



Biomedical Engineering Society at the University of California, Irvine

Chapter Development Report 2020-2021

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Executive Summary

The UC Irvine Chapter of the Biomedical Engineering Society is a student-run organization with a mission to foster an inclusive community for students interested in biomedical engineering through mentorship, career building, hands-on project experience, and outreach. The shift to remote learning this past year did not hinder our club impact as alternative strategies for hosting online speaker events, company networking opportunities, and socials were quickly adopted. In fact, over the course of the 2020-2021 academic year, we have not only maintained our member engagement but also increased the breadth of our programs.

In our mission to provide resources to students of all majors and backgrounds, we have especially focused on expanding our impact beyond UCI through our new Jr. BME Program which aims to provide high school students with advice and insight about college life, as well as a series of fundraisers through which we were able to raise over \$8000 in total over the course of the year. Moreover, we sought to enrich the virtual environment by shipping project parts to members in order to facilitate hands-on project experience, promote the development of technical skills, and incorporate entrepreneurial innovation. We also successfully hosted our Annual Industry Night in a completely virtual format with 7 different companies and over 90 total students in attendance.

Moving forward, we will continue to strive for improvement of our programs in order to support the evolving needs of our current and future members, while strengthening our relationships with the community and other BMES student chapters beyond UC Irvine.



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May 21, 2021

Dear National BMES:

Even though COVID-19 shutdowns have impacted all student activities, the local chapter of the Biomedical Engineering Society at University of California, Irvine has made great strides in the last year to maintain a vibrant program for the undergraduate students at UCI who are majoring in BME. The chapter leaders have kept students involved with outreach activities as well as virtual versions of the activities initiated last year.

UCI's BMES chapter has maintained a very good organization structure due to the excellent leadership. In the last few years, the most exciting achievement of the chapter is the creation of an engineering project that the students work on during the year. This project was conceptualized, designed, and built by the students. The older students mentor freshman and sophomores providing them with the technical know-how they otherwise would not see in their classes until end of sophomore or junior year. These projects are incredibly valuable in having students excited about biomedical engineering. This year, project coordinators focused in guiding students in multiple mini projects that could be done remotely. The student leaders plan to go back to in-person, hands-on projects this coming year.

This year UCI's BMES chapter has sent chapter members to the BMES Annual Conference in Sand Diego (virtual). Involvement in the National BMES has been a weakness of the UCI's local chapter in the years' past, so it is very important that the current leadership is actively working to get more involved. I look forward to the UCI's chapter continuing to be actively involved in the National BMES.

In response to the circumstances of last year, the UCI BMES chapter started an outreach activity for its members. They created a Jr. BMES program to introduce student in high schools to BME. Many students have contributed to the outreach website and spent time on live zoom calls mentoring younger students.

The chapter has some common areas that could be improved such as member retention. However, it was very impressive that the chapter continued to be so active throughout the shutdown. I look forward to the improvements that will continue this year with the new leadership.

Sincerely,

A. Grosberg

Anna Grosberg, Ph.D.

Associate Professor of Biomedical Engineering

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I. Administrative Report

I.1 Abstract

BMES at UCI continuously strives to provide meaningful experiences and opportunities to its members, and board members play an integral role in accomplishing this. Serving as the spokespersons and leaders of the organization, new board members begin their term at the beginning of each Spring Quarter. As such, during the 2020-2021 academic year, BMES at UCI was led by two cohorts of board members for the Spring 2020-Winter 2021 term and the currently ongoing term. Each board officer is responsible for maintaining and innovating a facet of the club under the leadership of the Executive Board including the Annual Project, Mentorship Program, fundraising, and professional development events as seen below.



For the Spring 2021 Quarter, various positions were added or consolidated in order to best meet the needs of our members. Namely, the Fundraising Coordinator took on expanded responsibilities of managing all outreach efforts as well as fundraising. Additionally, the National BMES Correspondent and Alumni Coordinator were consolidated into the responsibilities of the Executive Board and Secretary. The present structure of the new BMES at UCI Board and a summary of each position's responsibilities is as follows:



I.2 Chapter Officer Information

Executive Board

The Executive Board was selected via an interview process and decisions were made by the graduating board members of the preceding term. The newly elected executive board was then tasked with filling the remaining officer positions through open applications and interviews. This process occurred midway through the Winter quarter and decisions were made before the end of the quarter. The new executive board immediately began preparing the general board application and planning for the upcoming quarter and the following academic year.

Spring 2020-Winter 2021 Board

Position	Officer	Responsibilities
<i>President</i>	Justin Sadownick jsadowni@uci.edu	Serves as the leader of the board and organization. Oversees all club operations and external affairs.
<i>Vice President</i>	Nancy Morales nancyam1@uci.edu	Manages internal affairs and professional associations.
<i>Treasurer</i>	Meghana Ballari mballari@uci.edu	Serves as financial manager of the chapter.
<i>Secretary</i>	Lily McGrale lmcgrale@uci.edu	Manages chapter communications, weekly email, and membership attendance system.
<i>National BMES Correspondent</i>	Norma Damian Vilchez ndamianv@uci.edu	Compiles chapter information and plans attendance for the National BMES conference.
<i>Industry Correspondents</i>	Kamalesh Ananthkrishnan kamalesa@uci.edu	Plans all events regarding career development and industry engagement.
	Ruben Shakya shakyar@uci.edu	
<i>Alumni Correspondent</i>	Giselle Ho hogl@uci.edu	Plans and organizes all events involving alumni.
<i>Fundraiser Coordinator</i>	Angelique Espino angelique@uci.edu	Plans and organizes fundraisers for each quarter.
<i>Activities Coordinators</i>	Isabelle Lam isabeltl@uci.edu	Organizes all socials and activities to increase member engagement.
	Briana Peterson brianadp@uci.edu	
<i>Mentorship Coordinators</i>	Yuke Wang yukew2@uci.edu	Runs the Mentorship Program and manages all mentorship-related events.
	Edwina Hau haue@uci.edu	

Marketing Coordinators	Fiza Qureshi fizaq@uci.edu	Manages all social media accounts and advertises all club events.
	Phoebe Tran phoebemt@uci.edu	
Graphic Design Coordinators	Jasmine Dang jydang@uci.edu	Designs BMES merchandise and. creates all flyers for events.
	Chloe Chua cjchua@uci.edu	
Project Coordinators	Aryan Agarwal aryana2@uci.edu	Plans and organizes projects, workshops, and submissions for the National BMES Design Competition.
	Francis Aguas aguasr@uci.edu	

Spring 2021-Present Board

Position	Officer	Responsibilities
President	Raphael Francis Aguas aguasr@uci.edu	Serves as the leader of the board and organization. Oversees all club operations and external affairs. Directly assists the Project and Mentorship Coordinators.
Vice President	Lily McGrale lmcgrale@uci.edu	Manages internal affairs and professional associations. Directly assists with the Secretary, Outreach Chairs, Graphic Designers, and Publicity Chair.
Treasurer	Kamalesh Ananthakrishnan kamalesa@uci.edu	Serves as financial manager of the chapter. Directly assists with the Industry Correspondents and Activities Chairs.
Secretary	Isabelle Lam isabelltl@uci.edu	Manages club communication, weekly email, and membership attendance system. Responsible for alumni contacts and events.
Industry Correspondents	Ruben Shakya shakyar@uci.edu	Plans all events regarding career development and industry engagement.

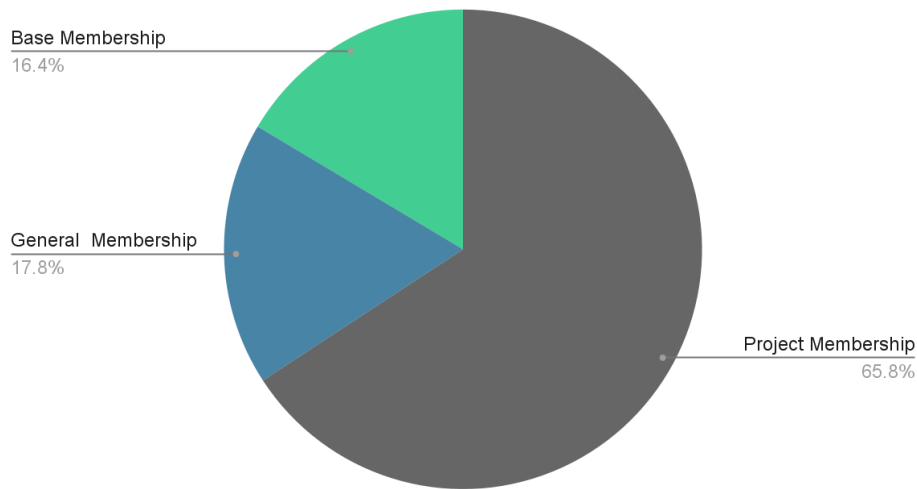
	Fiza Qureshi fizaq@uci.edu	
<i>Outreach Chairs</i>	Angelique Espino angelique@uci.edu	Organizes fundraisers, manages Jr. BME Program, and runs the Outreach Committee.
	Omar Said saido@uci.edu	
<i>Activities Coordinators</i>	Sam Rostami srostam1@uci.edu	Organizes all socials and activities to increase member engagement.
	Akshay Gharpure gharpura@uci.edu	
<i>Mentorship Coordinators</i>	Rebecca Mendoza rebeccm4@uci.edu	Runs the Mentorship program and manages all mentorship related events
	Shlok Bansal ssbansal@uci.edu	
<i>Publicity Chair</i>	Christine Linh Nguyen chrisln5@uci.edu	Manages all social media accounts and advertises all club events.
<i>Graphic Design Coordinator</i>	Jasmine Dang jydang@uci.edu	Designs BMES merchandise and. creates all flyers for events.
<i>Project Coordinators</i>	Aryan Agarwal aryana2@uci.edu	Plans and organizes projects, workshops, and submissions for the National BMES Student Design Competition.
	Edwina Hau haue@uci.edu	

I.3 Membership Breakdown

BMES at UCI membership is open to undergraduate and graduate students of all majors and backgrounds. Communication with and amongst members occurs through email and on a BMES Discord Server. For the 2020-2021 academic year, three membership options were available for members in order to best meet the needs of each different member. The free General Membership option allowed access to most general meetings and events and subscriptions to weekly emails. The \$10 Base Membership option granted the same benefits as the general option as well as admission to our two largest events: the Annual Industry Night and the Research Symposium. Additionally, those with the Base Membership were given 2 free BMES stickers and access to the Mentorship Program. The Project Membership option encompassed the same benefits given with the General and Base options as well as participation in the BMES

mini-projects in which materials were individually shipped to each member. The cost of Project Membership was \$25 to help pay for these materials and \$5 was returned upon successful completion at the end of the quarter. Shown below is the breakdown of members who signed up for each membership option out of our total 152 members.

Count of Membership Type

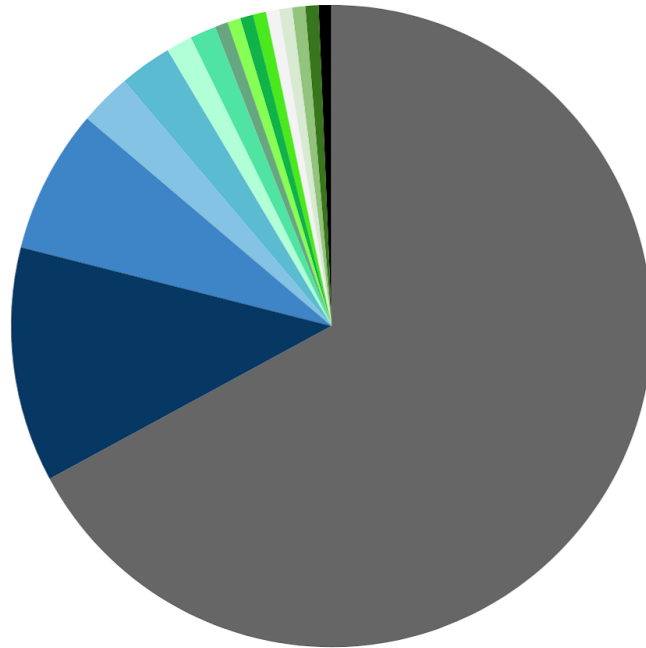


Diversity

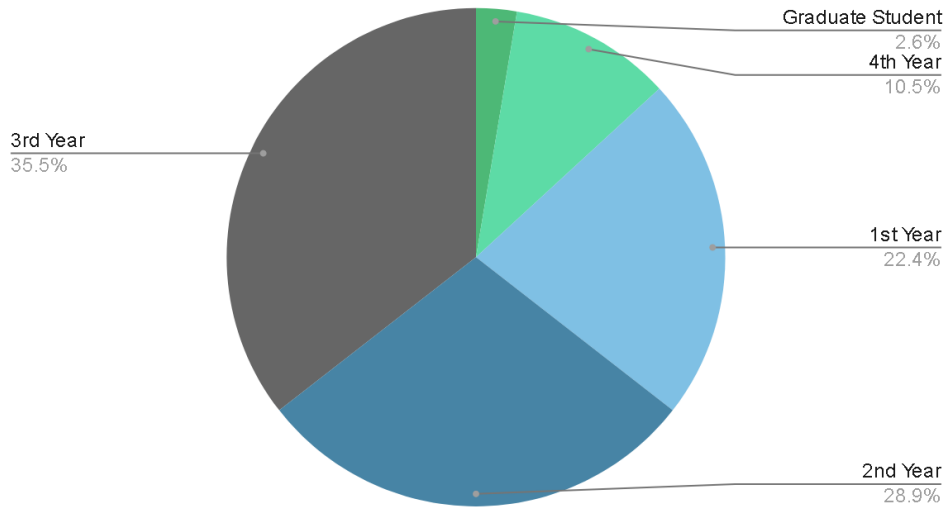
Compared to previous years, our membership not only increased, but the distribution of majors and years also increased as we were able to reach a broader audience of the UCI community. Shown below is a figure of which majors our members are pursuing, and their school years. BMES at UCI has always had a spread of upperclassmen and underclassmen, but this year in particular, we gained members from a larger variety of majors and even graduate students. We believe that the virtual setting, along with the revamping of our Project and Mentorship Programs contributed significantly to this uptake of members from outside both biomedical engineering and engineering in general.

Count of Major

- BME
- BME: Premed
- Mechanical Engineering
- Chemical Engineering
- Electrical Engineering
- Undeclared
- Computer Engineering
- Environmental Engineering
- Quantitative Economics
- Mathematics
- Computer Science and Engineering
- Materials Science and Engineering
- Biological Sciences
- Biology
- Software Engineering
- Neurobiology



Year at UCI



Member Retention

Our greatest challenge as a chapter is member retention. Last year, our member engagement dropped drastically, in part because of the COVID-19 pandemic. In order to maintain member engagement over the duration of the entire year and after graduation, we have implemented a monthly newsletter that summarizes BMES at UCI events and opportunities. Additionally, we include internship, job, and workshop opportunities for both current students and alumni. Our

chapter has also implemented a point system in which members can earn points for attending events, engaging in project or mentorship programs, and getting involved in the community. At the end of each quarter, members with 80% of the possible points are entered into an end-of-the-quarter raffle for a \$15 gift card. At the end of each quarter, our members have the opportunity to nominate other members for BMES at UCI Member of the Month. Based on these nominations, one individual is named the Member of the Month and earns two free BMES at UCI stickers. At the end of the year, our members vote on the Member of the Year out of the pool of Members of the Month. All of these initiatives encourage member engagement while in the remote setting and provide an avenue to give members extra excitement.

National BMES Members June 2020-June 2021

Name	Position	National Member ID
Aleen Meldosian	Project Member	4022867
Aryan Agarwal	Project Coordinator/Member	4022888
Angelique Espino	Fundraising Coordinator/Outreach Chair	4025140
Briana Peterson	Activities Coordinator	4025131
Edwina Hau	Project Coordinator/Member	4022921
Fiza Qureshi	Marketing Coordinator/Industry Correspondent	4025076
Francis Aguas	Project Coordinator/Member	4022250
Giselle Ho	Alumni Correspondent/Project Member	4022869
Isabelle Lam	Activities Coordinator/Secretary	4025051
Justin Sadownick	President	4016663
Kamalesh Ananthakrishnan	Industry Correspondent/Project Member	4022461
Karan Sharma	Project Member	4022920
Kevin Yang	Project Member	4022872

Lily McGrale	Secretary	4022265
Norma Damian Vilchez	National BMES Correspondent	4023095
Nery Arevalos	Project Member	4022916
Rahul Sreedasyam	Project Member	4022901
Ruben Shakya	Industry Correspondent/Project Member	4022919
Rucha Bhise	Project Member	4022914
Sarah Nassery	Project Member	4022922
Udit Iyengar	Project Member	4022913

I.4 Chapter Meeting Dates and Agendas

Board meetings are held on a weekly basis throughout each quarter to plan for events and other club affairs. During the summer, board meetings occurred on a biweekly basis.

Summer 2020 Board Meetings

Date	Agenda
06/21/20	Feedback for the 2019-2020 Academic Year, Outline of Summer and Academic Year Logistics, National BMES -Medtronic Design Competition Debrief
07/05/20	Black Lives Matter Fundraiser
07/19/20	Planning National BMES Meeting Attendance, Updating Mission Statement, Merchandise Designs, and Shop
08/02/20	Outline Fall Quarter Plans
08/16/20	Website Updates, Mentorship Program Planning, National BMES Meeting Attendance Planning
08/30/20	Finalize Fall Quarter Events, Discuss BMES at UCI Coloring Book, Anteatr Involvement Fair Booth Planning
09/06/20	Membership System Finalization
09/13/20	Finalized Research Symposium and Krispy Kreme Fundraiser

09/27/20	Professor Interviews for the Jr. BME Program, Fall Projects
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Fall 2020 Board Meetings

Date	Agenda
10/03/20	BMES Welcome Night, BMEet And Greet, Meet the Board Video
10/10/20	Finalize Illumina Company Talk, Discussed Halloween Fashion Show, Dispatched Membership Stickers
10/17/20	Membership Applications, Applied Medical Company Tour
10/24/20	Sending Out Project Materials, Planning #Dare2Donate Fundraiser
11/31/20	Began Planning Winter Quarter Events
11/07/20	Finalize Fireside Chat Event, Organized KGI Virtual Tour, Jr. BME Event Waiver Finalization
11/14/20	Finalized #Dare2Donate fundraiser, Began Planning the Medical School Panel
11/21/20	Applying for Winter Quarter Funding, Winter Events Planning
11/28/20	Organize the End of Fall Quarter Project Presentations
12/05/20	Industry Night Planning, Winter Quarter Fundraisers

Winter 2021 Board Meetings

Date	Agenda
01/06/21	Trivia Night Finalization, Finalizing Pre-Industry Night Workshop, Review Industry Night Virtual Platforms
01/13/21	Industry Night Logistics
01/20/21	Valentine's Day "Valgrams" Fundraiser Planning and Discuss Outreach Event
01/27/21	Letter Writing Event and Medical School Panel Finalizing
02/03/21	Black History Month Fundraiser Planning
02/10/21	Senior Design Colloquium Planning
02/17/21	Planning the First Jr. BME Live Zoom event for High School Students

02/24/21	Spring Quarter Event Planning
03/01/21	Board Applications, BMES 2020-2021 Plans and Goals (<i>Executive Board</i>)
03/02/21	New Executive Board Goal 2021-2022 Term Goals
03/09/21	Spring Quarter Planning (<i>Executive Board</i>)

Spring 2021 Board Meetings

Date	Agenda
04/06/21	Goals for the Quarter, Planning the BMEet and Greet Event
04/17/21	Planning the “How to Have a Good Summer” Event, Finalizing the “How to Make the Most of Your First Year in College” Live Zoom Event
04/20/21	ZotCorps Video Planning, Designing Senior Stoles, Planning Mentorship Events
04/27/21	“Psych!” Social, CenSyn Company Talk, and Murder Mystery Social Planning
05/08/21	Organizing Nihon Kohden Company Talk, Finalized Project Events for the Quarter, Finalized Cancer Fundraiser
05/15/21	Finalized Grad School Panel
05/25/21	Project Symposium Planning, Finalize Mentorship Program conclusion

General meetings are held every week for each quarter and vary from panelist events, socials, speaker events, company talks, and more. Weekly board meetings are held concurrently to prepare for all such events and programs. An example board meeting agenda is linked [here](#). Outside of general meetings, the Mentorship and Project Programs each host individual meetings on a regular basis throughout each quarter. Listed below are all the events held for each quarter (White = General, Red = Mentorship, Blue = Project).

