

BCDB LEADING EDGE

Newsletter Highlights

Director's Message

New Student Feature

Students Accomplishments
and Awards

Careers after BCDB: **Michael
Lee Cato, Ph.D.** - Visiting
Professor at Wofford College

Welcome new students!



Upcoming events:

- **DSAC Fall Fest - Oct 30th;** Emory Student Center
- **BCDB Retreat - Nov. 1st** at Trees ATL
- **Batter Together** - Following Advanced Seminar on **Wednesday, Nov. 13th** hosted by BCDB DEI Committee

Director's Message

If sweater weather is any indication, we are well into the Fall Semester. I hope everyone has settled into a semester of scholarship, research, seminars and socializing. As you likely know, BCDB is experiencing considerable growth this year, with sixteen new students (tying our record for incoming class size!), two new transfer students and five new faculty in varying stages of joining the program. You'll learn about the new students in this edition of the Newsletter and also have a chance to meet them at our upcoming BCDB Retreat, which is being held Friday November 1st at Trees Atlanta. The Retreat Planning Committee has worked hard to come up with a fun and meaningful day of events – I'm looking forward to it! Overall, I think that the engagement and ownership of our students, faculty and staff are what make BCDB such an attractive program. I value everyone's contributions that help BCDB thrive and am grateful that we have such a supportive and vibrant culture!



Mike Koval, Ph.D.

New Student Highlights

Welcome to our first years and those starting in Fall 2024 - we have 18 incoming students! We are excited you are here and cannot wait to see how you will grow over the next year.



Madison Allegretti

Hometown: Cleveland, Ohio

Undergrad: THE Ohio State University

Research interests: Basic biochemistry, RNA biology, molecular basis of disease

Why did you join Emory's BCDB graduate program? The community seemed so welcoming and there's so much great research!

★**Who is someone from your personal or professional life that significantly influenced your decision to pursue a PhD?** Dr. Jane Jackman, my undergraduate PI

★**Do you have any unique or unexpected talents?** I can cook and play soccer!

★**Outside of academics, is there something you hope to accomplish while in graduate school?** Explore Atlanta and all it has to offer!

Hometown: Denver, CO

Undergrad: Metropolitan State University of Denver (MSU)

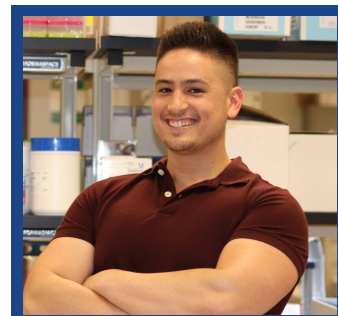
Research interests: Structural biology, biochemistry, virology, microbiology, biophysics, infectious disease

Why did you join Emory's BCDB graduate program? Aside from wanting to get far away from the snowy conditions of Colorado, I was intrigued by the research at Emory and within the BCDB program, the connections/relationships I made during the recruitment weekend, and the close proximity and collaboration with the CDC.

★**Who is someone from your personal or professional life that significantly influenced your decision to pursue a PhD?** My former PI at the Vitalant Research Institute, Dr. Tamir Kanias, who saw my potential to grow as a scientist.

★**Do you have any unique or unexpected talents?** I can play the oboe! Though sadly due to apartment living, it mostly just collects dust nowadays.

★**Outside of academics, is there something you hope to accomplish while in graduate school?** Solve a novel structure and publish a first-author paper! Also to successfully and regularly squat and/or deadlift 3 plates (315 lbs).



Scott-Wesley Bean



Taryn Trigler

Hometown: Atlanta, GA

Undergrad: Georgia Tech

Research interests: I'm interested in pharmaceutical development and molecular physiology, especially as they relate to addressing resistance to antimicrobials and other classes of drugs.

Why did you join Emory's BCDB graduate program? The quality and diversity of research performed by BCDB faculty attracted me to the program, and I decided to join due to the strong commitment to scientific training.

★**Who is someone from your personal or professional life that significantly influenced your decision to pursue a PhD?** Dr. Alice Mark, an instructor at MathLLy-Er, inspired me to pursue a PhD when I met her as a student at the program. Her passions for education and mathematics have led me to follow in her footsteps and seek an academic career.

★**Do you have any unique or unexpected talents?** I enjoy mixing fancy cocktails and creating new recipes.

★**Outside of academics, is there something you hope to accomplish while in graduate school?** It is my goal to run an ultramarathon before I graduate.

