


THE BENT

OF TAU BETA PI

The Engineering Honor Society

Spring 2015



Shawn's life inspired
me to support the →
SD Alpha chapter

**Endowment Initiative
Leadership Profile**

CHAPTERS

ALUMNI CHAPTERS (70)

District 1 • denotes active chapter

- Greater Boston Area, MA
- Central Connecticut, Hartford
- District 2**
- Buffalo, NY
- Central Jersey, NJ
- Long Island Suburban, NY
- Newark, NJ
- New York, NY
- New York Capital District, NY
- Rochester, NY
- Southern Tier, Binghamton, NY
- District 3**
- Lehigh Valley, Bethlehem, PA
- Philadelphia, PA
- Wilmington, DE
- District 4**
- Baltimore, MD
- Hampton Roads, Newport News, VA
- Kanawha Valley, Charleston, WV
- Research Triangle, Durham-Chapel Hill-Raleigh, NC
- Richmond, VA
- Washington, DC
- District 5**
- Atlanta, GA
- Central Florida, Orlando
- Daytona Beach, FL
- Gainesville, FL
- Miami, FL
- Midlands, Columbia, SC
- Palm Beach/Broward, FL
- Piedmont, Clemson, SC
- Puerto Rico
- Tampa Bay, FL
- District 6**
- Bluegrass, Lexington-Frankfort, KY
- Central Alabama, Birmingham
- Great Smoky Mountains, Knoxville-Oak Ridge, TN
- Greater Gulf Coast, Mobile, AL
- Louisville, KY
- Mid-South, Memphis, TN
- Rocket City, Huntsville, AL
- District 7**
- Ann Arbor Area, MI
- Central Michigan, Lansing
- Cincinnati, OH
- Dayton, OH
- Southeastern Michigan, Detroit
- Flint, MI
- Ohio's North Coast, Cleveland
- Columbus, OH
- West Michigan, Grand Rapids
- District 8**
- Chicago Area, IL
- Central Illinois, Urbana-Champaign
- Milwaukee, WI
- District 9**
- Rolla, MO
- St. Louis, MO
- District 10**
- Greater New Orleans, LA
- Central Texas (Austin/San Antonio)
- Texas Gulf Coast, Houston
- District 11**
- Ames, IA
- Minnesota, Twin Cities, MN
- District 12**
- Pikes Peak, CO
- Front Range, CO/WY
- Salt Lake City, UT
- Treasure Valley, Boise, ID
- District 13**
- El Paso, TX
- Phoenix, AZ
- Sun City, AZ
- Tucson, AZ
- District 14**
- Columbia River Basin, Richland, WA
- Portland, OR
- Puget Sound, Seattle, WA
- District 15**
- Sacramento, CA
- San Francisco Bay Area, CA
- San Francisco Peninsula, Palo Alto, CA
- District 16**
- Southern California, Los Angeles

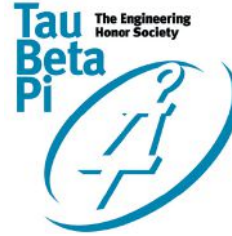
CA M	15	Calif. Poly. St. Univ., San Luis Obispo
CA N	16	California State Poly. Univ., Pomona
CA E	16	San Diego State Univ.
CA O	16	Loyola Marymount Univ.
CA P	16	Northrop Univ. (inactive)
CA R	15	California State Univ., Fresno
CA S	16	Univ. of California, Santa Barbara
CA T	16	Univ. of California, Irvine
CA Y	15	California State Univ., Sacramento
CA F	15	Univ. of the Pacific
CA X	16	California State Univ., Fullerton
CA W	16	Univ. of California, San Diego
CA Q	16	Harvey Mudd College
CA AA	15	California State Univ., Chico
CA AB	16	Univ. of California, Riverside
CA AF	15	San Francisco State Univ.
CA AD	15	Univ. of California, Santa Cruz
CA AE	16	Univ. of San Diego
CA A	12	Colorado School of Mines
CA B	12	Univ. of Colorado at Boulder
CA C	12	Univ. of Denver (inactive)
CA D	12	Colorado State Univ.
CA E	12	Univ. of Colorado at Denver
CA Z	12	United States Air Force Academy
CA 1	1	Yale Univ.
CA 2	1	Univ. of Connecticut
CA 3	1	Univ. of Hartford
CA 4	3	Univ. of Delaware
CA 5	4	Howard Univ.
CA 6	4	Catholic Univ. of America
CA 7	4	George Washington Univ.
CA 8	5	Univ. of Florida
CA 9	5	Univ. of Miami
CA 10	5	Univ. of South Florida
CA 11	5	Univ. of Central Florida
CA 12	5	Florida Atlantic Univ.
CA 13	5	Florida Inst. of Technology
CA 14	5	Florida A&M Univ.-Florida State Univ.
CA 15	5	Florida International Univ.
CA 16	5	Embry-Riddle Aeronautical Univ.
CA 17	5	Georgia Inst. of Technology
CA 18	5	Mercer Univ.
CA 19	14	Univ. of Idaho
CA 20	12	Idaho State Univ.
CA 21	12	Boise State Univ.
CA 22	8	Univ. of Illinois at Urbana-Champaign
CA 23	8	Illinois Inst. of Technology
CA 24	8	Northwestern Univ.
CA 25	8	Bradley Univ.
CA 26	8	Southern Illinois Univ. at Carbondale
CA 27	8	Univ. of Illinois at Chicago
CA 28	8	Purdue Univ.
CA 29	8	Rose-Hulman Inst. of Technology
CA 30	8	Univ. of Notre Dame
CA 31	8	Valparaiso Univ.
CA 32	8	Trine Univ.
CA 33	11	Iowa State Univ.
CA 34	11	Univ. of Iowa
CA 35	9	Univ. of Kansas
CA 36	9	Wichita State Univ.
CA 37	9	Kansas State Univ.
CA 38	6	Univ. of Kentucky
CA 39	6	Univ. of Louisville
CA 40	6	Western Kentucky Univ.
CA 41	10	Louisiana State Univ.
CA 42	10	Tulane Univ.
CA 43	10	Louisiana Tech Univ.
CA 44	10	Univ. of Louisiana at Lafayette
CA 45	10	Univ. of New Orleans
CA 46	1	Univ. of Maine
CA 47	4	Johns Hopkins Univ.
CA 48	4	Univ. of Maryland
CA 49	4	United States Naval Academy
CA 50	4	Univ. of Maryland Baltimore County
CA 51	4	Morgan State Univ.
CA 52	1	Worcester Polytechnic Inst.
CA 53	1	Massachusetts Inst. of Technology
CA 54	1	Harvard Univ. (inactive)
CA 55	1	Tufts Univ.
CA 56	1	Northeastern Univ.
CA 57	1	Univ. of Massachusetts at Amherst
CA 58	1	Boston Univ.
CA 59	1	Univ. of Massachusetts Lowell
CA 60	1	Western New England Univ.
CA 61	7	Michigan State Univ.
CA 62	11	Michigan Tech. Univ.
CA 63	7	Univ. of Michigan
CA 64	7	Univ. of Detroit Mercy
CA 65	7	Wayne State Univ.
CA 66	7	Kettering Univ.
CA 67	7	Lawrence Technological Univ.
CA 68	7	Oakland Univ.
CA 69	7	Univ. of Michigan-Dearborn
CA 70	7	Western Michigan Univ.
CA 71	7	Grand Valley State Univ.
CA 72	11	Univ. of Minnesota-Twin Cities
CA 73	11	Univ. of Minnesota, Duluth
CA 74	6	Mississippi State Univ.
CA 75	6	Univ. of Mississippi
CA 76	9	Univ. of Missouri-Columbia
CA 77	9	Missouri Univ. of Science & Technology
CA 78	9	Washington Univ.
CA 79	9	Univ. of Missouri-Kansas City
CA 80	9	Saint Louis University
CA 81	12	Montana State Univ.
CA 82	12	Montana Tech of the Univ. of Montana
CA 83	9	Univ. of Nebraska-Lincoln
CA 84	15	Univ. of Nevada, Reno
CA 85	16	Univ. of Nevada, Las Vegas
CA 86	1	Univ. of New Hampshire
CA 87	1	Dartmouth College
CA 88	2	Stevens Inst. of Technology
CA 89	2	Rutgers Univ.
CA 90	2	New Jersey Inst. of Technology

NJ A	2	Princeton Univ.
NJ B	2	Rowan Univ.
NJ C	2	The College of New Jersey
NM A	13	New Mexico State Univ.
NM B	13	Univ. of New Mexico
NM C	13	New Mexico Inst. of Mining & Tech.
NY A	2	Columbia Univ.
NY B	2	Syracuse Univ.
NY C	2	Rensselaer Polytechnic Inst.
NY D	2	Cornell Univ.
NY E	2	New York Univ. (inactive)
NY F	2	Polytechnic Inst. of Brooklyn (inactive)
NY G	2	City College of CUNY
NY H	2	Clarkson Univ.
NY I	2	Cooper Union School of Engineering
NY J	2	Univ. of Rochester
NY K	2	Pratt Inst. (inactive)
NY L	2	Union College
NY M	2	SUNY at Buffalo
NY N	2	Manhattan College
NY O	2	SUNY at Stony Brook
NY P	2	Rochester Inst. of Technology
NY Q	2	Polytechnic Institute of New York Univ.
NY R	2	Alfred Univ.
NY S	2	Binghamton University
NY T	2	United States Military Academy
NC A	4	North Carolina State Univ.
NC B	4	Univ. of N.C. at Chapel Hill (inactive)
NC C	4	Duke Univ.
NC D	4	Univ. of North Carolina at Charlotte
NC E	4	North Carolina A&T State Univ.
ND A	11	North Dakota State Univ.
ND B	11	Univ. of North Dakota
OH A	7	Case Western Reserve Univ.
OH B	7	Univ. of Cincinnati
OH C	7	Ohio State Univ.
OH D	7	Ohio Univ.
OH E	7	Cleveland State Univ.
OH F	7	Univ. of Toledo
OH G	7	Air Force Inst. of Technology
OH H	7	Univ. of Dayton
OH I	7	Ohio Northern Univ.
OH J	7	Univ. of Akron
OH K	7	Youngstown State Univ.
OH L	7	Wright State Univ.
OH M	7	Cedarville Univ.
OH N	7	Miami Univ.
OH O	9	Univ. of Oklahoma
OK A	9	Univ. of Tulsa
OK B	9	Oklahoma State Univ.
OR A	14	Oregon State Univ.
OR B	14	Portland State Univ.
OR C	14	Univ. of Portland
PA A	3	Lehigh Univ.
PA B	3	Pennsylvania State Univ.
PA C	3	Carnegie Mellon Univ.
PA D	3	Univ. of Pennsylvania
PA E	3	Lafayette College
PA F	3	Drexel Univ.
PA G	3	Bucknell Univ.
PA H	3	Villanova Univ.
PA I	3	Widener Univ.
PA J	3	Swarthmore College
PA K	3	Univ. of Pittsburgh
PA L	3	Penn State Erie, The Behrend College
PA M	3	Univ. of Puerto Rico
PR A	5	Brown Univ.
RI A	1	Univ. of Rhode Island
RI B	1	Clemson Univ.
SC A	5	Univ. of South Carolina
SC B	5	The Citadel
SC C	12	South Dakota School of Mines & Tech.
SD A	11	South Dakota State Univ.
TN A	6	Univ. of Tennessee
TN B	6	Vanderbilt Univ.
TN C	6	Tennessee Tech. Univ.
TN D	6	Christian Brothers Univ.
TN E	6	Univ. of Memphis
TN F	6	Univ. of Tennessee at Chattanooga
TN G	10	Univ. of Texas at Austin
TN H	13	Texas Tech Univ.
TN I	10	Rice Univ.
TN J	10	Texas A & M Univ.
TN K	10	Univ. of Houston
TN L	10	Lamar Univ.
TN M	10	Univ. of Texas at Arlington
TN N	13	Univ. of Texas at El Paso
TN O	10	Southern Methodist Univ.
TN P	10	Prairie View A & M Univ.
TN Q	10	Texas A & M Univ.-Kingsville
TN R	10	Univ. of Texas at San Antonio
TN S	10	Univ. of Texas-Pan American
TN T	12	Univ. of Utah
TN U	12	Brigham Young Univ.
TN V	12	Utah State Univ.
VT A	1	Univ. of Vermont
VT B	1	Norwich Univ.
VA A	4	Univ. of Virginia
VA B	4	Virginia Polytechnic Inst. & State Univ.
VA C	4	Old Dominion Univ.
VA D	4	Virginia Military Inst.
VA E	4	Virginia Commonwealth Univ.
VA F	14	Univ. of Washington
VA G	14	Washington State Univ.
VA H	14	Seattle Univ.
VA I	14	Gonzaga Univ.
VA J	4	West Virginia Univ.
VA K	4	West Virginia Univ. Inst. of Technology
VA L	8	Univ. of Wisconsin-Madison
VA M	8	Marquette Univ.
VA N	8	Univ. of Wisconsin-Milwaukee
VA O	8	Milwaukee School of Engineering
VA P	8	Univ. of Wisconsin-Platteville
VA Q	12	Univ. of Wyoming

COLLEGIATE CHAPTERS (249)

Chap. Dist.	Institution
AL A	6 Auburn Univ.
AL B	6 Univ. of Alabama
AL C	6 Univ. of Ala. at Birmingham
AL D	6 Univ. of Ala. in Huntsville
AL E	6 Univ. of South Alabama
AK A	14 Univ. of Alaska Fairbanks
AZ A	13 Univ. of Arizona
AZ B	13 Arizona State Univ.
AZ C	13 Northern Arizona Univ.
AR A	9 Univ. of Arkansas
CA A	15 Univ. of California, Berkeley
CA B	16 California Inst. of Technology
CA C	15 Stanford Univ.
CA D	16 Univ. of Southern California
CA E	16 Univ. of California, Los Angeles
CA F	15 Santa Clara Univ.
CA G	15 San Jose State Univ.
CA H	16 California State Univ., Long Beach
CA I	16 California State Univ., Northridge
CA J	16 California State Univ., Los Angeles
CA K	16 California State Univ., Northridge
CA L	15 Univ. of California, Davis

the Bent^{of}



Spring 2015
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*f*ounded at Lehigh University, South Bethlehem, Pennsylvania, June 15, 1885, by Edward H. Williams Jr., A.B., A.C., E.M., Sc.D., LL.D. (1849-1933). Key and name registered in U.S. Patent Office. Member, American Society for Engineering Education and (co-founder) Association of College Honor Societies. Affiliate, American Association for the Advancement of Science.

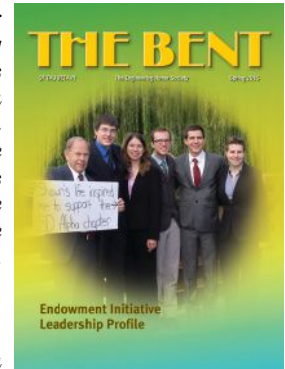
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by Alan S. Brown

ON THE COVER:
Former President Larry Simonson with members of the South Dakota Alpha Chapter during the 2014 Convention. This issue of *The Bent* announces a fundraising initiative to endow the collegiate chapters.



Cover artist: Dali Polivka

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Tau Beta Pi:
THE BENT



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The Tau Beta Pi Association was founded at Lehigh University in 1885 by Edward Higginson Williams Jr. to mark in a fitting manner those who have conferred honor upon their Alma Mater by distinguished scholarship and exemplary character as students in engineering, or by their attainments as alumni in the field of engineering, and to foster a spirit of liberal culture in engineering colleges.
—Preamble to the Constitution

Philanthropy in Action

PHI-LAN-THRO-PY NOUN \fə-lan'(t)-thrə-pēv the practice of giving money and time to help make life better for other people— from Merriam Webster's online Dictionary.

With this definition of philanthropy in mind, I offer another version that I've heard. Philanthropy is the unselfish giving of Time, Talent, and Treasure for the love and betterment of others. When I see the charitable giving and volunteerism shown by our fellow members of Tau Beta Pi, I see philanthropy in action.

This issue's cover photo and related articles on major gift giving feature several members who have gone way above and beyond the norm in their philanthropy. But, I want to make the case that with the Time, Talent, and Treasure possessed by our large and growing membership, we have so much more potential for philanthropy as an organization.

Time and Talent

It goes without saying that as The Engineering Honor Society we are loaded with talented members. As an organization, however, I'm not convinced that we have even scratched the surface in utilizing the many Talents of our members. While we have opportunities for members to volunteer as chapter advisors, District Directors, Engineering Futures facilitators, and to serve on various committees, I would argue that most of our members don't volunteer because they feel they either don't have the Time or don't have a role in which they can use their Talents.

Tricia Gomulinski has done a fantastic job as the Director of Alumni Affairs in recharging the alumni chapters. We now have 40 active alumni chapters across the United States, making the opportunity for you to participate as a Tau Beta Pi alumnus easier than ever. But we still look for help from you as members to determine how to best use your Talents and what your role can be. Do you want to provide mentorship to local K-12 students, college students, or recent graduates? Do you want to speak to student chapters? Do you want to establish named scholarships or fellowships for a favorite faculty member or loved family members? Do you want to have forums for discussing career or technical issues? Or do you just want a place to go where you feel comfortable and understood among fellow engineers and Tau Bates? Unfortunately, the Executive Council doesn't have all of the answers so we are asking for your help in identifying and developing these areas for our large and growing membership.

We understand that your availability to participate and volunteer, the Time part, can vary throughout your lives due to family, work, and other obligations. However, we feel that most of our members, at a fundamental level, want to find a way to support engineering, which has undoubtedly provided a wealth of opportunities for all of our members, even if they can't give the Time now.

Treasure

Treasure is a way to give back now. You can join the over 10,000 members who contribute annually to Tau Beta



Pi through the Alumni Giving Program. Your gift supports fellowships and scholarships, the annual Convention, the District, Engineering Futures, and MindSET programs, and, of course, our staffing costs. We were also proud to provide 242 \$1,000 or \$2,000 undergraduate scholarships and 25 \$10,000 graduate Fellowships last year. Surely, this is philanthropy in action. If you have not been an annual giver,

please consider contributing this year. If you are already an annual giver, thank you for your generosity and continued support.

Critical to Finances

While the annual Alumni Giving Program is critical to the finances of Tau Beta Pi, Sherry Jennings-King, our Major Gifts Officer, has been on the road visiting with many of our alumni across the U.S. sharing with them a new fundraising effort, The Chapter Endowment Initiative. Twenty-nine alumni have already come forward in support of either their initiating chapter, a different specific chapter, or any chapter needing support. Learn more about this opportunity on page 12.

We are proud to be members of Tau Beta Pi, and we hope that everyone cherishes their recollections of their time and activities with the Association. Help us provide the same opportunities that you enjoyed, and maybe even more, to our future members by sharing your Time, Talent, and Treasure and putting your own philanthropy in action.

—Norman Pih,
Tennessee Alpha '82, Vice President

"THE BEST PEOPLE" ENGINEERING JOB BOARD

Through a partnership with JobTarget, Tau Beta Pi is proud to offer a job board for students and alumni. Members can post resumes, browse over 4,500 engineering jobs, faculty positions, and internships, and employers may browse resumes.

New opportunities are posted on our home page daily and a full list of openings are available by visiting www.tbp.org/memb/jobBoard.cfm.



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TELL US THE TALE...WIN A T-SHIRT



SEND US YOUR clever caption(s) for this photo from *The Bent* archives, and if it is judged one of the best, you will win a TBI t-shirt.

The picture above, published in the Summer 1974 issue of *The Bent*, was made when guests stayed to dance following the Michigan Regional Banquet held on April 5 of that year. It was attended by members, faculty, and guests of Michigan Alpha, Michigan Gamma, Michigan Zeta, and the Flint Alumni Chapter.

Email entries to pat@tbp.org, or mail them to HQ by May 4, 2015.

The photo for the Winter Caption Contest, to the right, showed Association Officials wearing sombreros and serapes during activities around the installation of

the Texas Theta Chapter at the University of Texas, El Paso, in March of 1969.

The following caption was clearly the winner among a small field of six entries: "Wear a suit and tie, you said. We'll fit right in, you said. Now who looks silly?..." Congratulations to the author, John P. Crownover, P.E., *NJ B '85*. Your t-shirt is in the mail!

The judges chose two entries deserving of honorable mention.

From Lillian J. Quintero, *OH A '87*, we have "Who hired the entertainers for this year's Convention? They don't look anything like 'The Three Amigos' and 'The Men In Black!'"

Yi-Hsien Doo, P.E., *MI Z '81*, a frequent participant and past winner, sent this: "Tau Beta Pi's entry for New York Fashion Week."

Thanks to all of our participants—past, present, and future—for

providing proof that engineers do indeed have a sense of humor!





EDITORIAL

Endowing our Future

Sixty years ago our initiation fee was \$20 per new member. While that seems small today, adjusted for inflation, it is a whopping \$177! It has been raised over the years to its current level of \$45 which provides a membership certificate, key, four-year subscription to *The Bent*, support for the annual Convention, and new member orientation materials—the same items covered in 1955. Around \$8.50 of each new member's fee remains to finance the activities of the Association. The initiation fee covered 80 percent of our expenses in 1955; now it covers just over 10 percent.

The Alumni Giving Program started in 1963 and has allowed us to shift the responsibility of running TBPi from the students to the alumni, and it will continue to be our number one funding priority. The support of our alumni ensures that we can keep the Association initiation fee low and allows the chapters to keep a majority of the fee they charge to fund their own activities and projects. At the same time, we realize that there are areas we would like to expand (increasing the number and amount of our fellowships, for example) but do not have the resources to tackle.

With that in mind, we are launching the Chapter Endowment Initiative to provide permanent financing for some of the activities that directly benefit our student members and the collegiate chapters. This initiative will fund the same programs as the Alumni Giving Program, but the goal of the Chapter Endowment Initiative is to provide a permanent, rather than annual, revenue stream for the Association. You can read more about this effort in our feature article on pages 12-20. I have included information about the Association programs that will benefit from this initiative.

Convention

Our Convention is one of the most popular and beneficial activities that our students participate in each year. Tau Beta Pi pays for one student from each collegiate chapter to attend the three-day meeting which provides students the opportunity to meet their peers from around the country, conduct the business of the Association (it is, in essence, the annual shareholders meeting), receive professional development training, and learn how to lead their chapters. The Convention is funded through \$10 from each new member's initiation fee, corporate sponsorships, a portion of the TBPi endowment, and the Alumni Giving Program. The Chapter Endowment Initiative will provide funding so we no longer need to

use annual giving for Convention. We can then consider lowering the initiation fee or using it to fund other activities that benefit our students.

District Program

The District Program was created nearly 40 years ago to provide in-person contact by Association Officials to chapter members. With 242 chapters, it is impractical for our 5-member Executive Council and our small Headquarters staff to personally work with and visit each chapter. Our 45 volunteer District Directors fill that gap by visiting chapters annually, providing local problem solving and advice, and conducting leadership training at District Conferences each winter and spring.



These day-long regional conferences provide training and practical tools for our student officers to effectively lead and operate their collegiate chapters. This program is the envy of our colleagues in the Association of College Honor Societies as it provides additional structure and continuity on top of what is provided by our volunteer chapter advisors. Unlike some of our peer honor societies, we can proudly say that we have not lost a collegiate chapter due to lack of interest or inactivity.

Engineering Futures

For over 25 years, Engineering Futures has provided training in the “soft skills,” the non-technical skills necessary for success in the workplace but rarely included in engineering curricula. Modules address areas such as communicating and resolving interpersonal problems, working in teams, planning and managing effective meetings, solving problems in a team environment, and the latest addition, public speaking and formal presentation preparation. Last year our 42 volunteer facilitators led 233 sessions around the United States and in Qatar. Sessions are provided at no cost to our chapters, as TBPi covers the expenses to bring a facilitator to campus.

MindSET

MindSET is the Association's program to address the need to encourage more students to pursue education in the STEM disciplines. Dozens of our chapters are

actively engaged in providing hands-on activities in school districts across the country. A sample of current activities can be found on page 21, and a project by New Jersey Alpha at Stevens Institute was recently featured in *The Bulletin*, www.tbp.org/pubs/recentIssues.cfm. Tau Beta Pi provides grants up to \$1,000 per semester per chapter for groups interested in conducting MindSET activities. However, we cannot realistically fund every chapter at \$1,000 per year or grow the program to that level without additional resources.

Project Grants

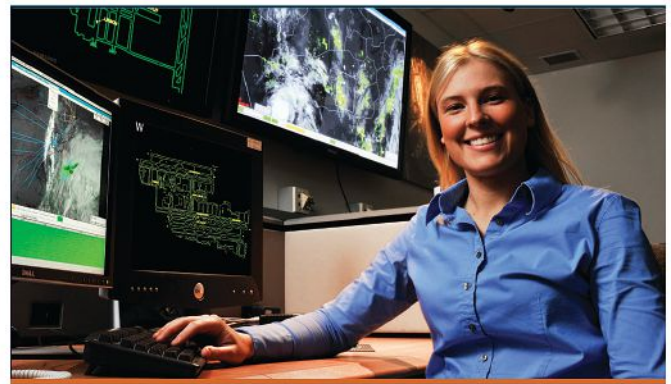
A concern we frequently hear from our student officers is the challenge in obtaining funding for a project that the chapter would like to undertake at the local level. These range from recognizing outstanding freshmen or sophomores with a scholarship to financing a community service project or sponsoring an activity within their college. We plan to address this concern through the Chapter Endowment Initiative by providing grants of up to \$1,000 per endowed chapter per year for projects the chapter is interested in undertaking.

Headquarters

The final component in the success of the Chapter Endowment Initiative is ensuring that the Association has the staff necessary to make the aforementioned programs available to our students. A maximum of 20 percent will be used to provide the staffing for these programs; it will not be used for fundraising activities, publication of *The Bent*, or other overhead costs. We have a dedicated group in Knoxville who work to help student officers in their efforts as chapter leaders, match interested chapters to available Engineering Futures Facilitators, assist delegates in making travel arrangements to and experiencing Convention, and work with chapters to conduct successful MindSET sessions. The Headquarters staff is critical in making these programs a reality.

I hope this provides some insight into the programs already funded through our Alumni Giving Program that we hope to fund in perpetuity through the Chapter Endowment Initiative. I know not everyone can consider the minimum \$5,000 gift for this initiative, but all gifts for our Alumni Giving Program help us to “mark in a fitting manner” and ensure we are more than just an honor society. Thank you for your support!

Until Later,



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WHO'S WHO

Rhodes Scholars

Rebecca A. Esselstein, *Colorado Zeta '15*, is a senior at the United



States Air Force Academy majoring in astronautical engineering, where she ranks 1st both academically and militarily. Her plans include a D.Phil.

in astrophysics at Oxford and to become an astronaut.

Anisha Gururaj, *Massachusetts Beta '15*, is a chemical and biological



engineering major at MIT where she is a senior and minoring in energy studies. She plans to pursue a M.Sc. in biomedical engineering and a master's of

public policy at Oxford with career aspirations in developing affordable biomedical devices.

Patrick G. Awuah Jr., *Pennsylvania Kappa '89*, is the founder



and president of Ashesi University in Berekuso, Ghana. The Ghanaian received bachelor degrees in engineering and economics from Swarthmore, and

an M.B.A. from UC Berkeley, before quitting his job as a program manager at Microsoft in 2002 to start the university, which presently has more than 600 students.

Russell D. Dupuis, Ph.D., *Illinois Alpha '70*, top, and **Nick Holonyak Jr.**, Ph.D., *Illinois Alpha '50*, are two of the five recipients of the 2015 Charles Stark Draper Prize for Engineering. The NAE said the



five were honored "for the invention, development, and commercialization of materials and processes for light-emitting diodes (LEDs)." The \$500,000 annual award is given to engineers whose accomplishments have significantly benefited society. Dupuis teaches at Georgia Tech and Holonyak



retired in 2013 after 50 years at the University of Illinois at Urbana-Champaign.

James D. Plummer, Ph.D., *California Epsilon '66*, has been awarded



the IEEE Founders Medal for 2015 "for leadership in the creation and support of innovative, interdisciplinary, and globally focused education and research

programs." Plummer is a member of the Stanford University electrical engineering faculty and former dean of the school of engineering

Alton D. Romig Jr., Ph.D., *Pennsylvania Alpha '75*, has been named as



the new executive officer of the National Academy of Engineering. He will be the chief operating officer of the NAE, reporting to the president. Romig was

previously a vice president at Lockheed Martin Aeronautics, where he set the strategic direction for new business and led management of the

renowned Skunk Works®. He earlier spent more than 30 years with Sandia National Laboratories.

Gwynne E. Shotwell, *Illinois*

Gamma '86, is president and COO



of SpaceX (Space Explorations Technologies Corp.). She joined SpaceX in 2002 and now manages the daily operations of a \$5 billion company with

3,000 people on its payroll, all working towards facilitating life on other planets. Shotwell was listed as the 90th most powerful woman in the world in 2014 by *Forbes*.

Sheri D. Sheppard, Ph.D., *Wisconsin Alpha '78*, was chosen as the



outstanding doctoral and research universities professor of the year by the Council for Advancement and Support of Education. She is professor of mechanical

engineering at Stanford University, and has worked to change the way in which students encounter engineering during their first course.

Michael B. Silevitch, Ph.D., *Massachusetts Epsilon '65*, has been



awarded the 2015 Bernard M. Gordon Prize, with Simon Pitts, for innovation in engineering and technology education. The two teach at

Northeastern University and the NAE said they were honored for developing a program to give graduate engineers the skills to be effective leaders.

National Academy of Engineering

The National Academy of Engineering has elected 67 new members and 12 foreign associates, announced NAE President C.D. (Dan) Mote Jr., CA A '59, in early February. Election to the academy is among the highest professional distinctions accorded to an engineer. It honors those who have made outstanding contributions to "engineering research, practice, or education, including, where appropriate, significant contributions to the engineering literature," and to the "pioneering of new and developing fields of technology, making major advancements in traditional fields of engineering, or developing/implementing innovative approaches to engineering education." New Tau Beta Pi/NAE members are listed below.

Harry A. Atwater Jr., Ph.D., MA B '81, Howard Hughes Professor of Applied Physics and Materials Science, California Institute of Technology, Pasadena. For contributions to plasmonics.

Sangeeta N. Bhatia, M.D., Ph.D., RI A '90, investigator, Howard Hughes Medical Institute; John J. and Dorothy Wilson Professor of Health Sciences and Technology and Electrical Engineering and Computer Science, Massachusetts Institute of Technology; and director, Laboratory for Multiscale Regenerative Technologies, Cambridge, MA. For tissue engineering and tissue regeneration technologies, stem cell differentiation, and preclinical drug evaluation.

Kevin G. Bowcutt, Ph.D., MD B '82, senior technical fellow and chief scientist of hypersonic design and applications, Boeing Co., Huntington Beach, CA. For development and demonstration of air-breathing hypersonic vehicles and the implementation of design optimization methods.

Wesley G. Bush, MA B '83, chairman, chief executive officer, and president, Northrop Grumman Corp., Falls Church, VA. For engineering leadership in national security.

Jonathan P. Caulkins, Ph.D., MO I '87, H. Guyford Stever Professorship of Operations Research and Public Policy, Carnegie Mellon University, Pittsburgh. For contributions to the analysis, modeling, and

engineering of drug policy in the United States and abroad.

Anantha P. Chandrakasan, Ph.D., CA A '89, Joseph F. and Nancy P. Keithley Professor of Electrical Engineering and head, department of electrical engineering and computer science, Massachusetts Institute of Technology, Cambridge. For development of low-power circuit and system design methods.

Ronald O. Hamburger, NY Z '74, senior principal, Simpson Gumpertz & Heger Inc., San Francisco. For advances in seismic design principles and practices for buildings through research and development of codes and guidelines.

Thomas M. Jahns, Ph.D., MA B '74, Grainger Professor of Power Electronics and Electrical Machines, and professor of electrical and computer engineering, University of Wisconsin, Madison. For advancement of permanent magnet machines and drives for transportation and industrial applications.

Brian A. McClendon, KS A '86, vice president of engineering, Google Inc., Mountain View, CA. For strategic, technical, and managerial leadership resulting in widespread accurate and useful geographic information.

Dana A. Powers, Ph.D., CA B '70, senior scientist, nuclear energy and fuel cycle programs, Sandia National Laboratories, Albuquerque, NM. For contributions to commercial nuclear power plant

safety worldwide and to radioactive source-term processes.

Clayton J. Radke, Ph.D., WA A '66, professor of chemical engineering, University of California, Berkeley. For understanding of mixed-wettability and foam-enhanced oil recovery through thin film and pore-scale models.

L. Rafael Reif, Ph.D., MA B '73, president, Massachusetts Institute of Technology, Cambridge. For technical and educational contributions and for university leadership.

Virginia M. Rometty, IL I '79, chairman, president, and chief executive officer, IBM Corp., Armonk, NY. For strategic applications of systems engineering and leadership in development of services science and its application to business processes.

Virginia C. Sulzberger, NJ I '62, retired director of engineering, North American Electric Reliability Corp., Livingston, NJ. For leadership and development of electric power system reliability standards.

