

AC 2007-1725: GETTING TO KNOW YOU: HOW PARTNERING WITH PROFESSIONAL SOCIETIES CAN ENHANCE LIBRARIANS' PROFILE AND IMPACT

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Getting to Know You: How Partnering with Professional Societies Can Enhance Librarians' Profile and Impact

Abstract

What information do undergraduate and graduate engineering students (and their faculty) REALLY want? If traditional interactions (reference desk, instructional sessions, faculty meetings) aren't getting the results you want, perhaps partnering with a professional society can provide that inside track.

Given the highly complex and changing information seeking behaviors of students, partnering with professional societies outside of traditional library venues can help librarians identify and satisfy incipient information needs of the university community. At the same time, working with student organizations can communicate on a personal level the value of your library's scholarly -- and human -- resources.

The University Partnership Program of the IEEE was developed to strengthen relationships with librarians, students and faculty at larger universities that subscribe to one of its online products and support IEEE Student Branches. In recent years, it has endeavored to foster a sense of community, of multi-disciplinary, egalitarian information sharing and outreach among partners within each university, and more ambitiously, among the schools nationwide that participate.

This paper examines how involving librarians in the "everyday life" of student professional society activities can build relationships that transcend the library's walls. By stepping into the information world of their users, librarians can develop more effective marketing, collection development and instruction sessions, and increase awareness of library resources and their relevance to life-long personal and professional learning.

Introduction

The IEEE (The Institute of Electrical and Electronics Engineers) dates to the 1963 merger of the AIEE (American Institute of Electrical Engineers, formed in 1884), and the IRE (Institute of Radio Engineers, formed in 1912). Today it is the world's largest technical society; it has more than 365,000 members, including about 68,000 student members, in over 150 countries. The IEEE sponsors more than 500 conferences and meetings each year that are attended by more than 100,000 technical professionals. It is a leading developer of international standards, with more than 900 active standards and 400 additional standards in development.

The IEEE's mission has long been to "advance global prosperity by fostering technological innovation, enabling members' careers and promoting community worldwide."

Community building is an important underpinning of the IEEE University Partnership Program, which began as a pilot program in 1999 with ten of the top technical universities in the United States. Currently, thirteen schools participate in the program: California Institute of Technology; Columbia University; Dartmouth College; Drexel University; Massachusetts Institute of Technology; Stanford University; Texas A&M University; University of California, Berkeley; University of California, Los Angeles; University of California, San Diego; University of Michigan, Ann Arbor; Virginia Polytechnic Institute and University; and Worcester Polytechnic Institute.

All partners within the participating schools (librarian liaison, engineering faculty chair, IEEE Student Branch Faculty Advisor and IEEE Student Branch President) sign an agreement to work toward specific objectives developed by IEEE staff and volunteers. With input from librarians, faculty and students, over the years these objectives have evolved to include:

- Increasing IEEE student membership
 - To involve more students in the research, communications and programs in their field; to improve students' leadership, teamwork and communication skills
- Planning an achievable number of events
 - To challenge students to network with faculty and industry outside of the classroom; to develop a practical understanding of the engineer in society; to improve leadership, teamwork and communication skills
- Developing relationships with IEEE beyond the student branch (this can include reaching out to the local IEEE Section or Affinity Groups such as Women in Engineering or Graduates of the Last Decade, and IEEE operations staff)
 - To help students discover how professional societies serve their members, profession, community and humanity worldwide; to appreciate the unique interests and needs of disparate engineering communities; to provide experience communicating and working with professionals
- IEEE Student Branch budgeting and reporting requirements
 - To enable students to develop business skills and responsibilities; to emphasize the importance of recording and sharing information on programs, problems and best practices.

For supporting these objectives, schools receive a rebate of up to \$5,000 on their IEEE *Xplore* subscription and unlimited simultaneous user logins at no additional charge. In addition, the IEEE Student Branches receive support for their membership activities and event planning and execution.

