



The Mathematics, Engineering, Science, Achievement (MESA) program focuses on initiatives to improve diversity and retention of historically underrepresented students in the STEM fields, including African American, Latinx/Hispanic, American Indian/Alaska Native, Native Hawaiian/Pacific Islander, and women students.

### EQUITY

We believe that race and gender should not be predictors of STEM educational outcomes.

### ACCESS

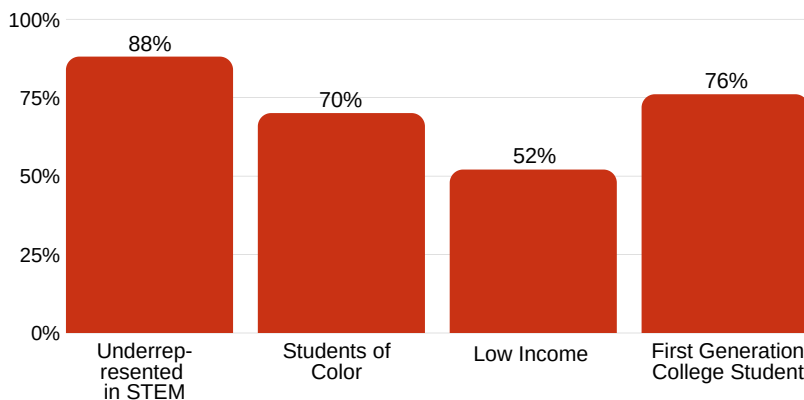
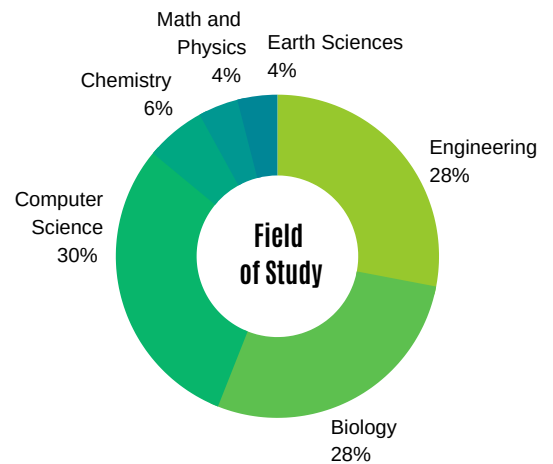
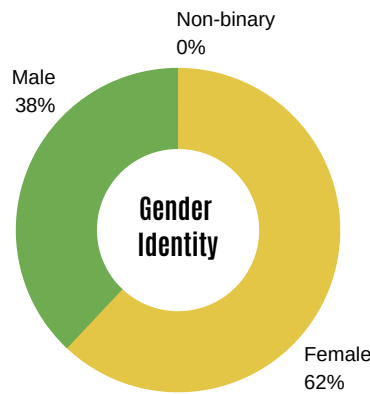
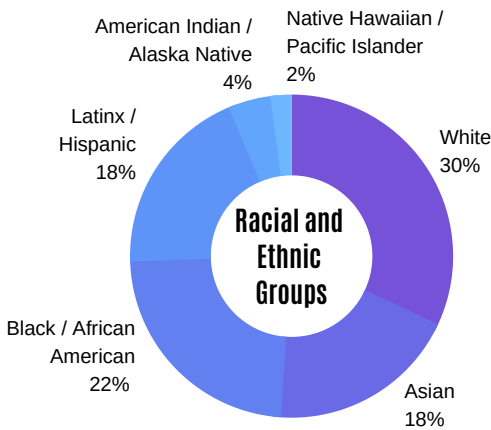
MESA students will have access to opportunities that will academically and professionally develop them into competitive STEM transfer students.

### COMMUNITY

Together, we will build and be part of a community that empowers each other.

## WHO WE SERVE: MESA STUDENTS

Fall quarter, MESA served 50 students. Below are MESA Student demographics.



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- MESA : Resource: Opportunity Database

# MESA EVENT HIGHLIGHTS

## STEM and MESA Kickoff

To start the 2019-2020 school year, the STEM Division and MESA hosted the annual Kickoff event in September. Students gathered to learn about the many STEM clubs and resources on campus. Then everyone enjoyed a pizza lunch to welcome them back to school. Career and Academic Advisor Nate Goodman, demonstrated the flammability of hydrogen verse helium to really start the year off with a "BANG"!

## Campus Sustainability Day



MESA student Zeki (left) and Megan (right), explain how to make edible water bottles.

