

2021 Chapter Development Report

Colorado State University Biomedical Engineering Society

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Executive Summary

The student chapter of BMES at Colorado State University (CSU BMES) is dedicated to promoting social engagement, professional development, and community outreach among biomedical engineering students. The chapter intends to provide students with enriching experiences that allow them to grow in areas outside of their academics. Additionally, the chapter strives to promote biomedical engineering within the CSU and local community. Through the 2020-2021 school year, the executive team has worked to put on weekly events that bring students together during distanced learning via virtual game nights and study socials. Students were able to connect with a number of industry professionals from across the country to receive networking and career advice during a number of professional panels, industry spotlights, and events like the campus-wide Biotech Connect, which brought a number of biotech companies together to meet with students from several STEM disciplines. CSU BMES also started a mentorship program that paired BMES members with industry members, further connecting CSU students with the bioengineering industry and providing them with invaluable professional development opportunities. The CSU BMES chapter also piloted a successful virtual outreach program with local middle schools that provided students with the opportunity to complete engaging hands-on projects and learn about the applications of biomedical engineering. In the coming 2021-2022 school year, the chapter will focus on increasing student engagement, including expanding the mentorship program, providing engaging design project activities, and involving student members in the development and expansion of the CSU BMES Outreach Program.



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June 1, 2021

Biomedical Engineering Society (BMES)
8201 Corporate Drive, Suite 1125
Landover, MD 20785-2224

Dear Student Chapter Award Committee members,

The Colorado State University student chapter of the Biomedical Engineering Society is dedicated to promoting the social, professional, and community engagement of students interested in biomedical engineering (BME). Especially within a virtual learning climate, CSU BMES has worked to build a strong and collaborative community of BMES members by hosting a number of social events, including study socials, virtual game nights, and lifestyle workshops. CSU BMES strives to connect CSU students to professionals within the engineering and bioscience community by hosting a number of professional development events, including a number of industry spotlights with speakers from various biotechnology companies, alumni panels, and campus-wide networking events. A mentorship program was piloted this spring in collaboration with the CSU School of Biomedical Engineering Alumni Leadership Council to pair BMES members with CSU alumni in industry, so that students can receive career guidance and build relationships with industry professionals.

The chapter also piloted a virtual outreach program for middle school students. Members distributed over 30 activity kits to middle school students in the Fort Collins area and hosted virtual workshops to teach these students about various applications of biomedical engineering and STEM careers. Moving forward, CSU BMES hopes to expand this outreach program outside of the Fort Collins community by reaching out to underserved communities in Denver and hosting a combination of virtual and in-person programs that accommodate students of all backgrounds. Additionally, CSU BMES hopes to promote this program to other BMES chapters so that they can host similar events in their community. The chapter has also started to collaborate with the North Carolina A&T University chapter of BMES to develop programs that connect CSU and NCAT students, faculty, and industry.

The CSU BMES looks forward to building upon the programs it has created this semester to promote professional growth with our members and continue engaging with the community, and it thanks the national BMES organization for its efforts to promote student involvement within the biomedical engineering community.

Sincerely,

Amy Keisling
Chapter President
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Samuel Bechara, PhD
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Associate Professor of Practice
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Table of Contents

I.	Administrative Report	3
II.	Treasury Report	8
III.	Chapter Activities	9
IV.	Social and Other Activities	9
V.	Inter-Chapter Activities	11
VI.	Outreach Activities	11
VII.	Mentoring Activities	13
VIII.	Industry and Professional Development Activities	13
IX.	Social impact Activities	18
X.	National BMES Meeting	18
XI.	Future Direction	18



I. Administrative Report

Going into the 2021 administrative term, CSU’s chapter of BMES restructured its executive team to allow for more focused and better-defined roles. The role of Administrative Assistant was omitted, and many of that position’s responsibilities were given to the Vice-President. The positions Graduate Liaison and Community Outreach Director were combined to create the Outreach Director position. Lastly, the Student Outreach Coordinator was omitted as the role had been poorly defined and the team felt as though the position was not necessary. Each position has responsibilities relating to organizing industry events, outreach events, and social events, respectively. This change resulted in increased efficiency and better communication among officer members when planning events.

Position Held	Name	Email Address
President	Amy Keisling	amy4634@rams.colostate.edu
Vice President	Peter Lohrisch	peter.lohrisch@colostate.edu
Treasurer	Sebastian Lawton	sebastianlawton@comcast.net
Outreach Director	Alec Jones	alec.jones@colostate.edu
Industry Director	Ian Lohrisch	ian.lohrisch@colostate.edu
Communications Director	Brooke Bennett	Brooke.Bounleuth.Bennett@colostate.edu
Engineering College Council Representative	John O’Donnell-Sloan	jodonnell@colostate.edu

The responsibilities for each executive officer are outlined below:

President: The President is responsible for organizing and driving both officer and general meetings. The President is responsible for overseeing all events, unless otherwise delegated, to ensure the events run smoothly and to represent the face of the organization. The President is to prepare and manage a semester plan/calendar. The President is responsible for coordinating meetings with the faculty/staff advisors and ensuring that they are kept up to date with what is going on within the student organization.

