

# On the Great

ALSO: Diversity, Equity and Inclusion Initiatives

ASHLEY  
KOWALSKI IS  
ONE OF SEVERAL  
BROTHERS  
IMPACTING  
THE FUTURE  
OF SPACE  
EXPLORATION

## SIRIUS BUSINESS



# SPECIAL DISCOUNT FOR **THETA TAU!**

**Engineered to help you save money.**

Get a quote for car insurance and mention your **Theta Tau** membership. You could get a special discount and save big! We can also help with umbrella insurance.

**GEICO**<sup>®</sup>  
MEMBER DISCOUNT



[geico.com/greek/thetatau](https://geico.com/greek/thetatau) | 1-800-368-2734 | Local Office

Some discounts, coverages, payment plans, and features are not available in all states, in all GEICO companies, or in all situations. GEICO contracts with various membership entities and other organizations, but these entities do not underwrite the offered insurance products. Discount amount varies in some states. One group discount applicable per policy. Coverage is individual. In New York a premium reduction may be available. GEICO may not be involved in a formal relationship with each organization; however, you still may qualify for a special discount based on your membership, employment or affiliation with those organizations. The GEICO Personal Umbrella Policy is provided by Government Employees Insurance Company and is available to qualified Government Employees Insurance Company and GEICO General Insurance Company policyholders and other eligible persons. GEICO is a registered service mark of Government Employees Insurance Company, Washington, DC 20076; a Berkshire Hathaway Inc. subsidiary. GEICO Gecko® image © 1999–2021. © 2021 GEICO. 2L\_605752/22





2	6	7	8	26	28
Observations	In Memorium	Digits	Chapter News	Foundation	50+ A

# Table of Contents

4



## Developing Diversity, Equity and Inclusion Initiatives

14



## Sirius Business: Simulating a Long Duration Space Mission

18



## To Infinity and Beyond with the "Space Squad"

2



## Meet the EC!

8



## Chapter News

28



## Tara Laughlin

### THE GEAR OF THETA TAU

**Editor-in-Chief**  
Sarah Mente,  
Pi Gamma (2020)

**Editorial Committee**  
Felicity Griffin,  
Sigma Gamma  
(2023)  
Dan Jensen, Theta  
Gamma (2001)  
Steven Kabath,  
Upsilon Beta (2020)  
Jean-Marc Cassier,  
Psi Gamma (2019)

**Review Committee**  
Matthew Clark,  
Kappa Beta (1999)  
David Parker,  
Lambda Gamma  
(2013)

**Creative Direction  
& Design**  
Tria Designs, Inc.

### EXECUTIVE COUNCIL

**Grand Regent**  
Stuart Kardian,  
Kappa Gamma  
(2006)

**Grand Vice-Regent**  
David Parker,  
Lambda Gamma  
(2013)

**Grand Scribe**  
Dan McConnell,  
Upsilon Gamma  
(2011)

**Grand Treasurer**  
Alex Chan, Xi  
Gamma (2011)

**Grand Marshal**  
Lindsey Carr, Kappa  
Gamma (2014)

**Grand Inner Guard**  
Andrew Blanchard,  
Xi Beta (2017)

**Grand Outer Guard**  
Keyannah "Kiki"  
Holloway, Mu  
(2014)

**Council Delegate**  
Raven Smith, Kappa  
Gamma (2018)

**Council Delegate**  
Alexandra Jordan,  
Gamma Beta  
(2018)

### CENTRAL OFFICE

**Executive Director**  
**Jim Gaffney**  
Theta Tau Central Office  
2131 W. Republic Road, #528  
Springfield, MO 65807  
512/472-1904  
800/264-1904  
512/472-4820 Fax  
central.office@thetatau.org  
www.ThetaTau.org

### Volume XCVIII, No. 1

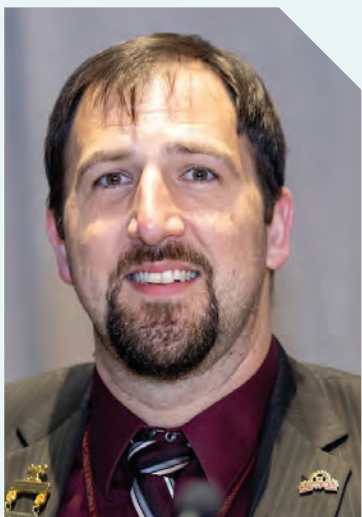
The GEAR of Theta Tau is the official publication of Theta Tau Professional Engineering Fraternity and is published in the fall and spring. The magazine is an educational journal devoted to matters of fraternity interest and is sent at no cost to members whose addresses are on record.

**Send change of address to:**  
Theta Tau Central Office  
2131 W. Republic Road, #528  
Springfield, MO 65807  
central.office@thetatau.org





# Meet Your Executive Council!



**STU KARDIAN, Grand Regent**

Our Grand Regent, Stu Kardan, is a 2006 alumnus of Kappa Gamma Chapter at Virginia Commonwealth University. As a senior nuclear engineer at Xcel Energy, he leads inspections, evaluates a plethora of various components from heat exchangers to dynamic restraints, and has become a subject matter expert for several regulatory nuclear programs. In his free time, he enjoys tubing, homebrewing, playing with his kids and having tea parties with his toddler. *"There is some good in this world, and it's worth fighting for." - J.R.R. Tolkien, The Two Towers*

**DAVID PARKER, Grand Vice Regent**

From Lambda Gamma Chapter, our Grand Vice Regent, David Parker, is a proud Clemson graduate. He works for a little known agency called the United States Navy in the capacity of a senior acquisition manager driving transformation across Navy IT and weapons systems. He loves to travel, play strategic video games, and read. He's recently taken a passion for growth of mind, body and soul. As someone who has always been an overachiever, sometimes he believes we do not always take a moment to enjoy the moment. Now every moment is special as we live in a world of possibility and we should #CarpeDiem or seize the day. *"If your actions inspire others to dream more, learn more, do more and become more, you are a leader." — John Quincy Adams*



**ALEX CHAN, Grand Treasurer**

Our Grand Treasurer, Alex Chan, is a brother hailing from Xi Gamma Chapter. He graduated from Texas A&M in 2011. Now, he works as a Product Manager at JPMorgan Chase & Co. Being quite the adventurous spirit, he snowboards, scuba dives, and boats in his free time. He is passionate about traveling and seeing the sights. All this considered, his quote to live by is very fitting: *"Don't Forget to Be Awesome"*

**DAN MCCONNELL, Grand Scribe**

Dan McConnell, a brother from Upsilon Gamma Chapter, is the current Grand Scribe. He graduated from the University of South Florida in 2011. He specializes in 3D scanning, reverse engineering and inspection and does work for a variety of industries including aerospace, marine, medical, power generation, automotive and manufacturing facilities. Dan is most passionate about making new experiences. He loves to travel and go do things with friends and family. He enjoys having those experiences and collecting those memories. *"I may purchase a souvenir on a vacation but it isn't the item I cherish, it is the memories attached to it."* He would urge others to go out and have those experiences and make great memories. They are the most precious and priceless possessions one can have, that can never be taken from you. *"We must all face the choice between what is right and what is easy."* — Albus Dumbledore







### **LINDSEY CARR, Grand Marshal**

Your Grand Marshal is Lindsey Carr, a 2015 graduate from Kappa Gamma Chapter. Lindsey is a Controls Engineer for AMF Bakery systems, whose product packages baked goods for grocery stores worldwide. In her spare time, she is an avid World of Warcraft player and enjoys reading science fiction and fantasy novels. Ask her about her feelings on Brandon Sanderson's Stormlight Archive series! Her passion for Theta Tau shows through her service to the Fraternity, providing her with an avenue to help students to be themselves and grow into the best version of themselves they can be. Her growth philosophy and favorite author combine in her chosen quote: *"The most important step a man can take. It's not the first one, is it? It's the next one. Always the next step..."*

— Brandon Sanderson, Oathbringer



### **ANDREW BLANCHARD, Grand Inner Guard**

Our Grand Inner Guard, Andrew Blanchard, is a brother originally from Xi Beta Chapter and graduated in 2017 from Lawrence Technological University in Southfield, Michigan. He works for

Accurate Technologies Inc. writing test automation for measurement, calibration, and diagnostic firms. In his free time, he enjoys smiting his opponents in League of Legends, breaking the sound barrier while streaming speed runs for various games, and playing Dungeons and Dragons. His passions are Theta Tau and ESports, both of which he also volunteers his time for. His favorite quote, from NFL Hall-of-Famer, Joe Namath, is *"When you have confidence, you can have a lot of fun. And when you have fun you can do amazing things."*

### **KEYANNAH "KIKI" HOLLOWAY, Grand Outer Guard**

Kiki Holloway, our Grand Outer Guard, is a brother from Mu Chapter. She graduated from the University of Alabama in 2014 and went on to work as a Pharmacy Manager at Publix, where she works on pharmacy drug dispensing, patient counseling, vaccinations and health screenings. In her free time, Kiki loves to play with her two mini goldendoodle puppies. She is very passionate about healthcare illiteracy and advocacy and of course, Alabama Football. Kiki has this quote to share for inspiration: *"Roll Tide!"*



