

Biomedical Engineering Society at UCLA

Chapter Development Report
2020-2021

Since its inception in 2003, the Biomedical Engineering Society (BMES) chapter at the University of California, Los Angeles (UCLA) has strived to bring together undergraduate students, graduate students, faculty members, alumni, and industry professionals for the improvement of the bioengineering community on campus. Our organization's central mission focuses on ensuring the success of all students interested in the field, both inside and outside of the classroom. To achieve this, UCLA BMES focuses its activities and events to target six crucial pillars of students' careers: academic success, professional development, social interactions, mentorship, community outreach, and technical skills training. This year, our student chapter has worked to further grow these six aspects while navigating the challenges of migrating events online. Despite this major hurdle, we debuted our first bioengineering-themed hack-a-thon, BioHack at UCLA; increased the breadth of companies participating at the Biotech Career Fair; and continued to foster a bioengineering community in a remote environment. The following chapter development report elaborates further on the progress BMES UCLA has proudly accomplished this academic year.

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A LETTER FROM OUR ADVISOR

Dear Student Chapter Award Committee Members,

In the 2020-2021 year, the UCLA chapter of BMES was dedicated to fostering a strong community online, and to make advancements in professional and technical skills development.

Despite being apart this year due to COVID-19, we were dedicated to delivering the same quality of events as we did in person, and to continue expanding our efforts in supporting students to become well-rounded individuals in the bioengineering community. Mentorship and social events continued to be held throughout the school year. We utilized online platforms like Zoom, Discord, Gather.town, JackBox Games, and more, to find new ways of interacting and fostering friendships. Similarly, our community outreach efforts persisted through the pandemic, using software like TinkerCAD; we even added on a second partner school for our Reaching and Inspiring Students in Engineering (RISE) program. As we return to campus, we are excited to continue leveraging these platforms to reach a larger number of our membership.

With professional development, we continued to host Bioengineering Career Week, offering students workshops to refine resumes; opportunities to network with recruiters; and consolidating bioengineering internships and jobs to a hub within campus. This year we focused on hosting company informational sessions with a mix of large biotechnology companies and smaller start-ups. In conjunction with our career panels, we are excited to continue expanding and exploring the breadth of bioengineering industries we can showcase to our students.

Lastly, we also continued expanding the technical scope of the club. Freed from physical space limitations and equipment constraints, we were able to welcome 95 students across various majors to participate in our year-long technical projects. These projects provide students with a breadth of exposure to technical skills, including, but not limited to: Arduino, CAD, coding, circuitry, and even cell culture through Labster. To further welcome students who are interested in enhancing specific skills, we continued our technical workshops, expanding to topics like app development, Git, Eagle, and more. This year, we also launched our first bioengineering-themed make-a-thon, BioHack at UCLA, to encourage teamwork, ideation, and innovation among undergraduate students. Moving forward, we look forward to formalizing the workshops series to better accommodate expressed student interest and utility.

The remote environment has challenged us to adapt faster than we ever have. We were able to connect with even more members from the bioengineering community with removal of traveling constraints, which has imparted invaluable insight on more niches within bioengineering, allowing us to better serve our membership. From these lessons learned through the past academic year, BMES at UCLA is ecstatic to modify existing events and add to our event repertoire, emerging as a more accessible and improving student chapter.



Sincerely,
Dr. Daniel T. Kamei
Chapter Advisor
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BMES UCLA
is proud to present the
2020-2021
Chapter Development Report

In this document, we proudly report all administrative and financial information regarding our events of the virtual school year, along with a detailed report of our chapter's activities. At the time this CDR was submitted, the UCLA academic year has not yet ended.

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ADMINISTRATIVE REPORT

The BMES chapter at UCLA is classified by the Henry Samueli School of Engineering and Applied Sciences as a medium-sized organization. Currently, the BMES board consists of 31 officers who design and execute all BMES events to support our growing size and diversifying perspectives on the field of bioengineering.

Led by the President and three Vice Presidents, the organization is split into six branches, where each executive board member manages their corresponding officers within each branch (specific branches and positions detailed on the next page). The officers identified in this report do not include the 7 committee members who assist the officers in their duties.

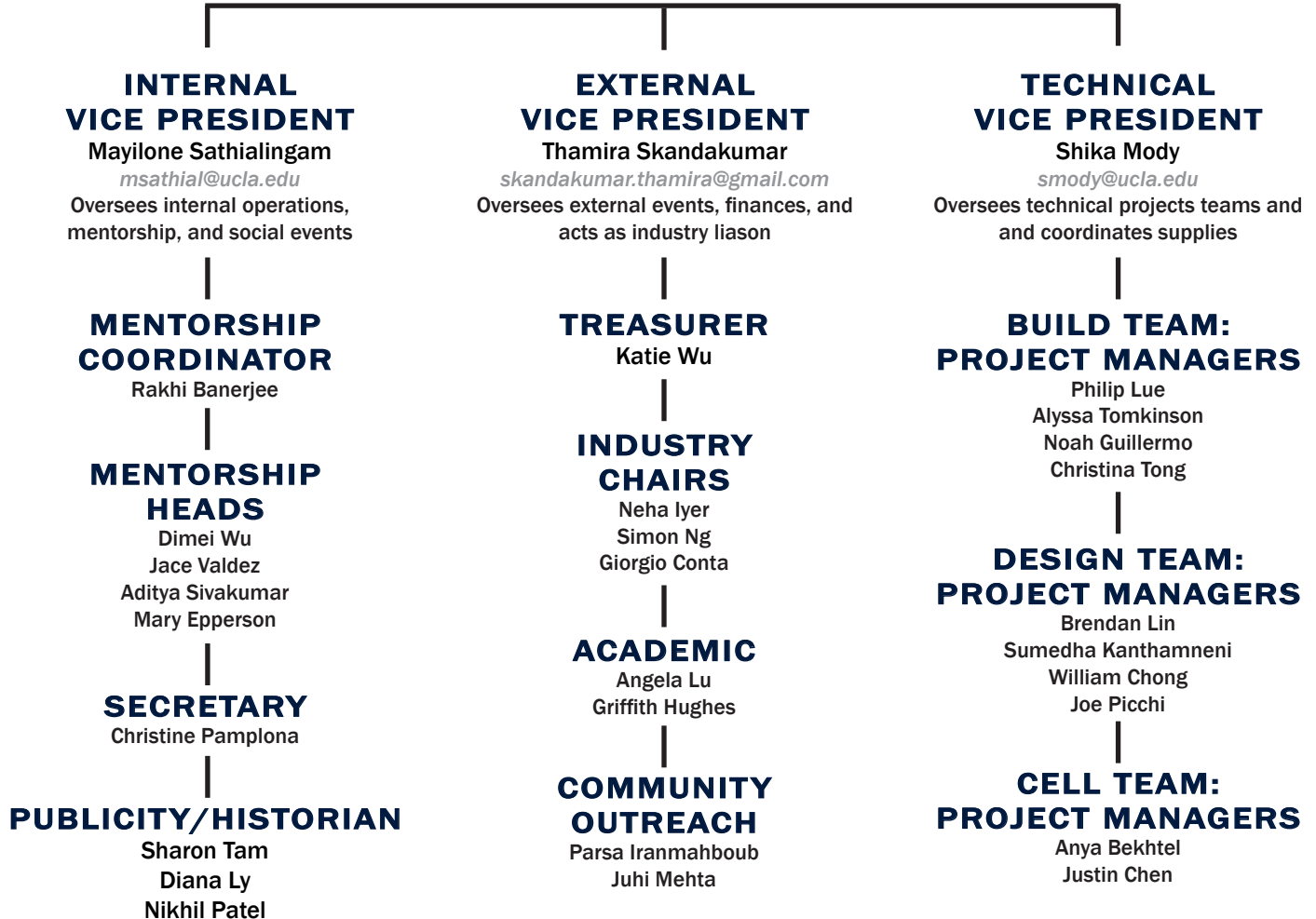
The wider general membership of the BMES chapter is open to all interested students, regardless of major or year. Membership grants students access to all events planned by our officers, ranging from academic to social to industry opportunities.

BMES BOARD

AMINISTRATIVE OVERVIEW

CHAPTER PRESIDENT

Linnet Chang
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 Oversees Chapter Operations



Executive Board Meetings and Agendas

Our executive board members, consisting of the President and VPs, meet weekly to discuss the agenda for board meetings as well as any action items needed to be completed by the four executive members.

General Board Meetings and Agendas

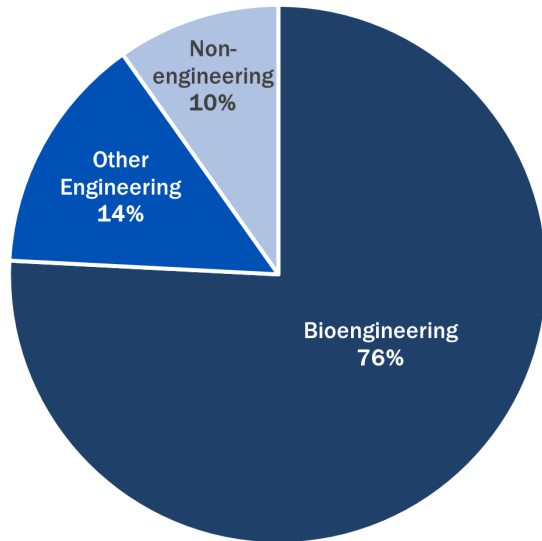
Our board members meet weekly to discuss and collaborate on the future of the chapter; this also serves as an opportunity for the executive board to touch base with each position. Each week, we review events from the previous week (if applicable), update all board members of activities from each board position, and open up a feedback roundtable for all board members to discuss points of improvement.

General Board Meeting Dates		
Fall	Winter	Spring
10/12/2020	1/12/2021	4/7/2021
10/19/2020	1/19/2021	4/14/2021
10/26/2020	1/26/2021	4/21/2021
1/2/2020	2/2/2021	4/28/2021
11/9/2020	2/9/2021	5/5/2021
11/16/2020	2/16/2021	5/12/2021

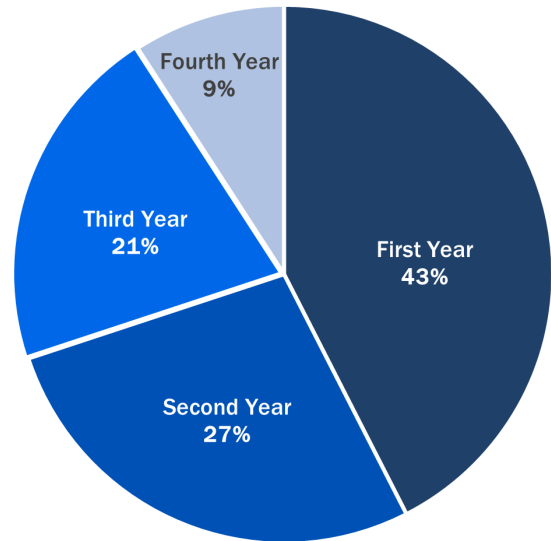
UCLA BMES MEMBERSHIP

GENERAL STATISTICS

MEMBERSHIP BY MAJOR



MEMBERSHIP BY YEAR



BMES UCLA consists of 153 registered members, with 116 of these members being in the bioengineering major. Other engineering majors that are a part of BMES include chemical engineering, computer science, electrical engineering, mechanical engineering, and materials science engineering; other non-engineering majors include computational systems biology, biology, physiological sciences and microbiology. In terms of faculty, 7 of the 15 core faculty of the Bioengineering Department have participated in chapter activities over the 2020-2021 academic year.

Total Student Membership: 153

National BMES Membership: 11

GENERAL MEETINGS

	Date	Attendance	Agenda
Fall GM	10/6/2020	188	Introduce 2020-21 board members, announce committee and technical projects applications, announce Fall events
Winter GM	1/6/2021	67	Introduce 2020-21 committee members, announce Winter events
Winter Mini GM #1	1/25/2021	3	Publicize fundraiser, social, academic, mentorship and industry events
Winter Mini GM #2	2/14/2021	6	Publicize social, EDI, and professional development events
Spring GM	3/31/2021	58	Announce 2021-22 executive board, announce Spring events

TREASURY REPORT

The External Vice President and Finance team utilize a breadth of grant opportunities and funding sources to ensure that members are not paying entry fees to attend events. BMES at UCLA applies for funding through UCLA student funding resources to cover the costs of larger events, such as the purchase for use of online platforms virtually. In addition, BMES at UCLA hosts various fundraisers to generate revenue that is solely used for the purchasing of BMES-related items. Over the last few years, BMES has run a successful sponsorship program in which industry representatives help support the activities of BMES to ensure meaningful connections between BMES members and biotech companies.

Funding helped cover the costs of virtual platforms for large scale events as well as providing BMES members with supplies to participate in mentorship activities and technical project teams from the comforts of their homes. Funds specific to BMES are held in a checking account through the University Credit Union and a departmental account.

The following report encompasses all expenditures, revenues and funding throughout the year from 9/28/2020 - 6/11/2021. No officers are monetarily compensated for their work and all funds are solely spent on BMES activities solely.