Many professional engineering societies have a presence on US campuses. However, a non-exhaustive search of literature and librarians indicates that the IEEE

University Partnership Program may be unique in encouraging the collaboration among scholarly society, librarians and faculty to help students develop the skills, knowledge and behaviors expected of professionals in their chosen fields. Indeed, many of these shared goals can be tied to expectancies of ABET, the accepted U.S. accreditor of engineering and other technical programs, especially:

- an ability to function on multi-disciplinary teams
 - IEEE Student Branches typically include majors outside of electrical and computer engineering, and are encouraged to collaborate with other student organizations in programming and competitions
- an understanding of professional ethical responsibility
 - IEEE promotes a Student Ethics Competition (<http://www.ieee.org/portal/pages/committee/emcc/competition.html>), maintains a site on Engineering Ethics Resources and Organizations <http://www.ieee.org/portal/pages/committee/emcc/resources.html>, and encourages students to host speakers who address ethics. Most IEEE Student Branches engage in community service/outreach, demonstrating a commitment to using their specialized knowledge for the public good
- an ability to communicate effectively,
 - Effective writing and communicating skills are imperative to running a vibrant IEEE Student Branch, which requires engaging speakers and sponsors from academia and industry; negotiating room, financial and other resources; and promoting events through a variety of media
- the broad education necessary to understand the impact of engineering solutions in a global and societal context,
 - Branch activities bring students together with engineering and non-engineering professionals who share practical international experience in official and informal meetings
- and, appreciation of the need for lifelong learning
 - Interacting with engineering and information professionals, professors, and students at different levels of education reinforces how continued learning drives personal satisfaction, as well as career opportunities and success

Achieving these goals demands the development of interpersonal, or “soft skills,” that are often best fostered outside of the classroom.

Creating an Information Ground

Research into the information seeking behaviors of college students, especially Karen Pettigrew Fisher’s theory of information grounds, is driving the IEEE University Partnership Program of the future. Loosely defined, an information ground is a location where the social atmosphere “can foster information sharing in spontaneous, serendipitous, and planned ways.”¹

The IEEE University Partnership Program seeks to build on the information grounds that students have already found in their scholarly societies, in the labs and lounges where they assemble, in the meetings they attend, in the listservs they create, and the events and presentations they plan and promote. Supporting these communities enables us to communicate our respect for students' complex and developing everyday information seeking and sharing behaviors. Becoming part of those communities and recognizing the social life and flow of information can give librarians an opportunity to create an information framework that will have a greater and more lasting impact on the quality of students' everyday -- and academic -- lives. Personal relationships are often the final arbiter for what type of information students will seek -- and how. Engineers, in particular, "tend to rely much more on interpersonal and informal means of communications," than their peers in other scientific disciplines.²

Recognizing the value of information grounds can help us promote -- and be part of -- what Fishers calls that "desirous mingling" or enriching experiences that focus on "the people present, provide opportunity for people to bond and share common interests and needs, and you feel like other people understand you and you trust them."¹ In branch activities, information flows not in a straight, authoritative and impersonal line, but in a more egalitarian circle. Diversity is welcome, encouragement sought, and development of interpersonal skills achieved. Weiler's study of motivation, critical thinking and learning behavior in Generation Y students, "found [students had] a strong bias in favor of knowledge collected through personal experiences, or by talking with others about personal experiences, rather than from disinterested information sources such as research studies or statistics."³ Librarians understand the importance of "disinterested information sources," but need to work hard not to be lumped in the same category. How research studies and statistics are presented to students make an enormous difference in their impact.

2006 IEEE University Partnership Program Events

January 11 -- Drexel University

Engineering Librarian Jay Bhatt invited librarians, faculty and students to a brainstorming session on the future of the IEEE University Partnership Program at Drexel. Dr. Nihat Bilgutay, then head of the ECE Department, his colleague Dr. Afshin Daryoush, and Dr. Donald McEachron of the Drexel Biomedical Engineering Faculty attended. Also participating were Jane Bryan, Director of the Hagerty Engineering Library, and more than 15 undergraduate and graduate students from various engineering departments.

This meeting focused on the best way to build a sense of community within Drexel and also, among the thirteen schools in the program. While much talk centered on the virtues of email, blogs, and websites, the conclusion was this: students want to meet face-to-face. Students commented that "emails are often overlooked in 'information overload,'" and many different forms of communication are necessary since "response depends on the individual."

Undergraduate students wanted career-oriented events that attracted representatives from major engineering companies, as well as from non-traditional career paths – intellectual property, financial engineering and banking were mentioned. Soft skills seminars were seen as critical, and the students and faculty all wanted meetings that addressed the impact of technology on society and engineering ethics. These interests confirm students' appreciation of the broad roles available to, and skills required of, engineers in today's global environment.

The graduate students wanted information on how to get published in peer-reviewed journals and how to write grants. They welcomed a chance to advise undergraduates on the perils and pleasures of post-graduate study. They also expressed interest in developing a graduate student forum that would serve the unique information and social needs of graduate students, while providing more focused outreach to other members of the Drexel community.

