Renewal Document

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University of South Florida

2023-2024

BIOMEDICAL ENGINEERING SOCIETY

Chapter Development Report

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In the academic year of 2023-2024, the Biomedical Engineering Society at the University of South Florida witnessed remarkable strides in bolstering the involvement and impact of the biomedical engineering community both within USF and across the Tampa Bay Area. Central to our mission was a concerted effort to nurture mentorship and professional development among undergraduate students. We achieved this by diversifying our events and workshops, equipping students with insights into the academia and industry within the field of biomedical engineering. A standout achievement this year was the successful hosting of the university's inaugural career fair dedicated exclusively to Biomedical Engineering Students. This milestone event is poised to become an annual tradition, providing invaluable opportunities for students to explore career pathways and connect with industry professionals. Moreover, our focus on securing funding and fundraising opportunities has enabled us to support new research and development initiatives, empowering our members to delve into large-scale projects and gain essential hands-on experiential learning. Additionally, our commitment to nurturing the next generation of biomedical engineers led us to initiate a mentoring program for a local high school, paving the way for the establishment of a high school student chapter. In reflection, the achievements of our chapter this academic year are evident in our heightened engagement, expanded network across the Tampa Bay Area, and significant strides in advancing our research and development endeavors. Through effort and dedication, we continue to elevate the impact of the Biomedical Engineering Society at the University of South Florida.

A WORD FROM OUR ADVISOR

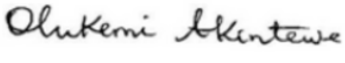
To the Student Chapter Award Committee Members,

The Biomedical Engineering Society (BMES) USF Chapter's mission is demonstratively consistent with its parent organization -- "to establish leadership skills, network, as well as the opportunity to participate in a wide range of career development programs." Specifically at USF, the biomedical engineering profession is promoted through continuous professional development activities that bridge gaps between academic and real-world experiences. These activities include but are not limited to technical seminars, facility tours, career development sessions, mentorship, research and development projects, and team-building events strategically planned to prepare members for the biomedical engineering field.

This last academic year, 2023-24, the USF BMES undergraduate chapter activities have been impeccable. The academic year finished with several accomplishments. There are six worthy of note: i) BMES USF students successfully initiated and organized the very first career fair ever conducted in the college by students. The career fair consisted of local and national biomedical engineering companies, instrument exhibitions, poster presentations, and approximately 100 people in attendance; ii) participated in outreach initiatives by mentoring high school students in STEM projects and leading lab tours; iii) the R&D committee expanded chapter membership by engaging in areas such as wireless integration and enhanced mobility of a wheelchair (students successfully presented the prototypes to ~10,000 attendees at the USF annual Engineering Expo); iv) membership increase of 66% exceeded last academic year enrollment; v) the chapter gave four poster presentations at the 2023 national conference at Seattle, Washington; and vi) the chapter participated in interdisciplinary collaborations with other USF student engineering organizations through immersive events. These accomplishments provide a great foundation for the future.

In the upcoming academic year, the chapter plans to continue to build a stronger network among its members, industry partners, and local community by focusing on three areas. First is continued interactive community outreach through design projects, mentorship, promoting and supporting STEM at the K-12 level, and participation in local or national design competitions. Second, to further increase active membership through team building, industry partnerships, and other strategic initiatives. And thirdly, increase representation at the BMES annual national conference. Sourcing for funding to participate in the national conference is an expected challenge for the chapter. Support from the national chapter would help lessen the burden if the number of travel awards is increased. Participation in the national conference will incumbently enrich the USF chapter with pertinent insights on how to be successful in its three focus areas. The ultimate outcome, notwithstanding challenges, is for students to gain first-hand exposure to the latest research and technology in the biomedical engineering field.

Sincerely,



Olukemi Akintewe Ph.D.

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ADMINISTRATIVE REPORT

The Biomedical Engineering Society (BMES) chapter at the University of South Florida is composed of a team of 14 executive board members, including a president, a vice-president of internal affairs, a vice president of external affairs, and eleven additional executive board members. The roles and duties of each officer are overseen by the respective vice president. The responsibilities of each officer, as well as the distribution of officer management, are described in detail below.

The executive board members are dedicated to serving students and members through various events, workshops, career fairs, research and development meetings, and engagements with faculty, engineers, and representatives of relevant biomedical engineering companies. Furthermore, the board members meet every week to update the responsibilities of officers for upcoming events and discuss plans for future events.