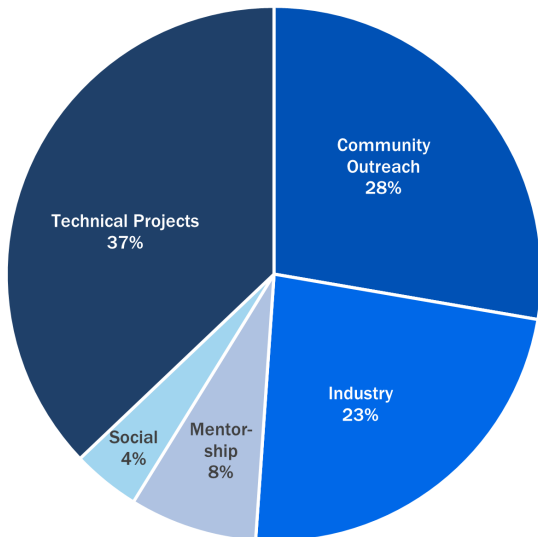
EXPENSES

ACCOUNTS BREAKDOWN

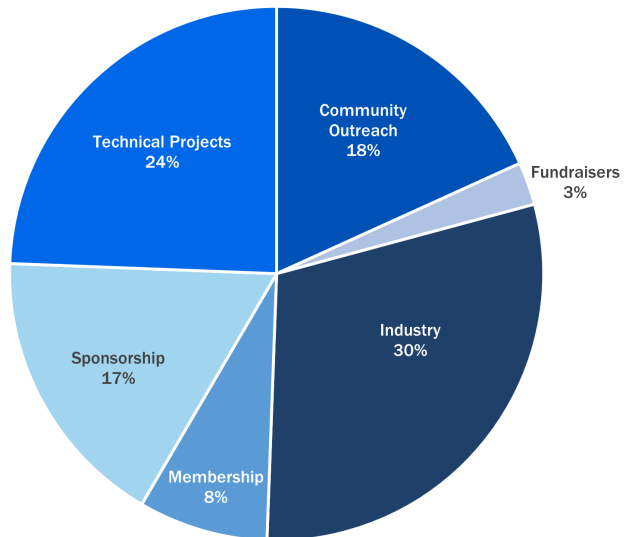
Overview of expenditures and deposits by event category

Event Type	Expenditure	Deposit
Academic	\$0.00	\$0.00
Community Outreach	\$1,963.24	\$1,963.24
Fundraisers	\$0.00	\$279.00
Industry	\$1,656.80	\$3,205.80
Membership	\$0.00	\$846.00
Mentorship (Mentorship Families)	\$545.38	\$0.00
Social	\$290.38	\$0.00
Sponsorship	\$0.00	\$1,850.00
Technical Projects	\$2627.93	\$2627.93
Total	\$7,083.73	\$10,771.97
Net Account Change		+ \$3,688.24

EXPENDITURES BY EVENT TYPE



DEPOSITS BY EVENT TYPE



FUNDING OVERVIEW

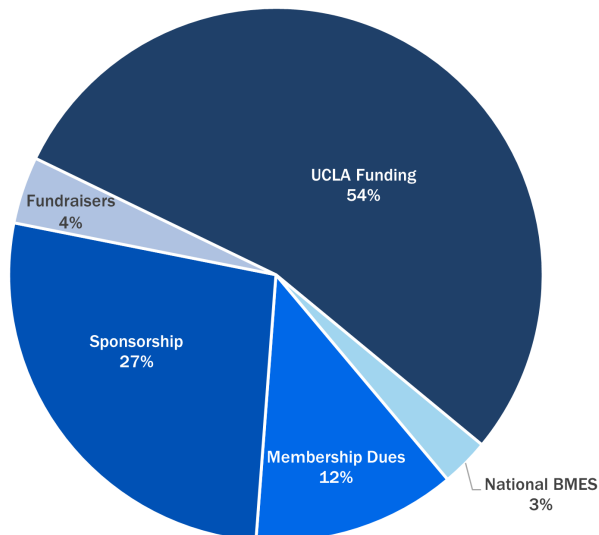
Overview of BMES Fundraisers

Name	Date	Amount
Membership Dues	ongoing	\$846.00
Game Tournament	12/20/2020	\$58.00
Participants donated to compete in two rounds of virtual games including Code Names, Among Us, Bomb Party, and Jackbox Party Pack games. The Winner was awarded a prize.		
Talent Show	2/7/2021	\$174.00
Participants donated to view performances put on by talented members of BMES.		
Smorgasboarg of Entertainment	5/26/2021	\$47.00
Participants donated to complete a variety of fun-filled activities to earn points.		
Total		\$1,125.00

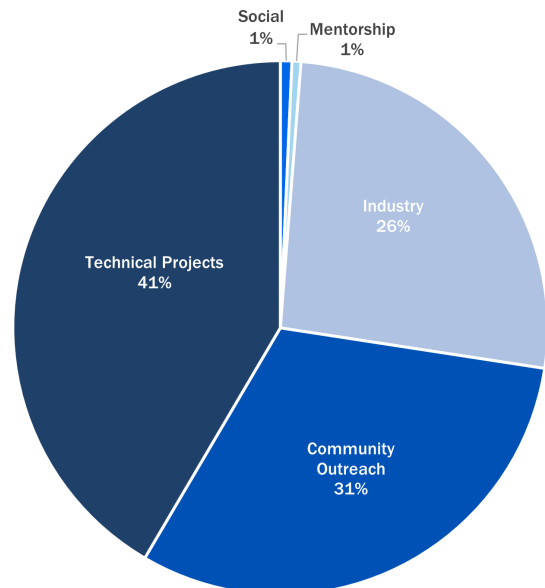
Overview of External Funding

Name	Amount	
[UCLA] Community Activities Commission	\$1,963.24	
[UCLA] Contingency Finance Application	\$43.96	
[UCLA] Campus Programs Committee	\$1,691.03	
[UCLA] Bioengineering Department	\$2,627.93	
National BMES	\$200.00	
Sponsorship - UCLA Magnify	\$500.00	
Sponsorship - UCLA Biodesign	\$500.00	
Sponsorship - ZS Associates	\$500.00	
Sponsorship - Medtronic	\$150.00	
Total		\$ 8,176.13

FINANCIAL SUPPORT



EXTERNAL FUNDING SPENT BY EVENT TYPE



CHAPTER ACTIVITIES

BMES at UCLA aims to provide its members with a breadth of events to support their current undergraduate journeys and future careers in bioengineering. To achieve this, event programming is targeted towards six main pillars of a student's undergraduate journey: professional development, academic support, technical projects, community outreach, social networking, and mentorship.

Professional development aims to support students' career trajectories; alongside academic support, students are equipped with resources to navigate classes for post-graduate success. Through technical projects, students have hands-on opportunities to learn about technical skills, teamwork, and iterative design; similarly, our community outreach programs serve to translate these learned skills into curriculum for the next generation of scientists and engineers, connecting and giving back to our local community. Lastly, our mentorship and social events connect students with our network of bioengineers, fostering safe spaces for support, advice, and friendship.

All these events are directed towards holistic development of our chapter members as participants in the bioengineering field and in general society. As we continue to evolve, BMES at UCLA hopes to continue exploring new ways to support our members and to find new ways of collaboration with other student organizations on campus, BMES chapters off-campus, and BMES on the national scale.

SOCIAL

One of the major goals of UCLA BMES is to foster friendships and a sense of community within the bioengineering student body and the department. Therefore, we host a wide variety of social events throughout the year, tailored to different audiences, to garner as much student interest and participation as possible. We host department-wide events to facilitate connections and conversations between undergraduate students, graduate students, and faculty.

To make a school as large as UCLA feel a little smaller, we also host more casual undergraduate-only socials and smaller socials within our board to provide a platform for students to catch up with old and new friends and keep student morale high throughout the year. Especially during this school year where many students did not have the same opportunity to socialize on campus, we found the social branch of BMES to play an exceptionally pivotal role in creating friendships and a sense of normalcy among the student body.

DEPARTMENT-WIDE CELEBRATIONS

Every quarter, BMES invites undergraduates, graduate students, faculty, and department staff to gather and celebrate the bioengineering community. Although the various venues and themes of these events had to be replaced by a virtual setting on Zoom, the variety of unique activities during each event created a fun environment that helped connect the undergraduate membership to the rest of the department in a casual, friendly setting.

FALL BBQ

Date: 10/8/2020 **Attendance:** 60 **Cost:** \$0.00

To kick off the first week of the school year, the BMES Fall Barbeque allowed students of all years as well as some faculty to virtually meet each other in a casual setting. Members worked together in small breakout rooms to complete participate in UCLA Jeopardy, a mystery riddle, and family reveals.

HOLIDAY PARTY

Date: 12/2/2021 **Attendance:** 75 **Cost:** \$0.00

BMES members gathered to celebrate the beginning of the holiday season and a near-end to a successful Fall Quarter. With the fitting theme of *Home Alone* based on the movie, students were able to socialize with new and old friends in small breakout rooms through a series of holiday-themed activities, including charades, a scavenger hunt, and a team drawing contest.

BIOENGINEER'S BALL (CANCELLED)

Date: 2/12/2021 **Attendance:** N/A **Cost:** \$0.00

The Bioengineer's ball is an annual tradition hosted as a nostalgic tribute to prom. The event is held at the UCLA Grand Ballroom and invites a live DJ to play tunes for those who attend. Due to COVID, the ball was cancelled, but planning for the event began during the summer of 2020 when plans for the academic school year were undefined.

END-OF-THE-YEAR BANQUET

Date: 5/21/2021 **Attendance:** 55 **Cost:** \$0.00

Students and faculty gathered for Banquet to honor the seniors and celebrate all the successful events and memories we have made throughout this unprecedented year. Participants especially enjoyed the breakout rooms activities, where they played a team drawing telephone activity and also created a fun, themed powerpoint which they presented to the audience.

UNDERGRADUATE SOCIALS

BMES tailors several events throughout each quarter for building friendships between undergraduate students. Each social event was designed to target unique student interests to ensure all students would have fun. The virtual environment also made it easier for students to join and meet new people within a few clicks.

FIRST YEAR & TRANSFER WELCOME

Date: 10/6/2020

Attendance: N/A

Cost: \$0.00

In order to help first years and transfer students feel comfortable and welcome, this event provided them with the opportunity to interact with other new students as well as the mentorship heads of BMES and get any questions they may have answered.

MOVIE NIGHT PART I

Date: 1/22/2021

Attendance: 15

Cost: \$0.00

In order to destress prior to the beginning of midterms, students came together for a fun movie night and watched Disney's new film, *Soul*, playing games and hanging out afterwards.

(E)SPORTS DAY

Date: 2/12/2021

Attendance: 20

Cost: \$0.00

In place of the annual Sports Day competition between mentorship families, BMES members competed in a series of virtual individual and team games, including Catan, Codenames, and Pictionary. This event was an ideal time for students to destress after their first midterms and meet new friends.

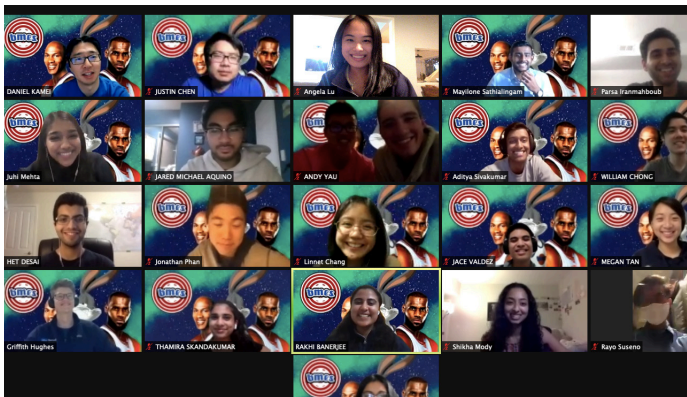
PALENTINE'S DAY

Date: 2/13/2021

Attendance: 13

Cost: \$0.00

Held the day before Valentine's Day, this event provided another opportunity for members from different BMES families to get to know each other. Random pairings were made to create "dates" and over the course of the evening, the pair of members got the chance to get to know each other.



MORE UNDERGRADUATE SOCIALS

FAMILY FEUD

Date: 3/5/2021

Attendance: 43

Cost: \$0.00

This event allowed for some friendly competition between the BMES Mentorship families. Members came together to win points for their family by showing us what they knew!

MOVIE NIGHT PART II

Date: 4/1/2021

Attendance: 12

Cost:\$0.00

With the success of the previous Movie Night, we held another Movie Night in which we watched *Cars*. Members were encouraged to come wearing pajamas and bring their own popcorn to enjoy!