Vice President: The Vice President (VP) is responsible for running meetings when the President is absent. The VP is responsible for completing and submitting paperwork required for events unless otherwise delegated. The VP takes the important duty of overseeing interactions with the School of Biomedical Engineering, the College of Engineering, and Colorado State University including completing room reservations and maintaining connections with professors and faculty. The VP is to coordinate yearly or biyearly T-shirt ordering and distribution of chapter T-shirts with the Treasurer. The VP is responsible for communication with the national level Biomedical Engineering Society and ensuring that members have a national membership. The



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VP is to maintain the online calendar and OneDrive for file storage as well as take notes during officer meetings.

Treasurer: The Treasurer is responsible for collecting dues and managing the financial accounts for the organization. At the beginning of the Treasurer's term, they will transfer the off-campus bank account information into their name. The Treasurer will oversee purchases made for events, and documentation of all financial information. The Treasurer is also in charge of any budgets that need be made, including but not limited to the full semester/year budget, gain/loss budgets, and budget proposals. The Treasurer will also oversee the budget made for traveling to the BMES National Conference, if it so applies. The Treasurer is responsible for seeking further sponsorship from the school and private sponsors and organizing fund-raising activities such as Landmark Event Staffing and RamRide. The Treasurer is to work with the Engineering College Council (ECC) representative on biannual funding presentation made to ECC.

Outreach Director: The Outreach Director is ideally a graduate student and acts as a graduate student liaison. The Outreach Director oversees long-term design projects and proposals and coordinates with the Treasurer on any project needs related to expenditures, grants, etc. This position is responsible for overseeing volunteering activities such as Fall Clean-up and RamRide. The Outreach Director is to oversee outreach activities, including the CSU BMES Outreach Program.

Industry Director: The Industry Director is responsible for coordinating events related to industry and works with the President and Vice-President in coordination of larger-scale events such as the CSU Biotech Connect. The Industry Director will work in conjunction with the Treasurer to organize any financial donations the organization receives. The Industry Director is in charge of contacting presenters/speakers from industry or outside businesses, scheduling the events that involve outside individuals, and maintaining contact with these individuals so significant bonds may be formed and kept between the organization and these individuals with the purpose of being able to contact them again in the future for any prospective events.

Communications Director: The Communications Director takes a key role in acting as the voice of the student members. This includes conducting quarterly surveys of general members' satisfaction with the organization and gauging student interest on current events, prospective events, and new event ideas. The Communications Director is responsible for maintaining communications for the organization. This includes updating the social media accounts and sending weekly emails to all active members including general meeting information. The Communications Director is to communicate events to the CSU student body (non-members) as appropriate and provide general meeting slides and any other relevant information to members.

Engineering Student Council (ECC) Representative: The Engineering College Council Representative is the connecting voice between the ECC and the organization. The ECC representative will speak during ECC meetings on behalf of the organization, and will relay information after ECC meetings. The ECC representative will oversee the biannual funding



presentation made to the ECC on behalf of the organization, with the purpose of obtaining funding from ECC for the organization's events each semester.

The general body meetings are outlined in the table below. Executive meetings were held weekly to plan upcoming events. For the sake of brevity, they were excluded from the following table.


BMES Chapter Meetings (FA20 - SP21)			
	Date	Meeting	Meeting Type
Fall 2020	31 Aug 2020	Welcome Event	Social
	14 Sept 2020	Best Research Practices	Academic
	21 Sept 2020	Terumo BCT Presentation	Industry
	28 Sept 2020	Career & Resume Tips	Professional
	05 Oct 2020	Stress Management Workshop	Professional
	12 Oct 2020	Graduate Research Discussion & Minecraft Social	Academic
	19 Oct 2020	Recent Graduate Panel (Collaborative Event with ASME)	Academic
	26 Oct 2020	Study Abroad Presentation	Academic
	02 Nov 2020	Graduate Student Panel	Academic
	09 Nov 2020	SBME Alumni Leadership Council Panel	Social/Professional
	16 Nov 2020	Minecraft Social	Social
	19 Nov 2020	Virtual BMES Elections	Administrative/Social
	30 Nov 2020	Study Social	Social
	07 Dec 2020	Virtual Game Night	Social
Spring 2021	25 Jan 2021	Start of Semester Social	Social
	01 Feb 2021	Medtronic Industry Spotlight and Virtual Tour	Industry
	08 Feb 2021	LinkedIn Workshop	Professional
	22 Feb 2021	Networking Panel	Industry
	23 Feb 2021	BMES Biotech Connect	Industry
	02 Mar 2021	"What I Wish I Knew Before I Entered Industry"	Professional
	08 Mar 2021	Virtual Game Night	Social
	15 Mar 2021	"What I Wish I Knew Before I Entered Grad School"	Academic
	22 Mar 2021	Quality Science Presentation	Academic/Industry
	29 Mar 2021	Industry Spotlight w/ Zimmer Biomet	Industry
05 Apr 2021	Social Game Night w/ Alumni Leadership Council	Social	