Fall 2020 Programs and General Member Events

Date	Events	Agenda
09/28/20 - 10/10/20	Krispy Kreme Fundraiser	Board members sold Krispy Kreme vouchers using social media to raise money for BMES at UCI
10/08/20	BMES at UCI Welcome Night	Intro, ice breaker, activity
10/15/20	BMEet and Greet	Ice breaker activity, networking in breakout rooms

10/19/20	Temperature Sensor Workshop	Fundamental concepts and guidelines for the temperature sensor project
10/21/20	Pulse Oximeter Workshop	Fundamental concepts and guidelines for oximeter project project
10/21/20	Mentorship M&M Mixer	Introductions, icebreaker, speed mingling activity
10/22/20	Illumina Company Talk	Company representatives gave a presentation followed by Q&A from the audience
10/26/20	Pressure Sensor and Electrodermal Detector Workshop	Fundamental concepts and guidelines for the pressure sensor and electrodermal detector projects
10/28/20	Hearing Aid Workshop	Fundamental concepts and guidelines for hearing aid project
10/29/20	Halloween Fashion Show	Members showcased Halloween costumes to a panel of professor judges
10/30/20	Student Mentor Info Night	Updates, Brainstorming Activity
11/02/20	Project Office Hours	Open office hours for all project teams
11/04/20	MicroVention Information Session	Company representatives gave a presentation followed by Q&A from the audience
11/04/20	Mentorship Reveal	Icebreaker, Reveal Activity, Scavenger Hunt
11/05/20	Research Symposium	UCI Professors and Graduate students shared research projects
11/12/20	Undergraduate Fireside Chat	Mingling between members in breakout rooms
	Project Progress Check	Project Coordinators checked in on teams' progress
11/16/20	Project Office Hours	Open office hours for all project teams
11/18/20	Mentorship Escape Room Social	Icebreaker, Introduction, Escape Room Activity
11/19/20	KGI Virtual Tour	Company representative shared information about KGI and showed a virtual tour of the facility
11/23/20	Project Progress Check	Project Coordinators checked in on teams' progress

11/24/20	Thanksgiving Arts & Crafts Social	Members made Thanksgiving-themed origami
11/29/20 - 12/05/20	#Dare2Donate Fundraiser	Board members performed dares on social media to raise money for BMES at UCI
12/10/20	Project Demo Day and Final Presentation	Presentations of each team's project functionality, impact, and future plans
	Study Hours	Breakout rooms for studying and playing games

Winter 2021 Programs and General Member Events

Date	Events	Agenda
01/05/21	Bob Ross Paint Night	Members followed a painting tutorial together
01/07/21	National BMES Competition Kickoff	Student Design Competition was introduced
01/12/21	Trivia Night Collaboration	Game of Kahoot between UCLA, UCSD, and UCI chapters of BMES
01/14/21	Ideation Activity I	Open brainstorming discussion and Patently Stupid Jackbox Game
01/15/21	Undergraduate Mentors College Tips & Tricks Workshop	Introduction, Presentation, Q&A
01/19/21	Pre-Industry Night Workshop	Resume and Interview Tips
01/22/21	Ideation Activity II	Shark Tank-style brainstorming activity
01/22/21	Mentorship Game Night	Introduction, Games
01/27/21	Industry Night	Companies held virtual one-on-one sessions with members
01/28/21	Feedback and Pitch Requirements	Project members shared ideas for projects
02/01/21 - 02/05/21	Valentine's Day "Valgrams" Fundraiser	Board members made cards, memes, and poems to raise money for BMES at UCI
02/04/21	Project Pitches	Project members shared project ideas with groups
02/09/21	Letter Writing Outreach Event	Writing letters to the elderly for the first half of the meeting and writing letters for frontline workers during the second half

	Mentorship Post-Grad Panel	Introduction, Q&A
02/11/21	Potential Market and Impact Workshop	Project members learn how to conduct market research, determine a sales price, evaluate value, and compare distribution channels for their product
02/16/21	Medical School Panel with American Medical Student Association (AMSA)	Q&A with a panel of medical students
02/19/21	Mentorship Movie Night	Movie
02/21/21 - 03/07/21	Black History Month Fundraiser	Board members posted informational posts about Black History Month on social media and gathered donations for Black Girls CODE
02/23/21	Black History Month Social with National Society of Black Engineers (NSBE)	Game night with NSBE playing Among Us in breakout rooms
02/25/21	Engineering Design Workshop	Project members learn differences between design criteria and constraints as well as different resources for prototyping.
03/01/21	Jr. BME Workshop: You've Been Admitted, Now What?	Q&A with a panel of UCI students followed by a raffle
03/02/21	Senior Design Colloquium	How to prepare for Senior Capstone Project and advice from current and graduated Seniors
03/04/21	Solidworks Workshop	Live demo of making a basic and advanced Solidworks part
03/05/21	Mentorship Game Night	Introduction, Games
03/09/21	Study Hours	Breakout rooms for studying and playing games
03/11/21	Project Progress Check	Project Coordinators checked in on teams' progress

Spring 2021 Programs and General Member Events

Date	Events	Agenda
04/01/21	Progress Check Feedback	Feedback was given to each project team
04/08/21	BMEet and Greet	Meet the new BMES Board and play Kahoot

04/10/21	Patent Research Workshop	Project members learn how to research the USPTO site and extract information from patent applications
04/12/21	Jr. BME Workshop: How to Make the Most of Your First Year in College	Q&A with a panel of UCI students followed by a raffle
04/15/21	How to HAGS Workshop (Emails, Resume, Professional Opportunities)	Resume, professional email, and other tips
04/17/21	Customer Discovery Workshop	Project members learn how to determine the impact of their product by interviewing customers using hypothesis testing.
04/22/21	Study Hours	Breakout rooms for studying and playing games
04/24/21	FDA Regulatory Pathways, Industry Standards, Estimated Manufacturing Costs Workshop	Project members learn the different aspects of FDA regulatory pathways, industry standards, and determining manufacturing costs
04/29/21	“Psych!” Social	Play three rounds of the Psych application as a group
05/06/21	CenSyn Company Talk	UCI-based startup company share their story
	Prototyping Design Workshop	Project members are exposed to more complex resources for prototyping and learn how to do proof of concept testing.
05/10/21	Murder Mystery Social Collaboration with the Society of Women Engineers (SWE)	Murder mystery game
05/12/21	PSC Biotech Company Talk	Company representatives gave a presentation followed by Q&A from the audience
05/15/21	Customer Discovery Updates	Project teams present their findings from customer discovery.
05/18/21	Mentorship Jeopardy	Introduction, Jeopardy
05/20/21	Nihon Kohden Company Talk	Company representatives gave a presentation followed by Q&A from the audience
05/22/21	Writing Your Proposal	Project workshop for National BMES proposals
05/24/21	Jr. BME Workshop: How to Prepare for the College Application Process	Twenty-minute presentation on the college application process followed by live Q&A with a panel of UCI students

		of various majors and a raffle
05/27/21	Grad School Panel	Graduate students answer questions about applications and graduate programs
05/10/21 - 6/02/21	Cancer Research Fundraiser	Held a raffle for a 3D printer and other prizes to raise money for the Uzair Qureshi Memorial Fund
06/03/21	Project Symposium	Project teams showcase their ideas
06/04/21	Mentorship Banquet	Mentorship awards announced

I.5 Affiliations

Although BMES at UCI operates autonomously, the chapter does receive support from several organizations within UC Irvine. All affiliations are official in designation and firmly established for the foreseeable future.

1. Associated Students of UCI (ASUCI)

ASUCI is the largest student-run governing body at UCI and coordinates with student organizations such as BMES at UCI to improve the student experience at the institution. We receive funding from ASUCI on a periodic basis and have a checking account with them where we store some of our funds.

2. Engineering Student Council (ESC)

ESC is a completely student-run organization formed by the combined efforts of all the registered Engineering Student Organizations (ESOs) associated with the Henry Samueli School of Engineering at UCI. BMES at UCI is one of the many ESOs that works within ESC with the aim of furthering the impact made by UCI engineering students and for UCI engineering students. We receive funding from ESC on a quarterly basis, and the Chapter President attends ESC Presidents Council meetings on a monthly basis.

3. Department of Biomedical Engineering at UCI

The Department of Biomedical Engineering (BME) at UCI has remained steadfast with the support of BMES at UCI since its inception many years ago. Through the department, staff has participated and been involved in a variety of events as part of a shared effort to educate people about biomedical engineering. As of late, the Department of BME at UCI has been working with BMES at UCI to increase the involvement and presence of UCI students at keystone venues such as the National BMES Annual Meeting.

4. UCI Student Alumni Association (UCISAA)

BMES at UCI is affiliated with the UCI Student Alumni Association to build and leverage our alumni network to support the professional development of our members

and maintain the BMES at UCI family after members have graduated. Our chapter attends quarterly workshops to discuss how to connect with alumni, maintain alumni relationships, and promote the engagement of alumni in our events. UCISAA hosts a quarterly affiliate challenge where student organizations can accumulate points for the quarter through alumni engagement events. BMES at UCI won third place for the Fall 2020 Quarter and first place for the Winter 2021 Quarter.

5. UCI Division of Career Pathways (DCP)

As part of our commitment to promote the professional development of chapter members, BMES at UCI has been a registered UCI DCP Affiliate. As an affiliate, BMES at UCI has received guidance and resources from DCP that we have directed members towards in exchange for advertising UCI DCP events and providing feedback to better the division as a whole. Resources provided by DCP include resume feedback, mock interviews, and access to professional seminars.

II. Treasury Report

II.1 Abstract

The Treasurer of BMES at UCI is in charge of all financial operations and accounts. The responsibilities of the Treasurer have included managing chapter expenditures and earnings, organizing fundraising ventures, and working with external entities to obtain funding. The primary means of financial income are membership fees, institutional grants, and fundraising. Membership fees were collected during the Fall Term, with tiers offered at different price points starting from \$0. Every quarter, BMES at UCI has conducted at least one fundraiser with proceeds going towards club activities and charitable donations. Large-scale events such as our annual Industry Night have helped fundraise beyond dedicated fundraisers as well. To minimize the expenses that would be funded by members, BMES at UCI received a substantial amount of funding support from partner groups. The UC Irvine Department of Biomedical Engineering, Engineering Student Council (ESC), and the Associated Students of UC Irvine (ASUCI) have provided support on both a periodic and rolling basis. The information conveyed by this treasury report covers the fiscal year between the recent and upcoming CDR submission deadline.

II.2 Chapter Balance Sheet Summary

Financial information within this CDR pertains to transactions between June 2020 to June 2021. The summary of BMES at UCI financials is as follows:

	Summer 2020	Fall 2020	Winter 2021	Spring 2021
Initial Balance	\$4951.71	\$4701.71	\$5898.65	\$6759.48
Revenue	\$630.00	\$4685.98	\$1232.00	\$1454.00
Expenses	\$880.00	\$3489.04	\$465.17	\$2189.00
Final Balance	\$4701.71	\$5898.65	\$6759.48	\$6024.48

***Spring 2021 quantities are as of 5/30/2021 and may be subject to change*

Chapter Revenue Streams

Relative to past years, a smaller share of our revenue was from student membership fees due to cost reductions that even included a free offering. This was done to avoid adding additional financial pressure on students during an unprecedented time period where there already was plenty of hardships for students. To compensate, BMES at UCI undertook a significant effort to draw revenue from a variety of sources to ensure that our ventures were adequately funded without diminishing the quality of member experiences.

Sources	Amount
Membership Fees	\$2695.00
Engineering Student Council	\$2350.00
UCI Department of Biomedical Engineering	\$1500.00
UCI Student Alumni Association	\$450.00
Industry Night Nonmember Admission Fees	\$135.00
Krispy Kreme Fundraiser	\$240.00
#Dare2Donate Fundraiser	\$620.00
“Valgrams” Fundraiser	\$177.00
Merchandise (Stickers, Graduation Stoles, etc.)	\$403.00
Cancer Research Raffle Fundraiser	\$534.00

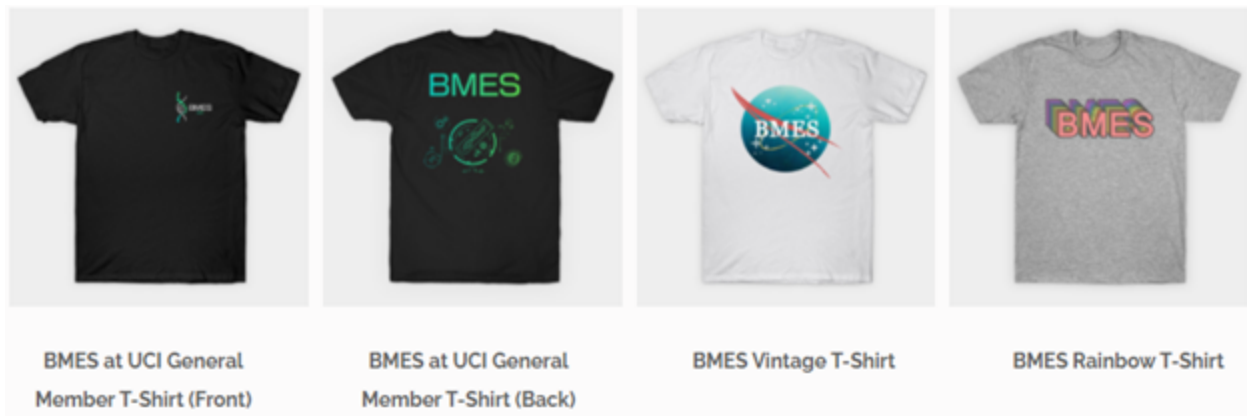
Expenses













BMES at UCI has always been a staunch supporter of social activism and helping out the community. To affirm our commitment to such causes, the chapter has made a significant financial investment to help a variety of organizations.

Event/Items	Amount
NAACP LDF and EJI Fundraiser Donations	\$1260.00
BMES Fall Mini-Projects	\$2170.78
Black Girls CODE Fundraiser Donations	\$548.00
Justice LA and Okra Project Donations	\$55.00
National BMES Memberships Reimbursements	\$420.00
2020 National BMES Annual Meeting Admission	\$1500.00
Mentorship Program	\$470.00
Cancer Research Raffle Fundraiser Prizes/Donation	\$230.00

Merchandise Store

In the summer of 2020, BMES at UCI started a merchandise store on TeePublic selling T-shirts of various designs. We also began designing and selling stickers online on our BMES at UCI website. Currently, there are 12 designs available on our website, along with seasonal stickers for holidays such as our Cupid Anteater for Valentine's Day. Payments towards the Pride Flag Anteater and BLM Shirt Anteater stickers will be donated to The Okra Project and JusticeLA respectively.



			
2020-2021 BMES at UCI Logo (Included in the Base & Project Membership) (1.7in x 1.7in)	Cupid Anteater SEASONAL Order by 2/6 to receive it by 2/14! (2in x 1.5in)	Snowman Anteater SEASONAL (2in x 1.3in)	ATLA Zuko Anteater NEW! (2in x 1.75in)
			
Pride Flag Anteater (2in x 1.6in)	BMES Shirt Anteater (Included in the Base & Project Membership) (2in x 1.25in)	Labcoat Anteater (2in x 1.25in)	BLM Shirt Anteater (2in x 1.25in)
			
Demon Slayer Nezuko Anteater (1.6in x 1.5in)	Cactus Anteater (2in x 1.45in)	Art Anteater (2in x 1.25in)	Demon Slayer Tanjirou Anteater (2in x 1.25in)

Future Financial Goals

Even while being completely virtual and limited with opportunities for funding accordingly, BMES at UCI was still able to finance numerous impactful ventures both within and beyond the organization. Nevertheless, BMES at UCI aims to increase its sphere of influence with professional engagement from a financial standpoint. One way we intend to do this is by working more closely with the Department of Biomedical Engineering at UCI. Although BMES at UCI has reached out to the department in the past, there has not been any extensive coordination of any sort. With the upcoming academic year, we will foster a more active relationship with staff and leverage such a relationship to obtain additional funding. Additionally, BMES at UCI aims to host more expansive fundraisers that would be intended to reach a wider audience than we

have over the past academic year. This would be done to address fundraiser fatigue that became increasingly apparent as the school year progressed. Lastly, BMES at UCI will invest more towards outreach service efforts as part of our continued commitment to positively impact the greater community.

III. Chapter Activities

III.1 Abstract

BMES at UCI hosts a variety of activities including networking and professional development events, outreach events, mentorship events, technical skills and entrepreneurship workshops, and hands-on projects. Our chapter's events are divided into general membership events, Mentorship Program events, Project Program events, and our Jr. BME program events. We host our general member meetings weekly, typically having activities focused around industry, outreach, or socials. Our chapter has found it imperative to provide our members with the opportunity to grow both professionally and personally to better prepare them for their future. The importance of such support has become quite apparent with the shift to a virtual remote environment due to the COVID-19 pandemic. By being remote, accessibility to resources has been harder to come by for many students and has added undue stress as a result. BMES at UCI has risen to the occasion to support its members and surrounding communities in whatever means possible.

IV. Social or Other Activities

IV.1 Abstract

Through our social events, we aim to create a positive and welcoming environment for both new and returning members. Ranging from game nights to arts-and-craft activities, these socials were scheduled intermittently throughout each quarter, allowing students an opportunity to take a break from their academic life and enjoy the company of friends. This year, we chose it as our challenge to make the events as engaging and interactive as possible despite being held virtually. When possible, prizes were provided as an extra treat for members. For socials, we also aimed to extend the reach of our club beyond our own members by collaborating with other clubs when organizing and co-hosting these events. This provided an opportunity for networking with engineers outside of biomedical engineering.

IV.2 Socials



Welcome to BMES

In this event, the board members were introduced and the programs of BMES were showcased. The rest of the time was dedicated to creating a friendly virtual environment where the members could get to know each other through social games such as Hot Potato Fav Color and Zoom Shapes Make.

Date:	Attendance:	Cost:
October 8th, 2020 8-9 PM	132	\$0



BMEet and Greet

The second week of general member activities was the BMEet and Greet where all of the members had an opportunity to meet other members and get to know each other through speed round group conversations. The groups were made through Zoom and arranged to encourage new friendships and new encounters. After a small icebreaker called Commonalities Compete where members compete in groups for the longest list of commonalities, the groups were prompted with questions to answer together and encouraged to start conversations.

Date:	Attendance:	Cost:
October 15th, 2020 8-9 PM	72	\$0



Halloween Fall Fashion Show

In the spirit of Halloween, about 20 participants came together to showcase their individual or team costumes through Zoom to compete for a total of \$50 Amazon gift cards. The participants had about 5 minutes each to present their costumes with music, slides, and fun fashion walks. With a total of 4 categories (Horror, Characters, Puns/Memes/Misc, and Teams), the judging panelists consisting of three guest professors chose their favorite showcases of each category and presented their reasoning. However, the audience of 60 students had the final say about their favorite costumes of the night.

Date:	Attendance:	Cost:
October 29th, 2020 8-9 PM	Undergraduate Students: 60 UCI Professors: 3	\$50



Bob Ross Paint Night

Showing off each other's artistic skill, the members of BMES at UCI bonded through following a Bob Ross paint tutorial. The event started off with an icebreaker riddle and was followed by the painting time. At the end of the event, all of the members had an opportunity to share how they did.