Norman J. Wagner, Ph.D., PA I '84, Robert L. Pigford Chair of Chemical Engineering and joint professor, department of physics and astronomy, University of Delaware, Newark. For understanding flow-induced microstructural transitions in complex liquids and invention of ballistic-resistant fabrics by strain-hardening suspensions.



LETTERS

Pipelines Issues

• Thank you for illuminating the technical challenges underlying oil pipelines, an important political issue. I want to suggest that a brief comment in the article [Winter 2015] may hold the key to improving pipeline reliability.

Ms. Bell blames underinvestment in maintenance and leak detection on “cost accounting practices that rely on only 1 to 5 years for ROI” even though pipelines operate for decades. This is quite plausible, but bears the question of “why?” We learn that spill cleanup is funded by the proceeds of an excise tax. This system effectively frees pipeline operators from individual responsibility, and leaves taxpayers with the bill in the possible but unlikely event of a catastrophic failure that exhausts accumulated funds.

The logical way to limit taxpayer responsibility and reduce the likelihood of spills is to require pipeline operators to carry private insurance, just like motorists do. Insurance companies specialize in assessing risk and rewarding caution among their clients, and respond more quickly to changing technological realities than do government regulators.

I also want to point out a factual error. The 20,000-barrel spill near Marshall, MI, in 2010 is not the largest onshore spill in U.S. history. That dubious honor goes to the Lakeview Gusher, a California well that blew out in 1910, releasing 9.4 million barrels, almost equivalent to one Marshall spill each of the 544 days that it gushed. Blowouts are less common today but, as Deepwater Horizon showed us, still possible. The private-insurance requirement could easily be extended to drillers as well.

Ilya V. Gurin, CA A '07

[Trudy E. Bell writes: Commercial insurance exists for all oil and gas operations. But no federal or state requirement exists for insuring

pipelines. Oil sands crudes—carried by Enbridge 6B and to be carried by Keystone XL—are even exempted from the eight-cents-per barrel excise tax to the Oil Spill Liability Trust Fund. We should learn from history (including 1910). Pursue your solution.]

• I must thank *The Bent* for publishing the research articles by Trudy Bell. In this instance, I specifically am referring to the “Pipeline Safety...” in the Winter 2015 issue. This is a fine example of technical skill at the service of educating the public. Also, the implied headlong plunge, oblivious of climate change, into the greater depths of fossil fuel consumption strains commonly accepted rules of logic.

James L. Manganaro, MA B '61

Arms and the Engineer

• While Mr. Wolf [*Letters, Winter 2015*] is certainly entitled to his opinion concerning the Second Amendment, I believe that he has drawn the wrong conclusion for all the wrong reasons.

First, one needs to use the proper definition for the term “militia,” which means using one from the 1700s not today’s liberal definition. In fact, the Militia Act of 1792 specifies that every male citizen between 18 and 45 is a member of the militia and is to provide his own firearm. Many of our early leaders—Thomas Jefferson, Thomas Paine, Patrick Henry, James Madison, George Washington, and John Adams all either wrote letters or articles supporting an individual’s right to own “arms.” History is simply not on Mr. Wolf’s side.

Second, why does every pro-gun control person always quote the first half of the Second Amendment and totally ignore the second half—the part that says: “...the right of the people to keep and bear arms, shall not be infringed.” That phrase seems pretty clear to me. The Supreme Court ruling was that the prefatory

clause (the first half) announces a purpose and that the operative clause (the second half) connotes an individual right. It is truly sad that the vote was 5-4 instead of 9-0.

Mr. Wolf also seems to misunderstand gun regulations. In almost all of the recent tragedies, the proper background checks were made prior to sale (i.e. all sales were legal)—just like store clerks checking the age of the buyer before selling alcohol and tobacco. He seems to want more regulation—but what? Folks like Mr. Wolf never can give a response when you ask what additional regulations do you want? We used to have medical privacy rights, but that is no longer true after one shooting tragedy—sometimes things can be reported to the “authorities” to be used against you if you want to buy a gun.

Is that what you want, Mr. Wolf, to give up more and more of your privacy rights to get a little “safety?”

Thomas F. Parrish Jr., TN B '75

• The letter printed under the heading “Arms and the Engineer” in the Winter 2015 issue contained inaccurate and dishonest statements.

Clearly the author’s goal of promoting increased regulation is gun confiscation. Honest analysis would include evaluation of empirical evidence. Mexico (except for .22 cal and less) and France are basically gun-free zones. Nearly every male head of household in Switzerland has a weapon. Off-duty soldiers in Israel are allowed to open-carry. Are citizens safer from violent crime and terrorist attacks in Mexico and France or in Switzerland and Israel? To remove possible cultural bias, similar comparisons can be made between U.S. cities.

The author of the aforementioned letter declared he knew the meaning of the Second Amendment and the Supreme Court does not, and set up the false argument that those who disagree with him believe that ev-

ery citizen has the right to weapons “regardless of mental stability.” He stated another falsehood that the NRA contends that every person is ensured the right to “possess every modern weapon under the sun.”

The most important falsehood is his denial that the founders understood that the right which shall not be infringed belongs to “the people, “not to the National Guard (read George Mason).

That author characterized people who disagree with the government as those who reflexively would start shooting. People who understand the Second Amendment are the strongest supporters of the Constitutional basis for ordering our society. Those who have contempt for the Constitution and take liberties with its intent are the greatest threat to a free society. After observing the historical parade of narcissistic figures it is not hard to imagine that a person would rise to power who thought our Constitution was flawed, who thought he could rule by executive decree, who wanted to fundamentally transform the unique traits that make us American, who cared nothing about integrity of the voting process, who wanted to defeat capitalism, and who viewed the media and federal agencies as his personal tools to eliminate opposition and armed those agencies to accomplish it. Now imagine one more thing: citizens had no power to resist.

More people were killed by their own governments than by wars in the 20th century according to R.J. Rummel (search: democide), usually following confiscation of people’s means of self-defense. Constitutions limit the reach of government, but do not guarantee that citizens’ rights will be protected. Even a constitutional republic will slip into a dark age under such corruption were it not for gun ownership by moral, educated, law-abiding citizens.

When leaders no longer adhere to the meaning and process of the Constitution, the only guarantor of liberty remaining is the fear that those despots will be defeated by force who apply force against the citizens. In spite of such evidence, common

sense, and—so far—legal decisions, the author advocated that all law-abiding citizens should be disarmed because it would “represent a commitment to try to diminish gun violence” although no proof exists that regulations would prevent an insane person or criminal from killing, and that his logic is “pointless to debate.”

I disagree with that letter not only because of the author’s political world view, but more because of the lack of integrity. The Code of Ethics requires engineers to make only public statements that are objective and truthful. However, that author exposed for all to see the agenda, technique of arguing, and character of those who try to destroy our constitutional republic and freedom itself.

David P. Simpson, WA A ’76

• I disagree with Mr. Bloomberg’s anti-gun actions because of his misuse of data in attacking guns. As a director in Bell Telephone Labs and then senior vice president in CBIS (an international corporation), I frequently used statistics in my work. My problem with Mr. Bloomberg’s position are:

- › Over 4,000 deaths by guns are highlighted when many were legal actions by police or citizens. Until challenged, the Boston marathon bomber’s death was included as a ‘victim.’
- › The ‘Mayors Against Illegal Guns’ group fell apart because many mayors abandoned it due to its errors.
- › His ‘Every town’ group incorrectly says there have been around 100 school shootings since Sandy Hook when government figures show around 10. Proposed gun controls would not have stopped them.

Since numerous valid peer reviewed studies show that private gun ownership prevents crime, gun control advocates can only misuse statistics or use fearful, unsubstantiated ‘what ifs’ to make their case and ignore:

- › A 2013 CDC report that states “privately owned guns prevent many crimes.” The report was

squelched by gun control politicians.

- › PoliceOne’s (national organization of police) 2013 survey with 15,564 respondents indicated:
 - ›› 86% believe school killings would be prevented or reduced by armed citizens.
 - ›› 76% believe armed citizens are very important in reducing violent crime.
 - ›› 91% disagree that bans on assault weapons would reduce violent crime.
- › Studies by John Lott (of ‘More Guns, Less Crime’) and nine other scholars and preeminent criminologists agree that right-to-carry-laws significantly reduce violent crime:
 - ›› Police arrive too late to stop carnage but armed citizens are often there to do so.
 - ›› Private guns prevent more than 2.5 million crimes per year and save more than \$2.5 billion per year in injury and property loss.
- › The website www.nraaila.org/gun-laws/armed-citizen.aspx regularly lists privately armed citizens preventing violent crimes.

Gun free schools and other buildings actually attract terrorists and people with mental problems to safe soft targets:

- › The Aurora killer bypassed many theatres that didn’t ban guns to choose his soft target.
- › Private guns stopped the killers in both the Texas Tech and WV college shootings.
- › 74% of convicts indicated they avoid homes with potentially armed occupants. Gangs attacking cars from Miami’s airport in 1993 chose airport rentals because they feared armed local drivers.
- › After school shootings, both Israel and Thailand encouraged teachers to carry guns; as a result neither country has had gun killings in schools.
- › Recently the *Washington Post*

(Continued on page 44)



ASSOCIATION BRIEFS

ALUMNI CHAPTERS AND MEETINGS

New York City Alumni Chapter President Jennifer Lui moderated a panel where TBP and SWE alumni shared their academic and career experiences with TBP students from Columbia, NY Polytech, and City College on Dec. 3, 2014 (below). The panelists shared their candid thoughts on working in a small or big firm (this got very heated), how to land a job, how they deviated from their original course, and the importance of staying active in groups like TBP and SWE.

The alumni had happy hours at Bierhaus NYC on Dec. 11, 2014, where they enjoyed German food and a live band (right).

To join the New York City Alumni Chapter, email tbpnycalumni@gmail.com.



Tampa Bay Alumni Chapter's new officers were visited by Executive Director Curtis D. Gomulinski and Executive Councillor Alan J. Passman in November. Around the table clockwise from the front left are Vice President Jason Abellada, Executive Director Gomulinski, Executive Councillor Passman, President Andrew Lloyd, Secretary Bill Collins, and Treasurer Michael Lindemuth. If you live in the Tampa/St. Petersburg, FL, area, contact Bill Collins to join the chapter at wcollins@tampabay.rr.com.



DISTRICT DIRECTORS NEEDED

Have you ever considered volunteering your time for Tau Beta Pi? We are looking for a number of District Directors in the areas of East Pennsylvania (Philadelphia), West/Central Virginia, Georgia (Atlanta) or South Carolina, Northeast Ohio (Cleveland/Akron), Northern Indiana or Illinois (Chicago), or Central Oklahoma.

District Directors are asked to visit their local chapters (typically 4-6 per director) once each academic year and attend and assist with the annual District Conference, the three-day annual Convention in the fall, and the Association Officials meeting in June. Directors serve as a resource for local chapters, collaborate with one to three other directors in the district, and assist in general administrative work.

Serving as a District Director is a challenging role

in the Association, but it is also a fun and educational avenue for giving back to the Association. While District Directors are unpaid Association volunteers, travel and other related expenses are reimbursed. If you are interested and live in any of the areas mentioned above, send an email to tbp@tbp.org; alumni not living in these areas are also encouraged to send an email in case a position becomes available in the future.

Speakers Wanted

Our collegiate chapters often look for speakers for their initiation banquets and meetings. If you are interested in speaking to our student members, email Director of Alumni Affairs Tricia Gomulinski at tricia@tbp.org.



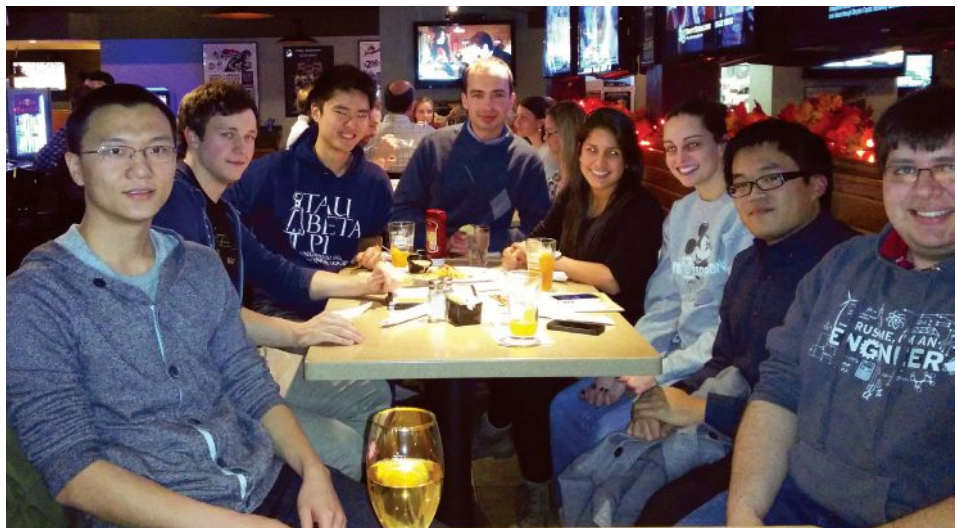
Portland Alumni Reactivate Chapter

Portland, OR, area alumni met on November 17 and reactivated the alumni chapter there. Pictured at the event are Matthew J. Walsh, *FL Z '14*; Jordan Toews, *OR Γ '14*; his wife Megan; and Julia C. Sheets, *OR Γ '14*. To join the Portland Alumni Chapter, email Jeffrey Drummond at jeffreyydrummond@gmail.com.

Rochester, NY, Out Bowling

The **Rochester, NY**, Alumni Chapter held a joint bowling social with New York Kappa and New York Pi members in November. They ended up not doing any bowling but had a great time nonetheless. Email Gavrail Tatarliev at gavrail.tatarliev@gmail.com to join the Rochester Alumni Chapter.

Join an Alumni Chapter
www.tbp.org/Alumni





THE TAU BETA PI CHAPTER ENDOWMENT INITIATIVE HAS BEEN LAUNCHED TO FUND THE ASSOCIATION ACTIVITIES THAT SUPPORT THE COLLEGIATE CHAPTERS. MAJOR GIFTS OFFICER SHERRY JENNINGS-KING, TENNESSEE ALPHA '93, EXPLAINS THIS NEW VENTURE AND HOW IT WILL WORK.

Chapter Endowment Initiative

Our roots

TAU BETA PI was founded at Lehigh University in 1885 “to mark in a fitting manner those who have conferred honor upon their Alma Mater by distinguished scholarship and exemplary character as undergraduates in engineering, or by their attainments as alumni in the field of engineering, and to foster a spirit of liberal culture in engineering colleges.” – Preamble to the Constitution.

While we have served our mission well, honoring those students and industry professionals who have achieved this status, the Association has also worked tirelessly to get new students into engineering, provide financial support to those completing undergraduate degrees, and encourage study at master’s and doctorate levels. While not mandated in our governing documents, our leaders envisioned a higher purpose in our work and have approved programs over the years to meet the needs and changing environment of the engineering profession.

Moving forward

All of us at Tau Beta Pi are proud that our members are among the most recognized and successful leaders in the engineering and business communities. Our alumni are the founders, innovators, and senior executives of a multitude of enterprises and the accomplishments of members such as Andy Grove, Jeff Bezos, Jack Kilby, David Packard, Buzz Aldrin, and many others inspire us all.

Tau Beta Pi seeks to ensure that the next generation of engineering leaders also have the opportunity to benefit from their membership in Tau Beta Pi—to enjoy the learning, camaraderie, service, and recognition that serves as the springboard to their future success. We are asking our alumni to participate in securing that opportunity for the outstanding engineers of the next decades through a unique connection between our alumni and our chapters.

Tau Beta Pi has recently created a new program, the Chapter Endowment Initiative, by which alumni, companies, and foundations can permanently endow the Association’s activities that support any of our 242 student chapters.

Why we need your help

Tau Beta Pi has always been a lean operation and we

currently have only 12 staff members whose efforts are supplemented by over 100 dedicated volunteer Association Officials. On the local level, over 2,000 students and alumni offer their time to provide leadership to the collegiate chapters.

As we look toward the next decade, we want to continue to offer the same benefits we do now and also bring on value-added programs for our members in the future. To do this, Tau Beta Pi will need additional resources. That is the purpose of the Chapter Endowment Initiative.

While our current financial situation is stable and the total amount of alumni giving is up, we are noticing that our older, more consistent donors are passing on and the students taking their place today are unable to give as generously as they are saddled with considerable debt burdens resulting from the cost of their education. The resulting trend is a fewer number of gifts but, fortunately, larger average gifts. While things are going well because we’re bringing in more money each year, a trend of decreasing number of gifts is not sustainable over the long run.

Our preference is not to pass on costs to the students as many universities have made a standard practice of tuition hikes. Tau Beta Pi feels that our students should continue to pay an initiation fee so that they value their association with us, but to increase it significantly would be prohibitive to many students. We strive to recognize achievement of all students, not just those with financial resources.

Based on input from our alumni and students, and in an effort to better serve them, we have been adding programs for the last forty years (District, Engineering Futures, MindSET) with no permanent source of revenue for these programs. Annual alumni giving has provided the bulk of support, but no major campaign to provide lasting support was conducted. Our plan is to increase our endowment so we can continue to provide the professional development experiences and leadership training for the future engineering leaders of our society as well as give out more scholarships.

At this point in time, 29 Tau Bates have stepped forward to be the first members of the Association to help us take the steps to increase our endowment through support for specific chapters. We hope you will consider

joining them in this effort as we seek to raise \$25 million over the next 10 years.

Frequently Asked Questions (FAQs)

Which chapters can I endow?

Any of our 242 chapters can be endowed. You can support your initiating chapter or another one. In some cases, alumni have voiced a preference for making a gift but allowing their gift for this effort to support “any” chapter. We have decided to establish a designation specifically for this purpose.

What is the amount needed to endow a chapter?

\$100,000 is the minimum amount needed.

What is the minimum gift acceptable for this initiative?

The minimum gift for this initiative is \$5,000 payable in one lump sum.

Why is the minimum gift \$5,000?

Gifts toward endowments are often a bit larger than gifts for an annual fund. If we begin to accept gifts toward this initiative in lower amounts, we would incur additional overhead in maintaining the accounting for the endowment. Gifts of less than \$5,000 still support our chapters, but through our annual Alumni Giving Program.

How will the money be spent?

The \$100,000 for a chapter will be put into TBPI’s endowment. Our current annual payout is 5 percent of the 48-month rolling average of the value of the endowment. It is our hope that within a few years, the fund will pay out approximately \$5,000 a year. As detailed in Curt’s editorial (pages 4-5), this will provide permanent funding for students of the endowed chapter to attend the annual TBPI Convention, receive officer leadership training through the District Program, obtain professional development through Engineering Futures, participate and facilitate MindSET activities, support Headquarters operations, and conduct chapter-directed activities on the college campus and in the local community.

Can pledges be accepted? Over how many years? Can I back-end load or front-end load a pledge?

Yes, pledges are being accepted; the minimum gift/pledge is \$5,000. Larger gifts may be accepted over a period of 3-5 years.

We will work with you to determine how a pledge may be set up to best suit your situation. For example, a gift of \$25,000 could be made over five years at \$5,000/year. We can also “back-end” or “front-load” pledges.

Are naming opportunities available?

Yes, there are two distinct ways to create naming opportunities:

1. An individual, company, or foundation will be recognized with a minimum gift of \$100,000.
2. A trusted advisor, former professor, or friend, etc., can be recognized, honored, or memorialized if a group of individuals pool their funding to reach a total of \$100,000 within a one-year timeframe.

What if a chapter receives more than \$100,000?

That is something we would like to happen! Our goal is to endow each chapter with a minimum of \$100,000.

What if we raise no funds or only a small amount for a chapter? Is the chapter’s status in danger?

No, the chapter’s status is not in danger. For now, we have enough funding to cover all the chapters. What we are concerned about is making sure that we continue to have enough funds to support them all.

Who manages Tau Beta Pi’s endowment?

The Trust Advisory Committee (TAC), created by the 1964 Convention, is charged with instructing Tau Beta Pi’s corporate trustee on the purchase and sale of assets. Members include: Rodger F. Smith, *WI A ’64*, managing director for investment management at Greenwich Associates; James W. Johnson, Jr., *NC A ’77*, engineering advisor, Nuclear Fuel Services, Inc., and Harry W. Lange, *MI Z ’75*, former Fidelity Magellan Fund manager.

Is my gift tax-deductible?

As a non-profit organization, Tau Beta Pi is exempt from federal income taxes under Section 501(c)(3) of the Internal Revenue Code. Therefore, your gift is tax-deductible to the full extent provided by the law.

OK, I’m interested. How do I make a gift?

We would be happy to speak with you about your specific situation. There are a number of ways to support this initiative. Checks can be made out to “Tau Beta Pi—The Engineering Honor Society” and sent to Tau Beta Pi, Attention: Curtis Gomulinski, Secretary-Treasurer, P.O. Box 2697, Knoxville, TN 37901-2697. In the memo line of the check, please write the name of the chapter or the name of the college/university so we know where to credit your gift. Or, if your gift is for “any” chapter, then please indicate this as well. Other options include gifts of highly appreciated stock held for over one year as well as including Tau Beta Pi in your estate plans.

*Will my name and gift be published in *The Bent* and be included on the website www.tbp.org?*

Yes, we intend to provide an update at least once each year in *The Bent* listing the name of the donor, chapter supported or “any” chapter as the case may be, and the amount of the gift.

Can I make this gift and remain anonymous?

Yes, you can retain your confidentiality within this initiative; just let us know.

Will a gift to this initiative be reflected in my total giving to TBPI?

Yes.

Whom should I contact to make a gift or learn more?

Please direct all inquiries about this program to Sherry Jennings-King, Major Gifts Officer, by phone at (612) 226-2922 or by email to sherry.jenningsking@tbp.org.

Gifts and Pledges Received So Far

James A. Anderson, MI E '66

The James A. Anderson Endowment for the MI E Chapter at Wayne State University \$100,000

Jerry S. Rawls, TX B '67

The Jerry S. Rawls Endowment for the TX B Chapter at Texas Tech University \$100,000

Larry Simonson, Ph.D., P.E., SD A '69

The Shawn R. Schwaller Memorial Endowment for the SD A Chapter at South Dakota School of Mines and Technology \$100,000

VSP c/o **James M. McGrann, NY A '84**

The VSP Global Endowment for the CA Y Chapter at California State University, Sacramento \$100,000

R. Dudley White, VA A '76

The R. Dudley White Endowment for the VA A Chapter at University of Virginia \$100,000

Peter A. Wright, NY Δ '75

The Peter A. Wright Endowment for the NY Δ Chapter at Cornell University \$100,000

Jean and **Robert E. Spitzer, IL A '61** for TX N at University of Texas-Pan American \$25,000

Jack N. Tutterrow, TN A '63, for TN A at University of Tennessee, Knoxville \$25,000

Pam and **Edward J. D'Avignon, NY B '88**, for NY B at Syracuse University \$22,130

Merton L. Bartsch, MN A '53, for MN A at University of Minnesota, Twin Cities \$20,000

John D. Schiller Jr., TX Δ '81, for TX Δ at Texas A&M University \$20,000

Anonymous, GA A '61, for GA A at Georgia Institute of Technology \$20,000

Josephine A. Lucey, IN Γ '80, for IN Γ at University of Notre Dame \$15,000

Nicholas M. Donofrio, NY Γ '67, for NY Γ at Rensselaer Polytechnic Institute \$5,000 and for NY B at Syracuse University \$5,000

Rick L. Klingensmith, PA B '82, for PA B at Pennsylvania State University \$10,000

Paul M. Adamo, TX A '85, for NH B at Dartmouth College \$5,000

Justyna and **Gene S. Carlson, MT A '64**, for MT A at Montana State University \$5,000

Joseph A. Carpenter, Ph. D., VA B '63, for VA B at Virginia Polytechnic Inst. and State Univ. \$5,000

Ronald J. Drnevich, IN Γ '63, for IN Γ at University of Notre Dame \$5,000

Henry B. Horltdt, P.E., MI H '47, for MI H at Lawrence Technological University \$5,000

Sandi and **Kevin S. Kayse, P.E., CO B '78**, for CO B at University of Colorado, Boulder \$5,000

David E. Kepler II, CA A '75, for CA A at University of California, Berkeley \$5,000

Robert L. Mueller, Ph.D., P.E., KS B '67, for KS B at Wichita State University \$5,000

Donald K. Walter, PA Z '53, for PA Z at Drexel University \$5,000

Thomas W. Weber, Ph.D., NY N '53, for NY N at State University of New York at Buffalo \$5,000

Anonymous, PA Λ '90, for PA Λ at University of Pittsburgh \$5,000

ESTATE PLANNING/DEFERRED GIFTS:

Mary-Lou and **James S. Aagaard, Ph.D., IL Γ '53**, for any Chapter

Sherry D. Jennings-King, TN A '93, for any Chapter

Anonymous, WV B '71, for WV B at West Virginia University Institute of Technology

Note: The minimum gift being accepted for this initiative is \$5,000. All checks received that are designated for this initiative in an amount less than \$5,000 will be put into Tau Beta Pi's annual fund which supports the same programs as the Chapter Endowment Initiative.

James A. Anderson, *MI E '66*

Endowment for the Michigan Epsilon Chapter at Wayne State University

AS A BUSINESS OWNER as well as someone intimately involved in university fundraising and budget-balancing, Jim Anderson understands the importance of healthy endowments and laying the foundations for things to come. “Growth and taking on new projects is important, but you need to start with a solid base of operations if you want to reach your final destination. Tau Beta Pi provides outstanding support to engineering students. If we as a country want to develop leadership talent, we need to focus on the entrepreneurs and innovators of tomorrow.”

Jim is a lifelong resident of Michigan, born at the hospital in St. Clair, MI, while his family was living in nearby Algonac on the St. Clair River. He attended a two-room elementary school and notes, “I learned you don’t have to have outstanding facilities to get a good education.” Growing up on the river led to a passion for boats. Jim and his wife have logged over 60,000 nautical miles, visiting 128 ports on the Great Lakes and another dozen on the Atlantic coast.

He received career advice as a five-year-old when he asked his older brother why he chose engineering. Big brother replied, “When you become an engineer, you never have to worry about finding a job.” Jim notes, “I believed him and he was right.”

Before starting business

Jim attended Wayne State University completing his B.S.C.E. in 1966 and M.S.C.E. in 1970 and pursued a Ph.D. until starting his business in 1977. Initially, his graduate work focused on soil mechanics and foundation engineering but then shifted to environmental engineering, principally air and water pollution issues. He developed computer mapping technology to display concentrations of air and water pollutants once they entered the environment from points like sewer pipes or smokestacks.

In 1975 computer mapping was a new concept and Jim gave talks on it beyond Wayne State. An economics student who went on to work at General Motors in the Cadillac division heard his talk on computer mapping. A key piece to her job in the dealer network planning department was a dot map illustrating the location of luxury car buyers in large metro markets such as Chicago. These maps were labor-intensive as they were produced manually by sticking dots on a conventional road map. In the Chicago metro area there were 36,000 dots. The young lady who had heard his talk on computer mapping asked

her colleagues why they weren’t using a computer for this laborious task. The response was that they had tried and been told it couldn’t be done. She knew someone who could! This encounter and subsequent introduction to her bosses at GM led to the start of Jim’s business.

Today, he is president, CEO, and chairman of Urban Science, which applies problem-solving tools from engineering to data in the sales and marketing departments of, principally, automobile manufacturers. Their analytics help determine the number and location of dealers selling a particular brand vehicle and also assist individual dealers with optimizing sales and profits. Urban Science has approximately 800 employees in 18 offices servicing clients in 40 countries. Jim would go around the world to visit each office every year. “This worked until we got to around eight offices. After that, the time spent in airplanes, hotels, and taxi cabs became too great to make effective use of my time. I was rescued by technology!” Business has been good and last year closed with \$180 million in revenue.

Jim cites as an influence in building his business the book, *Built to Last*, by Jim Collins and Jerry Porras. “You do things differently if you’re building a company to last, as opposed to sell. You must be capable of adapting to market conditions as they evolve over time. You need to be able to take advantage of current technology but also respond to a changing world.”

Jim can see Wayne State University campus from his office in downtown Detroit. He visits campus regularly as chair for the college of engineering board of visitors. He is also a member of the university foundation and enjoys his interactions with students. “I tell kids today that when I started this business we didn’t have the internet, PCs, cell phones, color printers, or laser printers. After a while they all ask the same question, ‘What the heck did you have?’” Jim notes that over 39 years it’s incredible how much the technology has changed. “I tell them to work hard and you will achieve your goals. I have been working for money since I was 13 years old. My first job was as a paperboy, and then I cut grass. I worked at a hardware store for the first two years of college and then got into drafting.”

Jim is most proud that he has been able to build both his family and business. “Thirty-two years of successful marriage while growing my business from \$2 million to \$200 million in 2015 is a great accomplishment. It is possible in America to achieve whatever goals you want.”



Jerry S. Rawls, *TX B '67*

Endowment for the Texas Beta Chapter at Texas Tech University

AS THE ONLY ENGINEER in his family, Jerry Rawls looked outside of his home when considering career options. Like young people, he initially dreamt of becoming either a professional baseball or basketball player but decided to go into engineering because of a neighbor who worked for Shell Oil Company. “I remember liking what I saw of his lifestyle and thinking, ‘I might like to do that.’”

Jerry graduated from Bellaire High School in Houston and enjoyed his time there as a student athlete. “Hard work pays off, and I accomplished a fair amount in basketball. I learned that you don’t accomplish anything until you give the effort to develop a high level of skill.”

He entered the engineering program at Texas Tech University and set his goal to become a member of Tau Beta Pi. “I was very proud to be offered membership and always viewed Tau Bates as a group of smart people.” He earned his B.S.M.E. in 1967 and went on to earn a master’s in industrial administration from Purdue University in 1968.

After Purdue, he began a twenty-year career with Raychem Corporation, a rapidly growing materials science and engineering company in Menlo Park, CA. In 1977, he became a marketing manager, and during his last six years there, he was general manager of two successful divisions, including the interconnections systems division. This employed 500 people and was the company’s fastest growing and most profitable business unit.

Formed their own company

In 1988 Jerry and a partner formed their own fiber optics company, Finisar Corporation. They funded the company with their own money and no outside financing. The goal was to build cost effective gigabit optical transceivers providing the optical input and output for high-speed computer networks. In 1992 he and his partner revolutionized the fiber optic communication industry with a new approach that lowered the cost of gigabit optical links by a factor of 10. Originally viewed as technically impossible by conventional wisdom, Finisar’s proposal was unanimously adopted by the ANSI committee as the basis for today’s fibre channel standard and later by the IEEE as the gigabit ethernet standard.

In 1999, the company went public, and, in 2014, Finisar had revenues of \$1.2 billion, employing 14,000 people. It had facilities and operations in California as well as in Dallas, Philadelphia, Boston, Champaign-Urbana, Malaysia, Singapore, Shanghai, Shenzhen, Sydney, Tel Aviv,

Berlin, Sweden, Denmark, and Korea. Jerry’s current role is as Finisar’s executive chairman of the board.

Jerry notes that he was in his 40s and had already been a manager at a senior level at a corporation for more than a decade when he co-founded Finisar. At Raychem, he had learned a lot about building organizations, taking care of customers and employees, and the importance of recruiting top talent. He recalls that being at the helm of Finisar led to new lessons. “Being a public company has its own bag of problems. Dealing with Wall Street and the big mutual funds, Sarbanes Oxley reporting requirements, regulations, the Securities and Exchange Commission...it’s all expensive, difficult, and time-consuming. I remember thinking, ‘Wow, being a public company can be a serious burden!’”



Jerry cites Bill Hewlett and David Packard and the ethics, integrity, and respect for the individual that made “The HP Way” a model for Finisar. “The lack of pomposity in their organization was gratifying. They were positive, humble, smart guys who worked hard and selected very capable employees who helped build a culture of treating customers and employees

with great respect.”

Jerry advises young engineering students: “Experience and learning in your first job are more important than money. The money will come, but it’s what you learn and take away from those early jobs that build value for you as an individual. In my own work, I learned that initiative, creativity, and hard work really do pay off. Starting out in sales I saw first-hand that your personal integrity is more important than anything and absolutely determines your success. Your customers have to know you won’t let them down.”

Jerry has declined to serve on any other corporate boards but does serve on advisory councils at both Texas Tech and Purdue. He is also currently on the board of industrial affiliates at the Optical Society of America.

Jerry was honored to be invited as a member of the Association and notes, “Tau Bates have potential. They are very bright and can accomplish a lot.” Regarding his gift he shares, “There’s lots of things a chapter can do to provide service in the community and help to other students—having financial backing makes the chapter and the Association more productive.”

Jerry and his wife have two children and two grandchildren. As a sports fan who enjoys college football and basketball, he enjoys playing golf in his spare time.

Larry Simonson, SD A '69

The Shawn R. Schwaller Memorial Endowment for South Dakota Alpha Chapter at South Dakota School of Mines and Technology

LARRY SIMONSON, right, is no stranger to discipline and the value of hard work. “Growing up on a farm, I learned from my father’s example that developing a strong work ethic is an important life lesson. Working 14-16 hour days was how I spent much of my teenage years. There was always something that needed to be done on the farm and pride in ownership resulted.”

