PI TAU SIGMA ANNUAL CHAPTER REPORT
2017-2018
Stevens Phi Omicron

A. Initiations

Stevens Institute of Technology follows a broad based engineering curriculum with a common core for the first three semesters and students are not required to declare their engineering major before their fourth semester. In addition, nearly a quarter of all engineering students complete 3 to 4 semesters before declaring their major.

In order to ensure that all initiates graduate as Mechanical Engineering majors, the chapter has established a policy to initiate only juniors (5th and 6th semesters) and seniors (in their 7th semester). Students who have excellent academic record (top sixth or 16.7% and who have a GPA of 3.7 or "High Honors") and who are in good standing are reviewed and invited to become members of the Stevens Phi Omicron Chapter.

During AY 2017-18, Stevens conducted two initiation ceremonies. The fall initiation ceremony for the Academic year was conducted on November 28, 2017 and 30 new members were initiated. The spring initiation ceremony was conducted on May 3, 2018 and 7 new members were initiated. The Chapter Officers and the Faculty Advisor officiated the initiation ceremony. The following is a listing of the AY 2017-18 initiates.

Fall 2017 Initiates:

Armstrong, Michael David
Bolzoni, Noah B.
Conway, Joseph Thomas, II
D'Aiuto, Anthony, Jr.
Desai, Rohan
Edens, Abraham L.
Flaherty, Thomas E.
Gurgone, Nicolette T.
Hyland, Haley Michelle
Kerestes, Eric Alan
Misthos, Peter A.
Paolella, Alexis Z.
Roe, Dana Alisabeth
Shea, Robert Joseph
Sabota, Patrick J.
Bianco, Anthony D.
Clark, Allyson Patricia
Cyr, Caralyn M
del Puerto, Pablo Nahuel
Diglio, Matthew David
Fazio, Gianna Rose
Foerst, Matthew A.
Hunstein, Karina M.
Kareem, Nayeem Ahsan
Lambert, Nikolas Takis
Orlando, Nicholas Russel
Poidamani, Daniel Robert
Schozer, Jacob R.
Skwirut, William Franklin
Van Orden, Katherine Rose

Spring 2018 Initiates:

Barlow, Stephen Todd
Gutmann, Ryan J.
Rice, Matthew John
Volz, Bryan D.
Drennan, Ellen X.
Liu, Jieyu
Sitler, Justin Louis

The chapter pays the dues for all the students who are initiated. In addition, the chapter also provides stoles at no cost to all graduating seniors, who are members of the chapter. Funds for all chapter activities and socials are provided by the Mechanical Engineering Department.

B. Chapter Activities

Goals for 2017-18

- Initiate Members from the Senior and Junior Class during 2017-18 academic year
- Participation in the Annual Pi Tau Sigma conference, out-reach activities, and co-sponsorship of student-faculty activities.
- Participation in the 2017-18 Innovation Expo held on May 2, 2018 (the event hosts capstone design projects and an exposition of ongoing research and innovation).
- Promotion of events associated with promoting Mechanical Engineering and involvement in the Stevens Innovation and Entrepreneurship activities.
- Continue the development of STEM club activities to encourage talented students, especially those from underrepresented communities to pursue engineering career
- Mentoring of freshmen and sophomores interested in pursuing mechanical engineering
- Sponsorship of engineering seminars, co-sponsorship and participation in professional society student chapter activities
- Participation in community and outreach activities.

All goals for AY 2017-18 were met and the following is a brief summary of chapter activities.

Activities

The Stevens Phi Omicron chapter again assisted the Mechanical Engineering Department with the open house for accepted students, which was hosted by Stevens on Saturday and Sunday, April 21-22, 2018. In addition to volunteering their time for the various laboratory tours and for interactions with the students and parents several senior capstone design projects were on display, including the Off-Road Vehicle (SAE Design Competition entry) and the Omni-directional wheel system, among others.

The special outreach program involving the organization of a STEM Club, which was started at the Lady Liberty Academy Charter School in Newark during spring 2014 and expanded during 2015 was continued with several events, including the True Mentors program — an after school program which works with 2nd through 8th graders. The chapter developed and presented modules with lessons followed by hands-on projects to introduce basic concepts in engineering and science.

Stevens celebrated the Research & Innovation accomplishments and the successful completion of the Engineering Capstone Design of its graduating class on May 2, 2018 with the Innovation Expo — an all-day campus gathering of Students, Faculty and Business Community. The annual campus event, organized by the Office of Innovation & Entrepreneurship, has always been a showcase of the creativity and problem-solving capabilities of interdisciplinary student teams that reflect the university's academic approach to science, engineering, business and humanities. The Stevens Phi Omicron chapter assisted the Mechanical Engineering Department with the set

up for the event. Various capstone design projects were on display and they included the following from the graduating class of Stevens Phi Omicron.