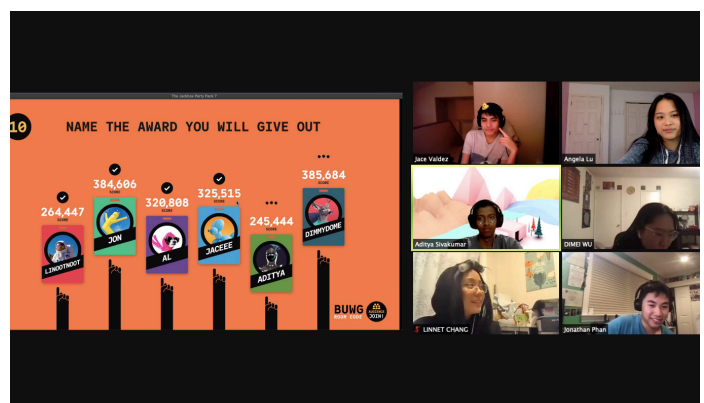
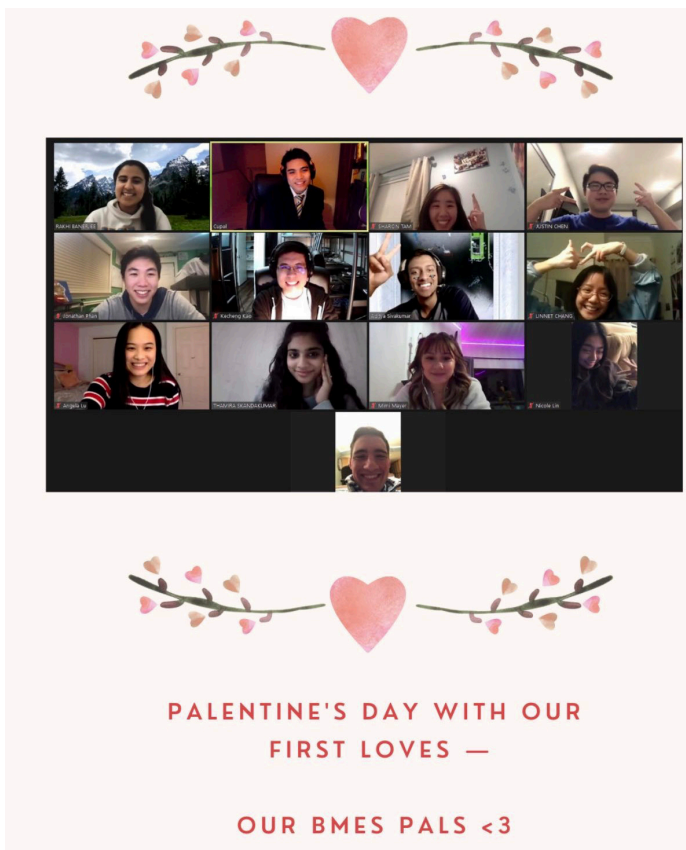
BYO PAINT NIGHT

Date: 5/14/2021

Attendance: 10

Cost: \$0.00

To relax a bit before finals studying kicked in, members had the opportunity to relax and paint some beautiful scences with each other during this bring your own paint night.



BOARD SOCIALS

Due to UCLA BMES being so multifaceted in its programs and offerings to students, we have a large board composed of multiple branches. Quarterly board socials were crafted to ensure that all board members felt closer to one another and part of the family, regardless of their position or branch. These socials helped foster a camaraderie that was essential for executing our events, many of which often required the support of multiple branches.

FALL VIRTUAL BOARD RETREAT

Date: 10/18/2020 Attendance: 25 Cost: \$0.00

The BMES Board came together and participated in various virtual team-bonding events to foster a tight-knit community among Board Members to help them tackle the upcoming school year.

WINTER VIRTUAL BOARD RETREAT

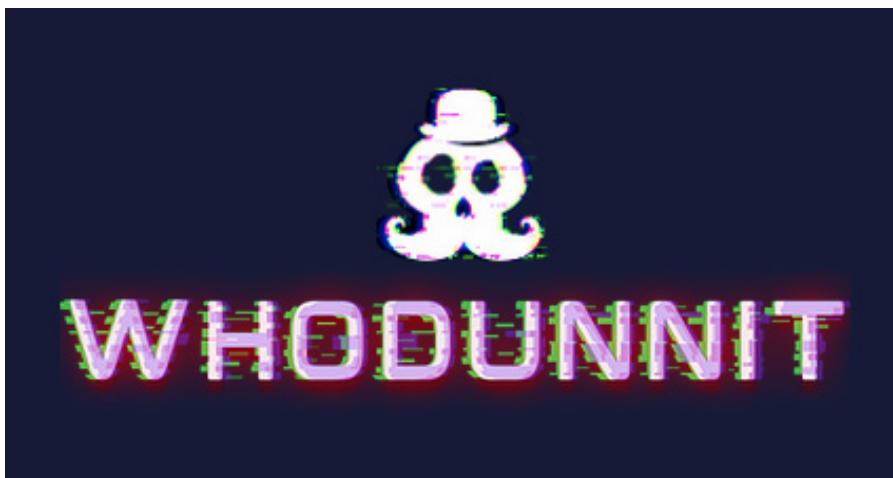
Date: 1/15/2021 Attendance: 34 Cost: \$0.00

To welcome and fully integrate the new committee members selected to train under their respective chairs, BMES Board spent the night playing virtual team-building games to foster comradery for the remainder of the school year.

SPRING MURDER MYSTERY BOARD SOCIAL

Date: 4/30/2021 Attendance: 27 Cost: \$43.96

To kick off the final quarter, BMES Board worked together to solve professional murder mysteries (which will be saved for subsequent events/years). Board Members were given their character information and interacted with each other in a virtual environment. They worked closely with one another, improved their communication and teamwork, and had fun throughout the whole activity.



INTER - CHAPTER

Fostering a larger bioengineering community outside of just UCLA is integral to developing the breadth and diversity of ideas and representation of what it means to be a bioengineer. This year, we attended, invited, and collaborated with BMES members from sister schools in the Southern California region on a variety of events. These include socials, career panels, EDI panels, offering all attending students a larger network of resources for personal and professional development.

COLLABORATIVE EVENTS

These events were a result of collaborative efforts from various chapters of BMES. These involved planning and communication between schools in order to make sure both opinions and interests were heard.

SOCIAL w/ USC

Date: 4/1/2021

Attendance: 43

Cost: \$0.00

In lieu of the annual Beach Volleyball social, this year USC and UCLA co-hosted an online games social to show off our school pride and rivalry. Students were able to meet each other through games of Geoguesser, Codenames, and more.

INVITATIONAL EVENTS

These events were planned by one chapter and an invitation was sent out to nearby chapters to attend the event. Other chapter members were invited to partake not only to give access to networking opportunities, but to also develop social relations with other undergraduate students.

THANKSGIVING ARTS & CRAFTS AT UCI

Date: 11/24/2021

Attendance: 40

Cost: \$0.00

BMES at UCI hosted an arts and crafts night, focusing on bonding with fellow peers through origami and sharing thanks on a virtual post-it board.

TRIVIA NIGHT WITH UCSD & UCI AT UCI

Date: 1/12/2021

Attendance: 60

Cost: \$0.00

BMES at UCI hosted a trivia night, stoking friendly competition between UCI, UCSD, and UCLA to see which team reigns supreme. Teams were composed of students from all three schools, which led to new friendships and learning fun factoids.

INVITED UCI TO EDI & CAREER PANELS

Date: Various Dates

Attendance: Varied

Cost: \$0.00

We invited BMES at UCI members to attend our EDI and career panels as both student chapters benefit from developing a holistic view on bioengineering; just as UCI has invited us to tap into their professional and social networks. Refer to **page 27 and 29** for specific event details.

OUTREACH

We at UCLA BMES strongly believe in playing an active role in supporting our local underserved communities through educational outreach and providing financial resources. Since many of us found our passion for STEM throughout our various experiences during K-12, we want to make sure that students from underserved communities receive a hands-on exposure to STEM to spark their interest in a career in STEM. To accomplish this, our Reaching and Inspiring Students in Engineering (RISE) program provides middle and high school students hands-on yearlong exposure to building circuits, coding, and creating computer aided design (CAD) models. In just our second year of the program, we have expanded to two school sites and have closely worked with nearly 60 students from Title I schools in Los Angeles. In a non-pandemic year, we would also host science days that provide a hands-on educational field trip to UCLA for about 90 elementary and middle school students from Title I schools. Lastly, every year we also host fundraisers to raise money for LA food banks to combat food insecurity, a problem that was further amplified due to the pandemic; we are proud to have raised a record-setting amount of funds this year.

REACHING & INSPIRING STUDENTS IN ENGINEERING (RISE)

Our goal was to implement a year-long, hands-on educational experience to foster continued interest in pursuing higher education and a career in the field of engineering. This year, we were able to expand our impact on students by partnering with a second school. RISE partners with James Madison Middle School and Fairfax High School, both Title I schools in the Los Angeles Unified School District, where over 87% and 71% of students come from low-income backgrounds, respectively. The program provides students from underserved communities with the opportunity to explore the vast possibilities in science, technology, engineering, and mathematics (STEM) without financial limitations. RISE offers a structured, engaging learning environment in which these students are not only introduced to STEM concepts, but are also exposed to the various opportunities available to them as they continue their education.

Our program focuses on teaching basic engineering concepts through a hands-on learning environment. Due to the COVID-19 pandemic and health guidelines, workshops and all activities were limited to a virtual setting. Nonetheless, with the guidance of our volunteers, students at James Madison Middle School were able to learn how to build basic circuits and design 3D objects using TinkerCAD. These workshops included opportunities for students to design LED circuits in series and parallel and with pushbutton switches. During the later half of the year, workshops focused on using Computer Aided Design (CAD) software and code blocks from TinkerCAD to allow students to learn concepts regarding biomimicry and engineering design for biomedical applications, while creatively constructing objects like a flower, finger stint, and dinosaur prosthetics.

At Fairfax High School, students were provided with their own physical Arduino microcontroller kit. Throughout the year, workshops were given to teach students how to build LED circuits with the Arduino, breadboard, and various hardware components like pushbutton switches and potentiometers. Students were also able to learn more about the Arduino coding language and how to write code for their own Arduino circuit. The culminating project involved students designing an automatic night light, an auditory and visual reaction time test, an ultrasonic distance detector, or Newton's luminescent cradle.

Overall, we have received plenty of positive feedback from the school science director, teachers, and principals of both schools, and it was extremely rewarding to increase students' interest in STEM through these regular visits. Educational outreach has always been a cause that is dear to our hearts, and we will always strive to increase the reach and quality of our efforts.

RISE VISIT BREAKDOWN

James Madison Middle School RISE Visits:

	Date	Attendance	Visit Description
Visit #1	12/10/2020	37	Circuit Basics: Voltage, Current Resistance, Open vs Closed Circuit, Schematic Diagrams; Use TinkerCAD to light up an LED with Arduino
Visit #2	1/21/2021	37	Review Circuit Basics; In break out rooms, design series and parallel circuits on TinkerCAD
Visit #3	2/11/2021	37	Explore resistance and resistivity; Learn how LED intensity changes in series vs. parallel
Visit #4	3/4/2021	37	Learn the basics of CAD; In breakout rooms, use TinkerCAD to design dice and stackable bricks
Visit #5	4/15/2021	37	Explore biomimicry, the Fibonacci sequence, and mathematical patterns found in nature; In breakout rooms, use Code Blocks on TinkerCAD to create 3D designs found in nature (flowers and honeycomb)
Visit #6	5/6/2021	37	Continue exploring basic CAD techniques; In breakout rooms, use TinkerCAD to design custom 3D finger splits
Visit #7	5/20/2021	37	Learn about basic functionality of ball and socket joints; In breakout rooms, use TinkerCAD to design prosthetic limbs for prehistoric species

Fairfax High School RISE Visits:

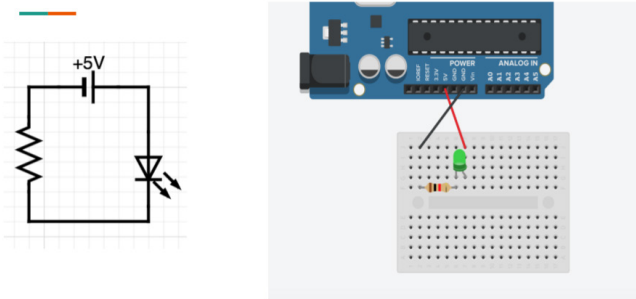
	Date	Attendance	Visit Description
Visit #1	1/21/2021	20	Circuitry Basics: Voltage, Current and Resistance; In breakout rooms, Use TinkerCAD to design series and parallel circuits
Visit #2	2/11/2021	20	Review circuitry material; Learn basics of code in Arduino Language; In breakout rooms, Use TinkerCAD to light up an LED with Arduino
Visit #3	3/4/2021	20	Review coding in Arduino; Learn about buttons and potentiometers; In breakout rooms, use Arduino kits to do a potentiometer activity and create a traffic light circuit
Visit #4	4/15/2021	20	Review concepts from past lessons; Introduce the 4 final projects: Automatic Night Light, Reaction Time Test, Ultrasonic Distance Detection, and Newton's Luminescent Cradle; In breakout rooms, complete workshop activities to learn about project specific materials and code
Visit #5	5/6/2021	20	In breakout rooms, use Arduino kits to start working on final projects
Visit #6	5/27/2021	20	In breakout rooms, complete working on final projects

RISE BUDGET

ITEM/EXPENSE	COST
Technical Equipment (Arduino kits, breadboards, etc.)	\$1963.24
Travel	\$0.00
Food	\$0.00

JAMES MADISON CURRICULUM

FAIRFAX CURRICULUM



Teaching students how to light up an LED on TinkerCAD

Circuit Schematics

- Diagram that shows how wires and other components in an electrical circuit are connected
- Necessary to communicate across your set-up

Battery	
LED	
Resistor	
Switch	
Ground	

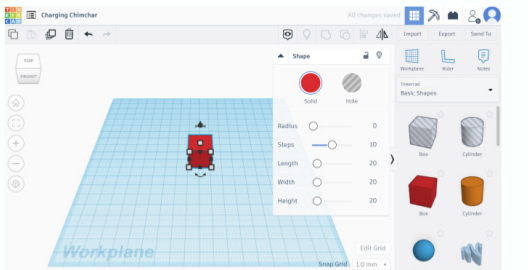


Teaching students how to read circuit schematics

Placing Objects

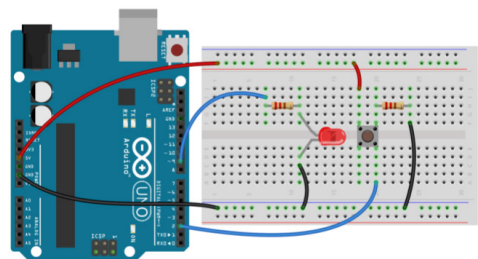
Drag and drop any of the objects from the menu and into your environment!