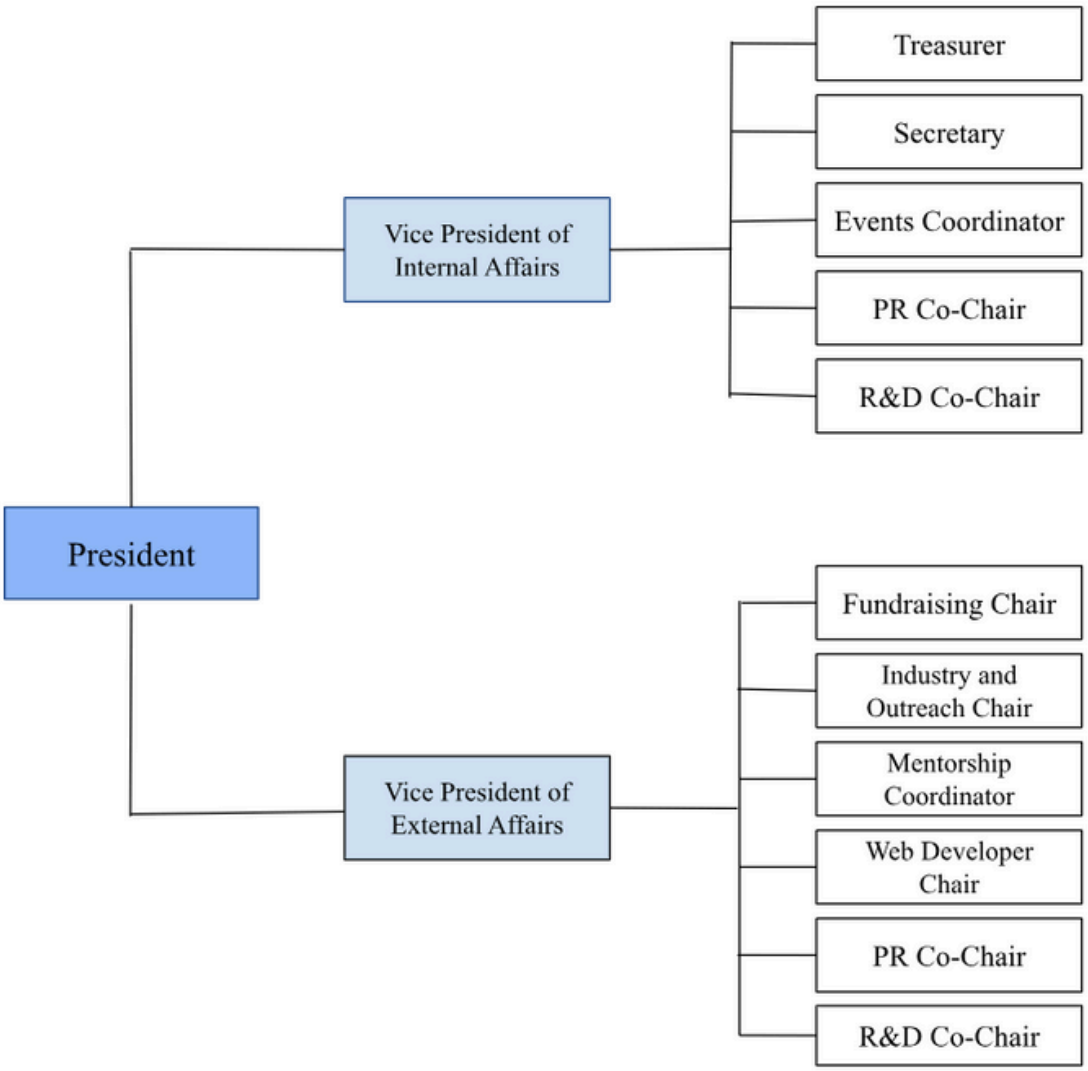
EXECUTIVE BOARD

Position	Name	Contact Information	Roles and Responsibilities
President	Srinidhi Manthena	manthenas@usf.edu	Manages all officers, meetings, and functions. Ensures all events are running smoothly and acts as a primary University Liason.
Vice President of Internal Affairs	Nhan Nguyen	nguyen66@usf.edu	Oversee and facilitate internal team and report to the President
Vice President of External Affairs	Sachita Yerramill	syerramilli1@usf.edu	Oversee and facilitate external team and report to the President
Treasurer	Mary Guinocor	guinocor@usf.edu	Operates the organization's budget and observes any activities regarding the bank account
Secretary	Acer Chafee	acerchafee@usf.edu	Maintains records of meetings to ensure all officers know their duties for the week
Industry and Outreach Chair	Joelle Copeland	copelandj12@usf.edu	Contact relevant companies and engineers to organize Career Fair, tours, and events to speak to students
Events Coordinator	Alex Lapointe	alexl@usf.edu	Organizes events and books rooms, ensuring all events run smoothly

EXECUTIVE BOARD

Position	Name	Contact Information	Roles and Responsibilities
R&D Chair	Avery Altamirano	akaltamirano@usf.edu	Leads and operates various projects throughout the year. Organizes engineering workshops and engages with the annual Engineering Expo
R&D Chair	Deepesh Managuru	deepeshm@usf.edu	Leads and operates various projects throughout the year. Organizes engineering workshops and engages with the annual Engineering Expo
Mentorship Coordinator	Emi del Rosario	delrosarioe@usf.edu	Facilitates relationships between mentors and mentees
Fundraising Chair	Cristina Evans	cristinaevans@usf.edu	Plans fundraising events and givebacks by collaborating with businesses. Monitors profit margins, ensuring correct financial profits
Public Relations Chair	Nadezhda Korostyleva	nadezhdakorostyleva @usf.edu	Manages social media accounts and designs merchandise designs
Public Relations Chair	Farida Safarli	faridas@usf.edu	Manages social media accounts and designs merchandise designs
Web-Developer	Tam Do	tamdo@usf.edu	Controls and manages the BMES wesite