24 Apr 2021	Outreach Event	Outreach
03 May 2021	End of Semester Social	Social

The executive team made efforts to retain and increase participation at chapter meetings amid the COVID-19 pandemic. Due to University policies, all meetings were held virtually via MSFT Teams. The team worked diligently to host meetings that members would feel are a good use of their time and to combat “Zoom Fatigue”.

	BMES Members	BMES National Members	
No. of Students	47	25	53%



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Student Club
ASME
 American Society of Mechanical Engineers

“What I Wish I Knew Before I Entered Industry”

Panelists

Teryn Degenhart – Caterpillar

Jackie Foss – Applied Medical

Mauri Richards – Medtronic

Zack Scott – Kinetic Core Solutions

Tuesday, Feb 16th
5:00 pm via Teams



bmes@colostate.edu
asme.colostate@gmail.com

If you don't have the link, email us!

Meeting flier example

Officer meetings were held weekly and allowed officers to come together to plan future events and discuss other topics of significance. An example of an officer meeting agenda is below:



BMES Officer Meeting

Date	07 March 2021
Attendees	Amy, Peter, Sebastian, Jack, Ian, Brooke

Meeting Opener: Peaks/Pits

Officer	Peak	Pit
Amy	Weather, nice bikeride	OCHEM exam this week
Peter	Skiing/running in RMNP	School catch-up
Sebastian	Nice, relaxing weekend after three exams last week	n/a
Alec	n/a	n/a
Jack	Nice weather	None to report
Ian	Skiing on Saturday	Calculus exam this week
Brooke	Relaxed week after two exams last week	None tot report

Meeting Agenda

Item No.	Topic	Responsible Party	To Be Discussed	Decisions/Notes	Action Items
1	Peaks/Pits	All	<ul style="list-style-type: none"> none 	<ul style="list-style-type: none"> n/a 	<ul style="list-style-type: none"> n/a
2	Social Pictionary Event	All	<ul style="list-style-type: none"> This Monday, March 9 	<ul style="list-style-type: none"> Keep casual, no score keeping 	<ul style="list-style-type: none"> n/a
			<ul style="list-style-type: none"> https://www.thegamegal.com/word-generator/ 		
3	Zimmer Biomet Industry Spotlight	Ian	<ul style="list-style-type: none"> Tentatively planned for March 29 	<ul style="list-style-type: none"> n/a 	<ul style="list-style-type: none"> Follow up with Kylie on Wednesday
4	CBE-Related Industry Spotlight	Alec, Peter	<ul style="list-style-type: none"> Alec – any updates? March 15th or April 5th Really need that nailed down by Wednesday of this week 	<ul style="list-style-type: none"> Wait for update from Alec 	<ul style="list-style-type: none"> n/a
5	Grad Panel Mar 15/4	Amy	<ul style="list-style-type: none"> Date will depend on when Zimmer Biomet industry members are available March 15th or April 4th – whichever one Novartis does not pick Amy reached out to grad students Will be April 24 and 25 Ian playing important role in packaging consistency & professionalism Amy, Peter, Alec finalized BOM by end of this week 	<ul style="list-style-type: none"> n/a 	<ul style="list-style-type: none"> n/a
6	Outreach Program	Amy, Peter, Alec	<ul style="list-style-type: none"> Something to include on agenda for future, so Brooke knows what to include on weekly emails 	<ul style="list-style-type: none"> Weekly emails to be sent at latest on Wednesday nights 	<ul style="list-style-type: none"> n/a
7	Weekly Announcements	Amy, Brooke	<ul style="list-style-type: none"> How do we want to go about this? 	<ul style="list-style-type: none"> Sebastian is going to look into how to reimburse officers using ECC funds 	<ul style="list-style-type: none"> Make sure to keep receipts for reimbursements
8	Outreach Program Reimbursements	Peter, Sebastian	<ul style="list-style-type: none"> Coordinate with Amber Martinez on due payment through PayPal 	<ul style="list-style-type: none"> Sebastian will take care of this week 	<ul style="list-style-type: none"> Sebastian to take care of Amy to provide Sebastian with shipping cost
9	Due Payer	Sebastian			