TBPI has benefited greatly from Larry’s involvement. As a faculty member for over three decades at the South Dakota School of Mines & Technology and Chief Advisor to the chapter there for almost as long, he became known for his cross-country trips with vans full of students to attend TBPI Conventions. In recent years, Larry served as TBPI President (2006-14) and many members are familiar with the sight of him in his red Prius delivering homemade Black Hills jams and jellies to grateful Tau Bates.

Following retirement from the classroom, he keeps in touch with SDSM&T alumni as a major gifts officer with the South Dakota School of Mines Foundation raising funds for scholarships and new buildings.

Larry’s decision to fund a chapter endowment was influenced by his insider’s view of TBPI. “As president for the past eight years, I know there are tremendous opportunities for Tau Beta Pi to provide life-impacting activities for our members, but if we are going to keep moving forward, we need additional resources. I am hopeful that my gift will inspire others who have the resources to put the Association in a position to take on new projects.”

Former student

Larry’s gift in support of SD Alpha was inspired by one of his former students, Shawn R. Schwaller, left.

Shawn’s early years were spent traveling with his family as his father was a field service technician, which took them throughout the United States and to the countries of Germany and Jordan. In 1982, the family returned to the United States and settled in Sioux Falls, SD, where Shawn completed his secondary education.

Larry met him when Shawn came to the School of Mines as an electrical engineering major in 1990. He was one of Larry’s students in several classes. “Shawn became very engaged in learning and mentored many

students—his positive attitude was contagious!” Shawn and Larry remained close friends after Shawn graduated from college and they enjoyed their time together. Larry credits Shawn with many great TBPI ideas that became the backbone of the Foundation Slate platform when Larry, Solange Dao, Norman Pih, Jason Huggins, and

Jonathan Earle were elected as the Executive Council at the 2005 Salt Lake City Convention.

Shawn spent one semester on a co-op assignment with Rockwell Collins in Cedar Rapids, IA, and graduated with an electrical engineering degree in May 1995. While at the School of Mines, Shawn met Tricia Mohrhauser who began her studies there in 1992, spent two co-op semesters at Rockwell Collins and

graduated in 1998 with degrees in electrical engineering and computer science. Tricia and Shawn were married on the weekend of the 1998 TBPI Convention. Shawn and Tricia worked for Raytheon in Aurora, CO. Tricia was appointed District 12 Director in 2000, and together Shawn and Tricia attended many Conventions, District Conferences, and chapter functions.

Shawn passed away on September 9, 2007, after a short battle with leukemia. In the spring before his death, Shawn was honored that the Colorado Mines chapter asked him to be one of their advisors.

As a tribute to Shawn’s active involvement in many facets of TBPI, the CO A and SD A chapters teamed with Shawn’s family and many friends to honor his legacy by establishing the TBPI Shawn R. Schwaller Memorial Scholarship. CO Alpha held a Texas Hold ’Em tournament to raise money for the TBPI Scholarship fund. A scholarship endowment was also established at SDSM&T.

•EDITOR’S NOTE: Based on Larry’s recommendation, the Executive Council appointed Tricia Schwaller a District 12 Director in 2000. After Shawn’s passing, Tricia met fellow District Director Curt Gomulinski, and they were married on December 31, 2010.

Tau Beta Pi appreciates all the donors who have come forward over the years to support the two scholarships in Shawn’s name, one at Tau Beta Pi and one at South Dakota School of Mines.



VSP Vision Care (c/o James M. McGrann, NY A '84)

VSP Global Endowment for the California Upsilon Chapter at California State University, Sacramento

JIM MCGRANN, PRESIDENT of VSP Vision Care, shares enthusiastically with students that an engineering degree is an excellent way to start your career no matter your field of interest—business, law, medicine, non-profits, etc. “The engineers of today shouldn’t limit themselves to the places where they think they should work. My father didn’t understand my career path. He thought I wasn’t using my engineering degree the way it was supposed to be used...sitting down at a drafting table. Businesses such as VSP and business leaders I know today are glad to have engineers work for them in all types of fields.”

Jim graduated in 1984 from Columbia University and joined Arthur Andersen in their management information consulting division. He spent the next 15 years in IT consulting at Arthur Andersen, IBM, and Ernst & Young. The second half of his career has been in the vision and eyewear industry. Jim joined VSP Global in 2008 as president of Eyefinity® from Marchon® Eyewear, Inc, where he had been senior vice president and chief information officer since 1999. In 2010, he became VSP global chief technology officer and chief executive officer for Eyefinity. In 2012, Jim took over as president of VSP’s insurance business, where his leadership has resulted in significant year over year growth.

Five lines of business make up VSP Global—VSP Vision Care (the largest vision insurance company in the U.S. covering more than 70 million members), Eyefinity (an EHR and practice management software company), VSP Optics Group (lens, lab, service, and logistics), and Marchon Eyewear (one of the three largest manufacturers, designers, and distributors of eyewear in the world) and newly formed VSP Retail (e-commerce and retail development for eye care providers). Interestingly, four presidents of these businesses graduated with degrees in engineering.

Jim recently spoke with the dean of the school of optometry at University of California, Berkeley, and noted, “I find it interesting when talking to optometrists. So far, when I ask, one-hundred percent of them cite engineering as a profession they would have considered if they hadn’t gone into optometry. There’s a similarity in the mindset of optics work and engineering.”

Jim shares, “VSP is celebrating our 60th anniversary this year. While we’ve been innovative over the past 60 years, there is a need to step it up a notch and increase the pace at which we’re innovating. To support this, we launched our innovation lab, called The SHOP, in 2012.”



There are two locations for The SHOP—one in Sacramento near the California State University, Sacramento campus and the other in Manhattan where most of their eyewear designers reside. The purpose of The SHOP is to explore disruption within our industry over the next 5-10 years bringing together technology, fashion, and

health. One of The SHOP’s early successes was VSP’s partnership on the first release of Google Glass, providing Google with access to leaders in all facets of the optical industry—and they were the first company to design a fashionable Google Glass with Marchon licensor Diane von Furstenberg.

“Outsiders see us as a big insurance company. We want to change that mentality and show we’re more than that and focused on science and technology. With everything happening in the marketplace, the companies who will succeed need to get out in front of the marketplace and understand how these products will disrupt the status quo. We want to be a disruptor, not disrupted! The best way to do this is to partner with engineering schools, especially the ones close to you. We want to leverage those students who are here and who we can bring onboard to work on projects. It’s a perfect marriage of our focus on innovation and getting young people involved.” VSP is also working with MIT and Columbia University and is starting to look at other schools.

Jim’s advice for engineering students is to have a willingness to take on work that they see other people walking away from. “Take the dirty job when you get the chance. As a Columbia engineering student, I heard that a steel company was hiring interns and went with a friend to interview. We were dressed in suits. I remember an employee laughing at us letting us know that we’d be learning the steel business from the ground up and that we needed to go home and change. I also worked in a blast furnace in Florida in the summer. It was hot but I learned a lot about the business. Lots of times people lose sight of the opportunity to learn from work from which others are walking away.”

Jim notes that VSP was happy to step forward and endow the CA Upsilon Chapter at California State University, Sacramento. “I was president of my chapter and attended the 78th Convention at Urbana-Champaign, IL, in 1983. I also remember my chapter rallying around one of our friends who received a Tau Beta Pi fellowship. VSP Global is proud to support an organization that does so much to develop young engineering talent as they grow into our society’s future leaders.”

R. Dudley White, VA A '76

Endowment for the Virginia Alpha Chapter at University of Virginia

GROWING UP IN Richmond, VA, Dudley did not have a specific career in mind but noted that he always wanted to do something to solve the problems of mankind. “At one point, I thought I would become a physicist, but as I got closer to college, engineering seemed a better way to work on challenging and important problems.”

One factor in his decision to become an engineer was Neil Armstrong’s walk on the moon. “That event had a big influence on a lot of baby boomers, and I like the depiction of engineers behind the television broadcast of the first moon walk in the movie *The Dish*—it reminds us that anything is possible once a problem is defined and engineers are put to work on it. The major problems of the world today (energy, environment, disease, food) can be fixed, given the necessary resolve, funding, and effort by scientists and engineers.”

Dudley spent his career at Zeta Associates, founded in 1984, which is in the field of signal collection and processing. When he joined as the 18th employee in 1987, Dudley was the second youngest there; currently, the company is about 400 strong. “I never wanted to get into management and was happy to work directly on problems in signal processing and communications, sometimes as a team leader, and more often as a systems engineer developing algorithms to collect and process signals.

No support staff

“In the early years of Zeta, I performed systems engineering and technical assistance work for government customers, mainly performance simulation and verification for signal processing systems. Since we had almost no support staff, the engineers fulfilled those roles, and I was put in charge of our Sun computers. I also built our early open Internet web presence and built an internal classified web server to supply engineering documents and resources to the staff.

“I will continue in that role over the next three years until I retire at the end of 2017. At that time, I will move down to the Charlottesville, VA, area, where I have been offered opportunities to mentor/teach at the University of Virginia engineering school.”

Dudley enjoys outdoor activities including hiking,

camping, sailing, scuba, and math puzzles, adding, “I enjoy the problems in *The Bent*.” He admits to once using a computer at work to solve a Brain Ticklers problem by brute force. He was grateful when the answer was printed in the next issue and says he found the published solution to be very elegant. Interest in puzzles is a tradition in Dudley’s family.

His grandmother used to be a quilter and enjoyed making complex patterns.

He enjoys spending time with family: wife Barbara, who has an engineering degree and now teaches algebra; older daughter, Melissa, *New York Gamma '14*, who graduated Cum Laude (BSEE) from Rensselaer Polytechnic Institute and is working on her Ph.D. at Cornell; younger daughter, Beth, who double majored in math and theater at University of Mary

Washington and has worked at Wolftrap and Kennedy Center; and son, Paul, majoring in chemistry at Virginia Commonwealth.

When asked why he made a gift of \$100,000 to endow the Virginia Alpha Chapter of Tau Beta Pi at the University of Virginia, Dudley explained how his attitude toward giving has changed over time. He grew up in a lower middle-class environment and was extremely frugal in his early years. He saved everything and put himself through the University of Virginia which provided him with the skills to build a satisfying career.

As he became more successful, Dudley discovered he had a giving heart, whether volunteering with the Boy Scouts of America, making financial donations, or giving blood at the Red Cross. About 15 years ago, he started giving more generously to the University of Virginia and TBPi. After Zeta Associates was bought out, he found himself able to increase his philanthropy—with the chapter at his alma mater being recipient of an endowment providing yearly funds to the Association.

In September, Dudley met with the president of Virginia Alpha, Emily Nemeec, to discuss the gift. Emily shared her vision for the chapter and her excitement about joining 500+ Tau Bates at the 2014 Convention.

Dudley’s advice for current students is “Don’t stress the small things. Assume the best in everyone at first, even if it means disappointment later. Treat everyone, no matter their station in life, with respect and kindness.”



Barbara and Dudley White with their older daughter, Tau Beta Pi member Melissa, on her BSEE graduation from Rensselaer.

Peter A. Wright, NY Δ '75

Endowment for the New York Delta Chapter at Cornell University

PETER A. WRIGHT failed at attaining his dream job. “I wanted to be owner of the Yankees because I wanted to be part of something I loved.” Despite coming up short, Peter has had a successful career in a field that came to his attention somewhat later in life.

Born in New York City and raised in the suburban community of Hartsdale, Peter chose to pursue a technical degree “because I always felt comfortable in math and science and least comfortable in linguistics, so engineering was an obvious choice for me.” He added that he liked the analytic platform and discipline required to be effective in engineering and felt it was “horizontal” and broad-based and ultimately useful for whatever career he would choose. He received a B.S. in chemical engineering and an M.B.A. from Cornell University.

Peter began his career as a financial analyst at IBM Corporation from 1976-79 where he was involved in the development and control of operating plans. Peter moved on in 1980 and held the position of executive vice president and research director at the Gartner Group for six years. As an analyst, he followed many companies and sectors in technology. He was part of the executive committee and ran the consulting and general products division. From 1986-90, Peter served as the president and CEO of SoundView Financial Group, Inc., a broker/dealer in Stamford, CT. He was responsible for research, sales, trading, corporate finance, and administration.

‘I liked playing the game’

Peter established P.A.W. Capital Partners, L.P. in December 1990. They now have approximately \$200 million in total capital under management. As the general partner and portfolio manager, Peter is responsible for the management of his U.S. Equities Hedge Fund. When asked about his decision to start his own fund, Peter shared, “The basic issue was that as a broker/dealer I liked playing the game better than managing a bunch of prima donnas.”

He was less than impressed with the attitudes expressed by colleagues noting, “Everybody always thinks that what could have happened was a result of their efforts,” and “There was a ‘me-first’ society when splitting the pie.”

When asked if he ever experienced an “A-ha!” moment over his 30-plus years of experience in the securities industry, he shared, “There was no great moment, but I do have some credos I live by. First, don’t believe

your own B.S. Second, leverage works both ways. Third, I’m in the ‘mistake-management’ business. Fourth, capital preservation is critical. Fifth, diversification is essential. Sixth, you don’t have to deploy all your money all the time.”

Peter makes a point of surrounding himself with high-energy people who are intelligent, display street smarts, good focus, strong analytical capacity, the ability to breakdown complex problems and come up with simple explanations, and most importantly, display a passion for their work as he does.

One of Peter’s other passions is the STEM (science, technology, engineering, math) movement. He serves on the board of OFANIM, an Israeli non-profit organization which provides STEM enhancement/enrichment education for economically-disadvantaged students in Israel. Peter’s support of STEM activities is founded on his belief that long-term growth opportunities for the U.S. are dependent on increasing the number of college graduates in STEM fields. “If you look at all of the job creation in Silicon Valley, these are typically all STEM students.” He is also a member

of Cornell’s subadvisory investment committee for hedge funds and marketable alternatives.

Primary Interest

Peter’s primary interest is investing in organizations that promote STEM because while there are many worthy causes, he feels that the U.S. will be best served in the long term by creating more scientists, mathematicians, and engineers. His hope is that these technically-educated students will then go on to become entrepreneurs who start companies that create high-paying jobs. “I tend to invest in organizations and prefer to fund endowments. By starting endowments, you help an organization in perpetuity. Tau Beta Pi represents the best and brightest engineers. By identifying the top students and recognizing and honoring their achievements, it’s a star on their resume. This might help them as they launch their career and inspire them to not only be more creative but also to create more intellectual property.”

He and his wife have five children. In his spare time, Peter plays tennis and golf and enjoys bike riding and traveling to take in the scenery and wildlife.



K-12 MindSET



November 2014—The St. Louis (MO) Alumni Chapter prepares for a "Mission to Mars" MindSET module at the Saint Louis Science Center. Photo: Gail Lueck

The Tau Beta Pi MindSET program continues to support STEM education from Oregon to Florida, and many places in between. At least 57 collegiate and alumni chapters have hosted a hands-on activity session with a K-12 partner school. Roughly 42 of these MindSET projects are currently ongoing.

From the 2014 winter school year to this February, more than 2,100 elementary, middle, and high school students have participated in MindSET activity sessions led by approximately 430 Tau Bates and other dedicated volunteers. In the past six months, ten TBPi collegiate chapters and three alumni chapters have applied and received grants to fund their MindSET projects. Here are details of recently hosted sessions as they were submitted by MindSET chapter leaders:

•**California Epsilon at UCLA**—works once a week with the Nora Sterry Elementary School to host one hour after school MindSET modules. This is a challenging task that CA Epsilon handles with aplomb. Volunteers work with mainly 5th graders and present unique modules such as Cartesian Diver, Halloween Slime, and Tin Foil boats.

•**District of Columbia Beta at Catholic Univ. of America**—visited San Miguel School in Washington, D.C., and presented a penny launcher module to three separate classes of middle school students. The January module focused on projectile motion, principles of energy, and the experimental method. The DC Beta Chapter also hosted bridge and rocket modules at the school in 2014.

•**Florida Theta at Florida International University**—hosted students from Miami during a campus Engineering Expo and also partnered with the Miami Christian School. The chapter customized a circuit module for high school students and plans a Minecraft interactive module in 2015.

•**Ohio Epsilon at Cleveland State University**—began a partnership with Fairfax Elementary School in January 2015. The chapter hosted a module on buoyancy and a two-part bridge building module. The learning concepts for the 3rd to 5th graders will focus on tension and compression as well as unit conversion. Former OH E president and current Ohio's North Coast Alumni Chapter president Andrew Zak, OH E '14, helped organize the chapter's MindSET efforts and had this to say, "We are just starting out, so it has been challenging... but it has also been incredibly rewarding and a lot of fun."

•**New Jersey Beta at Rutgers University**—partnered with Fords and Iselin Middle Schools in Woodbridge Town-

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ship, New Jersey. They hosted 25 K-12 students for a water bottle rocket focusing on aerodynamics,

Newton's Laws, and some basic physics. A total of 15 NJ Beta members volunteered at the event in October.

•**Saint Louis Alumni Chapter**—became the first TBPi alumni chapter to initiate, receive a grant, and host a MindSET activity session without the assistance of a collegiate chapter. The handful of dedicated alumni host a range of K-12 students at the St. Louis Science Center.

In addition to the projects summarized here, many other chapters put in valuable work which contributed to the enhanced preparation of K-12 students in math and science, including: *AL Gamma* at UAB; *CA Gamma* at Stanford; *FL Alpha* at UF; *OR Beta* at Portland Univ.; *TN Alpha* at UT; and *TX Kappa* at Prairie View A&M.



October 2014—A 7th grader from Fords Middle School (NJ) watches his water bottle rocket take off into the sky. Photo: Kate Connolly

Mark E. Dean: From PCs to Gigahertz Chips

Mark E. Dean, Ph.D., Tennessee Alpha '79, a Sophisticated Style of Leadership

by Alan S. Brown

MARK DEAN knows about leadership. Fifteen years ago, as vice president of research for IBM's Systems business, he signed up to manage the team to build the company's new supercomputer, Blue Gene.

IBM's previous supercomputer, Deep Blue, scored global headlines when it beat chess grandmaster Garry Kasparov. Deep Blue was a monster, with 32 supercooled processors that could calculate 200 million chess moves per second. But there was no way to scale up its architecture without housing it in a stadium-sized building using as much electricity as a medium-sized town.

Instead, IBM opted to distribute the computing load over many smaller processors working in parallel. Ultimately, it would spend \$100 million over five years to develop Blue Gene, whose 134,000 processors could do 280 trillion operations per second. Blue Gene was not only orders of magnitude faster than Deep Blue but also smaller and more energy efficient.

The design involved many passionate debates about computer architecture. Dean, now the Fisher Distinguished Professor in the Electrical Engineering and Computer Science Department at the University of Tennessee, had to resolve them.

There were two proposals, he explained. One called for a highly distributed architecture that maximized number-crunching speed but would have required new systems level software. The other was not as densely distributed and not as powerful, but had more commonalities with existing software and would enable users to run their applications with fewer modifications.

What does it mean to be a leader? In this series "Profiles in Leadership," Tau Beta Pi is exploring that essential question through the lives of member engineers who attained leadership positions in their fields.

Dean, no expert in supercomputers, had to balance risk, performance, cost, and resources. He gave both sides a chance to make their case.

"It was very transparent. We had open discussions, and everyone attended each other's sessions. Nobody was cut off. All ideas were good ideas. We all listened to the pros and cons. When a decision had to be made, it was based on all the input that everyone else had heard," Dean explained.

By the end of that process, the best course was obvious to most participants, Dean said. When he announced his decision, only a few on the losing side dropped out of the project. Most stayed, because they could see why the decision made sense.

"We had an open discussion to get buy-in. Buy-in doesn't mean I have to agree with the chosen approach. It means that I understand why we chose the approach, and if I don't necessarily think it's the best approach, I can still work to make it successful. As long as I understand how we got there, I can do that," Dean said.

It was an example of what Dean calls a "blended approach" to leadership. Prior to joining the University of Tennessee in 2013, Dean had spent his entire career at IBM. He holds three of the company's first nine PC patents and

invented the Industry Standard Architecture (ISA) system bus that made it possible to upgrade PCs. In addition to Blue Gene, he led the team that built the first gigahertz-speed computer processor and headed IBM Almaden, IBM's premier research center at San Jose, CA.

Along the way, he was exposed to many different definitions of leadership. Dean's own



Dean, right, and wife with Tanzanian President Jakaya Kikwete during Dean's time as IBM CTO for the Middle East and Africa.

preference is to act as a “servant leader,” one who helps others get things done. And while he knows how to build consensus, he is also comfortable making the final call.

“The best leaders,” he said, “know how to leverage the best style for different situations and different people.”

It is a sophisticated understanding of leadership, and Dean can trace it to his childhood.

Dean was born in 1957 in Jefferson City, then a town of 4,500 people in eastern Tennessee with a small African-American population.

His mother’s side of the family had been there for several generations. Some worked as domestics, others held professional jobs. His grandmother started as a receptionist and learned to be a dental hygienist. His grandfather was principal of the small, segregated K-12 Nelson Mary School.

“He loved to debate,” Dean recalled. “In fact, he would drive people crazy. Whether he agreed or disagreed, he would pick the other side so he could have a debate. He knew so much history, he would challenge you on why your approach would work when it didn’t work in the past.”

Dean’s father grew up on a farm outside Mobile, AL. After serving in the Korean War, he came to Jefferson City to look for work with the Tennessee Valley Authority. He joined a maintenance crew. By his early forties, he was a supervisor, fixing everything from big turbines and spillway gates to electrical equipment at three TVA dams.

Disciplinarian and Enforcer

Dean’s mother was the stern disciplinarian, his father the enforcer. Dean hardly noticed. He was fascinated by his father’s mechanical skills. His father not only rebuilt a 1931 Dodge and 1947 Chevrolet, but he also built an entire tractor from scratch.

“There was nothing I was aware of that he couldn’t figure out. If he had grown up in my generation, he would have been an engineer.”

Dean learned about more than building things from his father: “He showed me that if I worked hard and got things done, nothing was impossible.”

Dean’s first years in school foreshadowed how far that attitude—and Dean’s own abilities—might take him. His grandfather’s segregated school had so few students that first through fourth grades was a single class. Dean found the math easy.

“One day, in first grade, I came home with a trigonometry book—at least, I remember it was a trigonometry book—and my mother called the teacher and asked if she had made a mistake. But I was already tutoring the fourth graders. It was easy for me. It felt so natural,” He recalled.

“You know,” he added, “English—reading, writing—that was the hardest thing ever for me. I still struggle. I’m great with mathematical operations, but terrible with English. Math has so much more structure. It’s made up of 10 characters and just 4 operations. English has all these characters, and we put them together with varying rules. It’s much more complicated.”

In third grade, Jefferson City integrated its schools. For the next nine years, Dean was often the only African-American in his class.



This Leader In Brief

Full professional name: Mark E. Dean.

Current position: John Fisher Distinguished Professor at the University of Tennessee College of Engineering.

Birthplace: Jefferson City, TN, 1957.

Highest degree: Ph.D., Electrical Engineering, Stanford University, Stanford, CA.

Major career highlights: Awarded three of IBM’s first nine PC patents, 1980-82. Invented the color graphics adapter, which made color PC displays possible, 1981. Co-invented the ISA (Industry Standard Architecture) system bus, a key element in the growth of the PC industry, 1982. Led IBM PC design team, 1982-89. As director of the IBM Austin Research Laboratory, he pioneered the first gigahertz speed CMOS microprocessor, 1997-2000s. As vice president of systems research, Watson Research Center, his team developed the basic architecture for IBM’s Blue Gene supercomputer, 2000-02. Vice president, IBM Almaden Research Center, 2004-08. Vice president, World Wide Strategy and Operations, IBM Research, 2008-11. Chief technology officer of the IBM Middle East/Africa, 2011-13. Granted more than 38 patents with 5 patents pending.

Honors: IBM Fellow, 1995. Black Engineer of the Year, 1996. Ronald H. Brown American Innovator Award, U.S. Department of Commerce, 1997. National Inventor’s Hall of Fame, 1997 and 2000. Named one of *U.S. News & World Report’s* “Innovators of the 21st Century,” 2000. Elected to National Academy of Engineering, 2001. Outstanding Scientist Award, National Institute of Science, 2006. Distinguished Torch Award, National Society of Black Engineers, 2006. Distinguished Alumnus Award, University of Tennessee, 2012.

Greatest accomplishment: Invention of systems technology for IBM PC .

Hero: My father, James Edward Dean.

Hobbies: Building cars.

Favorite books: Harry Potter.

Personal motto: Anything you can imagine is possible. The only constraints are time, money, and risk.

If you could do one thing over: Learn to play the saxophone.

MARK DEAN

“The white kids would make you aware of it, but it didn’t slow me down. In the beginning, I’d get into trouble a lot, but that was because I was so far ahead of other kids, I was bored. So I would blurt out answers, do numbers in my head. It upset some teachers, but most recognized that I was smart in math. Eventually, I got in with a group of kids that would challenge each other and who were always seeing who could be the best,” he recalled.

It was culture shock for some of his new friends.

“I had one friend come to me in middle school and say, ‘You’re not really black, are you?’ I made As, so he thought, ‘He’s something else, he’s not black.’ It was eye-opening for many of them, that a black person could do so well,” Dean said.

Encouraged by his parents, Dean played sports on integrated teams, mixed with everyone, and treated everyone equally. There were awkward moments, but his grandfather

added a home brew preamplifier so he could listen to records and 8-track tapes on it. He continued to get top grades (except in two required English classes) and graduated with highest honors.

Dean interviewed with several top firms. The Hewlett-Packard interview included problem solving, and they made an offer on the spot. When Martin Marietta invited him to Orlando, they let him rent a Camaro so he could drive around and smell the orange blossoms.

But Dean wanted IBM and computers (which HP did not yet make). He landed in Boca Raton, FL, in 1979. The industry was just moving from punch cards to screen-based displays. The first job for the young engineer who had so much trouble with English was to develop a word processor adapter for IBM’s Data Master terminal.

Dean’s experience putting graphics—letters, numbers, and punctuation—on a screen earned him a place on the PC team. Two of his three PC patents are for monochrome and color graphics adapters.

“To this day, I can visualize and write digital logic the same way some people write a paragraph or a report. It was something that came naturally. I could do it while watching football games,” he said.

PC Market

By then, the PC market was starting to emerge. IBM’s business, however, was mainframes, and so a small project in Boca Raton to build personal computers flew under the corporate radar. Ultimately, sales of PCs and their less expensive clones would reach 100 million systems per year.

The PC team was a small, tight group. It evolved that way by necessity.

“We had to find people to get the job done, and there were only a small number we could recruit. The things we couldn’t do in house, we outsourced. We got the processor from Intel and DOS from Bill Gates. The early applications were from companies like VisiCalc,

which developed spreadsheet software,” Dean recalled.

Success was not a given. IBM had always built hardware for computer professionals. While the company was not exactly focusing on consumers—computer gaming was just getting started and the Internet was not yet invented—IBM had to build a system that was far less costly and much easier to use.

It also had to be reliable. This was an age when a phone could survive a drop from a two-story building and still work. Electronics were built to last and be serviced. So naturally, when IBM shipped its PCs, it included a complete technical reference manual.

“It had all the logic and software used to build a machine, so a technician could debug or fix it, like a television set. Making that information public is what created the clone industry. That ecosystem of PCs, clones, peripherals, and software is why the PC won over Apple. It was an accident,” Dean said.



Dean with an AC Cobra replica which he built.

had taught him that people are not born bigots. Bigotry had to be learned, and so it could be unlearned, too.

“He always believed that if the next generation was exposed to what was possible, they could break away from old-style beliefs and embrace that people where equal and could do things equally,” he said.

Some classmates never came around. Others, over time, changed their thinking.

“The way we interacted became natural, not odd or out of place,” Dean said. “I don’t know if their parents felt that way, but the kids felt that way.”

By the end of middle school, Dean knew that he wanted to be an engineer. In high school, he set his sights on computers and IBM. Upon graduation, he accepted a scholarship to the University of Tennessee.

College was “a fun time” with lots of hands-on projects. His favorite was an amplifier he designed and built as a senior project. Of course, Dean, the consummate tinkerer,

There was another reason, too. It was the introduction of the ISA (Industry Standard Architecture) system bus. It became an industry standard that made it easier to expand PCs and clones with memory, disk drives, video cards, printers, modems, and other components designed by a multitude of different vendors. The ISA bus standard also made the PC ecosystem possible.

Dean headed the ISA project. In 1982, he was 25 and had just earned his master's degree from Florida Atlantic University. His thesis project was a high-performance graphics terminal.

At the time, the state of the art was the vector terminal, a complicated device the size of a small refrigerator. Dean found a simpler way. By taking advantage of faster 16-bit processors and low-cost memory, he was able to store information about each pixel and paint it onto the screen. This made it possible to take information from a mainframe and display it graphically.

It also addressed IBM's PC problem. The PC did all its processing in an 8-bit processor and had no way to off-load some of that computing burden to other devices on the system. This made it hard to expand and modify. By tweaking his master's project, Dean developed a bus that would enable the PC's processor to send some data to a graphics card or a modem, which would carry out any additional processing remotely. This opened the door to radical PC customization.

High Speed Chips

Dean was having a ball.

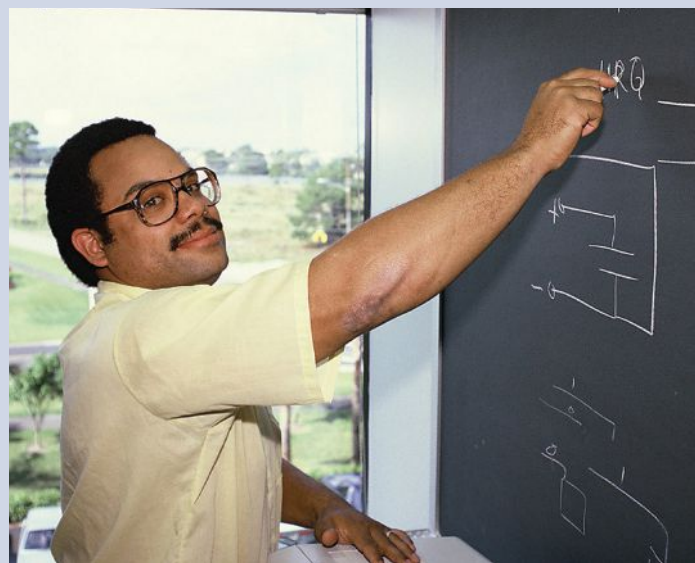
"In our little corner of IBM in Boca Raton, we were a team. We'd drink together, eat together, and go out together. It didn't take much to justify getting together at Bud's, a dive pizza place in Del Rey Beach. Anyone who got a promotion had to buy, and everyone would show up.

"Was I working all the time? No, I was playing all the time. It was so much fun, it was like play. Those first 10 years were the best days of my career. Anything you did was right, you were building something new, and everyone else wanted to build what you were building," Dean recalled.

He also learned a lot about working on teams. He discovered that if engineers communicate and fix a problem early, most people would never even know they had a problem. He also learned that while compromise and buy-in are important, sometimes leaders have to choose. As his grandfather said, there are lots of good ways to get something done, and sometimes you just have to pick one.

By the time Dean was 25, he was in charge of all PC design. He led the entire design of the IBM 486, which was the company's smallest and most powerful PC to date. Then, at 32, he told IBM he wanted to attend Stanford University full-time for his Ph.D. IBM agreed to fund his degree while paying his full salary.

At Stanford, Dean studied ways to move computers from synchronous to asynchronous operation. Conceptually, the challenge sounds simple: All digital computers have a central clock that determines when chips transfer data and perform operations. Some chips could operate much faster under certain conditions, but they run slowly to accom-



TOP: The young Dean, at right, with his cousins in Jefferson City, TN.
CENTER: Dean at work leading the PC development team in the 1980s.
BELOW: With his wife and parents.



moderate the system's slowest components. Dean's research looked at ways to enable those chips to speed up and slow down as needed. Twenty-five years later, the field is still a subject of intense study.

Dean moved back to IBM and spent some time helping to revitalize the server business. He was working with Willie Shih, now at Harvard, and Rodney Adkins, an African-American executive. One magazine dressed up Dean and Adkins and took a photo, calling them the "Blues Brothers."

"It might have been a bit risqué for IBM," Dean chuckles. "Rodney got a call from the CEO, and all he said was, 'That's different.' I suppose he was not 100 percent sure that type of photo was the best thing for an IBM executive to do."

While working with servers, Dean got to learn more about the high-speed chips that powered them. That was a good launching point for his next position. IBM appointed him head of its Austin Research Laboratory in 1995. His major challenge was to develop a computer processor that could run at gigahertz speeds.

"Most people thought it was impossible. They thought the frequencies were too high, and we couldn't manage the interconnects and clocking with sufficient accuracy to support running a calculation every nanosecond," he said.

"It turns out that, yes, we can. But we needed a basic understanding of how the system needed to be designed to support operation at those frequencies and development tools that let us build devices that could support nanosecond operations."

The processor IBM unveiled was a small unit similar to the ones powering IBM servers. It was the first time anyone had built a chip using conventional semiconductor technology that could run faster than one gigahertz.

Top Researchers

Also in 1995, when he was 38, IBM made Dean a Fellow, an honor it bestows on top researchers whose achievements had a significant impact on the company. IBM had about 60 Fellows, fewer than the number of vice presidents, Dean recalled.