Each object has their own unique set of functions you can use to change the shapes!



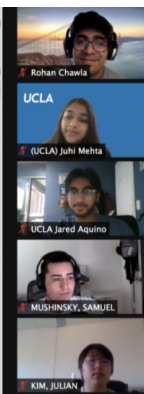
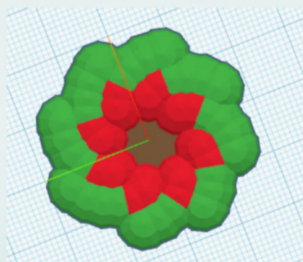
Teaching students how to create basic shapes in CAD

LED Reaction Test

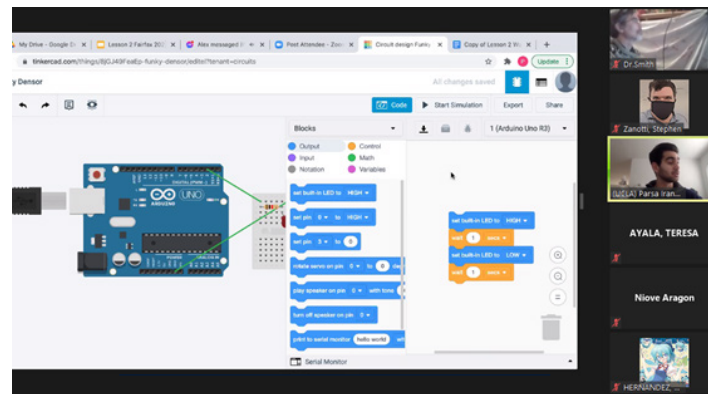


Building a LED and button based reaction circuit

Using the Golden Ratio to Make Flowers!



James Madison RISE Visit #2



Fairfax RISE Visit #6

ENGINEERING KIDS DAY WITH ESUC

Date: 4/7/2021

Attendance: 90

Cost: \$0.00

The Engineering Society at UCLA hosts a yearly event in which college students are able to sign up for 20 minutes slots to introduce K-5 students to different types of engineering. BMES volunteers led an experiment to teach attendees about molecular interactions through dish soap, water and pepper.

SCIENCE DAYS (CANCELLED)

Date: 6/2/2021

Attendance: N/A

Cost: N/A

The Science Day Series began with the Equitas Science Academy in 2016, and since has been a BMES tradition that members look forward to every year. Middle school students from Title I schools in the LA region are invited to UCLA for a day to experience stepping foot on to a university campus while getting hands on experience on basic engineering concepts. Since the introduction of Science Days, we have expanded to multiple schools, including James Madison Middle School.

The event was unfortunately cancelled this year due to COVID-19, however, if the event were to take place, BMES would have hosted 80-90 students where they would be greeted by BMES volunteers. Middle schoolers are taken on a campus tour, are given the ability to explore the UCLA planetarium with a guided show, listen to graduate students talk about their love for science and conduct their own science experiment where they extract strawberry DNA. The majority of the middle school students attending come from a minority background. Therefore, our diverse group of panelists and student volunteers provide a great representation of minorities pursuing STEM.

FOOD BANK FUNDRAISER

Date: 5/10/2021 - 5/14/2021

Attendance: N/A

Cost: \$0.00

In past years, BMES at UCLA has focused on supporting the local community through annual Food Drives. Due to the COVID-19 pandemic and that many members were no longer on campus and instead studying remotely, we were unable to host a physical food drive this year. Instead, we shifted our focus on having a virtual fundraiser, where all donations would go to the LA Regional Food Bank. Collectively, we were able to fundraise a total of \$577.

Shown to the left is the bingo card BMES members posted on their social media platforms to raise money for the food bank. BMES volunteers included fun incentives to the bingo board to encourage friends and families to donate in return for rewards such as receiving a thank you note.



MENTORING

We understand that, while larger scale social events can be great places to meet many new people at a time, it is during smaller group interactions that many friendships form. Thus, UCLA BMES's Mentorship Family system hosts these smaller events and makes social gatherings more readily accessible and less daunting for students. Students that sign up to join a family are paired with an upperclassman volunteer mentor and then placed into a family based on both career and recreational interests.

Named after the DNA nucleotides in the spirit of bioengineering, our families are a great source of friends, mentors, and memories! All events are open to all students, regardless of family. These families accomplished the ultimate goal of forming tight relationships among the student body. In addition to mentorship families, students are also paired with UCLA BMES alumni to provide further guidance on life after college. As the bioengineering major has various different career path branches, these alumni mentors have played a pivotal role in helping students narrow down their career choices post-graduation.

MENTAL HEALTH EVENTS

In addition to facilitating friendships and a sense of community among UCLA BMES Members, the Mentorship Family program also provides a safe space for openly discussing mental health issues that students may be facing. These events were especially important during the pandemic, in which students have been dealing with the challenges of remote learning throughout the year.

MENTAL HEALTH PJ PARTY

Date: 11/24/2021

Attendance: 40

Cost: \$0.00

Adenine and Cytosine (mentorship families discussed on [page 21](#)) collaborated on a mental health event at the end of Fall Quarter, using Google Jamboard to allow family members to anonymously write down their frustrations and fears. Other members identified statements that resonated with them, allowing for open and free discussion of topics such as loneliness, imposter syndrome and burnout.

DISCUSSING IMPOSTER SYNDROME

Date: 1/12/2021

Attendance: 60

Cost: \$0.00

Thymine and Guanine (mentorship families discussed on [page 21](#)) collaborated together on a mental health event that focused on two general themes: dealing with the negatives on remote learning and Impostor syndrome. The event was broken up into phases where in the beginning, groups were taken into breakout rooms to "check in" on how they have been coping with the current remote situation, and then after, we all came together in the main room to discuss what happened in their respective breakout room, if they felt comfortable. This same process was done when the topic shifted to impostor syndrome.

TRANSFER ROUND TABLE

Date: 10/16/2020

Attendance: N/A

Cost: \$0.00

The Transfer Round Table was initially planned as a welcome event where incoming transfer students would have the opportunity to meet with current transfers. The goal was to facilitate an open discussion about the challenges transfers face and the resources available to them. Due to no student interest, the event was cancelled.

MENTORSHIP FAMILIES

Mentorship families host events that encompass a wide variety of interests to cater to a diverse student population. Since a student can attend any event regardless of family assignment, mentorship allows students to foster closer relationships with other students both inside and outside their families, exploring new interests that are core to each family. Especially with the pandemic reducing the interactions students have in class, our members found their mentorship family and events to be especially impactful this year.



ADENINE FAMILY

FAMILY HEAD: ADITYA SIVAKUMAR

	Date	Cost	Attendance
Opening Social	10/18/2020	\$0.00	20
Fall Study Night	10/22/2020	\$0.00	5
Good Vibes Playlist	11/1/2020	\$0.00	18
Game Night With Jackbox Games	11/17/2020	\$34.23	20
Fall Powerpoint Night	11/24/2020	\$0.00	20
Mental Health Event With Cytosine	12/9/2020	\$0.00	20
Postcard Writing	12/20/2020	\$15.00	20
Winter Game Night	1/16/2021	\$0.00	12
Winter Study Night	2/7/2021	\$0.00	5
Winter Powerpoint Night	2/24/2021	\$0.00	18
Winter Movie Night	4/12/2021	\$0.00	8
Embroidery Part I	4/22/2021	\$0.00	8
Summer Slappers Playlist	5/3/2021	\$0.00	10
Cooking Night With Adenine	5/8/2021	\$22.30	15
Embroidery Part Ii (Cancelled)	5/18/2021	\$0.00	N/A



THYMINE FAMILY

FAMILY HEAD: JACE VALDEZ

	Date	Cost	Attendance
Fall Game Night	10/17/2021	\$0.00	20
Fall Study Night	WEEKLY	\$0.00	VARIABLES (5-7)
Fall Cooking Night	11/21/2020	\$0.00	10
Mental Health Event With Guanine	12/4/2020	\$0.00	15
Postcard Writing	12/20/2020	\$15.00	18
Secret Santa	12/22/2020	\$60.00	20
Jackbox Night	1/09/2021	\$0.00	8
Craft Night	1/23/2021	\$0.00	5
Jackbox Night Part II	3/28/2021	\$0.00	5
J-Egg-Ardu	4/11/2021	\$0.00	6
Cooking Night With Adenine	5/8/2021	\$7.00	10
Kudoboard Yearbook	6/1/2021	\$6.00	TBD



GUANINE FAMILY

FAMILY HEAD: MARY EPPERSON

	Date	Cost	Attendance
Baking Night	10/17/2020	\$0.00	12
Fall Study Night	10/21/2020	\$0.00	7
Guanine's Greatest Hits	10/30/2020	\$0.00	10
Fall Game Night	11/4/2020	\$0.00	9
Fall Postcard Writing	11/8/2020	\$15.00	11

	Date	Cost	Attendance
"Film Festival" Night	11/22/2020	\$0.00	3
Mental Health Event With Thymine	12/4/2020	\$0.00	15
Finals Study Night	12/14/2020	\$0.00	8
Winter Postcard Writing	1/7/2021	\$0.00	11
Winter Study Night	1/10/2021	\$0.00	6
Towel Folding Event	1/23/2021	\$0.00	6
Winter Game Night	2/8/2021	\$0.00	6
Winter Finals Care Packages	3/11/2021	\$60.00	10
Spring Study Night	WEEKLY	\$0.00	VARIES (4-8)
Movie Night	5/9/2021	\$0.00	3



CYTOSINE FAMILY

FAMILY HEAD: DIMEI WU

	Date	Cost	Attendance
Youtube Playlist Icebreaker	11/15/2020	\$0.00	15
Mentor/Mentee Scavenger Hunt	10/29/2020	\$0.00	8
Postcard Writing	11/7/2020	\$15.00	6
Eggscellent Cooking Night	11/17/2020	\$0.00	20
Mental Health Event With Adenine	12/9/2020	\$0.00	3
Power Point Night	1/17/2021	\$0.00	6
Taichi And Stretching Exercises	1/30/2021	\$0.00	5
Yoga Session & Online Games	2/20/2021	\$0.00	7
Instant Noodles Cooking	3/11/2021	\$0.00	8
Embroidery Night	4/22/2021	\$40.85	8

MENTORSHIP WEEKLY CHALLENGES

The mentorship program incentivizes people to participate in mentorship related activities by hosting a mentorship cup, similar to the house cups seen in Harry Potter. Families gain points for attending various events and can further earn points through mentorship weekly challenges. The mentorship coordinator sets up weekly challenges through the course of the year in which mentorship family members must send responses to the challenge in their respective family group chats. Members are able to send in as many applicable pictures throughout the week; so the more the better!

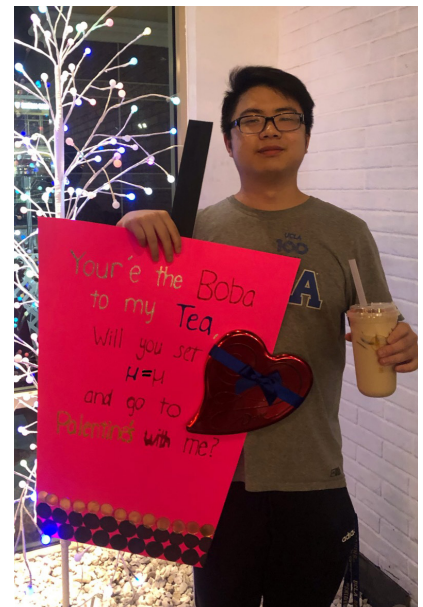
	Date	Cost	Attendance
Rub the Foot!	11/8/2020 - 11/14/2020	\$0.00	130
Decked Out In Family Colors	11/15/2020 - 11/21/2020	\$0.00	130
Thanksgiving Dinner	11/22/2020 - 11/28/2020	\$0.00	130
Take a Mental Break From Finals	12/6/2020 - 12/12/2020	\$0.00	130
Zoom With Your Mentor/Mentee	1/3/2021 - 1/9/2021	\$0.00	130
Recreate Your Favorite Meme	1/31/2021 - 2/6/2021	\$0.00	130
Ask a BMES Member to Be Your PALentine	2/7/2021 - 2/13/2021	\$0.00	130
Dress Up as Your Role Model	2/14/2021 - 2/20/2021	\$0.00	130
"Get That SUN" Week	2/21/2021 - 2/27/2021	\$0.00	130
"Dress To The Nines"	2/28/2021 - 3/6/2021	\$0.00	130



Winter Quarter Week 1 Example:
Zooming with your mentees



Fall Quarter Week 6 Example:
Touching the foot of a cat!