## Physics Slam

In October, the UW Physics Department hosted this event where 6 scientists "slammed" their innovative area of research, trying to explain the essence of their topic in just 10 minutes! At the end the audience voted on the best slammer. Dr. Michael Wong won by talking about his research about possible life on Jupiter. MESA students were excited to learn about some of the cool research applications of physics and bond with other MESA students. Proceeds from the event support sending underrepresented UW Physics students to conferences around the country.

## Boeing Tour

In November, Edmonds CC MESA partnered with the Boeing Future of Flight program to organize a tour of the Everett factory. Students from Edmonds, Everett, Highline, and Seattle Central Community Colleges came together to tour the largest building by volume in the world, see how commercial airplanes are assembled, and learn about the vast variety of careers at Boeing.



*The educational tour to Boeing was a great experience. I learned so much about the different planes that Boeing has and the things that make the planes unique. My personal favorite was the Dreamlifter, which is the cargo plane used to transport other parts of the planes. I learned that science is an evolving process and we cannot simply be content with where we are technologically. We have to challenge ourselves and find easier ways of solving problems and making work easier. It was also interesting to see the concepts we learn in class being applied in real life.*

- Brenda, MESA Student, Computer Science



Edmonds CC students checking out the Math Club table.

MESA participated in the Campus Sustainability Day hosted by the Edmonds CC Green Team. The event brought together information, resources, and activities about sustainability on campus and in the community. MESA demonstrated how to use liquid sphereification with sodium alginate and calcium lactate to make edible water bottles which are a proposed solution to decrease plastic pollution.



MESA students and staff after the UW Physics Slam.

# MESA STUDENT SPOTLIGHT

## Priscilla Burns

### Major:

Manufacturing Engineering

### What inspires you?

*Believing in myself and inspiring someone else to know that it's never too late to go back to school. My family is my rock, I want them to admire my hard work, and to be an example.*

### College goal?

*As a first-generation earning a degree, it's a thought I never imagined could be possible to achieve in my life. Don't wait for the "right time" to get an education, it's an opportunity I am grateful to experience. My goals at Edmonds CC are to acquire knowledge, skills and personal growth to excel academically in achieving my degree.*

### How has MESA impacted you?

*Deciding on going back to school after 35 years was terrifying, to say the least. First, in August 2018, I earned my diploma and decided that I wanted to continue my education. Secondly, I courageously chose a degree outside of my comfort zone. I felt strong and confident enough to remove myself from my "safe place", because I wanted more for myself and my children. I reached out to MESA, and they were a welcoming community of supportive and inspiring people that I am grateful to be a part of. MESA has exposed me to awesome opportunities and amazing resources; connecting me to achieving my math and science degree in engineering. I am excited and looking forward to the future with the guidance and support of the MESA community in my corner.*

# FACULTY SPOTLIGHT

## Chuck Mueller

**Department:**  
Engineering

### What is your favorite thing about teaching?

*I love that the students of Edmonds CC bring their personal stories, interests and excitement for science to my classroom. I have had students come into my classes wanted to learn about prosthetics, sailing, robotics, computer simulations, and lots of other topics that I did not know much about. At Edmonds CC, I have the flexibility to engage these students on the topics they are interested in and give them a unique learning experience. Helping my students learn while learning from my students about topics that interest them is the most rewarding part of my job.*

### What does it mean to you to support underrepresented students at Edmonds CC?

*As a teacher in a STEM discipline, supporting underrepresented students means bringing in more voices and more perspectives into STEM fields. It's my job to welcome underrepresented students into the learning process and make sure that they feel free to share their stories. Sharing my enthusiasm for science with them and engaging them in the exploration of science and engineering gives me great joy.*

# MESA EVENTS - CONTINUED

## Advancing the Future of Aerospace Conference



MESA staff Megan and MESA students Brenda and Gio during the AIAA Conference.

Two MESA students attended the AIAA Advancing the Future of Aerospace Conference in November. After kicking off with a keynote about the Boeing's contributions to the Apollo Program, industry professionals from many local companies gave presentations about electrified flight, innovation in plane engines, and their passion for aerospace. Attending conferences and talking with professionals provides the opportunity for MESA students connect with industry mentors and learn about industries they want to work in the future.

## Community Potluck and Drone Building

On the final day of Fall quarter, MESA hosted our annual Community Holiday Potluck featuring DIY Drone building and a race course! Surrounded by friends and food, MESA students and their families tested their pilot skills but guiding these little flyers through the course. It was lovely seeing the MESA family come together for a fun and relaxing night.