"I had mapped out my entire career. I wanted to make Fellow in 15 years—only one person had done it faster—but missed it by one year. I got my Ph.D. late too, and that slowed me down. I was crazy about setting goals, and in fact, what I am doing now, academic research, was part of the plan."

After Austin, Dean held several senior research slots and got the Blue Gene supercomputer off the ground. In 2004, Adkins asked him to lead IBM's Almaden Research Center.

Dean quickly said yes. He had always wanted to work at Almaden. Its 400 researchers included world experts in databases and storage technology. It was the most independent of IBM's labs, and its directors had the most autonomy.

"We had a lot of meetings outside," Dean said. "It was such a beautiful spot, people relaxed immediately. I would tell people that there was no problem that we couldn't resolve in Almaden. It was just fun."

Dean jumped into all sorts of projects. IBM was shifting its business to a service-based model, so Dean sought to make the delivery of those services more scientific.

He also began studying the brain. It was clear that computer processor chips were not going to get much faster. IBM needed a different model, especially since their corporate clients were drowning in all the data generated by their computers and smart devices. Dean thought IBM could learn a lot by leveraging how the brain works (which, it turns out, is asynchronously).

"I didn't want to build a brain, but a different type of computer. It would do things that do not need yes-no answers and handle new types of data.

"It could search for a person in a busy airport and find them in no time, not just by looking at their face, but by how they walked and moved and other factors. It could classify anomalies to detect viruses or catch disease outbreaks without being told specifically what to look for," Dean said.

After Almaden, Dean moved to New York to work on research strategy, and then headed IBM's Middle East/Africa business. At that point, exactly according to plan, he was ready to leave for academia.

He had only one regret: He never got to head IBM's research operations.

"That was one goal that I didn't achieve," he said. While he was strong technically, he realized that it took a special level of social skills and salesmanship that others had in greater abundance.

Dean could have stayed with IBM, but he wanted to come back to the lab. At Tennessee, he returned to his interest in brain-like processing architectures and distributed intelligence.

"Like IBM, we take the brain as a model, but we use simpler components. We both have similar goals, and maybe our lab will wind up solving some simpler levels of problems," Dean said.

He is also building smart sensors that process information locally. This might enable him to create more intelligent networks that can sort through the background noise of a city to identify emergencies, such as a fire or gunshot or burst water main. Such smart sensor networks might help computers learn and eventually make inferences and predictions about their environment.

Dean has accrued many honors. The year after being named an IBM Fellow, he was selected Black Engineer of the Year and inducted into the National Inventors Hall of Fame. In 2001, he joined the National Academy of Engineers.

Yet, as he is quick to note, he failed 10 times more than he succeeded. "I was not just breezing through," he said. "Not everything I did became successful. I failed in many situations, but I always tried to learn from them."

Along the way, he learned to lead. He did not do it by reading a book or going to a seminar, but by applying what he learned both as a boy growing up in Jefferson City and a young man on a small project team that succeeded beyond anyone's wildest dreams. He led by building consensus, helping others, and, when he had to, making a decision.

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The generous support of each member is deeply appreciated by the Executive Council and other Association Officials. The financial resources have permitted strengthening our programs in several areas that emphasize the importance of Tau Beta Pi's basic objectives and that help all collegiate chapters and student members.

Recognition Club Donors are listed alphabetically within their chapters and appear in the first section below. Member-contributors appear in the last section. Names marked with a † symbol are of deceased members in whose memory donations were made either by relatives and friends or through bequests. In addition to gifts acknowledged here, several were made anonymously through the Combined Federal Campaign and Network for Good and are also deeply appreciated.

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HEIKES CLUB

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TX A Klump, D. Craig '77
Wells, Roger Murray '71
TX B Clean, Stephen W. '66
TX Δ Raghavan, Krishna Kumar '81
Straut, William Lewis '49
TX H Nicholson, James Eric '75
Schmidt, Robert W. '84
TX Θ Barrett, Gerald George '70
Stokes, F. Xavier '78
UT A Davidson, Stuart W. '83
Eide, Eric Norman '89
VA A Brown, Lee Merry '88
VA B Berk, Benjamin Charles '72
Harras, Edgar D. '67
VA Γ Glass, Christopher E. '83
WAB Cass, Robert Dennis '83

CHI CLUB

AL A Hartley Jr., John T. '55
Talbot, Thomas F. '52
Trapane, Karen L. '82
Vollberg, Walter K. '73
AL B Delorenzo, Joseph David '57
AK A Cline, John Robert '81
Dombrowski, Roger Alan '69
AZ A Bailey, Harold E. '71
Berg, Jeffrey Roy '93
Da Silva, Eduardo G. '58
Erickson, Kenneth L. '68
Womack, Donald E. '50
AZ B Latta, David Raymond '89
AZ Γ Bruening, Brenda I. '82
Bruening, Gregory W. '80
AR A Hunte, Gary Wayne '84
Weaver, Mark E. '77
CA A Bassett, James Harold '50
Dozier, J. Ronald '54
Kirschman, Theodore Baker '85
Karn, Richard W. '50
Kirschman, Randall Keenan '66
Magvary, Andrew '65
McCune Jr., Earl William '79
Ravenscroft, Dewey S. '63
Van Dyke, Korbin E. '80
Wilhoite, W. Clinton '85
CA B Burke, James D. '45
Cruz, Richard J. '66
Jessen, Howard Ellsworth '46
Lue, Roland R. '75
CA Γ Cotton, Thomas A. '65
Dohner, John W. '72

The Heritage Society

The Heritage Society was established in 2001 to recognize and honor those who continue the tradition of outstanding support by remembering TBPI in their plans. Heritage Society members, listed below, have included a provision in their estate plans to benefit the Association and have informed TBPI of this commitment. Their support is gratefully acknowledged, and their names will appear each spring.

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 † Alford, Henry M., *MS* A '27
 † Althouse, Ernest E., *PA* A '26
 † Anderson, Marshall, *MI* Γ '32
 Anonymous, *IL* A '55
 Anonymous, *MA* B '66
 † Arm, David L., *PA* E '30
 † Banner, Charles E., *OH* Γ '47
 † Barnes, Raymond H., *MI* Γ '40
 Basta, Edward D., *OH* E '82
 Bateman, Terry S., *CA* Γ '58
 Beans, Ph.D., E. William, *OH* Γ '53
 Brill, Arno W., *TX* A '71
 Budd Jr., Col. Roger, *IL* A '62
 Burg, Stoddard S., *PA* B '51
 Burns, Carlisle V., *NY* A '50
 Campbell, P.E., Cleveland L., *IA* A '47
 Cancilla, Charles E., *CA* Z '59
 Chamberlain, Ph.D., P.E., Adrian R., *MI* A '51
 Chute, Richard, *MI* H '49
 Colbry, Ph.D., Dirk J., *MI* A '06
 Colbry, Ph.D., Kathleen Luchini, *MI* A '99
 Cook, Norman L., *WY* A '79
 † Curtis, Ph.D., Richard A., *OH* A '64
 D'Avignon, Edward J., *NY* B '88
 † Donoghue, Leonard W., *MA* Δ '37
 Dooley, George H., *NH* A '53
 † Duenweg, Col. Louis, *IN* B '36
 † Dulles, John W.F., *AZ* A '43
 Fellner, Kenneth M., *AZ* A '84
 Fisher, James E., *CO* Δ '78
 Fleming, John R., *IA* B '50
 † Forge, Charles O., *CA* Γ '56
 Forslund, Donald C., *NJ* A '60
 Froula, P.E., James D., *TN* A '67
 Fue, Harold, *IL* A '57
 Gendron, Roger J., *IL* B '55
 Gomulinski, Curtis D., *MI* E '01
 Gomulinski, Tricia E., *SD* A '98
 † Hanley, Edward P., *IL* B '42
 † Hart, Jack B. & Arline I. (ΣΤ)
 Haynes, Ph.D., P.E., Charles D., *AL* B '62
 Herke Jr., Frederick P., *OH* A '54
 † Heymann Sr., Andrew P., *FL* A '39
 Jackel Jr., Henry E., *IN* B '57
 Jackewicz Jr., Joseph I., *IN* Γ '75
 Jennings-King, Sherry D., *TN* A '93
 † Johnsen, Roy L., *MI* B '57
 Johnson Jr., James W., *NC* A '77
 † Jones, David S., *KS* A '49
 † Kern, Jack C., *CA* K '71
 Kitchens, Philip H., *LA* Γ '67
 † Kolff Van Oosterwijk, H.L.J., *CA* A '50
 † Liggett, John A., *MI* A '43
 Luce, John W., *FL* Γ '50
 † Luchini, Ph.D., P.E., John R., *MI* Γ '71
 † Lucken, Ernest G., *NY* Γ '42
 McDonald, Capers W., *NC* Γ '74
 † Nelson, Thomas A., *CA* Δ '49
 Orkins, James E., *OH* Γ '66
 Peterson, Charles C., *UT* A '68
 Pierce, Russell W., *WA* A '70
 † Ray, Frederick H., *OH* E '49
 † Reed, Ph.D., Charles E., *OH* A '34
 Regula, Ph.D., Donald W., *MI* E '63
 Reinhardt Jr., William H., *IA* A '48
 Sax, Franklin S., *MO* Γ '55
 † Scheffler, P.E., Paul H., *PA* Z '48
 Schmolter, Ralph H., *OH* Δ '61
 † Scribner, A. Clayton, *NY* Γ '29
 † Sickafoose, Robert D., *IL* B '50
 Siller Jr., Ph.D., Curtis A., *TN* A '66
 Slafer, Loren I., *CA* Δ '68
 Smith, Andrew L., *MS* A '48
 Smith, Richard N., *OR* A '57
 Smith, Rodger F., *WI* A '64
 Soderberg, Peter H., *CT* A '68
 † Stechmeyer, John P., *OH* E '48
 Stella, P.E., Damien F., *AK* A '82
 † Strom Jr., George J., *CA* Γ '56
 Swanson, P.E., Hilmer S., *WA* A '76
 Swanson, Ph.D., John A., *NY* Δ '62
 Taber, Norma J., *MO* Γ '80
 Tarwater, James P., *MO* B '51
 † Taylor, Paul D., *KS* A '58
 Tydeman, Frederick J., *CA* Δ '73
 Tyson, Samuel E., *PA* B '48
 Weissman, Martin J., *NY* E '58
 Wetenhall, Paul D., *GA* A '73
 White, Robert C., *IL* Γ '56
 Widmann, Bradley H., *NY* A '69
 Williams, David C., *TX* B '47
 † Wilson, Charles N., *WA* A '70
 † Winkler, Albert H., *AZ* B '75
 † Wisner, Benjamin G., *CA* Δ '49
 † Zimmerman Jr., Marlin U., *MD* A '44
 Zuurbier, George W., *IL* A '53

(† indicates that member is deceased)

Please contact Patricia McDaniel at pat@tbp.org if you wish to be included as a member of the Heritage Society.

CHI CLUB, CONTINUED

- Hardison, Robert Logan '57
 Hess, Kenneth Lafferty '74
 Inouye, Lance M. '68
 Lehmer, Gerald Dwight '56
 McClelland, Scott '60
 Palmer III, Everett Arthur '65
 Parker, Henry Whipple '45
 Rodriguez, David A. '58
 Root, Steven D. '75
 Sansbury, James Douglas '66
 Ullman, Marc A. '83
 CA Δ Fong, Franklin M. '69
 Mallis, Richard K. '52
 CA E Curry Jr., Winfield S. '57
 Gaunt, Arnold J. '86
 Karagozian, Ann R. '78
 Woo, Raymond '72
 CA Z Cancilla, Charles E. '59
 Downey, James B. '62
 Javete, Donald P. '51
 CA H Akers, Joe '69
 Battersby, Leslie Charles '98
 Broadston, Robert D. '94
 Burrows, Stanford '63
 Chin, Victor H. '74
 Pershon, James M. '79
 Trebaol, George Olivier '75
 CA Θ Bach, David P. '69
 Kawahara, Lester M. '80
 Sedlak Jr., William L. '81
 CA K Humphreys, Evan '75
 Ramirez, Marvin Jerome '82
 CA A Hafer, Edward Henry '70
 Horn, Jeffrey Ben '79
 Pickles, William Raymond '80
 Stanley, Richard L. '79
 West, Timothy D. '78
 CA M Keiser, Randy Jay '73
 Mitsuoka, Jeffrey Minoru '79
 Rodgers, Patrick J. '80
 CA N Emery, Linda R. '82
 Reukauf, Paul J. '70
 Ruid, John E. '73
 CA E Hart, Laura Jean '82
 CA O Caballero, Ross Charles '72
 Campbell, William J. '65
 Fitzsimons, Michael Joseph '79
 CA T Shen, Eric Chi-Chun '93
 CA Y Gruspe, Nancy T. '88
 CO A Peters, Richard Duane '80
 Van Dinter, Jennifer Ann '97
 CO B Aronson, Haskell Harold '52
 Bartlett, Paul E. '51
 Blackwelder, Ron F. '64
 Eason, Ernest D. '71
 Knapp, Barry G. '81
 Shapiro, Robert Joseph '47
 CO Γ Hough, H. Vernon '52
 CO Δ Fisher, James E. '78
 Mehring, James W. '72
 CT A Fischer, Edward Michael '89
 McLeod, Christopher Kevin '77
 CT B Douglass, Michael Richard '79
 Klopfenstein, Rex C. '59
 Layman, Timothy Paul '79
 Taylor, Kenneth Doyle '71
 DE A Kimpel III, Paul H. '70
 DC A Belcher, Wade D. '70
 DC B Gathungu, Peter Maina '93
 DC B Maggio, John Joseph '81
 Maslen, Carrie Y. '82
 FL A Furman Jr., Thomas D. '66
 Gordon, Horace Cadwell '64
 Hayden, James George '69
 Passman, Alan Joseph '06
 FL B Ault, Richard H. '64
 Elnaggar, Suzanne '93
 Slavovskis, James Bernard '70
 FL Γ Collins Jr., William Louis '75
 Copeland Jr., Charles Edwin '73
 Lancor, Barbara J. '79
 FL Δ Nugent, James Charles '95
 FL E Stierlen, Lorelei Beth '97
 GA A Gilliland, Clinton Redmond '59
 Layden, Elizabeth C. '87
 Layden III, Joseph Calvin '87
 LeCroy Jr., Edwin Poteat '67
 Mowrey, Daniel B. '65
 Negro, James Eugene '68
 Parker, Jonathan Edward '59
 Snare, Daniel M. '80
 ID A Erickson, Leif '80
 IL A Beanblossom, Todd M. '80
 Flitman, Jeffrey Edward '82
 Gromala, Edward Joseph '79
 Hans, Daniel Joseph '86
 Jones, Douglas Warren '80
 Kasik, Phillip M. '68
 Kasper, Frank Stanley '52
 Krupka, John Frank '52
 Le Blond, Peter Carl '75
 Nolte, Kenneth George '64
 Ostrodka, David L. '70
 Schoenberg, Kurt F. '72
 Snyder, Dan W. '50
 Tomasic, Michael George '66
 IL B Gurney Jr., Donald P. '59
 Hughes, Joseph L. A. '79
 Kinast, John Arthur '79
 Lewis, Burton A. '48
 IL Γ Aagaard, James Stuart '53
 Fenton, Suzanne Schadel '79
 Guest, Howard Brandon '81
 Haglund, Birgit Lyn '82
 IL Δ Hachtel, Dale A. '68
 Klasing, Wayne Gill '65
 IL E Hopkins, Mark A. '82
 IN A Bullions III, Robert J. '64
 Carlson, Richard A. '70
 Egilsrud, Richard L. '81
 Eilers, Ph.D., Steven M. '77
 English, James Allison '57
 Enoch, Idolo L. '50
 Hanover, Marilyn K. '78
 Heirman, Donald N. '62
 Hendryx, Kevin S. '81
 Herendeen, Robert Oliver '65
 Jicha, Albert J. '52
 McGraw, Earle P. '50
 Sosnay, Richard Gordon '66
 Sublette, Ivan H. '49
 Warren, Scot William '83
 White, Harvey C. '49
 Woosnam, Thomas Jay '65
 IN B Marsh, Gene Wesley '85
 Martin, Jeffrey V. '78
 Nicholson, Scott Michael '84
 Noblitt, Niles L. '78
 Powell, Robert Lowell '51
 IN Γ Heidrich, Steven J. '82
 Heubaum, Karl Franz '91
 Kast, Steven James '69
 Kukla, James A. '72
 Lombard, Michael G. '76
 Mason, James A. '56
 Schuster, Gregory M. '77
 IN A Kempf, Dale Frank '62
 Schmalz, Peter B. '60
 Spring, Bradford Hall '59
 IA A Bossbart, David J. '80
 Coffey, Leo Frederick '64
 Drumm, Alfred W. '64
 †Johnson Jr., Aldie E. '47
 Reinhardt Jr., William H. '48
 Stanley, Richard H. '55
 IA B Coe, Roger N. '57
 Corrao, Debbie G. '93
 Rasing, Joyce Ann '81
 KS A Black, Arthur Geiger '70
 Henman, Ivan LaVoral '56
 Johnson, Lee Samuel '77
 Knapp, Roy Marvin '63
 Kohman, Wayne E. '51
 Leamon, Richard Gaylord '67
 Looney Jr., Chesley Hall '50
 Shankles, Larry E. '69
 Timmerman, Robert Walter '38
 KS B Howe, Donald Craig '78
 Mikelson, Erin Kathleen '00
 KS Γ Benton, Kirk '78
 McKinnis, Steve R. '74
 MA E Bauer, Arthur Robert '63
 Howe, P.E., Richard S. '59
 LA A Compton, Ronald R. '72
 Franklin Jr., Duard D. '74
 Nelson Jr., George Gus '52
 Richardson, John Daniel '72
 White Jr., Kenneth E. '69
 LA B Buesinger, Robert Ford '78
 Mullins, Peter Lake '57
 Perrin III, Shepard F. '83
 LA Γ Poole, Ronald Gene '69
 Sigmund, John A. '75
 Smoak, Albert Malcolm '84
 LA Δ O'Rourke Sr., Donald Joseph '51
 ME A Palmer, Gerald Milton '61
 MD A Becker, William H. '65
 O'Keefe, Christian Victor '87
 Valencia, Warren M. '74
 Tate, David Marshall '84
 Wiseman Jr., William J. '64
 MD B Bromley, Ralph Wesley '44
 Dinkle, Ralph Edward '65
 Ewing, R. Alan '67
 Gold, Irwin Lester '49
 Hardesty, Donald R. '64
 Jansen, Russell Onas '74
 Kirschbaum, Alan Ira '71
 Lambrechts, James R. '73
 Perkins, Michael Joseph '95
 Schaefer Jr., William Joseph '70
 Toense, Robert E. '76
 Valencia, Jaime Alfonso '74
 Werneth, Russell Lee '64
 MA A Bernacki, Stephen Edward '70
 Berndt Jr., Edward C. '44
 Bujancic, Gerald Alan '79
 Chace, Brian D. '69
 Hubelbank, Mark '68
 Royea, James Edward '92
 MA B Balazs, Phillip Terry '69
 Bennett, Kenneth Harold '89
 Brandes, Richard D. '57
 Clauss Jr., John Seebold '54
 Dickey, Robert L. '74
 Freeman, Reed Harlow '61
 Isnardi, Michael A. '82
 Kelllogg, John H. '48
 Marks, Lloyd A. '71
 McKim, Thomas Francis '75
 Nobel, Sanford M. '58
 Patterson, John Bryan '68
 Smallwood, Richard Dale '57
 Smoot, William N. '56
 Strauss, Richard A. '60
 MA Δ Colen, Esq., Frederick H. '69
 Curtis, Jonathan G. '69
 MA E Frost, George C. '50
 Herzberg, Ernst '51
 Jonah, Maxwell V. '55
 Moore, Timothy E. '71
 MA Z Cain, John Francis '61
 Nelson Jr., George Gus '52
 Richardson, John Daniel '72
 White Jr., Kenneth E. '69
 MA H Buesinger, Robert Ford '78
 Mullins, Peter Lake '57
 Perrin III, Shepard F. '83
 MI A Griffin, Albert Walter '80
 Houthoofd, Janet Marie '76
 Lafrey, Raymond Richard '61
 MI B Bohren, James F. '67
 Halpin, John A. '51
 Henriksen, Leslie Louis '58
 Hodgson, Darel Edward '63
 Leven, Peter Johannes '93
 Sandereto Jr., Peter P. '64
 Saul, William Edward '55
 Scott, Kenneth John '55
 Stropm, John Edward '78
 Wacker, Don Herbert '52
 MI Γ Albrecht, Terry Erwin '67
 Danel, Richard Irvine '48
 Drago, Gary A. '75
 Engelhardt, Larry N. '77
 Friess, John G. '57
 Gray, Jeffrey J. '94
 Hammond, Donald D. '52
 Hansen, Charles '46
 Isackson, Robert M. '78
 Tami, Robert Majao '73
 Pepper, Julia L. '84
 Prescott, Thomas J. '69
 Sanguinetti, John Winston '70
 Sivier, Kenneth R. '51
 Stewart, Stephen Russell '66
 Taylor, Mark E. '74
 Toliver, Christopher Michael '74
 Trankle, Thomas L. '71
 Trojan, Paul Karl '55
 Trost, Cecilia A. '78
 Warner, Caleb '44
 Zuk, David M. '70
 MI A Culver, Walter '60
 Di Cicco, Dominic Armand '61
 MI E Doughey, Robert E. '65
 Durisin, Michael John '81
 King, James Bartholomew '65
 MI Z Lachee, Roger Eric '75
 Sadlo, Thomas George '77
 Volpe, David Randall '74
 MI H Johncox, Robert A. '83
 MI Θ Beck, Burdette Terry '71

CHI CLUB, CONTINUED

Garrity, Stephen Daniels '72
 MN A Bakke, Mark Alan '88
 Duscha, Lloyd Arthur '45
 Hanson, Henry A. '66
 Lapakko, Kim A. '76
 McDonald, Daniel William '82
 McLeod, Gary W. '70
 Rosene, Robert W. '45
 Severson, John A. '72
 Thompson, Richard A. '77
 MS A Jerome, Dennis C. '67
 Siler, Raymond David '83
 MO A Brownfield, David Lee '68
 Crabbe, Emmanuel F. '81
 Donaldson, Albert L. '75
 Myles, Thomas D. '82
 Oehrke, Timothy Chris '75
 Raines, Gary Keith '65
 Stiefermann, Michael C. '86
 Warmack, Ralph Ernest '67
 MO B Ash Jr., Richard Lawrence '70
 Boston, Robert A. '60
 Ernest, Terry L. '88
 Hacker, Alden Gerok '41
 Peat, Robert James '79
 Saloff, Stanley Alexander '65
 MO G Kilert, Albert Harold '63
 MT A Johnson, Richard M. '56
 Osgard, Dennis M. '62
 NE A Criswell, Marvin Eugene '65
 Steube, Milan Ray '74
 NH A Scharfe, Alan Charles '78
 NJ A Murphy, Kevin Jay '78
 Schmidt, Arthur Joseph '68
 NJ B Cohen, Robert B. '77
 Fletcher, Leroy S. '58
 Rabin, Daniel E. '75
 Wollmann, Norman P. '81
 NJ G Krumins, Aivars Edgars '75
 Kunyz Jr., Joseph J. '73
 Reder, David P. '85
 Reitano Jr., Anthony J. '72
 Sharon, Anthony P. '74
 NJ A Lisle Jr., Thomas K. '69
 Meyer, John E. '81
 Prutzman, Robert A. '72
 NY A Cohen, Adam Barrett '85
 Epling Jr., William Y. '83
 Franco, Peter F. '76
 Lowe, David '81
 Selius, Albert O. '87
 Tao, Ying T. '81
 Thomashower, William J. '70
 NY G Bornhorst, Bernard R. '60
 Bruch, Charles G. '59
 Lequar, James Kay '87
 Limplamai, Manit Michael '04
 Mohr, Wendell C. '53
 Roberts, John W. '86
 Schultz, Stephen Parker '70
 Spengler, Stewart R. '52
 Stallman, Thomas F. '59
 Thal Jr., Herbert Ludwig '53
 Walczak, Dennis J. '76
 Weinberg, Richard Sheldon '81
 NY A Anderson, Gordon Wood '59
 Dougherty, John W. '59
 Teng, William L. '74
 NY E Grinthal, Edward Ted '62
 Hellman, Martin Edward '66
 Kammenzind, Henry A. '50
 McCaffrey, Ronald Walter '52
 Rubin, Lowell '61
 NY Z Lopinto, Robert A. '67
 Sindel, Fred H. '59
 Tuchband, Stuart Martin '63
 NY H Bergh, Gerald Kenneth '58
 Kopp, Eugene H. '50
 Levy, Jeffrey M. '74
 Valcourt, Jean-Mary K. '85
 NY O Crompton, Kenneth H. '67
 Kaylor, James M. '88
 NY I Berman, Jay L. '78
 Calkin, Edwin T. '61
 NY K Ablowitz, Mark Jay '67
 Alcaro, Domenic John '87
 Brown, George Albert '48
 Hinshaw, David J. '86
 Moore, Duncan T. '69
 NY A Ball, James E. '75
 Daszyński, Warren M. '75
 Silverman, Joel Stuart '74
 NY M Czuba, John Stanley '78
 NY N Gluszak, Timothy J. '88
 Morris, George Craig '63
 NY E Mathews, Joseph R. '81
 NY O Courter, Jeanne Lynn '75
 NY II DeVoe, Charles George '76
 NY P Curran, Paul J. '83
 Kull, Philip Robert '86
 Roldan, Mark J. '85
 NC A Baer, Richard Tobias '63
 Caudle, P.E., Darryl L. '85
 Crotts, P.E., Marcus B. '53
 Fitch Jr., Johnny Edward '76
 Redano, Richard T. '84
 Shelton, Monty Lee '84
 Yohman, Donald Forest '73
 NC G Ando, Robert Ryoichi '73
 Chambers, William F. '60
 Hansen, Mikkel Anders '78
 OH A Bondor, Paul L. '63
 Kull, Philip Robert '86
 Heyman, Duane A. '63
 Karkalik, Fred G. '59
 Klinich, Kathleen Desartiss '90
 Oravec, Joan M. '71
 Wentworth, John Lee '46
 OH B Frazzoni, Gregory Francis '76
 Hagedorn, Donald Edward '54
 Hamilton, Edward L. '73
 Harner, Brian Lee '85
 OH G Becher, Charles David '72

Cowan II, Robert Lee '66
 Guins, Thomas S. '69
 Hollenbaugh, Roger E. '71
 Milligan, George Clarence '50
 Orkins, James E. '66
 Pass, Brian C. '86
 OH A Miller, Truesdell Charles '64
 Moore, Matthew F. '82
 Ronsh, Norman H. '59
 OH E Cull, Ronald Carl '70
 OH Z Allman, Susan Jane '85
 Frederick, Wm G. D. '58
 OH H Hager, Douglas Scot '85
 Kohlhaas, Richard L. '62
 Nelson, James R. '65
 Stolberg, Carl Gene '57
 OH K Maki, Luke Richard '77
 OH A Murphy, Charles J. '77
 OH M Kovacs II, William '74
 OK A Lampi, Maurice Bernard '89
 Leaman Jr., Gordon James '73
 OK B Boyce, Robert Michael '73
 Waldorf, John W. '83
 OK G Basore, Paul Alan '78
 Diggs, Robert Allen '74
 Freese, William E. '50
 OR A Andresen, Kenneth Wayne '53
 Beard, James L. '61
 Cantwell, Gary Kenneth '80
 Carlson, Burton Carter '53
 Ewing, Robert Clark '43
 Geer, Edward Douglas '52
 King, Warren E. '69

TN A Bromenshenkel, Wendy K. '89
 TN E Orr, Nancy Lynne '77
 Wilcox, Leslie M. '77
 TX A Bain III, P.E., Henry Carl '80
 Baker, William E. '52
 Glasgow, Brian Scott '99
 Godfrey, Thomas Gray '63
 Herring, David M. '55
 Hicks, Frank M. '82
 Kopecky, Johnny A. '65
 Porcher, Calvin E. '48
 Reese, Francis E. '75
 Stanbery, Sam R. '64
 Sweet, Paul A. '70
 Turner, William Donny '61
 Wilson, Randy Wayne '97
 TX B Stinson, John Michael '66
 TX F Hunter, David G. '79
 Johnson, Terry R. '55
 Lodal, Jan M. '65
 Pieper, Wylie Bernard '53
 Rutherford, Henry H. '45
 TX A Crosser, Robert E. '50
 Dokos, Nick George '57
 Garner, Scott J. '77
 Knowles, David W. '80
 Muldrow, Grady M. '89
 Richards, Tameka L. '81
 Smith, Manning D. '64
 TX E Herrmann, Edwin P. '67
 Hon, Wai-Leung '67
 TX H Brown, Ian William '73
 Nooyi, Raj Kishan '78

Fassett, Gordon W. '74
 Gallensky, Neil E. '82
 Lester, Roger N. '87
 Scharton, Craig Allen '85
SECOND CENTURY CLUB
 AL A Downs, Brian Joseph '07
 AL B Babcock, Roger L. '57
 Dodson, Gene A. '57
 Gachet, Thomas H. '60
 Moore, Robert A. '54
 Shields, Clark R. '71
 Wallace, Ronald S. '75
 AL F Banasiewicz, Kenneth A. '79
 Sawahneh, Mary C. '76
 AL A Styles, Robert Charles '76
 AL E Mincy, John Wayne '70
 AZ A Atkinson, Dale R. '86
 Davis, Robert Allen '79
 de Shazo Jr., Thomas E. '62
 Krauss, Leroy E. '50
 Leonardi, Suryanto Felix '86
 McLaughlin, Dennis P. '80
 Steinwachs, Donald M. '68
 AR A Kooker, Stephen Lowell '63
 Zaleski, Michael Ernest '63
 CA A Cocotis, Paul Alexander '90
 Griswold Jr., Thomas F. '72
 Kaprielian, Elmer F. '42
 Ong, Allen '70
 Serr, Eugene F. '46
 Trezek, George J. '61
 CA B Wassel, Gustav N. '60

CA X Michaels, Philip George '91
 CA A Johnson, Kristi Lee '01
 CO A Haycraft, Thomas Wayne '73
 CO B Akers, David A. '78
 Ashwood, Edward R. '75
 Chapman, Terry C. '69
 Davis, Gregg Randall '77
 Drexel, Charles F. '48
 Erickson II, Thurston G. '74
 Fechtel, Mark E. '76
 Furman, Michael Lee '80
 Greene, Christopher Storm '73
 Lafollette, Jack '59
 Walker, John Sherwood '53
 CT A Bugel, Robert Harry '45
 Eastman III, Frank H. '63
 Johnson, Edwin L. '57
 Lehman, Philip Lester '76
 Martin, Eugene E. '51
 CT B Altschuler, Stephen '54
 Dembiczak, Gerald J. '74
 Diggins, John Edward '38
 DE A Ferron, John Royal '48
 Halfen, Charles W. '80
 Maloney, Francis G. '73
 Tucker, Evelyn May '79
 FL A Jones Jr., Luther C. '71
 Milburn, David M. '91
 Spennering, William R. '55
 Townsend, Frank Charles '62
 Vande Vusse Jr., Gerald '65
 FL I Anderson II, Shannon R. '75
 Luce, John Wharton '50
 FL A Hewlett, Troy Stanley '97
 FL Z Stewart, Robert G. '84
 GA A Bowersox, Sara Parrish '89
 Brown Jr., Harry J. '65
 Brush, Gary Stoddard '80
 Drawdy, Jean Elizabeth '78
 Driggers, Herbert H. '63
 Leathers, James Crewe '81
 Lee, George H. '70
 Russell, Richard C. '56
 Seay II, Charles Tomlinson '63
 Sullivan, Francis J. '86
 IL A Allen, Charles Humphrey '66
 Baumgartner, Richard A. '69
 Boehm, Ronald J. '81
 Brown, Harold Thomas '68
 Dowden, Douglas C. '73
 Holland Jr., Lester Marion '66
 Jackson, Victor Guy '49
 Kipp, Lyle D. '86
 Kuhn, Paul A. '54
 Kuske Jr., John A. '61
 Michlovich, Michael S. '81
 Pubentz, Lawrence James '81
 Saltzman, Jay Adam '90
 Spitt, Frank George '52
 Steffen, James R. '74
 Stein, Roger H. '80
 Wilhelm, Dale R. '80
 Williams, Allan Richard '71
 IL B Knorovsky, Gerald A. '70
 McBlaine, Michael Richard '75
 Stocker, Danny L. '86
 Thomas Jr., Stanley R. '72
 IL I Davis Jr., Charles F. '48
 Gosnell, John R. '61
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 Weertman, Julia R. '46
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 Zeller, Sean Michael '92
 IL E Wasyleczak, Michael Joseph '78
 IN A Anderson, Kenneth R. '55
 Bach, Gary R. '74
 Becker, Kenneth A. '81
 Borgman, Earl A. '48
 Carter, Eric L. '72
 Cripe, Duane B. '82
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 Dander, David L. '70
 Davies, John R. '79
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 Dyer, Richard Wallace '60
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 Goette, William Edward '66
 Golan, James R. '54
 Good, Larry David '67
 Hartter, Larry Lee '65
 Haworth, Donald Robert '52
 Houchens, Albert F. '61
 Kettering Jr., Floyd Firman '63
 Testa, Lori Ann '01
 CA Z Benson, Chris A. '84
 Masnada, Dante Angelo '75
 CA H Puig, Carlos Manuel '94
 Rossow, Terry Lynn '66
 Zimmerman, Norman B. '57
 CA O Gilman, Larry '73
 Kantor, Michael E. '84
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 Monesko, George Edward '68
 Taylor, Robert D. '82
 CA A Fujitani, Paul Edward '79
 Holl, Susan Louise Roche '76
 Kiss, Robert David '85
 CA M Barth, Todd Vincent '79
 Clark, David James '99
 CA N Chen, Peter Wai-Man '76
 Lopez, Michael Howard '95
 CA E Nicoloff, Louise Devere '82
 Nicoloff Jr., Nicholas '83
 Schroeder, Steven A. '78
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COMBINED FEDERAL CAMPAIGN

Tau Beta Pi has been included as an eligible organization on the 2014 Combined Federal Campaign (CFC) national list. The CFC is the annual workplace fundraising drive conducted by federal employees and military personnel each fall, which raises millions of dollars benefiting thousands of nonprofit charities. Tau Beta Pi has participated since 2000.

