that a broader education including development of soft skills.
3. **With graduates and school activities as the catalysts, serve Baylor, Waco, the state of Texas, the United States and the world.** Board of Advocate comments focused on the tense of the statement and questioned whether it was future or present.
4. **Engage in world-renowned research and graduate education.** Again, the conversation centered on whether this was current or for the future. Also, Board members questioned how success will be measured.
5. **Cultivate an excellent growing environment for faculty and staff.** The conversation relating to this aspiration related to the culture of teaching vs. research and how balance is achieved. Relating to funding an endowed faculty position, engaged alumni will want to contribute to an initiative like this.

Update: ECS Development

Dr. Kevin Ludlum spoke to the Board about connecting with alumni. The process of connecting with ECS alumni has started, and different ways of communicating are being implemented, such as social networking ([Facebook](#), Linked-In, etc.) There are currently 2700 ECS alumni. Although there is a notion of where alumni are, much contact information is missing in order to directly connect with alumni. The total solicitable alumni number is approximately 1300.

Dr. Ludlum introduced Greg Davis, Dusty Bedwell, and Jennifer Hodgins, as well as a student intern, Ashton Cooper, who is working with the development team this fall. He shared that the list of funding priorities is a “living,” changing list, and the goals will develop along with the strategic planning process.

There is no formal plan for the new School of Engineering & Computer Science building, but the capital initiative is still being discussed. There are no endowed faculty positions, yet, and a priority continues to be building endowment.

A Board member asked about how legislation could affect increased research funding. Dr. Ludlum responded that Baylor’s Office of Sponsored Projects is typically the partner for assisting with government funding opportunities, as opposed to philanthropic opportunities. Current funding is being sought for the computer science game development/simulated environment program, technology entrepreneurship, the ECS proposed residential college, ECS retention initiatives, and student scholarships. Additional “targets of opportunity” include the engineering hippotherapy research initiative, Engineers with a Mission projects, and faculty equipment needs.

Dr. Ludlum concluded by saying that the development team “is starting to get traction.” The upcoming student calling campaign to alumni may bring additional dollars, in addition to the Board of Advocates generous match to the calling initiative.

Lunch: Summer Internship Presentation

Following lunch, the Board heard from Mr. Drew Irons, mechanical engineering senior, about his summer internship at BP Wind Energy, Houston.

Breakout sessions

Computer Science Breakout Session

Attendees: Dr. Don Gaitros, Bill Booth, Dr. David Sturgill, Dr. Young-Rae Cho, Dean Swisher, Beth Casteel, Larry Johnson, Bill Mearse, Shawn Sedate, Trent Voight, Harold Spangler, Dr. Bill Poucher, Dr. Jeff Donahoo, Dr. Greg Speegle and Alicia Murry.

Topics:

- ABET/CAC 2008
- Strategic Planning
 - Support the missions of Baylor and ECS.
 - Support ECS aspirations
 - Work with Alumni
- Capstone
 - Feeds into the strategic plans
 - Industry Experience
- Game Development
 - Future direction for research
 - 3rd year in program
 - Quality students want this program
 - External Funding
 - Game Club
 - Presentation to Texas Game Studios
 - Meeting with Gearbox
- Looking Forward
 - New Faculty Members
 - Internships
 - Research
- ICPC
 - Oldest & Largest programming competition
 - Headquarters are at Baylor University
 - Constantly growing

Electrical and Computer Engineering (ECE) Breakout Session

Agenda

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|----------------------------|-----------------------|
| 1. Introduction to Faculty | Dr. Kwang Lee |
| 2. Department Overview | Dr. Kwang Lee |
| 3. ABET Report | Dr. Mike Thompson |
| 4. Mission Projects | Dr. Brian Thomas |
| 5. Graduate Program | Dr. Mike Thompson |
| 6. Strategic Planning | Dr. Steven Eisenbarth |

Board of Advocates Participants:

Dr. Kwang Lee
Dr. Mike Thompson
Dr. Brian Thomas

Dr. Steven Esienbarth
Dr. Byeong-Mun (Ben) Song
John Miller

Participating Baylor ECE Faculty:

Mark Cannata
Joe Cestari
Rick Maule
Jim McDonough

Harold Rafuse
Bill Ratfield
Steve Butt

1. Intro to Faculty

Dr. Kwang introduced two new faculty members, Dr. Byeong-Mun (Ben) Song, and John Miller.

2. Department Overview

The department is in the midst of faculty recruitment as they plan for 10 new faculty members over the next 5 years. The department is also an active participant in the Fall Student Premier. They are also underway with their strategic planning process and implementation of the PhD programs.

The department wants to increase the number of ECE internships, as well as both undergraduate and graduate scholarships. They will seek alumni and industry donations to do so.

3. ABET Report and FE Exam

The department reviewed the results of the Fundamentals of Engineering Exam and the BSECE outcomes with 6 out of 10 students passing. Subsequently, the discussion focused on possible approaches to improving the results of the Circuits Review section, possibly changing emphasis with an earlier study of solid-state electronics, and introducing a ME Survey course instead of thermodynamics.

4. Engineers with a Mission Projects

To-date, Baylor students and engineers have completed the following projects:

- Micro-hydro Electricity Generation in Honduras
- Materials Research with Coconuts in the Philippines
- Water Purification in Honduras
- Solar PV Systems in Kenya, Uganda, and Rwanda
- Wind Power in Kenya
- Septic Tank Control Panel in Southeast Asia

There is a website: www.engineerswithamission.org

Private contributions pay for the Engineers with a Mission's administrative expenses and projects. EWM needs donations so they can offer scholarships to offset the cost to students who want to participate in their projects. They are also accepting frequent flier airline miles, equipment, and tools that they can use on their projects.