- Advanced Class Cargo Plane design (Conner Harrigan, Alex Kainer, Joseph Katerba)
- Automated Coffe-Brewing and Delivery System (Austin Marchese, Margaux Peterson)
- Automated Fluid-Blending System Design (Nicholas Llyod)
- Automated Laser-Welding System Design (Austen Thien)
- Autonomous Robot System for Mapping and Navigation (Roger Kleinmann, Kelly Munyan)
- Catheter System for Carotid Artery Procedures (Nicholas Rossi)
- Container Lift System Design (Christophe Volz)
- Dual-Gantry 3-D Printer Design (Preston Horan)
- Electric Eco Car Design (Jayson Winick)
- Energy-Harvesting Power Lifter System (Rohan Desai)
- Forecasting and Inventory Re-ordering System (David Roghanian)
- Glaucoma Monitoring System (Christian Cupo, William Reinhardt)
- Head-Impact Telemetry System (Farryl Groder, Megan Lynes, Delaney West)
- Heavy Lift Cargo Plane Design (Nirav Sampat)
- Hobby-class Combat Robot System Design (Ethan Sackett)
- Mechanized Ordnance Carrier/Lifter Design (Peter Teague)
- Off-Road Vehicle Design (John Raziano)
- Omnidirectional Wheel System Design (Alexander De Rosa, Jennifer Kreder)
- Reusable Hybrid Propulsion Stage (Marissa Turley)
- Solar Splash: Solar Electric Boat Regatta (Ellysa Lamperti, Sara Poor)
- Streamlined Wireless Communication System Design (Arunvenkatesh Aruljothi)
- Universal Lifting and Transport System for Elderly and Disabled (Wuider Chuquimarca)
- Water Reclamation System (Kyle Napolitano)

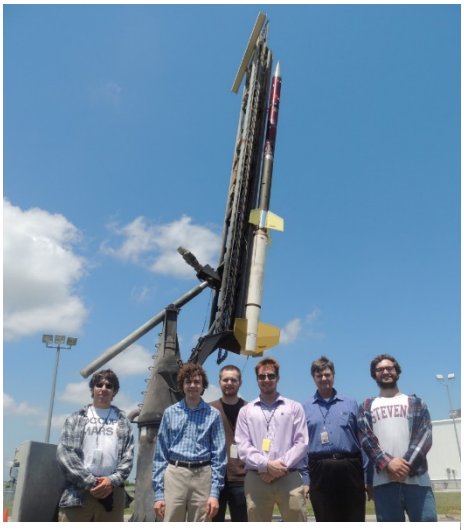
Stevens 2018 SAE Off-Road Vehicle Competition entry

The chapter again successfully organized and implemented an academic tutoring program for the mechanical engineering undergraduate students during the fall and the spring terms. The event covered all core engineering topics for the sophomore and junior class with a special review during the final exam period.

The Stevens Phi Omicron chapter continued its development of an Alumni Networking Database to track where alumni move to, work, or have previously worked, along with their contact information. This will be a living document that will continue for years to come.

Mr. Peter Teague (chapter president) represented Stevens at the centennial Pi Tau Sigma National conference at the Drexel University (February 23-25, 2018).

Several members of the Stevens Phi Omicron chapter have participated in the NASA Rock-Sat-C program that focuses on design, instrumentation, fabrication, testing and launch of payloads (modeled after small sattelites) since 2011 through the sponsorship and grants from the New Jersey Space Grant Consortium — a NASA supported program to stimulate students to choose careers in aerospace science and engineering, especially students who are female or from under-represented groups. The Rock-Sat-C program mentors ten to twelve collegiate teams from all over the country through a full engineering space flight design process life cycle. The 2017-18 year's program involved two luanches with proofs-of-concept designs for pressure and vibration isolation, which were modeled, designed, fabricated and instrumneted. The culminating launch of 75 miles into space at the NASA Wallops Island facilty and the subsequent data collection and validation were was successful with chapter member Arunvenkatesh Aruljothi (not pictured) leading one of the two subgroups.



Stevens team at the launch site with the rocket in the background

The chapter members also volunteered at all the student visit days for the Mechanical Engineering department, and participated in various Mechanical Engineering panels and gave feedback to the External Advisory Board.

In addition, as part of social outreach, several members of the chapter, especially those associated with campus fraternities and sororities, volunteered for various community activities during the holiday period.

A number of current Stevens Pi Tau Sigma chapter members are also elected members of the Alpha chapter of the Tau Beta Pi, the engineering honor society and several are current and past chapter officers.

The chapter's web page (www.stevens.edu/pts) has been updated.

Graduates

Aruljothi, Arunvenkatesh
Curran, Patrick John
Desai, Rohan
Harrigan, Conner Lee
Kainer, Alex Joseph
Kleinmann, Roger Joseph
Lamperti, Ellysa Rose
Lynes, Megan Julia
Munyan, Kelly Nicolee
Peterson, Margaux Alexis
Raziano, John Christopher
Roche, Jeremy
Rossi, Nicholas
Sampat, Nirav
Chuquimarca, Wuider Paul
Cupo, Christian Michael
Groder, Farryl
Horan, Preston Fox
Katerba, Joseph Daniel
Kreder, Jennifer Ashley
Lloyd, Nicholas Brannon
Marchese, Austin Robert
Napolitano, Kyle Robert
Poor, Sara C.
Reinhardt, William Michael
Roghanian, David
Sackett, Ethan Robert
Teague, Peter Mikael

Thien, Austin Edward
Volz, Christopher
Winick, Jayson M.
Turley, Marissa Anne
West, Delaney Lynne

Awards & Recognition

Several of the Stevens Phi Omicron chapter members from the 2018 graduating class were recognized for their academic excellence and participation in various extra-curricular activities during the graduation.