Tau Beta Pi will appear in the listing of National/International Organizations which is published in each local campaign brochure. Your donation will be directed to Tau Beta Pi by using the CFC identification number 10960.

In previous years, our Association has received thousands of dollars annually from this campaign. Unfortunately, the many local agencies gathering donations for the campaign are not able to provide us with the names of all the donors. Because of this, a donation made through this campaign may not be included in a member's giving record. Please know that the contributions are used to support the Fellowship, Scholarship, Laureate, and District Programs.

Thank you to all who have contributed to Tau Beta Pi through this campaign!



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 †Rakula, Dierk Hans '55
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 Tamanaha, Howard S. '77
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- Young, Richard O. '62
- MO B Berkey, Vernon Glessner '50
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- Friedman, Marc Andrew '00
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- Wilreker, Victor Francis '72
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- Burgi, Charles E. '51
- Mills, Robert Allen '57
- Patterson, James Glen '99
- Wildermuth, Amy Joelle '94
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- MT B McDonnell, Kathleen G. '83
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- Sneed, Kathryn Kay '80
- Stransky, David Wayne '92
- Charron, Ronald Harvey '64
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- Wolosky, Irwin S. '88
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- NY I Blakeman II, Robert Denis '89
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- Curtis, Justin Alan '60
- Gordon, Benjamin Bruce '97
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- Walter, Ret. John Arthur '60
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- Frank III, Henry C. '77
- Hillin, Thomas A. '69
- Newton, Philip Lynn '67
- Nuccio, Robert Peter '51
- TX E Lim-Smith, Yee Lan '82
- Smith, Kevin George '81
- NY H Godwin, Albert Eugene '84
- Motley, Edward Milford '76
- Norwood Jr., Edwin B. '67
- Sanamputi, Padmavathi V. '95
- UT A Matthews, G. Morris '73
- UT B Craig, Donald D. '82
- Hart, Robert Evan '73
- UT I Clyde, Eric S. '78
- OK A Goddard, Eric H. '86
- Sleeper, Gregory D. '86
- VT B Clark, David Thomas '81
- Henry, Thomas Arthur '70
- VA A Barrill, Charles D. '70
- Colonna, James L. '65
- Stickle, Robert L. '54
- Wyant III, Thomas R. '71
- VA B Barnes, Edgar Eugene '68
- Bucklen, Jerry C. '62
- Dalton Jr., Eddie G. '86
- Davidson Jr., Charles A. '70
- Gresham, James A. '83
- Kern, David Paul '88
- Painter, Robert A. '48
- Roberson, C. Leslie '60
- Sloan, Forrest Eugene '83
- Wayne, Jennifer Susan '88
- VA I Carlson, Diana Lu Weaver '91
- Rausch, Leonard E. '80
- WA A Cahill, Robert S. '72
- Levin, Marc E. '80
- Miller, Stefan John '63
- Rosen, Donald G. '58
- Simpson, David Paul '76
- WAB Brown, Delbert Palmer '57
- Comstock, Lori A. '73
- Charles Jr., Daniel A. '83
- Sarles, Vivian B. '80
- Simon, Terry W. '75
- Bibbee, Dennis E. '68
- WVA Pellegrin, John Daniel '73
- Rowe Jr., Eldridge E. '68

SECOND CENTURY CLUB, CONTINUED

Zimmerman Jr., Albert R. '58	Herning, Joel Gregory '69	MA I	Masi, James V. '60	Sugin, P.E., Leonard '55		Streb, Paul L. '54
WV B Stevens, Ellen W. '84	Kenny, Kevin Bernard '90		Schreiner, Steven '88	NY Θ	Free, Albert P. '78	PA I Eweler, Nathan Troy '07
WI A Antolovich, Stephen Dale '62	Kueck, Thomas L. '64	MI A	Conklin, Daniel L. '65		Hunt II, William E. '59	Goebel, Kenneth A. '76
Devoe, Michael J. '78	Ross Jr., William Charles '86		Fike, Jay Edward '96		Thiemann, Peter Ernest '79	Henry, Martin W. '72
Diedrich, Donald L. '69	Stutzman, Byron William '60		Hole, Kevin Michael '90	NY I	Andrews, Richard F. '79	PA A Tjader, William S. '79
Ellison, Henry O. '58		IL B	Lipsitt, Harry A. '52		Ispass, Alan Benjamin '74	PR A Brana-Mulero, Francisco J. '74
Fifer, Larry Dean '83			Meckler, Carrie Lynn '98		Kayton, Myron '55	Hernandez, Edgar '77
Meister, James Richard '78		IL I	Su, William Perry '90		Lerner, Steven L. '75	Ortiz-Cassaus, Manuel Angel '92
McCleary, John Allen '68			Bartholomew, Thomas '83	MI B	McCutcheon, William John '66	Padria, Jose L. '84
Tausche, Paul Everett '48			Ilax, Susan B. '77		Nelson, Carl E. '54	Perez, Luis A. '88
WI B Bella, Robert A. '65			Luttinen, Gail Lee '68		Ronan, Anne D. '83	Santana, Juan Carlos '97
Graef, P.E., Luther W. '52			McNeil, Michael T. '86	NY K	Shevchuk, George J. '71	Shev-Reyes, P.E., Miguel '84
Lenz, Marsha Joann '86		IL Z	Oliver, Bruce L. '63		Foot Jr., James Conklin '60	RI A Salmon, Edward D. '66
Lubinski, Paul J. '87		IN A	Peck, John Hudson '68		Reid, Patti Allyson '83	SC A Brooks, Nigel R. '69
McMorrow, Daniel Patrick '98			Pollock, Craig Allen '80	NY A	Chipolone, Michael D. '54	SC B Calcutt, Walter Wade '91
Niggemann, Richard E. '60			Skaugen, Borg '63	NY N	May, Kenneth R. '78	SC B Stuedel Jr., Edward M. '64
Wentink, William Stewart '68			Whipple, Kristina G. F. '87	NY E	Thumminello, Paul A. '85	SC I Kiggans, Robert Gene '65
Wick, Paula B. '81			Willing, Vernon R. '64		Cleary, Thomas F. '73	Langston, Ronald E. '64
Wilhelm, James J. '69			Gallagher, Howard A. '51		Cole, Randolph Paul '68	SD A Bier, James J. '84
WI I Scherer, Richard A. '74		MI I	Ackenhussen, Thomas W. '89		Elkaslasy, Samy '10	Keller, Debra S. '78
Siehr, Tim Matthew '86			Fishback, James Allen '74		Green, Gary P. '71	Kerk, Carter J. '81
WY A Cavalli, Matthew '98			Frantz, John A. '80		Taylor, Matz, James B. '80	SD B Packard, Douglas Randall '64
Hill, Janet Lynn '95			Geib, Arthur John '44		Vitulli Jr., Joseph L. '80	TN A Exum, Hal '52
			Gross, Paul Henry '83	NY O	Fleming-Dahl, Arthur Nels '80	Hudson, Harold D. '64
			Hornburg, Donval P. L. '57	NY P	Ferreira, Antonio Manuel '97	Jones, Michael J. '68
			Jones, Bruce Elliott '81		Ramos, Dennis J. '03	Lotts, Adolphus Lloyd '55
			Kowal, Brian William '73		Rossin, Alan R. '79	McConnell Jr., Oaklie K. '51
			Mahowald, John E. '77	NC A	Benge, George Gregory '83	Perkins, Michael Byrd '61
			Schepis, Deborah Kalef '83		Borden, Laura H. '82	Rochat, Vernon E. '58
			Schepis, Randy S. '83		Freeze, John M. '85	Tang, Alice W. '86
			Stoughton, Herbert W. '73		Helms, Chester Ethane '74	TN B Spurgeon, Susan Prozelius '65
		MI A	Dauerer, Walter P. '60		Keith, Alan R. '82	Westerman Jr., William J. '59
			Gallagher, James A. '68		Noziger, Charles L. '73	TN I Badiru, Adedeji B. '79
			Hemming, Joseph A. '69	NC I	Astropino, Arthur '79	Moon, William Tom '61
			Lee, Albert W. '62	NC A	Dempsey, Gary L. '82	Moyers, Robert Lewis '05
			Olex, Michael '74		Nixon, Robert David '82	TN A Maguire, John H. Lewis '72
			Walsh, John S. '80	NC E	Craft, William J. '63	TN E Dodson, Gregory A. '77
		MI E	Grant, Robert M. '75	ND A	Herther, Terry Dai '60	Jones, Michael J. '68
			Hill-Stramsak, Colleen Lynn '00		McCormack, Fred E. '76	Lotts, Adolphus Lloyd '55
			Yarne, Victor C. '68		Rossin, Alan R. '79	McConnell Jr., Oaklie K. '51
		MI Z	Bowers, Jeffrey S. '75		Palmer, William A. '65	Perkins, Michael Byrd '61
			Carpenter, Robert Daniel '82		Reifschneider, Paul H. '80	Rochat, Vernon E. '58
			Doo, Yi-Hsien '81		Rieder, William G. '56	Tang, Alice W. '86
		MI H	Kipp, Carl R. '83		Schmidt, Wayne Joseph '50	Tang, Alice W. '86
			Kipp, Eric Michael '98		Solberg, Bruce Jerome '69	Wing, Lucas '84
			Stramsak, Steven A. '01	OH A	Cares, William R. '63	TX B Figueroa, Francisco A. '67
		MI Θ	Merrick, Nelson J. '71		Fakult, Joseph Paul '90	Krauss, Kerry L. '72
			Zarins, Paul Steven '87		Kirkland, Earl J. '75	McMillen, Robert P. '78
		MN A	Larson, Michael L. '59		Lund, Jeffrey W. '69	Reeser, John B. Lewis '05
			Loomis, Howard B. '51		Meissner, Robert P. '53	TX I Jacobson, Marcus J. '52
		KS A	Tarek, Joseph Anthony '79		Ness, Valoree J. '73	TX A Baskin, Leland Burleson '74
			Walsh, John S. '80		Prickeet, Gordon Odin '58	Bolander, Jeffery Noel '82
			Kastman, Kenneth Herbert '66		Bell, Charles V. '56	Butte, Jennifer Lynne '89
		IN A	Nagielski, Lawrence S. '81		Cleveland Jr., Grover '69	Burk, Dannie O. '68
		IN E	Nagielski, Lawrence S. '81		Dowdle, Walter L. '67	Caffey, James Enoch '55
		IA A	Brackett, Robert Chase '48		McVea III, Albert N. '79	Fowler, Joe Robert '68
			Hining, Dennis E. '70		Steele Jr., W. Glenn '68	Hopper, Bruce L. '67
			Maifield, Christopher James '95		Steele Jr., W. Glenn '68	Messengale Jr., Levon '51
			Sorensen, John Albert '62	MO A	Salerno, Kenneth Wilbur '55	Vaden III, Frank S. '56
			Stammer, Russell D. '79		Campan, Michael J. '84	Bair, Alan Roy '77
			Van Horn, David A. '51		Sandridge, Jack R. '65	Bloschek, Mark J. '77
		IA B	Gurnett, Donald Alfred '62	MO B	Weidinger, Robert P. '61	Kennedy, Sean Florence '94
			Kessen, James Franklin '88		Bach Jr., Wilbert Edward '50	TX Θ Hoppersall, Robert D. '72
			Nicodemus, Keith L. '32		Hanser, David '92	Pearnsall, Katherine June '71
			Priester, Henry Wyatt '83		Katz, Manfred '55	Maguire, Daniel M. '81
		KS A	Pack, Garrett E. '60	OH A	Knepfer, Andrew Edgar '51	Somes, Brian '89
			Rock, Brian A. '85		Kopsky Jr., Raymond J. '84	Essman, Joseph Edward '57
			Vann, Kyle David '70	OH A	Deem, Sara Peters '83	UT A Birk, Jack Nelson '47
			Vaughan, Charles Francis '77		Essman, Joseph Edward '57	UT B DeCarlo, Armando '95
		KS I	Berland, Stephen Lawrence '72		Felice, Conrad William '79	Hardy, Mark D. '84
			Gudenkauf, Wayne Anthony '93		Hild Jr., Wilbur H. '64	VT A Pease, Brian Leigh '64
			Heronemus, Daryl L. '77	OH E	Hupp, William M. '69	VT B Komoni, Krenar '06
			Kottwitz, Donna D. '75		Bennett, William R. '80	Pypfer, Gordon Richardson '48
		KY A	Lockhart Jr., Zane Duane '86	OH Z	Badik Jr., Thomas B. '85	VA A Binder, Ronald W. '74
			Midkiff Jr., Kenneth Clark '79		Jones, Barbara J. '82	Byers, Duane Michael '80
			Rawe, Richard Anthony '57	OH H	Isett, John Barton '78	Clem, Kenneth R. '69
			White, Garey L. '51		McKenzie Jr., Leslie E. '77	Coleman, George W. '45
		KY B	Gray, John H. '75	OH Θ	Merkle, Laurence Douglas '92	Kiss, Linda D.B. '85
			Cederman, Candace R. '82		Begovich, John Michael '74	Loecks, Steven J. '64
			Gray, Donald Lee '55	OH I	Trogus, Frank Joseph '69	Mac Glashan, Donald Welton '57
		LA A	Bouvier Jr., Maurice J. '59		Marone, Victor D. '59	Rodeffer, Charles C. '58
			Bullard, Salem C. '63	OH K	Morris, John Mikel '99	VA B Blanton, John C. '76
		LA I	Sutton, Jerry Kent '67		Michalak, Travis Edward '03	Ernest Jr., Charles L. '70
		LA A	Hoffman III, William C. '84	OH M	Neely, Matthew Minick '91	Mayer, D. Stephen '49
		ME A	Bowden, Warren W. '49		Myers, Kenneth S. '53	Myers, Kenneth S. '53
			Smith, Edwin B. '50	OK A	Petruska, Gregory J. '80	Rhodes, Marvin D. '63
		MD A	Aaron, Nelson Harris '80	OK I	Flaming, Keith Edward '80	Thlachak Jr., Charles J. '61
			Catlin Jr., John Carey '69		Krause, Lester Eugene '56	VA I Simmons, William Allan '95
			Doll Jr., Martin L. '78	OR A	Gibbs, Bruce F. '79	Allyn, Donald C. '59
			Leimbach, Wendell B. '71		Marquis, Malcolm '53	Betts, Frank Patrick '90
			Leith, Robert S. '51	PA A	Albright, Carl H. '55	Christiansen, Walter H. '84
			Ranestad, Andreas '59		Danner, Joseph C. '59	Danielson, Donald Hayden '54
		MT A	White, Richard H. '72		Flaherty, Robert E. '68	Haase, Richard H. '50
		NE A	Hofer, Diane J. '82	OH I	Hicks, Robert C. '49	Perrault, William Richard '59
		NH B	Price, Alexander Daniel '05		Huester, Peter K. '53	WAB Swinford, Thomas Harold '82
			Barrise, Anthony L. '70	OH K	Johnson, Robert Scott '80	WAF Wong, Tommy S H '06
		NJ A	Boardman, Thaddeus J. '52		Phelps, David Reeves '62	WVA Britton, Barry Kevin '85
			Gertz, Alan S. '45	PA B	Stanley, Richard A. '63	Kaick, Richard J. '84
			Swanson, Frederick James '68		Garback, Richard Joseph '59	Mongold Jr., Guy E. '50
		NJ B	Brandenburg, Dan S. '72		Godlesky, Mark Albert '87	WI A Frazier, Clive '66
			Barry, James J. '70	PA I	Trochio, James T. '82	Nesbitt, John David '82
		NJ I	Busch, Robert E. '68		Au, Tung '43	Stahl, Bernhard '63
			Kobylarz, Thaddeus John '58		Bissert, Fred J. '56	Kern, Keith L. '57
		MA A	Labos, William Joseph '73		Bloom, Jeremy A. '73	Barone, Frank J. '82
			Lerner, Marshall Aron '62	PA A	Frison, Bradley Joseph '82	Fosselheim, Franche Marie '99
		MA B	Sulzberger, Virginia Claire '62		Danner, Joseph C. '59	Hanser, Eric D. '77
			Aughenbaugh, Jason M. '01		Flaherty, Robert E. '68	Koester, Fred W. '59
		NJ A	Moore, James Holloway '84		Hicks, Robert C. '49	Lind, Bruce A. '64
			Madia, Joseph '82	PA E	Huester, Peter K. '53	Pelt, Thomas E. '70
		NY A	Moody, J. Roger '58		Johnson, Robert Scott '80	Beckley, Linda K. '88
			Moody, J. Roger '58		Phelps, David Reeves '62	WI E Holte, Jennifer E. '90
		NY B	Borst, Kenneth J. '49		Stanley, Richard A. '63	WI A Caudill, Lisa A. '86
			Hennessey, James E. '55		Garback, Richard Joseph '59	Muchmore, Royce A. '93
			Leight, David M. '75		Godlesky, Mark Albert '87	
			Placentra, Nicholas Joseph '79		Trochio, James T. '82	
		NY I	Rubinstein, Ian Z. '69		Au, Tung '43	
			Beesley, Arthur H. '75		Bloom, Jeremy A. '73	
			Foust Jr., Tilman H. '68		Frison, Bradley Joseph '82	
		MA A	Hrudu, Prokop V. '83		Danner, Joseph C. '59	
			Ives, HSN Ret, Jon Robert '61		Flaherty, Robert E. '68	
			Kotzalas, Nick '60		Hicks, Robert C. '49	
			Levin, Neil '80		Huester, Peter K. '53	
			Smith, Catherine Vaddala '86		Johnson, Robert Scott '80	
		NY A	Ball Jr., Robert W. '65		Phelps, David Reeves '62	
			Beaubien, Robert Patrick '90		Stanley, Richard A. '63	
			Kovacs, Sandor Janos '69		Garback, Richard Joseph '59	
			Lampell, David Mark '73		Godlesky, Mark Albert '87	
			Lazar, Dale S. '74		Trochio, James T. '82	
		MA E	Munch, William D. '76		Au, Tung '43	
			Ng, Benjamin '81		Bloom, Jeremy A. '73	
		NY E	Gallo, Santo V. '72		Frison, Bradley Joseph '82	
			Hoekstra Jr., Robert '56		Danner, Joseph C. '59	
			Lokenberg, John A. '69		Flaherty, Robert E. '68	
			Magliani, Robert Z. '63		Hicks, Robert C. '49	
			Magnina, Anthony F. '55		Huester, Peter K. '53	
			Reiss, Herbert R. '58		Johnson, Robert Scott '80	
		NY Z	Dileo, Daniel A. '69		Phelps, David Reeves '62	
			Pollack, Martin L. '72		Stanley, Richard A. '63	
		NY H	Le, Phong Dang '90		Garback, Richard Joseph '59	
			Rubin, David Kenneth '59		Godlesky, Mark Albert '87	
		MA H	Walsh, Edmund John '83		Trochio, James T. '82	
					Au, Tung '43	
					Bloom, Jeremy A. '73	
					Frison, Bradley Joseph '82	
					Danner, Joseph C. '59	
					Flaherty, Robert E. '68	
					Hicks, Robert C. '49	
					Huester, Peter K. '53	
					Johnson, Robert Scott '80	
					Phelps, David Reeves '62	
					Stanley, Richard A. '63	
					Garback, Richard Joseph '59	
					Godlesky, Mark Albert '87	
					Trochio, James T. '82	
					Au, Tung '43	
					Bloom, Jeremy A. '73	
					Frison, Bradley Joseph '82	
					Danner, Joseph C. '59	
					Flaherty, Robert E. '68	
					Hicks, Robert C. '49	
					Huester, Peter K. '53	
					Johnson, Robert Scott '80	
					Phelps, David Reeves '62	
					Stanley, Richard A. '63	
					Garback, Richard Joseph '59	
					Godlesky, Mark Albert '87	
					Trochio, James T. '82	
					Au, Tung '43	
					Bloom, Jeremy A. '73	
					Frison, Bradley Joseph '82	
					Danner, Joseph C. '59	
					Flaherty, Robert E. '68	
					Hicks, Robert C. '49	
					Huester, Peter K. '53	
					Johnson, Robert Scott '80	
					Phelps, David Reeves '62	
					Stanley, Richard A. '63	
					Garback, Richard Joseph '59	
					Godlesky, Mark Albert '87	

Grateful Appreciation of Member-Contributors

AL A	Reilly, Patrick Francis '93	Matsuo, Roy Minoru '59	Harr, Calvin Dean '73	Boggio, Joseph Edward '58	Graves, Meek Bernell '55
AL B	Foster, Jonathan Michael '13	Oikamitsu, Gregg Kimu '82	Hendrich, William R. '62	Calzone, Joseph A. '61	Henley Jr., James A. '60
	Lamar, John E. '82	Vick-Roy, Thomas R. '44	Hughes, Gordon M. '81	Duscha, Hannah Mitsue '12	Kyzar, R. Andy '67
	Pilleteri, Joseph '74	CO F	Kerber, Ronald L. '65	Kennedy Jr., Francis E. '63	Moring, Jane Alicia '89
	Price, Andrew Roy '11		Miliken, Don Brant '52	Melanson, Vanessa Rose '01	Odom Brackett, Cornelia A. '83
	Price, Marion R. '75	CO A	Moore, Darrel D. '64	Nesman, Edwin Franklin '55	MO A
AL F	Willoughby, William M. '76		Nichols, Anne Bernadine '85	MA B	Aschkenase, Steven Alan '81
	Nichols, Gary G. '78	CO A	Rehfs, Elizabeth Mellett '86		Buncher, Charles R. '60
	Wilson Jr., Herbert W. '87		Schleich, Paul C. '80		Carpenter, Jack W. '51
AL E	Eringman, William John '06	CO Z	Schilling, William J. '55		Chang, Nancy Tien-Tien '87
AK A	Blum, Cynthia Louise '85		Shimp, Alan B. '55		Fynsk, Arthur William '50
AZ A	Baldwin, David B. '76	CT A	Shook, Edgar Graham '60		Lippitt, Alvin Warren '72
	Brusch, Richard Gervais '65	CT B	Stanwood, Jay W. '52		Marshall, James Louis '49
	Nowatzki, Edward A. '62		Tyrrrell, David H. '58		Salehi Omran, Sina '10
AZ B	Ivan, William Thomas '92		Wagner, Steven John '88		Silveston, Peter L. '51
	Lancaster, Jessica Jones '05	CT F	Manhart, Robert A. '44		Walsh, Edmon Francis '03
	Warg, Paul A. '74		Morhead, Bruce H. '51	MA A	Wiegner, Allen Walter '69
AR A	Macke, Bruce Clay '80	DE A	Rolenc, Christian Edward '94		Brown, Donald Claflin '59
CA A	Carvalho, Chris Joseph '81		Williamson, Robert John '10		Fisher, Evelyn C. '74
	Chu, Jeffrey M. '82	DC A	Ford, Kevin Anthony '82		Fogel, Arlene Beck '77
	Fretter, Ernest F. '67	DC B	Gillan, John J. '65		Kakliamanos, James '08
	Inami, Thomas Tatsuchi '52		Hurlbut, Margaret Hoffman '13	MA E	Wu, Andrew Yao '00
	Talghader, Vivian Lee '91	DC B	Tavares, Edward Joseph '70		Cohen, Jacob '81
	Whisler, William D. '59	DC F	Tragarr, Michael Aloysius '65		Kurtz, Wayne '87
	Wizelman, David Aaron '00		Turek, Mary Beth '79		Lerner, Herbert A. '50
CA B	Chang, I-Lok '65	FL A	Bedford, James Z. '78		Wilt, Donald R. '65
	Chavakula, Vamsidhar '08		Campbell, Jerry Robert '82	MA Z	Liau, Irene '82
	Drehaman, Alvin J. '78		Douglas, Gavin Lee '63	MA H	Richardson, Alan M.L. '70
	Whitehead, John C. '82		Doyle, Steven E. '87	MA O	Mallela, Vidhi '86
CA F	Bochman, Margaret Pfeiffer '12		Grau II, Erwin F. '67		Abubio, Paul Douglas '91
	Groundwater, Don M. '75		Keane, Barry Patrick '71	MA I	Vasilios, Thomas '50
	Lai, Eric K. '09		Knapp, Paul Edward '77		Allard, Timothy Ryan '08
	Richardson, John L. '56		Ruckstuhl, Ann Sung '86	MI A	Zawacki, David Vincent '98
CA A	Amanatullah, Derek '98		Schoppman, Gregg M. '08		Andersland, Orlando B. '52
	Beckstead, Dale Allen '59	FL B	Yaros Sr., Michael A. '79		Berg, Kristin E. '83
	Fujihara, Glenn Y. '74	FL F	Basta, James J. '85		Christenson, Carl Elcon '49
	Ung, Evelyn Fay '83		Brown III, Norman L. '96	IA B	Fellingham, Linda Lorraine '71
	Van Der Laan, William F. '62		Fuller, Robert Clark '75		Guidry, Kevin J. '78
	Yuan, Harold C. '77		Lamaack, David Bradley '92		Hironaka, Noboru '57
CA E	Brady, Dale D. '56		Schmitzler, Paul '57		Hunt, Dayton Allen '52
	Krieger, Marc Danny '88	FL E	Catanese, Anthony James '63		Kostrzewa, Audrey Sue '86
	Platus, David Lewis '53		Chen, Meiying '13	KS A	Potvin, Deborah L. '91
CA Z	Jones, Frederick W. '65	FL Z	Hoo Fatt, Marlon Dean '88		Vannice, Merlin A. '64
	Zones, Donlan F. '52		Jakubowski, John C. '87	MI B	Kicinski, Stephen E. '59
	Lee, Mario John '79	FL H	Lamb, James Meigs '93		Markwardt, Donald D. '57
	Tsukayama, Taryn S. '11		Nance, Craig E. '91		Sauer, P.E., Daniel Michael '05
CA H	Gerken, Gary Mark '11	FL O	Burrow, Gregg Duncan '11		Shroff, Avante C. '65
	MacAraeg, Christopher C. '87	FL I	Passarelli, Brian L. '10		Thoume, Diane Lynn '98
	Morgan, Kimpton B. '85	GA A	Andrews, Harry W. '70		Wiersema, Ronald G. '57
CA O	Griffith, Rickie Charles '74		Benator, David Ross '82	MI F	Averbook, Charles J. '69
	Mijares, Ernest R. '62		Clark, Martin '53		Balachander, R. S. '87
	Shipp, John Gregory '64		Dundervill, Walter E. '58	NJ F	Bonevich, John E. '86
	Valenzuela, Robert Daniel '13		LeCroy, Robert Thomas '83		Bulleri, Andrew Anthony '60
CA I	Schamp, Carol J. '74		Mencol, Serafin G. '75		De Boer, Douglas F. '78
	Sullivan, Patricia Ann '80		Presley Jr., William H. '51		Duncan, Ph.D., T. Michael '75
	Youngblood, Terry Lee '66		Sammweber Jr., Martin '73		Hewitt, Thomas R. '71
CA K	Longenecker, Eric Benton '89		Stainton, Samuel David '73	KY A	Huellerbauer, Jakob N. '13
	Siu, Jeff '07		Turney, William Joseph '73		Lazaroff, Joseph L. '62
CA A	Brookman, S.E., Ronald H. '84		Yarbrough, David Wylie '60	KY B	Margolese, Kate Mary '84
	Hamber, Robert A. '78	ID A	Eckert, Wayne Willis '68		Mehlhorn, Thomas Alan '74
	Jensen, Mark Christopher '93		Morrison, Robert Clayton '75	LA A	Melvin, James Coleman '86
	Miller, Richard K. '71	IL A	Anderson, Richard E. '67		Mohr, Dale '56
	Niebuhr, Philip Martin '86		Byrne, Richard Peter '79		Piatkowski, Thomas F. '60
	Swanson, Charles W. '98		Carroll, Matthew Francis '86		Sherman, Steven Randall '92
	Ftaeck, Leonard George '74		Cribbett, James Eric '96		Teller, Andrew S. '61
	Perry, Paul E. '05		Jacobson, Paul A. '80	LA B	Thompson Jr., Levi T. '81
CA N	Amirhosseini, Michael M. '90		Messner, Laura E. '10		Veiling, Thomas R. '99
	Davis, Gary Markham '02		Messner, Mark C. '10	MI A	Weins, Michael James '61
	Dubral, Douglas L. '76		Smith, Dale Clarence '48		Kudiac, Gregory Alan '86
	Miller, James Allen '73		Toy, Mae Y. '75	LA F	Kudiac, Maureen Dorsey '86
	Nava, Juan Carlos '82	IL B	Saathoff, William M. '85		Sommerfeld, Jude Thomas '58
	Reinsvold, Chris H. '81		Sahlstrom, Roy '45	LA E	Ziemba, Gerald Paul '57
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	Peterson, John A. '93		Nudd, Oliver R. '92		Miller, Stanley John '49
CA P	Ramirez Jr., Jose Juan '05	IL E	Rawson, Norman Elroy '58	MD A	Decker, Gilbert Felton '58
	Tatum, Tiffany '13		Tatun, David Mark '80		Porter, Neil C. '86
CA T	Vu, Paul C. '89	IN A	Andrew, Stephen Peter '82		Ragonese, Paul Phillip '67
CA Y	Ancheta, Cesar M. '87		Berman, Mitchell L. '74	MD B	Ulanowicz, Robert E. '64
CA X	Tanigawa, Shayne Kaori '95		Bock, Robert H. '54		Yaffe, Barry Marshall '62
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CA A	Tillotson, Trisha Marie '01		Carbniener Jr., Wayne A. '85	LA G	Bloom, Seymour '59
CO A	Banaszak, James E. '83		Clark, Ronald Ray '62		Bouchev, Stuart Henry '50
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	Kassens, Clarence L. '51		Fuhrman, James E. '74	MD F	Poffenberger, Thomas Alan '82
	Pratt, Ronald M. '80		Glenn, Richard A. '49		Rader, Richard Andrew '62
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IN THE COLLEGES

SPOTLIGHT

Moving Staff Around

Oil and gas companies throughout the industry continue to see a shortage for engineers, even with energy prices fluctuating.

“We are seeing a shortage of qualified engineers and geoscientists, mainly in the experience range of eight to 15 years,” said Jennifer Koury, vice president, human resources, petroleum, at BHP Billiton, the world’s largest mining company.

“We focus our searches on individuals that have experience with other E&P operating companies, but for certain disciplines we are able to hire engineers and geoscientists from service companies who are not in the upstream side of the business. Some examples are project engineers, process/facilities engineers, and some from the geophysical/petrophysical disciplines.”

BHP Billiton recently had the opportunity to transfer a number of geoscientists from some of its mining divisions. This will give these individuals the opportunity to learn the oil and gas industry and broaden their experience as geoscientists.

Most of BHP Billiton’s demand for engineers is for office-based roles. However, these individuals are expected to travel to field locations often.

•The AP reported recently on the growing presence of women in the petroleum engineering industry, comprising 25% of the national industry according to the U.S. Bureau of Labor Statistics figures and 19% according to a March 2014 IHS report for the American Petroleum Institute. The report highlighted a need for more female mentors and mentorees in the field.

Manning-up?

As a follow-up to recent studies on sexism and harassment in STEM,

researchers studied the Internet’s reaction to the evidence those studies provided—and it turned out that male commenters flipped out.

The study’s results were published in the journal *Psychology of Women Quarterly*.

To see how different genders reacted to evidence of bias, researchers looked at the comment threads of articles about studies on the issue.

Several studies have shown that a gender gap exists in STEM fields, with women losing out across academia and industry. In 2012, researchers from Yale published a study that indicated unconscious gender biases in hiring processes.

All other things being equal, academic hiring squads were rating the women as less competent than men.

Reader feedback on three articles written about studies like these (posted on *The New York Times*, *Discover Magazine*, and *IFL Science*) showed:

- 9.5% of the comments argued that sexism does not exist; 68% of these commenters were men.
- 67.4% of the comments agreed that gender bias exists; of these 29% were men.
- 22% of all of the comments justified the existence of gender bias. Of these comments, between 79% and 88% were made by men.
- 7.6% of the comments argued that sexism targets men more than women; 65% of these commenters were men.
- All comments expressing gratitude for the study came from women.
- Only .5% of the comments mentioned that their minds were changed about gender bias after reading the article; of these 67% were made by men.

