

Alumni Notes

Presenting the Fall 2012 Officers

by Yvan Boucher, Tau Beta Pi Graduate Student Advisor

The elections of the Fall 2012 officer corps went very smoothly, lasting just under 4 hours. We have a very good officer corps for the coming year, consisting of a variety of experienced officers and new faces to allow for growth and development of the society.

Officers

President—Mike Hand (mikehand)
Vice-President—Mike Boyd (mjboyd)
Secretary—Chris McMullen (cmcmull)
External VP—Vicki Choe (vchoe) and
Kevin Joseph (kevijose)
Treasurer—Matthew Khoo (khoowx)
Corporate Relations—Kristin Graf (grafk)
Activities—Isabel Cosnahan (cosnahan)
Website—Arthur Shih (ajyshih)
Service—Maria Schneider (schneima)
New Initiatives—Gina Calco (gcalco)
Campus Outreach—Ben Rothacker (benroth)
Diversity and Leadership—Susie Chung (susiec)
Grad Coordinator—Nathan McKay (ngmckay)
K-12 Outreach—Carlos Pons Siepermann (carlpons) and
Marissa Lafata (malafata)
Intersociety—Eeshan Kanpara (keeshan)
Membership—Justine Kunz (justkunz)
Publicity—Ryan Chen (ryanchen) and Nick Ruff (nickruff)



Above: TBP President-Elect Mike Hand

Advisors

Paul Kominsky (paulko) (Chief Advisor)
Dan Becker (debecker)
Andy Boucher (yanders)
Dan Kiefer (dkiefer)
Josh Larson (jilarson)
Elson Liu (eyliu)
Pritpaul Mahal (pritspaul)
Sarang Supekar (supekar)



Above: Outgoing and incoming officers in a group photo following the elections meeting.

MindSET Program – Winter 2012

by Carlos Pons Siepermann, K-12 Outreach Chair

Continuing the hard work of past semesters, the K-12 Outreach Chairs, Nathan Rowley and Carlos Pons Siepermann hosted four public schools from the Ann Arbor and Ypsilanti areas for four consecutive weekends to teach interested children about science, math and engineering.

This semester was of great importance given that it was the first time two K-12 chairs were working together simultaneously. As a result, many projects were undertaken in order to strengthen the program and hopefully ensure continuous growth and progress in the coming years. Some of the most notorious endeavors were: contacting the American Institute of Chemical Engineers (AIChE) for collaboration in the modules in order to increase the number of volunteers available; the implementation of a volunteer-run transportation system, which allowed active members of Tau Beta Pi that reside in Central Campus and lack personal means of transportation to get to the modules in North Campus; and finally, the creation of two completely new modules, one called Density Quest (that introduces the students to basic chemistry concepts) and another called Engineering Product Design (which instructs in topics such as material selection, product design and marketing).

The program was very successful this semester, approximately 30-40 kids came all weekends and a strong volunteer/student ratio was sustained. Additionally, the new modules were performed without any setbacks and were well received, it is the intention of the chairs to send the worksheets and presentations of the new modules to Tau Beta Pi Nationals to show the hard work performed by our chapter in order to ensure that MindSET remains a dynamic and growing program.

The plans for the future include contacting more leadership-and-service-focused student societies such as the Epsilon Chi in order to expand the number of active collaborators to the program and allow further growth. The goal of the chairs is to allow more schools and children to participate in the program as the number of available volunteers increases. Additionally new modules are being prepared constantly with the goal of ensuring that the scope of topics covered in the program is rich and diverse, covering all branches of science and engineering.



Above and right: Pictures of K-12 Students participating in MindSET with aide from volunteers from Tau Beta Pi.