- **Roger J. Kleinmann** was a 2018 valedictorian with a perfect 4.0 average and was the co-recipient of the *Lawrence C. F. Horle Memorial Award* which is presented to the senior who attained the highest grade point average during the entire undergraduate program at Stevens.
- **Roger J. Kleinmann** and **Austin R. Marchese** were the co-recipients of the *Eugene Fezandie Award* for best overall performance by a graduating senior in Mechanical Engineering in the sequence of junior and senior year Mechanical Engineering courses.

The following chapter members of the graduating class were recognized for their academic excellence.

- **Roger J. Kleinmann** was also a co-recipient of the *Elie Fonrose Award* for his promise of advancement in the field of aerospace engineering.
- **Jennifer A. Kreder** received the *Arthur J. Grymes award* for demonstrating greatest interest and proficiency in fluid mechanics.
- **Nicholas B. Lloyd** was the recipient of the *Fernando Sisto Award* for his outstanding performance in Turbomachinery and Aerospace.
- **Sara C. Poor and Austen E. Thien** were the co-recipients of the *Richard S. Magee Excellence Award* for demonstrating both extracurricular involvement and leadership in departmental and campus activities.
- **John C. Raziano** received the *Andrew Carnegie Machine Systems Award* for being an outstanding student in Machine Systems and Design.
- **David Roghanian** was the recipient of the *Kenneth J. Moser Award* in recognition of her outstanding performance in heat transfer.
- **Marissa A. Turley** received the *Col. John Stevens Power and Energy Systems Award* for being the outstanding student of Power and Energy Systems.

Roger J. Kleinman was also a co-recipient of the *Kurt H. Weil Award* for outstanding performance in the Master of Engineering program in mechanical engineering.

The following members of the Stevens Pi Tau Sigma chapter graduating class of 2017: **Brendan Fay, Luke A. Guglielmo, Elizabeth M. Morris** and **Sarah C. Zahran** were also members of the New Jersey Alpha chapter of Tau Beta Pi, the Engineering Honor Society, with **Luke A. Gulielmo** serving as the Vice President of the chapter.

Wuider Paul Chuquimarca, Preston Fox Horan, Joseph Daniel Katerba, Roger Joseph Kleinmann, Kelly Nicolee Munyan, Kyle Robert Napolitano, John Christopher Raziano, William Michael Reinhardt, Jeremy Roche, Ethan Robert Sackett, Peter Mikael Teague, Marissa Anne Turley, and **Delaney Lynne West** received both a Bachelors degree in Mechanical Engineering with High Honors as well as a Master of Engineering Degree.

At the state level, **Jennifer A. Kreder, Kelly N. Munyan** and **Marissa A. Turley** were selected from Stevens to receive the *NASA New Jersey Space Grant Fellowship* for their outstanding academic record. As part of this *state-wide* award they each participated in a research project of aerospace relevance and presented a research paper and poster at the state-wide *NASA New Jersey Space Grant* meeting (at the Georgian Court University) to highlight their work.

Plans for 2018-2019

Our plans for the upcoming year consist of educational, social, and outreach activities. Among others, it will include, among others:

- Promotion and publicizing of the Mechanical Engineering program activities within Stevens
- Recruitment and initiation of new members and participation in the national Pi Tau Sigma conference
- Mentoring of freshmen and sophomores interested in pursuing mechanical engineering
- Participation in the Stevens Innovation and Entrepreneurship programs
- Continued participation in the STEM club and outreach activities to expose high school and middle school students, especially those from under-represented groups, to the excitement of mechanical and related engineering fields
- Sponsorship of engineering seminars, co-sponsorship and participation in professional society student chapter activities

In addition, the chapter plans to distribute the stoles and recognize the graduating seniors during the annual banquet.

Chapter Officers

President:	Peter Mikael Teague
Vice President:	Anthony Robert Lanza
Secretary-Treasurer:	Kelly Nicolee Munyan
President Elect:	Anthony Robert Lanza
Vice President Elect:	Melanie Nicole Valentin
Secretary-Treasurer Elect:	Peter A. Misthos

The elections for the chapter officers were held on May 3, 2018 following the initiation ceremony. The current group of officers explained the responsibilities and chapter activities to the officers-elect who will govern during the 2017-18 academic year. The chapter responsibilities were transferred during the last week of the term.

Chapter Advisor: Siva Thangam, Professor, Department of Mechanical Engineering**,** Stevens Institute of Technology, Castle Point on Hudson, Hoboken, NJ 07030 **(**sthangam@stevens.edu)

Chapter Website: www.stevens.edu/pts

Reporter: Siva Thangam