There were sexist remarks in the comments. Seven percent of comments contained such statements, 76.8% of them smearing women.

STEM Trend

A National Student Clearinghouse report found the number of STEM bachelor’s degrees received by women has “ticked down over the past decade,” according to *The Washington Post*.

Women received 23% of BAs in computer science in 2004 versus only 18% in 2014. The study also notes that both sexes were “slightly more likely” to major in STEM fields in 2014 than they were in 2004.

The study also notes that educators have cited Harvey Mudd College “as a role model” for encouraging women in STEM fields, as the school’s “revamped” intro course and other changes have led to women comprising “nearly half of its computer science majors.”

•A study by the National Student Clearinghouse Research Center found that the number of U.S. students who complete degrees in science and engineering increased by only one percentage point from 33% in 2004 to 34% in 2014, despite a national effort to enhance workers’ skills and in turn strengthen US economic competitiveness.

PEOPLE

Michael D. Amiridis, Ph.D., *South Carolina Beta* ’85, has been named



as chancellor of the University of Illinois at Chicago. He was previously executive vice president for academic affairs and provost at the University of

South Carolina in Columbia, where he joined the faculty as a professor of chemical engineering in 1994. Earlier posts included being an engineer for North Aegean Petroleum Company, an energy company based in his native Greece, and a lecturer at Johns Hopkins University in Baltimore, MD.

Pamela A. Eibeck, Ph.D., P.E., *Arizona Gamma '79*, has been appointed to the National Collegiate Athletic Association (NCAA) Division I Committee on Academics. Eibeck is president of



University of the Pacific and will serve as vice chair of the committee, which will focus on advancing the association's mission of supporting student-athlete success in the classroom and on the playing field. The new committee is comprised of academic and athletics leaders from 20 other institutions of higher education.

FACILITIES

University of Illinois has held the first day of classes in its new \$95 million electrical and computer engineering building, noting that the facility had been "decades in the making."

The 230,000-sq.ft. building, pictured, is designed to be a net-zero energy user, with solar panels, low-energy lighting, efficient heating and cooling systems, and a soaring atrium designed as a community space for students and faculty. There are state-of-the-art design labs open to undergraduates and a 400-seat auditorium.



Members of the university community call the building "a huge, high-tech improvement" over the department's home for more than half a century, Everitt Lab at Green and Wright streets. That is being renovated for the department of bioengineering.

Michigan State University's board of trustees has approved the opening of the new department of biomedical engineering at MSU. The first courses will be offered in Spring 2016.

Engineering dean **Leo C. Kempel, Ph.D., Ohio Beta '89**, said the department will become a lightning rod between the college and the rest of campus, "This will allow the expansion of translational research at MSU and



provide a framework for expanding our collaborations in translational health care."

Many of the activities will be centered in the MSU bioengineering facility, pictured, currently being built on the south side of campus. The almost \$61 million project has four stories and around 130,000 square feet.

Faculty members are expected to start moving into the new structure this summer or early fall. Primary tenants will be faculty from MSU's colleges of engineering, human medicine, and natural science.

Purdue University and GE Global Research have entered into a partnership which the school says marks a new approach to expediting the academia-based technology commercialization process.

The agreement will merge the expertise of GE's corporate technology commercialization group with innovations being developed at Purdue to commercialize new technologies.

"GE already benefits from a long-term collaborative affiliation with Purdue that dates back more than 100 years, and historically GE hires more Purdue students than from any other university in the world," said Tony Denhart, region manager, university relations at GE. "As we have experienced, the core values of Purdue and GE match up well and this agreement moves our partnership to the next level."

Purdue innovations under consideration for development through the partnership include enhanced medical diagnostic imaging, advanced propulsion technologies, solar technologies, energy recovery tech-

nologies and new biological testing technologies.

University of Tennessee, Knoxville, will lead the Institute for Advanced Composites Manufacturing Innovation (IACMI), a \$259 million public-private partnership. The institute reflects a \$70 million commitment from the U.S. Department of Energy and \$189 million from IACMI's partners.

Supported by the DOE's advanced manufacturing office in the Office of Energy Efficiency and Renewable Energy, IACMI joins four other institutes backed by the Obama administration in a recent push to accelerate advanced manufacturing.

The institute is regionally organized around five focus areas: vehicles (Michigan); wind turbines (Colorado); compressed gas storage (Ohio); design, modeling and simulation (Indiana); and composite materials and processing technology (Tennessee supported by Kentucky).

The focus will be on advanced fiber-reinforced polymer composites that combine strong fibers with tough plastics to yield materials that are lighter and stronger than steel.

University of Texas at Austin's school of engineering has been given \$3.5 million by Texas Instruments Inc. for teaching and project labs for its department of electrical and computer engineering.

The TI Laboratories will be in the school's engineering education and research center and is set to open in 2017 in Austin. The Engineering Education and Research Center will have 430,000 square feet of open, flexible space for multidisciplinary learning and student projects.

TI is a longtime supporter of the Cockrell School of Engineering and UT. Since 2010, more than 70 electrical and computer engineering students have received TI scholarships and fellowships. More than 500 UT alumni work for the company, and about 300 are graduates of the Cockrell School.



Indiana University—Purdue University, Indianapolis

iNDIANA UNIVERSITY–PURDUE UNIVERSITY INDIANAPOLIS (IUPUI), a partnership between Indiana and Purdue universities, is Indiana’s urban research and academic health sciences campus. Its roots can be traced back to 1891, when Bloomington-based Indiana University offered classes in Indianapolis for the very first time. In the decades that followed, both IU and Purdue proved themselves dedicated to providing higher education opportunities in Indianapolis, offering programs in the liberal arts, medicine, and more.

However, the two universities operated independently

until then Indianapolis Mayor Richard Lugar called for “a great state university in Indianapolis” in 1968. As a result, IU and Purdue merged their many programs and schools to create the new school in 1969.

Today, IUPUI has two colleges and 17 distinct schools that confer 200 degrees through the two universities. More than 30,000 students, including approximately 5,000 graduate and professional students, attend IUPUI. The university’s mission is to advance the state of Indiana and the intellectual growth of its citizens through research and creative activity, teaching and learning, and civic engagement. By offering a distinctive range of bachelor’s, master’s, professional, and Ph.D. degrees, IUPUI promotes the educational, cultural, and economic development through innovative collaborations, external partnerships, and a strong commitment to diversity.

Forbes ranked IUPUI as the 8th Best Public College in the Midwest, and recently, it was listed as the #5 Up-and-Coming University in the nation by *U.S. News and World Report* magazine. The university made the top 20 list for best non-historically black colleges and universities for minorities by *Diverse: Issues in Higher Education*. IUPUI also was listed 156th in the 2014 global university ranking from The Center for World University Rankings. The university was named a “Savior of our



Cities” and received the President’s Higher Education Community Service Award for Excellence in General Community Service.

In addition to offering cutting-edge academics, the university is a research catalyst, enabling collaborative inter-disciplinary research teams who drive innovation and technology realization. IUPUI has made great strides over the last several years through 100 pioneering research centers led by talented faculty and students from all over the world. These centers are focused on solving pressing challenges in areas such as health care, energy, and transportation, while educating a technically savvy workforce. In fact, IUPUI researchers attracted just over \$336.3 million in extramural research grants and awards in 2012-13.

The largest school on the campus—in terms of degree-seeking students—is the Purdue school of engineering and technology, with 3,100 students pursuing programs (2,700 undergraduate and 400 graduate). It was formed in 1972 and is the successor to Purdue University programs that began in 1940. The first Purdue courses in the city were for defense training and sponsored by the U.S. Office of Education.

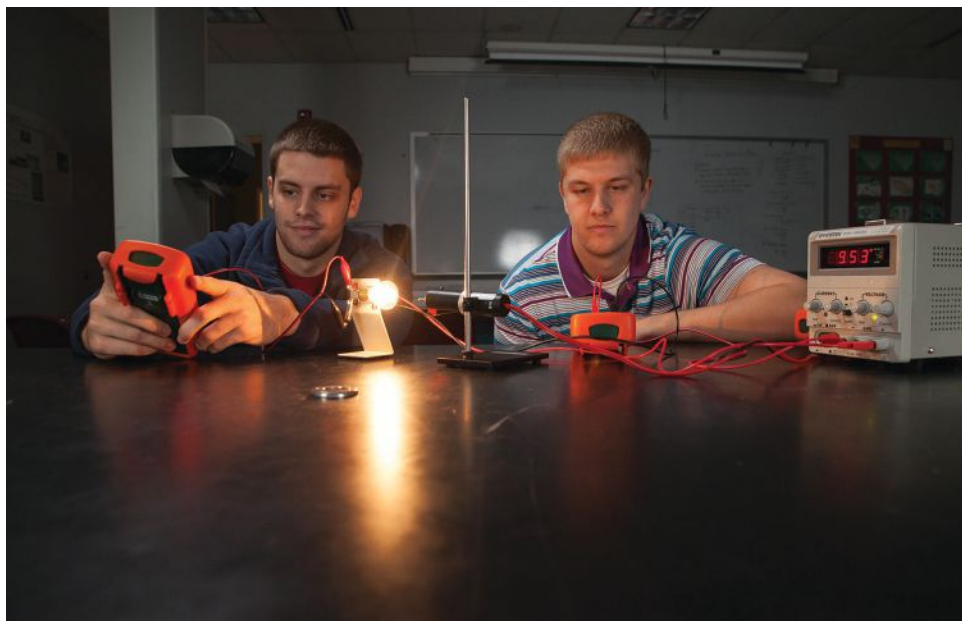
After World War II, the curriculum was changed from a certificate to a diploma program. Three technical-institute programs were established: drafting and mechanical technology, electrical technology, and supervision and production technology. Ten students graduated at the first commencement in 1947. Freshman engineering courses were added in 1948; the bachelor of science in engineering degree was first offered in 1969.

Nationally Ranked

Today the school offers nationally ranked undergraduate and graduate programs leading to Purdue University degrees. The school was ranked among the top 100 in *U.S. News and World Report’s* 2015 College Ranking Lists in the category of Best Undergraduate Engineering Schools offering the doctorate. Departments include: biomedical engineering, electrical and computer engineering, mechanical engineering, computer information and graphics technology, engineering technology, technology leadership and communication, and music and arts technology.

Through these programs, both undergraduate and graduate students conduct research for state initiatives, partnering with organizations such as Bio-Crossroads, Conexus, Techpoint, and Energy Systems Network, as well as I-STEM education through Project Lead the Way. Students and faculty work on federal and industry sponsored projects from the automotive, aerospace, energy, pharma and medical sectors, as well as from other areas.

In 2008, IUPUI became the first university in the U.S. to offer a bachelor’s degree in motorsports engineering. Located in the heart of Indianapolis, “Racing Capital of the World,” the program prepares graduates for careers



in the motorsports industry, as well as automotive-related companies. Students learn the fundamentals of engineering and participate in hands-on projects that involve designing, analyzing, and building of actual systems. Students may choose from a four-year bachelor of science degree in motorsports engineering, a motorsports technology certificate or a masters concentration. They participate in a variety of racetrack opportunities and internships within the industry.

In 2014, the school received a \$1.15 million grant from the Indiana Economic Development Corporation to support the new Dallara D3 driving simulator at the IndyCar Factory in the nearby town of Speedway. The school is partnering with Dallara to conduct research designed to advance motorsports-related economic development in Indiana.

With the understanding that the need for women in engineering is crucial now and in the future, the school offers a women in engineering program designed to enhance the success of current female students and broaden the school’s reach with women who wish to pursue a career in engineering.

IUPUI strongly encourages students to incorporate an international component into their studies. To make this possible, it offers a wide variety of study abroad, international service learning, and international internship opportunities. Engineering and technology students may study abroad in Poland, Mexico, Germany and other countries. International dual-degree programs include German, French and Spanish paired with an engineering curriculum.

The school also is a strategic partner with Sun Yat-Sen University (SYSU) in China. A cohort of 20 rising juniors in mechanical engineering joined in the fall of 2014, and increasing the enrollment of SYSU students in other engineering programs is an ongoing goal. The school’s international population consists of over 450 students from 75 countries.

With a double-digit percent increase in enrollment over the last four years, the school is positioned for continued growth in the future as students are drawn to its wide range of opportunities to make a difference in the world through research, hands-on learning and civic engagement.

•This article was compiled by Lisa York of Westcomm for IUPUI and the Purdue School of Engineering and Technology.



Embry-Riddle Aeronautical University— Prescott, AZ, Campus

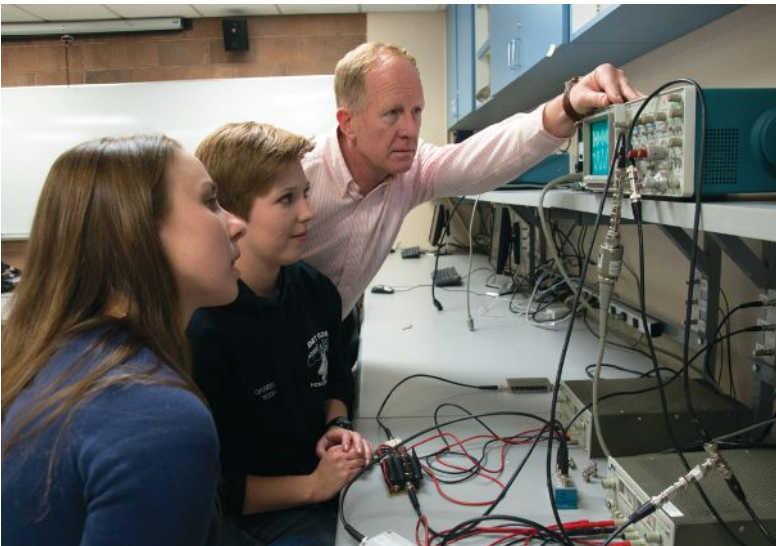
WITH SOME 120,000 GRADUATES around the world, Embry-Riddle Aeronautical University (ERAU) continues to lead the way as the world's largest university specializing in aviation and aerospace education. Originally founded by T. Higbee Embry and John Paul Riddle at Cincinnati's Lunken Airport in 1925, the Embry-Riddle Company began training pilots and mechanics in 1926. The Embry-Riddle

Flying School gained attention in 1927 when the school trained a student to fly solo in only 5 hours, 34 minutes, which was believed to be the shortest amount of time at that point.

The company carried airmail and passengers in the 1930s and was selected by the U.S. government to train pilots for the U.S. Army Air Corps in 1940. By the height of World War II, and now based in Miami, FL, Embry-Riddle had become the largest privately operated flight school in the world.

Established as a non-profit corporation in 1959, the Embry-Riddle Aeronautical Institute ultimately outgrew its Miami facilities due to the demand for aviators and relocated to Daytona Beach, FL, in 1965 to establish its first residential campus. Embry-Riddle achieved university status in 1970, becoming Embry-Riddle Aeronautical University. Later that year, the Worldwide Campus was launched, opening its first classroom site at Fort Rucker, AL. In the late 1970s, ERAU opened its second residential campus, in Prescott, AZ, home of the new Arizona Delta Chapter.

Enrollment for the Fall 2014 semester was 2,035 at the Prescott Campus. In addition, the university educates tens of thousands of students online through its Worldwide Campus. Besides training aerospace engineers, pilots, air traffic controllers, and meteorologists, ERAU now offers programs



in safety, security, and intelligence. Prescott's college of security and intelligence is the first comprehensive degree-granting college of its kind in the country. New degrees have been added at Prescott, including B.S. programs in forensic biology; global business; industrial psychology and safety; wildlife science; and security and intelligence.

The campus is located roughly 100 miles north of Phoenix. Nestled in the scenic Bradshaw Mountains, Prescott's 5,000-foot high-desert climate features almost 300 sunny days a year and milder temperatures than its lower-desert counterpart, Phoenix.

The Prescott Campus has experienced significant growth in recent years and Fall 2014 brought record numbers, including the largest incoming class (609 students), and the largest student body (2,035 students). The campus also recorded the highest number of female students in its history, now making up 23 percent of the student body. Due to the unprecedented growth, new academic and residential facilities are being built.

Campus diversity is in part due to the increasing number of scholar-athletes. New sports added in the past few years include cross-country and women's softball. Men's basketball begins in Fall 2015 followed by women's basketball in Fall 2016 and men's baseball in Fall 2017. ERAU Prescott continues to be recognized by the Cal Pac Conference for the number of scholar-athletes it produces.

Top private college

Additionally, for two years in a row, AffordableCollegeOnline.org named Embry-Riddle Prescott among the top one percent in "Million Dollar ROI (Return on Investment)," identifying our campus as a top private college whose graduates out-earn non-degree holders by at least \$1 million during their careers.

The first engineering program at Prescott, aeronautical engineering, began in 1980 under the leadership of professor Tracy Doryland. ABET accreditation was received in 1986. The aeronautical engineering program was renamed to aerospace engineering and in 2002 a spacecraft design option was added. The electrical engineering degree program began in 1985 under the leadership of Art Draut. The first class graduated in 1990, and initial ABET accreditation was achieved in 1992.

The two initial programs, AE and EE, were combined in 1998 under the leadership of **Richard F. Felton, Ph.D.**, *West Virginia Alpha '60*, to form what is now the college of engineering. The current dean of the college, **Ronald A. Madler, Ph.D.**, *Colorado Beta '86*, was instrumental in establishing the astronautics track portion of the AE curriculum.

A computer engineering degree program was started in 1998 under the leadership of **Milton L. "Chuck" Cone, Ph.D.**, *Missouri Alpha '67*. The first class of students in computer engineering graduated in 1999, and initial ABET accreditation occurred in 2004. Mechanical engineering became a degree program in 2007 under the direction of Tom Gally. The first graduates and initial ABET accreditation occurred in 2010. The fifth engineering program on

the Prescott Campus, software engineering, began in Fall 2013, also under Cone's leadership. Software engineering is slated to produce its first graduates in Spring 2016, and will apply for ABET accreditation once that milestone occurs.

The Prescott engineering college encourages all students to gain a broader view of their degree so that they will be prepared for any challenge they encounter in industry.

ERAU provides research grants for undergraduates in many fields, such as robotics, propulsion, and energy generation as well as the NASA space grant. Research in industry leads to application and testing, which are included in the curriculum at ERAU as well.

EGR 101, Introduction to Engineering, is a required freshman-level class that uses Lego Mindstorms products



and the students' creativity to navigate through mazes and obstacles while presenting their designs to faculty who act as customers. Experience in design as well as communication skills are further developed and refined in smaller projects in other engineering classes.

During the preliminary and detailed design courses students challenge themselves with ambitious goals for projects that require creative solutions as well as managing their own team budget and schedule. Multiple presentations are held throughout the design process to simulate the industry experience of review panels by presenting not only to faculty but also to industry leaders. Projects have ranged from a portal turret to a new fighter plane and from a lunar lander to a firefighter monitoring system. Inspiration is often pulled from the needs of the local community; ideas that were thought to be fun, but impossible, were accomplished through research, determination, and creativity.

•This article was prepared by **John E. Post, Ph.D.**, *Texas Beta '81*, associate professor and chair of the computer, electrical, and software engineering department, and Chief Advisor of Tau Beta Delta; Jason Kadah, Communications and Media Relations Manager for the Prescott Campus; and Adrienne Rector, a senior aerospace engineering major.



Brain Ticklers

RESULTS FROM

FALL

Perfect

Bohdan, Timothy E.	IN	Γ	'85
Ebersold, Mareia T.	CA	A	'95
Ebersold, Dakota	Son of member		
*Gerken, Gary M.	CA	H	'11
Goodacre, Brian C.	NJ	B	'12
Lakocy, Alexander J.	IL	A	'14
Langenderfer, Brian A.	OH	Z	'85
*Mayer, Michael A.	IL	A	'89
*Norris, Thomas G.	OK	A	'56
Parks, Christopher J.	NY	Γ	'82
*Richards, John R.	NJ	B	'76
Schmidt, V. Hugo	WA	B	'51
Slegel, Timothy J.	PA	A	'80
Slegel, Dalton M.	Son of member		
*Stribling, Jeffrey R.	CA	A	'92
Strong, Michael D.	PA	A	'84
*Wing, Michael	Son of member		

Other

Aron, Gert	IA	B	'58
Benedict, Daniel H.	PA	H	'09
Chatcavage, Edward F.	PA	B	'80
Chowdhury, Suparna	AL	E	'15
Conway, David B.	TX	I	'79
Grewal, Rashi	NJ	Γ	'09
*Gulian, Frank J.	DE	A	'83
Gulian, William F.	Son of member		
Handley, Vernon K.	GA	A	'86
Harris, Kent	Non-member		
Henze, Edward D.	IL	Γ	'50
*Kimsey, David B.	AL	A	'71
Lloyd, Margaret M.	MA	B	'12
Marks, Lawrence B.	NY	I	'81
Marrone, James I.	IN	A	'61
Minton, Evelyn A.	NY	H	'73
Quan, Richard	CA	X	'01
Rentz, Mark	Son of member		
Rentz, Peter E.	IN	A	'55
Roggli, Victor L.	TX	Γ	'73
Sigillito, Vincent G.	MD	B	'58
Siskind, Kenneth S.	RI	A	'86
Siskind, Brian A.	Son of member		
*Spong, Robert N.	UT	A	'58
Sterns, Alan R.	OH	H	'88
Vinoski, Stephen B.	TN	Δ	'85
*Voellinger, Edward J.	Non-member		

*Denotes correct bonus solution

FALL REVIEW

Even though each of the regular Fall problems received more than 85% correct answers, incorrect solutions to problems 2 (ages of men), 3 (kings) and/or 4 (officers) kept several entrants from getting perfect scores.

While the regular problems may have been a little easier than usual, the Fall Bonus (pi resistance using 1-ohm resistors) appears to have been a little harder, as only about a quarter of the entrants tried to solve it.

WINTER SOLUTIONS

Readers' entries for the Winter Ticklers will be acknowledged in the Summer *Bent*. Meanwhile, here are the answers.

1 A = 3, B = 1, C = 4 and D = 2. We are given the information in the table, where the a-statements are derived from the given statements based on the principle of transposition: if $p \rightarrow q$ then $\sim q \rightarrow \sim p$.

No.	Statement
S1	If A is 1, then B is not 3
S2	If B is not 1, then D is 4
S2a	If D is not 4, then B is 1
S3	If B is 1, then C is 4
S4	If C is 3, then D is not 2
S5	If C is not 2, then D is 2
S5a	If D is not 2, then C is 2
S6	If D is 3, then A is not 4

Since D appears most often, start by considering its value. D can't be 1 or 3, because if $D \neq 4$, then $B = 1$ (S2a), and $B = 1$ implies $C = 4$ (S3), but if $D \neq 2$, then $C = 2$ (S5a), but $C = 4$, a contradiction. Next, test $D = 4$. If $D \neq 2$, then $C = 2$ (S5a), and A and B are 1 and 3 or 3 and 1. Now, if $A = 1$, $B \neq 3$ (S1), but B must be 3, so $A = 3$ and $B = 1$, but then $C = 4$ (S3), but $D = 4$, another contradiction. Therefore, D must be 2, with $B = 1$ (S2a), $C = 4$ (S3), and $A = 3$. Checking, we find this is consistent with all the statements. This approach, which uses neither S4 nor S6, is only one line of reasoning. There are others.

2 The length of the side of the square is $(10 + 3\sqrt{7})^{0.5}$. Set up a coordinate system with the origin at the corner of the square 3 cm from the point and x and y axes along the sides of the square. Then, the coordinates of the point are (x, y) , and the equations of the squares of the distances to the three corners are:

$$\begin{aligned} \text{E1: } & (L - x)^2 + y^2 = 2^2 \\ \text{E2: } & x^2 + y^2 = 3^2 \\ \text{E3: } & x^2 + (L - y)^2 = 4^2 \end{aligned}$$

Subtracting E2 from E1 and solving for x gives: $x = (L^2 + 5)/(2L)$, and subtracting E2 from E3 and solving for y gives: $y = (L^2 - 7)/(2L)$. Substituting these results into E2 gives: $[(L^2 + 5)/(2L)]^2 + [(L^2 - 7)/(2L)]^2 = 9$. Expanding, combining terms, and simplifying gives: $L^4 - 20L^2 + 37 = 0$. By the quadratic equation, $L^2 = 10 + 3\sqrt{7}$, so $L = \sqrt{10 + 3\sqrt{7}} = 4.235$.

3 Eleven of the 35 different hexominoes can be folded into unit cubes. Start by analyzing the 12 different pentominoes to find that 8 can be folded to form a 4-sided, open-topped box. For each of these, there are 4 places (the top edges) where a unit square can be added to serve as a lid for the box, giving 32 hexominoes that can be folded into a cube. Discarding the duplicates leaves 11 hexominoes that can be folded into a cube. In the following list, each hexomino is represented by a code word. For each code word, blocking in the squares in the grid corresponding to the letters in the code word will display one of the hexominoes: abchij; abghil; abghim; abghin; abghmn; afghik; afghil; afghim; afghin; bfgihl; and bfgihm.

a	b	c	d	e
f	g	h	i	j
k	l	m	n	o

4 The maximum number of cards in a 5-spot deck with 5 letters on each card is 21. Consider the general case with n letters on each card. The same letter can appear on at most n cards, for if this letter appears on $(n + 1)$ cards, then in a maximal deck, each letter will not occur the same number of times in the deck. Thus, a random card can match a given letter with $(n - 1)$ other cards, and since each card has n letters, a card can match $n(n - 1)$ cards. When the card itself is added to the total, the maximum deck size is $n(n - 1) + 1$ cards. For $n = 5$, this is 21 cards. One possible deck of cards is shown in the table.

ABCDE	BHLPT	DGMPR
AFGHI	BIMQU	DHJOU
AJKLM	CFKPU	DIKNT
ANOPQ	CGJQT	EFMOT
ARSTU	CHMNS	EGLNU
BFJKL	CILOR	EHQOR
BGKOS	DFLQS	EIJPS

5 There are **845** different 10-digit integers in which the sum of adjacent digits is a prime. This problem can be solved using a very large decision tree, but we used a computer.

Bonus The probabilities are **0.4574** for a pair and **0.4048** for a bust. There are $C(52,5) = 2,598,960$ possible five card poker hands, where $C(i, j)$ is the number of combinations of i things taken j at a time. The cards in a bust (no pair or higher rated hand) must be of five different ranks, which can occur in $C(13, 5) = 1287$ ways; also, each card can be one of four suits, so there are $4^5 = 1024$ possible suit distributions, for a total of 1,317,888 hands, but this total must be corrected for straights and flushes; there are 10 possible straights (*AKQJT* through *5432A*) and 4 possible flushes, one for each suit, giving $[C(13,5) - 10][C(4,1)^5 - 4] = 1,302,540$ possible bust hands, if there are no wild cards.

If one-eyed jacks (OEJs, the jacks of spades and hearts) are wild, no bust hand can have an OEJ, as any such hand is, at worst, a pair. To correct for OEJs, first calculate the number of hands with no jacks. By reasoning similar to that above, except that, with no jacks, there are only 12 ranks and possible straights are reduced by 4 (*AKQJT* to *JT987*), we get $[C(12,5) - 6][C(4,1)^5 - 4] = 801,720$ hands, so the number of hands with a jack is $1,302,540 - 801,720 = 500,820$, but only half will have an OEJ (the other half will have a two-eyed jack), so the number of bust hands is $1,302,540 - 500,820/2 = 1,052,130$, or a probability of $1,052,130/2,598,960 = 0.4048$.

To count the number of hands with a pair, consider three cases with three subcases: (1) hands that have a natural pair with 0, 1, or 2 two-eyed jacks, but no OEJ; (2) hands that have one OEJ but no

two-eyed jack, and (3) hands with a OEJ and a two-eyed jack.

For Case 1, count the ways to get a natural pair in a hand with 0, 1 or 2 two-eyed jacks. For no jacks, there are $C(12,1)$ ways to pick the rank of the pair; $C(4,2)$ ways to pick two cards of that rank; $C(11,3)$ ways to pick the ranks of the other three cards, with $C(4,1)^3$ possible suit distributions, for: $C(12,1)C(4,2)C(11,3)C(4,1)^3 = 760,320$ hands. With one two-eyed jack, everything is the same except that there are $C(2,1)$ ways to pick the jack, and only $C(11,2)$ ways to pick the ranks of the 2 non-jack, non-pair cards for: $C(12,1)C(4,2)C(2,1)C(11,2)C(4,1)^2 = 126,720$ hands. If both two-eyed jacks are in the hand, the hand has a pair, and there are $C(12,3)C(4,1)^3 = 14,080$ ways to pick the other three cards. Total for hands with a natural pair is: $760,320 + 126,720 + 14,080 = 901,120$.

For Case 2, there are two ways of picking the OEJ; $C(12,4)$ ways of picking the ranks of the other four cards, minus 28 ways of making a straight with an OEJ (for example, a OEJ plus *9876*, *9875*, *9865*, *9765*, etc.); and $C(4,1)^4$ possible suit distributions minus 4 ways to make a flush for: $2[C(12,4) - 28][C(4,1)^4 - 4] = 235,368$ hands with an OEJ/non-jack pair.

For Case 3, there are two ways of picking the OEJ; two ways of picking the two-eyed jack; $C(12,3)$ ways of picking the other three ranks, less 13 ways to make a straight with a two-eyed jack and a OEJ, and $C(4,1)^3$ possible suit distributions, less one way to make a flush for: $2(2)[C(12,3) - 13][C(4,1)^3 - 1] = 52,164$ hands.

In total, there are $901,120 + 235,368 + 52,164 = 1,188,652$ hands with a pair, so the probability of getting exactly one pair is $1,188,652/2,598,960 = 0.4574$. Thus, with one-eyed jacks wild, it is easier to get a pair than it is to get a bust hand, which violates the spirit of poker that higher ranked hands should be harder to get.

Computer Bonus There are **18** four-digit mirror-image integer

pairs with mirror-image squares. The smallest pair is 1,002 and 2,001 with squares 1,004,004 and 4,004,001, and the largest pair is 2,022 and 2,202 with squares 4,088,484 and 4,848,804. Each pair has at least one repeated digit

NEW SPRING PROBLEMS

Now, here are some new Ticklers for your entertainment.

1 We start with a special Tickler. Tau Beta Pi is launching a new initiative, the Chapter Endowment Initiative, and in recognition of that effort, here is a new cryptic created specifically to call attention to the initiative. Solve the following addition/subtraction cryptic:

DONATE – MONEY – TO – THE +
NEW = ENDOW + MENT.

Of course, we want the answer with the largest ENDOWMENT. The usual rules apply. Each different letter stands for a different digit, and each different digit is always represented by the same letter; there are no leading zeros. This cryptic is a little trickier than usual, but it can be solved without a computer. Give it a try.

—Howard G. McIlvried III, Ph.D.,
PA Γ '53

2 If Bill's age in years is appended to Alice's age, the resultant four digit integer is a perfect square. The same thing will be true thirteen years from now. What are Bill's and Alice's ages?

—Mathematics Teacher

3 Three married couples, Al and Xenia, Bill and Yvette, and Carl and Zoe, are out for a hike when they come to a river. The good news is they find a boat; the bad news is the boat holds, at most, two people at a time. The problem is that the men are very amorous and will kiss any wife who is separated from her husband. The husbands are also very jealous, so how can the three couples cross the river without any illicit kissing occurring? Present

your answer as a sequential list of the occupants of the boat as it makes multiple crossings of the river. To make grading easier, when there is an option for whom to put in the boat, choose the one or two eligible persons whose names come first alphabetically.

—*The Chicken from Minsk* by Yuri Chernyak and Robert Rose

4 You have a bag containing five marbles—three are red and two are blue. You agree to share them with your friends. One friend reaches into the bag, grabs a marble and leaves without your seeing the color. You then reach in and remove a marble and see that it is blue. What is the probability that the marble your friend took is also blue?

—Marilyn Savant
in *Parade Magazine*

5 The new One World Trade Center (OWTC) building has an unusual shape—it has a square base and a same-size square top, rotated 45° relative to the base, with sides consisting of eight isosceles triangles which extend the entire height of the building. (This shape is called a square antiprism.) Thus, a horizontal cross section of the building at any height is an octagon, although only the cross section halfway up is a regular octagon. Let us idealize the situation and suppose that the OWTC has exactly 100 evenly spaced stories with the base square being the floor of the first story and the top square being the ceiling of the 100th story. Assuming that the entire floor space of each story is usable, what is the ratio R of the total floor space of the 100 stories to the area of the base? (The ceiling of the 100th story is not considered to be floor space.) Now, having considered a specific case, consider the general case of a building with N stories, and find a simple expression for R in terms of N , that is express R as a function of N . (Remember, the ceiling of the top story is not floor space.) An expression involving a summation is not acceptable.

