

SMET-Oriented Career Services at Baylor

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Abstract

The Office of Career Services at Baylor University has long organized undergraduate-oriented Career Fairs within the campus athletics arena to help support the employment aspiration of students. Currently these are called Hire-A-Bear Career Fairs, with over 100 organizations represented. Interview-practice and resume-preparation workshops and services, and other career counseling resources are promoted throughout the academic year, including on-line resume uploading and interview signup sites. The Career Services Office grew out of Baylor's Business School and the fairs have historically had a prominent presence of companies seeking students with business majors. Baylor also has a strong School of Education and school districts are invited to participate in a separate Education Fair. Other specialty fairs are targeted toward student athletes, non-profit organizations, and Greater Waco companies. A large percentage of Baylor students major in the liberal and fine arts and as is a common approach elsewhere the fairs have responded to this student segment using general approaches. Baylor's School of Engineering and Computer Science (ECS) is a small and young addition to Baylor's undergraduate academic constellation. For more than a decade a frequent complaint by Baylor ECS students has been that the Office of Career Services and the Career Fairs had little to offer them. Major within this was the lack of companies at career fairs specifically seeking ECS majors. Conversations with Career Services staff ratified some of these observations and overtures to work together to better serve the needs of ECS graduates were initially thwarted. More recently, an emerging partnership is developing that includes a Science Technology, Engineering, and Mathematics (STEM)-specific Career Fair, and other ECS-targeted activities, with other improvements and services on the horizon.

Introduction

The undergraduate enrollment of Baylor University is nearly 12,000 students. Many of these students choose to major in the liberal arts, resulting in a vibrant campus life with a diversity of performing and visual arts attractions. Baylor also has a well established reputation of excellence in medicine, and as such, pre-medicine is the most often intended field of study among first-year students. Baylor too has a nearly 100-year-old history of offering academic programs in business, which comprises the second largest academic unit with over 3,000 students and is the university's largest professional component. In contrast, Baylor's School of Engineering and Computer Science (ECS) has a relatively short history, and comprises around five percent of the undergraduate population. ECS attracts the highest quality undergraduate students among the degree-granting units and is Baylor's highest ranking academic unit as measured by *U.S. News and World Report* survey.

The Office of Career Services is the university's administrative unit charged with "enhancing the career satisfaction and employment opportunities" for Baylor students. In responding to this challenge, this office offers student-aimed workshops on resume writing, job-search strategies, interviewing skills, career fair preparation, and networking. This office also manages online resources, employment services, and special services, including career fairs.

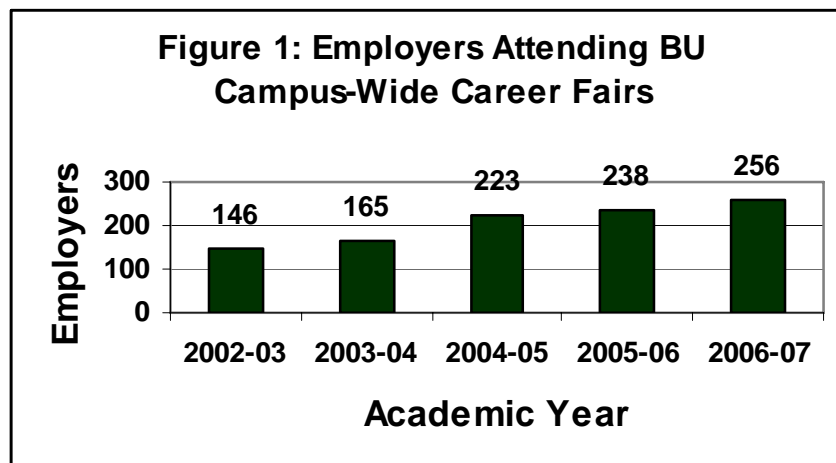
Owing to Baylor's student population, career fairs and other career services have traditionally been targeted toward liberal arts and business students. One disadvantage of this approach is that many companies seek to hire graduates studying in general fields and do not specifically value or utilize the education and skills possessed by ECS students. Neither do most ECS students appreciate that the positions offered by these companies often do not seek to take advantage of their technical capabilities. Similarly, though many of the firms attending career fairs and seeking business graduates are high-tech organization, the positions they often seek to fill are targeted toward specific business majors such as accounting, marketing, and finance.