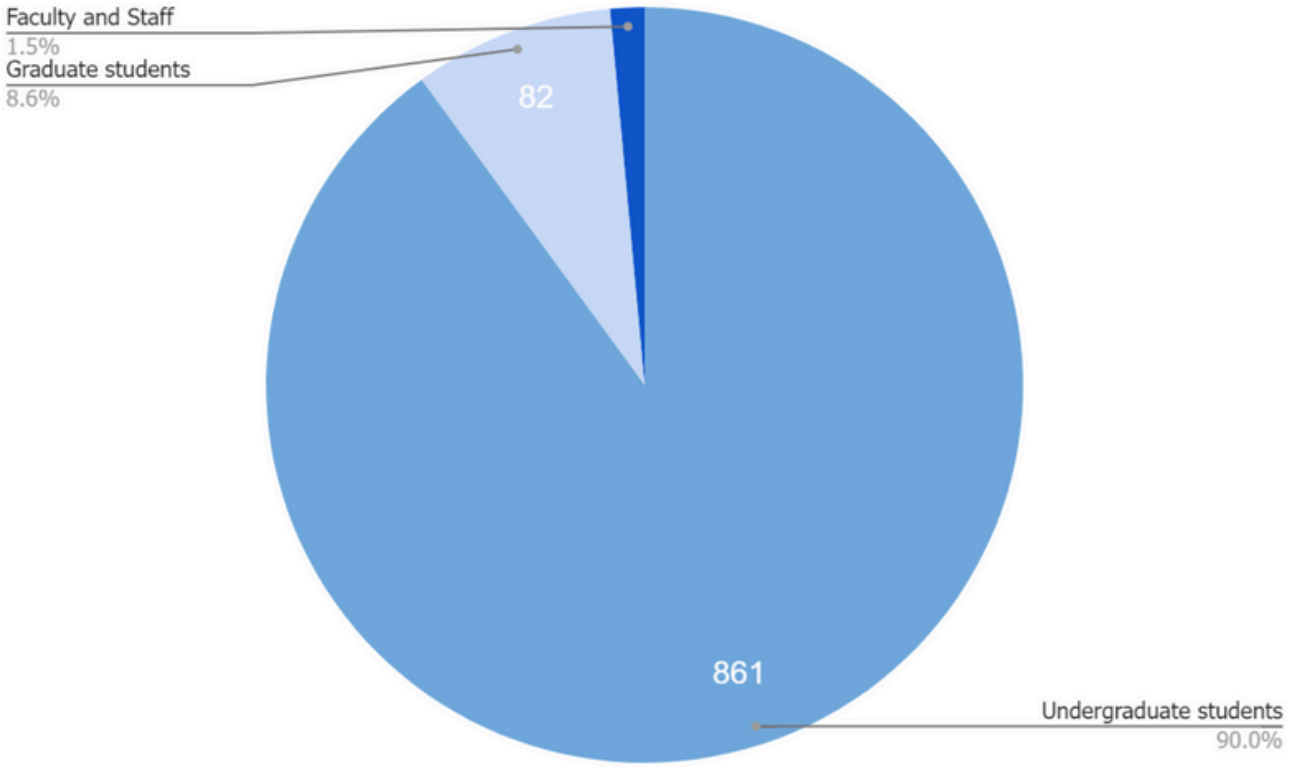
EXECUTIVE BOARD DISTRIBUTION



MEMBERSHIP BREAKDOWN

Membership at the Biomedical Engineering Society Chapter at the University of South Florida is open to all USF students regardless of their major free of charge. BMES at USF consists of 957 members in total, consisting of undergraduate and graduate students, as well as, faculty and alumni. There was approximately a 66% increase in membership from last year. There are currently 14 members who hold national membership in the USF BMES chapter.

USF BMES CHAPTER MEMBERSHIP BREAKDOWN



EXECUTIVE BOARD MEETINGS

Dates	Summary
5/15/23	The first meeting of the year was centered on organizing. Plans were established for events, industry outreach, research and development, mentoring, and public relations. Roles and goals were also given, and the budget was completed.
5/30/23	The schedule was verified, and future events were discussed. Events between mentors and mentees were planned, the budget was set, and strategies for fundraising were reviewed. There were also talks about fresh project ideas from R&D, industry visits, and a career event.
6/13/23	A new research and development chair was introduced. The treasurer gave an update on the budget and reaffirmed roles and objectives. The secretary took charge of the meeting minutes as strategies for fundraising were discussed and event schedules were prepared. There was a scheduled career fair, industry visits, and the distribution of mentoring forms. PR completed the designs for the t-shirts and posters, while R&D presented project concepts and workshop schedules.
6/27/23	Goals and roles were discussed, along with preparations for the next meetings and career fair. The secretary oversaw meeting minutes, and the treasurer gave reports on financial training. Events were scheduled with room reservations, and future events were the subject of fundraising initiatives. The industry and outreach committees completed the tour schedules, and the mentorship chair organized events and mentor training. PR made polls for potential t-shirt designs while R&D worked on project presentations.
7/11/23 & 7/25/23	Roles and objectives were reaffirmed in both of the July meetings, and reports on money, the budget, and meeting minutes were given. The main priorities were accommodation reservations, event scheduling, and future event planning. Events for mentorship were organized, industry tours were completed, and R&D kept working on project presentations. PR chairs approved items and designs.
8/8/23	This last meeting before classes started back up was devoted to organizing future activities. While industry and outreach developed tour preparations, the treasurer oversaw finances and purchases. The event's organizer completed event details, mentorship arranged events, and R&D chairs worked on initiatives. The PR chairs oversaw post-organization and design.
8/22/23	The subsequent sessions carried on with the planning of forthcoming gatherings and events. The chairs for R&D worked on projects, mentorship chairs planned for events, the treasurer oversaw funds and purchases, the industry and outreach chair completed tours, and the events coordinator completed event arrangements. The PR chairs oversaw post-organization and design.
8/28/23	Talks about the mentoring program, financial updates, industry and outreach updates, R&D project updates, and updates from the secretary and PR.
9/11/23	Updates from the treasurer, mentorship chair, events coordinator, and PR chairs were shared, along with information on upcoming events including Freshmen Insight and the Blaze fundraiser.

EXECUTIVE BOARD MEETINGS

Dates	Summary
9/18/23 & 9/25/23	Announcements regarding upcoming events and preparations for joint Halloween collaboration. PR chairs' social media plans and committee updates were also covered.
10/9/23 - 10/30/23	PR chairs organizing social media, committee updates, financial updates, conversations on secretary and mentorship duties, and preparation for events like career fairs and fundraisers. In October, a new role as a web developer was introduced.
2/13/24	Talks about preparing career fairs, events, and fundraisers as well as committee and budget updates, mentoring conversations, and PR social media preparation.
2/20/24 - 3/12/24	Planning for activities such as volleyball matches and movie evenings, as well as committee reports, financial updates, mentorship talks, and PR social media scheduling. Finalizing planning for the career fair took precedence.
4/9/24	At this meeting, the new e-board members and their positions were introduced, along with the election results.

GENERAL BODY MEETINGS

Fall General Body Meeting #1
September 13th, 2023
Attendance: 20

Introduced the new 2023-2024 executive board, Discussed all events that take place in the Fall 2022 Semester. Upper-level students of Biomedical Engineering shared their insight into class advice, tips to succeed with different professors, and how to progress through the major easily.

Fall General Body Meeting #2
November 20st, 2023
Attendance: 35

Ended the semester and reviewed all events that took place in the fall semester, we played board games, and trivia games, and ate Caribbean jerk chicken provided by a local vendor to celebrate the year.

Spring General Body Meeting #1
April 16th, 2024
Attendance: 37

Discussed all events that took place in the Spring 2024 Semester. Introduced new e-board for the 2024-2025 year, Members had the chance to connect with the e-board members

TREASURY REPORT

Primary funding for the USF BMES chapter comes from USF Activity and Service Recommendation Committee (ASRC) funds. Applications are submitted through the USF Engineering Council, a committee created to support funding for engineering society projects that may be overlooked when ASRC allocates funds. Fund requests were filled out and submitted by the Treasurer, Mary Guinocor, and approved by the USF Student Government board. Use of these funds is only approved for events or items that can be distributed to the entire student body. Limits are in place for amounts of money that can be spent on particular items and where purchases can be made. Funds went toward our research and development projects, mentoring events and professional development workshops. Other sources of funding were raised through fundraising including bake sales and givebacks with local businesses.

