BioE Newsletter
Enjoy a bi-weekly digest of the most current BioE news!

Hey BioEs,
Below, find the upcoming weeks' events as well as our Behind the Microscope features. Read on to learn about two more of the incredible stories our BioE members and share your story with us!

Scroll all the way to the bottom of the page to follow us on social media and join the BioE Slack. :)

Upcoming Seminars

BioE Office Hours
Dr. Manu Platt
Link - 10/13/2020 - 9-10am

Dr. Hung Lu
Link - 10/16/2020 - 4:30-5:30pm
Latinos/Hispanics in STEM: A Career Path Series
w/ Dr. Jorge Macedo, GT Assistant Professor in CEE
[Link](https://outlook.office365.com/mail/search/id/AAQkADYxMTdiODNkLWJjMjAtNDc0Yy1iMWFkLWRlOTBjZDc4YTgwMQAQAJjrxSCRsEowq%2FCDm02...)

10/06/2020 - 4-5pm

ChBE Silas Lecture
"Thermodynamics and Design of Sequence-Defined Polyelectrolyte Complexes"
Sarah Perry (University of Massachusetts Amherst) and Charles Sing (University of Illinois, Urbana Champaign)
[Link](https://outlook.office365.com/mail/search/id/AAQkADYxMTdiODNkLWJjMjAtNDc0Yy1iMWFkLWRlOTBjZDc4YTgwMQAQAJjrxSCRsEowq%2FCDm02...)

10/07/2020 - 3:30-4:30 pm

Nano@Tech seminar
Saima Afroz Siddiqui Postdoctoral Associate (University of Illinois, Urbana-Champaign)
[Link](https://outlook.office365.com/mail/search/id/AAQkADYxMTdiODNkLWJjMjAtNDc0Yy1iMWFkLWRlOTBjZDc4YTgwMQAQAJjrxSCRsEowq%2FCDm02...)

10/13/2020 - 12-1 pm

Reminder!

Don't forget to conduct your weekly COVID Asymptomatic Test!

Take care of yourself, your lab, and community. #JacketsProtectJackets

[Testing registration](https://outlook.office365.com/mail/search/id/AAQkADYxMTdiODNkLWJjMjAtNDc0Yy1iMWFkLWRlOTBjZDc4YTgwMQAQAJjrxSCRsEowq%2FCDm02...)

https://outlook.office365.com/mail/search/id/AAQkADYxMTdiODNkLWJjMjAtNDc0Yy1iMWFkLWRlOTBjZDc4YTgwMQAQAJjrxSCRsEowq%2FCDm02...
In this week's segment...

Jacob Davis

**Homeschool:** Biomedical Engineering

**What year of graduate school are you on?** 4th year

**Advisor:** Eberhard Voit (BME) and Sam Brown (Biology)

**What's your research on?**
I study antibiotic resistance in respiratory pathogens, specifically MRSA (Staphylococcus aureus), Pseudomonas aeruginosa, and Burkholderia

Dr. Greg Sawicki

**Homeschool:** Woodruff School of Mechanical Engineering, School of Biological Sciences

**Lab:** Physiology of Wearable Robotics (PoWeR)

**What's your research on?**
The Human Physiology of Wearable Robotics (PoWeR) laboratory’s goal is to combine tools from engineering.
I work with the Cystic Fibrosis and Airways Disease Research Center (CF-AIR) at Emory and CHOA, using microorganisms recovered from patients. I am researching what specifically allows for antibiotic resistance and survival of pathogens, including enzymatic degradation of antibiotics, altered chemical environment, and presence of non-pathogenic microorganisms. I am also creating a modelling framework that will hopefully be able to predict patient response to antibiotic therapies.

At what age did you start graduate school? 31

What motivated you to attend graduate school?
I've always enjoyed research and learning new things. I've always had several non-fiction library books checked out, and have spent hours at a time going down Wikipedia rabbit holes. I really couldn't see myself doing a job that doesn't allow me to learn new things daily and hopefully contribute to the world's body of knowledge.