Date:	Attendance:	Cost:
January 5th, 2021 8-9 PM	18	\$0



Social With NSBE at UCI

The National Society of Black Engineers (NSBE) at UCI and BMES at UCI came together for a gaming social to build relationships with other engineering clubs. During this social, groups were organized based on the games that members were interested in joining such as JackBox, Scribble.io, and Card games after all of the members had bonded through a few rounds of Zoom Shapes Make.

Date:	Attendance:	Cost:
February 26th, 2021 8-9 PM	18	\$0



BMEet and Greet

For the beginning social event of the Spring 2021 Quarter, BMES hosted a meet and greet where the members were introduced to the newly accepted board members. The event began with each board member introducing themselves and letting everyone know a bit about themselves. The members were then divided into breakout rooms in order for the members to get to know the board members better. After regrouping the breakout rooms, the event then continued with a game of Kahoot that listed fun facts about each of the new board members, where the participants had to then guess who the given fun fact belonged to.

Date:	Attendance:	Cost:
April 8th, 2021 7:30-8:30 PM	18	\$0



Psych Social

During this event, members of BMES downloaded the app “Psych!” from the App Store to participate in the social event. For each round, one random question was created about one of the participants and other members then created a false answer to try to deceive others into voting for theirs. Each member was then presented with a pool of all created answers and was asked to pick the correct answer in order to earn points. At the end of the night, the person with the largest amount of points was deemed the winner.

Date:	Attendance:	Cost:
April 29th, 2021 7:30-8:30 PM	18	\$0



Murder Mystery Social Collaboration with the Society of Women Engineers at UCI

In collaboration with the Society of Women Engineers (SWE), BMES at UCI planned and hosted a murder mystery social where members of each organization helped reenact and solve a murder case. With 19 people in attendance, the participants were divided into 8 primary characters and 11 investigator roles with the SWE’s social chair being the host of the event. The characters then took turns reading their dialogue and reenacting the storyline for each of the three rounds while the investigators asked questions in an attempt to find out who the murderer was. At the end of the three rounds, each character then took turns voting on the murderer’s identity. After all of the votes were counted for, the host revealed the murderer and the participants spent the rest of the event socializing.

Date:	Attendance:	Cost:
May 10th, 2021 6-7 PM	19	\$0

V. Inter-Chapter Activities

V.1 Abstract

Over the last year, hosting events remotely during the COVID-19 pandemic allowed more frequent collaboration between BMES student chapters than ever before. Before the pandemic, we hosted little collaboration events with other chapters as traveling amongst classes is difficult. However, there are no obstacles preventing our members or members of other chapters from joining events through online platforms such as Zoom. BMES at UCI invited other BMES chapters including BMES at UCLA and BMES at UCSD to most of our socials and guest speaker events. Our chapter also hosted events specifically for the inter-chapter mingling including the Thanksgiving Arts and Crafts social and the Trivia Night. Our chapter members were also invited to events hosted by the UCLA chapter as well. The relationships developed with other BMES chapters over the last year has allowed the exchanging of ideas for remote events, provided our chapter board members new perspectives about how to structure and run our chapter, and has given our members the opportunity to meet students from other schools, backgrounds, and interests.

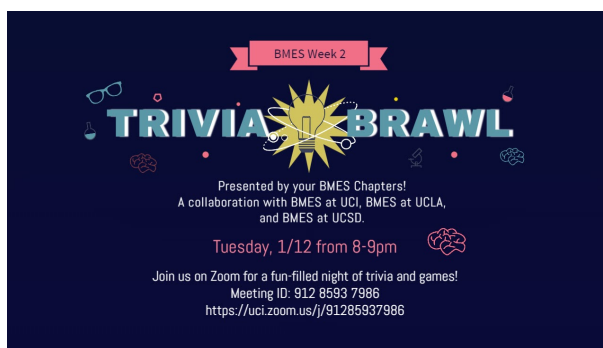
V.2 Collaboration Events Hosted by BMES at UCI



UCI Thanksgiving Arts & Crafts

In this social, attendees made origami leaves and pumpkins for the Thanksgiving holiday. The BMES at UCLA chapter was invited and the event was a fun way to network between chapters.

Date:	Attendance:	Cost:
November 24th, 2020 8-9 PM	UCI Chapter: 25 UCLA Chapter: 2	\$0



UCI x UCLA x UCSD Trivia Night

The BMES chapters at UCI, UCLA, and UCSD planned a Trivia Night social. During the event, members from all three chapters socialized as they were put into random teams and challenged with trivia questions. Towards the end of the event, there was an individual person trivia portion, which was a competition between the chapters.

Date:	Attendance:	Cost:
January 12th, 2021 8-9 PM	UCI Chapter: 22 UCSD Chapter: 6 UCLA Chapter: 13	\$0

V.3 Collaboration Events Attended by BMES at UCI Members

UCLA Women in Bioengineering Panel

December 1st, 2020 from 6:30-7:30 PM

The BMES at UCLA chapter invited us to a Women in Bioengineering Panel. The panel consisted of women who study and work in various fields of bioengineering. The panelists provided insight on their undergraduate experiences, their decisions to enter graduate school or industry, and the challenges they faced as women throughout their careers.

UCLA Career Paths and Development Panel

January 14th, 2021 from 5:25-8:15 PM

The BMES at UCLA chapter invited us to a Career Paths and Development Panel. In this event, a variety of panelists in industry, academia, medicine, and law presented their career journeys. Attendees were able to ask the panelists questions ranging from undergraduate research experiences and application processes to career goals. The event provided a great opportunity to network with professionals in multiple different careers.

UCLA Underrepresented Racial Minorities in Bioengineering Panel

March 9th, 2021 from 5-6 PM PST

The BMES at UCLA chapter invited us to an “Underrepresented Racial Minorities in Bioengineering” Panel. The panelists included racial minorities with various backgrounds in

academia and industry. The panelists provided their experiences during their undergraduate education, their career paths, and the challenges they faced.

VI. Outreach

VI.1 Abstract

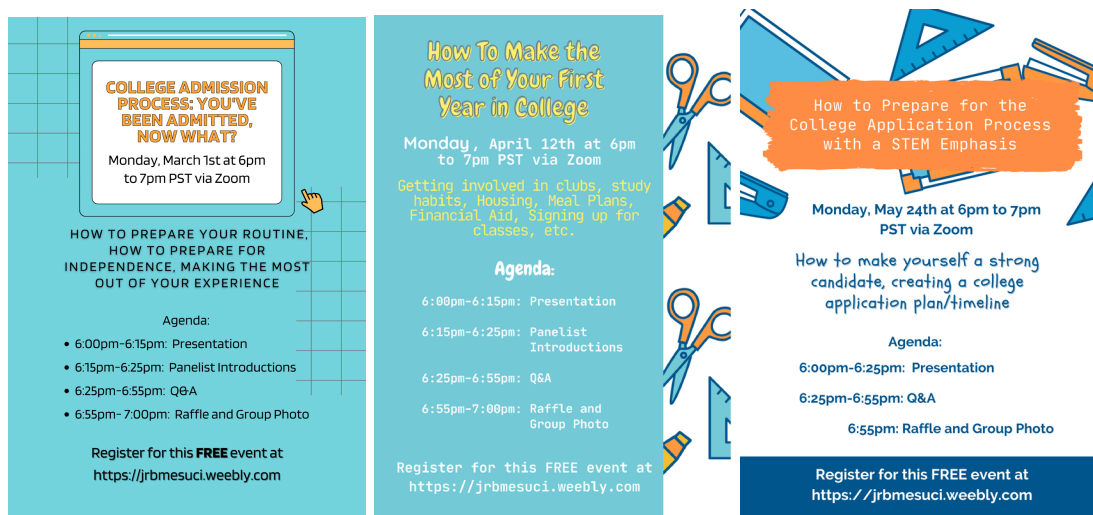
This year, BMES at UCI expanded our impact beyond our general members through our Jr. BME program and community involvement activities. COVID-19 highlighted the importance of community involvement, even in a remote environment. Our outreach events and activities were designed so that our members in locations across the globe could be involved. Our Letter Writing Event is one example where members had the opportunity to collaborate with one another to have a positive impact on the community. Together, we wrote letters to frontline workers to show support and to the elderly in care centers to provide them with some company during these hard times. We also recognized the obstacles COVID-19 created for high school seniors when applying to or choosing a college with most college tours canceled. In September of 2020, BMES at UCI established the Jr. BME outreach program, which includes a series of live zoom events and an online platform that hosts resources for high school students to learn about Biomedical Engineering and the college application process. This year we also took an initiative to use our online platforms to spread awareness and fundraise for things such as COVID-19 and racial justice. We have hosted a series of virtual fundraisers to show our support to various organizations including Equal Justice Initiative, Black Girls Code, UCI Medical Center, and many more.

VI.2 Jr. BME Program

In September of 2020, BMES at UCI launched our Jr. BME Program designed to be a resource for students interested in Biomedical Engineering, STEM, or college in general. The [Jr. BME website \(hyperlinked here\)](#) includes videos about Biomedical Engineering, recorded interviews of UC Irvine Biomedical Engineering Professors and students, and engineering projects for students to have the opportunity to gain hands-on experience from home.

This Spring, we launched our virtual panel series where high school students could have the opportunity to ask current college students questions about choosing a school/major, how to apply to college, financial aid, or college life in general. Our first of three events was centered around the theme "You've Been Admitted: Now What?" to help accepted students navigate the admissions process and how to prepare for their first year of college. Our second event, "How to Make the Most of Your First Year in College", dove into advice current college students wished they heard themselves as freshmen. And finally, our third event, "How to Prepare for the College Application Process", introduced students to the college application process and financial aid application process while also providing resources such as a google sheets template for organizing applications. This event also had a diverse set of panelists of four different majors

including Biomedical Engineering, Biology, Business Economics, and Psychology. At the end of each event, we raffled off a \$20 Amazon gift card to provide a random attendee with a little extra happiness.



Event:	Date:	Attendance:	Cost:
College Admission Process: You've Been Admitted, Now What?	March 1, 2021 6 – 7 PM	High School Students: 6 UCI Students: 15	\$20
How to Make the Most of Your First Year in College	April 12, 2021 6 – 7 PM	High School Students: 21 UCI Students: 12	\$20
How to Prepare for the College Application Process with a STEM Emphasis	May 24, 2021 6 – 7 PM	High School Students: 25 UCI Students: 10	\$20

VI.3 BMES at UCI Coloring and Activity Book

The 2020 BMES at UCI Coloring and Activity Book was designed to create a resource for elementary school students to learn about STEM in an engaging and artistic way while under COVID-19 at-home orders. We incorporated a combination of activities such as a crossword puzzle and word search and coloring pages while narrating with comments about what biomedical engineers do. Some high school and college students used the coloring book sections as a stress-reducing activity as well. Here is a link to the [BMES at UCI Coloring and Activities Book](#).

ENGINEER'S WORD SEARCH!

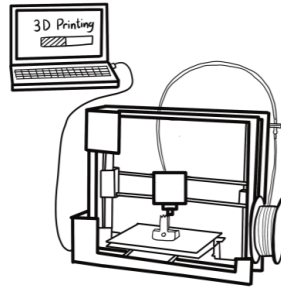
Hey there! Did you know that the word "engineer" comes from a Latin word meaning "cleverness"? Show off your smarts by finding all the words below! Good Luck!

A P X R A Y A Q Z P G O X B X
 Z U K X R L L I E T O B O R F
 Y G O L O N H C E T X M C L V
 K U E O X G I N U H K R F E A
 F J Z E P V G B K L Z M P U H
 R C J P E I X E J Y B E I F V
 E E K D N S S P I R C O O O O
 P N S E A W U O K Y U Z Y B M
 N A E A P E R C J C R O T W Z
 S R T R L S I S E D E S I G N
 V G A R G A V O F C Z E V E F
 O J O T L Y T R A D Y I A A L
 H N V I A F N C W O T W R R V
 A W R H V D B I Q G L U G R B
 P R E T E M O M R E H T R S J

Engineer	Data	Virus
Device	Cure	Xray
Robot	Laser	Technology
Design	Gear	Fuel
Microscope	Thermometer	
Gravity	Energy	

Page 2

Engineers often use 3-D printing to design prototypes when working on projects.



Page 3

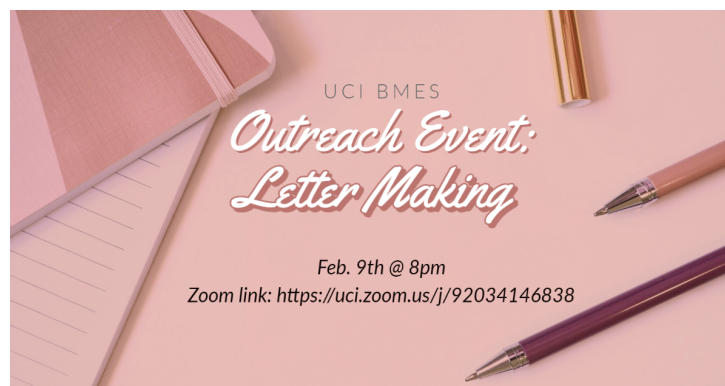


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VI.4 ZotCorp Videos

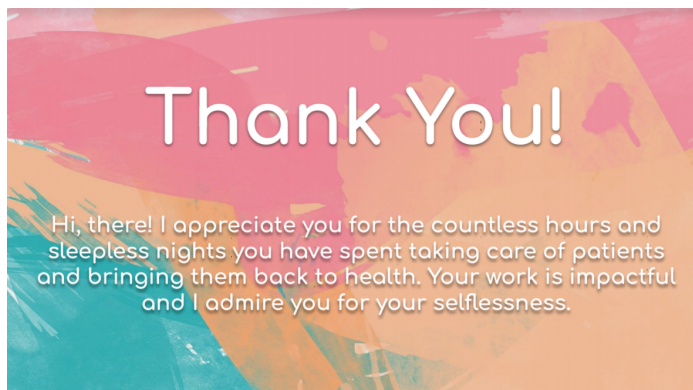
Beyond resources for learning about STEM and college, BMES at UCI recognizes the importance of fostering positive self-care habits and mental health, especially over the last year of the pandemic. We have participated in the ZotCorps Community Project, a collaboration between UCI Campus Organizations & Volunteer Programs and the Santa Ana Unified School District (SAUSD). This project encourages UCI Student organizations to help create videos to share with the students in the Santa Ana School District. The videos had to be related to the health & wellness in remote learning. We ended up creating three one-minute videos that targeted the following topics:

1. The Benefits of Getting a Full Night's Rest (8-10 hours)
2. How to Balance School, Work, and Social Life
3. Dealing With Body Image during a Pandemic

**VI.5 Letter Writing Event**

To show our support to healthcare workers and firefighters during the COVID-19 pandemic, BMES at UCI members wrote letters to show our appreciation and support to healthcare workers and firefighters. Each member wrote a letter to a chosen department in their own community and the BMES Board mailed each. For example, we had letters sent to the UCI Medical Center, to

the Simi Valley Fire Station, and to the St. Jude Medical Center ER and ICU staff. Additionally, each member wrote a letter to the elderly to provide some company to those who were still in isolation. These letters were delivered through Letters & Smiles, an organization launched by two students at Western University in London, Ontario, whose goal is to engage elders in meaningful activities such as conversation through letters. Through this organization, our letters were paired with a care package and sent personally to an elder in a senior home.



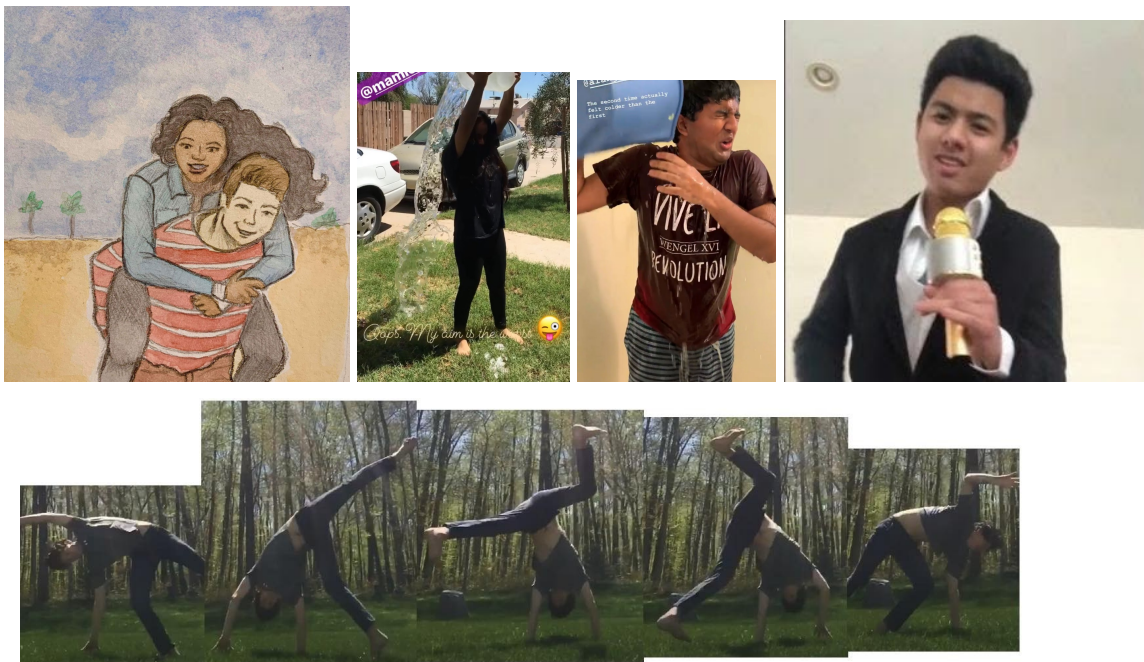
Event:	Date:	Letters Sent:	Cost:
Letter Writing Outreach Event	February 9th, 2021	26	\$0

VI.6 Fundraisers

VI.6.1 COVID-19 Social Media Bingo Fundraiser for UCI Medical Center

The pandemic was a sudden obstacle everyone faced in the early Spring of 2020, especially hospitals and healthcare workers alike. We as a club decided to do our part in helping our local health facilities by holding our first ever completely virtual fundraiser called “BMES Bingo” to

help raise money for UCI Medical Center who were asking for funds to help buy necessary PPE and lab equipment for testing. The approach we took was to make a bingo card of dares that our audience and our member’s audiences could pay for us to complete. For 5 days from May 11-15, 2020 our board members would post the bingo card on their choice of social media such as Instagram, Facebook, or Snapchat and collect funds from anyone who wanted to donate who would direct message that member and pay online. Once a purchase was complete, the member who received the order would complete the designated dare within the week of fundraising and post the result publicly on their social media. Our most popular dare was the “Ice Bucket Challenge” for \$5 with over 15 purchases across our members. Overall, we were able to raise **\$450** and donated 100% of it to the medical center. Due to the success of our COVID-19 virtual fundraiser, it was decided that the fundraising model we used would be our primary template for any upcoming fundraisers. Below are images of our members completing their tasks.