MESA students and family gather for a holiday celebration.



MESA student Gio shows off one of the DIY drones.

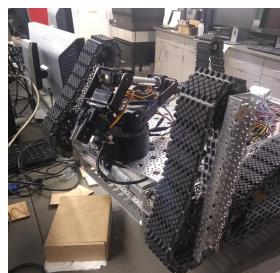
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*I went into the MESA Holiday Community Potluck feeling anxious, nervous, basically holding tightly onto a fear of being an outsider. However, I left the event feeling happy, relaxed, and a sense of being accepted by others there. I want to thank Holly for being by my side when she immediately noticed that I was unsure what to do. I felt like everyone there was inclusive, and I had an overall great experience.*

- Hallelujah, MESA Student, Biology

## UW Bothell Tour

In December, MESA toured the UW Bothell campus, exploring the many STEM Labs, the Makerspace, and the recreation center. One highlight was learning about the interdisciplinary capstone project where mechanical, electrical, and software engineering students work to design, build, and program a rover. Then, they compete in a competition to solve puzzles and complete objectives without getting hacked by cybersecurity students.



(Left) One of the capstone rovers built by UW Bothell students.



(Right) MESA Student Brenda, in one of the labs on campus.

# MESA EVENTS - CONTINUED

## UW Seattle Transfer Preview Day



MESA Students and Staff with "Dubs" the UW mascot.

MESA Students and Staff attended the UW Seattle Transfer Student day in December. After a welcome from the admissions department, students dispersed to information sessions about majors and programs they were interested in. MESA student Vanessa, attended the Information School session and learned about all the different types careers in information science. After a lunch hosted by the Office of Minority Affairs & Diversity, sessions about computer science, astronomy, and physics began. MESA students walked away feeling inspired and hopeful about their futures at UW Seattle.

# STUDENT RESEARCH SPOTLIGHT

Many MESA students work on research projects through their classes or on their own. Here are some of their projects!

## Andre

### Project?

*Independently, I've been working on a weather app using JavaScript.*

### What have you learned during the project?

*One of the biggest things I've learned was about retrieving data from an external API. Currently I'm trying to answer how to secure the API key from any user if I were to make the app accessible to the public.*

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## Taylor and Vanessa

### Project?

*For Physics 221, we explored the relationship between angle of attack and lift coefficients on Airplane wings.*

### Why were you interested in this topic?

*With Boeing in our backyard and the recent opening of Paine Field as a commercial airport we thought it could be useful to our future careers to explore this sector.*

### What methods did you use to answer the question?

*We utilized the physics department on campus, the wind tunnel in Monroe hall, and online sources like NASA.*

### What did you find?

*We found that our experiment needs more testing to confirm or deny our hypothesis. Our test results did follow a pattern but there were anomalies that we didn't expect to see.*

### What did you learn during the project?

*Mistakes are going to happen and retesting is just a part of physics. The important thing is that you learn from your mistakes and understand what they mean to your experiment.*

# FACULTY SPOTLIGHT

## Gabrielle McIntosh

### Department:

*Math*

### What is your favorite thing about teaching?

*Helping students reach their goals! In my job, I am able to share my love for math and help students access education which can transform the lives of their families for generations to come. The students at Edmonds have a diverse set of life experiences and I feel lucky that I am able to be a part of their challenges and triumphs.*

### What does it mean to you to support underrepresented students at Edmonds CC?

*First and foremost, I strive to make students feel like they belong at Edmonds and that they have a team of people that they can reach out to for support including their instructors, advisors, support programs and mentors. I hope that students feel comfortable coming to me with whatever challenges they are facing. I also try to be understanding that many students have a wide variety of demands on their time and may not be able to attend regular office hours or meet deadlines set for certain days of the week.*

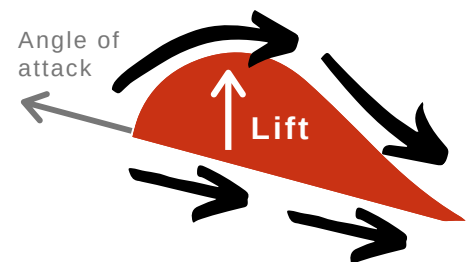


Diagram showing wind over a model airplane wing and the associated lift.