2012 Leaders and Honors Brunch

by Vicki Choe and Kevin Joseph, External Vice-Presidents

The Leaders and Honors Brunch is a yearly event hosted by the College of Engineering, Tau Beta Pi, and the Epeians Engineering Leadership Society. This event honors CoE students who have made exceptional contributions in the areas of scholarship, research, leadership and service via university, departmental, and student organization scholarships. This year, 29 awards were presented to 85 students for a total of over \$200,000 in scholarship funds. Key speakers at the event include David C. Munson, Robert J. Vlastic Dean of Engineering; Jeanne Murabito, Executive Director for Student Affairs; Thomas Zurbuchen, Associate Dean for Entrepreneurship; James Holloway, Arthur F. Thurnau Professor and Associate Dean for Undergraduate Education. This event is made possible through the hard work of members of the Office of Student Affairs, Tau Beta Pi, and Epeians—namely Jennifer Wegner, CoE Student Affairs Assistant Director; Kelle Parsons, Student Affairs Graduate Intern; Vicki Choe and Kevin Joseph, TBP External Vice Presidents; and Auresa Thomas, Epeians Leadership Awards Chair. Elson Liu (Tau Beta, AZ A) provided a musical prelude to the proceedings.

The major responsibility of the External Vice Presidents of Tau Beta Pi was to recruit and form eight award committees comprised of one faculty member, one grad student, and one undergrad student per award. They then scheduled the award interview slots based on committee availability and, finally, the student nominees. The EVPs were also in charge of selecting the recipients of the First Year Student Awards. They coordinated the committees during interview week and worked with the Office of Student Affairs to set up and direct guests at the Leaders and Honors Brunch capstone event.

Congratulations to all of the Tau Bates who received academic, leadership, and/or organization awards at this year's Student Leaders & Honor Brunch:

Yvan Anders Boucher, Nuclear Engineering and Radiological Sciences—Distinguished Leadership Award
Rebecca Frank, Computer Engineering—Distinguished Achievement Award
Elizabeth Grobbel, Civil & Environmental Engineering—Henry Ford II Prize
Michael J Hand, III, Electrical Engineering: Systems—Distinguished Leadership Award, Tom S. Rice Tau Beta Pi Award
Steven Hoffenson, Mechanical Engineering—Distinguished Leadership Award, Richard F. and Eleanor A. Towner Prize for Distinguished Academic Achievement
Daniel Kiefer, Aerospace Engineering—Distinguished Leadership Award
Brendan Kochunas, Nuclear Engineering and Radiological Sciences—Richard F. and Eleanor A. Towner Prize for Distinguished Academic Achievement
Abhishek Kumar, Aerospace Engineering—Richard F. and Eleanor A. Towner Prize for Distinguished Academic Achievement
Joshua Lumley, Chemical Engineering—Distinguished Leadership Award, Distinguished Achievement Award
Michele Mastria, Chemical Engineering—Tom S. Rice Tau Beta Pi Award
Darin McLeskey, Civil & Environmental Engineering—Distinguished Achievement Award
Paul Rigge, Electrical Engineering—Distinguished Achievement Award
Aftin Ross, Biomedical Engineering—Marian Sarah Parker Graduate Prize, Richard F. and Eleanor A. Towner Prize for Distinguished Academic Achievement
Shani Ross, Biomedical Engineering—Richard F. and Eleanor A. Towner Prize for Outstanding GSIs
Nick Ruff, Computer Science Engineering—Cooley Writing Prize: Fiction Division
Sarang Supekar, Mechanical Engineering—North Campus MLK Spirit Award
Vivek Thanabal, Mechanical Engineering—Distinguished Achievement Award
Patrick Theisen, Computer Science Engineering—Distinguished Achievement Award
Yiqing (Shirley) Xu, Chemical Engineering—Cooley Writing Prize: Nonfiction Division



Above (L-R): Yvan Boucher, Vicki Choe, Kevin Joseph, Jenna Bertke (2011 SWE Career Fair Director), Mike Hand, Michele Mastria, Sarah Ewing (2010 SWE Career Fair Director).

