**PI TAU SIGMA ANNUAL CHAPTER REPORT**

**2016-2017**

**Illinois Alpha**

## A. Initiations

PTS Illinois Alpha invited candidates who had obtained a minimum of 60 credit hours and had maintained a minimum 3.5/4.0 GPA to initiate into our chapter at the beginning of each semester via an email written by the chapter president. This email additionally invites these potential initiates to a meeting at which initiation requirements are outlined and all chapter officers are introduced.

1. ***Initiation Requirements:***

   Illinois Alpha's initiation requirements are such that the initiate is introduced to all of the chapter's many activities. Initiates are required to attend at least one social event, two service events, and one new member event. Initiates must attend a certain number of events to accumulate points and those who attain a certain point value are invited to initiate into the Illinois Alpha chapter. This point requirement serves to encourage greater participation in chapter events and bonding between members of the society.

2. ***Initiation Ceremony:***

   Attendance at the initiation ceremony is required, and is typically held the week before finals each semester. This year's ceremonies were on December 7th, 2016, and May 3rd, 2017. 9 new members were inducted in the fall and 30 new members were inducted in the spring. Business professional attire is required for all participants. During the ceremony, initiates are led with their eyes closed into a dimly lit room and line up across the front of the room. The executive board then instructs the initiates in the code of ethics that all members of Pi Tau Sigma must uphold, and initiates individually pledge to do so. The Pi Tau Sigma coat of arms and emblem are then introduced and explained. Then initiates are taught the secret handshake and presented with a pin, pencil, t-shirt, and key. Initiates are then treated to an Olive Garden dinner.

## B. Chapter Activities

### *1. Fundraising*

Twice a year, our chapter holds a two week long barbecue to raise money for a charity organization. This year, we chose to donate to a local organization called Grow in Illinois. This organization seeks to rehabilitate individuals battling mental health issues and provide them with the support they need to thrive in the community. At these barbecues, we sell bratwurst, hamburgers, hot dogs, cheeseburgers, chips, and drinks to passerby. Initiates and members grill, collect money, and serve customers.

### *2. Service*

#### *a. Booker T. Washington Technology and Engineering Club*

Every year, our chapter participates in the BTW Technology and Engineering Club. This is broken up into two groups of students, one for K- 2nd graders and the other for 3rd – 5thgraders. The structure of the club this year consists of two separate, six-week sessions, one in the fall and one in the spring. In conjunction with our department's chapters of ASME and SEM, the STEM advisor at BTW academy, and Joe Muskin, the Outreach Coordinator for the MechSE department, we developed a curriculum that includes plenty of hands-on activities in order to explain concepts discussed. The topics covered included additive manufacturing, hydrophobic materials, wire-coil motors, conductivity, non-Newtonian fluids, wind power, and fluid density among others. Each of these topics was introduced with a short, 5 minute presentation of the basics of the topic, and then a 30 - 40 minute, hands-on activity. PTS and some members of our chapter have received service awards from our department due to our efforts with the engineering club. A few reports can be found on the department newsletter regarding our events. We will continue our involvement with Booker T. Washington in the future, and are excited to be a part of such a valuable initiative.

#### *b. Family Engineering Nights/Picnics*

Family Engineering Night or Picnic (depending on the time of day) is similar to BTW engineering club in that it too offers demonstrations to instruct elementary school students in engineering and science concepts. The interest in these Family Engineering Nights arose because of the success of the afterschool engineering club, and our volunteers were asked to extend our service to students in the area. This year, it took place once each semester. Over 100 students and their parents participated in activities hosted by Pi Tau Sigma jointly with our local chapter of

ASME. Families were broken down into groups and they could pick which activities to participate. Each of the activities would take about 25 minutes. The duration of each event was about 3 hours. In the fall semester, the Family Engineering Night was hosted at Booker T. Washington, as was the Family Engineering Picnic in the spring semester.

*c. Engineering Open House*

Every year our society creates four projects, further discussed later, for exhibition and competition at Engineering Open House, an event spearheaded by the UIUC's Engineering Council. This is the largest science fair in the country, and many student organizations create exhibits for the enjoyment and instruction of the general public. Thousands of visitors come to campus to see EOH every March. This year we exhibited our legacy Lego Mindstorms project, as well as a new design project, a bike powered scissor lift, and debuted our Siege Weapons exhibit, which we hope to continue to add to in years to come. Additionally, we built a robot for the Midwest Robotics Design Competition, which takes places at EOH. This year EOH took place on March 10th and 11th.