January 24 -- Texas A&M

Engineering Librarian Jane Stephens disseminated an invitation to an IEEE sponsored graduate/faculty lunch over electrical and computer, biomedical, and aeronautic engineering department listservs. Several faculty and three engineering librarians attended the event, and approximately 30 graduate students. Dr. B. Don Russell, Texas A&M IEEE Student Branch Advisor, introduced the session, and spoke of the value of professional affiliation throughout an engineer's career. The informal nature of the event aided networking, and indeed, two of the senior faculty spent lunch discussing research issues with Ms. Stephens and biomedical engineering librarian Pauline Melgoza.

This event highlighted the power of a "personal touch." Earlier that month, IEEE offered a special University Partnership Program Graduate Student Travel Award. Texas A&M PhD student Fabian Uriarte was encouraged to submit a paper, and when it was accepted, he received a grant to attend the IEEE PhD research in Microelectronics conference in Otranto, Italy, in June.

Later that day, IEEE staff and Texas A&M engineering librarians participated in a program featuring two successful alumni and former IEEE Student Branch officers. These young men had successful careers with their own start-up company, Miraplex Communications, Inc, and were seeking new employees from the ranks of IEEE student branch leadership. After the presentation, Ms. Stevens and life science lecturer Pat Alford had an opportunity to introduce themselves to students, and increase awareness of new library resources and events.

February 22 – Columbia University

The IEEE UPP manager attended a Student Branch executive meeting to brainstorm ideas for the spring semester. While no faculty or librarian could attend this meeting, the notion that "national" took interest in their efforts resonated: "Your presence

was definitely a booster shot of morale!” This branch had struggled with the defection – to other degrees – of their entire executive board (but one student), and needed assistance formulating strategies to attract faculty and student support. The Branch has since run many standing-room only activities, including a series of “Reverse Engineering” talks by Senior Lecturer David Vallancourt. Columbia librarians could capitalize on these events to highlight their vast library offerings and expertise.

March 24 – Virginia Tech

IEEE staff conducted another graduate/faculty lunch facilitated by IEEE Student Branch Advisor Dr. Amy Bell. IEEE presented results of a study on the importance of IEEE information to top US patenting organizations, information the Virginia Tech library makes available to its students. IEEE Client Services Manager Ruth Wolfish demonstrated IEEE *Xplore* search tips, current awareness tools and research features. Virginia Tech Engineering Librarian Larry Thompson asked and answered questions, promoted the full range of Virginia Tech engineering resources, and strengthened relationships with faculty and graduate students.

This event was followed by an IEEE Student Professional Awareness Conference (SPAC, see: <http://www.ieeeusa.org/volunteers/committees/SPAC/>), designed to bring together professionals, students and faculty to discuss career and non-technical aspects of an engineer’s professional life. Jim Peterman of Tekelec outlined his “Lifetime of Learning” and Dr. Dan Sable of VPT Inc. addressed why engineers need to understand global issues. Students responded with questions about starting a business, writing a business plan, finding capital, etc. – all fertile ground for future librarian involvement.

Again the library had a fun, casual presence, as Mr. Thompson conducted a raffle for an Xbox 360 for students who brought in a citation from IEEE *Xplore*. The library also donated gift cards and raffled IEEE t-shirts and optical mice.

As an aside, the SPAC Chair for Virginia Tech, Brian Crosby, said what he learned managing this conference was a key topic of conversation during job interviews. He received several offers.

March 28 – University of Michigan

Graduate student Joshua Bartlett led a team of PhD, graduate and undergraduate officers at the University of Michigan IEEE for two years. Lacking a faculty advisor (Dr. Jamie Phillips accepted the position in spring 2006) didn’t impact their impressive slate of activities. A Distinguished Lecture in March featured Prof. Larry Bernstein, Industry Research Professor of Software Engineering at Stevens Institute of Technology, who spoke on “Trustworthy Software and the Role of the Engineer in Protecting the Public.” More than 50 students attended this presentation on why software must be engineered to work dependably and why professional Codes of Ethics matter. The Art, Architecture and Engineering Library has begun providing tangible support to the IEEE Student Branch, and is open to future collaborations.