### **RAVEN SMITH, Council Delegate**

Raven Smith, a brother from Kappa Gamma Chapter, is one of our Council Delegates. She graduated from Virginia Commonwealth University in 2018. She currently works as a Validation and Readiness Engineer at Merck & Co. There she helps qualify vaccine processes and systems to ensure they meet global/national/state industry regulations which involves a lot of experimental design, problem-solving, and (of course) paperwork. Raven enjoys Dungeons and Dragons, podcasts, playing board games and watching the Bachelor/ette with her coworkers. Raven is also DEI national Committee Chairman which is very fitting because one of the things she is most passionate about is spreading empathy. *"You can't expect to meet the challenges of today with yesterday's tools and expect to be in business tomorrow."* — Raina Chapman



### **ALEXANDRA JORDAN, Council Delegate**

Alexandra Jordan, a brother from Gamma Beta Chapter, holds one of two Council Delegate positions. After graduating from George Washington University in 2018, she now works as a Cost Analyst for Turner Construction Company, by working with their teams and overseeing the budget and costs of construction projects throughout the Boston area. Alexandra likes trying new restaurants, running, photography, traveling, and just getting outside and spending time with friends and family (especially in the snow). She is also passionate about going to the Minnesota State Fair because she has gone every year she's been able to. She had many memories with her parents including the Giant Slide, visiting all the barns, fun houses, butter sculptures, and of course all the food!

*"People are like stained-glass windows. They sparkle and shine when the sun is out, but when the darkness sets in, their true beauty is revealed only if there is a light from within."* — Elisabeth Kübler-Ross ☺





Angelina Bambina / iStock

# Diversity, Equity and Inclusion

**DEVELOPING INITIATIVES FOR THETA TAU** by Raven Smith, Virginia Commonwealth (Kappa Gamma, '18)

***"The Purpose of Theta Tau is to develop and maintain a high standard of professional interest among its members and to unite them in a strong bond of fraternal fellowship."***

The Purpose of Theta Tau is a force that binds every member of the organization — students and alumni alike — with a common goal to strive toward as one. One body: working, learning, and celebrating together. Togetherness, belonging, inclusion — however you choose to call it, this is a key factor in the success or

failure of any organization. A 2019 survey by Catalyst, a global nonprofit working to improve gender diversity and inclusion in the workplace, found that "49% of team problem-solving, 35% of work engagement, 20% of intent to stay, and 18% of employee innovation" could be attributed to positive experiences of inclusion.<sup>1</sup> This, in turn, can correlate to increased financial gains, better organizational performance overall, greater innovation and agility, and a higher likelihood of achieving desired business outcomes.<sup>2</sup>

Meanwhile, diversity in organizations — both cognitive and demographic — is critical to creativity, risk management, profitability and crisis resolution. A 2018 review by the Center for Talent Innovation and Hewlett Consulting Partners indicates that "a lack of diversity in leadership can hinder an organization's ability to respond well to a novel situation where innovative thinking is required"<sup>3</sup>. Further, with 65% of companies in a 2011 Forbes survey reporting official programs focused on the recruitment, development, or retention of a diverse



workforce<sup>4</sup>, it is clear that the world is moving in a more equitable direction. And we're happy to join them.

To date, Theta Tau has over 15 active and candidate chapters with a chair position or committee dedicated to improving Diversity, Equity and Inclusion (DEI) at the local level. These members work to raise awareness of DEI topics within not

only their chapter, but also the community around them. These grassroots movements such as Eta Delta's Dive Deep talks — when brothers gather to have tough conversations about the issues coming to light in the world around them — and Theta Gamma's DEI programming — which intentionally incorporates media and art from communities of color — demon-

strate a marked eagerness within our membership to pursue DEI as a cultural, professional, and fraternal priority.

Within the Greek Life community, commitment to building an inclusive environment that is equitable for all of its members can take on a unique tint. The history of organizations such as ours is one often tainted with bigoted ideologies and exclusionist practices; and, as has often been said, We must therefore commit ourselves not only to the comprehensive education and development of our membership on DEI topics, but also to the thorough examination of our past through a DEI-specific lens. This self-study will be in an effort to evaluate our history against our present standing and shared values — celebrating ways in which our organization has grown to reach where we are today and shining a light to a darker past lest it be forgotten along with the crucial lessons it has taught us.

So, let us embark together upon a journey of self-discovery, improvement, and actualization. Let us work to build a better Theta Tau — a diverse, equitable, and inclusive Theta Tau that holds its members to a high standard of professionalism and fosters a more inclusive space for fraternal fellowship. 🌟

1. *Getting Real About Inclusive Leadership: Why Change Starts With You*, Catalyst.
2. *"The diversity and inclusion revolution: Eight powerful truths"*, Deloitte Review.
3. *"Diversity's Positive Impact on Innovation and Outcomes"*, Center for Talent Innovation and Hewlett Consulting Partners LLC.
4. *"Global Diversity and Inclusion: Fostering Innovation Through a Diverse Workforce"*, Forbes Insights.

## "We have a Purpose!"

This Purpose is the first thing I ever learned after my Pinning — the brothers of my chapter would have a game to see how quickly each PNM could learn and recite it. So — after all the handshaking, congratulations, dues talk, and formalities — we split up into small groups and set to work.

The room buzzed as we began to practice with each other and the brothers, who coached us with helpful tips, mnemonics, and encouragement along the way. After a few minutes, a loud voice rose above the chatter. "We have a Purpose!" We fell silent in a moment, watching as one of us moved from her seat and began to recite in a clear, bright voice. Around her, the chapter watched, transfixed. Some of the brothers' lips moved silently as they instinctively recited the words alongside her. She finished, beaming with pride as the room erupted into cheers, our exuberance shaking the very walls around us. One by one, each new individual learned it in their own time and was celebrated in the same manner. By the time the final PNM made the final recitation the air itself seemed to hum with excitement, and we settled into easy conversation in our groups, enjoying the evening with our new friends.

## Organizations with Inclusive Cultures <sup>4</sup>



**6x**

more likely to be innovative and agile



**2x**

as likely to meet or exceed financial targets



**3x**

as likely to be high-performing



**8x**

more likely to achieve better business outcomes



Above: A trip to the Detroit Institute of Art for the "Black is Beautiful: The Photography of Kwame Brathwaite" exhibit, highlighting the natural hairstyles and African-inspired attire of black men and women at the time.





# AWARDS

## THETA TAU HONORS THREE MEMBERS

by Jim Gaffney, Executive Director of Theta Tau  
Kappa Lambda of Kappa Sigma ('08)  
Shippensburg University

The Fraternity is pleased to recognize the extraordinary contributions of three of its members with Distinguished Service Commendations, awarded by the Executive Council at their December 20, 2021, meeting.

### DISTINGUISHED SERVICE COMMENDATION

The Distinguished Service Commendation is the Fraternity's second highest honor, after only the Alumni Hall of Fame. Commendations are granted to those persons who have rendered exemplary and extraordinary service to the Fraternity, generally service which is far above and beyond the call of duty.

The December 2021 Recipients are:

- **BROTHER DAN "DANNO" JENSEN (THETA GAMMA, 01)** was awarded a Distinguished Service Commendation for his work as Candidate Chapter Director. His work has led to Theta Tau having, as of the issue of the award, the largest number of interest groups and candidate chapters in our modern history.
- **BROTHER DONALD NEWMAN (CHI, '71) AND BROTHER ROBERT CUMMINGS (CHI '76)** were each awarded a Distinguished Service Commendation for their work as Trustees of the Chi Chapter from January 2020 until December 2021. Their work contributed to the correction of risk management and operational deficiencies at the Chi Chapter and the chapter's successful return to normal operation.

Brothers Jensen, Newman and Cummings join Brother Frank Ventura, also of the Chi Chapter, on the roll of those who have received this award, which was created in 2020.