FUNDRAISING BREAKDOWN

Name	Date	Revenue	Description
Blaze pizza Giveback	September 27, 2023	$0	This giveback was hosted at the Blaze Pizza closest to the university. A minimum of $250 was required to receive 20% back. To advertise, we printed flyers to distribute and promote the fundraiser through social media platforms in the form of posts, stories, and texts. Moreover, this fundraiser was right after one of our events to promote students to go eat. We received $0 back because we did not make the minimum.
Chipotle Giveback	October 18, 2023	$88.03	This giveback was hosted at a Chipotle close to the university. A minimum of $150 was required to receive 33% back. Promotions were made through social media platforms and word of mouth. We received $88.03 back.
Tsaocaa Giveback	November 14, 2023	$29.45	This giveback was hosted at a boba shop, Tsaocaa, close to the university and popular among college students. Promotion of this fundraiser was put on social media in the form of posts and stories. Moreover, we had a study social the same day where we brought those who went to Tsaocaa for the fundraiser after. There was no minimum to meet and we received 15% back from the total sales. We received $29.45 back.
Uncle Iroh's Lemonade Stand Fundraiser	November 15, 2023	$52	We hosted a bake sale fundraiser at Cooper Hall in the university. The night before we prepared lemonade, vanilla cupcakes, and sugar cookies. We kept with the theme from the mentorship program, Avatar the Last Airbender, and decorated the food as such.

FUNDRAISING BREAKDOWN

Name	Date	Revenue	Description
Tsaocaa Giveback	January 31, 2024	$29.47	This giveback was hosted at the same boba shop from November, Tsaocaa. We asked for a larger percentage back, so instead of 15% back, we received 17%. This giveback was promoted on social media and we had a study social the same day, so we brought people from the study social to Tsaocaa. We received $29.47 back.
Valentine's Day Fundraiser	February 16, 2024	$62.75	This fundraiser was a bake sale we hosted outside Cooper Hall at the university. We made brownies and chocolate chip cookies the day before our original date of February 14th. We had to change the date of the fundraiser last minute to February 16th. We promoted this event on social media ahead of time and through word of mouth on the day of.
Tijuana flats giveback	February 28, 2024	$0	This giveback was hosted at Tijuana Flats closest to the university. A minimum of $250 was required to receive 20% back. This giveback was promoted through social media made by posts from our public relations officers. Since we did not meet the minimum, we received $0 back.
Total Revenue		$320.92	

EXPENSES BREAKDOWN

Event	Cost
R&D Projects	$321.07
Merchandise	$431.77
Event Bulk Items	$121.66
Study Socials	$99
Mentor-Mentee RUSH	$155.83
Intro to BME Event	$87.98
Mentorship Reveal	$73.08
Fall Career Fair	$62.75
Fall Banquet	$189.98
Spring GBM	$108.70
Game Night	$65.94
Workshops	$63.95
Movie Night	$152.33
Volleyball Olympics	$76.96
Spring Banquet	$188
Total Expenses	$2198.00

CHAPTER ACTIVITIES

Our chapter put in significant effort to engage our members through a diverse range of carefully curated activities. Our overarching goal was to expand the available opportunities while fostering a strong sense of community. To achieve this, we organized numerous professional and social events to provide an enriching experience for our members. Using our R&D teams, we designed and executed workshops tailored to empower our student members in their future pursuits within the field of biomedical engineering. These workshops served as invaluable platforms for knowledge sharing, skill development, and practical insights. Recognizing the significance of building connections and fostering a tight-knit network, we also arranged a variety of social gatherings that extended beyond traditional networking. Our two R&D sections allowed us to channel our efforts into a broader spectrum of projects and initiatives. While one group passionately poured their energy into preparing for the VEXU Championship, the other group dedicated themselves to undertaking projects that directly addressed critical needs and challenges within the realm of biomedical engineering.

INTER-CHAPTER ACTIVITIES

This year, the USF BMES chapter witnessed an expansion in its inter-chapter activities. We established collaborations with multiple organizations, forging connections with prominent engineering entities such as the American Institute of Chemical Engineers, Biomedical Engineering Society, National Society of Black Engineers, and Society of Hispanic Professional Engineers at the University of South Florida. These partnerships facilitated interdisciplinary engagement, and the opportunity to work collectively on initiatives. Through these extensive inter-chapter activities, the USF BMES chapter continues to thrive, strengthening its influence within the engineering community and fostering an inclusive and collaborative environment for its members.

Activity Breakdown

Halloween Costume Contest
October 31st, 2023
Attendance: 40

At the Halloween contest, BMES partnered with the DFX design laboratory to host a costume party and contest for students. Many students arrived in their creative Halloween costumes and a small prize was awarded to the voted winner.

Activity Breakdown

Engineering Expo
February 9th-11th, 2022
Attendance: 10,000

The Engineering Expo is an event hosted by the College of Engineering to inspire K-12 students to study STEM. Our chapter holds a booth every year with interactive games and exhibits to get students excited about biomedical engineering. We usually showcase some of the projects the R&D chapter has been working on.

MENTORING ACTIVITIES

USF BMES organized two different mentorship programs. After each semester, the program would restart with new mentors and mentees and new pairings for the program. Registration would open at the beginning of the semester. Juniors and above, regardless of major, could be mentors. Before the semester started, they would provide the number of mentees they were able to mentor for the semester, ranging between 1 to 6 mentees. Mentees were freshmen or sophomores, also regardless of major. Most of the pairings were based on major, but there were other factors such as interests, hobbies, and future aspirations, used to further determine the best pairings. If there was no mentor that matched with a mentee's major, the next biggest determinant was how the mentor could help the mentee in the professional world. For example, if a mentee needed help getting into a research lab, they would be paired with a mentor who is either in a lab or has been in a lab. Each mentor and mentee pair were required to meet at least twice per semester. These meetings could be completed either by going to a BMES-facilitated event or on their own time. Mentees and mentors who did not meet with each other were sent emails during the semester as a reminder about the requirements for the program.

