

# THE Bulletin OF Tau Beta Pi

March 2011

A Publication  
for the Collegiate  
Chapters

## MindSET 101: Get Involved

by Dylan S. Lane, MindSET Coordinator

**A**mbition. How important was your education, pre-college, in your ability to pursue your career aspirations and to realize your dreams?

Think about students who are ill equipped to pursue science, technology, engineering, and math (STEM) careers because they were not prepared to complete algebra successfully. The Tau Beta Pi MindSET Program is the opportunity for members to give back and help K-12 students realize their dreams by better preparing them for completing integral math and science courses.

In 2011, TBPi will be laying the foundation for the future success of the MindSET Program with the goal of expanding to hosting chapter projects to 25 percent of the collegiate chapters. It is time to ask yourself how you can get involved.

Your involvement in the MindSET Program will in the short-term enable the development of partnerships of TBPi collegiate chapters with local school districts in establishing and supporting math and science intervention programs that contribute to the enhanced preparation of K-12 students.

In the long run, you will be addressing the challenge of our nation in preparing more students for STEM discipline careers.

The success of the MindSET

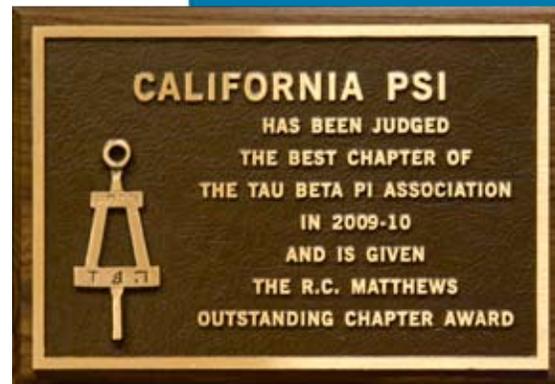
Program depends upon engaging Tau Beta Pi members and leveraging the available resources from a motivated membership.

Currently, there are more than 40 collegiate chapters that are interested in starting their own MindSET projects.

TBPi took part in the inaugural USA Science

& Engineering Festival on the National Mall in October. The enthusiasm and interest parlayed into the first MindSET District cluster training and information session—to help chapters in the DC and Maryland-area in networking and brainstorming ways to start MindSET projects at their respective universities.

Similar training sessions are being planned in other Districts where there is interest in the MindSET Program. However, alumnus involvement has played a key role in implementing MindSET at the 12 chapters that currently host activities for local school districts. For this reason, TBPi is pursuing participation from members across the country.



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ISSUE AVAILABLE AT [WWW.TBP.ORG](http://WWW.TBP.ORG)

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## A Surprising Career Development

Robert A. Ellis, *Missouri Gamma '59*

Previous articles in THE BULLETIN have discussed the value of a liberal education and patents. These highlight non-technical aspects of an education and career in engineering.

My own career provides a case study for a non-technical career direction. Typically we think of an engineering career in terms of technical and management paths. But my own experience suggests that there may be other possibilities.

My engineering career mostly followed the traditional path: several years as a technical contributor in computer systems and applications followed by a shift to management positions. But about six years before I retired something else happened. First, at the urging of an engineering VP and director of a research group, I teamed with a person from education marketing to jointly found our company's (Sun Microsystems) first formal program of university research support. Then with just two years left in my job as a paid employee, I joined the technical policy committee of an industrial study organization (computer systems policy project).

Our university research program had several unique features. Because we did not have the expertise or budget to support large, unique projects, we provided only supplemental funding for ongoing, peer-reviewed research. We would support only graduate students, expecting faculty members to provide their own support. We required a technical sponsor from the company. We did not restrict publication of research results and encouraged joint authorship with a Sun employee. Company proprietary information, such as early access to new products, needed to be respected.

The computer systems policy project ([www.cspp.org/index.php](http://www.cspp.org/index.php)), now known as the Technology CEO Council, was formed to provide a policy study presence in Washington, DC. It consists of the CEOs of leading technology companies and produces the results of studies of policy issues for governmental officials, employees, and the public.