Theta Tau thanks these brothers for their extraordinary contributions and invites all members to join us in extending congratulations! ☺



# In Memoriam

## Alpha (University of Minnesota)

Earl Angell, 1951, Roll #546

## Gamma (Colorado School of Mines)

John E. Petrocco, 1950, Roll #707

## Delta (Case Western Reserve University)

Karl Kuhn, 1969, Roll #1097

## Epsilon (University of California, Berkeley)

Donald H. McLaughlin, 1951,  
Roll #679

## Iota (Missouri University of Science and Technology)

John A. Cooper, 1948, Roll #449  
Roscoe L. Mackie, 1964,  
Roll #947

## Mu (University of Alabama)

Walter C. Rhodes, 1933,  
Roll #116

## Mu (University of Alabama)

Benjamin Wires, 2012, Roll #1511

## Xi (University of Wisconsin)

Charles H. Pitt, 1949, Roll #97

## Omicron (University of Iowa)

Rupert E. Kenyon, 1954,  
Roll #457

## Rho (North Carolina State University)

Fred Welfare, 1957, Roll #534

## Phi (Purdue University)

George Cook, 1957, Roll #310

## Theta Gamma (University of Michigan)

Simi Sotimehin, 2023,  
Potential New Member

## Rho Gamma (University of Central Florida)

Antony Silva, 2024, Roll #471 ☹

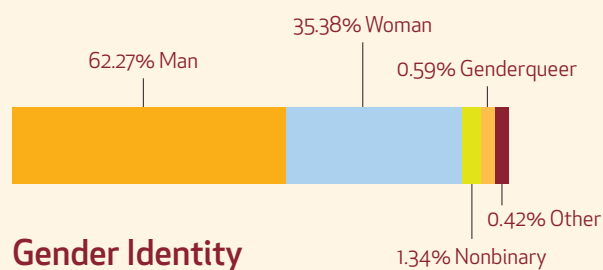
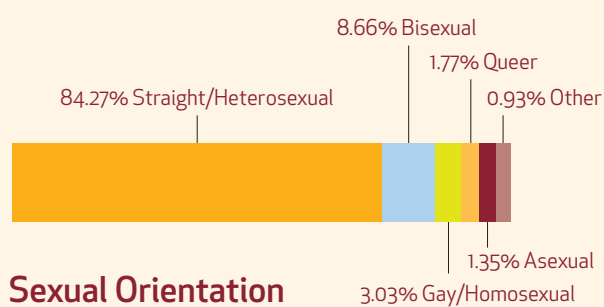
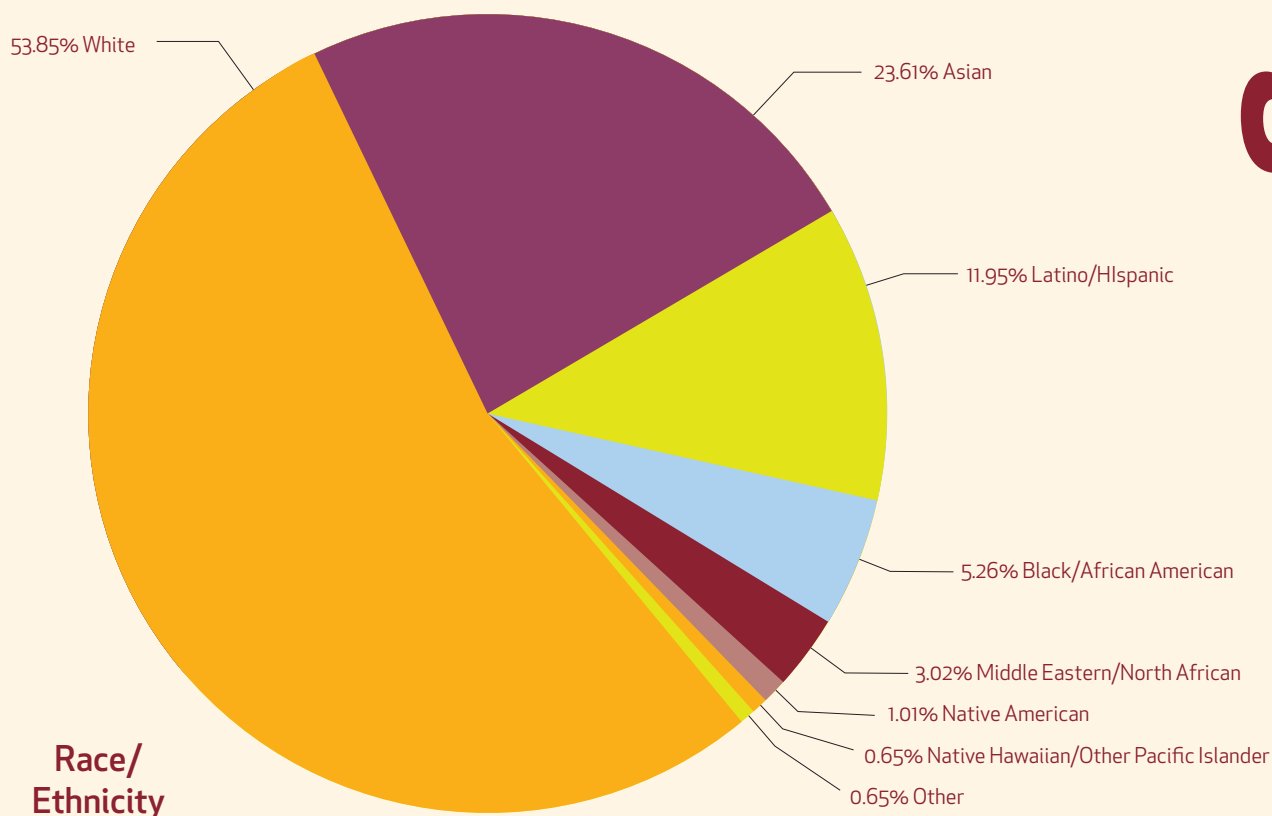






## Theta Tau by the Numbers

Data from potential new members from fall 2021



16%

English as a Second Language

17%

First Generation College Student





## BETA CHAPTER

### Michigan Technological University

## Beta Chapter Celebrates 115 Years

by Alex Stockman ('22)

We are grateful to have been able to reach 115 years of continuous chartering as a chapter of Theta Tau and to have been able to host such a successful event that showed what our pillar of Brotherhood can truly become. This past August we hosted a reunion that had a great turn out. We were able to recognize those brothers who had done so much in assisting our move from our last residence at Anchor Hill to where we currently reside just off of the campus of Michigan Technological University. Brothers David Post, Jim Cote, Dan Clark, Doug Owen, and Tom Irwin were honored at the reunion with a plaque that is now proudly displayed in our Chapter House. It was with their dedication to finding us a safe new home that we are able to be as strong as we are today.

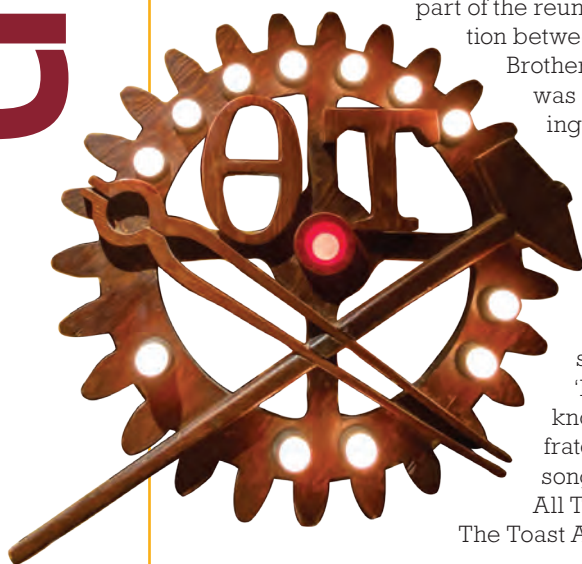
The reunion was also special because of the dedication of our new chapter room, sponsored by Brothers Jon Ricker and Jim Botz. These brothers not only donated, but put in the physical work to completely renovate the chapter room into a place where we can more properly carry out the traditions of our

Fraternity. Lastly, perhaps the most important part of the reunion was the socialization between brothers of all ages.

Brother David Post, class of 1956, was high pin of the event being pin number 736. Brother Clay Patterson, initiated this past year, was the lowest pin present, being pin number 1481. We concluded the event with dinner, and with our traditional singing of what we call our 'Dinner Song' but is better known to the rest of the fraternity as the chorus of our song titled 'Theta Tau'. "Come All Theta Tau Men, Let's Drink The Toast Again ..."

Brothers of all generations had stories to share with one another, and many bonds were formed as a result of it. We are always glad when alumni from our chapter stop by, and hopeful many brothers will be able to make it up to Houghton and see the progress we are making until our next reunion. As we prepare to tackle this next chapter of our history, we know that we can rely on the strength of our chapter's brotherhood to make it through the tough times.

Above Left: The Member's Badge Light housed at the Beta Chapter house.



## ZETA EPSILON CHAPTER

### Stony Brook University

## Be The Match

by Ayaz Javaid ('22)

This September, the Zeta Epsilon Chapter collaborated with the Psi Pi chapter of Alpha Kappa Psi to bring *Be The Match* to Stony Brook University. *Be The Match* is a global leader in bone marrow transplantation. They provide support and resources for patients, partner with a global network of specialists and experts, and conduct vital research used to improve transplant outcomes. Every year, thousands of people are diagnosed with life-threatening blood cancers like leukemia and lymphoma. Programs like *Be The Match* work with the National Marrow Donor Program to manage a diverse marrow registry that is able to match donors to patients. Hopefully one day, they will find a solution to cure blood based diseases.

During our time volunteering with *Be The Match*, brothers were educated on just how important their work is as well as how to best combat blood based cancers. For four hours, our brothers worked alongside brothers of Alpha Kappa Psi to spread awareness and to encourage people to sign up for the National Bone Marrow Registry. Each participant was asked to aggressively swab both cheeks for 10 seconds each, and then carefully place each swab in a sterilized tube. Brothers would then guide participants through the registration process and ensure that their data is successfully sent to the registry. It was awesome to learn more about such a great cause and to be able to give back to our community in an incredibly important way.