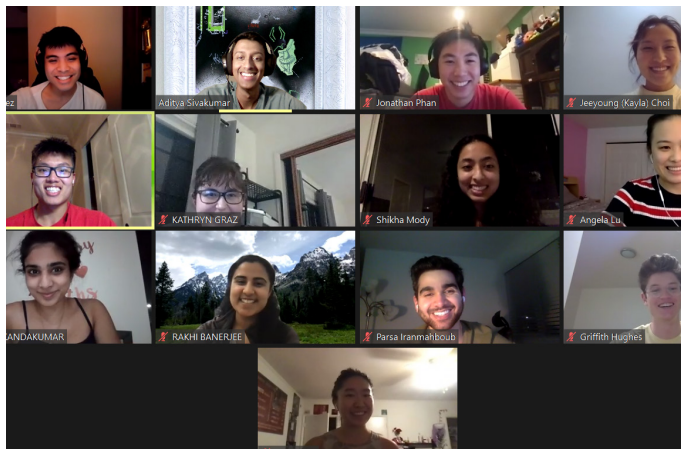


Winter Quarter Week 6 Example:
Palentine's Proposal

A WALK DOWN MENTORSHIP'S GREATEST MEMORIES



Thymine J-EGG-ardy



Adenine Powerpoint Night



Cytosine Taichi and Stretching Exercises



Thymine Towel Folding Night



Guanine Study Night



Adenine Embroidery Night

ALUMNI MENTORSHIP

We are grateful to have a solid base of alumni who are dedicated to keeping in touch with current UCLA BMES members and imparting their wisdom and experiences. Their mentorship provides invaluable exposure for students to life and career options after graduation as well as a solid network for students to build upon.

YEAR LONG MENTORSHIP PROGRAM

Date: VARIES

Attendance: 35

Cost: \$0.00

Undergraduates were paired with an alumni mentor based on their shared interests and career goals. A wide range of alumni participated, sharing insights into R&D, manufacturing engineering, program management, graduate school, medical school, law school, and more. With the normalization of virtual meetings, students were able to connect with alumni from across the United States to learn from their experiences and help jumpstart their careers.

ALUMNI PARTICIPATING IN MENTORSHIP PROGRAM

Mariam Carson '20

Quincy Chen '15

Nikhil Kalluri '16

Gretchen Lam '11

Natalie Maxwell '20

Eva Chen '18

Cooper Tanquary '19

Kajal Maran '20

Laila Rad '20

Alice Tang '20

Izabella Samuel '20

Hillary Yen '17

Smiti Narayanan '20

Phillip Cox '17

Mandy Hung '19

Farhana Harque '19

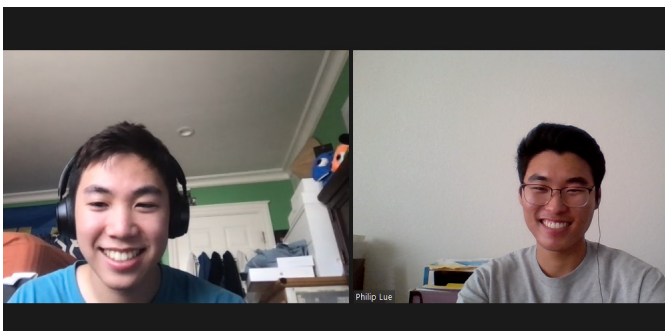
ALUMNI MOCK INTERVIEW SERIES

Date: December - January

Attendance: 30

Cost: \$0.00

Undergraduates were paired with an alumni mentor based on their shared interests and career goals. A wide range of alumni participated, sharing insights into R&D, manufacturing engineering, program management, graduate school, medical school, law school, and more. With the normalization of virtual meetings, students were able to connect with alumni from across the United States to learn from their experiences and help jumpstart their careers.



EDI PANELS

In light of BLM protests and rising anti-Asian sentiment, BMES at UCLA was inspired to take a proactive stance in learning more about underrepresented communities within bioengineering, and to assess tangible steps to uplifting these groups within the campus ecosystem. These events are intended to open a line of dialogue and to educate ourselves and our members on how to become better allies.

WOMEN IN BE PANEL

Date: 12/1/2020

Attendance: 66

Cost: \$0.00

BMES at UCLA hosted an EDI panel with women bioengineers, ranging from current students to industry and academia professionals. This panel sought to open a discussion about what it means to be a woman in engineering, and to assess ways we can be better allies for this community.

WOMEN IN BIOENGINEERING PANELISTS

Dr. Stephanie Seidlits	Isaura Frost	Alexandra Li	Eva Chen
Assistant Professor of Bioengineering, UCLA	MD/PhD candidate at Ronald Reagan Medical School	Bioengineering Undergraduate at UCLA	Microsoft Project Manager

UNDERREPRESENTED RACIAL MINORITIES IN BE PANEL

Date: 3/9/2021

Attendance: 42

Cost: \$0.00

BMES at UCLA hosted a panel with engineers who identify as underrepresented racial minorities (URMs) in bioengineering, ranging from current students to industry and academia professionals.

UNDERREPRESENTED RACIAL MINORITIES IN BIOENGINEERING PANELISTS

Antoinette Kiamba	Dr. Catera Wilder	Sarah Esparza
Advanced Senior Engineer	Post Doctorate, Alexander Hoffman Lab	Bioengineering Undergraduate at UCLA

FIRESIDE CHATS: LGBTQ+ IN STEM PANEL

Date: 6/2/2021

Attendance: TBD

Cost: \$0.00

BMES at UCLA will host a fireside chat with members of the LGBTQ+ in STEM, ranging from current students to industry and academia professionals. This event is intended to be a more casual discussion about how the LGBTQ+ identity intersects with bioengineering, and ways we can be better allies for members of this community.

LGBTQ+ IN STEM PANELISTS

Dr. Aaron Meyer	Laila Rad	Alberto Libanori	Rachel Swan
Assistant Professor of Bioengineering, UCLA	PhD candidate at University of Michigan	PhD candidate at UCLA	PhD candidate at UCLA



INDUSTRY

& PROFESSIONAL DEVELOPMENT

BMES at UCLA aims to both prepare students for a career in industry and create opportunities for them to connect with professionals for internships or full-time opportunities. The virtual setting made it easier to connect company representatives to our members through Zoom information sessions and large-scale career fairs. Despite being virtual, we were able to host our second annual Bioengineering Career Week, allowing members to be exposed to a holistic overview of different career pathways, enabling them to find opportunities for a future job.

We also provide opportunities for students who are interested in taking the academic path instead of going straight into industry. We expose our members to various graduate schools that specialize in bioengineering and offer a variety of panels to ensure students can hear experiences of alumni who have achieved goals post-undergraduate similar to theirs.

INDUSTRY

In this section, we will explore industry related events BMES hosts to allow students to get connections to employers as well as events that allow students to develop industry related skills.

BIOENGINEERING CAREER WEEK

BMES at UCLA hosted our second annual bioengineering career week in which events related to the event lead to our annual Biotech Career Fair. As the only career event specifically oriented towards students interested in industry pathways in bioengineering or biotechnology, we help expose students to professionals in a wide variety of occupations.

CAREER FAIR WORKSHOP PREP

Date: 10/13/2020 **Attendance:** 40 **Cost:** \$0.00

Resumes and CVs, Elevator Pitches, and LinkedIn profiles were covered in this year's Career Fair Prep Workshop. UCLA BMES partnered with our bioengineering alumni network to share student's resumes with alumni. Each resume was reviewed by two or three alumni in order to provide students with constructive feedback.

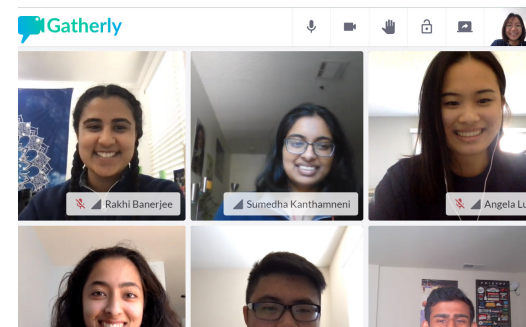
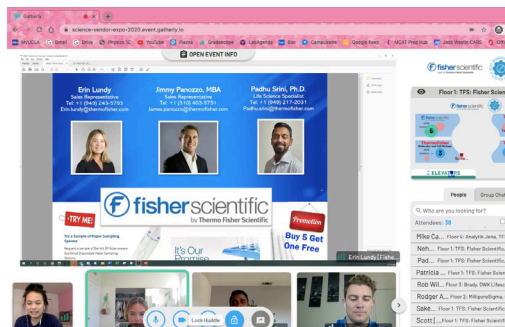
VIRTUAL CAREER FAIR

Date: 10/20/2020 **Attendance:** 319 **Cost:** \$1220.80

Our third annual Biotech Career Fair was transformed to a Virtual Career Fair in which 14 companies in the medical device, pharmaceutical and consulting field joined a virtual platform known as Gatherly to network with both undergraduate and graduate students. Company representatives were able to chat over video to develop connections and also collected resumes to give interviews for full-time and internship opportunities.

COMPANIES THAT ATTENDED THE 2020 BIOTECH CAREER FAIR

- | | |
|------------------------|------------------------------|
| Abbott | Advanced Sterilized Products |
| Azzur Consulting Group | BiVACOR |
| DeciBio Consulting | Gilead |
| Grifols | Medtronic |
| Moderna | Novartis Gene Therapies |
| Takeda | Thermo Fisher Scientific |
| Tioga Research | ZS Consulting |



INDUSTRY-RELATED PANELS

Bioengineering is a very broad major and freshmen especially are unaware about the numerous career paths open to bioengineers. Some students are even unaware that there are job prospects not related to engineering, such as consulting and law. The goal of these industry panels is to give insight to members about the various opportunities that are available to them. Furthermore, listening to people who have been previously in bioengineering allows students to understand how to reach their goals.

CAREER PATHS AND DEVELOPMENT PANEL

Date: 1/14/2021 **Attendance:** 65 **Cost:** \$0.00

For students interested in learning about different career paths after their undergraduate education, BMES hosted our second annual Career Paths and Development Panel. Panelists in industry, law, academia, and medicine discussed the paths they took to pursue their careers and offered advice on how to best succeed in these professions. Students were able to learn about how to network and gain skills in order to find a job as well as what a typical day at work looks like for these panelists. As the Chair of the Bioengineering Department Dr. Song Li remarked, the information shared by the panelists was "invaluable to our students."

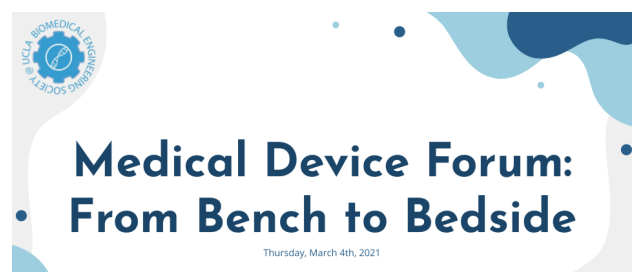
PANELIST	COMPANY/FIELD
Alexander D. Zeng	Knobbe Martin
Nicole Kuntjoro	Microsoft
Darby J. Chan	Wilson Sonsini
Dr. Walt Baxter	Medtronic
Kathryn Christoferson	Accenture
Daniela Glaser	UCLA Law Student
Christian Johnson	UCLA Health Biodesign Fellow
Richard Yoon	MicroVention Inc.
Dr. Zachary S. Ballard	UCLA Postdoc
Dr. Armin Arshi	Chief Resident, Orthopaedic Surgery
Dr. Arash Naeim	Chief Medical Officer for Clinical Research
Dr. Song Li	Professor and BE Department Chair at UCLA
Dr. A. Nick Shamie	Chief Spine Surgery
Dr. Angela Lai	NHLB/NIH Training Program

MEDICAL DEVICE FORUM: FROM BENCH TO BEDSIDE

Date: 1/14/2021 **Attendance:** 65 **Cost:** \$0.00

Our Medical Device Forum: From Bench to Bedside event focused on allowing students to learn about the ins and outs of bringing a medical device from inception to market. Through a Bioengineering lens, forum panelists guided students through a case study of how Aveda Health developed their medical device from bench to bedside. Additionally, students were able to acquire knowledge in idea generation, company formation, financing, patenting, and regulatory aspects behind developing a medical device. As panelist Jessica Richter from the Experian Group described, the panelists aimed to "inspire [students] to consider a career in medical devices."

PANELIST	COMPANY
Sabing Lee, MS, JD	Patent Attorney at Knobbe Martens
Rabi Narula, S, JD	Intellectual Property Attorney at Knobbe
Ed Johansen, MSEE, JD	Retired Patent Attorney
Shyam Natarajan	Co-Founder and CEO at Aveda Health
Jessica Richter	Chief Operating Officer and Head of Business Development at Experian
Dr. Arash Naeim, MD, PhD	Chief Medical Officer for Clinical Research at UCLA Health



SCIENCE VENDOR EXPOSITION

Date: 11/17/2020

Attendance: 188

Cost: \$436.00

At this exposition, 15 vendors joined to showcase their newest devices to members of the UCLA community. This event is a great way for UCLA professors and graduate students to get insight into new lab equipment they can use in their research laboratories. For undergraduate students, this serves as a networking event to connect with vendor employees and learn about the potential job prospects available in devices. Since the event was held on a virtual platform known as Gatherly, participants could move between rooms and talk to vendors through video chat about their products.