Event:	Date:	Donations:	Cost:	Total Amount Donated to Organization:
BMES at UCI Bingo Fundraiser for COVID-19	May 11, 2021 - May 15, 2021	\$450	\$0	\$450

VI.6.2 Black Lives Matter (BLM) Fundraiser for the Equal Justice Initiative (EJI) and National Association for the Advancement of Colored People Legal Defense Fund (NAACP LDF)

A few months after the major shutdown of the country and the pandemic panic slowly decreasing, another issue took the spotlight: racial injustice. This pushed us to want to help spread awareness in our next fundraiser called BMES for BLM which ran from July 6-10, 2020. Due to the serious subject matter, most logistics of the fundraiser remained the same as the previous except for the removal of the dares that could be purchased. All donations were simply collected with no dares in return. Another initiative we took to motivate donations was to match every \$100 we raised. Although the raising of money was a big goal, we also wanted to make sure that we were spreading useful information about racial injustices across the country to inform our audience about why we were raising money in the first place. The two organizations we chose to donate to were Equal Justice Initiative (EJI) and NAACP Legal Defense Fund (LDF) who are both actively working to make an impact in our communities to help eliminate racial injustice and we informed our audiences of their respective mission statements in a set of infographic flyers. Along with informing our audience of the organizations we were raising money for, each board member was also required to find reputable posts that discussed racism and discrimination or that empowered people of color and primarily black artists. Each day was designated a topic we wanted our social media posts to focus on:

- **Monday**

- Goal: Introduced EJI and NAACP LDF with their backgrounds and mission statements
- Example posts:





● **Tuesday**

- Goal: Discuss Black History in America
- Example posts: We reposted a popular post done by *Now This News* which reminded people just how long protests really lasted in the Civil Rights Era which many of our board members shared.



● **Wednesday**

- Goal: Promote art made by black artists (paintings, movies, music, etc.)
- Example post: This graphic is the first of a series of graphics made by Morgan Harper Nichols to raise awareness about Juneteenth.



- **Thursday**

- Goal: Discuss the history of white privilege
- Example Post: A talk done by Joy DeGruy from 2013



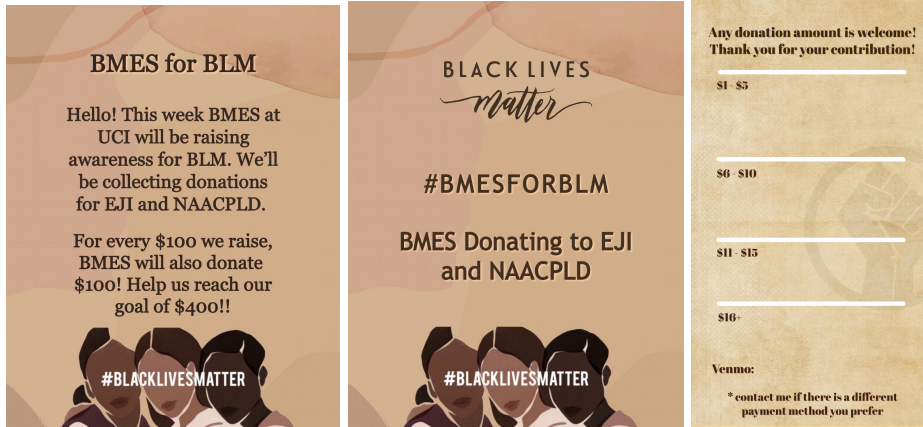
Source: <https://www.youtube.com/watch?v=GTvU7uUgjUI>

- **Friday**

- Goal: Promote black-owned businesses
- Example post: A local college student from CSULB named Jenelle Mendoza made a nice graphic of black-owned businesses which we gladly shared.



In the end, we raised \$660 from our audience and matched each \$100 out of pocket with help from the board members and our club funds for a grand total of **\$1260** raised. This amount was split in half and donated to each organization.



Event:	Date:	Donations:	Cost:	Total Amount Donated to Organization:
BMES at UCI for BLM	July 6, 2021 - July 10, 2021	\$660	BMES at UCI Donation Matching: \$200 Board Donation Matching: \$400	EJI: \$630 NAACP LDF: \$630

VI.6.3 Black History Month Fundraiser for Black Girls CODE

Once school started up again, we wanted to continue to raise money to help with racial injustices but this time with a focus on education. This spawned our next large fundraiser during Black History Month from February 22-27, 2021 for the organization Black Girls CODE who provides free workshops and classes to children in underserved communities to learn about computers and programming. This fundraiser held the same format as the last one with the added bonus of sending out special themed stickers to our donors. If someone donated at least \$1, they would receive our BLM Anteatr sticker and if they donated at least \$5, they would receive an additional bonus BLM sticker. Another slight change was that most of our awareness posts were aimed to be more education-driven by honoring black scientists and discussing Black History Month itself. Instead of having a topic to discuss each day, board members were free to choose from a list of topics and share at least 1-3 posts a day, just as they did in the previous fundraiser.

By the end of the fundraiser, we raised \$363 from our donors and we matched each \$100 once again for a grand total of **\$663**. All money raised and matched was donated to Black Girls CODE.



Event:	Date:	Donations:	Cost:	Total Amount Donated to Organization:
Black History Month Fundraiser	February 22, 2021 - February 27, 2021	\$363	BMES at UCI Donation Matching: \$200 Board Donation Matching: \$100	Black Girls CODE: \$663

VI.6.4 Pediatric Cancer Raffle Fundraiser

The final large fundraiser we have held this year was held from May 19-June 3, 2021, where we helped raise money for the Uzair Qureshi Memorial Fund who donates all proceeds towards pediatric cancer research. This fundraiser is a more personal event for one of our fellow board members and their family with whom we worked in collaboration. To stray away from our original virtual fundraising format, we decided to instead host a raffle that would help encourage old and new donors to participate. This fundraiser was advertised just as the previous ones on social media and raffle entries were tallied up and 5 random winners were chosen to win one of our 5 special prizes. The prizes included a 3D printer, a Disneyland ticket, a UCI sweatshirt, an Amazon Echo Dot, and a Krispy Kreme dozen glazed doughnuts voucher. Entries were bought on a scale of \$2 per single ticket, \$5 per 10 tickets, and \$10 per 25 tickets. We plan to choose the winners live at our Project Symposium meeting and send out the prizes to the winners. As of 05/31/21, we have been able to raise \$279 for the Uzair Qureshi Memorial Fund.

BMES / UCI RAFFLE

Thank you to everyone who has donated so far to help the Uzair Qureshi Memorial Fund!

DISNEY TICKET

BMES has added a new prize to our raffle for pediatric cancer research! You can now win a DISNEY TICKET if you enter our raffle and attend our entire project symposium meeting on Thursday June 3rd!

\$2 per single entry | \$ 5 per 10 entries | \$10 per 25 entries
Must fill out link in Bio!
BMES Venmo: @bmes_uci

BMES / UCI RAFFLE

All proceeds go to Uzair Qureshi Memorial Fund: raise money for pediatric cancer research

Echo Dot

3D Printer

UCI Sweatshirt

1 dozen Krispy Kreme donuts vouchers

Monday 5/17 to Wednesday 6/2. Winners will be picked live at our project symposium
Thursday 6/3 @ 7:30 - 8:30 PM

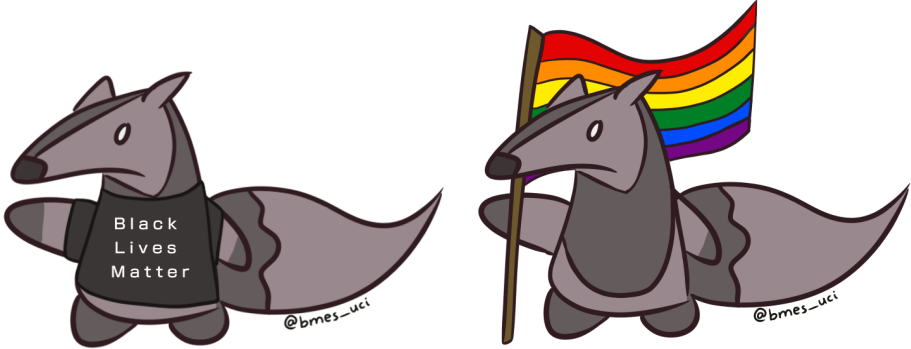
\$2 per single entry | \$ 5 per 10 entries | \$10 per 25 entries
Scan QR code to buy

Event:	Date:	Donations:	Cost:	Total Amount Donated to Organization:
BMES at UCI Raffle	May 11, 2021 - May 15, 2021	\$299 As of 05/31/21	\$230	TBA

VI.6.5 Sticker Sales

Apart from our major fundraisers we also wanted to ensure that even when we did not have any special events to donate to, that our members and audience were still able to donate to some type of organization. For this, we decided to create two unique stickers for two causes we feel strongly about which include racial injustice and the protection of LGBTQ+ rights for which all proceeds from said stickers would be donated for. One sticker was an ant eater wearing a “Black Lives Matter” shirt which costs \$2 and is available at any time on our website. The proceeds of this sticker are sent to the organization JusticeLA who helps support those impacted by incarceration in the greater LA area for which we raised a total of \$36. The second sticker is an ant eater carrying a rainbow pride flag which is again available at any time on our website for \$2. The proceeds of this sticker go to The Okra Project who helps support LGBTQ+ people and even

youth with things such as food and housing for which we raised \$19. We hope to expand our sticker collection with new charitable opportunities in the future.



Event:	Date:	Donations:	Cost:	Total Amount Donated to Organization:
Charity Sticker Sales	Since Summer 2020	\$55	\$55	Justice LA: \$36 The Okra Project: \$19

VII. Mentoring Activities

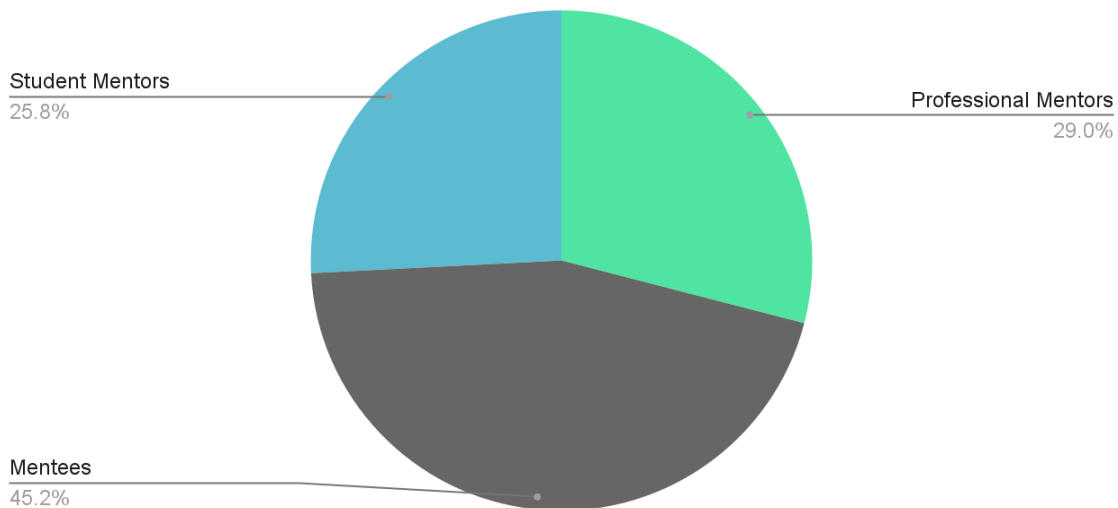


[2021-2022 Mentorship Program Outline - Google Docs](#)

VII.1 Abstract

Due to COVID-19, our second year of having the Mentorship Program had to be hosted virtually. We recognized that students may have difficulties transitioning into a virtual learning environment and finding guidance in their pursuit of academic and personal growth. As such, we tried to build and foster a tightly-knit BME community at UCI through our Mentorship Program this year. In the program, we aimed to connect underclassmen to upperclassmen as well as help all undergraduate students participating in the program connect with industry or academic professionals to aid students in their career exploration. Our program this year includes 18 professional mentors, 16 student mentors, 28 student mentees. The ratio of professional mentors to student mentors to mentees can be visualized below. Anticipating a decrease in participation and excitement for the program over the year, we have included a points system, biweekly challenges, and unique virtual events to keep members engaged throughout the year.

Mentorship Program Member Roles



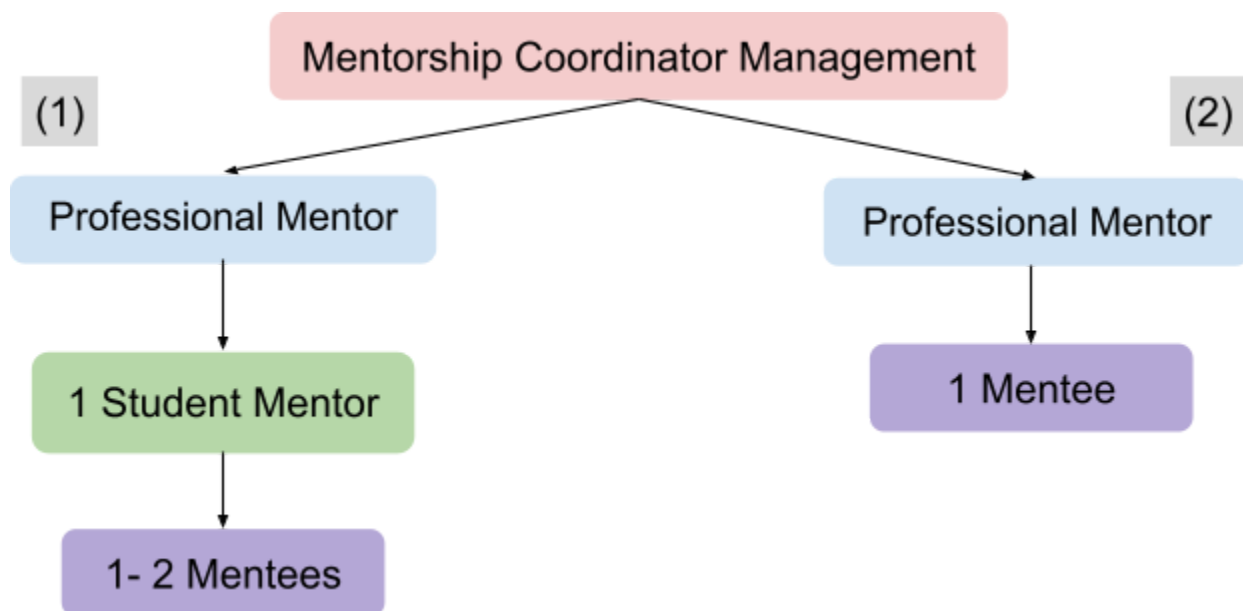
Professional mentor: People who have a Bachelor’s degree and are working or pursuing a career in the biomedical field. A mentor to both the student mentor and mentee(s).

Student mentor: An upperclassman undergraduate student that is a mentor to their mentees. They are mentored by a Professional mentor.

Mentee: An underclassman undergraduate student. They are mentored by a Professional mentor and student mentor.

VII.2 Structure and Pairing

VII.2.1 Mentorship Program Structure



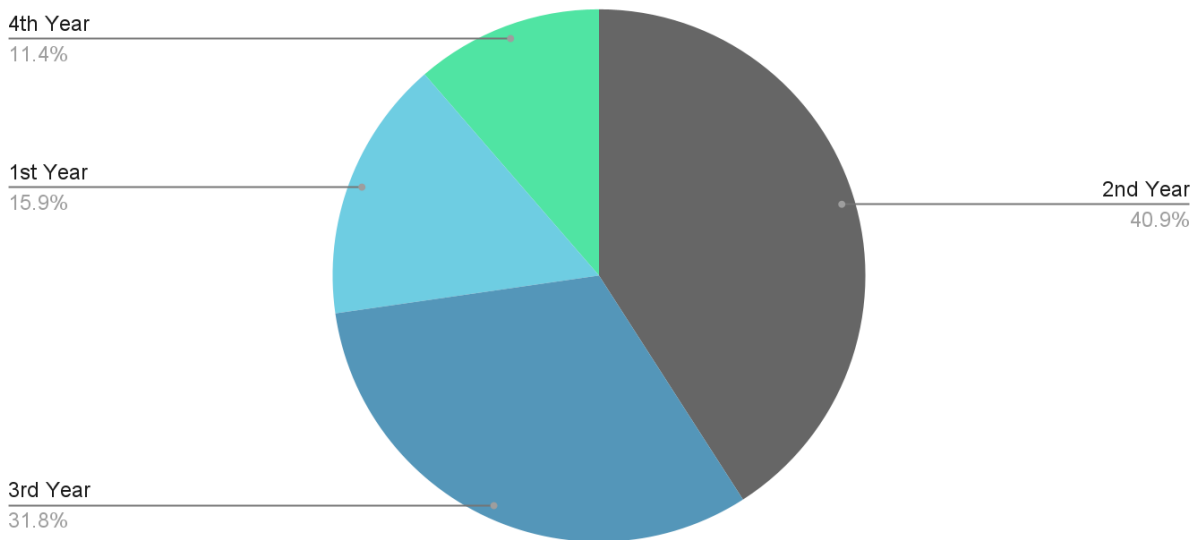
There are two types of Mentorship Groups in our Mentorship Program. In Group Type (1), professional mentors are a mentor to both the student mentors and the mentees. The mentees thus have two mentors: a professional mentor and a student mentor. In Group Type (2), there are no student mentors. Since some upperclassmen applied to be mentees and we recruited more professional mentors than anticipated, we decided to pair them directly together.

VII.2.2 Pre-screening Application and Professional Mentor Recruiting

A pre-screening application among the undergraduates was used to ensure the program was manageable and its members were dedicated to building strong mentor-mentee relationships. A Google form was sent out at the beginning of September to Student Mentors and Mentees to gauge interest and apply to the Mentorship Program. The application includes fields of interest in

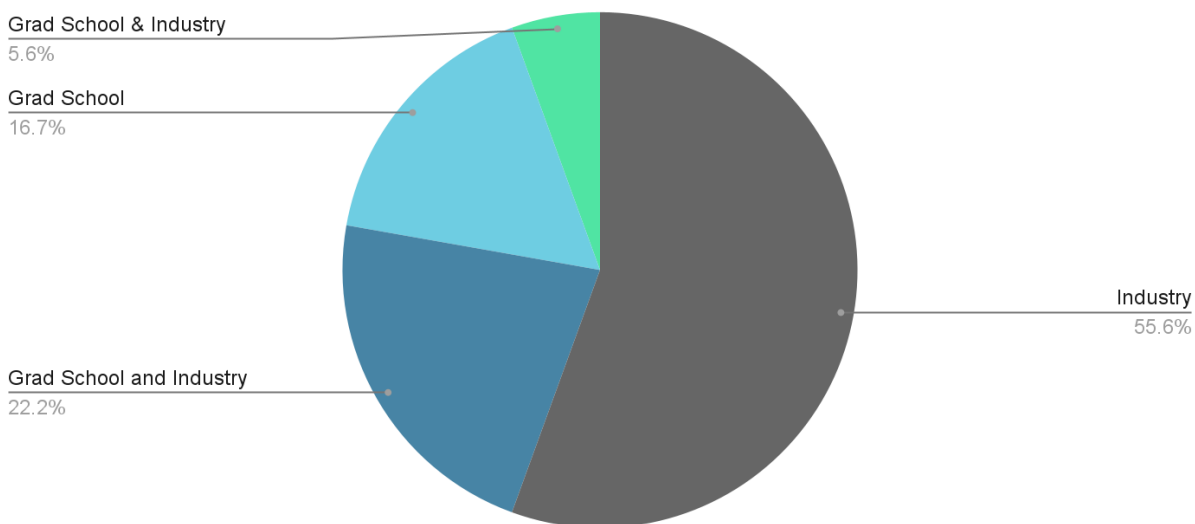
BME, hobbies, Myers-Briggs personality type, availability, and situational questions. Applicants were chosen first based on interest in the Mentorship Program and then availability. The undergraduate mentors and mentees were picked from the application by Week 2 of the Fall 2020 Quarter. A breakdown of the 44 undergraduates in our Mentorship Program is as follows:

Mentorship Undergraduate Members by Year



A Google Form was sent out at the beginning of September to gauge interest from professionals that have past or current connections with BMES and/or UC Irvine. Such people include alumni of BMES, alumni of UCI, current graduate students at UCI, current Ph.D. students at UCI, professors at UCI, and connections on BMES at UCI's LinkedIn. During this process, we asked them about their contact information as well as how many people they were willing to mentor. A breakdown of the 18 professional mentors by experience is as follows

Professional Mentors By Experience



VII.2.3 Mentorship Grouping Process

Selected undergraduate mentors and mentees were given the opportunity to meet each other and with the professional mentors before the grouping process in the M&M Mixer. More information about the M&M Mixer can be found in section X.4.1. Student mentors and mentees could also post introductions of themselves in the mentorship Facebook group and Discord channel.