#### **XI GAMMA CHAPTER**

**Texas A&M University**

# Fifty Points to Texas A&M

*by Chris Oake ('23)*

As one of the largest universities in the United States, Texas A&M prides itself in having large, diverse organizations. Xi Gamma Chapter is no exception, as we boast a staggering seventy-two active brothers reported for the Fall 2021 semester. After our current Regent and Scribe went to the 2021 National Convention, we decided growth was crucial for the future of the chapter. Our successful Fall Rush left us with thirty energetic pledges excited to become a part of Theta Tau and all the incredible things we have to offer.

Our professional development committee has been working hard to get our chapter more involved in the industry setting. They plan to invite representatives from various companies to speak to the entire chapter, and possibly obtain a few sponsor deals to expand our network. In the future, we hope that our vast network can assist our brothers in landing them their dream jobs.

Our fraternal bonds have also experienced major growth in recent times. Our chapter has implemented a "house" system, like that seen in Harry Potter. Members of each house can earn points by participating in official events, attending social house events, and going above and beyond for the betterment of the chapter. The house with the most points at the end of each semester earns a prize, like a pizza party or boba tea. This system has tremendously helped pledges and younger actives to develop strong relationships with all our brothers. This has also led to a spike in overall participation and involvement. It is always amazing to see everyone actively participating in all of our events, and we hope to eventually reach one hundred percent involvement in the future.

Overall, Xi Gamma chapter is so proud to see how far we have come as a chapter, and we hope our recent advancements will inspire future brothers to continue to better our chapter for years to come.



#### **PSI EPSILON CHAPTER**

**Florida Institute of Technology**

# Restore Our Shores

*by Fiona Swarr ('22)*

The Indian River Lagoon is home to a broad ecosystem loved by the students of Florida Tech, and all those residing in the area. However, due to development of our shores, over-harvesting of oysters, and a reduction in water quality due to pollution from pesticides, fertilizers, and other wastes, oyster populations have decreased rapidly in the area over the years. Oysters filter up to 50 gallons of water every single day, protecting our coasts from erosion. They provide food and protection to all the creatures that live in the waters, causing this decline to have a huge impact on the ecosystem of our waters. On October 9th 2021, the brothers at Florida Tech stepped up and worked with Restore Our Shores, a non-profit organization partnered with the Brevard Zoo, to make oyster bags that will eventually be made into oyster mats. This involved taking live oysters and putting them in bags filled with shells. Oysters can survive up to twelve hours outside of the water, giving us the time to work with these animals quickly and efficiently. One of their favorite places to nest is on other oysters, making huge oyster reefs, hence bagging them together. This was a huge effort, as we ended up making 450 oyster bags! At the end of making the bags, brothers waded into the river and gently placed them on pallets where they will continue filtering and growing until they can be placed on mats to be spread throughout the river. The fight to clean our waters will continue, as these oysters continue to face the dangers of development throughout our area. Our brothers will continue to help to restore our shores back to the beautiful waters with a diverse ecosystem, filled with manatees, dolphins, fish, crustaceans, and phytoplankton.



# Rushing In-Person Again

## VIRTUAL ENGAGEMENT JUMP STARTS ALUMNI ASSOCIATION

By Carly Shafer ('22)



In the fall of 2020, our chapter voted to suspend rush for the semester while we all navigated stringent COVID-19 restrictions. Last spring, thanks to the efforts of our relentless rush chairs, Brother Gabrielle Gramza and Brother Anandita Singh, we were able to hold an all-virtual rush process that upheld the standards of our usual rush process and allowed us to transition 29 amazing new potentials into members of our brotherhood.

With many COVID-19 restrictions being lifted nationwide, everyone is happy to get back to the things they did before - seeing movies, going shopping, travelling, etc. This fall our chapter hosted our first in-person, fully masked rush process since the beginning of the COVID-19 outbreak in the US.

We are back to an in-person rush and our brothers couldn't have been more excited. Our rush chairs, Brother Sam Nichols

and Brother Jaden Hicks, organized exciting events to meet rushees and demonstrate the three pillars of Theta Tau - service, profession, brotherhood. Between September 8th and 27th, we were able to meet around 100 new and returning rushees while face to face at fun events like speed dating, Engineering-Off, and game day.

Brothers and rushees alike were refreshed by this return to an in-person rush process. While brothers were able to form closer relationships with rushees they met face-to-face, returning rushees who struggled to shine in a virtual environment were able to come into themselves at our in-person rush events. When asked about organizing in-person rush events, rush co-chair, Brother Samantha Nichols, said, "I loved being able to organize an in-person rush for Theta Tau this semester with my co-rush chair, Jaden. Seeing the enthusiasm in person, even

behind the mask, for Theta Tau after a year being virtual was such an inspiration to continue working with such an incredible community of engineers!"

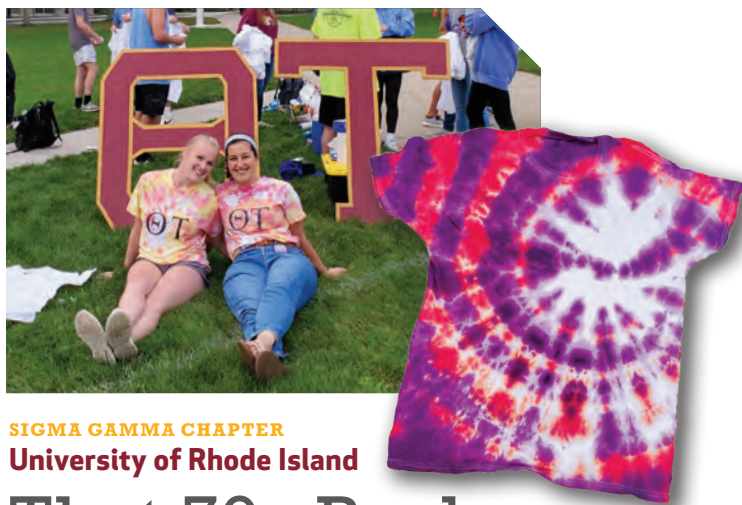
**"Seeing the enthusiasm in person, even behind the mask, for Theta Tau after a year being virtual was such an inspiration."**

To finish off our rush process, we were able to welcome in our new pledge class. Instead of being told over email that they are being invited to join our brotherhood, pledges were told that they had been invited to "Round 3" of our rush process, with the first

event of the round being mock interviews. Twenty-five rushees showed up to this "rush event" dressed in business casual attire, anxiously awaiting to be interviewed by brothers (pictured above). Instead, they were met by a welcome message on the projector screen and the chapter cheering for them." The energy in the room was tangible as brothers clapped and cheered on the new pledges as they realized they were now invited to be a part of our special brotherhood.

This exciting in-person rush process was the perfect way to kick off our first semester with in-person meetings since COVID-19 began. Whether it's reconnecting with brothers at in-person chapter meetings or being able to meet new pledges face-to-face, the brothers of Iota Delta chapter are incredibly grateful for the beginnings of a return to normalcy.





**SIGMA GAMMA CHAPTER**  
**University of Rhode Island**

## That 70s Rush

by Felicity Griffin ('23)

Thanks to the return to campus, the ability to have in-person events again, and a lot of hard work from our rush chairs, Sigma Gamma was able to take our biggest pledge class in many years. In the past two semesters combined, we only initiated four new brothers total, due to the difficulties posed by the pandemic. Considering that our chapter struggled to recruit new members even pre-pandemic, we knew that we needed to do something differently. We looked at the return to campus and in-person classes/events as a way to reset, as we essentially had to relearn how to run chapter events in person. This led us to brainstorm new strategies for Rush, and ways to get our name out there more than we ever have before. Before classes even started, we participated in organization fairs, posted on social media, reached out to incoming freshmen and their parents in order to try to get more people involved. Once classes started, we went into all of the sections of our mandatory freshman engineering class to talk to the students there and prepared for what we hoped would be a big rush.

When Rush week finally came, we held five events, including a meet-and-greet, resume workshop, and an alumni Q&A panel. Our rush theme was That 70s Rush, so our posters and many of our social media posts leading up to rush week were 70s inspired. With the given theme, it was only fitting that we held a Tie Dyeing event. One afternoon, we took over the Quad on our campus to tie dye T-shirts with the rushees. This was a great rush event, because it gave us a chance to be creative and do something fun while actively talking to potential new members. Many of the rushees said that out of all of the events, tie dye was their favorite. We had a lot of fun and our shirts turned out great!

When it came time to do our formal interviews, almost all of our time slots over three days were taken by people who were interested in joining, which is something that never happens here. During previous semesters we would end up cancelling one of the interview days because we didn't have enough people sign up, so the fact that we had nearly all the time blocks claimed this semester was a big deal for us. After some deliberation as a chapter, we extended 18 bids - all of which were accepted! Since we come from a small chapter (25 active brothers), we currently have almost as many pledges as we have brothers. This is a huge improvement from previous years and we couldn't be more proud of our Rush Chairs for all the hard work they put into growing our chapter.