There are exceptions to the generalities described above. For example, specialty career fairs are organized for distinct units of the Baylor student population. The Baylor Law School and the Truitt Seminary operate autonomously to meet the clearly unique career services needs of their graduates. The other smaller career fairs aimed at segments of the undergraduate population include a Teacher Job Fair, a Non-Profit Job Fair, and a partnership with the Greater Waco Chamber of Commerce for a Work-in-Waco Job Fair.

Background

Until recently, feedback from ECS students concerning their experiences and expectations with Baylor career fairs has been predominately negative. Much of the criticism stemmed from the scarcity of companies at career fairs seeking to fill ECS-related positions. For the large part these complaints were justified. Further, there appeared to be little recognition from or inclination by the Office of Career Services to introduce initiatives to increase the presence of technology companies or positions at career fairs.¹ With what appeared to be the non-acknowledgement of the problems and a seemingly unwillingness to address them (from ECS's perspective), ECS's internal activities to help improve conditions dealt principally with two initiatives. Both involved the Office of Career Services and ultimately helped to build and bridge a partnership.

The first career-oriented efforts focused on enhancing student summer internship opportunities. An ECS faculty member was charged with increasing program participation and representing ECS and Baylor in company interfaces. Students were recruited based on the career advancing benefits and advantages of internships experiences.^{2,3} Business and industries were attracted because of the pipeline internships have on securing permanent employees after graduation.^{4,5} Although much of this activity commenced simultaneously with the dot-com bust, the tragedy of 9-11, and the economic recession of the early 2000s, more recent improvements in the demand for ECS graduates have helped improve both student and employer participation.^{6,7} This rise is also seen in the overall participation of business and industry in student recruitment environment at Baylor. Figure 1 shows the increase in number of employers who have participated in the campus-wide career fairs (fall and spring) since the 2002-03 academic year. In recent years, up to 40% of participating employers have indicated their interest in specifically hiring ECS majors.



Students enrolling in the ECS internship program are required to participate in a multi-day on campus preparation program in advance of departing for their internship, and to meet participation milestones during their internship.^{8,9} Students who satisfy prescribed learning objectives and successfully complete the internship experience may earn a three-credit technical elective that applies toward their degree. Students may also participate in the process and elect not earn academic credit. They may also participate for more than one summer, although a maximum of three internship credit hours may be applied toward their degree. Because many ECS courses are offered only once each year, electing to participate in an internship, or a full cooperative education experience, during the academic year is rare.

The other principle career-oriented effort related to the campus-wide career fair. It was promoted to ECS students by the school's faculty and staff, and a few faculty members even awarded extra credit to students who attended. Information highlighting ECS-friendly companies were posted on bulletin boards, plasma screens, and distributed in handouts and email to students. At each fair, several faculty members, including department chairs and the dean, visited and mingled with the recruiters at the fair. Several companies with ECS ties (alumni, advisory board members, etc.) were recruited by the ECS Advancement Coordinator to participate in the career fair. And although the utility of the campus career fairs were increased for ECS students, years of building dissatisfaction led to student apathy that helped to keep student participation suppressed.

STEM Fair

In the fall term of the 2005-06 academic year, representatives from Baylor's Office of Career Services approached ECS about organizing a career fair aimed at engineering, science, and technically-oriented students. Their overtures were met with enthusiastic cooperation. Because this approach had never been attempted at Baylor, many of the details and logistics were initiated from scratch. It was subsequently named the STEM (Science, Technology, Engineering and Math) Career Fair. Among the details to be addressed for the STEM fair included:

- where to hold the fair since the athletics arena was perceived to be too large. It was decided to hold the fair in the impressive atrium of the Baylor Science Building.

- when to hold the fair as some companies complete their summer internship before Christmas and others do not begin until the spring. It was decided to hold the inaugural STEM fair in February the day after the campus-wide fair with the hopes of drawing employers to both fairs.
- whom to attract to the fair. Alone, ECS may not be able to garner the number of students needed to attract an ample number of diverse companies to attend, and thus students from the sciences, math, and other technical disciplines were invited to participate.

Many other issues required addressing including how many organizations to invite and what hours of the day to conduct the fair. The Office of Career Services used their existing systems and processes to organize and operate the 2006 STEM Job Fair.

For each of the past three years, Baylor STEM Fair has been held in February. It is no longer coupled to the timing of the campus-wide career fair. This coupling did not seem to affect a company’s decision to participate, and administering back-to-back fairs placed an undue burden on the career services staff.

The number of companies represented at each of the three STEM Fairs is shown in Table I and has more than doubled.