II. Treasury Report

Financial Summary:

For the 2020-2021 academic year, the CSU BMES treasurer along with the officer team reviewed and allocated funds at each of the weekly officer meetings. Fundraising is generally attained through proposals to the CSU Engineering College Council (ECC), corporate sponsorships, various volunteering events on campus, and voluntary membership dues. The generated funds are put towards t-shirts for dues-paying members and the officer team, prizes for members who have won certain games and events, food if the meetings are held in-person, online games and services that allow our members to better connect and get to know one another, any costs associated with running the CSU BMES Outreach Program, and any miscellaneous costs covering a multitude of small charges. The 2020-2021 school year required funding for:

1. T-Shirt Printing and Shipment (\$425.00)
2. Awards and Prizes for Social Events (\$50.00)
3. Online Services and Games (\$122.24)
4. Outreach Program Costs (\$1,782.11)
5. Miscellaneous (\$83.97)

Total: **\$2,463.32**

Through diligent fundraising, our chapter continues to provide funding for the above expenses with a comfortable margin to support bigger and better ventures in the future. In the 2020-2021 school year, the sources of this funding included:

1. Membership Dues (\$205.00)
2. Corporate Sponsorships (\$500.00)
3. CSU ECC Proposal Funding (\$3,000.00)
4. Volunteering (\$300.00)

Total: **\$4,005.00**

Balance Sheet

CSU BMES 2020-2021 Accounts Balances					
Account Name	FNBO & Venmo	EBO	SBME	SOFA	Totals
Starting Balance	\$428.48	\$1,214.27	\$1,887.00	\$3,735.39	\$7,265.14
Withdrawals	\$781.21	\$1,682.11	-	-	\$2,463.32
Deposits	\$505.00	\$3,000.00	\$500.00	-	\$4,005.00
Current Balance	\$152.27	\$2,532.16	\$2,387.00	\$3,735.39	\$8,806.82



III. Chapter Activities

CSU BMES hosted weekly general social and professional development meetings for BMES members. Additionally, the chapter hosted several mentoring, outreach, and campus-wide professional development events. All events were held virtually via MSFT Teams. Each hosted event is broken down by category below.

IV. Social or Other Activities

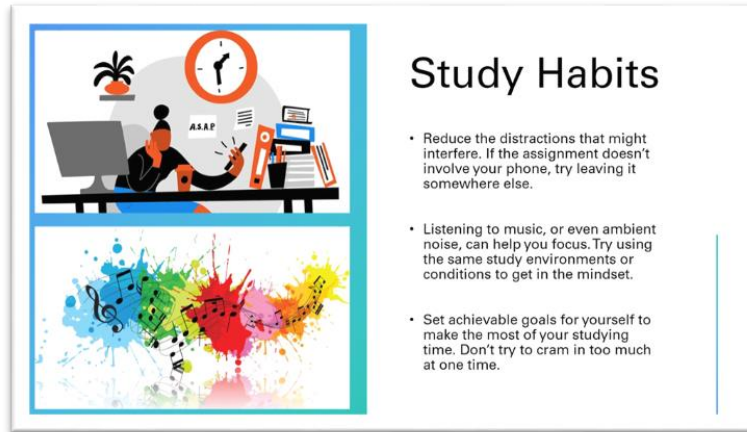
The social events were held through Microsoft Teams for both Fall of 2020 and Spring of 2021. The events were designed to provide safe, stress-free opportunities for students in the bioengineering community to connect and encourage them to join the CSU BMES chapter. Students attended study socials, game nights, and workshops designed to foster a positive and supportive community within CSU BMES. The chapter purchased a Minecraft video game server to try out as a platform for students to interact and collaborate virtually in a fun and engaging setting.

- I. **Welcome Events:** Every semester, the chapter holds an introductory welcome event in which the BMES officers introduce themselves to new interested students, explain how the organization is run, and allow new members to connect with officers and current members. In the Fall 2020 semester, students competed for prizes in CSU-related trivia via the online platform Kahoot. In the Spring 2021 semester, students were put into groups of four, each with officer leaders, to play a game of Jeopardy with bioengineering topics. The membership drive, during which first-time due paying members can receive a free annual National BMES membership, is advertised at these first meetings.