A Google form was sent out to the undergraduate mentors and mentees that allowed them to indicate their preferences in undergraduate mentors or mentees and their preferences in professional mentors. Based on the information provided to us in the pre-screening application and preference form, we grouped people into Mentorship Groups according to this order:

1. Their choices of student mentors and mentees
2. Field of Interest
3. Hobbies
4. Myers-Briggs Personality Type

VII.3 Management

In lieu of a physical meeting and community space, virtual meeting platforms and social media were used to host Mentorship events and make announcements. Some platforms the mentorship coordinators used to host and make announcements include email, Discord, Facebook Groups, Messenger, and Zoom. A multitude of platforms was used because there was no singular platform that everyone used and checked regularly.

Announcements of events were made using email, Discord, and Facebook Groups. Events were hosted via Discord, Zoom, and other external websites for games. Discord and Facebook groups were also used to post photos of meetings and events. Communication between the mentorship coordinators and the student mentors was mainly conducted through Messenger. Bi-quarterly check-ins were also conducted by the mentorship coordinators via multiple platforms with every member of the program to regularly ask for feedback and troubleshoot issues that may have come up, such as finding topics to discuss within meetings with mentors and mentees.

VII.4 Guidance and Incentives for Participation

In the past, we have noticed that many undergraduate students did not know how to best foster and build professional relationships as either a mentor or a mentee. As such, we constructed “How-To” guides for undergraduate mentors and mentees that included good practices in fostering a mentor/mentee relationship such as establishing goals and expectations, setting up regular meetings, and good questions to ask.

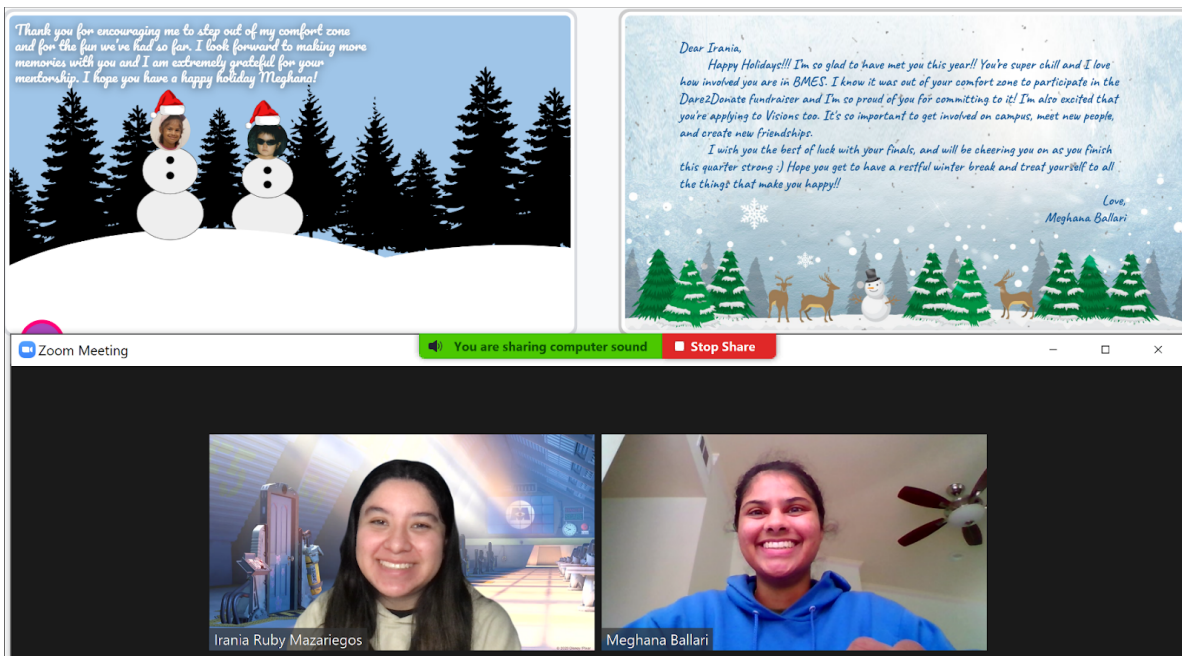
In addition to events hosted by the mentorship program, we used biweekly Challenges to give the Mentorship Groups ideas of what to discuss in their meetings. Biweekly challenges were either social-oriented to promote bonding within a mentorship group or professional-oriented to give students opportunities to work together to build professional skills. Some examples of biweekly challenges include “recreate a funny video together” and “review each other’s resumes”.

❄️ **CHALLENGE #2: Virtual Holiday Cards [11/23 - 12/06 ; 3 points]** ❄️

- With the holidays just around the corner, make virtual holiday cards for your mentor(s)/mentee(s) to spread the cheer!
- Make easy and free cards with **Google Slides**. We compiled some [templates: Holiday Card Templates - Google Slides](#) you can choose from or be creative and design your own.
- Share your cards with Edwina (haue@uci.edu) or Yuke(yukew2@uci.edu) to earn points.

Mentorship Group Hangouts

Make sure you start setting up hangouts with your mentor/mentees and/or professional mentor. Your group will get **10 mentorship points*** for each hangout !!



Additionally, we used a points system to encourage students to meet with their mentors and mentees. Groups with the most points at the end of the year will get a prize. In order to earn points, groups had to take pictures of their meeting or completion of the biweekly challenge and post them in our Mentorship Discord Channel or Mentorship Facebook Group. This encouraged other groups to also participate in biweekly challenges and to meet with their mentors or

mentees. Examples of what we awarded points for can be seen as follows:

WAYS TO EARN POINTS!			
** POINTS WILL ONLY BE REWARDED WHEN THE ONE OF THE UNDERGRADUATE MENTORS AND ONE OF THE UNDERGRADUATE MENTEES ARE PRESENT **			
KEY	TAKE A GROUP PHOTO DURING THE EVENT AND POST IT TO EITHER FACEBOOK OR DISCORD WITH A DESCRIPTION OF WHAT Y'ALL DID		
	MENTORSHIP COORDINATORS WILL REGULARLY CHECK FOR COMPLETION		
ACTION	BIWEEKLY CHALLENGE	MEET WITH MENTOR/MENTEE	MEET WITH PROFESSIONAL MENTOR
POINTS	5	10	10
NOTES	REQUIRED TO COMPLETE 1 / QUARTER	REQUIRED TO COMPLETE 1 / QUARTER	REQUIRED TO COMPLETE 1 / QUARTER
ACTION	GENERAL MEETING / MENTORSHIP EVENT	FEEDBACK FORMS (EVERY PERSON IN GROUP NEEDS TO FILL OUT)	
POINTS	5	10	
NOTES	HIGHLY RECOMMENDED TO ATTEND	NOT REQUIRED	

VII.5 Mentorship Events: Attendance, Cost, and Detailed Description

No money has been used to fund events for the Mentorship Program. The only money the Mentorship Program anticipates to use is towards the end of the year awards for the mentorship groups with the most points and gifts for the professional mentors.

Social events were hosted regularly by the Mentorship Coordinators to give opportunities for people from different mentorship groups to meet and bond. Academic guidance and career exploration events helped further involve student mentors and professional mentors in the program. These events also provided opportunities for students to learn from all the mentors and not just their paired mentors.

VII.5.1 Fall



M&M Mixer

The first event hosted by the Mentorship Program this year. The professional mentors, student mentors, and mentees that were selected for the program could attend the event to mingle with each other before selecting mentorship group pairings. Professional mentors that could attend introduced themselves to everyone with an accompanying slide, which included their

experiences, LinkedIn, fields of interest, and fun facts. After professional mentor introductions, everyone was placed into random breakout rooms for an icebreaker. The icebreaker was to try and find the most commonalities between all the people in the breakout room. After the icebreaker, we conducted four rounds of a speed mingling activity where people were placed into random breakout rooms for 10 minutes and given two questions to answer. In each round, one question was geared towards career or academics and the second question was geared towards hobbies and interests.

After the event, the mentorship pairing preference form was sent out. The professional mentor introduction slides were also shared with all the undergraduates because not everyone could attend the event.

Event:	Date:	Attendance:	Cost:
M&M Mixer	October 21, 2020 6 – 7 PM	Total: 50 Professional Mentors: 9 Student Mentors: 14 Student Mentees: 27	\$0

Student Mentor Info Night

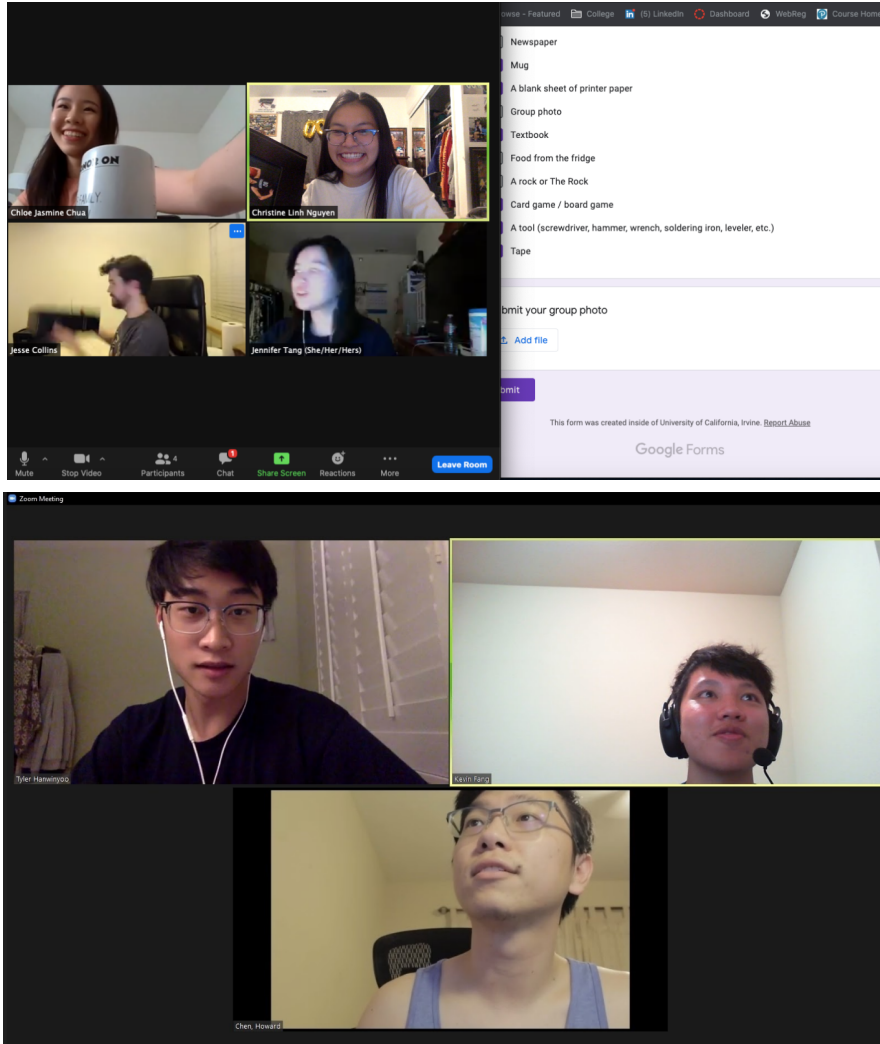
This meeting was an orientation for student mentors. We discussed action items for the student mentors including posting introductions about themselves on either Facebook or Discord and filling out the mentorship group pairing form. We also discussed details about expectations for student mentors and the structure of the program. The “How to be a good mentor” document was shared with the student mentors.

Event:	Date:	Attendance:	Cost:
Student Mentor Info Night	October 30, 2020 6 – 7 PM	Student Mentors: 14	\$0



Mentorship Reveal

This event was used to reveal all the mentorship group pairings. Last year, the mentorship groups were revealed in an interactive activity, but due to the limitations of Zoom, we couldn't



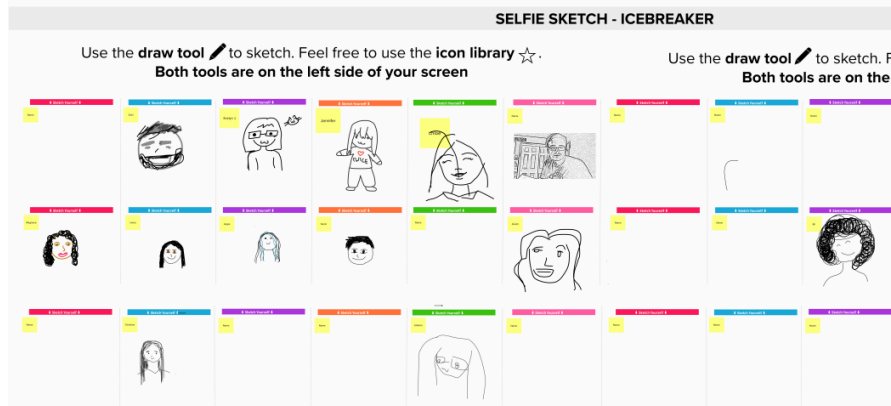
A spreadsheet with the mentorship group pairs and contact information was shared with everyone after the event.

Event:	Date:	Attendance:	Cost:
Mentorship Reveal	November 4, 2020 6 – 7 PM	Total: 55 Professional Mentors: 15 Student Mentors: 16 Student Mentees: 24	\$0



Escape Room!

Professional mentors, student mentors, and mentees were all invited to the event. There was a mini activity as people came into the Zoom. Using the platform MURAL, we asked participants to draw a self-portrait. The portraits can be seen below:

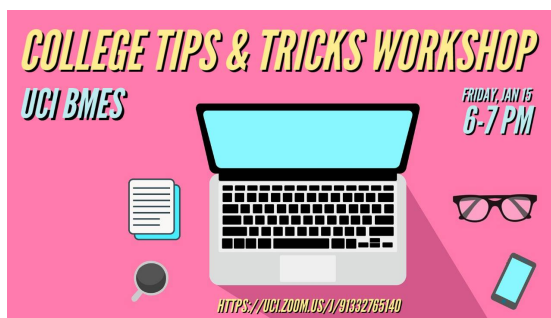


We provided a list of Google Form “escape rooms” that people could complete with their mentorship groups in preassigned breakout rooms. Mentorship groups can win points by completing an escape room. Points were allocated to each escape room based on difficulty. Submitting screenshots of the completion page on the escape rooms through a google form served as proof of completion of the escape room. [Here](#) is the list of “escape rooms” we used.



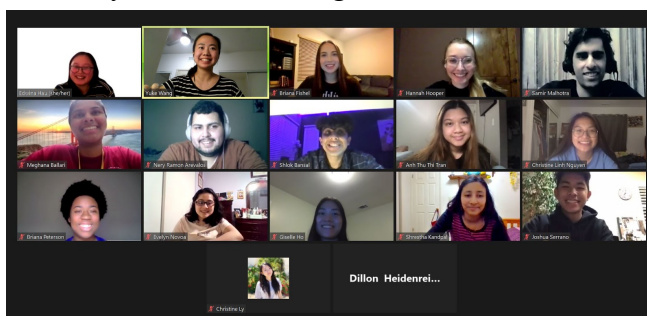
Event:	Date:	Attendance:	Cost:
Escape Room!	November 18, 2020 6-7 PM	Total: 26 Professional Mentors: 5 Student Mentors: 11 Student Mentees: 10	\$0

VII.5.2 Winter



College Tips and Tricks Workshop

This was a student-mentor-led event that introduced college survival tips that our student mentors wanted to share with our mentees. To plan for the event, the student mentors involved held a planning meeting on December 29th. During the planning event, the student mentors discussed important lessons they learned in college and brainstormed the structure of the event.



Brainstorm Guiding Questions

What would have been helpful to know in your first two years of college?

- Taking the time to polish up my resume for Career Fairs
- Career Toolkit
- The different study rooms on campus
- Start working week 0!
- You can start research as a first year
- knowing about online resources for professional development
- There is no timeline for when you need to join research or internships
- Understand that everyone is different and you must find your own habits
- knowing my limits

What did you struggle with during your time at college?

- Understanding the curve
- Studying/ focusing
- Staying motivated to participate in extracurriculars
- Knowing how to study (knowing that you DO NOT need to do everything assigned)
- Joining a research lab and learning the best study approach
- Fast paced learning
- Having the time to go to office hours
- time management
- Focusing on myself and not comparing to other people

How do you make the most out of your experiences?

- Make friends by forming study groups in lecture
- Persistence!
- Make yourself memorable
- Utilize your network
- go to the career center workshops!
- Joining clubs
- Leave Friday nights Free!!!!!!
- Know where your escape spot is: find your comfort zone to study
- connecting with not just people in industry but with classmates
- Ask questions!
- don't be afraid to speak up!
- take classes you like
- choose GE's that double count
- Order food by the Starship and delivering it to study rooms
- Study at Dunkin!

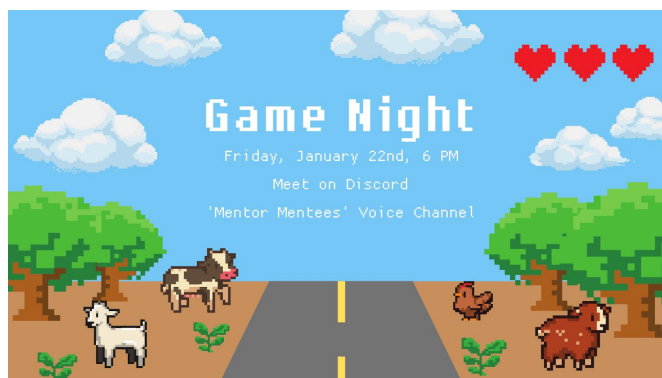
What was something that changed your whole college experience?

- Counseling center!
- Self care and mental health
- Studying with friends
- setting my own pace
- Having one or two meetings every quarter with my academic counselor to discuss 4 year curriculum
- cross-cultural center
- There is such thing as overstudying and realizing when to stop
- Start research as soon as possible!
- Learning that failure is present, to treat yourself even when everything may not seem perfect
- Plan out 4 year timeline early (including summers) for research, internships, projects, study abroad, etc.
- Joining fun clubs like for art
- Handshake and LinkedIn

On the day of the event, each student mentor spoke about their college experiences, struggles,

and tips around the topics: academics, research and internships, professional development, campus resources, college life, and course planning. Student mentors also mentioned specific tips they had in relation to COVID-19, such as how they are managing and maintaining their mental health, research and internship opportunities, and study habits.

Event:	Date:	Attendance:	Cost:
College Tips and Tricks Workshop	January 15, 2021 6-7 PM	Total: 19 Student Mentors: 11 Student Mentees: 8	\$0



Game Night

Only undergraduate members attended this event. This event was entirely hosted on the platform Gather.town. The platform provides a virtual meeting space that you can explore with an avatar. When your avatar is close to other avatars, you can see their camera and hear them which mimics how you would interact with other people in real life. We customized the rooms, added games, and included a video recording of our Pre-Industry Night workshop for the platform Gather.town. The platform provides a virtual meeting space that you can explore with an avatar. When your avatar is close to other avatars, you can see their camera and hear them, which mimics how you would interact with other people in real life. We customized the rooms, added games, and included a video recording of our Pre-Industry Night workshop for the event. Some games we added to our virtual space are Tetris, Pictionary, SET, and Codenames. The night of the event, we played Pictionary, Tetris, and Codenames together. The winners of the games earned points for their mentorship group. The link to join our gather town virtual space can be found [here](#). This is a picture of us in Gather town:

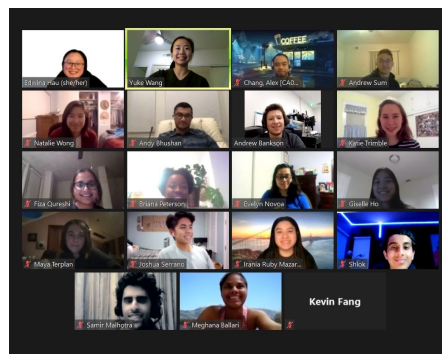


Event:	Date:	Attendance:	Cost:
Game Night	January 22, 2021 6-7 PM	Total: 11 Student Mentors: 7 Student Mentees: 4	\$0



Post-Grad Panel

We hosted this event to help students explore what potential career paths they can take after graduating from undergrad. Our panelists consisted of our professional mentors that either have experience working in the biomedical industry or have experience going to graduate school. Our event was structured so that the graduate school panelists answered questions in the first half and the industry panelists answered questions in the second half. They helped answer many questions including, “How do I know which graduate program is best suited to me?” and “How did you secure your full-time job?”.