My job on the project was to be my company's representative on the technical policy committee. Guided by staff we studied policy issues from a

technology standpoint. We met with governmental representatives and produced reports.

Both of these positions required learning new things. I had worked as a member of a university research staff so I knew something about how university research worked. But I didn't have a lot of insight on how funding worked except for writing proposals and reports. I had even less knowledge of how government worked, but enjoyed learning. I learned that just as our elected officials represent a group of citizens, they would like to hear from representative groups. There is also a hierarchy of importance that goes something like constituents, campaign donors, business groups, and other policy groups.

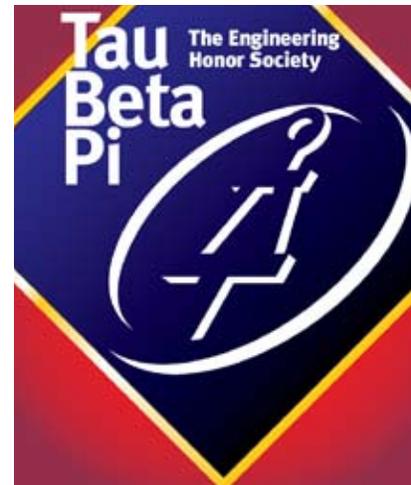
After retiring I continued my technology policy work as a volunteer with the Association for Computing Machinery. For several years I chaired technology policy activities for its special interest group on computer graphics ([www.siggraph.org/pub-policy](http://www.siggraph.org/pub-policy)). I wrote a quarterly column and organized sessions at the annual conference. I am also a member of ACM's U.S. public policy council ([usacm.acm.org/usacm](http://usacm.acm.org/usacm)), which speaks on matters of technology policy.

Why did this surprising direction in career path happen? The primary reason was that after 30 years I was tired of doing essentially the same thing. I always had an interest in history and public policy and realized that computing was increasingly affecting the general public. Soon conditions would necessitate legal and policy activities. The opportunity to make this move away from technical development and management was also important. Opportunity, interest, and a desire for change came together, and there I was!

How does one prepare for such a shift in career? Typically these combinations happen unplanned and then become more formalized. Biomedical engineering is a good example. When I was involved in the field starting in the mid-1960s, there were no formal education or professional opportunities. Today there are departments of biomedical engineering in educational institutions and corresponding professional societies. In my case I had a traditional 1950s university education in electrical engineering with just a smattering of humanities courses. So my preparation was only informal and based on my shift in interest and opportunity.

Is preparation necessary? When combination careers such as technology policy or biomedical engineering are emerging, there is little opportunity unless one pursues educational paths in multiple disciplines. I had no idea during my formal education that I would be interested in working in support for research or policy and would never have taken courses or pursued degrees in multiple fields. The only possibility would have been to take more humanities courses and additional education in research.

The bottom line here is: stay flexible in career development, be open to non-traditional career paths, develop interests outside engineering and technology, and be open to opportunities.



### Tau Beta Pi: THE BENT



### Educational Loan Fund

Since 1935, Tau Beta Pi has assisted student members with their financial needs while in school or with payment of their initiation fees through our Student Loan Fund. We are pleased to offer this service for student members in amounts up to \$2,500 per member.

Repayment is required to begin after three years, and a simple interest rate of six percent is charged from the day the loan is received.

Interested students can obtain promissory notes and loan applications from their chapter president, the website, or the international Headquarters in Knoxville.

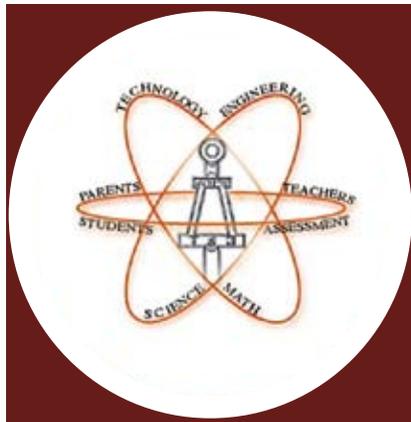
## MindSET (continued from p.1)

There are several different levels of involvement. The most important aspect of involvement is helping to support chapter implementation of a MindSET project.