Dream Vacation for an Aerospace Engineer

by Nathan McKay, Activities Chair

During spring break a group of 16 aerospace engineers took a grand tour of Southern California (SoCal), visiting 8 of the top aerospace research and production facilities. The group included Mi-Gamma officers Dan Becker and Nathan McKay, as well as advisor Dan Kiefer. Known as the “Aerospace Dream Tour,” this event was organized by Michigan’s AIAA chapter, which leveraged its network to arrange tours at JPL, Boeing, Northrop Grumman, SpaceX, Lockheed-Martin “Skunk Works,” Scaled Composites, Pratt & Whitney Rocketdyne, and Edwards Air Force Base. Details of this trip were documented on a blog the AIAA president Steve Harris kept throughout the trip. You can view this blog at <http://aeroscholar.com/>. A day-by-day breakdown summarizing our trip is given below:

Monday: On Monday we toured NASA’s Jet Propulsion Laboratory (JPL) and Boeing’s C-17 production facility. JPL is responsible for almost all of the deep space probes NASA sends to the other planets. Among other things, we saw where the new Mars rover known as Curiosity (the Mars Science Laboratory, currently on its way to Mars) was made. We noticed an engineer in a clean suit was using the iHandy app on his iPhone to find the inclination of the MSL engineering model. Later that day we saw C-17 Globemasters in various stages of their construction. It was humbling standing next such a large aircraft in its infancy. Some of the construction techniques were very unique, and we learned some surprising facts on the type of damage this military aircraft can take and still stay in the air.

Tuesday: On Tuesday we toured Northrop Grumman and SpaceX. At Northrop we toured the composites facility and walked down the F-18 Super Hornet production line. Looking at fighter jets never gets old for an aerospace engineer, and seeing their half build structure and internal guts gave us all goose bumps. We then toured SpaceX, which pretty much blew the socks off the space geeks in the group (myself included). Everywhere you looked there was space hardware, including a new rocket engine the tour guide told us we should probably not be looking at. We stuck our head into that Dragon capsule mock up, watched their mission control room in action during a test run for the upcoming launch, and ate some of the free frozen yogurt the employees enjoy every day at the expense of a bet lost to Elon Musk. Did I mention the Iron Man movie was filmed here?

Wednesday: The mind-blowing tours continued on Wednesday when we took a very exclusive tour of Lockheed’s Advanced Development Programs facility, commonly known as the Skunk Works. This is where a lot of the top secret aircraft are developed and built. Most of us never thought we would have a chance to step foot in this facility without working for them. There we had a chance to get down and dirty with the P-791, an experimental aerostatic/aerodynamic hybrid airship. The day kept getting better with a trip to the Mojave Spaceport and a tour of Scaled Composites. One of the most interesting aircraft they developed and built is the Space Ship One spaceplane, a suborbital vehicle which won them the X Prize. There TBP members (Dan Becker and myself) piloted the suborbital flight simulator, launching the spaceplane to the edge of space.



Above: TBP President Dan Becker with an F-1 Engine



Above: Members of AIAA on their Spring Break Trip.

Thursday: On Thursday AIAA members took a tour of two of Rocketdyne’s production facilities. Rocketdyne is responsible for building the F-1 rocket engine; the enormous monster that combined with four other engines put a man on the moon. They also built the Space Shuttle Main Engines, among others. If you want to see their handy work head over to the FXB.

Friday: Our grant tour concluded on Friday with a bang, literally. We were sitting in a conference room on the secure military base eating lunch and a loud noise, which sounded like someone dropping something on the roof, shook the room. It was a sonic boom! We had a chance to shake the wing of a Global Hawk (a surveillance UAV) to view the vibrational modes, and saw plenty of jets in the air, including tow F-22 raptors. We saw the F-35 (the new Joint Strike Fighter) with our own eyes, and got up close to an F-16 and its various tools of destruction.

There is no question that this trip is basically the best possible way an aerospace engineer can spend a week short of flying in a fighter jet or traveling into space. However, not everything was official business. There were a lot of conventional fun activities we did as well. For instance, on Thursday, after our tour of Rocketdyne, we piled into our *inconspicuous* 12 passenger white van headed to Santa Monica for some beach time. There we took a short walk to Venice Beach to do some people watching, check out the set of American Ninja Warrior, and get some tattoos. Needless to say, it’s a pretty crazy place! Once the Sun set we drove to Hollywood Blvd for dinner and some live music at the Hard Rock Café. We also spent some time hanging out with employees from SpaceX and Scaled Composites and made use of the hotel hot tub. All in all, a perfect spring

The Other 1%: or why I've never wanted a regular spring break

by Mike Hand, Corporate Relations Chair

This spring break, I traveled with 12 other participants to the Dominican Republic to assist with medical clinics near the border with Haiti, with taking care of malnourished children who had been taken in, and with organizing and assembling materials in a new nutrition center. During our trip we experienced much material and financial poverty alongside extreme affluence of spirit. Put another way, despite encountering some of the poorest of the poor, we were struck by the incredible attitude of welcome and kindness that we encountered during our trip.