**CHI CHAPTER**

**University of Arizona**

## Utilizing Online Platforms

by Kevin Martinez ('23)

The most inspiring aspect of this year, looking back, was the way our community at Chi Chapter came together to develop various solutions to achieve our goals. With the new dynamic of online functioning, there was a lot that had to be restructured, including our process of accepting new members. We found ourselves trying to answer the question of "How do we achieve an outcome to these events that falls in line with safety regulations while still fulfilling their purpose?" We were able to successfully find answers to that question using online resources that brothers were already comfortable using, such as Zoom and Discord.

Brothers eventually got into the groove of catching up with each other online, and interacting through the online resources we designated as our chosen modes of communication. By the end of the semester all of us were all too familiar with Zoom Movie Nights and Game Nights, our online meetings began to go smoother as brothers adjusted to using chat options and features in Zoom that allowed our meetings to flow a little more seamlessly than in person, even if we could not actually see each other. This coming together is what I wish many will look back on as a hopeful light, used to see that, even in the hardest of times, Theta Tau can come together with all of our might to hold each other up and to continue on towards the future.

Our current regent, Brother Cameron Crowley, was asked to comment on the previous semester's experience and noted "One of the greatest challenges while engaging in a COVID-19 environment for our chapter was involvement. The emphasis that we took away as a chapter was being innovative. As engineers, our problem solving skills got to be flexed in a unique way."

As we moved forward thought this the 2021 fall semester, and transitioning to more in-person activity and involvement, we employed many of the tactics we learned in the past year to approach any sort of challenge. The biggest take from trying to function as a chapter during the pandemic was an improvement in our problem solving abilities. The ability to take a step back, analyze the scenario, what we want to accomplish with it, what resources we have available to put a plan into action, and carry out our strategy. There were certainly other silver linings to the pandemic, but among them this improvement to our problem solving capabilities is the most adaptable tool we have gained.





#### CHI EPSILON CHAPTER

The College of New Jersey

## Chapter Installation

by Grace Matassa ('22)

On September 25th, 2021, The College of New Jersey gained the Chi Epsilon Chapter of Theta Tau on their campus. Looking back 3 regents, 47 members, and 2 years ago, the founding colony members had a long way to go before they could even think about installation. The only way we were able to make it to such a momentous day was due to the path laid out by our very first colony eboard and with the help of the Candidate Chapter Director Dan Jensen. Our very first installed Regent, Brother Sarah Esposito, said in her speech at the banquet that installation was a day she had looked forward to since being elected as our colony's regent.

On the day of the installation, emotions ran high as our current members welcomed our alumni back to campus to be installed. The many tearful reunions were characterized by tears of joy, the product of the bond formed by the challenges of the journey from a candidate chapter to a chapter. Our past regent, Brother Conor Collins, said that the biggest challenge in the journey was the transition to completely online for a full year. Our will as a group was tested during this time, but thankfully our members found creative solutions to accommodate the need to be completely remote. During the fully online year, the activities that our members had done, such as building a home with Habitat for Humanity, organizing games for Engineers Week, and getting together as a group, were nearly impossible. We had to get creative during that time. Our most popular brotherhood event was a virtual talent show where brothers got together on a Zoom call and either showed a video or performed their talent live. The service events our members performed were all over New Jersey; each town with a member in it had someone helping an elderly neighbor with groceries, picking up trash on their own and surrounding neighborhoods, or collecting food cans to donate to their local soup kitchens. During COVID-19, we connected with the campus community by running virtual games through Instagram and our members attended the virtual programs run by other on-campus organizations. Despite the circumstances of the year, our candidate chapter persevered. Thanks to the resiliency of our members, we continued meetings and recruiting on a virtual platform and we were able to make it through the year. Now, as a freshly installed chapter feeding on the added excitement of being back in person, our members are eager to take our first steps as a chartered chapter of Theta Tau.

#### XI BETA CHAPTER

Lawrence Technological University

## Senior Design Exposition

by Leif Gunderson ('20), Logan Hyvonen ('22), Angelica Capizzoli ('22), Timothy Powell ('21)

The past 18 months have been rough for the Xi Beta Chapter of Theta Tau, but that has not stopped us from pursuing education and engineering to the best of our abilities. Some brothers of our chapter have had to work on and complete senior projects for the Lawrence Technological University's Bachelor Degree program during this chaotic time.

Brother Timothy Powell, an electrical engineering major, tackled material feeder systems used in processes in the manufacturing industry. His goal was to design an actuator and control unit with general functionality for a low cost. This way, when feeder systems inevitably break down from continuous use, the repair and replacement of the actuator and control unit are quicker and cheaper, leading to a reduced downtime and cost.

Brother Angelica Capozzoli, an architectural engineering major, collaborated with Architectural Engineering majors of different concentrations to design a building that met LEED Silver accreditations. Angelica's concentration is in electrical & lighting, so she designed the lighting plan, conducted lighting calculations, and created computer renderings. Brother Angelica and the other architectural engineers of her team designed a 40-unit apartment complex consisting of shipping containers. The building also possessed retail and restaurant spaces, a green roof, and a photovoltaic array. Their project was presented to an engineering board and was met with positive feedback.

Brothers Leif Gunderson and Logan Hyvonen, electrical and computer engineers respectively, are creating an electronic aquarium monitoring system designed to monitor aquarium health and display real-time measurements and trends, and alert users when conditions exit a safe range. Using Printed Circuit Board (PCB) design, microcontrollers, and embedded software development, their plan is to prototype & create this product by the end of May 2022 when they graduate.





**TAU DELTA CHAPTER**  
**Miami University**

## Intramural Sports at Tau Delta

by Kayla Lohman ('22)

During the year 2020, everyone had to adapt to changes. Tau Delta Chapter had classes online and chapters could not be in person due to a ten-person gathering limit. We feared that this could be the end of our chapter, however, the determination of our brothers in leadership positions carried us through. We recruited a fall 2021 pledge class through Zoom and kept morale high with various virtual events, but there was still a connection missing between our brothers that was impossible to emulate virtually.

Intramural sports have always been held in high regard within our chapter as an important outlet to stay healthy and get out of the engineering building every once in a while. In 2020, we found ourselves missing broomball, soccer, softball, volleyball, and more. For those of you unfamiliar with the game, broomball is a combination

of hockey and soccer played while wearing clown-like shoes that give you minimum traction on the ice. Despite our high amount of participation in intramural sports, we don't always win, but that isn't what we are there for. Brothers enjoy a healthy amount of competition and find themselves working together against their opponents, and sometimes that opponent may be a team of more brothers! Brothers of all ages participate and it is a great way to have older pledge classes interact with younger ones. These games have also allowed people to reach outside their comfort zones and perhaps try something new. After all, who willingly chooses to run and fall on ice for 20 minutes?

These events have slowly come back and Tau Delta has jumped on the opportunity. Broomball was one of the first to return, with games of less than 10 people on the ice. Since then, soccer and

softball have picked back up as well. In the most recent season, we had 7 teams of 5 brothers each in a league of 28 teams, making the league 25% Theta Tau. This equates to at least 50% of our chapter participating on an intramural team! Intramurals have been our first way to reconnect in person and continue to grow our brotherhood since the pandemic.

The impact that intramurals have on our chapter would not have been possible without the enthusiasm of our Athletics Chairs each semester. Most recently, Brothers Jack Paul and John Doll have set a precedent of weekly updates encompassing the wide world of sports. This ranges from local sports (high school football, cross country) to professional (NFL, NBA), and most importantly, the records of our beloved intramural teams. They have done an amazing job recruiting and organizing teams each semester, coaching games they aren't playing in, and adding to the overall brotherhood of the chapter. Hopefully, intramural sports don't take a hiatus any time soon. ☹️










# SIRIUS BUSINESS

BROTHER ASHLEY KOWALSKI IS CURRENTLY SERVING AS FLIGHT ENGINEER  
AND SECOND IN COMMAND FOR SIRIUS-21 — A LONG DURATION  
SPACE MISSION SIMULATION IN RUSSIA

*Written by Sarah Mente, University of North  
Carolina at Charlotte (Pi Gamma '20),  
Editor-in-Chief of the Gear*

*Information provided by Erika Hastings (Gamma  
Beta '09) and Ashley Kowalski (Gamma Beta '11)*

**ASHLEY KOWALSKI**, a brother from Gamma Beta Chapter at George Washington University, has always had a desire to be more involved with human spaceflight. After graduation she went to work for NASA, seeking out opportunities to be an active participant in furthering research in the field, placing her one step closer to her goal of becoming an astronaut. She began seeking opportunities in Russia, since space program collaboration between the U.S. and Russia is one of the longest and most successful international collaborations in existence. She was accepted into the Alfa Fellowship Program, a selective international program providing accomplished Americans, Britons, and Germans the opportunity to receive intensive language training, attend professional seminars, and participate in professional development assignments



in Moscow, Russia. During this fellowship, She worked at Sputnix in Moscow as a Space Systems Engineer and Space Policy Researcher. When she returned to The Aerospace Corporation, her experience in Russia had opened up new opportunities focusing on international space systems and global partnerships. Her education and experiences led to Kowalski's current participation in an astronaut analog study known as SIRIUS-21.