This can be done by becoming a MindSET advisor to a local TBP chapter. The two main duties of a MindSET advisor are ensuring continuity of the MindSET project at the university and serving as a local reference point to assist in communications and guidance for the chapter with potential partners and with MindSET leadership.

Other ways to get involved include sharing school-district contacts with chapters, volunteering your time to participate in the hands-on sessions, or becoming a regional or national MindSET management committee member.

TBP is proud to offer this program with the goal of preparing young students to lead the country into the next century. We ask that our members consider giving back and assisting our student chapters in developing the future engineers of the world.



## New MindSET Grants

Your chapter could receive up to \$1,000 to conduct a project helping to educate local K-12 students in the STEM disciplines.

The money is available to chapters from Tau Beta Pi's MindSET Program to involve young students in their communities and develop engineering modules that stress the importance of math and science.

Proposals will be considered on a first-come, first-served basis, and up to 10 grants may be given. Florida Delta won the first grant of \$500 in 2010.

Send your chapter proposal to Headquarters. Application guidelines are in the *President's Book* on the website.

Visit [www.tbp.org/mindset](http://www.tbp.org/mindset)

## TBP Engineering Futures Designed for Excellence!

### BRING EF TO YOUR CAMPUS!

Bring the award-winning EF program to your campus. Contact Sherry King ([sherry@tbp.org](mailto:sherry@tbp.org)) today about hosting an EF session. Download a set of fliers to help promote the event at [www.tbp.org/Chapters/Resources/OtherResources/index.cfm](http://www.tbp.org/Chapters/Resources/OtherResources/index.cfm).

The TBP EF Program won the American Society of Engineering Education Corporate Member Council's **2007 Excellence in Engineering Education Collaboration Award**.

This recognition validated two decades of effort by TBP Facilitators and engineering students since 1988. During a recent three-year period, 3,100 students each year participated in 206 sessions annually.

## Chapters must file

The IRS requires non-profit organizations that do not file an annual form 990 to file a 990N. This affects most TBP chapters, which are required to visit IRS.gov and submit the online-only form 990N no later than the 15th day of the fifth month after the close of the chapter's fiscal year.

For example, if the fiscal year ends May 31, the e-postcard is due by October 15. Information about form 990N and IRS.gov are available on the Chapter website. Officers need to be aware of this new federal requirement. Failure to submit will result in a chapter losing its tax-exempt status.

This is a required report for receiving a Secretary's Commendation. Chapters must forward a copy of the acknowledgment email received from the IRS to receive credit for submitting the report.

## Welcome Florida Iota!

One new chapter established by the 2010 Convention is being installed with the initiation of the charter members this year. Florida Iota officially came into being on March 12, 2011, at Embry-Riddle Aeronautical University in Daytona Beach, FL, with Vice President **Solange C. Dao** as official installing officer. This raises the number of active collegiate chapters to 237.

## PPI test-review products

Professional Publications, Inc., is offering verified TBP members:

- 30% discount on PPI-published products, including exam preparation materials for the FE and PE exams.

Enroll online at: [www.tbp.org/pages/ForMembers/Index.cfm](http://www.tbp.org/pages/ForMembers/Index.cfm).

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## Initiate One More Electee!

**W**e're well on our way to meeting the goal above for a fourth straight year! This should be a continuing goal of every chapter! Growth allows a chapter to develop. In the Chapter Development Cycle, increased membership leads to better leaders, campus service, an improved image, more members, ... and on it goes.

Recently, a total of 123 chapters and the Association as a whole were yet again meeting this goal. Indiana Alpha was leading the way by initiating 37 more electees than during Fall 2009. An additional 29 chapters increased the number of new members by 10 or more. Forty-seven chapters initiated all their electees in the Fall!