Event Title	Event Date/Time	Attendance
Welcome Event with Social & Kahoot Game	5:00-6:00 PM, 8/31/20 Microsoft Teams	15 BME attendees
Start of Semester Social – Virtual Jeopardy	5:00-6:00 PM, 1/25/21 Microsoft Teams	17 BME attendees

- II. **Stress Management Workshop:** This event was run by the current CSU BMES treasurer, Sebastian Lawton. He presented on tips and tricks on stress management and adapting to the pandemic. The importance of balance and overall wellbeing was emphasized.

Event Title	Event Date/Time	Attendance
Stress Management Workshop with Sebastian Lawton	5:00-6:00 PM, 10/5/20 Microsoft Teams	18 BME attendees



A slide from the presentation given detailing advice for maintaining healthy study habits

III. Game Nights: With student organization restricted to online meetings during the 2020-2021 academic year, the chapter used online game platforms to host virtual game nights to offer a fun and engaging break from coursework. The chapter primarily played Minecraft, Kahoot, Scriblio, and Scategories while using online chat rooms to communicate and socialize. On a couple of occasions, these game nights were held in conjunction with CSU's BME Alumni Leadership Council in which members were able to socialize with alumni in the BME industry.

Event Title	Event Date/Time	Attendance
Graduate Research Discussion with Minecraft Social	5:00-6:00 PM, 10/12/20 Microsoft Teams	14 BME attendees
Minecraft Game Night Social	5:00-6:00 PM, 11/16/20 Microsoft Teams	16 BME attendees
Virtual Game Night	5:00-6:00 PM, 12/7/20 Microsoft Teams	17 BME attendees
Virtual Game Night	5:00-6:00 PM, 3/8/21 Microsoft Teams	8 BME attendees
Social Game Night with Alumni Leadership Council	5:00-6:00 PM, 4/5/21 Microsoft Teams	9 BME attendees
End of Semester Social	5:00-6:00 PM, 5/3/21 Microsoft Teams	9 BME attendees



- IV. BMES Elections:** Every Fall, officer elections are held for the following calendar year. Candidates present pre-recorded speeches, and students vote online for a president, vice president, treasurer, industry director, outreach director, communications director, and engineering college council representative.

Event Title	Event Date/Time	Attendance
BMES Elections	5:00-6:00 PM, 11/19/20 Microsoft Teams	20 BME attendees

- V. Miscellaneous Social Events:** This event allowed students to come to a quiet and interactive virtual space to study with other BME students. The students studied together and/or independently for the upcoming finals. Lower-classmen students were able to ask questions to upper-classmen regarding early engineering classes.

Event Title	Event Date/Time	Attendance
Study Night Social	5:00-6:00 PM, 11/30/20 Microsoft Teams	15 BME attendees

V. Inter-Chapter Activities

While inter-chapter activities have not been a focus of past CSU-BMES executive teams, there has been a new effort to interact with other chapters. With CSU's Department of Biomedical Engineering recently partnering with North Carolina A&T State University's (NCAT) Department of Bioengineering, CSU-BMES has initiated discussions with NCAT-BMES. One introductory meeting has been held (27 Apr 2021) in which officers from both chapters met each other and became familiar with the other chapter (e.g. what types of events they hold). The two chapters will meet periodically throughout the summer (next meeting planned for 01 Jun 2021) to discuss and plan collaborative events for Fall 2021.

VI. Outreach Activities

Over the course of March and April 2021, BMES officers planned and organized the CSU BMES Outreach Event. The purpose of the event was to engage local middle school students in STEM-related fields, with a particular emphasis on biomedical sciences. The event consisted of three STEM-related activities – DNA extraction from strawberries, construction of a model lung and diaphragm, and construction of a simple breadboard circuit. The activities were chosen to provide students with a broad demonstration of the wide variety of biomedical engineering paradigms (in particular, biochemical, mechanical, and electrical engineering).

Because the event was held virtually, a considerable amount of effort was devoted towards making the event engaging in a virtual environment. Individual kits were tested,



assembled, and delivered, free of cost, to registered participants (approximately 40 kits for each activity) over a two-week period. For the event itself, presentation slides and animations describing the overarching science and engineering principles were prepared for each activity, and participants interacted with BMES officers over Microsoft Teams while performing the activities. The three activities were split over two sessions, with the DNA extraction taking place over a 90-minute session on Saturday, and the lung model and breadboard activities occupying a 2-hour session the following day.

After the event, participant feedback was collected, and will be used to refine and develop future events. Current summer plans related to future BMES Outreach activities include asset design and implementation of a dedicated webpage, along with brainstorming and testing of three additional future activities.