COMPANY INFOSESSIONS

As we have seen through our yearly Biotech Career Fair, BMES at UCLA opens doors for students to find full-time or internship opportunities at companies throughout the year. Another way we do this is by hosting on-campus information sessions with company recruiters where representatives can provide personalized presentations about the company and any available positions. Students can also submit their resumes and get questions answered by employees during these sessions.

	DATE	COST	ATTENDANCE
Novartis Infosession	12/2/2020	\$0.00	33
Invoy Infosession	1/6/2021	\$0.00	33
Pfizer Infosession	1/27/2021	\$0.00	58
Azzur Infosession	4/7/2021	\$0.00	32
Codexis Infosession	4/14/2021	\$0.00	34
Moderna Infosession	4/28/2021	\$0.00	51
Microculus Virtual Lab Tour	5/12/2021	\$0.00	10

AZZUR GROUP

Our Core Values

- Integrity
- Put others first
- Have the courage to take action
- Take personal responsibility
- Have fun!

AZZUR.COM

Video call participants: NEHA TYER, Hong Seock Jih, RAKHI BANERJEE, Justin, Simon Ng

?

Q & A

moderna

Video call participant: jimurphy

INDUSTRY

& PROFESSIONAL DEVELOPMENT

GRAD SCHOOL INFOSESSIONS

As we have seen through our yearly Biotech Career Fair, BMES at UCLA opens doors for students to find full-time or internship opportunities at companies throughout the year. Another way we do this is by hosting on-campus information sessions with company recruiters where representatives can provide personalized presentations about the company and any available positions. Students can also submit their resumes and get questions answered

KECK GRADUATE INSTITUTE INFOSESSION

Date: 11/10/2020 **Attendance:** 17 **Cost:** \$0.00

Students joined Dr. Anna Hickerson (from KGI) for a presentation and workshop on, "Artificial Intelligence Applications for Medical Devices, Current and Future Ideas." Afterwards, Dr. Hickerson held a short info session on KGI for students to learn more about the graduate school application process.

JEFFERSON INSTITUTE FOR BIOPROCESSING INFOSESSION AND VIRTUAL TOUR WITH AICHE

Date: 1/12/2021 **Attendance:** 60 **Cost:** \$0.00

In collaboration with the American Institute of Chemical Engineering (AIChE) at UCLA, BMES co-hosted an info session and virtual tour with Geoff Toner, the Director of Curriculum Development at the Jefferson Institute for Bioprocessing (JIB). At this graduate school info session, students were not only able to learn about biopharmaceutical processing and what biopharmaceutical engineers do, but they were also able to gain insight on how JIB trains industry professionals through workshops, certificates, and hands-on education at the undergraduate and graduate levels to prepare individuals for the Pharma Industry.

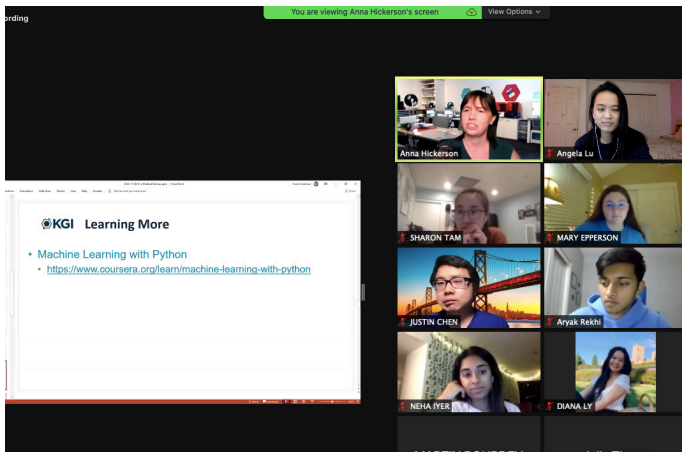
CLASS PLANNING WORKSHOPS

Quarterly class planning workshops are used to connect students with experienced upper classmen. The workshops are hosted as virtual, drop-in office hours, where upper classmen are split into groups to ensure students hear from multiple perspectives. Students shared advice about four year plans, lessons for managing the quarter system, and their experiences with the UCLA Bioengineering program. Future workshops will include engineering counselors to help answer specific student questions and integrate the event

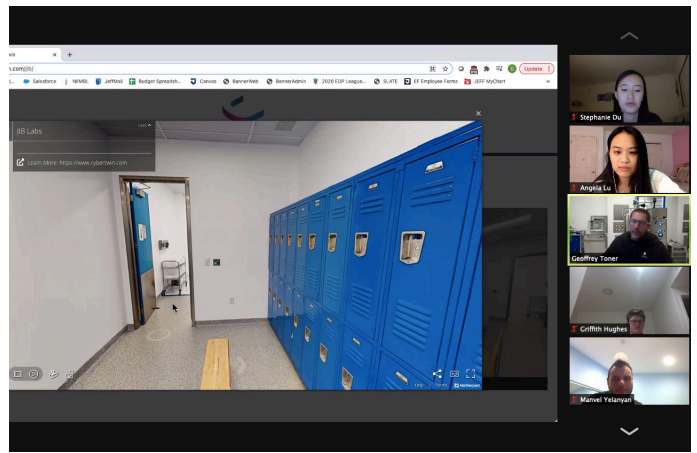
ACADEMIC

In this section, we will explore academic related events BMES hosts to allow students to receive academic advice from upperclassmen as well as advice for post undergraduate options.

	Date	Cost	Attendance
Fall Workshop	11/9/2020	\$0	25
Winter Workshop	2/9/2021	\$0	27



Keck Graduate Institute Infosession



Jefferson Institute Virtual Tour

ACADEMIC-RELATED PANELS

Many bioengineering students seek post undergraduate options that are not related to industry. Through our academic-related panels, we allow BMES members to get advice from alumni about how to achieve their goals in relation to graduate school, medical school as well as industry. Speaking to alumni gives members an opportunity to hear first hand about other Bruin Bioengineers' experiences.

GRADUATE & MEDICAL SCHOOL PANEL

Date: 4/26/2021 Attendance: 35 Cost: N/A

BMES hosted our annual Graduate and Medical School Panel, which aims to help students looking to apply to graduate and medical school in the future. Current and former undergraduates who have gone through the application processes discussed their paths to graduate and professional school with an additional focus from faculty about what they look for during the application process. For students unsure about their plans after graduating college, this event helped students gain a better understanding as to how to plan their education moving forward.

PANELIST

Robin Tusher	Mariam Carson
Nguyen Le	Vishwesh Shah
Dr. Daniel Kamei	Kajal Maran
Mayilone Sathialingam	Dr. Chris Arakawa

ALUMNI PANEL

Date: 5/10/2021 Attendance: Cost: N/A

For students who are unsure about which aspirations to pursue after graduating college, the goal of the Alumni Panel was to allow former BMES members and Bioengineering alumni to discuss some of the possibilities students can work towards. Alumni panelists shared their experiences with undergraduates, including discussing their time at UCLA, their transitions to post-graduation life, and where they are now. This panel provided students an opportunity to network with alumni and hear advice about how to navigate life after college.

PANELIST

Dr. Erik Reinertsen	Mariam Carson
Chen Zhuang	Laila Rad
Nikhil Kalluri	Gretchen Lam
Quincy Chen	Gregory Suematsu
Izabella Samuel	Jacob Hambalek
Isabelle Mieling	Dr. Devin Quinlan
Hilary Yen	Nick Kellerman
Dr. Kathryn Dem	

TECHNICAL SKILL BUILDING

UCLA BMES Technical division serves to teach undergraduate students applicable technical skills for various types of engineering. These include foundational circuitry, coding, biophysics, wet lab techniques, teamwork, and more. There are three year-long project teams catering to every skill level: Build Team, where students learn to build a pulse oximeter, Introduction to Cell Research Team (Cell Team), where students learn wet lab research and cell culture principles, and Design Team, advanced engineering teams encompassing unique cross-functional projects every year.

For 2020-2021, the Design Team projects were: a concussion-detection diagnostic helmet, with force sensors built into the helmet, and an immersive sleep device to gather long term data to ultimately improve quality of sleep. Technical workshops also occurred throughout the year, with topics ranging from technical interview preparation to foundations of 3D modelling. Additionally, this was the inaugural year of hosting BioHack at UCLA, a biomedically-focused make-a-thon where teams addressed a variety of problems facing the biomedical industry. This 24-hour event included workshops, alumni mentorship, and social activities, culminating in a presentation and judging session to decide winning teams.

Ultimately, the goal of UCLA BMES's technical projects division is to equip students with translatable skills to be successful in the future.

TECHNICAL WORKSHOP SERIES

The technical workshops are geared towards providing members of the UCLA community with applicable foundational tutorials for various technical skills. Topics include computer-aided design, Arduino principles, interview preparation, and more.

	Date	Cost	Attendance
AICHe x BMES: Technical Interview Workshop	10/28/2020	\$0.00	32
CAD Workshop	10/22/2020	\$0.00	30
Git Workshop	11/12/2020	\$0.00	31
Arduino Workshop	12/6/2020	\$0.00	20
Eagle Workshop	1/17/2021	\$0.00	20
AICHe x BMES: Technical Presentation	1/25/2021	\$0.00	12
Tech and Industry Workshop	2/28/2021	\$0.00	30

TECHNICAL EVENTS

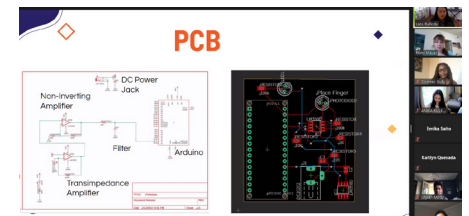
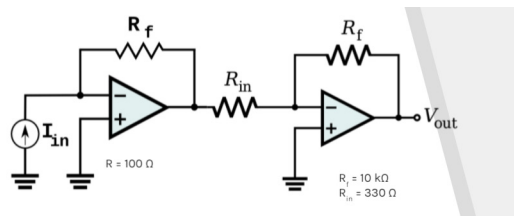
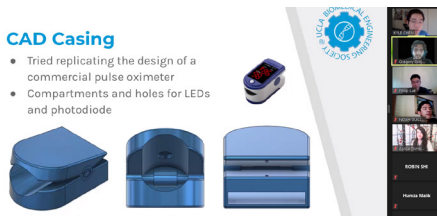
These activities expose students to technical projects without being on a team or attending a workshop. These events are open to the general masses to see what BMES has to offer in the technical realm.

	Date	Cost	Attendance
Technical Projects Infosession	10/7/2020	\$0.00	95
This infosession gives a detailed overview of all the technical teams.			
BioHack: Biomedical Hackathon	4/16/2020	\$0.00	30
Our first-ever biomedical hackathon focuses on creativity, innovation, and ideation due to the virtual setting. Included workshops, alumni mentoring, socials, and a judging and presentation session (along with keynote speakers).			
Demo Day	5/28/2021	\$0.00	TBD
This event allows the general public to view the completed products by the project teams.			

BUILD TEAM

The technical workshops are geared towards providing applicable foundational tutorials for various technical skills. Topics include computer-aided design, Arduino principles, interview preparation, and more. Build Team Project Managers teach important concepts during monthly **modules** and help students build their pulse oximeters during **workshops**. While workshops and modules cost \$0.00 to host, the BMES Build Team had a budget of \$206.13 in order to buy and ship parts for team members.

	Date	Cost	Attendance	Curriculum
Module 1	10/30/2020	N/A	41	Intro to Circuits
Workshop 1	11/5/2021	N/A	37	Basic Circuitry
Module 2	11/12/2020	N/A	37	Intro to Coding and Arduino
Workshop 2 Pt 1	11/19/2020	N/A	36	Coding and Arduino
Workshop 2 Pt 2	11/26/2020	N/A	33	Coding and Arduino
Module 3	1/5/2021	N/A	33	Problem Set Review
Module 4	1/11/2021	N/A	32	Arduino Analog, Physiology
Workshop 3	1/19/2021	N/A	39	Arduino Analog
Workshop 4	1/25/2021	N/A	34	Processing
Module 5	2/2/2021	N/A	30	Advanced Circuitry
Workshop 5	2/9/2021	N/A	34	Op Amps
Workshop 6 Part 1	2/16/2021	N/A	34	Pulse Ox
Workshop 6 Part 2	3/2/2021	N/A	29	Pulse Ox
Workshop 6 Part 3	3/9/2021	N/A	30	Pulse Ox
Pulse Ox Workshop 1	3/16/2021	N/A	27	Pulse Ox Building
Module 6	4/6/2021	N/A	29	CAD, 3D Printing
Module 7	4/13/2021	N/A	29	PCB, Eagle
Pulse Ox Workshop 2	4/20/2021	N/A	24	Team projects
Pulse Ox Workshop 3	4/27/2021	N/A	18	Team projects
Pulse Ox Workshop 4	5/4/2021	N/A	25	Team projects
Pulse Ox Workshop 5	5/11/2021	N/A	21	Team projects



CELL TEAM

The Introduction to Cell Research Team (Cell Team) focuses on teaching students principles of wet lab research and cell culture. Most of the curriculum centers around lab protocols along with journal clubs to learn about scientific literature and the direction of the bioengineering field. After being a member of this team, students usually continue on to join research labs at UCLA. Cell Team Project Managers teach important concepts during **modules** and help students experience lab skills virtually during **protocol walkthroughs** and **LABSTER** assignments. During **journal clubs**, students evaluate published research papers. While the listed events cost \$0.00 to host, the BMES Cell Team had a budget of \$1470.00 in order to buy the virtual lab platform, LABSTER.