Chapter officers must continue to provide the personal touch to reach out to eligible students and follow up! A letter from your dean to the parents of the electees can be effective as well.

The enduring strength of TBPI is you, the member. You will carefully elect new members who will then improve and strengthen your chapter. Be sure to contact candidates and let them know of our sincere desire for them to join us. Take time to ensure that they receive your invitations. Help them to understand what it is about TBPI that convinced you to join. After initiation, interact with them. You can build an even greater Society. It just takes a little time.

—Roger E. Hawks  
*Assistant Secretary-Treasurer*

## Spring Conferences



**T**HE DISTRICT PROGRAM provides a vital link between the international organization and individual chapters. Each year the Directors gather students for regional conferences to provide both retiring and new officers opportunities to discuss chapter operations and to socialize. All chapters are urged to elect new officers before their District conference. New and outgoing officers are encouraged to attend.

DISTRICT	LOCATION	DATE
1	Orono, ME	Apr. 16-17
2	Binghamton, NY	Feb. 12-13
3	Easton, PA	Feb. 11-12
4	Washington, DC	Apr. 16
5	Gainesville, FL	Feb. 26
6	Nashville, TN	Feb. 4-5
7	Grand Rapids, MI	Apr. 2
8	Indianapolis, IN	Apr. 1-2
9	Stillwater, OK	Mar. 5
10	New Orleans, LA	Feb. 12
11	Minneapolis, MN	Apr. 1-2
12	Salt Lake City, UT	Feb. 26
13	El Paso, TX	Mar. 4-5
14	Portland, OR	Apr. 2
15	Reno, NV	Mar. 5
16	Santa Barbara, CA	Apr. 30

## Nominate a Laureate!

**E**xceptional Tau Bates are recognized annually at each Convention for their talents and contributions to society beyond the normal perimeters of engineering. Last year, four outstanding students were recognized for accomplishments in athletics, arts, and diverse achievements. They each received a \$2,500 cash prize, a plaque, and national publicity in THE BENT and on the web.

The Tau Beta Pi Laureate Program has been honoring collegiate members since 1982 and has recognized contributions of Tau Bates in the arts, athletics, diverse achievements, and service. Chapters select nominees from their members; information on how to proceed is found in the *President's Book* (p. C-31) and on the web at [tbp.org/chapters](http://tbp.org/chapters).

If an extraordinary member in your chapter qualifies, submit a nomination package in digital format to Headquarters by April 1—to the attention of Secretary Treasurer Froula.

## Seeking TBPI-McDonald Mentor Nominees

Marion and Capers (*North Carolina Gamma '74*) McDonald and the Association have established an award to celebrate excellence in mentoring and advising among TBPI educators and engineers. The honor recognizes those who have consistently supported the personal and professional development of their students and colleagues through mentorship.

The TBPI-McDonald Mentor is chosen by a committee of national officials and will be presented a special medallion and a \$2,000 cash award (\$1,000 to honoree and \$1,000 to the nominating chapter—or to

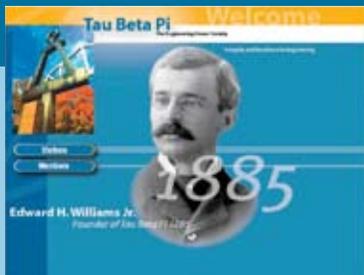


the honoree's chapter if nominated by a member). Only one award will be presented at any annual Convention.

Any chapter or member may nominate one (or more) alumnus member(s) for the award. The following material is required to be sent in digital form to the Executive Director by April 1:

1) A one-page summary of achievements and/or contributions of the nominee exemplifying the objective of the award.

2) Two letters of reference from persons other than the nominating party or sponsoring chapter president who are familiar with the nominee's contributions and achievements, such as a dean or supervisor.



## EXPLORE HQ'S MUST SEE WEB PAGES

Whether you're a new member or a veteran chapter officer, check these helpful Tau Beta Pi web pages.