Table I: Number of Organizations Represented at the STEM Fair			
Year	2005-06	2006-07	2007-08
Companies represented	16	25	41

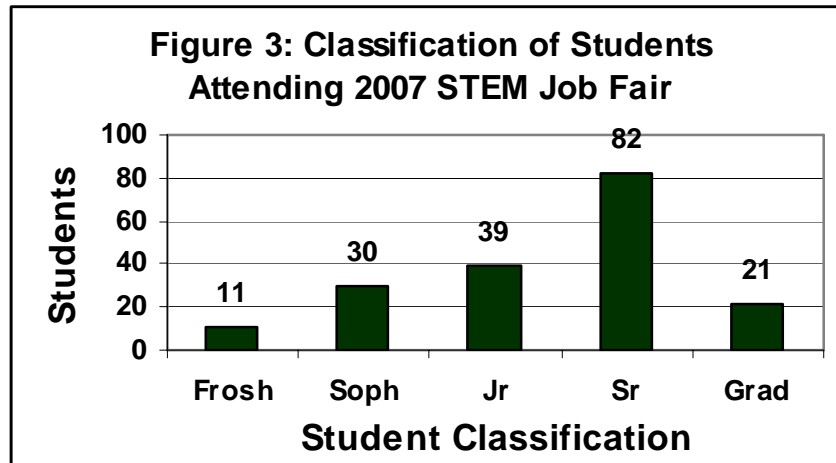
Other changes that have been made, many based on student or employer feedback include:

- The location was changed from the Baylor Science Building to the Cashion Academic Center in the Business School. While the inherent student traffic and convenience in the science building was an advantage, this also meant that some of the “walk-up” students were not prepared to participate, either in representing themselves, researching the employer, or in appearance/dress. Further, the noise and proximity to student study and social areas made discussion between students and recruiters difficult.
- The scheduled time for the STEM Fair was changed from midmorning-mid afternoon to accommodate students who has class and laboratory conflicts.

All ECS students, freshman to seniors to graduate students, were encouraged to attend the STEM Job Fair, whether on an active basis or just to observe. Publicity was generated through emails, flyers, and other means, including advertisements in the student newspaper using the logo shown in Figure 2. Figure 3 shows a breakdown by classification of the students who attended. Almost as many seniors attended as all of the other classifications combined. Freshmen were encouraged to attend so that the following year, when they are exploring internship opportunities, they will be familiar with the environment of a career fair.



Figure 2: 2008 STEM Job Fair logo.



The home academic unit of the students attending the 2007 STEM Fair was also measured, and is shown in Figure 4. Although cumulatively there are many more science and math students at Baylor than there is ECS students, and although the 2007 STEM was held in the Baylor Science Building, the majority of the students that attended were ECS students. Even still, this represented less than 20% of the ECS student body. Table II shows the total student attendance at the three STEM fairs held to date. These figures do not capture the “walk-up” students or students who did not register/sign in.

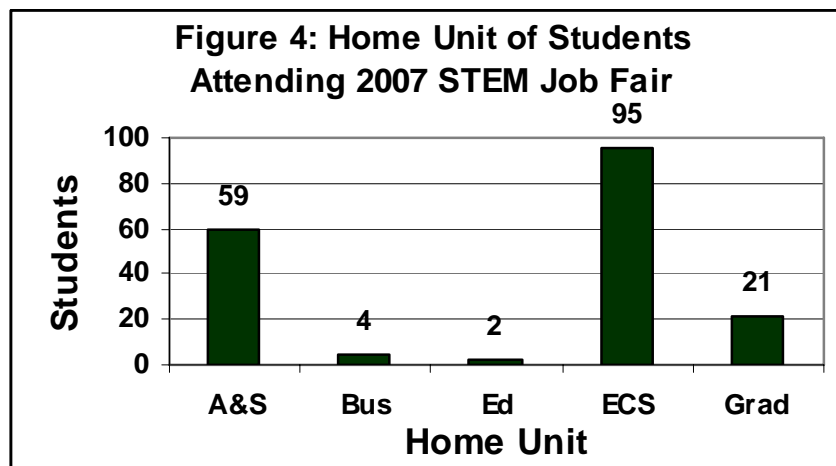


Table II: Number of Students Attending the STEM Fair			
Year	2005-06	2006-07	2007-08
Students participating	183	184	>250

In addition to recording student and corporate involvement, all participants were asked to rate their experience associated with the STEM fair. Student responses are shown in Table III and employer responses are shown in Table IV. Students were the harsher critics. Although students were appreciative of the concept of the STEM Career Fair, they were not pleased with the number or

organizations attending or the number of organizations hiring within their specific career field. Both the students and the recruiters felt that the participating students were well prepared. The recruiters likewise were appreciative of the STEM emphasis and desired that student participation was higher.