April 5 – University of California, San Diego (UCSD)

A hectic day at UCSD began with a graduate/faculty luncheon supported by UCSD Engineering Library Director Mary Linn Bergstrom, and Engineering Librarians Deborah Kegel and Susan Shepherd. Dr. Charles Tu, Faculty Advisor of the IEEE Student Branch attended the IEEE *Xplore* demonstration by Manager of IEEE Client Services, Rachel Berrington. Faculty participation in these programs is invaluable, as it teaches students (and librarians and the IEEE) how professors access and use peer-reviewed information.

An hour-long afternoon update on IEEE *Xplore* for UCSD librarians was followed by an evening with the university's IEEE Student Branch. Ms. Bergstrom and Ms. Kegel attended this event as well, where students polished their communication skills and showcased their teamwork with a poster session and PowerPoint presentations on three national student competitions: Robocar, AUVSI and Micromouse. UCSD librarians are actively engaged with student organizations on campus and promote their competition efforts with displays at the library and research assistance as needed.

April 6 – California Institute of Technology

California Institute of Technology was an IEEE revitalization project; the school had been without an IEEE Student Branch for over a year. Working with Dr. Michelle Effros, who agreed to act as Branch Counselor, the IEEE promoted a faculty/student lunch over multiple Caltech engineering listservs. Will Coulter, a Caltech graduate student, and Rahul Deb, a junior, contacted the IEEE prior to the event. They wanted to resurrect the Caltech IEEE Student Branch.

After a brief overview of the IEEE and IEEE *Xplore* features by IEEE staff, the meeting was turned over to these two students, who presented their vision for IEEE at Caltech. Their efforts earned the endorsement of the Faculty Chair, Yu-Chong Tai, who attended the luncheon, which in turn generated enthusiasm among the students present. Caltech librarians provide tangible support to this small, but increasingly dynamic group.

April 6 – UCLA

The IEEE Spring General Meeting at UCLA attracted more than 70 students and featured four speakers. UCLA professor and IEEE Coastal Los Angeles Section (CLAS) Chair Michael Briggs outlined the many networking and teamwork opportunities supported by CLAS, including Micromouse and NatCar. UCLA Librarian Audrey Jackson showcased the engineering library's new features, and captured the spirit of the partnership by teaching students how library resources can be used to identify the best parts suppliers for competitions and research projects!

IEEE staff covered the IEEE *Xplore* database as a job search, research and current awareness tool. Branch Chair Stanley Hsu moderated the event, and encouraged students to join UCLA competition teams, attend branch activities, and take on leadership roles.

May 1 – Conference call

Because the schools participating in the IEEE University Partnership Program are spread throughout the United States, facilitating inter-school communication is challenging. Student Branch Leaders joined an 8:00PM (EST) conference call, and once the agenda was covered, the conversation really began to flow. Students invited one another to visit campuses, gave advice on the intricacies of their graduate programs, shared funding strategies and sources, and challenges to branch management and officer recruitment.

Within a few days of the call, the Caltech Branch Chair started a listserv and invited both graduating and incoming IEEE Student Branch Leaders to subscribe. He wanted to create an “institutional memory,” or archive, of IEEE Student Branch leadership.

This listserv has proved useful in communicating information specific to partners, as well as a creative way to feed students engineering, business and career news, and to share best practices for IEEE Student Branch operations. Along these same lines, subscribing to IEEE Student Branch email groups, and also to university news and engineering newsletters, helps keep the IEEE University Partnership Program connected to the lives of students, faculty and librarians.

May 3-4 –Dartmouth Formula Hybrid Pilot Conference/Competition

The brainchild of Prof. Doug Fraser, Dartmouth Formula Hybrid (www.formula-hybrid.org) is an innovative design and engineering challenge that recycles Formula SAE chassis and incorporates more complicated technical requirements demanding interdisciplinary engineering skills. In fact, when asked during the pilot competition what was the most valuable skill learned, a Dartmouth electrical engineering team member responded, “EEs and MEs don’t speak the same language. And our definitions of ‘deadline’ are drastically different.” Formula Hybrid also attracted women engineers, and benefited from the involvement of Dartmouth graduate students. This competition requires understanding of socially responsible design, finance and marketing, in addition to challenging technical competence. Dartmouth Engineering Librarian Janifer Holt participated in the faculty conference, and served on the “Promotions” working group.

