PI TAU SIGMA ANNUAL CHAPTER REPORT
2010-2011
Cooper Union Pi Phi

A. Initiations

Initiations are held mid-semester in both the fall and the spring. This year, the fall 2010 initiation was held on December 20, 2011; six undergraduates were inducted. The spring 2011 initiation was on April 7, 2011; three undergraduates were inducted.

Initiations are performed according to the procedures outlined in the Handbook. The initiation ceremony is followed by a social pizza party. Afterwards, a standard meeting takes place in which the new inductees are informed of the short-term and long-term goals and activities of our chapter.

Elections for officer positions are held at the end of every spring semester. All non-graduating members are eligible for nomination. Votes from graduating and non-graduating members are counted.

Selection of initiates into the Pi Tau Sigma at the Cooper Union is based solely on grade point average. Students who meet a minimum GPA of 3.5 by their senior year were invited to join the society.

This past spring, the selection criteria were redesigned and will be enacted in fall 2011. It is a staggered system, in which the minimum GPA varies depending on the semester and the year of the student:

FALL
- 3.5+ Seniors
- 3.7+ Juniors

SPRING
- 3.6 + Juniors

This system ensures long-term, active members -- for example, seniors will not be inducted in the spring because by that time, they will not be able to contribute significantly to the chapter's activity. It also addresses potential problems due to the small selection pool, which is in turn due to Cooper Union's small student body size.

B. Chapter Activities

3-D Turkish Delight Bake Sale

A mechanical engineering twist on a traditional fundraising event. This event was held in the fall of 2010. Besides raising money, the goals of this event were to raise awareness of Pi Tau Sigma and also of the tools and projects of the mechanical engineering department.

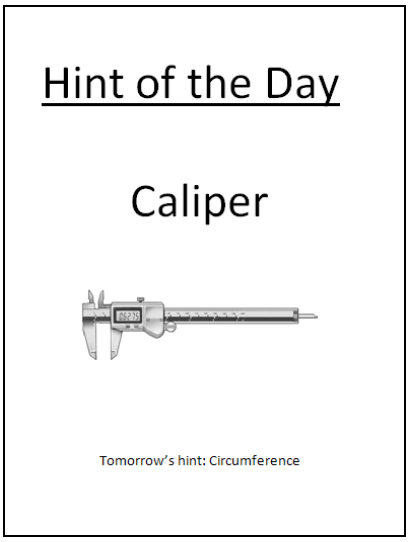
The original plan was to create baked goods using the rapid prototyping tools, such as the laser cutter and 3-D printer, of the mechanical engineering department. However, due to issues of practicality and safety, we had to supplement the original plan with Turkish baked goods.

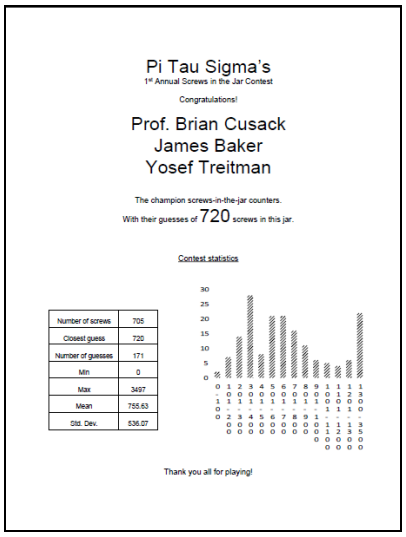
A pushcart was outfitted with a RepRap 3-D printer capable of printing precise frosting patterns on ginger snap cookies. Also for sale were Turkish deserts such as baklava and Turkish delight. Pi Tau Sigma salesmen were adorned with eye-catching fez hats. Everything was $1.

The event was a great success. The pushcart allowed us to be mobile allowing for wide exposure and aggressive sales tactics. This event will likely be repeated next year. Next time traditional Turkish coffee will also be served.

Screws-in-the-Jar Contest

Another mechanical engineering twist on a traditional fundraising event. This was a weekly event held in the spring of 2011, which garnered much attention and participation from the Cooper Union community. This fundraiser was a guessing game in which participants guessed at the number of screws in a sugar shaker. Each guess was a dollar. The winner with the closest guess received half of the pot.

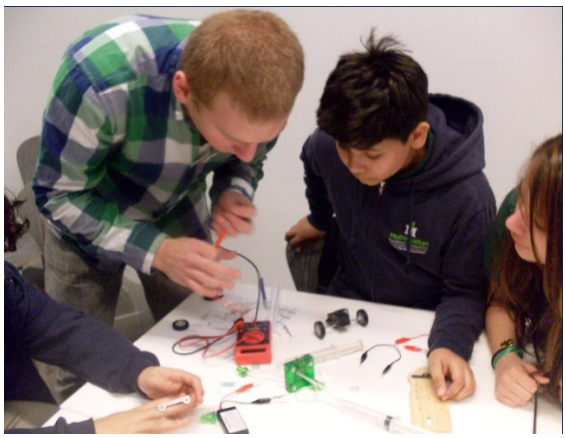




A unique and fun aspect of this game was that a different "Hint-of-the-Day" was provided daily. These hints were some kind of measurement device (scale, calipers) that would aide in determining the correct number of screws. This hints encouraged long-term participation while also promoting analytical and creative problem solving skills.