Table III: Student Responses to Questionnaire				
Response Rating→	Superior	Good	Fair	Poor
Concept of targeted fair for STEM majors	32%	46%	14%	5%
Number of organizations attending	3%	31%	50%	17%
Number of organizations hiring your major	9%	14%	33%	44%
Your level of preparations to ask questions	14%	49%	22%	16%

Table IV: Recruiter Responses to Questionnaire				
Response Rating→	Superior	Good	Fair	Poor
Concept of targeted fair for STEM majors	56%	38%	6%	0%
Adequate instructions received	38%	50%	12%	0%
Student attendance	12%	38%	38%	12%
Students' preparation	31%	62%	6%	0%
Fair facilities	38%	38%	12%	12%
Staff assistance	62%	38%	0%	0%

Future Efforts and Conclusions

The authors found it interesting that while the students have indicated that they desire greater on-campus opportunities to interact with industry recruiters, they participate in numbers that dissuade employers from coming to recruit on campus. This apparent apathy may also stem from justifiable past low numbers of STEM-related companies participating in campus-wide career fairs.

Baylor ECS students and student organizations have little involvement in the organization of the campus-wide or STEM career fairs, although their feedback has been instrumental in shaping the faces of these events. Survey results indicate ECS students are interested, but their rate of participation does not so indicate a high level of interest. There is some consideration being given to involving ECS students, including student organizations, in more meaningful ways, in hopes of increasing their ownership and ultimately participation. A web survey of around three dozen STEM-type fairs at other higher education institutions indicate roughly an equal distribution between fairs that are principally managed by the career services unit, the STEM academic unit, and STEM students and organizations.

Although it is believed that ECS student participation in the STEM Career Fair should be more robust, it is at a rate several times higher than that of students majoring in science, math and other technical disciplines. ECS has been much more aggressive in working with Career Services to attract company recruiters and student participates than the sciences. Much of ECS motivation is related to student and employer feedback and the desire to raise Baylor's profile in comparison to large neighboring state institutions. Within the sciences, not necessarily just at Baylor, faculty members do not seemingly have the sense of urgency for graduate employment, and some seem to

convey that such activities act in opposition to liberal education. Garnering greater support and participation from the sciences has the potential to significantly improve the richness of the STEM Career Fair.

Similarly, many of the companies seeking ECS graduates are not necessarily recognized high-tech companies. For example, many Wall Street firms and major banks, and other sectors of the economy, actively recruit, including for internship opportunities, STEM disciplines.¹⁰ Figure 5 shows the 2006-07 breakdown for all graduate placements at Baylor. A significant percentage of ECS graduates are attracted to companies not traditionally considered high tech.

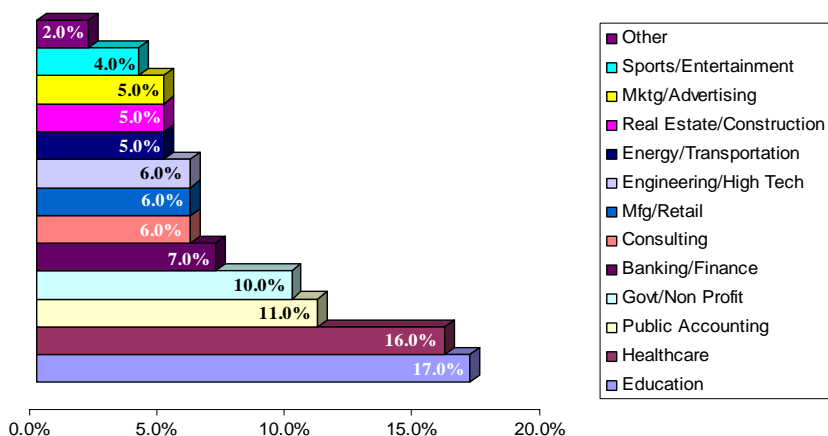


Figure 5: 2006-07 Baylor placement breakdown.

The partnership between the Office of Career Services and the School of Engineering and Computer Science at Baylor University to develop a STEM Career Fair has been successful. Several program modifications have been based on constituent feedback. Student and employer participation continue to increase. Improvements in ECS student participation and the involvement of more science/math students remain a priority.

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