—**Robert N. Spong**, *UT A '58*

Bonus Find a 4×4 magic square consisting of 16 different positive semiprimes less than 100. A semiprime is a positive integer with exactly two, not necessarily different, prime factors. (For example, both $21 = 3 \times 7$ and $25 = 5^2$ are semiprimes.) In a magic square, the entries in each column, row, and major diagonal have the same sum (known as the magic sum). We want a magic square for which, in addition, the four center entries, the four corners, and each of the four quadrants also exhibit the same magic sum, making a total of 16 ways to get the magic sum. We want the square with the smallest magic sum for such a square. Present your answer as four rows of four integers each.

—**Howard G. McIlvried III**, Ph.D.,
PA Γ '53

Computer Bonus Let $S(N)$ equal the sum of all the divisors of N that are less than N . For example, $S(8) = 1 + 2 + 4 = 7$, and $S(30) = 1 + 2 + 3 + 5 + 6 + 10 + 15 = 42$. Define $S^2(N) = S(S(N))$ and $S^3(N) = S(S^2(N)) = S(S(S(N)))$, or in general, $S^n(N) = S(S^{n-1}(N))$. Call N a sociable number of degree n if $S^n(N) = N$ and there is no $m < n$ such that $S^m(N) = N$. An example of a sociable number of degree 5 is 12,496, i.e., $S^5(12,496) = 12,496$ ($12,496 \rightarrow 14,288 \rightarrow 15,472 \rightarrow 14,536 \rightarrow 14,264 \rightarrow 12,496$). Find the smallest sociable number of degree 28.

—*Madachy's Mathematical Recreations* by Joseph S. Madachy

Send your answers to any or all of the Spring Brain Ticklers to Curt Gomulinski, Tau Beta Pi, P. O. Box 2697, Knoxville, TN 37901-2697 or email to BrainTicklers@tbp.org plain text only. The cutoff date for entries to the Spring column is the appearance of the Summer *Bent* in mid-June. Note that the electronic version of *The Bent* can be available to its subscribers considerably before some copies are received by regular mail. It is not necessary to include the method of solution. The Computer Bonus is not graded. The judges welcome any interesting problems that might be suitable for

the column. Curt forwards your entries to the judges who are **F. J. Tydeman**, *CA Δ '73*; **D. A. Dechman**, *TX A '57*; **J. C. Rasbold**, *OH A '83*; and the columnist for this issue, **H. G. McIlvried III**, Ph.D., *PA Γ '53*.

LETTERS TO THE EDITOR

(Continued from page 9)

reported that following their recent school massacre, Pakistan now encourages teachers to carry guns.

Misconstruing data to justify ill-conceived gun laws (that multiple, scientifically proper studies show actually increase violent crime) does not show an intelligent 'commitment to diminish gun violence' as Mr. Wolf stated in his letter. Mr. Bloomberg not only misuses data, his upcoming gun control seminar for the press won't allow opposing presentations. His regular misuse of data and squelching intelligent opposition, not politics, is why I reject Mr. Bloomberg as worthy of mention by Tau Beta Pi.

James R. Hahn Jr., FL B '61

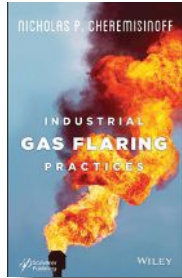
[Editor's Note: This started out as what was thought to be an innocuous 85 word note about the activities of one of our members has turned into a multi-page discussion about the merits and drawbacks of gun control. It is clear that with over 550,000 members, there is some disagreement regarding this issue! We could continue printing letters back and forth for decades and neither side would be satisfied. While there is undoubtedly more that could be said about this matter, we will not be including any additional letters to the editor on this topic.]

An astute member noted that we do not include information on where to send Letters to the Editor. As noted at the bottom of the table of contents, correspondence (including Letters to the Editor) can be sent to tbp@tbp.org or to *The Bent* of Tau Beta Pi / P.O. Box 2697 / Knoxville, TN 37901.]

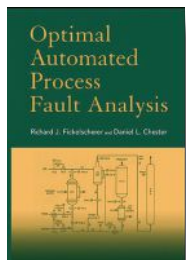


AUTHORS

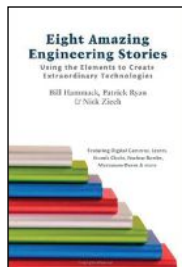
Nicholas P. Cheremisinoff, Ph.D., *New York Theta '74*, is a consultant on pollution prevention and responsible environmental care. He has written *Industrial Gas Flaring Practices* on an issue whose consequences are just beginning to be understood. The book examines both the technical and environmental aspects of gas flaring to help professionals in the oil and gas industry take an important step toward reducing worldwide CO2 emissions. Publisher is Wiley.



Richard J. Fickelscherer, Ph.D., P.E., *New York Nu '83*, is co-founder, with Daniel L. Chester, Ph.D., of Falconeer Technologies. They have co-authored *Optimal Automated Process Fault Analysis*, which describes a fuzzy logic algorithm for automating process fault analysis and a program called FALCONEER IV that implements it. The book is meant to be a study guide for engineers seeking "intelligent supervision" of processing plants. It is published by Wiley and the AIChE press.

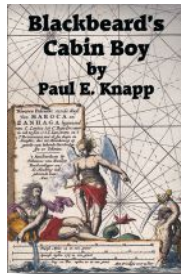


William S. Hammack, Ph.D., *Michigan Beta '84*, is a chemical engineering professor at the University of Illinois at Urbana-Champaign and the EngineerGuy of public radio and video fame. He has co-authored *Eight Amazing Engineering Stories: Using the Elements to Create*



Extraordinary Technologies, which reveals the stories behind how engineers use specific elements to create the material world around us. The eight chapters explain things like lasers, digital cameras and microwave ovens. Publisher is Articulate Noise Books.

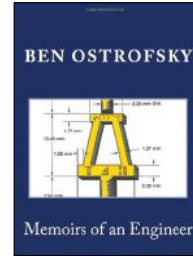
Paul E. Knapp, Florida Alpha '77, is retired after being a senior health physicist with the U.S. Nuclear Regulatory Commission. He has written *Blackbeard's Cabin Boy*, the story of his ancestor Daniel Melvin who left Scotland as a cabin boy, was captured by Blackbeard, and then escaped to live in Colonial America. It is published through Smashworlds.com.



Preston E. Law Jr., P.E., Maryland Beta '60, is retired after being a communications systems engineer with the Department of Defense. He has written a children's book *Drummer Boy for the Bonnie Blue: Marching Through Maryland, Virginia, and Pennsylvania with Robert E. Lee's Army*. It was published by White Mane Kids in connection with the 150th anniversary of the American Civil War.

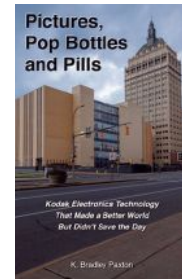


Benjamin Ostrofsky, Ph.D., Texas Epsilon '47, is a retired engineer, professor, and veteran who received permission to use a well-known image of Tau Beta Pi's Bent on the cover of his book *Memoirs of an Engineer*. Ostrofsky tells how he convinced his mother to sign papers so he could enlist in the Army Air Corps at the tender age of 17 after

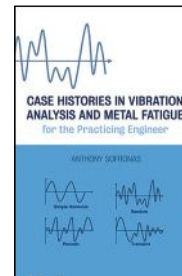


Pearl Harbor, and so begin a lifetime of intriguing experiences and almost unbelievable stories. He is now retired from the University of Houston. Publisher is CreateSpace.

K. Bradley Paxton, Ph.D., New York Gamma '60, was director of the Eastman Kodak Co. electronic imaging research laboratories. He has written *Pictures, Pop Bottles, and Pills*, about Kodak's role in the electronic imaging and the digital revolutions. Paxton captures the greatest Kodak moments of the modern era in the midst of the company reinventing itself in the digital world, and also what went wrong for the photo giant. Publisher is Fossil Press.



Anthony Sofronas, D.Eng., P.E., Michigan Delta '75, spent forty-five years troubleshooting field failures and designing machinery for ExxonMobil, General Electric, and the Bendix Corporation. He has authored *Case Histories in Vibration Analysis and Metal Fatigue for the Practicing Engineer*, which provides analytical methods and guidelines for solving vibration problems in industrial plants and demonstrates their practical use through case histories from the author's personal experience in mechanical engineering. It is published by Wiley.





CHAPTER ETERNAL

The condensed style of these notices of death is made necessary by Tau Beta Pi's large membership and space limitations in The Bent. You may email or write the Editor for further facts concerning the following deceased members. The assistance of all is earnestly sought in reporting the deaths of Association members, with appropriate details. You may report the death of a member by sending an email to chapter.eternal@tbp.org.

- AL A '48 **Edwards, Hugh Tisdale**; February 19, 2009.
 '48 **Wallner, Norman Richard**; January 20, 2015.
 '55 **Grandy Jr., Rodney Leon**; October 3, 2000.
- AL B '32 **Hereford, Robert Earl**; November 13, 1985.
 '35 **Butterfield, Alan Gardner**; July 3, 2002.
 '43 **Wozniak, Mitchell Bernard**; February 7, 1988.
 '48 **Knab, Harold Frederick**; May 20, 2007.
 '52 **Crawford, Robert F.**; March 15, 2012.
- AL Γ '46 **Wilson, Edwin Moir**; December 30, 2014.
- AZ A '53 **MacKallor Jr., Dewitt Clinton**; no details.
- AR A '31 **Gordon, William Madison**; no details.
 '50 **Gammill, Edward Lee**; December 17, 2014.
 '50 **Gentry, George Baker**; October 24, 2005.
 '53 **Stanley, Charles E.**; May 28, 2014.
 '55 **Waters, Hugh Franklin**; April 16, 2002.
- CA A '41 **Mendenhall, Irvan Frank**; July 29, 2014.
 '43 **Steele, Roger Clarendon**; April 22, 2014.
 '50 **Polder, Jacob H.**; January 12, 2014.
 '51 **Allen, Lowell Charles**; December 2, 2014.
 '51 **Shadduck, William Dexter**; August 4, 1996.
 '57 **Mills, Barton**; June 1, 2013.
- CA Γ '35 **Paxton, Charles Norman**; October 11, 1996.
 '36 **Ainsworth, Laine Johnston**; June 2014.
 '39 **Lyon, Richards Parker**; no details.
 '40 **Samter, John Henry**; April 29, 2002.
 '40 **Schellinger, Alfred Kenneth**; November 20, 1999.
 '49 **McKittrick, Jack Wilson**; no details.
 '09 **Azage, Berhane Hiwot**; January 8, 2015.
- CA Δ '48 **Davidson, Ralph Bryce**; August 15, 1989.
- CA E '34 **Flanigan, Alan Everett**; December 5, 1974.
 '58 **Bramblett II, Ernest King**; November 5, 2014.
 '58 **Newmyer, Charles Thomas**; July 22, 2014.
 '66 **Ahrens, Henri Walter**; no details.
- CA Z '41 **Stephens Jr., Eugene Graham**; July 10, 2013.
- CA Θ '40 **Potter, Richard Carter**; November 16, 2014.
- CA M '40 **Rapp, John Benjamin**; no details.
 '43 **Nicolaides, John Dudley**; April 25, 1999.
 '97 **Alsbury, Michael Tyner**; October 31, 2014.
- CO B '39 **Bauer, William Charles**; October 24, 1997.
 '40 **Fallon, John Thomas**; September 28, 2003.
 '41 **Priest, Frank Farrington**; July 28, 1993.
 '45 **McFeron, Dean Earl**; March 2, 2011.
 '45 **Roylance, Robert W.**; February 23, 2011.
 '47 **Mathias, Robert Addison**; January 19, 2015.
 '73 **Nies, Justine Ruth**; October 24, 2012.
 '75 **Beehler, David Ray**; no details.
- CT A '40 **Addoms, Hallett Burtis**; March 11, 1995.
 '48 **Patterson, Herbert Parsons**; no details.
 '49 **Ward, Robert B.**; December 28, 2014.
 '51 **Reichenbach, George S.**; October 6, 2014.
- CT B '45 **Biretta, Vitti J.**; August 24, 2014.
- DE A '50 **Blake, Julian Wayne**; June 23, 1999.
 '55 **Houghton, George Lewis**; October 24, 2014.
- DC Γ '32 **Nutt, Harold V.**; June 10, 2014.
- FL A '39 **Goheen, Robert Marsh**; July 19, 2000.
 '54 **Mahaffey II, William Arnold**; November 27, 2014.
- GA A '40 **Dusenbury, Millard Reese**; April 23, 2010.
 '40 **Schreeder, John Marvel**; June 17, 2010.
 '45 **Smith Jr., Blanchard D.**; April 10, 2008.
 '47 **Crain, John Thomas**; March 19, 2013.
 '49 **Williams Jr., Frank Bridges**; December 6, 2014.
 '51 **French, William Bates**; November 4, 2013.
- '54 **Clark, James Watts**; July 8, 2014.
 '54 **Daniel, Julian Wylie**; January 6, 2014.
 '57 **Murphree Jr., Leland Charles**; January 18, 2015.
 '90 **Miller, Patrick David**; December 31, 2014.
- IL A '40 **Harrison, Leslie Dale**; October 4, 1992.
 '40 **Swift, Howard Raymond**; December 8, 2003.
 '44 **Bower, Edward Ralph**; November 21, 2001.
 '53 **Landgren, John David**; November 13, 2014.
 '53 **Lubin, James Bruce**; November 24, 2004.
 '55 **Gapp, Anton**; May 30, 2012.
 '57 **Purviance, Keith Webster**; April 15, 2012.
 '58 **Horak, James Albert**; January 17, 2015.
 '66 **Meliza, Ronald Stephan**; October 25, 2012.
 '83 **Gee, Walter**; June 5, 2008.
- IL B '40 **Fate, Robert John**; April 26, 2013.
 '57 **Graham, Frederick Allison**; no details.
- IL Γ '56 **Jones, James W.**; January 17, 2015.
 '58 **Hartfield, Edward David**; May 9, 2002.
- IN A '33 **Greiner, Albert Charles**; February 9, 2014.
 '38 **Reichelderfer, Charles Albert**; December 30, 2005.
 '39 **Tomaszewski, Theodore Louis**; July 29, 1995.
 '40 **Schrader, Robert James**; March 14, 2009.
 '40 **Smith, John Henry**; April 25, 1999.
 '41 **Schnaible, Albert Paul**; July 7, 2003.
 '49 **Hanson, Edwin Eugene**; June 15, 2013.
 '50 **McQueen, Kenneth Theodore**; October 9, 2010.
 '57 **Ward, Raymond William**; August 25, 2007.
 '60 **McDonald, Alan Taylor**; October 15, 2008.
 '62 **Li, Frank Kuanghua**; December 15, 2014.
 '66 **Lampadarios, George V.**; November 30, 2014.
- IN E '74 **Holbrook, Bruce E.**; October 29, 2013.
- IA A '39 **Hannan, William Kelley**; June 20, 2014.
 '39 **Richey, Forrest Alden**; September 18, 2006.
 '40 **Akins, John C.**; June 11, 2010.
 '40 **Berg, Robert Q.**; August 22, 2004.
 '40 **Brogan, Joseph Edward**; May 23, 2003.
 '40 **Kennedy, Frank C.**; March 14, 2006.
 '40 **Maxon, Warren Howard**; January 14, 2006.
 '40 **Munsell, Albert Lowell**; May 29, 1995.
 '40 **Skromme, Arnold Burton**; August 8, 2008.
 '40 **Strom, Robert Gordon**; May 21, 1992.
 '41 **Carleton, William Arthur**; January 25, 2015.
 '41 **Miles, Roscoe Conkle**; no details.
 '42 **Park, Robert Don**; April 23, 2007.
 '53 **Merriman, Marcus Arthur**; August 1, 2014.
 '14 **Troupe, Paul Thomas**; November 19, 2014.
- IA B '40 **Kippenhan, Charles Jacob**; September 23, 2010.
 '40 **Sykes, Robert Burdell**; March 16, 2008.
 '47 **Bell, Robert Thomas**; November 28, 2013.
 '48 **Woolever, Earl J.**; June 8, 2012.
 '54 **Mozey, Dwayne Leroy**; June 1, 2014.
- KS A '35 **McKim, Robert Dan**; October 20, 2004.
 '38 **Gordon, George Heaton**; June 2, 2014.
 '40 **Harries, Myron Lee**; September 15, 1991.
 '48 **Case, Lowell Clyde**; April 12, 2005.
 '50 **Jones, Don Barber**; December 3, 2014.
- KS B '75 **Drewry, Richard Lee**; February 27, 1992.
- KY A '40 **Pennock, Donald William**; July 11, 2002.
 '59 **Linardos, Stathis G.**; December 28, 2014.
 '60 **Canada, Charles Eugene**; June 13, 2012.
- LA A '40 **Adams, George E.**; January 1, 2014.
 '40 **Hebert, Francis Foch**; December 5, 2006.

- '40 **Hingle, Roy Cornelius**; June 17, 2008.
- LA B '40 **Prechter Sr., Robert Rougelot**; May 4, 2013.
- LA Γ '40 **Corrigan, Glen Lee**; no details.
- '52 **Oglesby, Minor Wallace**; December 7, 2014.
- '60 **McClary, Jimmy E.**; November 30, 2014.
- '78 **Raywinkle Jr., Bill Edward**; May 23, 2014.
- ME A '42 **Gibson, Richard Cushing**; July 16, 2014.
- '45 **Casassa, Edward Francis**; June 19, 2009.
- '52 **Dickey, Dana H.**; January 4, 2015.
- '02 **Hedefine, Eeva Kaarina**; May 25, 2014.
- '03 **Bouchard, Ryan Patrick**; July 12, 2010.
- MD A '40 **Gray III, John Basil**; June 21, 2003.
- '40 **Hague Jr., Charles Sylvester**; August 26, 2004.
- '40 **Wenk Jr., Edward**; June 27, 2012.
- '44 **Hoelscher, Harold Ewald**; August 6, 1993.
- '59 **Rannestad, Andreas**; March 28, 2013.
- MD B '33 **Adams, John Loren**; March 20, 1998.
- '40 **Coleman, Thomas Ludlow**; December 12, 2003.
- '40 **Lapoint, George Malcolm**; April 3, 2003.
- '40 **Piper, Harry William**; January 20, 2002.
- '49 **Wilson, William Robert**; January 19, 2015.
- '51 **Nesline Jr., Fred William**; no details.
- '78 **Harrill, Randall Lee**; June 21, 2014.
- MA A '45 **Simon Jr., Carl Frank**; July 29, 2012.
- MA B '39 **Baldwin, Woodson William**; October 28, 2008.
- '39 **Poulsen, George Gordon**; April 2, 2003.
- '40 **Danforth, John Loring**; November 11, 2010.
- '40 **Godfrey, Charles Stuart**; January 31, 1998.
- '40 **Radtke, Schrade Fred**; April 9, 1988.
- '40 **Rhode Sr., Judson Cyrus**; no details.
- '47 **Aldrich Jr., Harl Preslar**; November 24, 2014.
- '55 **Ladd III, Charles Cushing**; August 4, 2014.
- MA Γ '35 **Johnson Jr., Lee Harnie**; April 4, 2002.
- MA Δ '37 **Harlow, Henry G.**; November 17, 2014. [*Cent. 108*]
- '39 **Pfanstiehl, Harry Desmond**; April 17, 2003.
- '40 **Atwater, Paul Albert**; February 27, 1998.
- '40 **Plumley, Edward Anson**; December 5, 2012.
- '47 **Geohegan Jr., Kenneth Price**; June 12, 2011.
- '57 **Kean, Warren W.**; July 19, 2013.
- '59 **Brown, Donald Clafin**; no details.
- '79 **Knox, David Paul**; February 9, 2013.
- MA E '34 **Swiniarski, Joseph K.**; no details.
- MI A '43 **Conklin, George Willard**; October 25, 2014.
- '50 **Morse Jr., Ivan E.**; March 12, 2014.
- '58 **Robertson, Wayne Marvin**; no details.
- MI B '40 **Gittlen, Maier**; June 19, 2001.
- '43 **Allen, Robert Donald**; January 17, 2015.
- '49 **Marttila, Levi Richard**; October 9, 2008.
- '49 **Tretheway, Burton Scott**; November 29, 2000.
- '49 **Voyles, Jack Louis**; November 26, 2014.
- '54 **Soine, Gordon Sanford**; December 29, 2009.
- MI Γ '40 **DeLand, Robert Earl**; October 27, 2009.
- '40 **Fey, Norman Joseph**; October 30, 2002.
- '40 **Parish, Edward John**; November 8, 2003.
- '41 **Farris, Hansford White**; December 7, 2014.
- '42 **Youngdahl, Paul Frederick**; September 10, 2014.
- '43 **Inman, Thomas Frederick**; May 11, 2007.
- '49 **Clauss, Richard J.**; October 14, 2010.
- '50 **Baguley, John Keith**; June 24, 2014.
- '50 **Davey, Peter E.**; April 20, 2013.
- '50 **Marsh, Francis Xavier**; November 6, 2000.
- '50 **Simmons, Charles David**; April 22, 2009.
- '57 **Fenton, James Lewis**; November 10, 2014.
- '66 **Fenton, James Erwin**; January 11, 2004.
- MI E '42 **Stone, Sigmund Peter**; January 27, 2009.
- MI H '40 **MacDonald, Harold C.**; May 26, 2004.
- '45 **Jones, Harvey C.**; October 15, 2014.
- MI K '92 **Henry, Roger Charles**; November 12, 2014.
- MN A '40 **Chryst Jr., Anton Wallace**; December 22, 1999.
- '46 **Bartoo, Wallace Hubert**; March 17, 2009.
- '47 **Mayer, Lee Olen**; November 19, 1999.
- '47 **Sueker, Keith Hayles**; December 30, 2014.
- MS A '37 **Holland, Albert Willard**; April 21, 1999.
- '40 **Harz III, Joseph**; January 26, 1997.
- '40 **Jennings, Major Jones**; June 4, 2012.
- '40 **Slocum Jr., Ray Redding**; May 9, 2004.
- '40 **Thigpen, Kenneth Arledge**; October 20, 2006.
- '50 **Woleben, William Dean**; January 25, 2015.
- MS B '48 **Patton Jr., Finis Stephen**; December 30, 2014.
- MO A '40 **Holloway, Kenneth Junior**; November 19, 2011.
- '40 **Mellow, Ernest Wesley**; March 13, 1996.
- '42 **Sneed, Carl Miller**; March 14, 2008.
- '72 **Votaw, Frank Charles**; no details.
- MO B '40 **Burgess, Woodrow Louis**; June 9, 1998.
- '40 **Kidwell, Albert Laws**; August 16, 2008.
- '40 **Lorance, Robert Neal**; July 9, 1996.
- '41 **Koch, Charles Otto**; September 18, 2010.
- '47 **Henke, Elvin Alfred**; July 27, 1996.
- '51 **Burch, William Dean**; December 31, 2014.
- '52 **Danzer, Richard Harold**; no details.
- MO Γ '40 **Garber, Max**; October 8, 2000.
- '49 **Brandes, Raymond Eugene**; January 27, 2013.
- '50 **Sheppard, Robert Boyne**; October 22, 2014.
- '52 **Feldman, Arthur**; January 4, 2015.
- '52 **Russell, Charles Edward**; November 3, 2007.
- MT A '49 **Myers, Maynard Robert**; May 13, 2006.
- MT B '85 **Sherwood, Todd Robert**; August 24, 2010.
- NE A '41 **Petersen, Carroll Clayton**; December 12, 2010.
- NH A '63 **Daniels, Stuart Frederick**; November 9, 2014.
- NJ A '40 **Miller, Aubrey Bernard**; June 10, 2006.
- '48 **Mallard, Stephen Anthony**; May 1, 2014.
- NJ B '40 **Heydt, Kenneth**; November 3, 2004.
- '40 **Malmberg, Ben Olaf**; March 29, 1993.
- NJ Γ '40 **Paradiso, Dominick Armando**; May 17, 2006.
- '60 **Kulpinsky, Joseph Charles**; June 23, 2014.
- '68 **Grant, Douglas J.**; March 10, 2014.
- '71 **Dudley, Richard Walter**; July 30, 2014.
- '76 **Daut, David George**; January 24, 2015.
- NY B '40 **Horrocks, John Balfour**; July 17, 1992.
- '40 **Sloat, Samuel M.**; December 19, 2006.
- '48 **Kopka, William**; June 20, 2013.
- '53 **Korolenko, Andrew**; March 9, 2011.
- '53 **Marcum, Stanley Neal**; June 21, 2014.
- NY Γ '38 **Homiller, Edward Dunker**; January 17, 2015.
- '40 **Hardesty, Egbert Railey**; January 30, 2006.
- '50 **Giguere, Kenneth George**; April 18, 2007.
- '51 **Sneck Jr., Henry James**; January 25, 2015.
- NY Δ '40 **Frank, James Alan**; January 26, 2004.
- '49 **Corning Jr., Horace F.**; November 18, 2014.
- '51 **Bishop, Albert Bentley**; February 25, 1999.
- '52 **Nuttle Sr., Thomas Oliver**; January 8, 2015.
- '54 **Schadler, Harvey Walter**; November 30, 2014.
- '58 **Spicher, Robert George**; December 6, 2014.
- NY E '50 **Godino, Rino Lodovico**; May 23, 2007.
- '55 **Kosow, Herbert R.**; October 23, 2014.
- NY H '42 **Alvy, Reuben Ralph**; December 23, 2014.
- '49 **Tellerman, Jakob**; December 31, 2013.
- '56 **Gilmore, Jerold P.**; November 5, 2014.
- NY Θ '40 **Lord, Nicholas Akin**; March 15, 1998.
- '45 **Voorhees, James Sheldon**; January 30, 2015.
- NY N '59 **Leney, Thomas F.**; no details.
- '74 **Schmidt, Neal George**; September 26, 2010.
- NY Ξ '40 **Keigher, Joseph Patrick**; January 14, 1998.
- NC A '51 **Muse, Vernon Revere**; January 4, 2014.
- '80 **Crotts, Van Jackson**; January 25, 2015.
- '82 **Griffiths, David Leland**; November 26, 2014.
- NC B '36 **Neel, Robert Monroe**; September 1, 2014.
- ND A '51 **Hansen, Ralph Waldo**; March 10, 2000.
- '64 **Ebeling, Kenneth Arnold**; September 25, 2009.
- OH A '40 **Marble, Frank Earl**; August 11, 2014.
- '49 **Maxwell, Jack Erwin**; October 24, 2014.
- '50 **Dieglio, Joseph Mario**; November 28, 2011.

- '58 Snyder, Gordon Lewis; March 17, 2010.
OH I '37 Lattimer, George Atherton; no details.
'38 Brown Sr., Graham Bauer; October 25, 2014.
'38 Hanger, Wallace Sherwood; August 29, 2007.
'39 Brown, Darwin Wilson; March 20, 1988.
'39 Marx, Clarence Joseph; July 24, 1988.
'40 Gustafson, Paul Norman; June 1, 2014.
'40 McCarthy, Harry E.; November 14, 2005.
'42 Van Arnum, Kenneth John; January 5, 2015.
'42 Young, Ned Wilford; May 9, 2005.
'43 Kouns, Herbert Henry; October 25, 2008.
'48 Kroencke, Edward A.; January 22, 2014.
'49 Strigle Jr., Ralph Frederick; November 13, 2014.
'56 Wagner, William Edward; November 6, 1999.
OH E '40 Bouquard, Joseph Peter; May 20, 2007.
OH Z '37 Tracy, Parker Cole; November 17, 2014. [Cent. 109]
'40 Abrams, Bernard Bradson; no details.
OH I '40 Nagy, Charles K.; June 4, 1993.
OK A '37 Benischek, Howard William; July 29, 2014.
'46 Askew, Richard Graves; November 29, 2014.
'50 Mayes, Paul Eugene; December 12, 2014.
'53 Riley, Edwyn A.; October 2, 2005.
'75 Gunn, Kerry Frank; April 11, 2013.
OK B '39 Buthod, Arthur Paul; November 14, 2012.
OR A '38 Kelley, Stanley Robert; February 8, 2014.
'40 Magill, Lloyd Gilbert; April 5, 2005.
'40 McMillan, Fred Russell; July 10, 2006.
'42 Olson, Arthur Eugene; June 7, 2007.
'47 Evans, Harrison Martin; February 27, 2001.
'49 Fern, Frank Arnold; June 7, 2005.
'56 Kerri, Kenneth D.; December 15, 2014.
'69 Place, David Eugene; August 16, 2014.
PA A '38 Hoffman, Charles Harry; April 21, 2014.
'39 Raff, Albert Simpson; February 6, 2007.
'40 De Huff Jr., Philip Greenawalt; July 18, 2012.
'40 Keller, Gilbert Mumper; December 14, 2004.
'48 Simon II, David Emanuel; September 21, 2013.
'77 Nardone, Daniel Vincent; August 6, 2013.
PA B '44 Merker, Robert Leslie; January 26, 2012.
'48 Smith, Donald Dendler; November 12, 2014.
PA I '39 Aronson, Milton Howard; May 29, 2009.
'40 Heger, James J.; June 18, 2008.
'42 McAleer, William Kearns; May 4, 2013.
'46 Pepper, Andrew Joseph; July 1, 2011.
PA Δ '67 Flomenhoft, Mark Joel; July 29, 2014.
PA E '43 Lichtenwalner, Hart K.; October 11, 2014.
'50 Muench, Charles Frederick; June 27, 2007.
PA Z '39 Bauer, Horace Peter; March 6, 1991.
'40 Di Meglio, Mevio; February 20, 2004.
'40 Fromm, Winfield Eric; August 2, 2002.
'51 Hawn, Charles David; no details.
'56 Wright, John Batty; November 28, 2013.
PA H '63 Waldner, Frederick Adam; October 22, 2014.
RI A '29 Demarest, Kenneth Douglas; no details.
'35 Fancher, Henry Brainard; March 2, 2014.
'40 Smith, Robert Irvine; September 4, 2002.
'41 Allen Jr., William Frederick; September 21, 2014.
'42 Heller, Gerald Silius; September 29, 1992.
'47 Brophy Jr., James Edward; February 23, 2008.
SC A '84 Schenning, Mark Frederick; no details.
SC I '53 Mooney Jr., John Bradford; May 30, 2014.
SD A '58 Harris Jr., Floyd Thomas; November 16, 2014.
TN A '40 Guy, James Lamb; April 13, 2006.
'40 Heiskell, James Moulten; November 2, 2014.
'40 Pelton, Philip Wood; June 28, 2011.
'40 Slater, John Wiley; June 30, 1999.
'47 Raines, J. Walter; February 13, 2004.
'48 Garner, James William; October 17, 2010.
'50 Crossley Jr., Wilbur James; January 5, 2015.
'52 Bradfute Jr., George Archibald; January 8, 2015.
'52 Seagle, Ernest Fanning; November 20, 2014.
'53 Pawel, Richard Emanuel; January 2, 2015.
'53 Scarbrough, Robert Earl; September 29, 2014.
'55 Mottern, John Wallace; November 6, 2014.
TN B '43 Hardigg, George William; December 6, 2001.
'47 Fehrman, Alvin Lyone; January 22, 2013.
'48 Shaub, Clarence Gordon; January 11, 2009.
TN I '49 Langlois, Arthur Joseph; December 31, 2009.
TN E '40 Jacobs, Marvin L.; February 17, 2007.
TX A '38 Carter, William Junius; December 1, 1994.
'40 Athanas, Gus; August 18, 2008.
'40 David Jr., Julius Huie; October 1, 2009.
'40 Forsman, Marion Edwin; April 27, 2002.
'40 Glasford, Glenn Milton; November 25, 2010.
'40 Neill, Elmer Thomas; November 28, 2007.
'50 Morgan, Joseph Hawes; August 15, 2010.
'51 Davis, Charles Edward; April 26, 2014.
TX B '39 Kuehler, Paul Nicholas; March 11, 2000.
'50 Goodyear, Donald Lamar; August 20, 2013.
'50 Steele, James Reece; July 19, 2013.
'56 Lawrence Jr., James Harold; September 25, 2013.
TX I '33 Turner, Benjamin Bynum; no details.
'39 Sterling Jr., Albert Alexander; December 29, 2014.
'40 Hirdler, Louis C.; April 11, 2013.
'40 Nagai, Gladys Masao; August 14, 1989.
'48 Chisholm II, Roy Davies; December 13, 2014.
TX Δ '40 Bibbs, John Carter; October 11, 1987.
'40 German, John Paul; May 14, 1995.
'40 Schneider, Carl Conrad; March 29, 2008.
'50 Schechter, Robert Samuel; October 8, 2014.
'51 Snead, Edwin DeSteiguer; January 22, 2015.
'62 Dublin Jr., Wilbur Leslie; November 25, 2014.
TX E '40 Kirkpatrick, Charles Verne; December 2, 2011.
'61 Shen, Liang C.; no details.
'78 Wheatley, Charles LeRoy; February 14, 2014.
TX Z '57 Manning Jr., Thomas Arthur; October 12, 2014.
TX H '74 Breeden, Arnold Paul; May 24, 2008.
UT A '54 Kubo, Shoji; November 23, 2005.
UT I '10 Willis, David Christopher; June 9, 2014.
VT B '61 Regan, Edward Robert; November 18, 2014.
VA A '62 Head Jr., Nelson Mead; August 7, 2011.
VA B '49 Coffman, Alfred Martin; December 20, 2014.
'54 Bardsley, James Jackson; December 16, 2014.
VA Δ '40 Culpepper, Fred C.; April 20, 2002.
'42 Durham Jr., Lucian A.; January 14, 2001.
'82 Horne, Darryl Keith; November 5, 2014.
WA A '39 Mueller, James I.; no details.
'40 Batchelor, Burton Hazen; no details.
'41 Richey, Eugene Porter; July 3, 2003.
'47 Friedland, Rudolph Joseph; July 12, 2014.
'51 Watts, Raymond Paul; November 3, 2012.
'65 Zimmerman, Irvin Julius; December 4, 2014.
WA B '36 Shelton, Dale Alfred; no details.
'39 Smith, Russel Redfield; August 23, 2001.
'40 Edholm, Robert M.; September 2, 1988.
'40 Heglund, Floyd Walter; April 8, 2006.
'41 Snoeberger, David Francis; December 25, 2010.
'43 Johanson, Joel Marion; October 8, 2009.
WV A '60 Morris, George Foster; December 2, 2014.
WV B '40 Jeffers Jr., Joseph Crosby; February 11, 2005.
WI A '40 Burstein, Victor Simon; November 17, 2013.
'40 Wilke, Charles Robert; October 2, 2003.
'40 Woerfel, John Blakefield; October 10, 2003.
'52 Breuer, Ned William; January 3, 2015.
'52 Schoof, Walter William; July 1, 2012.
'55 Loper Jr., Carl Richard; September 7, 2010.
WI B '39 Halter, Allan Carl; November 18, 2008.
'40 Muster, Douglas Frederick; September 7, 2007.
'50 Gutzwiller, Frank William; November 23, 2011.
WI I '51 Griskey, Richard George; December 16, 2014.