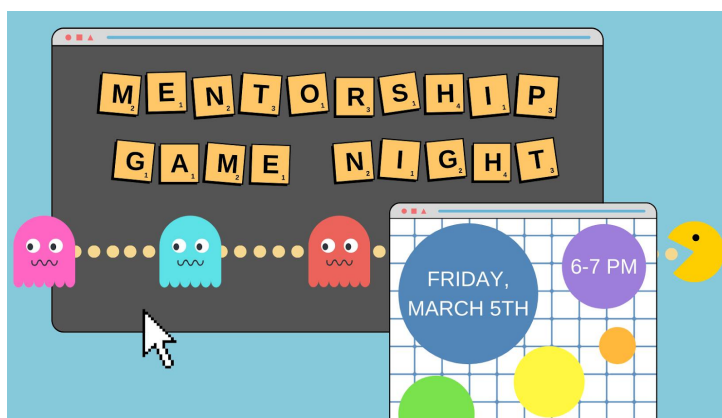
Event:	Date:	Attendance:	Cost:
Post-Grad Panel	February 11, 2021 7-8 PM	Total: 25 Professional Mentors: 6 Student Mentors: 9 Student Mentees: 10	\$0



Movie Night

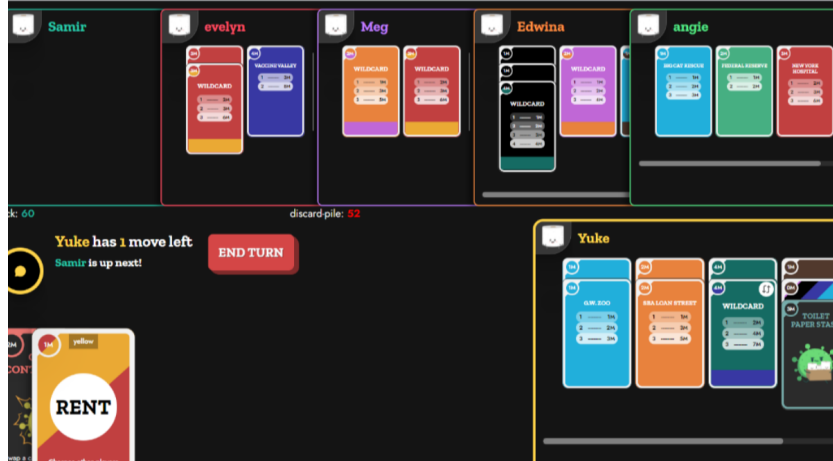
As a de-stressor event, we decided to host a movie night, showing the movie “Knives Out”.

Event:	Date:	Attendance:	Cost:
Movie Night	February 19, 2021 6-8 PM	Total: 6 Student Mentors: 4 Student Mentees: 2	\$0



Mentorship Game Night

As a second de-stressor event, we planned a game night. Attendees decided to play the game Covidopoly together.



Event:	Date:	Attendance:	Cost:
Mentorship Game Night	March 5, 2021 6-7 PM	Total: 6 Student Mentors: 4 Student Mentees: 2	\$0

VII.5.3 Spring

Jeopardy Game Night

A social event based on fun facts of mentors, the new Mentorship Coordinators, and UCI BME department staff. The winner of the event earned 50 points towards their Mentorship group and each participant earned 10 points for their mentorship group for attending. This event encouraged members to get to know each other more and learn new facts about the student mentors.

Participants stayed past the end of the game and mingled amongst each other and the new mentorship coordinators.



Event:	Date:	Attendance:	Cost:
Jeopardy	May 18, 2021 7-8 PM	Total: 8 Student Mentors: 3 Student Mentees: 5	\$0

Mentorship End of the Year Banquet

A social event to commemorate the end of the 2020-21 Mentorship Program. The winners of the mentorship points competition are revealed and awarded with prizes. Events from the past year are highlighted via a slideshow and graduating members share last words. A professional mentor, student mentor, and mentee of the year are recognized for being outstanding members of the program. A google form is distributed to collect feedback and inquire about those interested in returning to the program.

Event:	Date:	Attendance:	Cost:
End of the Year Banquet	June 4, 2021 6-7 PM	Total: N/A	\$0

VIII. Industry and Professional Development Activities

VIII.1 Abstract

A key goal for BMES at UCI is to further the development of professional and networking skills for our members. Throughout the past year, we have hosted a variety of company events, networking nights, and research events so that members can have the opportunity to expand their connections. One of the largest events at BMES at UCI is Industry Night. An opportunity for regional biomedical companies and startups to present any open opportunities for our members and for members to expand their network. To supplement this event, we provide companies, such as Medtronic and Nihon Kohden, the opportunity to come and present details regarding any opportunities or their company culture. Additionally, we provide our members with opportunities to find research opportunities with another large event in the form of a research symposium. Here, graduate students and professors at UCI came and presented their research and open positions for students to apply for. This year, all the events were remote and orientated to simulate in-person events as close as possible.

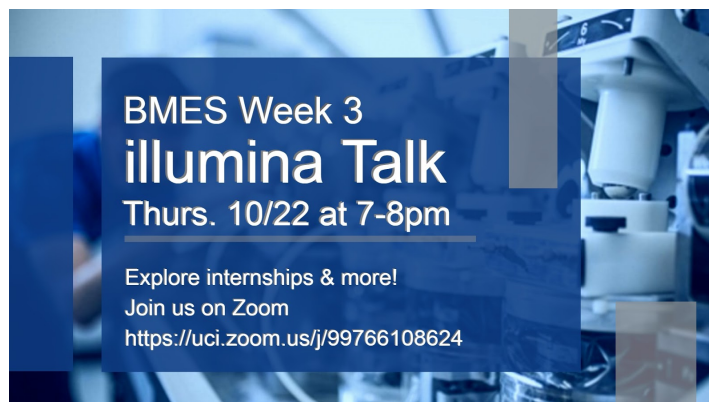
VIII.2 Events



Networking Mixer - BMeet and Greet

The first professional event of the school year was a networking night designed to introduce newer students to older students and alumni. During the event, virtual breakout rooms were created and users were assigned based on their academic year. In each breakout session, users had 5-8 minutes to talk about their interests and ask upperclassmen and questions. Icebreaker questions were provided at each session to get the conversation started. Participants were encouraged to share social media and contact information and it was very helpful for incoming freshmen and transfer students to meet new people during remote learning.

Event:	Date:	Attendance:	Cost:
Networking Mixer - BMeet and Greet	October 15, 2020 8-9 PM	72	\$0

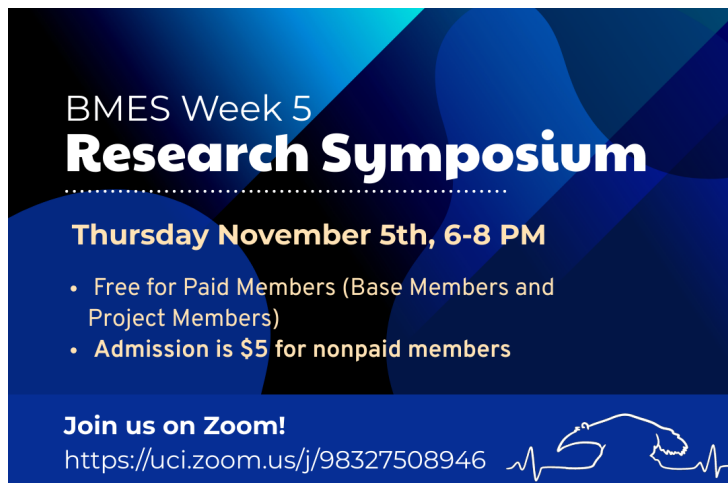


illumina Company Talk

The first company talk this year came from the San Diego-based biomedical company, Illumina, and was hosted virtually via Zoom. On this day, we invited the UCI campus ambassador and a current biomedical engineer from Illumina to speak to our members regarding the overall company culture and additional internship opportunities. The event then shifted to an overall question and answer format in which members could ask about specifics within the company. Such questions included day-to-day life at Illumina and the qualities of an ideal candidate.

Additionally, at the end of the event, a raffle was held for attending members to obtain an Illumina t-shirt.

Event:	Date:	Attendance:	Cost:
Illumina Company Talk	October 22, 2020 7-8 PM	45	\$0



Research/Alumni Symposium

Our annual Fall Quarter Research Symposium is an opportunity for members to hear about and listen to graduate students and undergraduate researchers present their research and learn about the different laboratories at UCI. Normally, the event would be held in a large ballroom at UCI and allow for individual interactions between presenters and attendees. However, this year, the event was shifted to an online symposium consisting of four graduate students and two professors. Each presenter had a 20-minute time slot in which they could present and also field questions from the Zoom audience. Additionally, research positions were advertised for the respective laboratories. After the event, we learned that at least three students were able to secure research positions within the labs.

Event:	Date:	Attendance:	Cost:
Research/Alumni Symposium	November 5th, 2020 6-8 PM	71	\$0



Undergrad Fireside Chat

This event was again to help foster connections between upperclassmen and underclassmen by offering another networking event. The event started with an icebreaker to help introduce attendees to the mentors. This event focused on pairing upperclassmen with underclassmen in breakout rooms and starting with a casual conversation to help get everyone to know each other. Later on, the conversations focused more on professional and individual growth and also highlighting the upperclassmen’s unique journeys at UCI. Breakout rooms allowed for a more personalized experience and helped with forming connections.

Event:	Date:	Attendance:	Cost:
Undergrad Fireside Chat	November 12th, 2020 8-9 PM	22	\$0

KGI Virtual Tour/Talk

A staple event for BMES at UCI is to take a tour of a company’s or graduate program’s facilities in order to better understand and get a sense of the day-to-day operations. To accommodate an event similar to an in-person tour, BMES at UCI and Keck Graduate Institute in Pomona, CA, teamed up to pre-record a tour of the biomedical facilities at the institute. This video was recorded via Zoom and was shown at the beginning of the event. Afterward, a presentation was shown highlighting the different graduate programs tailored for biomedical engineers and additional summer programs for those who are not graduating seniors.

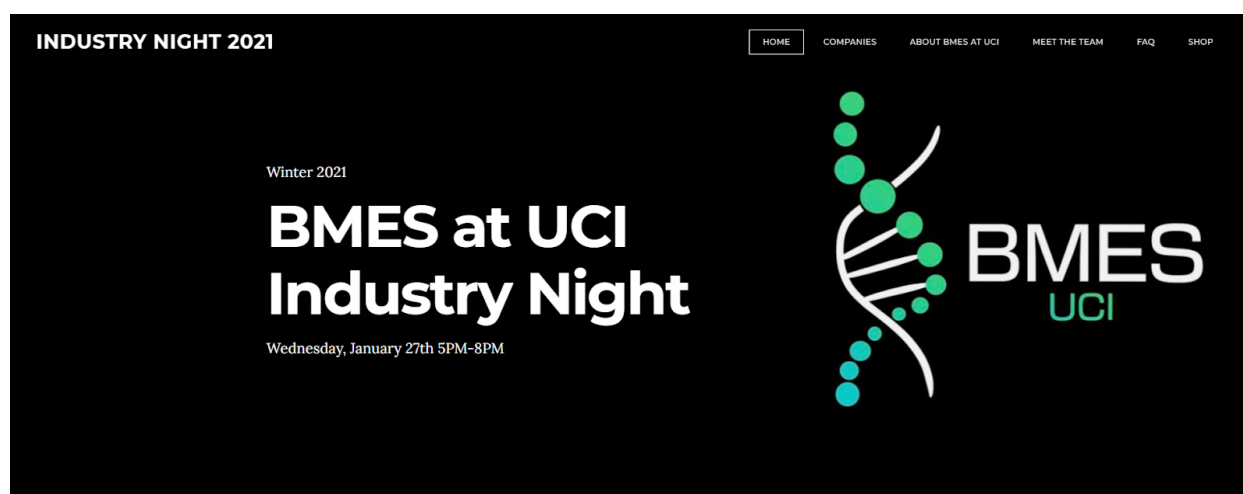
Event:	Date:	Attendance:	Cost:
KGI Virtual Tour/Talk	November 17th, 2020 7-8 PM	30	\$0



Pre-Industry Night Workshop

The precursor to our annual BMES Industry Night, the 2021 Pre-Industry Workshop, prepared attendees with tips and tricks to maximize their time at Industry Night. The event was a presentation on the event details, resume format, and interview scenarios to expect. The presentation was created using resources and guidance for the Division of Career Pathways at UCI. Attendees could ask for one on one feedback in regards to personal pitches and also resume feedback.

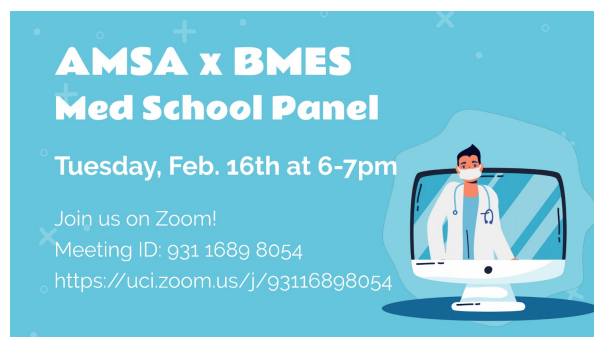
Event:	Date:	Attendance:	Cost:
Pre-Industry Night Workshop	January 19th, 2021 8-9 PM	40	\$0



BMES at UCI Annual Industry Night

[BMES at UCI's Annual Industry Night](#) is the largest event of the year in scale and attendance. This event brings together companies around the Orange County (OC) area in order to promote internship and job opportunities to members and paid attendees. In previous years, companies would set up booths and students would line up to talk to company representatives one on one to pitch themselves and form connections for networking opportunities. To replicate that experience as best as possible, BMES at UCI began to develop an online platform for students to sign up for group sessions or individual one-on-one sessions with company representatives. Due to the new format, companies outside of the OC area were able to join such as SeaSpine. Group sessions were larger time slots that allowed representatives to present company information to a larger audience. There were seven companies that signed up and their sessions were staggered so that attendees could attend every group session. Each individual session was five minutes long and there were over 130 one-on-one sessions. Overall, over 100 people attended the event and we heard that many utilized the connections to later land a job or internship.

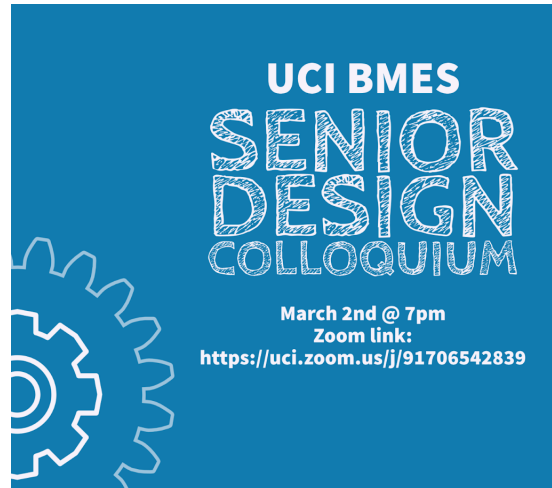
Event:	Date:	Attendance:	Cost:
BMES at UCI Annual Industry Night	January 27th, 2021 5-8 PM	UCI Students: 91 Company Representatives: 15	\$200



Medical School Panel

The Medical School panel was a collaboration with the American Medical Student Association and BMES at UCI in order to bring alumni for prospective medical students. The panel consisted of four current UCI medical school students in various years. Each panelist shared their journey into medical school. Afterward, a set of preset questions were asked before opening it up to the audience to ask questions.

Event:	Date:	Attendance:	Cost:
Medical School Panel	February 16th, 2021 6-7 PM	36	\$0



Senior Design Colloquium

The Senior Design Colloquium brought together current Senior Design teams to present their work from throughout the year. At UCI, senior biomedical engineering majors are required to go through a year-long capstone course to develop a project that has been sponsored or develop their own idea as a startup. Here, five different teams presented their ideas and projects and answered any questions regarding the Senior Design process.

Event:	Date:	Attendance:	Cost:
Senior Design Colloquium	March 2nd, 2021 7-8 PM	UCI Students: 27 UCI Alumni: 2	\$0



How to H.A.G.S.

Our first industry event of the Spring 2021 Quarter, How to Have A Great Summer Workshop, was focused on giving advice to our members who are looking for a research position or are in the process of applying for internships. We opened the event with breakout rooms, spending about fifteen minutes in them doing icebreakers and allowing everyone to get acquainted with each other. Afterward, we discussed how to secure a research position, focusing on where to begin searching, who to reach out to, tips for emailing lab professors and the interview process, and mentioned available opportunities for the summer. Various students also shared their experiences about the process they went through to obtain their research positions. Then, we highlighted the path of applying for internships. Similar to the research aspect, we explained where to look for opportunities, tips for resumes, LinkedIn profiles, cover letters, and making connections. For the remainder of the event, we went through practice interview questions and gave advice on what to specifically mention.

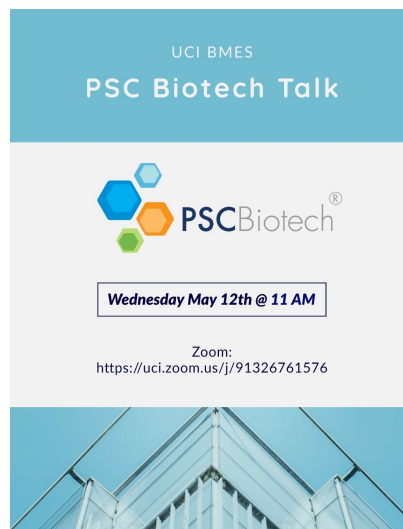
Event:	Date:	Attendance:	Cost:
Summer Opportunities - How to H.A.G.S. Workshop	April 15th, 2021 7:30-8:30 PM	15	\$0



CenSyn Company Talk

BMES at UCI hosted a three-week series of company talks starting with CenSyn, a UCI startup company that developed a portable EEG device for rapid screening of silent seizures. The creators of CenSyn talked about the process of transforming their senior design project into a startup company and focused on the entrepreneurial aspects and resources to seek out. Then, we changed to a question-and-answer format, where we allowed anyone to ask questions regarding senior design or the path to creating a startup.

Event:	Date:	Attendance:	Cost:
CenSyn Company Talk	May 6th, 2021 6-7 PM	26	\$0



PSC Biotech Company Talk

The second company talk of the series was with PSC Biotech who were looking for summer interns. Two company representatives discussed the background of PSC Biotech and explained the requirements needed in order to apply for the internship opportunities. After their presentation, members asked questions in regards to the company or the opportunities they mentioned.

Event:	Date:	Attendance:	Cost:
PSC Biotech Company Talk	May 12th, 2021 11 AM-12 PM	11	\$0



Nihon Kohden Company Talk

Nihon Kohden was the last company in our company talk series. The company representative spoke about the background of Nihon Kohden, the projects they are currently working on, and available internship opportunities. From there, we shifted to a question-and-answer format, letting our members ask about the specifics of the company.