What's something about you that sets you apart from other grad students?
I took a very long path to graduate school. After high school, I didn't have the means to go to college, so I joined the US Army. I was assigned to a small infantry unit on an joint US-Italian army base in northern Italy. Immediately after arriving, our unit was deployed to Afghanistan for just over a year as part of a large troop surge. After returning, I learned that the Army offered free tuition to active soldiers, so I started taking classes at the University of physiology and neuroscience to discover neuromechanical principles underpinning optimal locomotion performance and apply them to develop lower-limb robotic devices capable of improving both healthy and impaired human locomotion (e.g., for elite athletes, aging baby-boomers, post-stroke community ambulators).

By focusing on the human side of the human-machine interface, Sawicki and his group have begun to create a roadmap for the design of lower-limb robotic exoskeletons that are truly symbiotic—that is, wearable devices that work seamlessly in concert with the underlying physiological systems to facilitate the emergence of augmented human locomotion performance.

At what age did you start graduate school?
25

What motivated you to attend graduate school?
Curiosity. Desire to figure out how things work ;)

What is something you believe set you apart from other graduate students?
First in family to pursue a PhD.

What is your favorite thing about being part of the BioE community?
Diversity of science and engineering experience and expertise in the cohort.

-----------More about you----------

Where are you from?
East Setauket, NY----way out east from NYC on North Shore of Long Island
Maryland, which had a small satellite campus on our base. Over the next several years (minus another 6 month deployment to Afghanistan), I took classes in person and online until my Army contract was over.

After I got out of the Army, I was able to use the GI Bill to finish my Bachelor's degree in Mechanical Engineering at the age of 30. While doing undergrad, I also got married and had a child. So now, while I learn how to be a professional researcher, I also am learning how to be a husband and a father.

**What's your favorite thing about being a BioE student?**
For me, I love the collaborative aspect of BioEngineering, that it brings so many departments together. I regularly work with BioE program faculty in my home department, but also in ChemE, Biology and even Emory faculty. I have also been able to take classes in BME, ME, ISyE, Biology and even Applied Physiology that count towards my degree so I have never had to take a class that I didn't find interesting just because my program required it.

----------More about you----------

**What is second on your list for a dream job/profession?**
That's a tough one, since I really do feel like I've found my calling. I would have probably been a high school math teacher, and maybe coached soccer on the side. As an undergrad, I did the teacher's training program and actually did student teaching.

**What are some activities you do when you are not in lab?**
run, bike, hike, live music

**What is something that you are proud of achieving during your academic career?**
Earning tenure

**Has there been any instance of hardship that has impacted your schooling? If so, how have you overcome that hardship and how has it shaped your graduate school experience?**
Never had a huge amount of money to put toward school. Loans and small scholarships and family saving for me got the job done. Also, my GRE scores were really low. It kept me from getting into the top engineering Departments for grad school. I got to U Mich via Kinesiology and then designed my own grad degree to get engineering back into the mix.
Since I have a family, I don't really get to choose my own activities anymore. I'm at the whim of a 4 year-old, so I play a lot of board games and read lots of children's books. I enjoy playing sports when I can, and I play piano and guitar.

Where do you see yourself in 10 years?
If I could be a BioE student in 10 years (with a much larger stipend!) I would be happy. Having said that, I would like to have a job where I can do research, either at a university or an agency like the NIH or CDC.

-------------Some fun ones-------------

What's the one food you could never bring yourself to eat?
There are a few: mushrooms, olives, pickles. Yuck.

Anything else you would like the readers to know about your story?
I’m really glad I chose the BioE program at Georgia Tech over the other programs I considered. I have learned so much since I've been here, I've had great advising, and I get to participate in meaningful research every day. I hope everyone else who goes through the program has the same great experience I have had.

If you would like to contact Jacob, feel free to do so here:
jjdavis@gatech.edu

We hope you enjoyed this edition of Behind the Microscope! Thank you to Jacob and Dr. Sawicki!

Would you like to share a bit about you? It’ll only take a few minutes! We would love to hear your story.
Behind the Microscope Form

Join us on Slack!

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Our mailing address is:
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