Let me give a brief run-through of the events of the first two days. Having arrived at El Llano (indicated by the star in Figure 1) the previous day, we set out on Monday to help at a new nutrition center. In assembling cribs, we had to overcome missing pieces, inadequate tools, and still make the crib stable enough to hold children. This forced me outside my comfort zone. Going in, I thought there was an exact right way to assemble the cribs. After struggling for a couple of hours, I had to adapt. We asked our coordinator, "How jury-rigged is too jury-rigged?" in reference to the crib construction. Her response was "you're in a third-world country; there's no such thing." This adaptability, or flexibility, was an integral virtue for the trip, and the crib-building experience helped me to be more open to that. Despite the building challenges we faced, we were able to assemble two cribs.

The next day we headed up into the mountain village of Rosa de la Piera to help out with a medical clinic. Seeing the issues that were troubling the people coming to the clinic and the difficulty in treating them was an eye-opening experience for me. The hardest cases to witness were those that affected children. During the clinic, we worked with 6 severely malnourished children, 3 of whom were bad enough that they needed to be taken in to recuperate. One of these children, named Pepito, had sores and infections and appeared to be in near constant pain. Nelson, shown in Figure 2, was one of the children brought in. With the addition of these three children, we were then responsible for taking care of 14 children at the house in which we were staying. Interestingly, we used one of the cribs we had built to hold the 3 new children.

In addition to the more conventional work, the trip had smaller bits of work that were incredibly meaningful. One in particular was doing laundry manually with Marisol, one of the women we were working with. Courtney, one of the other participants, and I had no experience at manual laundry, and probably contributed more to the amount of water spilled on the patio than to the completion of the laundry. Nevertheless, seeing Marisol's happiness with us helping out, and especially her willingness to show us what we were doing, helped us to see the patient, welcoming culture we had found. Another "small bit" of service work was feeding the children every day, especially the three new ones we had brought in. Perhaps the most rewarding aspect of this was seeing Pepito start to accept food and to even ask for water, and seeing Nelson start to feed himself.

There are many aspects of the trip that are easy to sell as positive experiences: warm weather, great food, international travel, etc. Many of the most worthwhile aspects however, are much more difficult to describe. For instance, using a syringe to administer fluids and medications to the malnourished children may not seem like a particularly



Above: Dominican Republic



Above: Nelson was brought into the house suffering from severe malnutrition.



Above: The St. Mary Student Parish ASB Dominican Republic Group with the FUMSIL workers at the El Chivo Nutrition Center.

enjoyable experience, nor would dealing with some of the common travelling illnesses seem like something that would bring a group closer together. Nevertheless, it was these small experiences that helped me to see the humanity of the individuals we were serving, that helped me to appreciate the many, many blessings I take for granted every day, and that helped take a group of 13 acquaintances and transform it into a group of incredibly close friends.

Cub Scout Day

by Ethan Wampler, Cub Scout Day Chair

Despite having a small number of volunteers and a record number of 120 Cub Scouts, Cub Scout Day was a huge success! Volunteers led the scouts through four different events: floor-plan, circuits, bridge building, and the crowd favorite – the egg-drop. The floor-plan taught the scouts how to measure and create a map of a room. In the circuits module, the scouts learned about electricity and the differences between series and parallel circuits. Then, the scouts built bridges out of straws and tape, and the group that could support the most weight got candy.

This brings us to the egg-drop. The scouts devised different methods to protect an egg based on the materials we gave them. The most successful design used a Meijer bag as a parachute attached to a paper bag that held the egg and crumpled paper, under which was a gallon-ziploc bag that acted like an airbag upon impact. The scouts go crazy during the egg-drop; it reminds me of what a gladiator match would be like in ancient times –people everywhere screaming! Overall, it was an awesome event, the scouts learned a lot, and they had a blast!