# UPCOMING EVENTS

## Winter Quater 2020

- MESA Kickoff Waffle Bar
- UW College of the Environment: Tour de College
- iFly: Indoor skydiving
- UW Seattle Bio-robotics Lab tour and Transfer Day
- Wind Tunnel Building
- WiSE Conference
- Internship Fair
- UW Bothell STEM Day
- WSU Everett Tour
- Personal Statement Workshops

## Spring Break

- MESA Hackathon
- MESA Student Leadership Retreat

Want to get involved or have event ideas?  
Let us know at [mesa@edcc.edu](mailto:mesa@edcc.edu)!

## JOIN THE #MESAFAMILY

-  [edcc.edu/mesa](http://edcc.edu/mesa)
-  [mesa@edcc.edu](mailto:mesa@edcc.edu)
-  [@edccmesafamily](https://www.facebook.com/edccmesafamily)
-  [@edccmesafamily](https://www.instagram.com/edccmesafamily)
-  [showcase/edmonds-cc-mesa](https://www.linkedin.com/showcase/edmonds-cc-mesa)

# STUDENT RESEARCH: CONTINUED

## Ariana

### Project?

For my physics class, I was trying to mathematically model a natural oscillation decay.

### Why were you interested in this topic?

I am a math major so I wanted mathematics to be the focus of the project but it obviously had to relate to physics so I settled on mathematically modelling a physical situation.

### What did you find?

I found that my system was heavily influenced by coupling oscillations which resulted in the system demonstrating chaotic behavior. I performed another experiment with a heavier-weighted system to isolate the controlled damping which resulted in data which demonstrated enough regularity to analyze with the initial hypothesis. My conclusion is that I could neither accept nor reject the hypothesis because while yes, I can mathematically model natural oscillation decay, it gets complicated when chaotic dynamics are involved. Finding the chaotic behavior was a surprise and will be the basis for my research next quarter with a focus on chaos theory.

### What did you learn?

I learned how to formally produce a research question and support it with data accurately analyzed using technology. I learned about efficient software for analyzing and displaying data and also how to format and publish a professional level research paper. The research I did in the Fall of 2019 has fueled my desire to continue research at the graduate level.

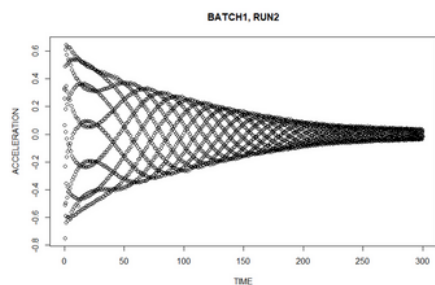


Figure 1: Batch 1, Run 2 of Second Experiment demonstrating chaotic behavior

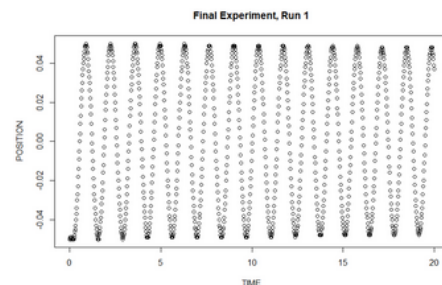


Figure 2. Final data run, roomed in.

# MESA RESOURCES: OPPORTUNITY DATABASE

Name	Due Date	Application Status	Application Opens
APPLICATION STATUS: Accepting Applications (Count: 47)			
1 Boeing Numerical Control Programming Intern	December 31, 2019	Accepting Applications	October 30, 2019
2 Neurological Surgery Summer Student Program	January 2, 2020	Accepting Applications	November 1, 2019
3 NASA Lucy L'Space Virtual Academy	January 5, 2020	Accepting Applications	October 15, 2019
4 2020 Plant Genome Research Summer Internship	January 7, 2020	Accepting Applications	
5 Harvard Summer Research in Ecology	January 7, 2020	Accepting Applications	
6 Community College Internships	January 9, 2020	Accepting Applications	October 16, 2019
7 SUU Science Undergrad Lab Internships	January 9, 2020	Accepting Applications	

During fall quarter Megan, the ACE Program Coordinator, reinvented the MESA Conference, Internship, and Scholarship Database. Shown on the left, the new database centralizes opportunities for students while including information about due dates, affinity groups, and allows students to create custom searches. The database can be accessed through the Edmonds CC MESA website ([edcc.edu/mesa/cis-database.html](http://edcc.edu/mesa/cis-database.html)) or the MESA Canvas page for students. Check it out and find an opportunity right for you!

## THANK YOU FOR READING

Stay Tuned for Exciting Events Happening During the Winter Quarter 2020!

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