**Tau Beta Pi Welcome**  
 "Designed to be helpful to first-time visitors."  
 —Ray Thompson  
**Log on:** [www.tbp.org](http://www.tbp.org)



**Tau Beta Pi Home Page**  
 "Find everything by bookmarking this page in your browser."  
 —Angie Boles  
**Log on:** [www.tbp.org/pages](http://www.tbp.org/pages)  
**10,500,000 hits!!**



**TBPCONNECT**  
 "You'll find 11,000 other Tau Bates in your state and around the world. Create a network with students, alumni, and friends. Join the fun."  
 —Dylan Lane  
**Look At:** [www.tbp.org/pages](http://www.tbp.org/pages)



**Chapter Website**  
 "This page leads to everything a chapter could want, including its own bylaws. It's indispensable for filing your reports."  
 —Roger Hawks  
**Look Under:** *Chapters*

**10,500,000 hits!!**



**Member Benefits**  
 "It may surprise you to learn how many benefits and useful discounts are available to members."  
 —Pat McDaniel  
**Look Under:** *For Members*



**Tau Beta Pi Member Lookup**  
 "You can easily determine if someone is a member of Tau Beta Pi."  
 —David Roberts  
**Look Under:** *For Members*



**Distinguished Members**  
 "Self explanatory! You'll find an amazing number of accomplishments by Tau Bates."  
 —Debbie Dewine  
**Look Under:** *About TBP* and then *People*



**2011 Convention Information**  
 "It has all the details you need for attending the next Convention."  
 —Sherry King  
**Look Under:** *Convention*



**Subscribe to THE BENT**  
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 —Betty Harless  
**Look Under:** *Publications*



**Chapter Materials Order**  
 "The best place to order electee invitations, posters, honor cords, stoles, castings, and other necessary supplies...*without* a credit card."  
 —Rebecca Davis  
**Look Under:** *Chapters and under Resources*

[www.tbp.org/pages/](http://www.tbp.org/pages/)

## 2011 Chapter Anniversaries

100 <sup>th</sup>	Maine Alpha	March 11, 1911	University of Maine
75 <sup>th</sup>	Louisiana Alpha	November 30, 1936	Louisiana State University
	Louisiana Beta	December 1, 1936	Tulane University of Louisiana
50 <sup>th</sup>	Florida Alpha	January 14, 1961	University of Florida
	Pennsylvania Theta	February 11, 1961	Villanova University
	Ohio Theta	March 11, 1961	University of Dayton
25 <sup>th</sup>	North Carolina Epsilon	February 18, 1986	North Carolina A & T State University
	Florida Zeta	March 1, 1986	Florida Institute of Technology

# Alumnus & Student News

## District 4 Chapters Prepare for MindSET

On December 11, 2010, at the Holiday Inn Laurel (MD), representatives from five TBPi chapters took part in the first MindSET training and information cluster session.

Dr. Jonathan Earle, Executive Councillor, Ashish Myles, *FL A 02*, Chair of the MindSET NMC, and Dylan Lane, MindSET Coordinator, led the session. A total of 13 members from DC Alpha, DC Beta, MD Beta, MD Delta, and MD Epsilon participated.

The agenda included a detailed overview of the MindSET Program, a comprehensive explanation of chapter implementation, a brainstorming and feedback session, and a great opportunity for the chapters to network.



Dr. Anne Spence, *MO B '85*, Maryland Delta Chapter Advisor, provided useful information about engineering education in the DC/MD area.

Materials were given to all attendees, and the presentation will be updated and become the master for future MindSET District training and information sessions. Tau Beta Pi appreciates the efforts and interest of the volunteers for taking time on a Saturday to learn about the program and position their chapter for implementation of a MindSET project.

## Student Spotlight

Puerto Rico Alpha Chapter members along with 26 candidates participated in a fall semester service activity with the local municipal nursing home, Sol Clara Cabán de Maygüez. The group hosted an event for the residents with a Christmas *parranda*, or Christmas caroling. The chapter also provided first aid, donated clothing, and most importantly brought lots of cheer to the nursing home. The event was covered by a local news station with video available on Tau Beta Pi's Facebook page.