John Deere / SAE International AWIM® Learn Twice Initiative with the Metropolitan Expeditionary Learning School

Over Spring Break, Pi Tau Sigma worked with the Cooper Union Formula Team to host middle school students from the Metropolitan Expeditionary Learning School (MELS). For three days we gave lessons on fundamentals of automotive engineering and alternative energy, gave tours of our lab facilities, and helped them construct fuel-cell car kits.



The mission of the *John Deere / SAE International AWIM® Learn Twice Initiative* is to promote STEM (Science, Technology, Engineering, and Mathematics) in elementary education. This

program provided us with a valuable and fun experience in teaching and mentorship. The students were quick learners and the fuel-cell car races made for exciting highlights.

For more information about the *Deere / SAE International AWIM® Learn Twice Initiative*, visit: http://www.awim.org/about/si/learntwice/

Additional photos from the MELS visit to the Cooper Union can be found at: http://www.metropolitanels.com/MELS/Image_Gallery/Pages/Green_Taxis_2012.html#grid

Interactive Light Room at P.S. 347

The *Interactive Light Room* is a project that allowed us to apply engineering design knowledge and resources towards the benefit of the community. An old storage room at P.S. 347, an elementary school for hearing impaired students, was converted into a playroom containing displays and toys which promoted interaction with light and shadows. The goal of this project is to promote interest STEM while also providing hearing impaired preschoolers novel and engaging opportunities for learning.

Members of Pi Tau Sigma volunteered with the renovation of the room and with the construction of the interactive displays. This was a joint effort between Cooper Union's Pi Tau Sigma, ASME, and undergraduate students.

This project was covered in a segment aired by the local ABC news: http://abclocal.go.com/wabc/story?section=news%2Feducation&id=8209063

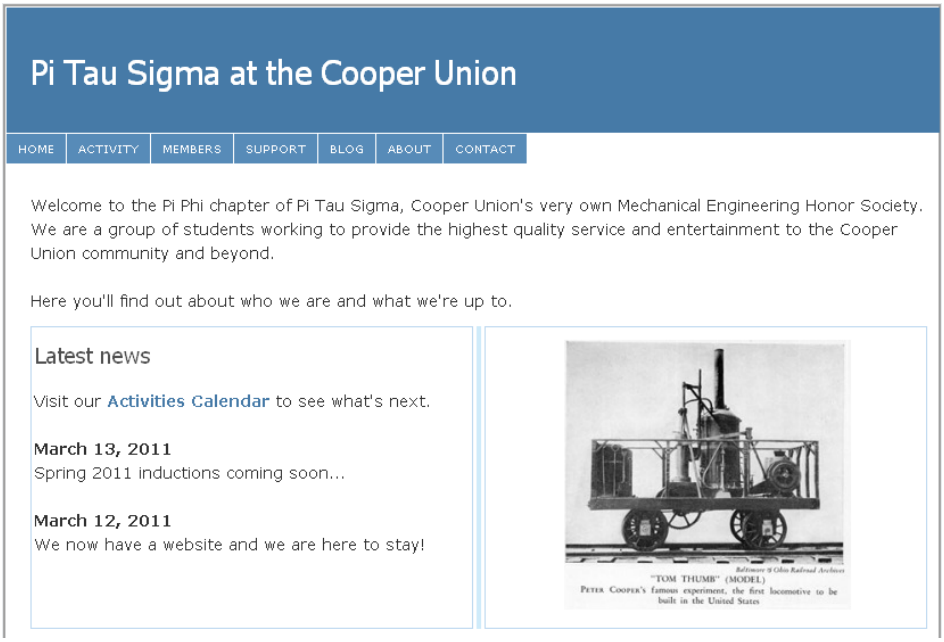
Mechanical Engineering curriculum evaluation

Over the past year, the faculty of the mechanical engineering department has been working to redesign the curriculum. Pi Tau Sigma served as student liasons to the faculty by providing input

and compiling surveys of junior and senior students' feedback. Pi Tau Sigma saw this as a great opportunity to serve the mechanical engineering department directly, to establish communication with the faculty, and to reflect on our educations.

Chapter website

We have been working on designing a website which will be launched in the fall of 2011. The purpose of the website will be to serve as the public face of the Pi Phi chapter. It will be where we promote and document our activities. Hopefully, this website will facilitate our continued engagement with the community.



2011 Chicago Pi Tau Sigma National Convention

Two chapter officers were sent to National Convention in Chicago. The members participated in the breakout meetings to discuss the various Pi Tau Sigma agendas. During this meeting, they learned about the different traditions at other Pi Tau Sigma chapters and brought back ideas to create a more active chapter at the Cooper Union.

The convention proved to be a great professional development experience. One of our officers found his current job through one of the networking events during the convention.