They ask the Baylor University Board of Advocates to consider donating frequent flier miles or giving tax-deductible donations to help support their missions.

5. Graduate Program

The department needs to increase the number of stipends and tuition scholarships that are currently available. They need to increase the number of available stipends from 7 to 11. They also need to increase the source of available scholarship funds in order to increase the ½ to full scholarships and increase the number of student enrolled in Graduate degree programs.

Research funding needs to increase, see the following web page:
<http://www.nsf.gov/statistics/nsf09315/pdf/nsf09315.pdf>

6. Strategic Planning

The ECE department has identified the following areas for their research focus:

- Reconfigurable Computing Clusters
- Avionics System Development
- Engineering Application f Time Scales

ECE's near-term plans call for expansion beyond the Rogers Engineering and Computer Science Building into the Marrs McLean Science Building. This requires fund raising to convert the facilities for ECE use; estimates are \$120K per room.

Mechanical Engineering Breakout Session Notes

Board of Advocates attending the meeting: Logan, Ross, Smith, Spencer, and Wiethorn

ME faculty attending the meeting Jordan, Jack, McClain, Campbell, Wright, and Van Treuren

After brief time of introductions, we spent the entire meeting discussing issues related to the ECS Strategic Plan that is currently being developed.

There was much discussion about issues related to the large number of ME students.

The Board members suggested that the strategic plan should contain:

- Commitment to increase the number of faculty members
 - Address the teaching load problems. We have a goal of 2-2 but rarely meet it, while Physics has a 2-1 teaching load
- Just having larger class sizes is against what we are trying to do at Baylor. Plan should include a method to lower the class size back to where it once was
- Need a commitment to obtain more lab space.
 - No department in ECS should control any space forever. If one department grows with respect to the others, some of the space should be reallocated.

Logan suggested that we should limit enrollment or add faculty members. Wiethorn suggested we should do this carefully, as a wide variety of skills/interests among our students is desirable.

The Board members asked us how they could help us. Jordan reported that we need more money for space and faculty. Van Treuren suggested that the Board help us by encouraging leadership (above ECS) to consider our needs.

With respect to the need to raise more money, Spencer said we should sell our needs to the Baylor Christian community and get them excited about how our faith affects our engineering. Wiethorn suggested that we work to get our current students to consider giving.

Wiethorn asked if we would be open to adjuncts teaching an untraditional schedule, such as meeting once or twice per month. While we have never done that, Van Treuren reported that the Baylor MBA program in Dallas does something like that.

The Board members agreed they would work out some way to appropriately communicate their concerns about our teaching load and space issues to the upper administration.

Full Board Closed Session

The Board members met in closed session.

Full Board Session

Following the closed sessions, the Board reconvened with the Dean and other Baylor faculty and staff for the final session. Mr. Mearse summarized the Board's response:

1. News of the national ranking is very positive.
2. Department of Computer Science reaccreditation is excellent.
3. Mr. Woodruff's morning presentation highlighted ECS as part of the "Baylor fabric." ECS needs to grow and improve along with the rest of the University.
4. Much progress has been made with the strategic planning progress. The Board encourages ECS to define its "critical mass."
5. The presentation by Dr. Ludlum defined development targets, which the Board found useful information, even if the targets are farther into the future.
6. The Board was encouraged to have reports showing how ECS contributes to the increased quality of the Baylor student population, with regard to SAT averages, etc.
7. In order for ECS to achieve "the next level," it is important to articulate ECS accomplishments as well as risks. Related to this point, Mr. Sedate asked whether ECS is philosophically "at the end of a curve or the beginning of the next curve" in relation to the changing shape and needs of ECS.
8. There is a very good pool of new faculty applicants.
9. Connecting with alumni can be enhanced with Board involvement. If the Board of Advocates can assist, they stand ready to do so. Related to making alumni connections, Mr. Smith suggested that the Board of Advocates can serve as connections to possible faculty adjuncts.
10. What are Dean Kelley's goals relating to Vietnam with which Board members can help?
11. Finally, the Board of Advocates is willing and able to help in addition to attending the spring and fall meetings on campus.

Following Mr. Mearse's summary, Dean Kelley offered a response:

1. It has been very beneficial to have the outside perspective at the day's meeting.
2. ECS faculty are making progress
3. The strategic plan will continue to be modified, and short-, mid-, and long-term goals will be identified.
4. Regarding Mr. Sedate's "curve" question, the Dean did not have the answer, although he agreed that the ECS landscape is clearly different than several years ago.
5. There continues to be work to do relating to alumni, and some solutions may be unconventional. In fact, a group of Waco-area alumni are working to build some momentum in the Central Texas area.
6. ECS continues to work with Admission Services on sculpting the incoming class of students.
7. ECS continues to develop a more comprehensive marketing plan.
8. Dean Kelley wants to continue to build his work in Vietnam. Coincidentally, as ECS has changed and grown, Dean Kelley does not envision himself continuing to lead the school in the next decade.

Board comments were supportive regarding alumni relations and offered suggestions such as small gift incentives for alumni participation and ways to enhance online social networking. Following these comments, Board members gave brief summaries of the afternoon academic sessions for the

benefit of fellow Board members who were unable to attend the concurrent sessions. Following those presentations, Board members were asked to participate in student recruiting efforts, and they unanimously agreed to help.

Following this concluding discussion, the Board agreed that the Spring meeting date would be April 16, 2010. Finally, Dean Kelley thanked everyone for attending, and the meeting was adjourned.