This year, there were multiple events hosted by the mentorship program. In the Fall 2023, the theme was Avatar the Last Airbender. Mentors and mentees were divided among the four types of elemental benders and would receive points for their team by meeting with their mentors. There were a total of 33 mentors, ranging from juniors to masters students. In Spring, registration reopened to allow new students to join the program. This also allowed mentees to drop out of the program or remove any mentees who did not do the required meetings. Mentees returning from the Fall semester could ask to stay with their mentor from the previous semester or switch the mentor for Spring. Mentors returning from Fall were once again asked how many mentees they were willing to mentor. The requirements for the program were the same as the previous semester. They must meet at least twice during the semester. The theme for Spring 2024 was Percy Jackson. Each mentor represented one of the Greek gods mentioned in the book series. There were a total of 26 mentors and 46 mentees.

Mentorship Activity Breakdown

BMES Mentorship Rush Event
September 6th, 2023
Attendance: 49

The mentorship rush event was used to allow the new mentors and mentees to get to know each other and hopefully find someone they were interested to teach and learn from. Mentors were divided into seven groups and mentees were also divided into seven groups. The groups would rotate through the seven stations each containing a different activity that facilitated discussion among the mentors and mentees about their interests, hobbies, and aspirations. At the end of the event, a questionnaire was sent out to the mentees for them to mention any mentor they were interested in.

BMES Mentorship Reveal
September 18th, 2023
Attendance: 40

The mentorship reveal marked the official start of the program as mentors and mentees came together to get acquainted with each other. During the event, mentees and mentors got to know each other more and engaged in social interactions not only with their own mentor and mentee but also with other mentors and mentees in the program.

Mentorship Activity Breakdown

BMES Trivia Night
September 27th, 2023
Attendance: 8

Goal: Have a social event so mentees can get to know their mentors better.
Outcome: Fun social event that allowed the students to decompress as well as connect with other people in the program.

Studying in Won Shi Tong's Spirit Library
November 15th, 2023
Attendance: 11

Goal: Provide a space in which mentees could meet with their mentors for help with their studies.
Outcome: Mentors provided the help mentees needed to better understand their classes.

Chiron's Advising Session
January 17th, 2024
Attendance: 27

Goal: Provide a space for the mentees to talk to their mentors about classes they are worried about for the coming semester.
Outcome: Mentors gave mentees advice on how to prepare for their classes such as how to study and what to expect from the class.



Mentorship Activity Breakdown

BMES Study Social
January 31st, 2024
Attendance: 12

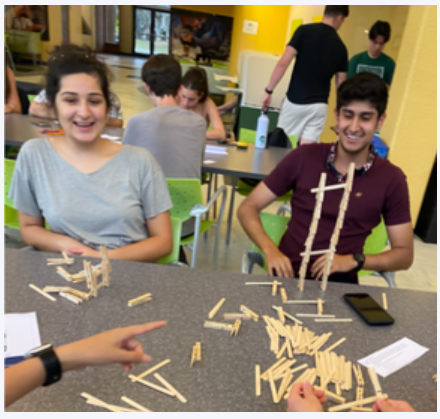
Goal: Provide a space in which mentees could meet with their mentors for help with their studies.
Outcome: Mentors provided the help mentees needed to better understand their classes.

BMES Game Night
February 7th, 2024
Attendance: 19

Goal: Have a social event that allows everyone to decompress while also getting to know others in the program.
Outcome: A fun night that allowed everyone to engage in social interactions and make connections with others in the program.

BMES Movie Night
February 26th, 2024
Attendance: 15

Goal: Have a social event that allows everyone to decompress while also getting to know others in the program.
Outcome: A fun night that allowed everyone to engage in social interactions and make connections with others in the program.


Mentorship Activity Breakdown

Learn with BMES Study Social
March 4th, 2024
Attendance: 15

Goal: Provide a space in which mentees could meet with their mentors for help with their studies.
Outcome: Mentors provided the help mentees needed to better understand their classes.

BMES Schedule Planning
March 20th, 2024
Attendance: 19

Goal: Mentors would help mentees schedule their classes for next semester.
Outcome: Mentors advised mentees on which classes to take for the next Summer and Fall semesters.

BMES Volleyball Day
March 23rd, 2024
Attendance: 9

Goal: Have a social event that allows everyone to decompress while also getting to know others in the program.
Outcome: A fun day that allowed everyone to engage in social interaction and make connections with others in the program.



Highschool Mentorship Program

BMES Mentorship program also organized an outreach program to Carrollwood Day School. The purpose of this program was to introduce the students to the field of biomedical engineering as well as assist them in creating their own BMES club at their school. During Fall 2023, USF BMES reached out to the Assistant Head for Academics at Carrollwood Day School and began a discussion on how the program would be run. Everything was finalized by the end of Fall semester, so the program would begin in Spring 2024. During Spring 2024, USF BMES would visit Carrollwood Day School twice a month and would have two types of workshops. The first workshop of the month discusses general biomedical engineering information such as the software and skills that USF Biomedical Engineering students learn in their program. The second workshop of the month focused on the project given to the students by the Mentorship Chair. The project required the high school students to build a prosthetic hand using the skills and supplies given to them by the program.

Mentorship Activity Breakdown

BMES TinkerCAD Workshop

January 31st, 2024

Attendance: 6

Goal: Introduce the high schoolers to the field of biomedical engineering and to the 3D printing program known as TinkerCAD.
Outcome: High school students were able to create a name tag using TinkerCAD that would be printed and given to the students at the next meeting.

BMES Project Introduction

February 14th, 2024

Attendance: 9

Goal: Give the students a brief introduction to biomechanics and discuss the prosthetic hand project.
Outcome: With the help of the introduction, the students were able to replicate how muscles are able to move the fingers in a hand with the use of everyday materials such as a rubber glove, tissue paper, pipe cleaners, and rubber bands.

BMES Arduino Workshop Part 1

March 6th, 2024

Attendance: 7

Goal: Introduce the students to Arduino code and basic electrical circuitry.
Outcome: The students were able to write the proper code and create the proper circuitry to turn on an LED and to use and to read the data from an ultrasonic sensor.

Mentorship Activity Breakdown

BMES Arduino Workshop Part 2

March 6th, 2024

Attendance: 7

Goal: Continue to develop the students' skills in Arduino and circuitry.
Outcome: Combining their skills from the previous workshop, the students were able to write code and create circuitry to turn an LED light on and off based on how far away an object was from the ultrasonic sensor. The students also learned the proper circuitry and code for a servo motor, which will be used to move the fingers of the prosthetic hand.