BMES Outreach Program participants holding up their working lung model



An example of the kit distributed to students, including materials for three activities



Event Title	Event Date/Time	Attendance
CSU BMES Outreach Event, Part I (DNA Extraction Activity)	Saturday, April 24, 12:30 PM – 2:00 PM	25 external participants, 3 BMES officers hosting
CSU BMES Outreach Event, Part II (Lung Model and Breadboard Activities)	Sunday, April 25, 12:30 PM – 2:30 PM	26 external participants, 6 BMES officers hosting

VII. Mentoring Activities

The CSU BMES has made it a goal over the past year to develop a mentorship program that connects new BMES members to older students and to industry professionals. This spring, the chapter partnered with the CSU School of Biomedical Engineering Alumni Leadership Council to pair interested BMES members with industry professionals within the biotech industry. The first cohort of mentors and mentees were paired at the end of the spring semester, and each pair will meet on their own throughout the summer and into next year. Each mentor and mentee were paired based on their availability and career interests in the field. The chapter hopes to kick off the next cohort of mentees and mentors within the fall, and host periodic in-person social and professional development events for participating members designed to help mentees develop professional and lasting relationships with their mentors. The program is intended to help students receive career advice and guidance outside of what is taught within their academics, and provide students with the opportunity to make connections and network within the industry that they hope to work in once they graduate. The partnership with the Alumni Leadership Council is incredibly valuable, as it allows students to hear from members of industry who have gone through similar educational degree programs. The chapter hopes to expand this into an ongoing program in future years.

Event Title	Event Date/Time	Attendance
Mentorship Program Recruiting	Monday, March 29, 5:00 PM – 5:30 PM	14 Undergraduate students
Mentorship Program Kick-Off	Thursday, May 6, 6:00 PM – 7:00 PM	8 Undergraduate students, 6 External participants

VIII. Industry and Professional Development Activities

The goal of industry and professional development activities was to give CSU BMES members glimpses into what potential careers in Biomedical Engineering could look like, and how they could best set themselves up for success. This was accomplished by bringing in industry professionals, graduate students, and presentations given by BMES officers.



- I. **CSU Biotech Connect:** BMES collaborated with the CSU Career Center and the CSU oSTEM student organization to host a virtual networking event titled Biotech Connect. This campus-wide event provided CSU students an opportunity to connect with industry professionals in the biomedical engineering fields. It began with a keynote panel of distinguished professional who answered questions about their career path and where they see the field of biotechnology in the future. Then industry professionals with each attending company were divided into breakout rooms so that students had the chance to connect with them in smaller group settings.

Join us for Biotech Connect!

Join industry professionals from the Colorado Biotech and Life Science industries to network, learn, and discuss career paths within Biotech!

Scan the QR Code to Register!

Talk with these companies:

- Medtronic
- Tolmar, Inc
- Institute of International Education
- Beckman Coulter
- Conmed
- Hyde Engineering+ Consulting
- Seran
- Colorado BioScience Association
- Pathways for Patient Health
- eClinicalWork
- AGC Biologics

...and more!

Biotech Connect

TUESDAY, FEBRUARY 23
 4:45 - 7:00 MT

Register on Handshake for this virtual event!

Join the meeting at 4:30 for Pre-Event Information!

CAREER CENTER | BMES

Biotech Connect flier

Event Title	Event Date/Time	Attendance
CSU Biotech Connect	5:00-6:00 PM, 9/21/20 Microsoft Teams	91 CSU Students



II. Industry Presentations: These presentations were an opportunity for students to look into local biomedical engineering companies. Professionals from each of these companies gave a more in-depth look at what their company did, and what steps they to get where they are in their careers.

Event Title	Event Date/Time	Attendance	Speaker(s)
Terumo BCT Presentation	5:00-6:00 PM, 9/21/20 Microsoft Teams	18 BME attendees	Thomas Felt
Medtronic Industry Spotlight and Virtual Tour	5:00-6:00 PM, 2/1/21 Microsoft Teams	17 BME attendees	Christian Lee, Craig Belgard
Industry Spotlight with Zimmer Biomet	5:00-6:00 PM, 3/29/21 Microsoft Teams	14 BME attendees	Kylie Soliday, Daniel Burke



Virtual Medtronic Site Tour Video

III. Professional Development: These presentations were designed to help BMES members achieve their professional goals by giving them tools that they could use now and in the future to make themselves stronger candidates for industry positions. They provided students with opportunities to grow and develop their skillset outside of academics.