Scientific International Research In a Unique Terrestrial Station (SIRIUS) is an 8-month ground-based spaceflight simulation, also known as an astronaut analog study. The study takes place in the historic







Top left: The crew included surgeon Viktoria Kirichenko, U.S. Armed Forces Space Command representative Ashley Kowalski, researcher Ekaterina Kariakina, U.S. linguist William Brown, instructor Oleg Blinov, and Arab Emirates cosmonaut Saleh Omar Al Ameri.

Below left: Ashley Kowalski participated in studies testing experimental physical fitness machines for use in future space missions.

Nazyemniy Experimentalniy Kompleks (NEK) at the Institute of Biomedical Problems (IBMP) of the Russian Academy of Sciences, in Moscow. This simulation is run in collaboration with NASA's Human Research Program. The goal of this mission is to help research the effects of isolation and confinement on human physiology, psychology, and team dynamics to develop methods and technologies to help humans prepare for future long-duration space exploration missions. The requirements for SIRIUS-21 included passing various Russian language tests in addition to other academic, physical, and psychological requirements.

Kowalski is the first American female, and one of two Americans selected by NASA to participate in this mission, along with one Emirati selected by the United Arab Emirates' Mohammad Bin Rashad Space Centre (MBRSC) and several Russian crewmates.

The crew is working with world-class research equipment, participating in unique studies, and testing out new experimental equipment for future space missions, such as physical fitness machines and virtual reality simulations. Researchers from all around the world submitted studies for the crew to carry out during SIRIUS-21. Ashley is the Flight Engineer for the mission and participates in all the research studies they are conducting in isolation. As the Flight Engineer, she is responsible for monitoring the overall status of all modules, reporting anomalies, and communicating with Mission Control back "on Earth" to determine solutions to issues that arise. She is second-in-command, assisting the Commander in setting up experiments, preparing crew members, and ensuring data is collected and transferred correctly. This requires her to be familiar with almost all of the estimated seventy experiments run during the SIRIUS-21 mission.

The past month has been packed with exciting new events for the crew. They had their first cargo resupply mission to restock food, clothes, hygienic supplies,





and additional equipment for experiments. They have also been participating in sleep studies. They have completed fragmented sleep (waking up every hour of the night), restricted sleep (5 hours of sleep), and most recently the sleep deprivation night (about 38 hours of no sleep). During these sleep studies, they are required to complete various experiments, surveys, and cognitive tests. Another recent event was their first SIRIUS-21 Extra Vehicular Activity (EVA) to the lunar surface! For this period, the Commander, Mission Specialist #3, and Kowalski separated from the remaining crew in the lunar orbital module and landed on the lunar surface where they remained for four nights. During the first EVA, Kowalski acted as the communications operator in the lunar landing module providing guidance to Commander and Mission Specialist #3. She has shared her excitement for the second EVA, where she will be joining the Commander.

According to Ashley, the most challenging part of being in isolation is the inability to instantly communicate with friends and family, as well as the lack of immediate access to information. She states, "when it comes to communicating with friends and family, we type letters and send them to a central point of contact at IBMP that then routes the letter to our friends and family back home to the email address we provided prior to the start of the mission. This means

**"I LIKE TO DO THINGS  
THAT CHALLENGE ME  
AND PUSH ME TO  
MY LIMITS – TO SEE  
HOW MUCH I CAN  
ENDURE AND WHAT  
I AM TRULY CAPABLE  
OF MENTALLY,  
EMOTIONALLY,  
PSYCHOLOGICALLY,  
AND PHYSICALLY."**

the turnaround for a response is at least one day." Ashley also expressed her frustration at not having immediate access to the internet for information, which has led to her keeping a list of questions that she sends to her friends, or Mission Control when appropriate, to have answered.

When Kowalski returns, she is excited to continue to apply for NASA's Astronaut Program. Her ultimate goal is to help further the future of human space-flight and successfully return humans to the Moon for long-duration lunar exploration missions and eventually to Mars. ☒



# TO INFINITY AND BEYOND

THE “SPACE SQUAD” FROM RHO GAMMA CHAPTER AT THE UNIVERSITY OF CENTRAL FLORIDA ARE IMPACTING THE PRESENT AND FUTURE OF SPACE TRAVEL AND EXPLORATION.

*by Sarah Mente, Pi Gamma (2020),  
Editor of the Gear*

**Blue Origin** is developing partially and fully reusable launch vehicles that are safe, low cost and serve the needs of all civil, commercial and defense customers.

**OUTER SPACE** is a topic that interests nearly everyone, and engineers in particular. Recently, Rho Gamma Chapter has produced several engineers dedicated to the research and application of aerospace transport. Working for Boeing, NASA, TOSC, and Blue Origin, these brothers maintain a high standard of professional interest in the final frontier.

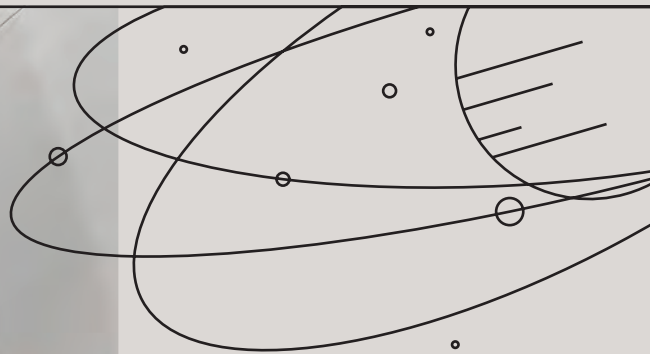
As Production Lead for Blue Origin’s Advanced Development Programs, Brother **Monica Bertram** (2013) develops manufacturing plans and supports design trades to ensure concepts can be manufactured efficiently. Brother **Steven Darrow** (2015) works as a Mechanical Design Engineer on Production Support Equipment, where he designs hardware and tooling for New Glenn build and production. As a Production Support Operations Engineer, Brother **Thais**

**Lage** (2015) created the maintenance system and provided tooling solutions to the production facility. Brother Lage recently joined the Production Test Engineering group and is now working alongside Brother **Esther Amram** (2017) to take rocket parts that come out of design and manufacturing and test them to ensure they’re ready for launch.

Prior to joining Blue Origin, Brothers Darrow, Lage, and Amram supported NASA’s Space Launch System (SLS) Artemis program. SLS is what propelled the Rho Gamma brothers from entering into the space field at Kennedy Space Center.



Brothers Esther Amram and Thais Lage standing in front of the Blue Origin "New Shepard" rocket



"As a US immigrant, my family and I moved a lot. While the ground below my feet kept changing, the stars and space were always consistent. That inspired me to look up and the more I looked up, the more I realized I wanted to work in the space industry. Working in space is so amazing because I know that I am a part of a community that will continue to come up with innovative solutions for Earth and to allow us to explore our neighbors in space."

- Esther Amram



Monica Bertram



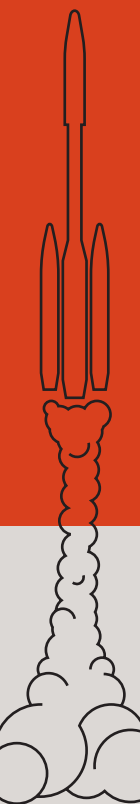
Thais Lage



Esther Amram







**The Boeing Company** is designing and building the future of safe, assured space exploration and commercial access.



Kelly McGuire standing in front of the fully stacked SLS rocket.

Brother **Kelly McGuire** (2015) works as a Structural and Payload Design Engineer at The Boeing Company. Here she is a lead design engineer on the Florida SLS Tooling Team. The team is responsible for the design, manufacturing, and sustainment of various ground support and production support equipment that assist the rocket throughout the entire build process at the rocket factory.

Working as the Deputy Project Manager for Ground and Flight Application Software (GFAS), Brother **Stephen Lander** (2007) manages the project team who is developing the software to be used in the Firing Rooms for processing and launching the Artemis rocket. Brother Lander was also one of the charter members for Rho Gamma Chapter!



Stephen Lander



**The National Aeronautics and Space Administration (NASA)** is America's civil space program and the global leader in space exploration.

"Space exploration never ends, the universe is always expanding and there's always new knowledge to learn about our solar system and universe. There's no better team sport than space exploration, the idea that we are inventing new technology as we explore is a great passion driver. Theta Tau gave me the foot in the door that I needed. My brothers were always there to back me up with my ideas or new projects I wanted to partake in."  
– Kelly McGuire



## The Newest Space Race: The Turkey Trot

*by Steven Kabath, Old Dominion (Upsilon Beta '20)*

Thanksgiving is a tradition which has its roots based firmly in American soil, but astronauts have voyaged beyond that frontier. Thanksgiving in space is not necessarily a new occurrence. Skylab 4 astronauts Gerald P. Carr, Edward G. Gibson and William R. Pogue were the first to celebrate Thanksgiving in space in 1973. While no official recognition of the holiday was given or a special entrée present, each person ate two meals for dinner because a spacewalk which lasted for several hours prevented lunch.