EXECUTIVE COUNCIL MEETING

The Executive Council met in Knoxville, TN, on December 5-6, 2014.

The Council appointed President Joseph P. Blackford as the Installing Deputy for the Indiana Zeta installation on March 28, 2015, and Councillor George J. Morales, Ph.D., as the Installing Deputy for the Arizona Delta installation on April 11, 2015. Executive Director Gomulinski was appointed as the Association's official representative for the 40th anniversary of the Alaska Alpha Chapter on April 19, 2015.

The schedule of District Conferences was reviewed, and assignments were made for Association Official representation at the 16 meetings. Councillor Passman was assigned to prepare the Council's presentation for the meetings.

The Council reviewed a proposal by the District Program Planning Committee to encourage chapters to initiate more candidates through "The 50% Challenge." Madison R. Herman, *OH Z '13*, was appointed as a District 10 Director to a term ending June 2017.

A schedule for future Executive Council meetings was reviewed and approved. Teleconferences with the Association's planning committees and the Fellowship Board were scheduled for February.

Plans for the June Meeting of Association Officials were discussed. The Council decided to limit attendance for the 2015 meeting to the District Program Planning Committee, the Engineering Futures Planning Committee, the Advisor Recruitment and Development Committee, and the Fellowship Board while the Council identifies goals and objectives of future meetings. Assistant Secretary-Treasurer Hawks was asked to provide cost estimates for different locations for the meeting.

Executive Director Gomulinski provided updates on Headquarters staffing, the 2013-14 audit, and the IRS 990. He is working with the auditor to resolve differences in program expenses before the final report is accepted and the 990 is filed. Mr. Gomulinski provided an update from the chair of the Financial Review Committee, Edward D. Basta, *OH E '82*.

The Council adopted resolutions regarding contingent access to the Tau Beta Pi safe deposit box, sales of securities, and registration certification for the state of North Dakota.

An update to the Engineering Futures Facilitator recruitment, appointment, training, certification, and administration was reviewed. The Council requested that President Blackford draft an updated policy document regarding the existing nomination policy. Councillor Morales and Executive Director Gomulinski were directed to review existing Association policies.

Proposals for new sessions at the 2015 Convention were discussed including a poster/research competition and an Arduino "Hackathon." Possible speakers for the 2015 event were discussed, but action was tabled until January so additional research could be completed. The

selection of San Diego as the host of the 2016 Convention was reviewed. Assistant Secretary-Treasurer Hawks was requested to obtain additional information before the Council made a final decision on a site and hotel.

President Blackford updated the Council regarding the general revision to the Constitution and Bylaws. He indicated that the process should take an additional two years with a draft document being presented at the 2015 Convention to receive feedback from the members. Based on the feedback received, a final proposal would be presented at the 2016 Convention.

Councillor Passman demonstrated a mobile app being developed for Tau Beta Pi by District 2 Director Jason Rogan. The scope and capabilities of the project were discussed as well as the cost and staff requirements to maintain the app.

Director of Development Pat McDaniel presented an update on the Alumni Giving Program. She reviewed the status of the program with an emphasis on the increasing size of donations and the decreasing number of donors. She reported on a meeting with our current fundraising counsel and their analysis of the last ten years of our giving program. The Council discussed the frequency of appeals and approved soliciting donors for more than one gift per year. She was also requested to explore possibilities of targeting e-solicitations to members who have not donated before.

Major Gifts Officer Sherry Jennings-King reviewed the status of her work on the Chapter Endowment Initiative. The Council reviewed the letters and articles being prepared for publication in the spring issue of *The Bent*. The current matching gift policy was reviewed, and Mr. Gomulinski was directed to prepare an updated version which would include the Chapter Endowment Initiative.

The Council reviewed the mileage reimbursement rate and left it at \$0.25/mile for Association Official and District Conference travel.

A proposal to fund a variety of projects from a collegiate chapter was reviewed. President Blackford was requested to follow up with the chapter and their District Director regarding the proposal. Executive Director Gomulinski updated the Council on a chapter that had conducted an unapproved initiation.

Mr. Gomulinski was asked to follow up with Levern W. Faidley, *IA A '67*, regarding his analysis of and recommendations for the scholarship program.

Proposals from two different organizations to provide insurance as a member benefit were reviewed. Director of Development McDaniel was asked to obtain additional information from both groups.

The existing vision and mission of the Association were reviewed in the context of developing a strategic plan. The Council conducted an analysis of the strengths and weaknesses of the organization as well as possible opportunities and threats.



FAMILIES

Centenarians

We add the names of 14 members who have reached their second century and been recognized in *The Bent*. The full list is available at www.tbp.org under Distinguished members.

Edward P. Coleman, *CA E '35*
b. July 9, 1910
d. March 17, 2011

Marco P. Barbarin, *PA H '32*
b. September 21, 1910
d. October 9, 2014

Fred E. Kasline, *WA B '33*
b. April 30, 1911

Harold P. Hesler, *MI Γ '33*
b. July 24, 1911
d. January 11, 2012

Waldemar J. Klasing, *MO Γ '38*
b. December 16, 1911
d. May 26, 2012

Ferber R. Schleif, *WA B '35*
b. 1913 (aged 101)
d. April 9, 2014

John A. Anthes, *MN A '34*
b. August 18, 1913

Thomas S. Wilmeth, *IN A '35*
b. October 2, 1913

Ronald Raver, *PA E '35*
b. October 18, 1913
d. November 18, 2013

Kenneth O. Beatty Jr., *PA A '35*
b. December 10, 1913
d. March 24, 2014

Alfred F. Norwood, *WA A '60*
b. January 23, 1914
d. May 31, 2014

Robert W. Halli Sr., *PA Γ '36*
b. February 25, 1914
d. September 8, 2014

Henry Gilbert Harlow, *MA Δ '37*
b. April 27, 1914
d. November 17, 2014

Parker C. Tracy, *OH Z '37*
b. August 16, 1914
d. November 17, 2014

Bi-Spousal

We welcome more Tau Beta Pi couples to this most popular category.

Jessica L. Alford, *AL E '07*
Matthew A. Alford, *AL E '07*

Catherine G. Ambrose, *TX A '92*
Robert O. Ambrose, *TX A '90*

Sigbjorn Birkenes, *SD A '98*
Tonje Soraas, *SD A '98*

David A. Borkholder, *NY Π '92*
Robin R. Borkholder, *NY N '91*

Bryan M. Clinton, *MI H '11*
Madison M. Clinton, *MI H '12*

Timothy M. Edgar, *CA A '08*
Meng-Han Kuo, *CA A '08*

Catherine M. Eichhorn, *MO B '12*
Jesse L. Eichhorn, *MO B '12*

Mark C. Fersdahl, *SD A '02*
Sarah M. Fersdahl, *SD A '04*

Christopher S. Harner, *PA B '01*
Julie M. Harner, *PA B '02*

Emily A. Hehl, *OH Γ '06*
Russell D. Mahoney, *OH Γ '06*

Michelle M. Hervey, *LA E '06*
Richard T. Hervey, *LA E '06*

Mark A. Hulet, *AZ A '81*
Angela S. Cotera, *TX A '86*

Burton S. Kaliski Jr., *MA B '84*
Michele A. Fichtl Kaliski, *NY Δ '85*

Cameron A. Kenny, *NM Γ '08*
Carolyn Orosco, *AZ B '09*

Lisa V. Lambert, *TN A '90*
William M. Lambert, *TN A '91*

Carol B. Lindell, *TX A '07*
Blake A. Lindell, *TX A '08*

Kaitlin I. Litchfield, *NH A '11*
Michael P. Litchfield, *NH A '11*

Samantha G. Montesdeoca, *LAI Γ '10*
Jorge A. Montesdeoca, *LA Γ '11*

Nicole Prendergast, *IN Γ '13*
Steven D. Prendergast, *IN Γ '12*

Benjamin C. Rowland, *OH I '06*
Sarah L. Rowland, *OH I '06*

Linda Shields, *CA Δ '84*
David R. Shields, *TX A '00*

Christina M. Trammell, *KY A '14*
Neil E. Trammell, *KY A '14*

†Paul T. Troupe, *IA A '14*
Sarah M. Troupe, *IA A '14*

Eric J. Yankovic, *PA B '12*
Jessika M. Yankovic, *PA B '13*

Jacob D. Zilliox, *CO A '14*
Skylar L. Zilliox, *CO A '14*

Robert S. Zobel, *FL A '89*
Julie A. Zobel, *OH K '98*

Ashley Powell Zummo, *TX A '11*
David V. Zummo, *TX A '11*

Multi-Generation

Here are more families with at least two generations.

The Allen Family
Frank A., *OH Γ '94*
John M., *OH M '14*

The Anderson Family
Donald M., *WA A '65*
Gary S., *WA A '95*

The Annestrand-Comeaux Family
Lori K. Comeaux., *LA A '87*
Thomas A., *CA Δ '87*
Lisa K. Comeaux, *LA A '89* (aunt)
Annelise M. Annestrand, *LA A '14*

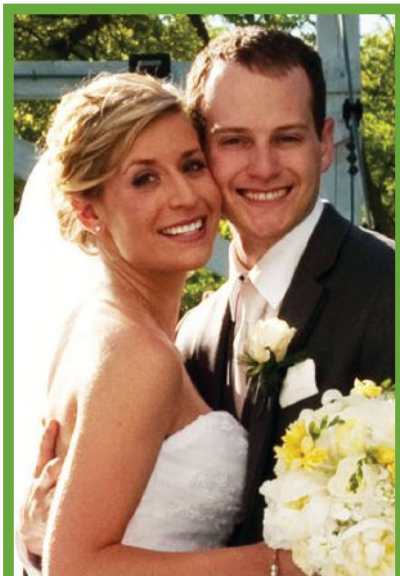
The Brauns Family
Fred, *FL A '58*
Frank J., *NC A '90*

The Brown Family
William P., *AR A '80*
Christopher D., *LA A '14*

The Burge Family
Legand L., Jr., *DC A '72*
Legand L., III, *DC A '92*

The Carter Family
Thomas P., *IN A '77*
Lara, *FL B '14*

The Camoriano-Gladson Family
Guillermo E. Camoriano, *IN Γ '77*
Theresa F. Camoriano, *IN Γ '77*
Nina C. Gladson, *VA B '10*
David A. Gladson, *VA B '09*



Paul T. and Sarah M. Troupe, both IA A '14, are shown on their wedding day, last May 24, two weeks after graduation. Paul, who was working in the Boeing research and technology division, passed away November 19 after a tragic car accident in Phoenix, AZ. A scholarship has been created for aerospace engineering students in Troupe's name. The Iowa State University Foundation is assisting with the Paul Troupe Scholarship Memorial. Gifts can be made payable to the ISU Foundation, with a note for the 'Paul Troupe Scholarship.'

The Crotts Family
 Marcus B., *NC A '53*
 †Van J., *NC A '80*

The Dallemand Family
 †G. Elbert, *CO A '31*
 Barbara L., *CO A '91*

The Davis Family
 Emmett I., *SC Γ '50*
 Emmett I., III, *SC Γ '79*

The Demas Family
 Peter J., *PA A '82*
 Nickolas P., *CT A '13*

The Dickerson Family
 †Lee R., III, *TX Δ '85*
 Austin, *PA Θ '14*

The Engram Family
 Robert L., *DC A '69*
 Kevin O., *DC A '95*

The Farnum Family
 Christopher R., *RI B '86*
 Bradley C., *CT B '15*

The Fischer Family
 Robert H., *NY I '73*
 Caroline J., *MA E '10*

The Fogelman Family
 Carolyn H., *TN A '82*
 Phoebe E., *TN A '15*

The Friedman-Bourcy Family
 †Arnold Friedman, *AZ A '63* (g'father)
 Brian C. Bourcy, *OK A '16*

The Gee Family
 Albert, *CA A '79*
 Nora W., *CA A '79*
 Aaron J., *CA Ψ '16*

The Gilbert Family
 Michael A., *CA M '79*
 Kyle, *CA M '16*

The Graham Family
 Mark V., *TN A '82*
 Eric M., *FL A '14*

The Grewal-Messick Family
 Kalwant S. Grewal, *TX H '73*
 Ruchi Messick, *TX A '02*
 Rashi Grewal, *NJ Γ '09*

The Grinalds Family
 John S., *SC Γ '59* (grandfather)
 John S., III, *OH N '15*

The Gunnink Family
 Brett W., *MT A '81*
 Rachel V., *MT A '17*

The Hanskat Family
 †John E., *FL A '50*
 Charles S., *FL A '76*

The Hays Family
 Rex D., *OH I '79*
 Lydia M., *NY II '17*

The Heigis-Gleason Family
 †Henry E. Heigis, *NJ A '27* (g'father)
 Timothy W. Gleason, *FL A '14*

The Hertz-Marks Family
 Caryn M. Hertz, *NY I '81*
 Lawrence B. Marks, *NY I '81*
 Noah H. Marks, *PA K '11*

The Hettwer Family
 Peter N., *ND B '83*
 Peter J., *ND A '13*
 Ethan P., *ND A '15*

The Hidalgo Family
 Fausto G., *NY Γ '44*
 Carlos J., *NY Γ '82*
 Rita M., *NY Γ '15*

The Hoblitzell Family
 Richard M., *OH B '82*
 Paul J., *OH B '82*
 (Richard's offspring)
 Katherine L. Knight, *KY B '08*
 Richard M., *KY B '09*
 Patrick J., *KY B '10*
 Greg A., *KY B '13*

The Hung Family
 †Siang-Hu, *IN A '32*
 †James C., *NY E '57*
 John Y., *TN A '80*
 Stephen T., *TN A '83*

The Isik Family
 Can, *NY B '78*
 Leyla, *MD A '10*

The Jacobs Family
 David L.E., *IA B '51* (g'father)
 Andrea C., *PA E '16*

The Jay Family
 †David J., *MI E '48* (grandfather)
 Gregory R., *CA Ψ '02*

The Kehl Family
 Randall J., *NY N '86*
 Lindsey A., *NY N '15*

The Christopher Family
 †Robert A., *CO B '57*
 Thomas R., *CO B '78*
 Jeffrey S., *TX Δ '13*

The Clark Family
 †Myron J., *IN B '32*
 Myron J., Jr., *IN B '56*

The Conway-Dimiduk Family
 †Ralph W. Conway, *OH B '29*
 Richard W., *NY Δ '54* (g'father)
 Thomas G. Dimiduk, *NY Δ '08*
 Sarah E., *NY Δ '11*

The Cook Family
 Kenneth J., *MI H '64* (grandfather)
 D'Arcy E., *MI Γ '17*

The Cottrell Family
 †Jack W., *NY B '41*
 Gary E., *NY B '69*

(Continued on next page)

- The Kelly-Vandevoorde Family
John B. Kelly, *OH* '67
Colleen A., *LA* '91
Christine M. Vandevoorde, *CA* '16
- The Klavan Family
Arthur R., *NY* '69
Michelle R., *TX* '12
- The Kowalyshyn Family
†Stephen, Jr., *PA* '41 (g'father)
William R. *NY* '72 (uncle)
Daniel A., *PA* '14
- The Krawczyk-Lewis Family
Charles C. Krawczyk, *NY* '58
Catherine A. Lewis, *FL* '84
Erin N. Lewis, *FL* '15
- The Kuprenas Family
Algimantas J., *MD* '54
Michael A., *CA* '82
Michael A.A., *SC* '13
Rachel, *SC* '15
- The Loveland Family
Michael W., *AZ* '81
Carly S., *MD* '15
- The Luchini Family
†John R. *MI* '71
Kathleen Luchini Colbry, *MI* '99
Dirk J. Colbry, *MI* '06
Mark J., *MI* '01
Timothy J.F., *SD* '11
- The MacDonald Family
Glenn E., *MS* '78
Katrina M., *TX* '08
- The Macke Family
David C., *MO* '95
David C., Jr., *MO* '13
- The Maciupa Family
Michael, *NJ* '74
David M. *OH* '09
- The Meyer-Volchko Family
Don A. Meyer, *IN* '51 (g'father)
Nathan W. Volchko, *OH* '15
- The Miller-Chadly Family
Max J. Miller, *IA* '62
Marcia R. Chadly, *IA* '85
Duncan M. Chadly, *CO* '15
- The Minner Family
Warren A., *CA* '51 (g'father)
Wesley A., *CA* '11
Kelsey J. Boulanger, *CA* '12
Mara A., *CA* '14
- The Morris Family
Thomas A., Jr., *IN* '51
Lee W., *CT* '78
- The Morris Family
Robert L., *PA* '55 (grandfather)
Carl, *MS* '10
- The Murrill Family
Randall T., Jr., *IN* '42
Stephen R., *IN* '71
- The Nordlund Family
Robert M., *WA* '80
Robert M., *MD* '12
- The Novotny Family
David R., *CO* '90
Whitney A., *NY* '15
- The Olson Family
Steven E. Olson, *IL* '81
Joshua P., *AL* '13
Caleb S., *AL* '13
- The Pham Family
Bau N. *OK* '81
Bau N., Jr., *LA* '11
Nhu T., *LA* '13
- The Prunty Family
Robert W., Jr., *SC* '71
Robert W., III, *SC* '97
- The Quesnel Family
David J., *NY* '72
Lisbeth S., *NY* '85
Alicia M., *IL* '01
- The Ropella Family
Kristina M. Piasek, *WI* '85
Kathleen M. *WI* '12
Mark P., *WI* '14
- The Schexnayder-Elias Family
Isby L. Schexnayder, *LA* '63
Janet S. Elias, *LA* '87
- The Schober Family
Robert C., *PA* '65
Susan M., *CA* '06
- The Schurr Family
Hermann D., *CA* '82
Juliet S., *CA* '85
Andrew H., *CA* '12
Naomi D., *MA* '14
- The Schwing Family
Robert L., *MI* '68
Mel A., *DC* '94
Kamilla J., *DC* '02
Kyle M., *GA* '08
- The Slatsky Family
Michael D., *AL* '90
Pamela D., *AL* '90
Katherine M., *AL* '15
- The Stanton Family
Robert S., *LA* '88
Michael B., *LA* '12
- The Stanzione Family
Daniel C., Sr., *SC* '67
Daniel C., Jr., *SC* '91
- The Stevens Family
Philip E., *MI* '83
Barbara K., *MI* '84
Kevin C., *OH* '14
- The Stout Family
Roger P., *AZ* '77
Joshua, *AZ* '15
- The Svetlik Family
Joseph F., *TX* '42
J. Frank, *MI* '67
Harvey E., *OH* '71
- The Thompson Family
†Ansel F., *AL* '35
Ansel F., Jr., *PA* '63
Charles T., *PA* '65
- The Troxell Family
Wade O., *CO* '80
Elise O., *CO* '15
- The Unger Family
Elizabeth A., *MI* '61
Mark B., *KS* '86
- The Upthegrove Family
†Clair, *MI* '1914
†Harry N., *MA* '48
William R., *MI* '50
- The Waters Family
William F., Jr., *MS* '66
William F., III, *MS* '92
- The Wawrzyniak Family
Lori A., *MI* '90
Nicole K., *NY* '16
- The Weertman Family
Julia R., *IL* '46
Johannes, *IL* '48
Willem L. *CT* '47
- The Wehe Family
†Albert H., Jr., *LA* '52
Richard B., *NC* '84



The family that surfs together.....The Olsons—See Multi-Generation

The Weir-Bailey Family

Verne R. Weir, *CA* Ⓣ '74
Breanna M. Bailey, *TX* Δ '00

The Wieggers Family

Bruce V., *ID* A '77
Brandy S., *ID* A '02
Robert G., *ID* A '04

The Wildenstein Family

Kevin L., *NM* A '87
Fabian C.W., *AZ* A '16

The Wilhelm Family

William J., *AL* A '58
Robert G., *KS* B '81
Andrew J., *KS* B '82

Siblings

The Bent publishes here the names of brother and sister members, plus twins as indicated.

The Avila Garcia Siblings

Ivan F., *PR* A '10
Diana A., *PR* A '14

The Benavides Brothers

Leonardo, *TX* Λ '90
Gustavo, *TX* Λ '91

The Berndt Sisters

Eva N., *MI* Δ '14
Kaylah J., *MI* Δ '15

The Ciaravino Brothers

Vito A., *MI* Γ '01
John S., *MD* Γ '02

The Cupp Brothers

Owen H., *CA* X '07
Jared D., *CA* X '10
Myles W., *CA* X '12

The Damashek Brothers

Elliot S., *CA* Γ '11
Aaron K., *CA* Γ '14

The Diver Brothers

†Ellsworth N., *MD* A '40
†Charles A., *MD* A '42
†Warren L., *MD* A '48

The Eerdmans Twins

Andrew T., *ND* B '16
William J., *ND* B '16

The Fuchs Twins

Jeffrey W., *WI* B '16
Joseph R., *WI* B '17

The Garrett Twins

Krista L., *IN* A '14
Lisa N., *IA* A '14

The Garvin Twins

Dillon J., *CO* Z '15
Traverse P., *CO* Z '15

The Gulati Twins

Ajay, *FL* Γ '15
Amit, *FL* Γ '15

The Huelsman Brothers

Chad M., *OH* Ⓣ '08
Tyler P., *OH* Ⓣ '13

The Jacob Brothers

Roeil, *CA* K '05
Rameil, *CA* K '06

The James Twins

Kevin W., *PA* Z '14
Matthew R., *PA* Z '14

The Koskela Brothers

†Arne C., *MI* B '52
Paul E., *MI* B '57

The Krajcovic Brothers

Mark P., *PA* A '07
Michael J., *PA* A '12

The LiVolsi Siblings

Joseph P., *RI* B '09
Catherine A., *RI* B '15

The Nuechterlein Brothers

†Harold F., *MI* A '47
†Melvin H., *MI* A '49

The Nutt Sisters

Brittany, *PA* Z '12
Lauren M., *PA* Z '15

The Ohland Siblings

Karen J., *PA* K '83
Matthew W., *FL* A '96

The Ranck Brothers

Christopher J., *MI* Γ '00
Andrew R., *IL* A '01

The Reuter Brothers

James V., *LA* B '78
Bryan C., *LA* B '85

The Rivera Collazo Twins

Javier R., *PR* A '14
Rafael J., *PR* A '13

The Scheuffele Brothers

Dustin J., *SD* A '12
Zachary M., *SD* A '15

The Shrope Brothers

Stephen J., *WA* B '70
Gerald G., *WA* B '71

The Setter Twins

Jason L., *NY* Δ '15
Jeff O., *NY* Δ '15

The Starr Sisters

Chelsea A., *CO* E '15
Julie A., *CO* E '16

The Steffen Twins

Austin J., *SD* A '15
Christian J., *SD* A '15

The Tarar Brothers

Danish S., *KS* A '12
Haider S., *KS* A '15

The Westkaemper Brothers

John C., *TX* A '47
†Lawrence E., *TX* Γ '52

The de Wet Brothers

Wouter C., *TN* A '14
Dane, *TN* A '16

The Zukas Twins

Angela N., *NH* A '14
Heather E., *NH* A '15

(† indicates that member is deceased)



ALUMNI NOTES

Alabama Alpha

Laurence H. Burger, '80, has joined Decisive Analytics Corporation as an employee owner and been appointed technical director of the Huntsville operations. This followed his retirement after 30 years civilian service with the U.S. Army Space and Missile Defense Command. He spent more than half his career at the senior executive level, serving as the director of the Space and Missile Defense Future Warfare Center.



California Lambda

Roland J. Hwang, '86, is the director of the Natural Resources Defense Council's transportation program. He works at state and national levels on transportation energy and global warming issues. Prior to the NRDC, Hwang was director of the transportation program for the Union of Concerned Scientists in Berkeley, CA. He is a mechanical engineer and has also worked on energy forecasting models at the Lawrence Berkeley National Laboratory and as an air pollution engineer at the California Air Resources Board.



District of Columbia Gamma

Timothy A. Waire Jr., '91, has joined the Cystic Fibrosis Foundation as chief information officer. Prior to joining the foundation, Waire held executive management positions at Quest Diagnostics and Constellation



Energy Group driving the strategic direction of technology across all lines of businesses and their supporting functions.

Illinois Alpha

Jeffrey D. Will, Ph.D., '95, has been awarded a 2014 ASEE National Outstanding Teaching Medal. He is computer and electrical engineering department chair and professor at Valparaiso University, where he has been on the faculty for 13 years and is an advisor to the Indiana Delta Chapter.



Indiana Alpha

Lawrence W. Ziniel, '79, has retired after 32 years at Abbott Laboratories, where he was a senior principal engineer in the nutritional business unit. He was responsible for supporting power and electrical safety programs at 16 facilities in North America, Europe, and Asia. Ziniel received Abbott Global Engineering Service's lifetime achievement award in 2013 for technical leadership and change management. Since retiring, he has been remodeling an 84-year-old house and is looking forward to doing some consulting work.



Massachusetts Theta

James E. Moran, '83, was married to the former Jane F. Bush on December 13 in Methuen, MA. James recently earned an ALM degree in extension studies from Harvard University in biotechnology with



a concentration in bioengineering and nanotechnology. He is a senior member of the technical staff at The Charles Stark Draper Laboratory.

Missouri Gamma

2nd Lt. Alexander U. Cox, '14, was honored as the 2014 Air Force Cadet of the Year at a ceremony at the Pentagon in Washington, DC. The award goes to the most outstanding cadet from the Officer Training School, the Air Force Academy, and the ROTC. Cox graduated last year with both a bachelor's degree in mechanical engineering, summa cum laude, and a master's in aerospace engineering. He is undergoing flight training with the Euro-NATO Joint Jet Pilot program.



New Jersey Gamma

William D. Wilson, J.D., '88, is a partner in the law firm of Mound Cotton Wollan & Greengrass, based at Florham Park, NJ. He co-wrote a book entitled *New Jersey Insurance Coverage Litigation - 2015: A Practitioner's Guide*, which has been published by the New Jersey Institute for Continuing Legal Education, a Division of the New Jersey State Bar Association. Wilson is also the author of NJInsuranceBlog.com.



North Carolina Alpha

Marcus B. Crotts, P.E., '53, has received a lifetime achievement award from North Carolina State University. In 1956, the Air Force Korean War veteran co-founded the full-service machine tool distributor

Crotts & Saunders Engineering, Inc., of Winston-Salem, NC.

Ohio Gamma

Alexander Ivanov, '14, has been selected in nationwide balloting as the 2014 Senior CLASS Award® winner in NCAA® Division I men's soccer. A recent graduate from Ohio State with a degree in electrical and computer



engineering, he was a goalkeeper and became the first Academic All-American in the program's history. Ivanov also has been involved in multiple outreach programs for youth. An acronym for Celebrating Loyalty and Achievement for Staying in School®, the Senior CLASS Award focuses on the total student-athlete in 10 NCAA sports and encourages students to use their platform in athletics to make a positive impact in their communities.

Scott E. Nodes, P.E., '84, has been inducted into the Westerville South High School Hall of Fame—Class of 2014 in Ohio.



He has worked as an engineer for 30 years in the public and private sectors, including serving as assistant state engineer for the Arizona Department of Transportation. He was a construction surveyor in the Oregon Army National Guard and volunteers for community organizations, including Habitat for Humanity, St. Vincent dePaul, St. Mary's Food Bank, and the Salvation Army.

Ohio Delta

Ralph H. Schmoller, '61, has now circumnavigated the globe three times with his wife Nancy, visiting a total of 97 countries. The couple reside in Rolling Hills, CA. He is now retired after a career with the military and aerospace and computer companies.

Oklahoma Alpha

Keith W. Hoffman, '75, has been reassigned as senior intelligence engineer, data exploitations directorate, National Air and Space Intelligence Center (OH) for the U.S. Air Force. He advises the scientific and technical intelligence analysis and production programs in the air and cyberspace analysis group. Hoffman was originally commissioned into the Air Force in 1975.



Andrew C. Taylor, P.E., '81, has been named chair of the executive



board for the National Institute for Engineering Ethics. He also serves as a governor for ASME. Taylor is supervisor of license renewal services for Entergy Nuclear and lectures on power and engineering ethics at universities and workshops throughout the world. Taylor retired from the U.S. Navy as a reserve officer in 2011 with the rank of Captain. He lives with his wife and four children in Russellville, AR.

Pennsylvania Beta

Renata S. Engel, Ph.D., '82, has become Pennsylvania State University's associate vice provost for online programs, a new leadership position where she oversees the academic unit within the world campus. Engel was associate dean for academic programs and professor in the college of engineering.



South Dakota Alpha

Ryan A. Brown, '14, has accepted a full-time position in Mission Control at NASA Johnson Space Center to support the International Space Sta-

tion. The fast-paced environment found in Mission Control's operations will allow him to tap into his experience in a different operational theater, as an eight-year U.S. Army veteran with more than six years in the Special Forces Command (Airborne) unit and combat tours in Afghanistan and Iraq.

Texas Delta

Larry G. Porter, '64, was inducted into the academy of distinguished graduates of mechanical engineering at Texas A&M University during the awards banquet. Porter, now retired, had served the ME department as chair of the industrial advisory council for the past six years. He remains active in civic associations including the Boy Scouts and the Masonic Lodge.

Virginia Beta

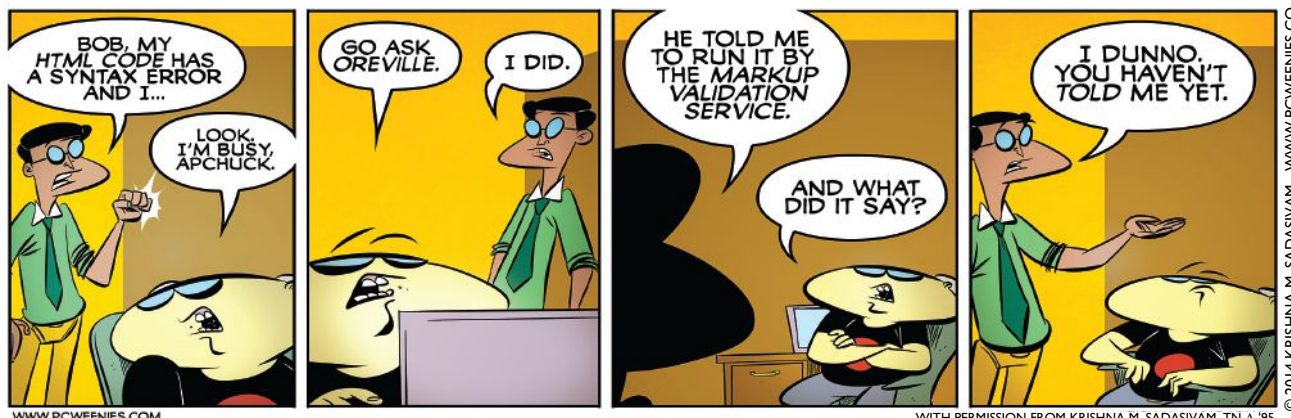
Scott A. Couture, '82, has received a Meritorious Civilian Service award from the U.S. Air Force "for his work as principal adviser for nuclear plans and policies to the Under Secretary of the Air Force." Couture is an engineer in the weapons and complex integration principal directorate at the Lawrence Livermore National Laboratory. He served as principal adviser to the Under Secretary of the Air Force for nuclear matters from May 2012 until May 2014.



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Your fellow Tau Bates are interested in news about you. Send items about civic activities, honors won, weddings, births, promotions, changes in address, etc. to Tau Beta Pi, P.O. Box 2697, Knoxville, TN 37901-2697 or to alumnote@tbp.org. Material for publication must be received for the **Spring** issue by February 1, **Summer** issue by May 1, **Fall** issue by August 1, and **Winter** issue by November 1. Include name, address, chapter, class year, and email address or phone number. Thank you!

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