Event Title	Event Date/Time	Attendance	Description
Best Research Practices	5:00-6:00 PM, 9/14/20 Microsoft Teams	12 BME attendees	Alec Jones presented on how to conduct academic research
Career and Resume Tips	5:00-6:00 PM, 9/28/20	11 BME attendees	Amy Keisling shared resume tips and career fair advice



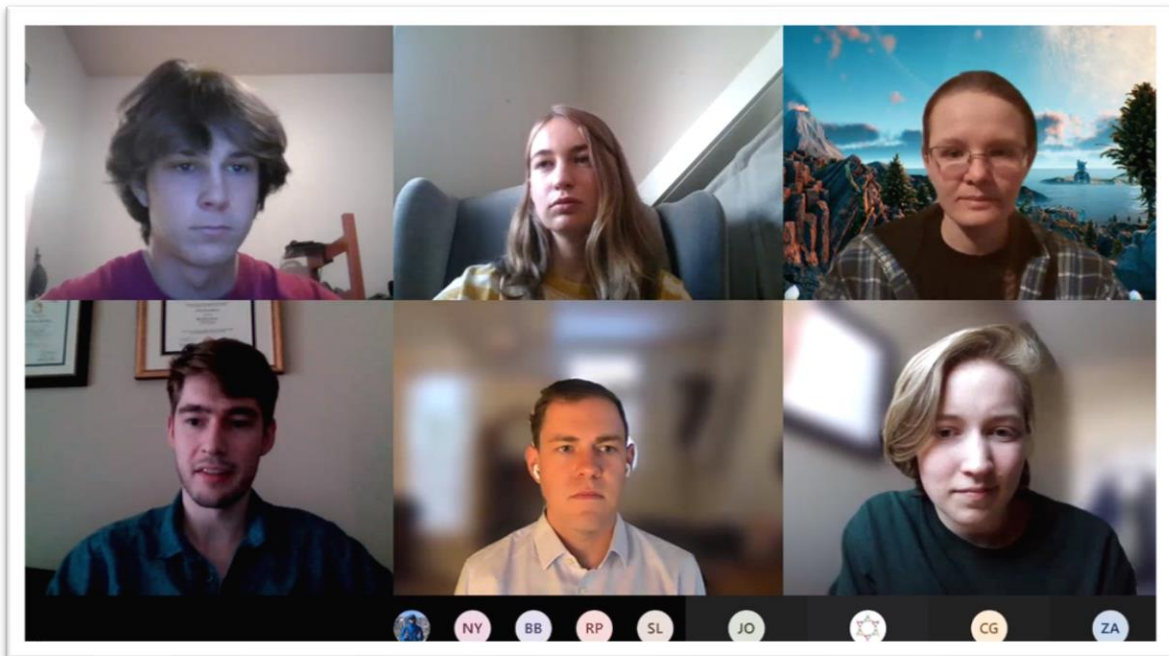
	Microsoft Teams		
Study Abroad Presentation	5:00-6:00 PM, 10/26/20 Microsoft Teams	16 BME attendees	Brett Beal, CSU academic advisor, presented on the CSU Prosthetic Innovation Program in Ecuador
LinkedIn Workshop	5:00-6:00 PM, 2/8/21 Microsoft Teams	9 BME attendees	Melissa Luna presented on how to build a LinkedIn profile
Quality Science Presentation and Pathway to Patient Health	5:00-6:00 PM, 3/22/21 Microsoft Teams	11 BME attendees	Marla Phillips, CEO of Pathway to Patient Health, presented on their Quality Science microcredential program

Microsoft Teams Quality Science Presentation

IV. Panels: These events were opportunities for BMES members to ask professionals, graduate students, and recent graduates their burning questions on how they got to where they are and help the students better understand what it takes to be successful in a career in biomedical engineering. A panel provided the opportunity to give more complete answers to the students' questions, as the panel members all took different paths to get to where they are in their careers. In the Spring of 2021, the chapter started a panel series entitled "What I Wish I Knew", focusing on asking CSU alumni what they wish they knew before they entered their respective fields.



Event Title	Event Date/Time	Attendance	Speaker(s)
Recent Graduate Panel	5:00-6:00 PM, 10/19/20 Microsoft Teams	14 BME attendees	Jackie Foss, Luis Monterrosa, Megan Socha
Graduate Student Panel	5:00-6:00 PM, 11/2/20 Microsoft Teams	12 BME attendees	Stephanie Ng, Jacob DeRoo, Vishakha Pawar, Lindsay Dietz, Alec Jones
SBME Alumni Leadership Council Panel	5:00-6:00 PM, 11/9/20 Microsoft Teams	15 BME attendees	Terrance Bishop, Zachary Kugler, Evan Siebenmorgen
Networking Panel with Medtronic, Aerotek, and Greenkey LLC	5:00-6:00 PM, 2/22/21 Microsoft Teams	12 BME attendees	Lindsey Summers, Ruben, Antunez Martinez, Chris Palm
“What I Wish I Knew” Before Industry Panel with American Society of Mechanical Engineers	5:00-6:00 PM, 3/2/21 Microsoft Teams	13 BME attendees	Teryn Degenhart, Jackie Foss, Maurie Richards, and Zach Scott
“What I Wish I Knew” Graduate Student Panel	5:00-6:00 PM, 3/15/21 Microsoft Teams	15 BME attendees	Danielle Weaver, Matt Marrapode, Katherine O’Dell, and Alden Tennison