May 16 – Drexel University Graduate Student Forum

The Drexel graduates students who attended the brainstorming session in January had a very successful launch of their Graduate Student Forum, with more than 50 students attending. Under the guidance of Mr. Bhatt, they arranged an impressive

program, beginning with a career presentation by staff from Drexel's Steinbright Career Development Center, followed by an informal interactive discussion among the students and the six faculty panelists: Dr. Nihat Bilgutay, Dr. Moshe Kam, Dr. Bruce Eisenstein, Dr. Kapil Dandekar, Dr. Elisabeth Papazoglou, and Dr. Rehamim Seliktar. Topics ranged from emerging technologies to industry and academy collaboration to searching for information on start-up companies. An IEEE librarian provided tips on how to use the IEEE *Xplore* database as both a career development and research tool.

Students involved in this event worked hard to offer fellow students a unique, interactive learning opportunity. In doing so, they honed important program management, communication, and presentation skills, and had fun and made new friends doing it.

June 2006 -- University Partnership Program Survey

In June 2006, a survey administered by IEEE Corporate Strategy and Communications was sent to 68 partners. The survey garnered a 53% response rate, spread among all constituencies (faculty chairs, faculty advisors, student chairs, librarians and others) and 97% rated the program "above average" or "excellent." That the most important incentive for participation was "assistance with university events" speaks to the potential for librarians to impact student professional organizations. Relationship with IEEE staff and the IEEE *Xplore* rebate, which many partners share or donate entirely to their IEEE Student Branches, tied for the second most important incentive. (Money may talk, but so do people.)

Support for learning objectives and networking opportunities were also cited as motivators for participation. Sample comments include:

- IEEE provided great incentives that students appreciated... Helped increase awareness of IEEE *Xplore* and other library resources
- It's a good program to help build leadership skills and network with people important in my field.
- The rebate is useful for funding activities that foster student/faculty interaction
- The program provides our university with an important resource (IEL) at a discount, and IEL is heavily used and highly appreciated

September 28-29 – IEEE Leaders Summit in Piscataway, NJ

"IEEE Connects" was the theme of the first IEEE Leaders Summit, bringing together student leaders from ten of the partner schools to build relationships and share their branch's successes, challenges and strategies. The students also gained a better understanding of the value of IEEE information made available through their libraries.

The agenda for the Leaders Summit included informal sessions where the student leaders and IEEE staff discussed pressing issues for young engineers, as well as formal

programs and presentations by noted authors. IEEE presented its first UPP Special Opportunity Grant, given to Berkeley's IEEE Student branch to support their for-credit "IEEE Hands-on Electronics" class. Thanks to the Berkeley librarians and faculty, and with additional IEEE support, the student branch was able to take this class on the road, bringing science learning to public high school students who might have little opportunity to learn about engineering as a career.

Of interest to librarians are the "hot topics" identified by Branch leaders: career opportunities -- how to find them, how to evaluate them; interviewing and resume tips; internships, fellowships and research/grant opportunities; health care; robotics; self-build computers; nanotechnology; Xbox and PS3 technology; intellectual property rights and law; and the next big technological boom.

In the six months since the Leaders Summit, IEEE Student Branch activity (and membership) at most of the UPP schools has increased, creating fertile grounds for librarians to find novel and meaningful ways to capitalize on a dynamic audience. A partial list would include Stanford, working with Berkeley on classes based on "IEEE Hands-on Electronics." MIT co-sponsored a program on entrepreneurship with IEEE Boston Graduates of the Last Decade. The Dartmouth Student Branch instituted an informal lunchtime "salon" for engineering students. UCSD has planned their first SPAC in several years, in collaboration with San Diego State University and University of San Diego. Worcester Polytech threw a "Spark Party" that drew over 200 participants. Berkeley hosted and presented at the IEEE Region 6 student conference, and added a programming class to their offerings. Schools and organizations around the world have indicated interest in "IEEE Hands-on Electronics," and an international conference is on the drawing board.

Conclusion

Working with the student professional organizations brings librarians in contact with highly motivated and skilled students (and their faculty) who can articulate the technical, business and personal information needs of their peers. Librarians need to consider "the challenge," according to Fisher and Naumer, "to create inverted information grounds: whereas information grounds utilize social interaction to foster information flow, librarians must use their information services to facilitate social interaction, which will, in turn, enhance their contributions to building and maintaining social capital within communities."¹

Partnering with professional societies is an excellent way to tap into existing student (and faculty) information communities and accumulate social capital, raise the library and librarians' profiles and increase their reach and impact. Insights gained from this participation can be used to build collections, market the library to users, develop creative instructional sessions and foster better understanding of the value of scholarly resources to professional as well as personal learning.

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