*d. MechSE Open House*

In order to help promote our department and Mechanical Engineering as a whole to prospective students and their parents, as well as local grade school students, our chapter participates in a smaller exhibition for the MechSE department called MechSE Open House. This year, we exhibited sandcasting for the last time, since the department would be removing the facility for a renovation. This involved

demonstrating the process of sandcasting to attendees and allowing them to pack molds themselves. We then would give them a small casted car for them to keep.

### *3. Departmental Involvement*

#### *a. Student Society Luncheons*

The president of our chapter of PTS participates monthly in the MechSE Student Society Luncheons, in which representatives from each of the MechSE-affiliated student societies meet to discuss departmental activities and resolve student concerns. This has given rise to much beneficial collaboration between societies for various events, some of which are discussed later on in this document.

#### *b. MechSE Peer Advising*

Our chapter helped provide Peer Advising alongside our chapters of ASME and SEM for younger students in the department in both the Spring and Fall semesters this year in order to help them determine their class schedules and reconcile them with their extracurricular endeavors for the coming semesters. Older students provided much needed insight in terms of workload and practicality of class schedules.

#### *c. Joint Events with MechSE Societies*

i. Broomball and Sand Volleyball

Illinois Alpha has also competed in various sport activities with other MechSE societies, as part of an informal tournament. This is a great way to promote bonding with the department!

ii. Corporate General Meetings

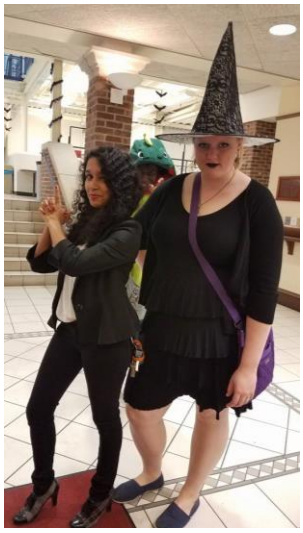
We have also cohosted meetings with representatives from companies such has Whirlpool and Proctor and Gamble alongside ASME. These companies have been kind enough to provide attendees with meals and activities such as product tear downs.

iii. Internship Panel

Additionally, we cohosted an Internship Panel for the student body with ASME so that younger students could learn about the many varying internship opportunities available and how best to go about applying for them.

iv. MechSEmiformal

Alongside many other MechSE societies, this year PTS cohosted MechSEmiformal, an end of the year dance event for the MechSE student body. This year boasted highly increased turnout from previous years, and we were glad to be involved.



*d. Halloween Events*

PTS organized a series of Halloween events for the MechSE student body which included decorating the atrium of the Mechanical Engineering Laboratory, and planning various festivities such as a Halloween BBQ and Movie Night where we watched Hocus Pocus, a Halloween classic. Prizes were given to those who wore the best costumes.

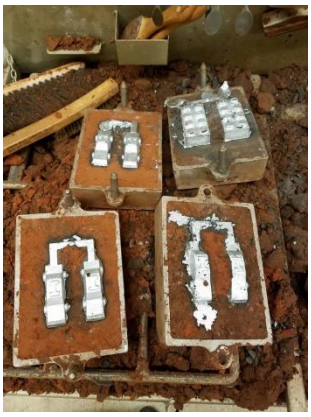
*e. Scholarships and Awards*

Once again, PTS awarded scholarships to worthy recipients, and many PTS student won departmental scholarships and collegiate awards for their service, academics, and involvement throughout the campus.

Scholarships directly awarded by our chapter included the Initiate awards, given to the initiates for each semester with the most participation in our activities, Most Valuable Member award, given to the member whose contribution to the society went above and beyond the call of service, Unsung Hero award, given to the

member whose great impact to the society did not go unnoticed, and the James W. Bayne External Service award, given to the member who demonstrated the greatest devotion to service to the community.

## 4. *Projects*



### a. *Sandcasting*

For years, PTS has showcased a sandcasting exhibit for both EOH and MechSE OH (discussed earlier). This year we exhibited for the last time at MechSE Open House due to renovations to the Mechanical Engineering Laboratory. Our exhibit consisted of an explanation and demonstration of a simple sandcasting technique. Visitors would then be given a casted car as a souvenir.

### b. *Siege Weapons*

To replace our sandcasting exhibit, we decided to form a new siege weapons team, with the objective of creating a new siege weapon every year to add to an arsenal for showcase at EOH. We feel that this is an engaging way to teach children about basic mechanical principles as well as some historical tidbits. This year we built a trebuchet for exhibition.