BMES Constructing the Hand

March 20th, 2024

Attendance: 4

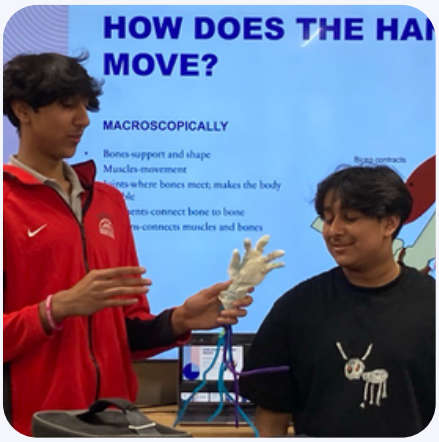
Goal: The students are able to build the external model for the prosthetic hand.
Outcome: The students were able to construct the hand using the 3D-printed parts provided by USF BMES.

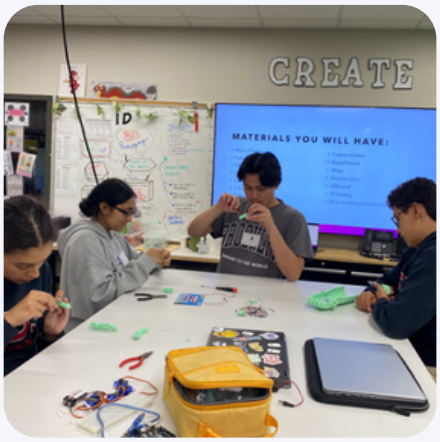
BMES Final Project Day

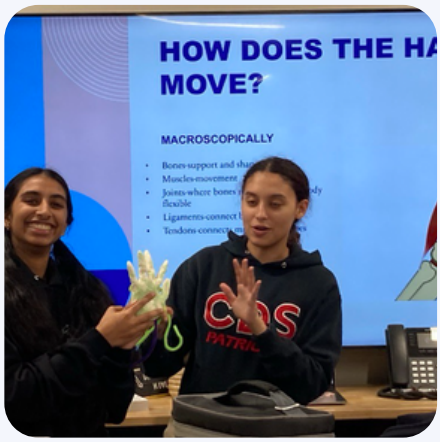
April 10th, 2024

Attendance: 5

Goal: Using the skills learned throughout the semester, the students will be able to make a functional, moving hand.
Outcome: The students were able to tie the 3D-printed hand to the servo motors. Using the code and circuitry they learned in the Arduino workshop, they were able to move the servo motors and fingers.







Mentorship Activity Breakdown

BMES Tour for Carrollwood Day School

April 24th, 2024

Attendance: 7

Goal: Show the high school students the campus of USF.
Outcome: The high school students were able to see the labs that college students participate in to better their skills. They were also able to see some of the research labs that professors are conducting.

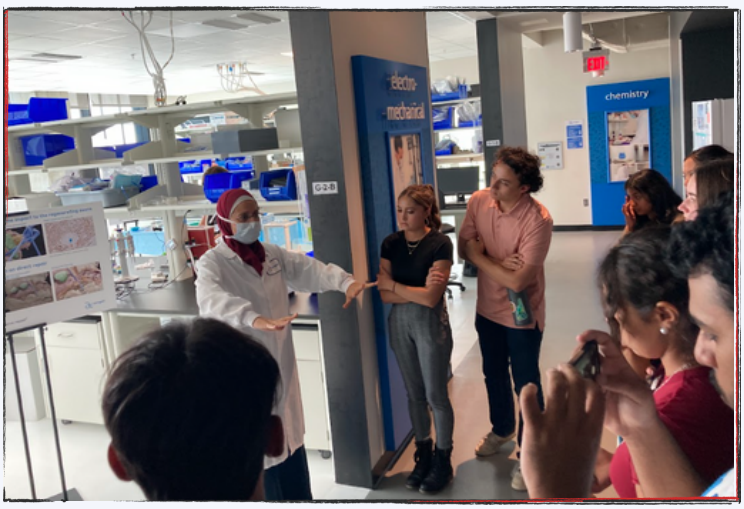
INDUSTRY AND PROFESSIONAL DEVELOPMENT ACTIVITIES

Throughout the year, we had numerous events which allowed students to engage with industry professionals, learn about the biomedical engineering industry field, and have the opportunity to work on soft skills when engaging with professionals. These helped students to be exposed to different areas within Biomedical Engineering and explore the scope of the impact they could have upon completion of the program at USF. To note a few, we were able to have local professionals from companies like Axogen, AMRoC, and Jabil come and speak to students at the Career Fair with near 100 students in attendance, and multiple professors who do research speak to students and engage with them within their area of expertise. The FMMC, or Florida Medical Manufacturers Consortium was also in attendance, and this served as a great opportunity for students to make connections and talk to companies they could potentially find internships or other opportunities with. The Evening with an Engineer events gave students an opportunity to meet professors, learn about their research and the applications, and know how they can get involved. These events were greatly beneficial to students as they got much-needed exposure to the possibilities that come with Biomedical Engineering and developed their idea of what they want to do post-graduation.

Activity Breakdown

BMES Tour with Axogen
October 10th, 2023
Attendance: 30

Students had the opportunity to tour the local facilities of Axogen, a Biomedical Engineering company that specializes in nerve repair. They were able to tour the Tampa location and interact with Axogen staff.



Activity Breakdown

Evening with an Engineer 1
March 27th, 2024
Attendance: 16

In the Spring of 2025 we had a Professor, Dr. Heller speak to students about the research she does in her lab and talk more about tissue engineering and drug delivery. She greatly excited students with her knowledge of the field and answered questions about it as well to have an interactive and engaging event.

Evening with an Engineer 2
April 11th, 2024
Attendance: 8

Students were able to attend a presentation from Dr. Meisam Asgari about his work in the field of biomedical engineering, specifically with an application to materials engineering. The attendees were able to have questions answered by him, and learn about the real-world applications of his research.

Activity Breakdown

BMES Arduino and Solidworks Workshop

September 20th, 2023

Attendance: 10

At the Arduino and Solidworks workshop, attendees were taught how to use the two software by an experienced upper-division student. Basic skills were taught along with the applications of each of them.