Microsoft Teams “What I Wish I Knew” Graduate Student Panel



IX. Social Impact Activities

In addition to our ongoing work with STEM-education outreach events, BMES officers have begun exploring additional ideas for community-based projects, particularly ones which can engage students in design projects and result in a donatable end-product. Current ideas under consideration include: a wearable chemiluminescent viral sensor, a portable second-harmonic generation microscope for imaging, hydrogel-based orthopedics, and EEG-controlled wheelchairs/prosthetics. BMES members have the skillset and tools to make many of these ideas possible, such as access to 3D printers and programmable arrays for prototyping. An organization-wide brainstorming session will be held during the Fall 2021 semester to solicit further ideas and organize a suitable timetable, as well as to gauge student interest.

X. National BMES Meeting

Due to financial limitations, no members of Colorado State's chapter of BMES attended the 2020 National BMES Conference. The 2021 executive team recognizes the importance of attending and have begun discussing the logistics of attending the 2021 conference.

Past executive teams have attended the national conference, notably the 2019 Philadelphia occurrence. Said attendees found great value in the Outstanding Chapters panel as well as meeting officers for different chapters around the country.

XI. Future Direction

The chapter established three main goals during the 2020-2021 school year: sponsorship, mentoring, and design competitions. CSU BMES has established excellent relationships with a number of companies within the past year, allowing the chapter to host a number of industry events. This will help build the groundwork for future sponsorships and partnerships with companies do develop funding, volunteer, and internship opportunities for students. The chapter was also able to meet its goal of establishing a mentoring program. By shifting away from peer mentoring and taking advantage of industry member mentoring, the organization is able to offer students with valuable career guidance. Unfortunately, the team was not able to implement a design competition this semester. Due to Covid-19 precautions, in-person club activities, including hands-on design work and building, were suspended. The team decided to focus on hosting frequent, beneficial events for students and putting together the outreach program. With the previous year's progress and improvement points in mind, the executive team has established a number of goals to work towards during the 2021-2022 school year:

1. Increase Engagement

The chapter experienced a significant decrease in engagement by members in the club amidst the COVID-19 Pandemic. However, the executive team is optimistic for a



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larger Fall 2021 turnout as the school returns to in-person activities. The team is discussing how to better advertise chapter events and meetings as well as hold meetings in an accessible location. Considering that general meetings are held during the evening, the executive team will resume providing food and snacks in hopes to draw more students.

2. Introduce Inter-Chapter Activities

As previously mentioned, the executive team looks forward to introducing inter-chapter activities. Discussions have been initiated with North Carolina A&T's chapter of BMES to explore ways in which the two chapters may collaborate. The chapters plan to co-host a couple of events virtually due to the far distances between schools and then meet in person at the national conference. The two chapters are discussing hosting both a game night where social interactions are encouraged as well as an industry panel where each chapter is able to leverage the other chapter's connections.

3. Introduce Research and Social Impact Activities

The chapter plans to introduce a yearly research project that connects graduate students in CSU campus research labs with undergraduates interested in gaining experience in research and design applications. The program would be designed to help students apply the concepts they learn in the classroom to real-world engineering applications. The chapter would like to explore various projects that could positively impact the community. For example, the executive team considered implementing a chapter-wide project to design an effective, made-at-home facemask. This project was ultimately shelved* due to limited engagement and virtual learning barriers. However, the team hopes to develop a similarly engaging and impactful project in the coming semesters that provides students with applicable project experience and gives them the opportunity to create something of value within the healthcare community.

4. Refine and Grow Outreach Program

The chapter is pleased with its first run of the middle school Outreach Program. The executive team plans to meet frequently throughout the summer to plan a similar and improved Outreach Program, to be hosted in person, in the fall. There are points of improvement the team has outlined to address in the coming year:

- The team plans to bring in more general members into the planning and hosting process of the event, including the formation of committees and several leadership positions open to members outside of the executive team.
- More activities will be added to increase variety for students who have already participated in the program and to increase the number of biomedical engineering topics covered.
- A website for advertising the outreach program will be developed. The website will be easily accessible to parents, students, teachers, and other members of the



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community. It will allow registration, communications, and advertising to be streamlined in one central place.

- The team hopes to make connections with school districts outside of Fort Collins to explore the possibilities of expanding the program into underserved communities.
- The team also plans to connect with biotech companies who may be interested in sponsoring or donating to the outreach program so that we can offer the program at little or no cost to students.