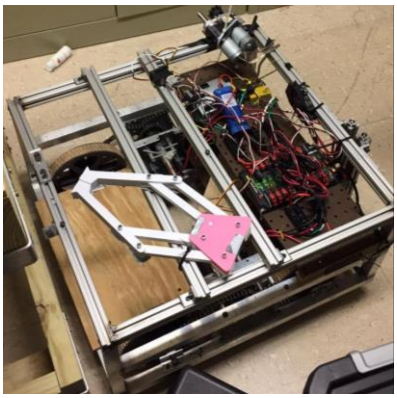
### c. *Design Project- Bike-Powered Scissor Lift*

As we do every year, we created a new design project to exhibit at EOH. This year, it was the Bike-Powered Scissor Lift. Members created a mechanism such that a scissor lift could be actuated by pedaling a bike. Visitors at EOH were allowed to sit on the mechanism in order to demonstrate the concept of mechanical advantage.

### d. *Lego Mindstorms*

We also reprised our Lego Mindstorms exhibit for EOH. This year, members programmed the robots to create spin art and send analog signals to motors by way of crank for a demonstration.

e. *Midwestern Robotics Design Competition*



Every year, we also make a robot to compete in the MRDC at EOH. Each year the robots are given a different task to accomplish. This year's was to score points by travelling through tunnels using a camera guidance system and retrieve a key and a ball in order to unlock a goal to put the ball in.

## 5. *Social Events*

a. *Happy Hours*

As per tradition, we have happy hours biweekly on Fridays at Murphy's, a local pub. Members and initiates are treated to Irish Nachos courtesy of our chapter!

b. *Game and Puzzle Nights*

This year, we started having sporadic game nights to provide a form of stress relief for our members. As these events turned out to be rather popular, we will continue this in future years.

c. *Initiate-Exec Board Dinner*

We continued the initiate-exec board dinner at Firehaus started last year as a way for initiates to get to know members of the exec board. As in the past, there was good turnout for this event, and this will likely be continued for years to come.

d. *Barcrawls*

Every semester, we participate in two barcrawls, one with the other departmental societies, and one on our own. This is an opportunity members to bond outside of classwork, and celebrate our accomplishments, as these are usually held near the end of the semester.

*e. Miscellaneous*

i. Valentines for Initiates

This year since our initiate information session coincided with the week of Valentine's Day, we decided to make Valentines for initiates in order to endear ourselves to them, and show that we welcome them with open arms.

ii. White Elephant Gift

We had a white elephant gift exchange for members around Christmas time in order to spread holiday cheer! We also made cookies for this event.

iii. Potluck

We held a potluck in April to show our appreciation for our members and encourage them to gather for a meal. This event was very successful and will likely be continued in the future.

iv. Pig Roast

Taking inspiration from another chapter's report from last year, we decided to hold an end-of-year pig roast. It was a challenging combination of engineering and culinary prowess, as none of us had ever attempted one before. We built an oven of cinderblocks in the president's backyard and roasted a pig purchased from our university's meat salesroom. Members of the executive board woke up early April 22nd and spent the day roasting the pig and a chicken and preparing dishes for a dinner for our membership. The event was hugely successful and we plan to have it again next year if we are able to find another suitable location for it.

***6. General Meetings***

We held general meetings every other week throughout the Fall and Spring semesters. Many companies came to speak with us during these general meetings including

Cornelius, Ford, Rolls Royce, and Cummins among others. These meetings serve to provide our membership with an opportunity to speak to personnel from these companies and this has on many occasions lead to internship and career opportunities for members. Occasionally, our own alumni will return to speak to us as representatives from the companies they work for.

7. ***Convention Attendance***

This year, our executive board was able to attend convention at Drexel University in Philadelphia. We found the convention to be both enjoyable and informative and relished the opportunity to try genuine Philly cheesesteaks!

8. ***Society Organization***

Our society is governed by an executive board comprised of a president, external vice president, internal vice president, vice president of membership, treasurer, secretary, social chair, and service chair. This executive board has meetings weekly to ensure that all events run smoothly. Additionally, there are four project heads who oversee the building and exhibition of all projects.

The president oversees all society operations. The external vice president is in charge of securing corporate representatives to speak to membership. The internal vice president ensures that the needs of project heads are seen to. The VP membership develops programming beneficial to our membership. The secretary sends out weekly emails and keeps track of attendance, and the treasurer manages the finances of the organization. The social chairs plans social events for the organization, and the service chair organizes the biannual fundraising BBQ and all outreach activities.

For other questions, please visit our website, www.pitausigma.mechse.illinois.edu, or email ptsillinoisalpha@gmail.com