It would be over a decade later before the next extraterrestrial edition would take place in 1985. On the space shuttle Atlantis, its crew of Brewster H. Shaw, Bryan D. O'Connor, Jerry L. Ross, Mary L. Cleave, Sherwood C. "Woody" Spring, Charles D. Walker, and Rodolfo Neri Vela enjoyed a special meal on the space shuttle Atlantis. In addition to the celebration, Neri Vela famously brought tortillas to space which proved to fare better than bread which tends to crumble.

The first official celebration of Thanksgiving on the International Space Station, ISS, took place in 2000. Due to a strong presence of astronauts from the United States, the holiday is now celebrated each year aboard the station. However, being thankful is not restricted to one nation. In 2009, twelve crew members from the United States, Russia, Belgium and Canada celebrated together in the most diverse celebration to date. The celebration actually had to be held two days prior to the calendar date of the holiday due to the shuttle being scheduled to depart the day of Thanksgiving.

To celebrate this year, the National Aeronautics and Space Administration, NASA, has posted a video to its YouTube channel with a message from most of the current crew members: Russian cosmonauts Anton Shkaplerov and Pyotr Dubrov, NASA astronauts Raja Chari, Thomas Marshburn, Kayla Barron and Vande Hei, and European Space Agency astronaut Matthias Maurer. Chari said that since Thanksgiving-themed runs like Turkey Trots are taking place on Earth, he brought "special colored headbands" for him and the crew to wear as they run off their holiday meal on the space station's treadmill. The menu this year contained crab bisque, roast turkey, potatoes au gratin, candied yams and cherry blueberry cobbler. 🍷





Brother Kelly McGuire in front of the SLS rollout at the Kennedy Space Center

**The Test and Operations Support Contract (TOSC)** was awarded to Jacobs Technology Inc. of Tullahoma, Tenn. Jacobs will provide overall management and implementation of ground systems capabilities, flight hardware processing and launch operations at NASA's Kennedy Space Center in Florida. These tasks will support the International Space Station, Ground Systems Development and Operations, and the Space Launch System (SLS), Orion Multi-Purpose Crew Vehicle and Launch Services programs.

Working on Launch Team Training, Brothers **Nicolás Alejandro González** (2018) and **Kevin Todaro** (2015) construct launch countdown simulations to train NASA's team to launch their new rocket, SLS, which is part of the Artemis program that will send humans back to the Moon and eventually to Mars. The team plans, develops, and puts on training events in the Launch Control Center firing rooms, which simulate the operations that the engineers would perform on a real launch day. During these training sessions, the launch team practices performing their steps, troubleshooting various problem scenarios, communicating over systems and giving a go/no-go decision for launch. These brothers develop different problem scenarios for the simulations to train them how to recognize problems, resolve issues, and stay calm under stressful situations. Brother Todaro is also volunteering as one of our Gulf Regional Directors!

**"What we learn from going to space, and technologies developed for it, end up creating improvements for everyone here on earth. The space field has the ability to inspire anyone of any age, not just engineers, to pursue and accomplish incredible things across many and all fields. From medicine to engineering to physics and even business and the arts."**  
**– Nicolás Alejandro González**



# Brother Managing SpaceX Manned Mission to Space Station

By Dan Jensen, University of Michigan (Theta Gamma '01)

Benjamin Stahl (Psi Beta '06) has taken a leadership role in America's 21st century private space program. He serves as the Mission Manager for the joint NASA/SpaceX "Crew-2" mission. Crew-2 is SpaceX's third manned mission, in orbit aboard the International Space Station (ISS) until its scheduled landing in October 2021. Crew-2 took off from Kennedy Space Center at Cape Canaveral, FL, on April 23, 2021 to relieve Crew-1 astronauts who had been on the ISS since November 2020, sending

mission. The booster had previously been used for the Crew-1 mission in November, and the capsule had been previously used in the Demo-2 mission in May 2020. While this was the first time each had been reused, current plans are to reuse the vehicle up to five times, refurbishing after each launch to repair and fine-tune the craft, and learning about possible improvements to be made in future iterations of each to improve safety and efficiency of space travel going forward. The refurbishing and recertification process is far from trivial and the Crew-2 team put extensive effort into ensuring the craft was safe for another trip into space. "There's a whole wealth of certification effort that has to occur for us to be comfortable providing that stamp of approval to put our astronauts on a vehicle that's already flown," Stahl told Spectrum News.

Crew-2 represents another first: that of a handoff from one SpaceX crew to another. Following Crew-2's arrival at the ISS, the astronauts from Crew-1 returned to Earth after more than 168 days in space. Stahl reports that he's excited and prepared for the challenges of the next human space mission. "I'm thrilled and humbled to be a part of it, just a small cog in the larger machine that's going to get this crew up there," he said.

SpaceX continued its human space flight program with Crew-3, the relief for Crew-2, in September 2021. The members of Crew-2 safely returned to Earth in November 2021, and launched it's all-civilian Inspiration4 mission. 🚀

*Special thanks to Spectrum News for allowing us to share portions of their April 2021 interview with Benjamin Stahl.*



Top: Brother Stahl, in a still taken from an interview on Spectrum News 13 in Orlando, Florida

Right: Crew-2 Mission patch (image courtesy of NASA)

four astronauts to the ISS: two from NASA, one from the European Space Agency (ESA), and one from the Japan Aerospace Exploration Agency (JAXA). As Mission Manager, Brother Stahl is responsible for the safety of the astronauts from the pre-launch phase until they return to Earth. He manages the crew's health, flight operations for both the SpaceX Falcon 9 booster and the Crew Dragon Endeavour spacecraft, the ground crew responsible for retrieving the capsule from its splashdown area, and the rescue teams if they should be needed.

He is quick to praise his coworkers. In an interview with Spectrum News 13, Stahl says, "I have the opportunity to really see all the boots on the ground that are doing all the real work. It really takes a very galvanized team to do that, a very integrated team."

Crew-2 is unique in that both the booster and spacecraft were "flight-proven," that is, used in previous missions. This is the first time SpaceX has reused both elements of the vehicle for a manned



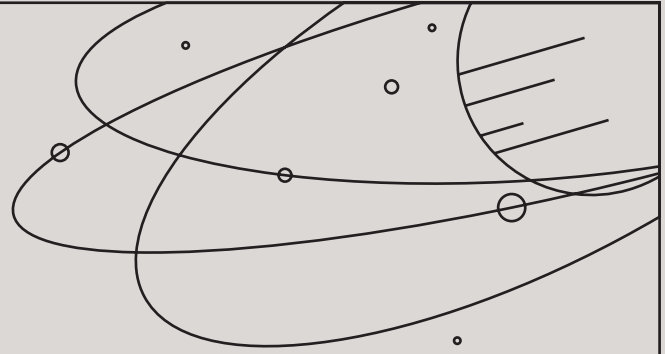


Brothers Di  
Taranto and  
Lourcey visiting  
the test stand  
at the John C.  
Stennis Space  
Center





Below: Brothers Todaro, Lourcey, Vaughn, Lage, Hadley, Amram, and Gonzalez gathering for a "Space Squad" reunion.



"A good number of us work closely together at Kennedy Space Center, and during college we took space related electives together. Having that close group of peers to encourage and help push me on through the day to day was very valuable."

– David Vaughn

Brothers **Makayla Lourcey** (2020) and **Christopher Di Taranto** (2017) are on the Handling, Mechanical, and Structures Engineering team. This team integrates the SLS/Orion vehicle at KSC from start to finish. For each element move or lift, their team develops and leads the work for mechanical interfaces, such as element mates, and maintains Ground Support Equipment (GSE) for their systems, including lifting beams and internal access kits.

As a Liquid Oxygen Systems Engineer, Brother **Emily Hadley** (2017) works in cryogenic propulsion on the liquid oxygen system. Her team writes the software that fuels the SLS rocket and sits on the console in the launch team to operate the system in combination with the software they write

Brother **David Vaughn** (2014) is a Flight Controls Engineer working on the procedures and software to test and process the Artemis rocket prior to launch, and through launch countdown. He works on the Flight Controls subsystem which includes the guidance and navigation systems, and the thrust vector control actuators used to steer during flight. He was awarded the NASA Spaceflight Awareness Trailblazer Award in 2020. It's a prestigious award given to early career individuals that demonstrate significant contributions to NASA's mission.

These brothers are helping to ensure our continued legacy of safe and productive space exploration. ☸







## Thank You to All our Founders Day Donors!

At Theta Tau we learn how to lead, and many of us have become leaders in their fields and companies. We must pave the way for future engineers and that we want our fellow members to succeed to even greater heights than we have.

**The Theta Tau Educational Foundation Founders Day of Giving raised more than \$25,000 in just one day!**

"I am proud to be the new president of such an amazing organization that is supported by so many accomplished and generous alumni," said Katie Griffin, Xi, 2002, President, Theta Tau Educational Foundation. "I'm looking forward to helping even more students in 2022."