Three members are among the 32 American recipients of 2011 Rhodes scholarships. Jared A. Dunnmon, *NC G '11*, mechanical engineering major; Jennifer I. Lai, *MA B '11*, majoring in biological engineering and music and theater arts; and Varun Sivaram, *CA G '11*, a double major in engineering physics and international relations. All three will continue their studies at the University of Oxford.

Zachary W. Carr, *NJ A '11*, was highlighted in the December 2010 issue of *Sports Illustrated* for his academic and athletic accomplishments. Carr is a senior biomedical engineering major and goalkeeper on Stevens Institute's varsity soccer team. He was named the top ESPN academic all-American in the college division for 2010.

## Alumnus Chapters

As alumnus chapters continue to grow and strengthen their reach, a new welcoming program is being discussed. A pilot program is underway in District 4 and with the Washington DC Alumnus Chapter to determine the necessary steps to best carry out this new program. A major goal of the program would be to welcome Tau Bates as they graduate and start their careers. The result would be a connection with a regional alumnus group and a decrease in the number of members who lose touch with TBPi.

## Alumnus Spotlight

The Bernard M. Gordon prize for 2011 was awarded to Dr. Edward F. Crawley, *Massachusetts Beta '76*, "for leadership, creativity, and energy in defining and guiding the CDIO (conceive-design-implement-operate) initiative, which has been widely adopted internationally for engineering education." Dr. Crawley is a professor of engineering at MIT.

The Charles Stark Draper prize for 2011 was awarded to Dr. Frances H. Arnold, *NJ A '79*, and Willem P.C. Stemmer, "for directed evolution, a method used worldwide for engineering novel enzymes and biocatalytic processes for pharmaceutical and chemical products." Dr. Arnold is a professor at Caltech. The Gordon, Draper, and Russ prizes are awarded by the National Academy of Engineering.

Eight Tau Bates are recipients of this year's presidential early career awards for scientists and engineers: Andrew A. Houck, *NJ A '00*; and Drs. Jeremy T. Busby, *KS G '99*; Virginia A. Davis, *LA B '93*; Dillon D. Fong, *IL G '94*; Ryan C. Hayward, *NJ A '99*; Jerome P. Lynch, *NY I '97*; Trent R. Northen, *CA S '96*; and Edo Waks, *MD A '95*. The presidential award is the highest honor bestowed by the United States government on science and engineering professionals in the early stages of their independent research careers.

Dr. Carolyn W. Meyers, *NC E '68*, is the new president of Jackson State University (MS). She began her new position in January 2011. Most recently, Dr. Meyers was president of Norfolk State University (VA).

## Engineers Week 2011

Engineers Week took place February 20-26. This year is the 60th anniversary of E-week. Introduce a Girl to Engineering Day was February 24, the 10th anniversary of activities geared toward involving females in engineering and STEM careers.

Visit [www.eweek.org](http://www.eweek.org) for more information.



## Partnership Opportunities

Teach for America and Tau Beta Pi are exploring a partnership in conjunction with the TBP MindSET program.

By joining Teach For America, you can use your engineering expertise to make a significant difference in the lives of children growing up in low-income communities. You can help expand and diversify the pipeline of future engineers by providing more students with the skills they need to be successful.

Full salary and health benefits. No education courses or experience required to apply. To learn more visit [www.teachforamerica.org](http://www.teachforamerica.org).

### BULLETIN on Web Only

Because of rising postage costs and in an effort to save precious resources, all future issues of THE BULLETIN are available only at [www.tbp.org](http://www.tbp.org).