BMES MATLAB Workshop

October 16th, 2023

Attendance: 7

At the MATLAB workshop, basic skills were taught to the attendees on how to utilize MATLAB for future projects in biomedical engineering.

BMES Research Paper Workshop

January 24th, 2024

Attendance: 8

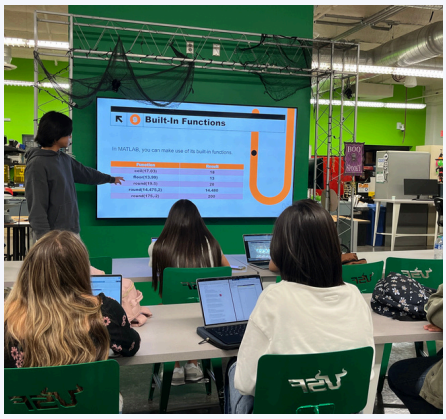
At the research paper workshop, an experienced scientific writer who was a part of BMES was able to share their insight with members on how to write impactful and effective research papers for publication or otherwise.

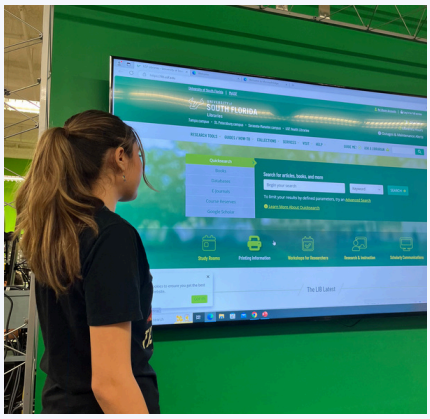
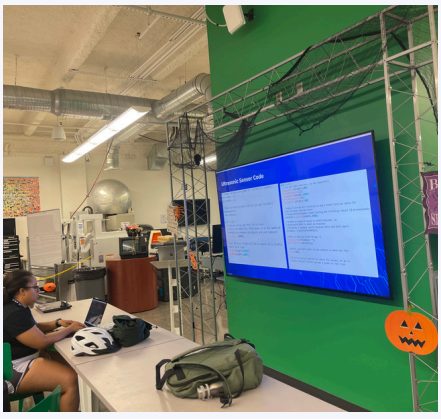
BMES Resume Workshop

January 24th, 2024

Attendance: 11

At the resume workshop, attendees brought their resumes and after a short lecture, received feedback on how to improve their resumes to help land their first jobs or internships.



Activity Breakdown

BMES Career Fair
November 8th, 2023
Attendance: ~100

In the Fall semester, our chapter organized an immersive and engaging event that provided an opportunity for students to network with potential employers at our Career Fair. Among the esteemed companies present were Axogen, Jabil, Asante Bio, Amroc, and members of FMMC, adding a diverse range of opportunities for attendees. These industry giants offered a plethora of prospects, including internships, job openings, and research positions, allowing students to explore various career paths within the biomedical engineering field. Beyond the chance to secure career-enhancing opportunities, the Career Fair served as a platform for students to hone their professional skills. Interacting with professionals provided invaluable experience in communication, networking, and professional etiquette, while also offering insights into industry trends and expectations. Furthermore, the event emphasized the importance of cultivating hard skills essential for success in the professional realm. Students had the opportunity to fine-tune their resumes, receive feedback from industry experts, and gain a deeper understanding of the qualities sought after by employers in the biomedical engineering sector. Overall, the Career Fair was a resounding success, providing students with a multifaceted experience that empowered them to take proactive steps towards their career goals. It exemplified our chapter's commitment to fostering the professional development and success of our members, while also strengthening our connections with leading companies in the industry.


SOCIETAL IMPACT ACTIVITIES

The BMES R&D team meets twice a week to develop and work on a variety of biomedical engineering projects.With BMES R&D, an inclusive and hands-on learning environment was created to welcome all individuals with diverse skill sets to participate on all projects expanding their knowledge in the process. Members learned how to use computer aided design software such as SolidWorks, learned how to build a circuit, and learned how to code using Arduino. This year, R&D members worked on three main projects. These projects include the wheelchair sensor, a heart rate monitor, and an automated pill dispenser.

Wheelchair Sensor

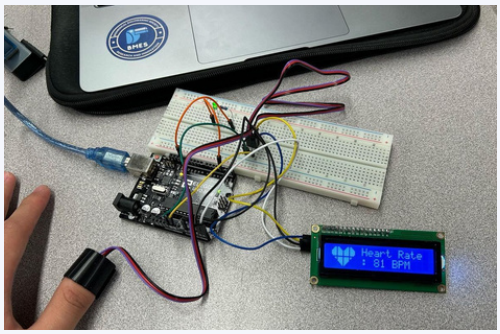
This year, the R&D team had the pleasure to complete a project for a client. This project consisted of creating an ultrasonic sensor based detection system that will be attached at the back of the client's motorized wheelchair to alert the client of a nearby object. This ultimately helped the client reduce collisions that could not be seen from behind and avoid the client from running into their pet. In order to complete this project, there were several tasks that could be done independently from each other that ultimately combined with one another to complete the project as a whole. Among the team members, one team worked on the Arduino code for the project to ensure all components were calibrated properly according to the client's needs, another team worked on the design of the chassis of the sensor using TinkerCAD, and the last team was responsible for the circuit design and construction. The finished project consisted of an ultrasonic sensor to detect object distance, a buzzer to alert an object's close proximity, a battery pack to power the system, and a push button to turn the sensor system on and off. A 3D printed chassis was used to encase all of the materials used for the sensor system and it was attached to the wheelchair.

