

AC 2007-2489: FOSTERING BIOENGINEERING THROUGH A QUIZ BOWL: THE 1ST ANNUAL BQB

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Fostering Bioengineering through a Quiz Bowl: the 1st Annual BQB

The Concept and Mission of a “Bioengineering Quiz Bowl”

Quiz Bowls are fairly common annual events at both the college and high school levels.[1] Typically, Quiz Bowls engage teams of four individuals, paired against other teams, in matches where answers to questions are awarded points, and a winning team emerges after a certain contest duration. Traditionally, quiz bowls have involved a teams of students competing to demonstrate academic superiority. Prizes for Quiz Bowl winners and champions typically include a trophy, and sometimes a grant to the winning school. Quiz Bowls provide the opportunity for individual teams to demonstrate their intellectual prowess, while providing the audience with an entertaining and informative forum.

Quiz Bowls have been held for more than fifty years in a variety of settings.[2] The first College Quiz Bowl match was played on October 10, 1953 and broadcast on NBC radio; in this first event, Northwestern University defeated Columbia University 135-60. During recent years, the winners of the College Bowl have included teams from a variety of schools, including University of Michigan-Ann Arbor, University of Chicago, University of Minnesota-Twin Cities, and University of California-Los Angeles. Another organization, the National Academic Quiz Tournaments (NAQT), organizes both high school and college national quiz bowl championships across North America with most major universities competing in the NAQT Intercollegiate Championship Tournament.[3]

Quiz Bowls typically involve questions on diverse subjects.[4] These subjects span literature, history, math, social sciences, fine arts, geography, and philosophy, to name a few. The College Bowl, run and operated by College Bowl Company, emphasizes short questions on academics, current events, pop culture, and general knowledge. Quiz Bowls focused on particular disciplines are fairly uncommon. In 2005, one of the co-authors of this paper (Anish Jina, then, an undergraduate student at UCSD) conceived the idea of a Quiz Bowl focused on Bioengineering. An internet search and queries to faculty in Spring 2005 yielded no prior Quiz Bowls with a focus on Bioengineering. The idea of such a Quiz Bowl was quickly endorsed by UCSD Faculty and also the UCSD Undergraduate Student Chapter of the Biomedical Engineering Society (UCSD BMES). Jina was designated as the chair of the organizing committee. Other members of the BQB Committee, Kevin Huang, Alex Varond, Reetu Singh, and John Yamauchi, planned the publicity, venue, technical equipment needed for the contests, refreshments, and sponsorship.

One of the first challenges was to establish an overall goal for the Quiz Bowl event. The organizing committee established the following mission statement, *“to establish a tradition in the UCSD Department of Bioengineering that will foster recognition of advances in bioengineering, enhance industry and alumni networks, cultivate solidarity within the community, and enliven bioengineering spirit.”* [5] This mission statement indicated that the event was envisioned to be not only a contest, but also a nucleating activity for Bioengineering in general, extending to alumni, industry, and the community.

One of the other initial challenges was to develop an abbreviated name for the event. A variety of options were considered considering the goal of identifying a focus on Bioengineering. After some deliberation, the event was named the Bioengineering Quiz Bowl, abbreviated by BQB. The abbreviation, BQB, was meant to be easy to remember, since it had the same letters as the common abbreviation, BBQ, for barbeque. Plans to hold the first ever BQB in the Fall of 2006 (UCSD BQB 2006) were underway.

Organization of UCSD BQB 2006

The UCSD BMES held the first BQB on April 7, 2006. Information about the 2006 BQB is available at <http://bmes.ucsd.edu/bqb>. This event was planned for the first Friday of the Winter quarter, after the Spring break, from 5 PM into the early evening. The date and time were chosen so that students and faculty could easily attend the event. By having the event early in the quarter, students were in town, yet not yet too busy with exams.

UCSD BQB 2006 was hosted by UCSD BMES, and also co-hosted by the UCSD Department of Bioengineering and the UCSD Whitaker Institute of Biomedical Engineering. The BQB was organized entirely by a group of undergraduate students, led by Jina, with encouragement from Department Faculty. A call was put out to Bioengineering faculty, inviting their participation particularly as “quizmaster,” the individual who presided over the live event, delivering questions to the teams as well as the audience. One faculty member, Prof. Shankar Subramaniam, volunteered to take on this task; he had participated in many College Bowls as quizmaster in the past! Support for the UCSD BQB 2006 was also solicited. UCSD BQB benefited from the generous support of corporate and academic sponsors. Financial support was provided by Baxter Corporation, Amylin Pharmaceuticals, and Flaim Partners Consulting, and also UCSD sponsors, the Alumni Association, the Associated Students, and the Cartilage Tissue Engineering Lab. As noted above, the UCSD Department of Bioengineering and Whitaker Institute of Biomedical Engineering also provided advice in arranging the event and its venue.

Questions for UCSD BQB 2006 spanned a wide range of topics relevant to bioengineering. These included foundation topics, such as biology, chemistry, physics, mathematics, computer science, and general engineering. Such topics made it possible for students early in their college career to participate and be active contributors. In addition, some questions were on more specialized topics in bioengineering, including biomechanics, transport phenomena, bioinstrumentation, bioinformatics, and others. Questions on these topics were targeted to be at the introductory level, again, to facilitate participation by all levels of students. These questions were written by the BQB Questions Committee, a team composed of five undergraduate bioengineering students. The committee, along with a group of faculty and graduate students, then reviewed the questions and answers for accuracy and formatted the order in which the questions would be asked.