	Date	Cost	Attendance	Curriculum
Module 0	10/29/2020	N/A	27	Intro to Cell Team
Module 1	11/2/21	N/A	27	Cell Basics
Module 2	11/5/21	N/A	30	Western Blot
Module 3	11/15/21	N/A	28	Immunostaining
Module 4	11/19/21	N/A	28	Introduction to Cell Culture
Module 5	11/26/21	N/A	29	Cell Counting & Viability Assays
Module 6	1/12/21	N/A	23	Genetic Engineering
Module 7	2/4/21	N/A	19	PCR/ELISA
Module 8	3/2/21	N/A	24	How to Get Into a Research Lab
Module 9	4/6/21	N/A	24	Drug Delivery Systems
Module 10	4/13/21	N/A	20	Wet Lab Applications to Medical Devices
Protocol Walkthrough 1	1/14/21	N/A	30	BCA Assay Analysis
Protocol Discussion 1	1/19/21	N/A	27	Practice Serial Dilutions
Protocol Walkthrough 2	1/21/21	N/A <td 25	Immunostaining	
Protocol Discussion 2	2/2/21	N/A	23	Practice Working with Python
Protocol Walkthrough 3	2/9/21	N/A	22	Cell Counting, Cell Passaging and Viability Assays
Protocol Discussion 3	2/11/21	N/A	22	Practice Working with ImageJ

Real Life Example: Why is drug delivery important?

Karuna Therapeutics – KARXT

Xanomeline
MUSCARINIC AGONIST

Human PKC α is double-blind, placebo-controlled trials in schizophrenia and Alzheimer's

Trials enrolled over 800 patients including 60 patients for ≥ 1 year

Exclusively licensed from Eli Lilly

Trospium Chloride
MUSCARINIC ANTAGONIST

Does not meaningfully cross the blood brain barrier, limiting effects to the peripheral tissues.

No known metabolic overlap with xanomeline

Generic drug for overactive bladder used since the 1960s

Cell Passaging: Removing Cells

	Date	Cost	Attendance	Curriculum
Project Manager Journal Club 1	11/12/21	N/A	25	COVID-19 Vaccines in Development
Project Manager Journal Club 2	11/22/21	N/A	26	CART Cell Therapy
Project Manager Journal Club 3	11/29/21	N/A	26	Pfizer and BioNech Vaccine
Student Journal Club 1	2/16/21	N/A	22	Bacteria-Based Self Healing Concrete
Student Journal Club 2	2/18/21	N/A	22	Cell Laden Hydrogel for Craniofacial Bone Tissue Regeneration
Student Journal Club 3	3/4/21	N/A	11	Degradable Briding Scaffold for Spinal Cord Injury Repair
Student Journal Club 4	4/29/21	N/A	20	Artificial Kidney on a Chip
Student Journal Club 5	5/13/21	N/A	19	Treatment of Neurodegenerative Diseases
LABSTER 1	Winter Quarter	N/A	30	Polymerase Chain Reaction
LABSTER 2	Winter Quarter	N/A	30	ELISA
LABSTER 3	Winter Quarter	N/A	30	Homogenization: Developing Better-Tasting Milk
LABSTER 4	Winter Quarter	N/A	30	Fuorescence Microscopy
LABSTER 5	Spring Quarter	N/A	30	RNA Extraction: Sample and Purify mRNA from Pigs
LABSTER 6	Spring Quarter	N/A	30	CRISPR-Cas-9 Applied to TGF-beta Induced EMT
LABSTER 7	Spring Quarter	N/A	30	Cell Culture Basics: Plate, Split, and Freeze Human Cells
LABSTER 8	Spring Quarter	N/A	30	Gene Regulation

Pfizer/BioNTech vs. Moderna		
	Pfizer/BioNTech	Moderna
Information Released	Final Efficacy Analysis November 18	First Interim Analysis November 16
Efficacy Rate	95% ($p < 0.0001$)	94.5% ($p < 0.0001$)
Storage Conditions	-70 °C (Long Term)	-20 °C (Long Term) 2 °C - 8 °C (Short Term)
Projected Doses	50 million in 2020 1.2 billion by the end of 2021	20 million in 2020 (US only) 500 million - 1 billion by the end of 2021
Side Effects	Fatigue (3.8%), Headache (2%)	Fatigue (9.7%), Muscle Pain (8.9%), Headache (4.5%)
Participants	43,538 (global) 94 confirmed COVID cases	30,000+ (in US) 95 confirmed COVID cases

Cell Team

- Basics of Bioengineering Research
- Get ready to join a research lab
- Wet Lab
 - Microscopy
 - Western Blotting
 - Cell Culture & Cell Viability
- Data Analysis
 - Excel
 - Python
 - ImageJ
- Technical Presentation
 - Journal Clubs
 - Independent Projects



DESIGN TEAMS

The most advanced project teams are called Design Teams. These are independent projects, unique to every school year, led by project managers. These teams rely on cross-functional collaboration and engineering knowledge since their goal is to produce a prototype of an actual product, utilizing electrical, mechanical, biomedical, and computer science principles. The design teams are meant to give team members the opportunity to further grow and apply engineering skills towards an engineering problem. Members become familiar with working on an engineering team as well as the design process. Through mentorship, project managers are able to provide their team with opportunities and resources to discuss their personal, academic and career goals. This year, we were able to host two design teams despite being in a virtual setting. While the listed events cost \$0.00 to host, the BMES Design Teams had a budget of \$951.80 in order to buy and ship parts for team members.

DESIGN TEAM 1: CONCUSSION DETECTION DEVICE

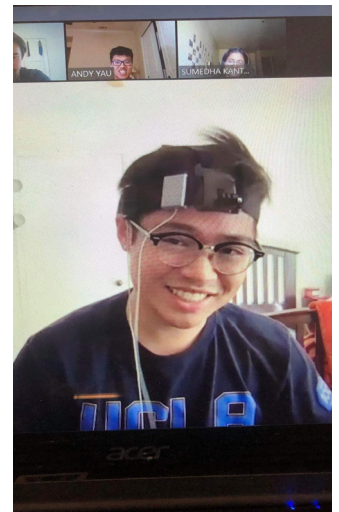
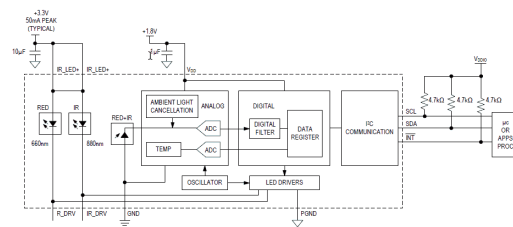
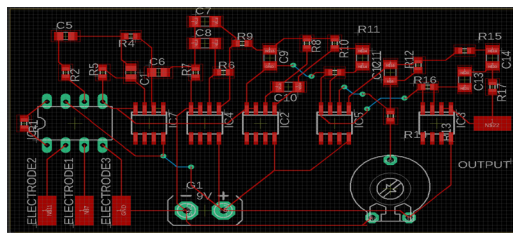
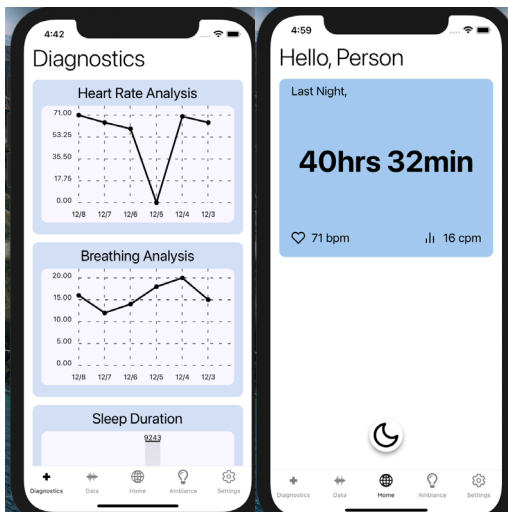
The Concussion Detection Device is a EEG and bluetooth embedded sports helmet. The goal of this device is to be able to provide real-time diagnosis of athletes who experience head trauma on the field. Early detection will allow for more fast and effective treatment of concussion, which when undetected, can result in numerous long term complications. The device also has a companion mobile application which records and saves brain activity data, allows athletes to track their brain health via a daily symptoms check survey, and access resources and the latest news related to sports medicine.

	Date	Cost	Attendance	Description
Weekly Standup Meetings	Every Sunday Starting Week 5 of Fall Quarter	N/A	12	Team members discuss their progress, ask for additional resources, set goals for the following week and present new ideas, designs, budgets, and partial or full prototypes to the larger team.
Weekly Subteam Meetings and Worksessions	Every Monday Starting Week 5 of Fall Quarter	N/A	3-5 per subteam	Members make progress in their respective teams
Virtual Socials	11/7/2020, 2/6/2021, 5/1/2021	N/A	12	Play online games to strengthen team relations
Post Demo Day Celebration	5/28/2021	N/A	12	Virtually celebrate the team's hardwork
Individual Check Ins	Week 1 of Winter Quarter	N/A	12	Gave the team members a chance to talk through any questions or concerns they had before moving into the next quarter

DESIGN TEAM 2: IMMERSIVE PHYSIOLOGICAL SLEEP MODULATOR

The Immersive Physiological Sleep Modulator offers an immersive deep-sleep experience with dynamic physiological monitoring and analysis. Designed as an IoT headband worn by the sleeper, the device contains ECG, accelerometer, temperature, and EEG sensors that continuously record physiological data and transmit it to the device's backend server. Near wake time, the device predicts the optimal wake time for the sleeper based on their EEG-informed sleep cycles, and it awakens them with gradually ascending auditory and visual stimuli so as to facilitate a peaceful and "natural" morning experience. Users can set sleep goals, track their physiological sleep trends, and view machine learning generated predictions on a clean smartphone interface developed with React Native.

	Date	Cost	Attendance	Description
Weekly Standup Meetings	Every Sunday Starting Week 5 of Fall Quarter	N/A	12	Team members discuss their progress, ask for additional resources, set goals for the following week and present new ideas, designs, budgets, and partial or full prototypes to the larger team.
Weekly Subteam Meetings and Worksessions	Every Tuesday Starting Week 5 of Fall Quarter	N/A	3-5 per subteam	Members make progress in their respective teams
Virtual Socials	11/7/2020, 2/6/2021, 5/1/2021	N/A	12	Play online games to strengthen team relations
Post Demo Day Celebration	5/28/2021	N/A	12	Virtually celebrate the team's hardwork
Individual Check Ins	Week 6 of Winter Quarter	N/A	3 per Check-In	Gave the team members a chance to talk through any questions or concerns they had before moving into the next quarter



BREAKDOWN OF TECHNICAL BUDGET

Outlined below is a thorough breakdown of the costs for each of the teams

BUILD TEAM

ITEM/EXPENSE	COST
Operation Amplifiers	\$6.99
6.8 μ F Capacitor	\$22.50
4.7 μ F Capacitor	\$22.50
Photodiodes	\$56.95
Forever Stamps	\$54.75
Envelopes	\$5.99
Resistors	\$12.50
Shipping Fee	\$23.95
Total	\$206.13

CELL TEAM

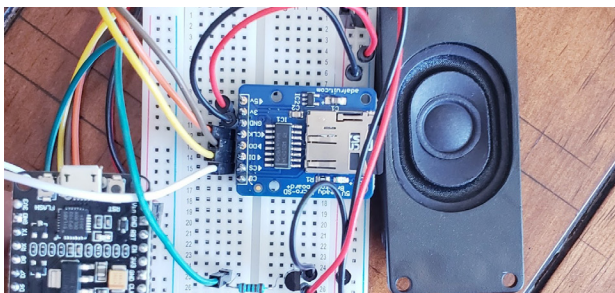
ITEM/EXPENSE	COST
LABSTER Module 1	\$183.75
LABSTER Module 2	\$183.75
LABSTER Module 3	\$183.75
LABSTER Module 4	\$183.75
LABSTER Module 5	\$183.75
LABSTER Module 6	\$183.75
LABSTER Module 7	\$183.75
LABSTER Module 8	\$183.75
Total	\$1470.00

DESIGN TEAM #1

ITEM/EXPENSE	COST
Arduino Uno R3	\$12.98
LCD Screen	\$12.99
Mindflex EEG	\$129.95
AAA Batteries	\$10.99
Soldering Kit	\$21.99
Helmet	\$150.00
Accelerometer	\$7.99
Shipping Fee	\$100.00
Total	\$446.89

DESIGN TEAM #2

ITEM/EXPENSE	COST
Arduino	\$60.99
Bluetooth transmitter	\$9.99
Soldering Iron Kit	\$34.99
Power Supply	\$4.99
PCB	\$74.99
Heart Rate Monitor	\$24.99
Shipping Fee	\$34.99
Other Hardware	\$200.96
Total	\$446.89



SOCIETAL IMPACT ACTIVITIES

The interdisciplinary approach of UCLA BMES's make-a-thon and advanced project teams allow them to make tangible impacts on UCLA's surrounding community. BioHack's goal was for teams to create innovative solutions addressing real-world prompts and problems, ranging from COVID-19 diagnosis challenges to generating insights from company data. Design Teams create medical device prototypes to improve the quality of life for various groups within UCLA.