**Looking for additional ways to give back to the fraternity and give to the next generation of engineers?**

- » **CAREER JOURNEY** The Theta Tau Educational Foundation will be launching new programs in 2022 leveraging the vast experience and expertise of our alumni. If you are interested in sharing your knowledge, expertise and career journey, we would love to have you.
- » **SHOP AT SMILE.AMAZON.COM** and designate Theta Tau Educational Foundation as your charity of choice. Every time you head over to Amazon, be sure to use smile.amazon.com and a portion of your purchase funds scholarships for current student members.
- » **PLAN A GIFT AND BECOME A MEMBER OF THE 2ND CENTURY SOCIETY.** If you include the Theta Tau Educational Foundation in your estate plans or other planned giving initiative, you become a member of the 2nd Century Society. If you have included the Theta Tau Educational Foundation in your estate plans, please let us know at board@thetataufoundation.org and we will recognize you in this society.
- » **VOLUNTEER** There are many opportunities to volunteer to help develop tomorrow's leaders.
- » **BECOME AN AMBASSADOR** The foundation is seeking a couple of ambassadors from each chapter to communicate information between the Theta Tau Educational Foundation and the chapter students and alumni.
- » **MEDIA COORDINATOR** The Foundation is seeking individuals interested in helping to create quality content, podcasts, videos, etc. that we could use in several programs that will be coming soon to highlight alumni, educate students and more. ☺

*Interested in learning more?*  
Visit [thetataufoundation.org](http://thetataufoundation.org) or email [board@thetataufoundation.org](mailto:board@thetataufoundation.org)



# SAVE THE DATE

## 2022 Leadership Academy

Washington University  
St. Louis, MO

July 28-31, 2022

We are excited to share that we are planning for a robust program and schedule for our 2022 Leadership Academy in St. Louis, MO.

More information at  
[thetataufoundation.org/2022-leadership-academy](http://thetataufoundation.org/2022-leadership-academy)

**We are  
actively seeking  
volunteers!**

Interested in leading sessions, managing programming or running operations for Leadership Academy this year?

Please reach out to us at  
[board@thetataufoundation.org](mailto:board@thetataufoundation.org).



Theta Tau's Leadership Academy is produced by the Theta Tau Educational Foundation, which is focused on providing educational opportunities to develop the leaders of tomorrow.

# We Need



### **THETA TAU NEEDS YOU!**

Theta Tau is seeking volunteers for many national committees and officer positions. With your help we can develop and improve national programs for service and professional development, but also for data and long-term planning, among others! Volunteering is an impactful way to build your network and develop your own strengths while helping the fraternity as a whole. We have greatly expanded volunteer opportunities recently for a wide range of possible time commitments and interests.

Learn more at [thetatau.org/volunteer](http://thetatau.org/volunteer)



### **HABITAT IS BACK!**

Theta Tau is excited to announce that this spring, we will be resuming our partnership with Habitat for Humanity's Collegiate Challenge spring break program, bringing brothers from across the country together in Florida and California to spend their spring breaks helping to build homes for the less fortunate. We have 60 brothers from 13 chapters sign up to volunteer for March 2022!



"I was taught by men of a homogenous background. It felt like I didn't have a place, seeing only one type of person working in a field that creates technology for all types of people."

# Tara Laughlin

Virginia Tech (Psi Gamma, '19)

► B.S. Computer Science, B.F.A. Creative Technologies

**Q: How did you become part of the inaugural cohort of Boeing Scholars at Virginia Tech's Innovation Campus?**

After receiving admission into the Master of Engineering program for computer science at Virginia Tech, I was asked by the Assistant Vice President of Student Services at the Innovation Campus if I was interested in the scholarship. While it was initially meant for full-time students, I was able to work with her and the Boeing representatives to get the scholarship despite being part time. I think I was considered for the scholarship because I'm a Virginia Tech alumna, a vocal woman in STEM and I push for diversity, equity and inclusion in technology.

**Q: What drives you to be an advocate for underrepresented groups and create inclusive tech?**

My motivation for advocating for underrepresented groups and creating inclusive technology stems from the early phases of my computer science degree when I was taught by men of a homogenous background. It felt like I didn't have a place, seeing only one type of person working in a field that creates technology for all types of people. When I had my first (and only) female computer science professor, Margaret Ellis, I saw a powerful example of how a woman could not only exist, but thrive in the field. She helped me realize I didn't need to have a cookie cutter background in software engineering to succeed.

**Q: How have you been able to integrate your passion for creating diverse technology into your career?**

I was recently promoted to a role at work that gives me the opportunity to work with our designers to ensure that they keep all types of users in mind and create the best user experience possible.

**Q: Why were you given the opportunity to speak at the ground-breaking ceremony for the Innovation Campus?**

I have a lot of public speaking experience through other opportunities as an undergraduate and in my career at Capital One. I also have a diverse set of experiences beyond being a woman of color in STEM. My origin story differs from many of my peers who started programming at an early age. Growing up, I was more interested in the fine arts and didn't start programming until I was in college. I find this gives me a unique perspective that is actually an asset in the technology space.

**Q: What is your favorite part of being a brother of Theta Tau?**

Like most people, my favorite part of being a brother of Theta Tau is the long-lasting friendships I've made. I ended up taking premature alumnus status since I had to complete both a computer science capstone and a senior art showcase to get both of my degrees. Despite being inactive for the two semesters leading up to the showcase for both my capstone and my art show, brothers came out in full force to support both of them. ⓧ







# SuperRegionals!

MORE THAN 225 BROTHERS ATTENDED THETA TAU'S FIRST "TRI-REGIONAL CONFERENCE" WITH ATLANTIC, MID-ATLANTIC, AND NORTHEAST REGIONS

*By Colin Scott, University of Maryland (Eta Delta '22)*

## Eta Delta Chapter at the

University of Maryland was slated to host the Atlantic Regional Conference in the Spring of 2020. However, just as the final details were coming together, our planning came to a halt, as all in-person activities ceased mid-semester due to COVID-19. Our chapter was crushed as we would no longer be hosting that semester and we felt as if the hard work put into planning the conference had been in vain.

As other chapters were moving back to in-person activities, we were once again given the opportunity to host the Regional Conference in-person. We were excited to begin planning the first in-person Atlantic Regional Conference in over a year, as the groundwork had been laid from the year prior. This time, however, we were

tasked with a new challenge. As there were Regional Director vacancies in the Mid-Atlantic and Northeast Regions, we were given the opportunity to host a conference for all three of these regions. Our Regionals Committee was thrilled with the idea of hosting a "Super Regionals" as it had not been done in a long time and would be an excellent opportunity for us to showcase our chapter to a wider audience as well as an excellent opportunity to learn more about how Theta Tau is experienced across more chapters.

Before we could effectively host this conference, there were concerns that we had to overcome to turn the Super Regionals into a reality. In welcoming two additional regions, we had to expand the scope of our planning to include a total of 238 attendees. Communication

was a major challenge for us as we had limited interactions with chapters outside of our region. Logistically, we had to find larger venues and increase the number of breakout sessions all while ensuring that we were adhering to the COVID-19 protocols on University of Maryland's campus. Beyond this, we also wanted to maintain each region's individual identity and culture.

When conducting regional updates, we broke up into two groups: the Atlantic Region, and Mid-Atlantic and Northeast Regions. We had several breakout sessions including our corporate sponsors, allowing brothers from across the East Coast to network with engineering companies in the Washington D.C. area, in addition to standard Theta Tau breakout sessions. Our keynote speaker, Dr. Ainane from

UMD, discussed how engineering can be used to create social change. We ended the conference with a banquet at the Marriott Hotel where national officers presented awards. In the spirit of a three-region conference, each award was given to three chapters. The Member Miles award was won by Nu Gamma, Upsilon Beta and Theta Epsilon; Most Spirited award was won by Eta Delta, Pi Epsilon and Psi Gamma; and MVP was won by Theta Epsilon, Upsilon Beta and Sigma Gamma. The Eta Delta chapter is incredibly grateful for the opportunity to have hosted this "Super Regionals", and we hope that if another chapter has the opportunity to host a multi-region event, they will not shy away, as it really has been a phenomenal experience. ☺



## Theta Tau Central Office

**Theta Tau Professional Engineering Fraternity**

2131 W. Republic Road, #528  
Springfield, MO 65807

Nonprofit ORG  
U.S. Postage  
**PAID**  
Bolingbrook, IL  
Permit NO. 467

ADDRESS SERVICE REQUESTED



### **Toys for Tots: @bingthetatau**

In December Nu Gamma raised \$4001 to purchase toys to donate to Toys for Tots. 100% of the donations were used, and the toys were distributed by the Salvation Army in Binghamton to children 0-11 throughout the holiday season.



### **Super Regionals: @thetatau\_hofstra**

Our brothers had an amazing weekend attendant the Super Regional Conference at the University of Maryland. Thank you so much @thetatauumd for sharing this wonderful experience with us!

# #thetatau



### **Hay Ride: @thetatauslo**

spending some time together at the Avila Valley Barn



### **Intramural Champs! @kappathetatau**

Congratulations to Kappa Chapter's Intramural Sand Volleyball team for bringing home the championship!