The UCSD BQB 2006 event was broadly advertised to all registered students in Bioengineering, and also to companies and individuals who have interacted with the Department of Bioengineering. The initial notice invited applications from BQB teams. More than 40 students independently formed BQB teams. These teams competed in a preliminary qualification round five weeks prior to the 1st Annual Bioengineering Quiz Bowl. From the preliminary competition,

four teams were selected to participate in the live event in the Fall of 2006. Team names were colorful, and included “Aqua Teen Hunger Force”, “Animal House”, “The Barbarians”, and “Necrotizing Fasciitis.”

The 1st BQB

Approximately 175 individuals attended the UCSD BQB 2006 (Figure 1). The students in attendance were mostly undergraduates, with 14.9% (127/850) of the enrolled Bioengineering undergraduate students [6] being present. In addition, the event was popular amongst graduate students, with 18.8% (25/133) of the enrolled Bioengineering graduate students [7] being present. More than half, 65% (11/17), of the regular and emeritus departmental faculty [8] were in attendance. Approximately 10% of the audience were UCSD alumni and industry professionals. The venue turned out to be a size that was appropriate for the size of the audience, allowing for comfortable and adequate seating, as well as sufficient room for movement and intermingling during the intermission.



Figure 1. The BQB was moderated by Professor Shankar Subramaniam (top right) and was attended by over two hundred people, including undergraduate and graduate students, faculty, and industry members (bottom).

The event included active participation by the audience. Each BQB game was fast-paced, lively, and engaging. Quizmaster Subramaniam (Figure 1) provided entertaining commentary. He

interspersed questions to the teams with questions to the audience. Those who answered correctly were awarded with gift certificates.

The winning undergraduate team consisted of four students from two of the four major tracks, and junior and senior students. The winners' names, Ronnie Chen, James O'Neill, Omeed Saghafi, Sahar Soleymani, were engraved on the "Stanley Cup" of bioengineering trophies (Figure 2), and showcased in Powell-Focht Bioengineering Hall, the building housing the Department of Bioengineering at UCSD.



Figure 2. The BQB was attended by faculty including Drs. Shu Chien (top left), Yuan-Cheng Fung, and David Gough (top right). Student teams participated for a chance to have their names engraved on the bioengineering Stanley Cup (middle left).

The evening culminated in a final match between the top undergraduate team and a team of "professionals." The "professionals" included one member from industry, one faculty member, and two graduate students. The crowd cheered and roared as the top undergraduate team made a valiant comeback effort, after falling behind early, against the "professionals". However, in the end, the "professionals" proved to be too much, winning the final match.

The half-time break during the BQB event provided an opportunity for undergraduates to mingle with industry members, professors, graduate students, and UCSD alumni/ae. The halftime event was so successful that it was extended from the originally-planned 15 minutes to >30 minutes.

Students interacted with faculty, graduate students, industry members and alumni to talk about research and job openings, current trends in bioengineering, career development decisions, and, in general, gained insight into what their futures might hold.

The Future of BQBs

The 1st BQB completed its mission, to establish a tradition in the UCSD Department of Bioengineering, to foster recognition of advances in bioengineering, to raise awareness of achievements in the field of bioengineering, to connect students with educators and members of industry, and to enliven bioengineering spirit. Both quantitative and qualitative measures indicated the success of the UCSD BQB. The number of people in the bioengineering community who attend the event was large. The interactions amongst faculty, students, and industry representatives were lively. Engagement of the audience with questions and answers actively promulgated facts about Bioengineering.

Students and industry representatives were provided a new venue for interaction. Students previously had interacted with industry through traditional activities including individual internships for both undergraduate and graduate students, research collaborations between individual lab groups, graduate student research symposia, and school-wide events. The 1st BQB provided an additional venue, this one with a focus on undergraduate interaction with local companies and the surrounding community, as well as with faculty and alumni.

With the apparent success of the 1st BQB, UCSD BMES is working to enhance the 2nd BQB event as the anchor of “Bioengineering Day 2007.” Plans are being developed to further enhance industry-academia-community connections at the student, alumni, and faculty levels. The upcoming Bioengineering Day (April 13, 2007) will include an alumni luncheon, facility tours, a poster competition, career panels, national keynote talks, company recruitment booths, and the 2nd annual BQB. In addition, K-12 students from schools affiliated with the UCSD BMES outreach program will be invited to the event to gain direct exposure to bioengineering. In the expanded program, bioengineering students will have a targeted venue to present their research and to interact with faculty, alumni, and industry professionals. Bioengineering Day 2007 seeks to establish a tradition in the San Diego bioengineering community. More event information can be found at <http://bmes.ucsd.edu/bengday>.

In addition, the 2nd BQB is being coordinated in a way that allows further analysis of the extent to which the event achieves its intended mission. A registration page has been deployed in order to provide a record of the number and type of attendees who plan to participate in Bioengineering Day and the BQB. From registration information, analysis can be done to assess whether the number and proportion of attendees increases in successive years, in various attendee categories. In addition, the attendees of future BQB and Bioengineering Day events will be surveyed to evaluate the educational value of each event, the relevance of the events to the attendee's work and/or studies, and the ability of the event to connect students, faculty, and industry.

UCSD BMES has been in active collaboration with other BMES chapters nationwide to expand the concept of the BQB. Working together, BMES chapters may be able to establish a network of regional BQBs. There have also been discussions with the national BMES organization (<http://www.bmes.org>) to hold a inter-university BQB at the Annual Fall Meeting of BMES. Such an event may help to foster a student community across schools, as well as enhance the program focus on students at the annual meetings.

References

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