Both Design Team projects, the concussion detection device and immersive sleep modulator, were designed with the intention of entering the new era of personalized medicine, where real-time diagnoses can assist in developing individual recovery plans by providing detailed identification of the injury or potential sleep problems. These assist in the athletic population of UCLA as well as the student population as a whole.

BioHack allowed students to create designs and prototypes of solutions to assist in COVID-19 diagnoses, stroke recovery and rehabilitation, and financial insights from sales data. The three prompts enabled students to gear their solution towards three different populations, ranging from COVID-19 patients, to stroke victims, to company executives. With this freedom, students could leverage their strengths to optimize their solution's design.

CONCUSSION DETECTION DEVICE

Date: Year Long

Attendance: 12

Cost: \$446.89

The Concussion Detection Device was created to help detect on-site concussions during a game, assisting with faster treatment and rehabilitation for football players. Within football athletes, around 7.4% of injuries are related to concussions, subjecting students to time off the field and limiting ability to focus on studies. By monitoring the concussion as soon as a collision occurs, this will contribute to less overall pain and a faster recovery timeline. More information is provided on [page 37](#) and a budget breakdown is given on [page 39](#).

IMMERSIVE PHYSIOLOGICAL SLEEP MODULATOR

Date: Year Long

Attendance: 12

Cost: \$504.91

With the Immersive Physiological Sleep Modulator, it aims to support undergraduate students who have poor sleeping habits due to stressors related to school, work, and social life. Poor quality of sleep affects at least 60% of the undergraduate student body, severely impairing students' educational experiences. Through tracking sleeping habits with the Sleep Modulator, students can better assess what their healthy sleeping patterns are and adapt their lifestyle around a sleep pattern that will enhance their quality of rest. More information is provided on [page 38](#) and a budget breakdown is given on [page 39](#).

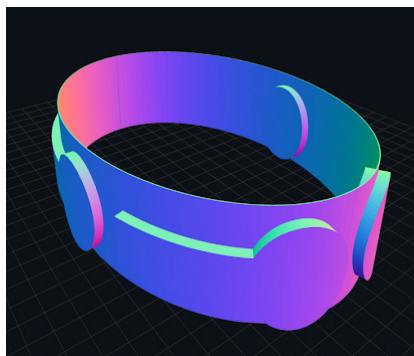
BIOHACK

Date: 4/16/2021 - 4/17/2021

Attendance: 48

Cost: \$0.00

BioHack at UCLA is a biomedically-focused make-a-thon where teams of 3-5 students collaborated to address one of three medically-relevant prompts. Since the format of most events was virtual, BioHack adapted to the format with platforms such as Discord and Zoom, while providing virtual tool guides for students to brainstorm, build, and innovate their solutions with software such as SolidWorks, Fusion360, Eagle, TinkerCAD, and more. The prompts ranged from COVID-19 diagnosis improvements, stroke recovery and rehabilitation, and data analysis for a medical device company. BioHack also included technical workshops, socials, and alumni mentorship sessions as a part of its 24-hour duration, all of which were well-received by participants. Overall, seven teams participated and created unique solutions to medically relevant problems today, potentially setting the stage for prototypes in the future.



NATIONAL BMES MEETING

BMES at UCLA first attended the national BMES conference in 2018, with the initial invite to present at the Student Chapter Awards Presentation. We were honored to attend the first virtual BMES conference and to accept the Commendable Achievement Award again this past year; we are extremely grateful for BMES' continued support of our student chapter. We look forward to participating in future hybrid and in-person conferences to meet more bioengineers from across the country.

BMES AT UCLA AWARDS AND PRESENTERS

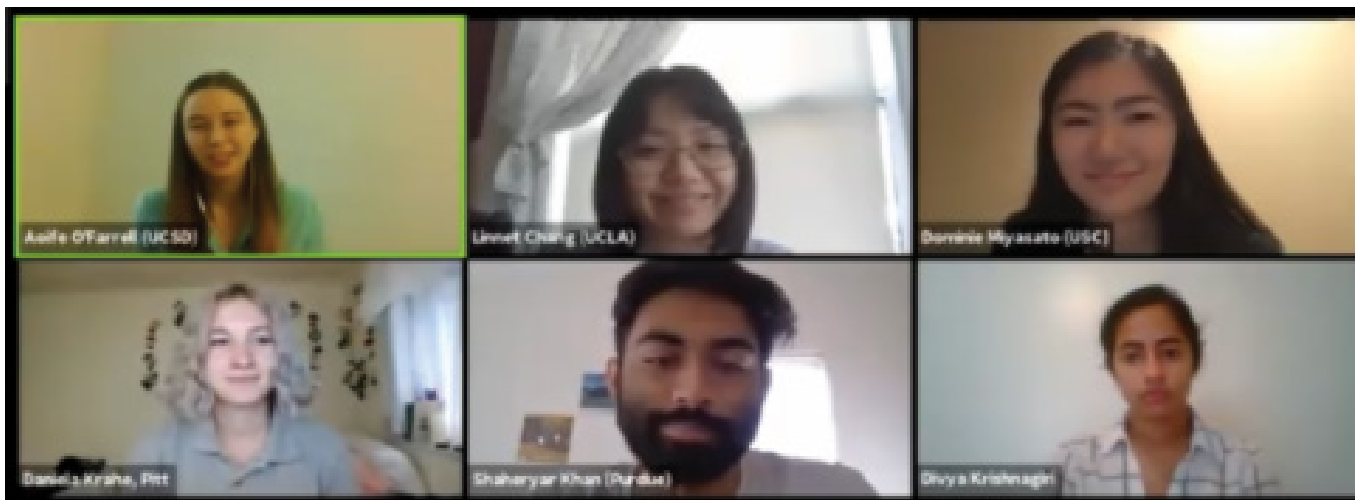
	Award	Presenter
2018 Annual BMES Meeting	Outstanding Outreach Award	Eva Chen, Megan Yuen
2019 Annual BMES Meeting	Commendable Achievement Award	Mandy Hung, Izabella Samuel
2020 Annual BMES Meeting	Commendable Achievement Award	Linnet Chang

GOALS FOR FUTURE MEETINGS

BMES at UCLA is humbled to be surrounded by inspiring researchers, students, and industry professionals at the BMES conference each year. While relatively new to attending national conferences, our student chapter is excited to continue engaging with BMES on a national level to learn from other BMES members and to better enhance how we serve members of our student chapter. As this is the third year of attending, we are confident that we will continue participating at the national conference as an annual tradition at UCLA.

We plan to continue encouraging attendance in the following ways:

- Continue to bring all four executive board members to the conference
- Collaborate with the bioengineering department to finance students who are interested in attending in-person through interest applications
- Coordinate with the department to consolidate travel and lodging logistics for attending faculty, graduate, and undergraduate students
- Encourage attendance through virtual means if travel is a limiting factor
- Emphasize student chapter networking opportunities and presentations to learn best practices from other schools to increase accessibility of our own events
- Point students towards career and EDI panels to support holistic development and to better understand multifaceted nature of bioengineering



Student Chapters presenting at 2020 BMES Conference

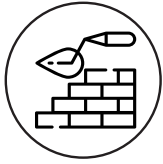
FUTURE DIRECTIONS

As the current executive board of the 2020-2021 school year graduates from UCLA, the incoming executive board for the following school year has been selected. The incoming leadership team will be expected to uphold the community BMES at UCLA fosters, and also to continue to produce innovative programming. The selection of these student leaders was informed by our confidence in their abilities to establish their own contributions that will support the BMES mission.

Both the outgoing and incoming executive board members have collaborated on the identification of important chapter milestones and goals. The goals and expectations for the following year have been further elaborated on in this report. The incoming executive board has also released a statement outlining how they will approach these goals in the coming year.

SUMMATION OF GOALS

ACHIEVED DURING THE 2020-2021 ACADEMIC YEAR



Further Develop Welcoming Environment Within Chapter

We advertised and collaborated on events with other engineering groups on campus. Our mentorship pairings were refined and social activities were adapted to fit a social setting. We also hosted EDI panels to formalize a means of dialogue for all students to become better allies and to assess how BMES at UCLA can continue uplifting these communities.



Expand The External Bioengineering Community

We were able to expand our outreach program, RISE, by adding a second partner school. In addition, we connected and collaborated with other BMES student chapters such as BMES at UCI and ASBME at USC. We have also expanded our industry connections by collaborating with more industry professionals to host career panels for students.



Creating New, Inclusive Technical Opportunities

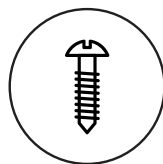
We expanded the number of students accepted on each technical project and hosted more technical workshops that covered a new set of topics suitable for the remote environment. We also debuted our first make-a-thon to welcome more collaborations with other engineering organizations on campus and to invite all interested students in participating.

IDENTIFIED FOR THE 2021-2022 ACADEMIC YEAR



Greater Incorporation of Mental Health Within The Club-Wide Diversity & Inclusion Conversation

This past year's introduction to mental health topics have included discussions on managing stress and navigating imposter syndrome. We would like to expand these discussions into conversations of normalizing mental health challenges by providing spaces for students to learn about and utilize resources.



Increased Accessibility to Our Technical Skills Workshop Series

To allow for greater involvement within our technical skills branch outside of our year-long projects, BMES plans on executing a new Workshops Officers role which will aim to teach technical skills to general members. Workshop Officers will host workshops in an easily accessible and low-commitment format.



More Interpersonal Connections Between Students & Leaders in Industry

In continuing efforts to increase the scope of companies at events, we hope to boost engagement of students to Industry connections by pairing undergraduates with Industry mentors, offering job shadowing opportunities, and launching a consulting segment for members to understand business and engineering challenges.

EXPECTATIONS

FOR BMES AT UCLA

ANGELA LU, NEXT YEAR'S PRESIDENT, ELABORATES ON THE UPCOMING PRIMARY DIRECTIVES OF BMES LEADERSHIP

As BMES at UCLA looks towards the future, our organization hopes to achieve several goals next year. These include greater incorporation of mental health within the diversity & inclusion conversation, increased accessibility to our technical skills workshops, and more interpersonal connections between students and leaders in Industry.

In light of the pandemic and recent dialogue unsilencing racial injustice conversations, we understand more than ever before how topics of mental health and diversity & inclusion go hand-in-hand. Beyond sharing mental health resources to our members through our mentorship mental health events, we hope to open the floor to forums with other engineering students and Industry representatives who have experienced mental health challenges first-hand. These forums would help normalize mental health discussions and allow members who are looking for additional support to have a less daunting and more inclusive foundation for seeking help. Additionally, BMES hopes to expand the scope and frequency of our current Equity, Diversity, and Inclusion (EDI) panels initiated this past year. Along with previous panels, such as the Women in BE, Underrepresented Racial Minorities in BE, and LGBTQ+ in STEM, we plan to host a Disability Awareness in BE panel as our organization strives to become more inclusive. The focus in implementing these EDI panels continues to revolve around guaranteeing that all members feel represented by our organization and see representation in their fields of study as they move towards their future careers.

In addition to the recent expansion of our technical projects branch, which included onboarding more Design Team PMs and team-based projects, BMES will be launching a formalized series of technical and non-technical workshops managed by those in our newly established Workshops Officers role. These workshops will cover topics such as MATLAB, Public Speaking, and Bioethics in AI. In addition to developing and piloting curriculum for technical projects teams in future years, these workshops will aim to provide highly accessible



and low-commitment skill development opportunities for all general members regardless of whether or not they are on a projects team.

Next, a new objective we have set in place for the Industry branch of BMES includes extending collaboration efforts with the Bioengineering Industry Advisory Board (IAB) to provide greater impacts on individual members. This past year's achievements have included connecting students to industry through an unparalleled number of company information sessions and companies in attendance at the BMES Career Fair. We plan to offer job shadowing opportunities for students hoping to pursue careers in Bioengineering. To help provide more real-world experience for our members, we hope to incorporate a consulting aspect of Industry so students may experience problem solving in engineering and business areas by resolving real-world issues that companies may need help with.

This previous year has challenged us to push our understanding of what defines BMES, acknowledging that beyond the events we host and the skills we teach, is a community of members relentlessly supporting each other as we grow into our passions. Through the victories and adversities this past year has created for every individual and the community, BMES has timelessly proven itself as a persistent foundation of encouragement for all of the endeavors our members hope to pursue. Most importantly, the core of this organization sits on the realization that we cannot move forward unless each one of us feels the extent of inclusion. It is a mission we have ingrained into our values and will continue to tirelessly advocate for in every step we take forward. We are beyond excited to begin to incorporate these plans and support our members through all of the opportunities, accomplishments, and possibilities for growth waiting for them next year.

Angela Lu
2021-2022 Chapter President
angelaclu@ucla.edu