Event:	Date:	Attendance:	Cost:
Nihon Kohden Company Talk	May 20th, 2021 7-8 PM	14	\$0

IX. Societal Impact Activities

IX.1 Abstract

A major goal of BMES at UCI is to provide the engineering community with the opportunity to develop and apply their technical skills in the context of meaningful and impactful projects related to the field of biomedical engineering. In the Spring 2020 Quarter, the BMES Project Coordinators organized three student-led design teams in preparing project proposals centered

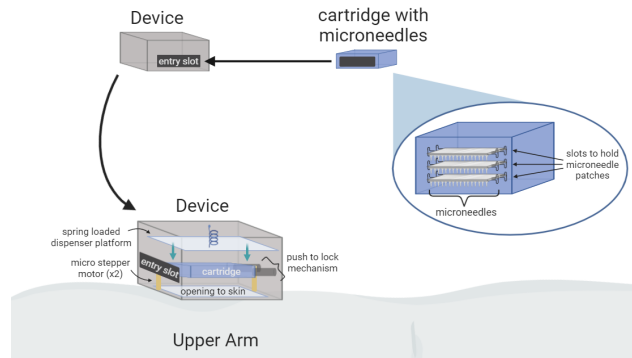
around medical device innovations for the National BMES-Medtronic Student Design Competition. Preparation for the competition consisted of brainstorming sessions and workshops focused on product needs, market research, patent searching, regulatory processes, and more. Despite our first time participating as a chapter, the culmination of our teams' efforts resulted in one getting recognition as the Second Place Winner overall. This success and the positive reception received from members about the experience prompted us to continue on a path of open-ended, student-led projects tackling real-life medical issues with an emphasis on innovation and entrepreneurship.

IX.2 National BMES Project

IX.2.1 Spring to Summer 2020

During the Summer of 2020, the Project Coordinators prepared three undergraduate student-led design teams to compete in the National BMES Student Design Competition sponsored by Medtronic. The goal of this endeavor was to bring together like-minded individuals in the engineering community to pursue entrepreneurship and learn how to evaluate impact, determine technical feasibility, and understand the market when designing a medical device of their own ideas. Several workshops were held with all the teams focusing on how to research patents, determine FDA regulatory pathways, conduct product documentation, prototype, and navigate market research. These workshops included different interactive activities that allowed students to engage and collaborate with each other to showcase what they learned. A total of 15 students participated with varying backgrounds in biomedical engineering, materials science, and computer science engineering. Teams were organized based on individual preferences of projects proposed by students that improved upon current medical devices and practices. Each team prepared and submitted a 5-page proposal outlining the problem they aim to solve, data showcasing device functionality, and market insights.

The teams were UltraVision, DualSheath, and AGLET. UltraVision's team organized a proposal describing and demonstrating a non-invasive, inexpensive, rapid intracranial pressure monitoring device that could be applied in sport injury treatments. DualSheath's team organized a proposal for a disposable endoscope attachment to help prevent cross-contamination in colonoscopy procedures. AGLET's team designed an auto-regulating glucose monitoring system to help treat Type 1 diabetics in a more timely manner. The images below display the device designs from each proposal that was submitted. In August, UltraVision was chosen from BMES at UCI as one of the top ten finalists and was invited to network and present to a panel of expert judges from Medtronic at the National BMES Annual Conference. After their presentation, UltraVision was awarded \$1,750 for placing second place nationally and received the opportunity to expand its project with Medtronic representatives. Besides the National BMES Membership Fee, there were no costs incurred by neither the members of this competition nor BMES at UCI.



IX.2.2 Winter to Summer 2021

From Winter to Summer of 2021, the Project Coordinators of BMES organized a series of events to help students prepare design teams focusing on developing novel solutions to medical problems in order to compete in the National BMES Student Design Competition sponsored by Medtronic. Similar to the previous year, the goal of this was to promote innovation and design thinking of real-world medical problems. Six project teams are currently in the process of researching and developing proposals, from which one will be selected to submit for each of this year's competition tracks. Besides the National BMES Membership fee, there were no costs to join a project team.

Smartcath is an intelligent balloon catheter system that provides real-time feedback on stent size during vascular stent placement procedures to facilitate optimal and safe stent placement. Phoraptor is a device enabling an affordable and efficient way for low-income communities to perform high-quality prescription tests. LunaWatch is shaping the future of women's health by creating a medical device and an app that will make menopausal management easier and will improve patient and doctor communication. The ThromboDetector aims to help patients that have suffered a serious heart ailment by controlling blood clotting in order to prevent future heart attacks or strokes. The Fluid Sensor is a fluid monitoring system that is a non-invasive solution to fluid management of severe COVID-19 patients. CardiacPatch is a skin patch that measures blood pressure continuously and noninvasively while giving the user real-time app updates of their levels. The following outlines the workshops held to guide students through the process of medical device development to compete for the submission.

Winter Week 1

The first project meeting of the quarter introduced the National BMES Design Competition to interested members, the benefits of participating, and the logistics of how to participate. Our winning team last year also joined to talk about their experience and provided advice to incoming project members.

Event:	Date:	Attendance:	Cost:
National BMES Project Kick-Off	January 7th, 2021 8-9 PM	38	\$0

Winter Week 2

The focus of the first set of workshops was to get members into the mindset of recognizing inefficiencies in medical devices and unmet clinical needs. This was divided into two separate ideation workshops that involved interactive activities to determine existing problems and develop solutions that can create an impact. The first part of this ideation activity was to provide members with a standard medical device such as a knee brace and hearing aid and initiate a discussion brainstorming potential improvements. This led to a 10-minute conversation among students discussing what aspects of the device need improving, what customer needs are being addressed, and why it is better than the current model, all considerations that are required in the National BMES Student Design Competition. Following that, the Project Coordinators held a Patently Stupid Jackbox game. This activity required students to form teams and give each other everyday problems that the teams needed to ideate, design, and create solutions for. Each team was separated into breakout rooms and presented their designs one by one and voted for the best.

Event:	Date:	Attendance:	Cost:
Ideation Activity I	January 14th, 2021 8-9 PM	26	\$0

Winter Week 3

The second ideation workshop mimicked a Shark Tank-style brainstorming exercise where students were given one of three currently existing products on the market and had to prepare a 1-2 minute pitch outlining the problem, innovation, and solution behind the idea of the product. Students were divided into groups of three to work collaboratively within breakout sessions to evaluate each product and provide an argument as to why their given product deserves funding. After about 40 minutes of collaboration, each team gave their presentation highlighting their understanding of the problem the product is trying to solve and the innovation behind the solution. This allowed students to learn how to recognize problems and use innovative thinking to develop solutions.

Event:	Date:	Attendance:	Cost:
Ideation Activity II	January 21st, 2021 8-9 PM	21	\$0

Winter Week 4

After two weeks of ideation, the Week 4 event was dedicated to providing insight and feedback to any students who had discovered a problem and wanted to propose a solution. At this point, students would start preparing a project pitch for their solution that they would present to everyone to begin forming teams. Discussions included technical feasibility, potential impact, and product need.

Event:	Date:	Attendance:	Cost:
Feedback and Pitch Requirements	January 28th, 2021 8-9 PM	30	\$0

Winter Week 5

At the project pitches, six individuals proposed their solutions to all students present highlighting the medical problem they aim to solve and the societal impact it would hold once developed. After each team presented, students signed up for the project of their preference, and teams were made accordingly.

Event:	Date:	Attendance:	Cost:
Project Pitches	February 4th, 2021 8-9 PM	33	\$0

Winter Week 6

The focus of the following workshops till the end of summer was to introduce how to approach different components of the competition proposal. Following ideation, the Project Coordinators first focused on having teams quantitatively evaluate their potential impact. The workshop involved interactively showcasing resources the university provides for market research, including selling price and distribution channel, as well as activities for understanding value proposition and the business model canvas. Students were tasked with determining the pains and gains of their customers as well as the pain relievers and gain creators of their product.

Event:	Date:	Attendance:	Cost:
Potential Market and Impact Workshop	February 11th, 2021 8-9 PM	29	\$0

Winter Week 8

The focus of the Engineering Design workshop was to introduce teams to the first stage of the prototyping process and considerations before building. This allowed the teams to prepare how to communicate their device's technical feasibility in their proposal. Interactive activities involving differentiating between design criteria and constraints. Students were introduced to a variety of options in initial proof of concept prototyping including engineering drawings, block diagrams, CAD modeling, and software programming. Students were tasked with determining 5 design criteria and constraints and to provide some form of early engineering design.

Event:	Date:	Attendance:	Cost:
Engineering Design Workshop	February 25th, 2021 8-9 PM	17	\$0

Winter Week 9

To supplement the Engineering Design Workshop, the Project Coordinators held a live SolidWorks tutorial for students. This workshop was divided into two simultaneous sessions with one session for beginner skills, such as sketching and extruding, and the other session for advanced skills, such as simulations, geometry, etc.

Event:	Date:	Attendance:	Cost:
Solidworks Workshop	March 4th, 2021 8-9 PM	12	\$0

Winter Week 10

For the Winter 2021 Quarter Progress Check, all teams submitted slides showcasing the results from their assigned tasks in previous workshops. Students displayed their market research along with their device's societal impact through their business model canvas highlighting the pain relievers and gain creators. Students also showed their initial engineering designs either through sketches or block diagrams and outlined important design criteria and constraints.

Event:	Date:	Attendance:	Cost:
Progress Check	March 11th, 2021 8-9 PM	N/A	\$0

Spring Week 1

Following the Progress Check, the Project Coordinators held 1-on-1 sessions with each team to discuss their progress, what to consider, and what the next steps would be. The discussions were mainly focused on the business model canvas and helping each team understand their customer and what value they would be bringing by solving their respective problems.

Event:	Date:	Attendance:	Cost:
Progress Check Feedback	April 1st, 2021 8-9 PM	28	\$0

Spring Week 2

The focus of the Patent Research Workshop was to familiarize students with navigating the United States Patent and Trademark Office (USPTO) page and reading a patent application. This involved interactive activities that explained how CPC Schemes can be determined for each respective project as well as breaking down the process of finding a patent and retrieving valuable information from it. Students were tasked with determining their CPC scheme and finding patents that were closely related to their product.

Event:	Date:	Attendance:	Cost:
Patent Research Workshop	April 10th, 2021 1-2 PM	16	\$0

Spring Week 3

To help teams determine their societal impact, the Project Coordinators introduced customer discovery in their medical device development process. This workshop focused on establishing the importance of conducting hypothesis testing with potential customers to determine if their current understanding of the market is correct. The workshop also outlined the differences between good and bad hypotheses and how to contact potential customers. Students were tasked with preparing 2 sets of hypotheses and report results from 2-4 interviews with potential customers.

Event:	Date:	Attendance:	Cost:
Customer Discovery Workshop	April 17th, 2021 1-2 PM	14	\$0

Spring Week 4

The focus of the FDA Regulatory Pathways, Industry Standards, Estimated Manufacturing Workshop was to introduce students to ways of determining what types of FDA regulations would need to be implemented for their corresponding projects. This involved categorizing the level of risk into Class I, II, or III devices to determine whether a 510(k) or a PMA is needed. Students were also introduced to the concept of a predicate and product code that would help them discover how the FDA treated analogous products. Then, the process of design documentation was explained to ensure their product follows industry standards. Budgeting and allocating costs to determine estimated manufacturing costs relating to quality assurance, risk analysis, and individual parts were shown.

Event:	Date:	Attendance:	Cost:
FDA Regulatory Pathways, Industry Standards, Estimated Manufacturing Workshop	April 24th, 2021 1-2 PM	8	\$0

Spring Week 6

The Prototyping Design Workshop served to be a direct sequel to the Engineering Design Workshop in Winter 2021 Quarter. Students were introduced to proof of concept testing and the differences between low-fidelity and high-fidelity prototyping. More complex resources such as Fritzing, EagleCAD, 3D printing, and other manufacturing sources were provided to aid in development.

Event:	Date:	Attendance:	Cost:
Prototyping Design Workshop	May 6th, 2021 8-9 PM	14	\$0

Spring Week 7

During Customer Discovery Updates, each team presented their customer discovery results to the Project Coordinators individually and also showcased changes made to their business model canvas based on the results. The teams explained what their next iteration of customer discovery would be based on the interviews they conducted and highlighted where they found potential impact. Project Coordinators spent 20 minutes with each team providing feedback and what to consider moving forward.

Event:	Date:	Attendance:	Cost:
Customer Discovery Updates	May 15th, 2021 1-2 PM	18	\$0

Spring Week 9

The Writing Your Proposal Workshop was the final workshop to prepare the teams for the National BMES Competition. The focus of the workshop was to introduce the breakdown of the required proposal itself and what is expected in each section. The workshop acted as a culmination of all previous workshops as the content in each section referred back to a previous workshop. Students were exposed to resources that could be used to create scientific and engineering figures for their proposals as well as tips on writing a narrative.

Event:	Date:	Attendance:	Cost:
Writing Your Proposal	May 22nd, 2021 1-2 PM	9	\$0

Spring Week 10

Sponsored By
BMES
Medical Engineering Society
Medtronic

UCI BMES
Project Symposium

June 3rd, 7:30 pm
<https://uci.zoom.us/j/96476651038>

6 student-led design teams competing in the National BMES Student Design Competition sponsored by Medtronic will be presenting their innovative projects for one of the four tracks.

Attendees will be entered into a raffle for a SURPRISE mystery prize!!

Teams:

- Smartcath
- Thrombo Detector
- Cardiac Patch
- LunaWatch
- Phoraptor
- Fluid Sensor

Project teams will present the medical problem and their design solution in a brief presentation to the general BMES at UCI audience. This serves as a checkpoint for their progress so far and provides practice for compiling their research in a succinct and digestible format. At the last General Meeting of the quarter, the winners of the Pediatric Cancer Raffle will also be announced and everyone who attends the symposium in its entirety will be entered into a raffle for a Disneyland ticket.

Event:	Date:	Attendance:	Cost:
Project Symposium	June 3rd, 2021 7:30-8:30 PM	N/A	\$0

IX.3 Mini-Project Program

In the Fall of 2020, the Project Coordinators organized an opportunity for the engineering community to develop technical skills in prototyping medical devices while also promoting innovative and creative thinking. In previous years, BMES at UCI organized a singular annual project that ran through the course of the academic year, but this lacked much variety to a large

range of people and the freedom for members to practice their own design thinking. To address this, mini-projects were developed in order to diversify skill sets that students could learn: a temperature sensor, a pulse oximeter, a joint pressure sensor, a hearing aid, and an electrodermal detector. Workshops for each project lasted one hour and were designed to guide anyone with minimal background experience through the fundamentals and encourage them with ideas for how to make the project their own. All workshops incurred no cost. Due to a remote setting, interested project members were asked to pay a \$25 project membership fee that provided them access to a collection of materials for their specific project that would otherwise cost \$40-45. Parts were purchased in bulk to reduce cost and shipped out individually to each paid member by the fifth week of the project timeline. At the end of the Fall 2020 Quarter, all project members were asked to demonstrate the problem they are trying to solve with their respective medical device, the development process they went through, and any form of functionality. To encourage full participation in their project, paid members were reimbursed \$5 when completing their presentation. A total of 70 members participated and 14 teams were formed.

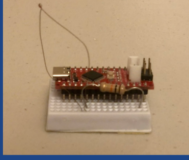
Fall Week 1

At the first BMES General meeting of the Fall 2020 Quarter, *Welcome to BMES*, members were provided with a general overview of all the projects being offered. The projects were all chosen by the Project Coordinators as standard medical devices that could be prototyped under a low budget to demonstrate basic functionality. To account for a wide range of skills and backgrounds, the projects varied in difficulty and required no prior experience to join. The images below showcase how the projects were advertised with clear goals and skills outlined. The projects introduced were a temperature sensor, a pulse oximeter, a joint pressure sensor, a personal hearing aid, and an electrodermal detector.

Event:	Date:	Attendance:	Cost:
<i>Welcome to BMES</i>	October 8th, 2020 8-9 PM	132	\$0

Temperature Sensor

Difficulty: ●



Goal
To build a device that uses electrical signals to measure and monitor body temperature

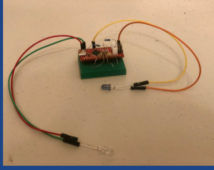
Skills You Will Learn

- Data Acquisition
- Mathematical Modeling
- Hardware Design
- Arduino IDE
- Circuitry

4

Pulse Oximeter

Difficulty: ●



Goal
To build a device that monitors a person's heart rate and oxygen saturation.


Skills You Will Learn

- Data Acquisition
- Analog Signal Processing
- Hardware Design
- MATLAB
- Circuitry

5

Joint Pressure Sensor

Difficulty: ●



Goal
To build a pressure pad model that will detect pressure changes in joint areas based on voltage changes

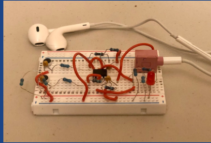
Skills You Will Learn

- Data Acquisition
- Analog Signal Processing
- Hardware Design
- Using Pressure Pads
- Circuitry

7

Personal Hearing Aid

Difficulty: ●



Goal
To mimic the functionalities of a hearing aid by amplifying audio signals to desirable ranges.

Skills You Will Learn

- Dual Op Amp
- Complex Circuit Design
- Audio Amplification

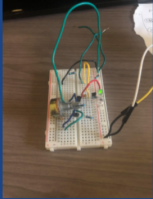
Improvements Include

- Device miniaturization
- Custom signal processing for noise and frequency ranges

8

Electrodermal Detector

Difficulty: ●



Goal
To detect changes in skin resistance by measuring electrical characteristics of the skin.

Skills You Will Learn

- Transistors
- Electrodermal activity
- Complex Circuit Design

Improvements Include

- Device miniaturization
- Integration of polygraph measures

9

Fall Week 2

The second project meeting was in collaboration with the Industry Correspondents and Mentorship Coordinators to provide students with the opportunity to meet other members with whom they could potentially form a project team.

Event:	Date:	Attendance:	Cost:
BMEet and Greet	October 15, 2020 8-9 PM	72	\$0

Fall Week 3: Workshops

The project meetings of the third and fourth week of the Fall 2020 Quarter were divided into individual project workshops that introduced major concepts, general approaches, and

improvements for each team’s respective project. The purpose of these workshops was to prepare the students in prototyping their medical devices as their parts were being delivered. At the end of each workshop, the students were expected to assign group roles and brainstorm design ideas to present at the Week 6 Progress Check.

The first individual project workshop was with our two temperature sensor groups. The workshop was structured as an interactive lecture that provided students with the opportunity to explore different aspects of medical device development such as hardware, circuit, and algorithm design. Students were exposed to how to use a thermistor to create a voltage divider that connected to a microcontroller and received temperature data. Components and pins of Seeeduino microcontrollers were covered to help start the circuit design process. General mathematical models relating voltage and resistance trends to temperature values were introduced with encouragement to innovate. Furthermore, students were offered online resources to model and test design ideas, such as TinkerCad, Fritzing, Matlab, and Arduino IDE, while project parts were being delivered.

Event:	Date:	Attendance:	Cost:
Temperature Sensor Workshop	October 19, 2020 7-8 PM	11	\$0

The second individual project workshop was with our three pulse oximeter groups. One group was formed with the intention to develop an integrated temperature sensor and pulse oximeter for menopausal management by monitoring and tracking symptoms. The workshop was structured as an interactive lecture that first demonstrated the significance of a pulse oximeter and provided students with the opportunity to explore different aspects of medical device development such as hardware, circuit, and algorithm design. Students were exposed to how oxygenated and deoxygenated blood operate in the cardiovascular system along with their specific interactions with light. As a result, students learned how to control LEDs with a microcontroller to perform data acquisition from a photoresistor, processing, and analysis for calculating heart rate and oxygen saturation. Components and pins of Seeeduino microcontrollers were covered to help start the circuit design process. General signal processing models such as smoothing, detrending, and normalizing were introduced with enough room to innovate. Furthermore, students were offered online resources to model and test design ideas, such as TinkerCad, Fritzing, Matlab, and Solidworks while project parts were being delivered.