### Important Deadlines

- **March 1** Scholarship Application
- **April 1** Ratification Ballot, Chapter Bylaw Jr./Sr. Procedure Approved, Laureate, McDonald Mentor, and Outstanding Advisor Nominations
- **June 1** Convention Bid for 2014 Curriculum Appeal
- **None** MindSET Project Proposal

**THE Bulletin**  
of Tau Beta Pi  
(ISSN 8755-5670)

Vol. LXXXIV      March 2011      No. 3

**International Headquarters**  
508 Dougherty Engineering Building, UT  
P.O. Box 2697  
Knoxville, TN 37901-2697  
Telephone: 865/ 546-4578  
FAX: 865/ 546-4579  
Email: [tbp@tbp.org](mailto:tbp@tbp.org)  
[www.tbp.org](http://www.tbp.org)

Executive Director & Editor: James D. Froula, P.E., Tennessee Alpha '67  
Asst. Secretary-Treasurer: Roger E. Hawks, New York Lambda '75

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Councillor: Norman Pih, Tennessee Alpha '82, Flagstaff, AZ

## Honor Cords Available

TBP honor cords, chosen by the 2004 Convention, are available to complement the beautiful graduation stoles. Order your supply in quantities of five or more at [www.tbp.org](http://www.tbp.org) under Chapter Resources to obtain a special price of \$11, down from the normal price of \$15.



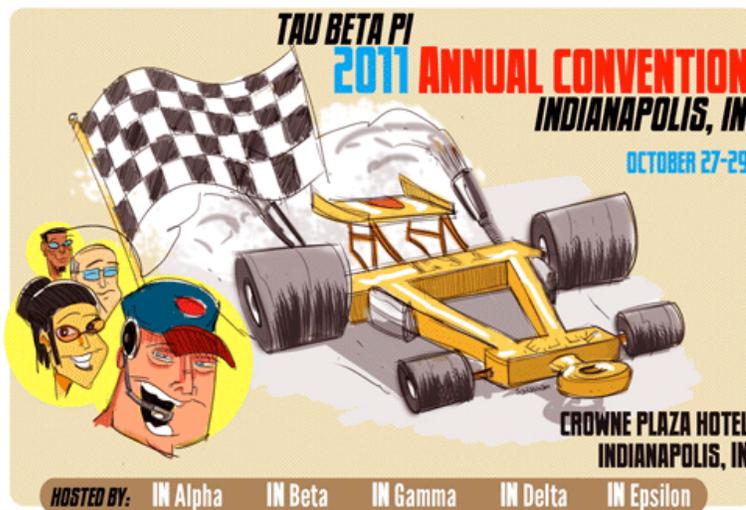
## New NAE website

The National Academy of Engineering has launched a site to improve the public understanding of engineering: [www.engineeringmessages.org](http://www.engineeringmessages.org).

## Find Advisors w/ AlumNet

Tau Beta Pi's AlumNet Program was created to pair students with alumni for the sharing of information about jobs and academe. The service has been expanded, and chapters can now use AlumNet to find potential chapter advisors and speakers. More than 100 alumni have already indicated a willingness to serve as an advisor. To get in touch with an alumnus about a certain field, company, institution, or chapter assistance, simply register online at [www.tbp.org](http://www.tbp.org). Click on the AlumNet link under "For Members" and follow instructions.

Complete the brief contact request form, and the necessary alumnus-contact information will be sent to you by email from the program coordinator. It is your responsibility to follow-up and to make contact with the alumnus.



## Special Benefits for Members

SEE COMPLETE LIST at [tbp.org/pages/ForMembers](http://tbp.org/pages/ForMembers)

- **AlumNet**—electronic mentoring service.
- **Engineering Futures**—sessions on people skills for engineering students.
- **Fellowships/Scholarships/Laureate Nominations by Chapters.**
- **GEICO**—additional discounts on automobile insurance.
- **KODA**—an online community for young professionals. Find jobs, connect with employers, and launch your career.
- **LTCFP**—long-term care outreach and education program with access to favorable rates on long-term care insurance.
- **My Home Benefits**—moving discounts & real-estate services.
- **PPI**—discounts on licensing exam review materials (FE/EIT, PE, LEED, & more).
- **TBPConnect**—for-members-only chapter and member networking tool.
- **TBP Job Board**—post a résumé online and browse through hundreds of engineering jobs at top companies.