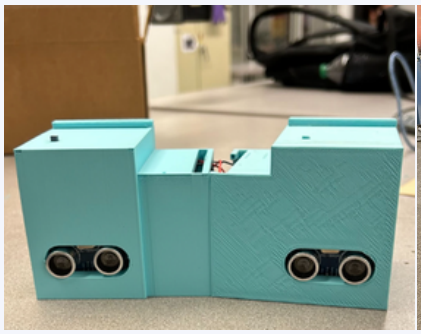
Heart Rate Monitor

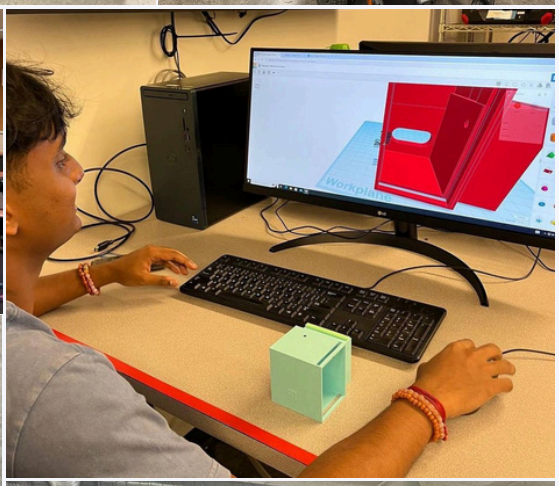
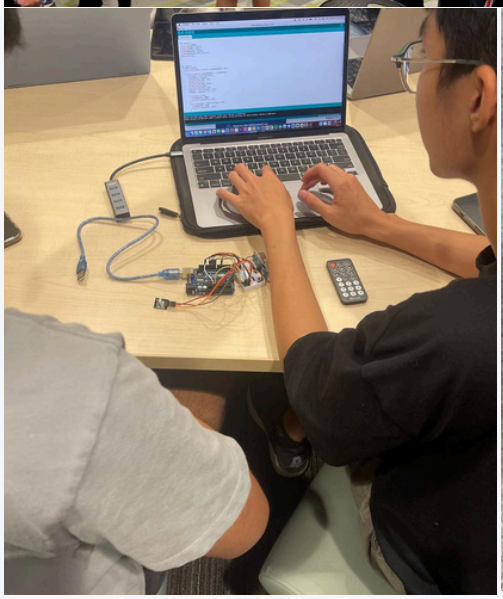
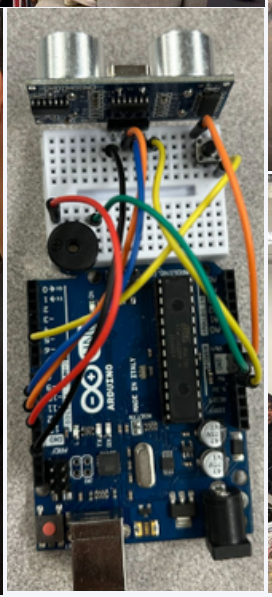
This year the R&D team was also able to design a heart rate monitor. This project utilized an ecg module and a LCD module. These parts were ordered separately online. Yo complete this project the work was divided into small tasks. Some members worked on the circuitry while others worked on the arduino code. This project was one of the more simpler side projects and it only took a few weeks to complete. The final project consisted of a ecg module which read one's pulse and then displayed the pulse on the LCD module.

Automated Pill Dispensor

The final project the R&D team worked on was the automated pill dispenser. This project essentially was developing a scan and drop mechanism similar to one's seen in automatic hand sanitizer machines or soap dispensers. We utilized an IT sensor to scan an individuals palm, and then we utilized a motor to open and close a valve where an individual pill would drop through an opening. The work was then split into three tasks: 3D design, coding, and circuitry. Each team worked separately on each section and was able to communicate effectively to develop the final project. For 3D design we had decided to use solid works as it was a bit more complex and allowed us to have more functionality in our design.






2023 BMES ANNUAL MEETING

The USF BMES Chapter actively participated in the 2023 Biomedical Engineering Society (BMES) conference, fostering collaboration among students, professors, researchers, and industry professionals. Our chapter engaged in a variety of activities such as plenary sessions, poster sessions, seminars, and workshops. The BMES conference proved to be an exceptional opportunity for undergraduate students interested in pursuing a career in biomedical engineering. It provided valuable insights into various career paths within the field and allowed them to connect with influential figures, including leaders from BMES chapters at other universities and accomplished professionals at the forefront of the biomedical research. This year, we had 6 undergraduate presenters, who proudly showcased their research at the conference. Overall, the BMES conference served as an invaluable platform for our members to explore the vast field of biomedical engineering and gain insights that will shape their future careers and educational endeavors. It provided a nurturing environment for learning, networking, and professional growth, empowering attendees to make informed decisions as they pursue their goals in the biomedical field.

2023 BMES ANNUAL MEETING

Attendees

	Attendees	Email
Executive Board	Srinidhi Manthena	manthenas@usf.edu
Executive Board	Sachita Yerramilli	syerramilli1@usf.edu
Executive Board	Nhan Nguyen	nguyen66@usf.edu
Presentor	Kaitlyn Miranda	kaitlynariel@usf.edu
Presenter	Manya Bhandary	manyab@usf.edu
Presenter	Hannah Caldi	hannahcaldi@usf.edu
Presenter	Sophia Alonso	sophiaalonso@usf.edu
Presenter	Marcelah Ines Chen Martiz	mchemmartiz@usf.edu

FUTURE DIRECTIONS

We are thrilled to share the remarkable achievements of our chapter this year, as we have not only met but also exceeded our goals set forth. One of the most significant accomplishments was the successful execution of our inaugural annual career fair exclusively for biomedical engineering students. This milestone event has surpassed our expectations, and we are committed to its continuation in the future, aiming to establish it as a permanent fixture for our members. Looking ahead, we are excited to expand our focus on societal impact projects, aligning with our commitment to making a meaningful difference in our community. We envision our chapter becoming a creative hub where students can collaborate with real clients, providing invaluable experiential learning opportunities that enhance their skills and prepare them for their professional endeavors.

In addition to our ambitious goals for events and projects, we are actively seeking sponsorships to provide vital funding for our club. These sponsorships will enable us to plan and execute a wider range of activities and initiatives for our members, enhancing their overall experience and opportunities within the biomedical engineering community. With the support of sponsors, we aim to diversify our offerings, provide valuable resources, and further strengthen our chapter's impact and influence. By continuing to innovate and push boundaries, we aim to solidify our chapter's presence and influence within the biomedical engineering community. Through initiatives like our career fair, societal impact projects, and sponsorship endeavors, we will create an environment that nurtures the growth, development, and success of our members while contributing to the advancement of our discipline. Our dedication to excellence and continuous improvement drives us forward as we strive to achieve even greater heights in the years to come.