Event:	Date:	Attendance:	Cost:
Pulse Oximeter Workshop	October 21, 2020 8-9 PM	17	\$0

The third individual project workshop was with our two joint pressure sensor groups. The workshop was structured as an interactive lecture that provided students with the opportunity to explore different aspects of medical device development such as hardware, circuit, and algorithm design. Students were exposed to how a velostat can be used to detect changes in pressure using copper tape, wires, and a microcontroller. General mathematical models relating voltage and trends to pressure data were introduced with enough room to innovate. Furthermore, students were offered online resources to model and test design ideas, such as TinkerCad, Fritzing, Matlab, and Arduino IDE, while project parts were being delivered.

Event:	Date:	Attendance:	Cost:
Pressure Sensor Workshop	October 26, 2020 7-7:30 PM	25	\$0

The fourth individual project workshop was with our four electrodermal detector groups. The workshop was structured as an interactive lecture that provided students with the background of how an electrothermal detector works to recognize changes in skin resistance. Specifically, students were exposed to how to use transistors, a potentiometer, and LEDs. A preliminary circuit design was shared to help students get started. Furthermore, students were offered online resources to model and test design ideas, such as TinkerCad, Fritzing, Matlab, and Arduino IDE, while project parts were being delivered.

Event:	Date:	Attendance:	Cost:
Electrodermal Detector Workshop	October 26, 2020 7:30-8 PM	25	\$0

Fall Week 4

The fifth individual project workshop was with our five hearing aid groups. The workshop was structured as an interactive lecture that first demonstrated the fundamental concepts behind sound and hearing and provided students with the opportunity to explore the complexities of different electrical components that can be used to amplify audio. Students were exposed to how a microphone converts sound waves to electricity which can then feed into an operational amplifier. Designing a bandpass filter of custom frequencies with capacitors and resistors was illustrated with encouragement to innovate implementation. Voltage dividers were introduced as a method to draw voltage down from a battery and an LED component was suggested for testing purposes. Furthermore, students were offered online resources to model and test design ideas, such as TinkerCad and Fritzing, while project parts were being delivered.

Event:	Date:	Attendance:	Cost:
Hearing Aid Workshop	October 28, 2020 8-9 PM	29	\$0

Fall Week 5

Between the project tutorial workshops and the first progress check, the Project Coordinators held open office hours for members to drop by and ask questions. This allowed students to inquire about unclear aspects of their projects and display their understanding of engineering concepts in a comfortable environment. During office hours, students conveyed the decisions that went into their circuit or software design and were able to verify whether they were on the right track.

Event:	Date:	Attendance:	Cost:
Office Hours	November 2, 2020 1-2 PM	3	\$0

Fall Week 6

The Week 6 Progress Check was one of three major checkpoints for project teams to present what they have accomplished up to that point. This was a 2-hour event where each team from each project successively spent 6-7 minutes illustrating their level of understanding of biomedical engineering concepts and proposed what their approach to the project would be. Students had the opportunity to present any of their preliminary designs and models they created and ultimately received practice in presenting their work to a large audience. Teams also showcased their team dynamic where each member highlighted their roles and contributions to the project moving forward. Project Coordinators spent 1-2 minutes answering any questions from team members and providing feedback.

Event:	Date:	Attendance:	Cost:
Progress Check	November 12, 2020 2-4 PM	65	\$0

Fall Week 7

Since all the projects incorporate the use of breadboards for prototyping purposes and several team members from the progress check explained that they were never exposed to Arduino IDE, the Project Coordinators compiled a document of resources and crash course on each of these engineering technical skills. The Week 7 Office Hour time was dedicated for anyone to drop by and ask further questions in understanding how to breadboard or use Arduino IDE as well as practice their skills in front of the Project Coordinators. The resources consisted of a step-by-step tutorial on breadboarding including how power is distributed, differences between parallel and

series circuits, and how to wire an LED with a microcontroller. The Arduino IDE resource outlined important syntax, different kinds of variables, loops, and if-statements and provided a tutorial on how to navigate the software in order to connect a microcontroller and view outputs.

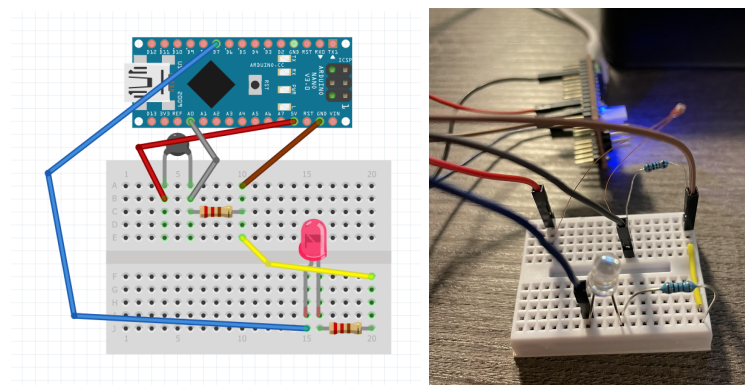
Event:	Date:	Attendance:	Cost:
Office Hours	November 16, 2020 3-4 PM	4	\$0

Fall Week 8

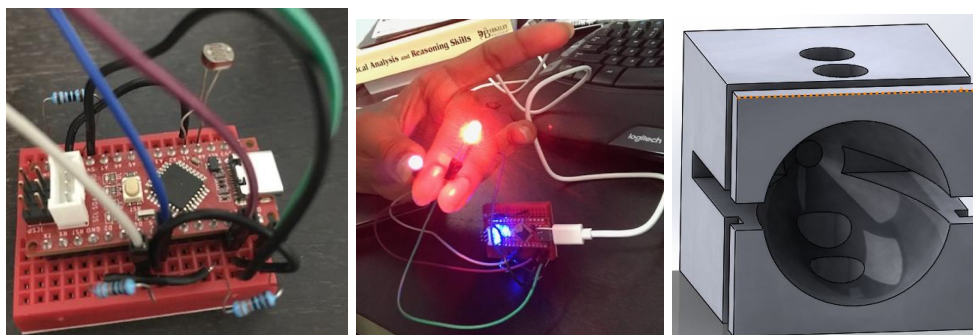
The focus of the Week 8 Progress Check was for students to explain the medical problem they aim to solve and showcase any form of device functionality including circuits, code snippets, and prototype design. Slides from each team were uploaded to a shared Google folder. Each team member from each team illustrated their contributions to the project thus far. Lastly, all teams outlined where they believe they can make improvements and how their designs can extend into future developments of commercial medical devices. For instance, one group mentioned how their design for the joint pressure sensor can be applied to create pressure for orthopedic therapy. The following figures exhibit some of the work presented by teams in each project.

Event:	Date:	Attendance:	Cost:
Progress Check	November 23, 2020	N/A	\$0

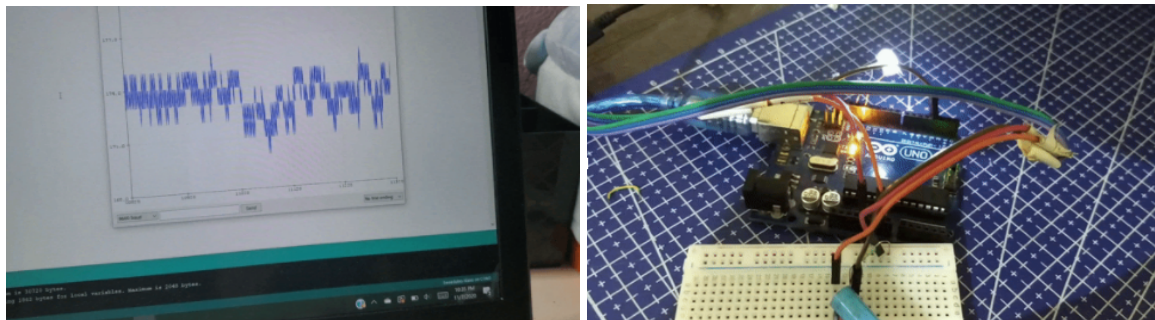
Temperature Sensor



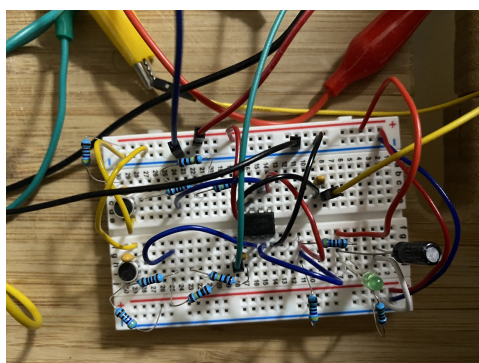
Pulse Oximeter



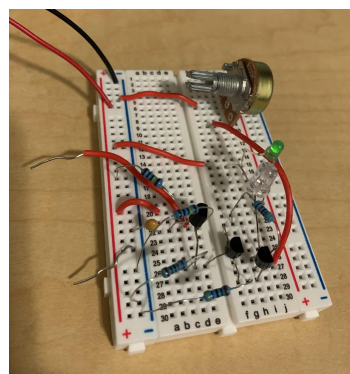
Joint Pressure Sensor



Hearing Aid



Electrodermal Detector



Fall Week 10

All project teams demonstrated the functionality of their projects in a symposium-style event while also highlighting the societal impact of their device for solving medical problems. Brief descriptions of how their device works, what their design achieved, and what improvements they would make if they had more time were also presented.

Event:	Date:	Attendance:	Cost:
Demo Day and Final Presentation	December 10, 2020 8-10 PM	77	\$0

X. National BMES Meeting

For the past years, BMES at UCI has intended to attend the BMES Annual Meetings. However, challenges involving transportation, time, and cost prevented us from going. Last year, we were able to attend the 2020 BMES Virtual Annual Meeting thanks to the support from UCI's BME Department and met our goal of sending at least five members to the meeting. The virtual aspect of the meeting aided in overcoming the transportation and time challenges as well. We understand that our members will greatly benefit from the attendance at these annual meetings.

Thus, we will continue to encourage them to participate not just as attendees but as presenters as well.

Our members were able to attend the annual meeting from the comfort of their own homes and arrange their schedules to participate in the annual meeting in the most convenient way possible. Additionally, thanks to the BME Department, we were able to overcome our main challenge: cost. BMES at UCI reached out to the BME Department and received generous funding to cover the registration fees of six members. BMES at UCI covered the registration fees of an additional member, bringing the total number of attendees to seven. The members are listed in the table below. All attendees were required to fill out a reflection survey about the events they attended and how valuable this experience was for their education and careers.

Attendees	National BMES ID Number
Edwina Hau	4022921
Giselle Ho	4022869
Kamalesh Ananthakrishnan	4022461
Kevin Yang	4022872
Lily McGrale	4022265
Norma Damian Vilchez	4023095
Rahul Sreedasyam	4022901

The BMES Annual Meetings provide invaluable opportunities to network, improve their professional skills, and engage with the BME community. Our members, without doubt, were inspired by cutting-edge research, outstanding peers, and accomplished professionals and motivated to make their advancements in the BME field. This is shown through the testimonials below. We hope to expose more members to these incredible experiences and encourage them to inspire others through their brilliance and passion.

“Overall, attending the 2020 BMES Virtual Annual Meeting was an incredible experience. Aside from the fact that it would have been an enhanced experience in person, I found the formatting of the event organized and informative with all individuals participating coming from a diverse range of backgrounds and fields, which added to the excitement. Throughout this conference, I gained a sense of what BME is outside of Irvine and the impact that our course of study has on the world and real-life issues, whether that be societal or scientific, and I think all the speakers really emphasized the importance of what we all are capable of doing. As a whole, it was an amazing opportunity to hear inspiring people share their story and also connect with individuals

from all backgrounds and walks of life. It was definitely a special conference to be a part of and I hope to attend in-person one day!" - BMES at UCI Attendee, 2020

"It was a great opportunity! It was a great way to network and learn from the BME community. I was able to talk to grad school recruiters, researchers, and connect with BMES chapters around the nation. There were a lot of talks on current research and poster presentations in almost any BME field you can imagine. There were also amazing panels on diversity and inclusion, which introduced me to so many communities within BMES that I didn't know had existed before! My favorite memory from the annual meeting was being able to talk to a grad school recruiter for almost half an hour!" - BMES at UCI Attendee, 2020

"I am beyond grateful for the opportunity to attend the national BMES conference this year. Without BMES at UCI's refund of the cost, I would not have been able to attend. This conference gave me many resources for resume and LinkedIn preparation, applying to graduate school, and how to best plan club events while remote. Additionally, the BMES national conference had a platform called "BMES Matchmaking" which allowed users to create a profile and connect to other attendees and presenters as well as schedule a zoom meeting. I was able to connect with representatives from my top graduate school choices and learn about their programs as well as gain some fee waivers through raffles. This was an experience that I will never forget, especially since I was able to do all of this from the comfort of my own home." - BMES at UCI Attendee, 2020

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"The 2020 BMES Virtual Annual Meeting was a pretty worthwhile experience for me. Although current circumstances prevent me from enjoying it in person amongst my colleagues in San Diego, I did gain a fair amount from attending. For starters, I was given the opportunity to hear from numerous long standing professionals involved in the biomedical field that I probably wouldn't have heard from otherwise. Their talks were both inspiring and quite informative. The work that professional and student researchers presented did not disappoint either. It was nice to see the culmination of research projects showcased as so. The most memorable part of the conference was actually boothing with my team for a live Q&A session for the National

BMES-Medtronic Student Design Competition. We spent hours communicating with field professionals interested in checking our project out, and it was a "wow" moment for me. Winning 2nd place didn't damper the competition either. Overall, even in a limited virtual format, the 2020 BMES Virtual Annual Meeting was a nice experience and I'm thankful to have the opportunity to go." - BMES at UCI Attendee, 2020

Three of the members listed above participated in the 2020 Medtronic Design Competition with their team Ultravision. Ultravision was our only team who passed to the final round and placed second after providing a thorough and remarkable presentation on their device. We are always impressed by the passion and brilliance of our members and we are excited to continue supporting them in their endeavors by providing more opportunities to expand their network and experiences. We will keep encouraging our members to participate in attending the meeting, applying for research presentations, and participating in the design competition in order to make attendance at the BMES Annual Meeting a tradition. Our goal for the BMES National Meeting in 2021 is to fully fund ten members in their registration fees through means of fundraising, chapter funds, and reaching out to the Department of Biomedical Engineering at UCI again. If there is much interest, we may instead fund 50% of the registration fees for twenty members instead in order to help more members attend. Additionally, we plan to have three teams submit to this year's design competition.

Award	Event	Presenters
Second Place	2019-2020 BMES - Medtronic Student Design Competition	Rahul Sreedasyam Kamalesh Ananthakrishnan Udit Iyengar Karan Sharma Kevin Yang Huy Ho

XI. Future Direction

XI.1 Summation of Next Year's Chapter Goals

BMES at UCI recognizes that despite our many successes in the past year, there is always room for growth and improvement. In the span of this past quarter alone, while transitioning into a new Officer Board, changes in leadership strategies and individual board member responsibilities have allowed for more efficient meetings and a dynamic quarter filled with a variety of events. Going forward into the next academic year, we have another opportunity to maximize the reach of our club and better serve our members, especially given the return to on-campus learning and events. As such, we have identified a comprehensive plan focused on member engagement, inter-club and inter-chapter relations, and professional development.

XI.2 Outline of Goal Achievement Strategy

XI.2.1 Member Engagement

Given the heavy course load of our engineering members, member engagement and retention is understandably a challenge. The first meetings each year during Fall Quarter typically bring in the highest attendance upward of 100 people, and that number slowly dwindles down as classes and midterms pick up. Building upon our previous member engagement strategies, such as the Member of the Month Program, is critical to retaining member attendance throughout the year. Some strategies we have in mind are outlined below:

- Committees - Implementing a committee system allows members to be more involved in the behind-the-scenes planning of club events and become more engaged with the club as a whole. We intend to incorporate this in the form of an Outreach Committee that assists the Outreach Chairs in planning fundraising and volunteering events.
- Hybrid meetings - Being able to join meetings virtually helped members who otherwise would not be able to physically attend meetings still participate. Additionally, this virtual setting proved convenient for guest speakers as well as they were not limited by transportation time and other hassles. For next year, we plan to have a hybrid of in-person and virtual events to accommodate and maximize attendance.
- Membership options - Having three membership options each with varying prices and included benefits helped bring in more members this past year. The free base membership allowed attendance to most events and subscription to weekly emails, both of which were previously only available for paid members and most likely limited our attendance. Going forward, we intend to keep this free base membership option in order to reduce potential barriers for our members.

XI.2.2 Inter-Chapter Relations

Over the last year, hosting events remotely during the COVID-19 pandemic allowed more frequent collaboration between BMES student chapters than ever before. Before the pandemic, we hosted very few collaboration events with other chapters due to transportation challenges. However, there are no obstacles preventing our members or members of other chapters from joining events through online platforms such as Zoom. This year, we have built a strong relationship with the BMES at UCSD and BMES at UCLA chapters. We hope to continue collaborating with these chapters and expand our network to other chapters as well. We have had communication with BMES at UCR, and we aim to strengthen this relationship. Next academic year, we plan to have a hybrid model of in-person and virtual events. Our goals for inter-chapter events are listed below:

- One Collaboration Event Per Quarter - Our chapter recognizes that the relationships developed with other BMES chapters allow for the exchange of ideas for events, provide our chapter board members new perspectives about how to structure and run our chapter, and give our members the opportunity to meet students from other schools, backgrounds, and interests. Because of this, we are aiming to host at least one collaboration event with other BMES chapters each academic quarter.
- One Large Virtual Collaboration Event Per Year - Our second goal is to host one large collaborative event hosted virtually per year in a format much like the Trivia Night event we hosted this January. We plan to reach out to and connect with the other BMES chapters this summer in order to get as many BMES student chapters involved as possible to provide all these members with an opportunity to meet students from other schools.
- One In-person Collaboration Event Per Year - We aim to have an in-person collaboration event held outside with BMES chapters in the near vicinity of UCI such as UCLA, UCR, and UCSD such as a beach social. This event will be challenging to coordinate with members from all chapters involved needing travel to the chosen event location. However, we believe this will be an invaluable experience for all attending students. If health and safety regulations prevent this event from occurring next Spring, we plan to push the event to the following year.

XI.2.3 Professional Development

Professional development is a core value of BMES at UCI, and we seek to provide members with a wide variety of ways to accomplish this. In recent years, we have introduced the Mentorship Program and revamped the Annual Project in order to help develop intrapersonal and technical skills. Beyond this, outreach and community service have similarly become an important part of what we do. Maintaining and continuing to grow these programs is a goal of ours going forward. Outlined below are some strategies we have in mind:

- Company networking - Company talks offer networking opportunities and exposure for our members while also maintaining good relationships with companies in the area. Our goal is to have at least two company events or talks per quarter.
- Project Makerthons - Our project program has grown extensively in the past year. However, what is still missing is additional means to connect and showcase the technical skills developed by members in a formal setting. Project Makerthons are events analogous to “Hackathons” that would offer hands-on experience in a competitive environment for members to apply their skills. Such an event would operate dually as a networking experience with people of other majors and industry representatives or professors both of which would be invited to attend.

- Entrepreneurship - The National BMES Competition has been a great opportunity for members to channel their innovative ideas in a constructive and competitive setting. We intend to build off our successes in this realm and incorporate entrepreneurship into our events and projects as another path students may not be as aware of. Specifically, we aim to leverage and advertise the resources provided by the UCI ANTrepreneur Center and UCI Applied Innovation.