New Student Highlights

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Hometown: Xi'an, China

Undergrad: China

Research interests: Protein interactions

Why did you join Emory's BCDB graduate program? It has a good reputation

★**Who is someone from your personal or professional life that significantly influenced your decision to pursue a PhD?** My uncle who is a cardiovascular physician and who sparked my interest in the life sciences when I was his pupil

★**Do you have any unique or unexpected talents?** I cannot think of any

★**Outside of academics, is there something you hope to accomplish while in graduate school?** I would like to speak better English and make new friends in Atlanta



Ziling Chen
Transfer student



Raining Huo
MD/PhD student

Hometown: Jilin, China

Undergrad: Bryn Mawr College

Research interests: Structural biology

Why did you join Emory's BCDB graduate program? I love biochemistry, and I really enjoyed talking to the students and faculty on my interview day

★**Who is someone from your personal or professional life that significantly influenced your decision to pursue a PhD?** My mom. She is very passionate about learning, and she pursued a PhD when she was 40 and already had an established career.

★**Do you have any unique or unexpected talents?** I can make cats talk to me :)

★**Outside of academics, is there something you hope to accomplish while in graduate school?** I want to be a better cook

Hometown: Columbia, MO

Undergrad: Emory University (sounds fake, but ok)

Research interests: Biochemistry and structural biology of proteins.

Why did you join Emory's BCDB graduate program? I wanted to join a program that I knew had a lot of great professors and students with classes that aligned to my goals. BCDB completed all three of those goals.

★**Who is someone from your personal or professional life that significantly influenced your decision to pursue a PhD?** Both of my parents have PhDs and I learned a great deal from them, especially in how to be a student and a scientist.

★**Do you have any unique or unexpected talents?** I can swim the 100 I.M. backwards

★**Outside of academics, is there something you hope to accomplish while in graduate school?** Go see a Super Bowl or NCAA championship at Mercedes Benz Stadium



Zach Lorson

Hometown: Lawrenceville, GA

Undergrad: University of Georgia

Research interests: I'm broadly interested in studying regenerative medicine, stem cells, and neuroscience.

Why did you join Emory's BCDB graduate program? I felt like I could experience many valuable learning opportunities in this program and do some exciting research.

★**Who is someone from your personal or professional life that significantly influenced your decision to pursue a PhD?** My professors and research advisors from my previous institution (PCOM GA) encouraged me to pursue a PhD when I was considering scientific research as a career.

★**Do you have any unique or unexpected talents?** I enjoy singing, painting, and playing tennis and chess.

★**Outside of academics, is there something you hope to accomplish while in graduate school?** I want to gain as much knowledge as possible and learn from experts from a variety of disciplines.



Anna Staskiewicz

New Student Highlights

Welcome to our first years and those starting in Fall 2024. We are excited you are here and cannot wait to see how you will grow over the next year.



George Dangas

Hometown: Angelochori Naousas, Greece

Undergrad: Democritus University of Thrace, Alexandroupolis, Greece

Research interests: Molecular Biology, Cell Biology, Biochemistry, Proteomics & Metabolomics, Host-Pathogen Interactions

Why did you join Emory's BCDB graduate program? I decided to join Emory's BCDB graduate program because BCDB is a really multidisciplinary program with an excellent curriculum, including the Foundations course and the grant writing course.

★**Who is someone from your personal or professional life that significantly influenced your decision to pursue a PhD?** My previous advisors, Dr. Penelope Mavromara (my undergraduate advisor in Greece) and Dr. Lefteris Michailidis (my supervisor at Emory University while working as a visiting fellow/research scholar), significantly influenced my decision to pursue a PhD.

Hometown: Cape Coral, FL

Undergrad: The University of Florida

Research interests: I am interested in studying antimicrobial resistance and fighting infectious disease with the power of biochemistry! However, I am keeping an open mind while I am rotating.!

Why did you join Emory's BCDB graduate program? The interesting research, tons of support and resources given to grad students, and the high student-to-faculty ratio led me to pick this program.

★**Who is someone from your personal or professional life that significantly influenced your decision to pursue a PhD?** My dad, Randy, who got a PhD in plant pathology and one of his colleagues from UF have given me a lot of advice and insight into what grad school is like.

★**Do you have any unique or unexpected talents?** I have sung in choir throughout my life as a soprano. I am also a scuba diver (NAUI advanced and rescue certified) and have done lots of dives in Florida!

★**Outside of academics, is there something you hope to accomplish while in graduate school?** I would like to travel to see new places, especially different countries! My dream destination would probably be Japan, but I would also love to do some SCUBA diving around different parts of Mexico (Cozumel, the cenotes, Yucatan, etc) someday!



Breanna Johnson

Hometown: Charlotte, NC

Undergrad: University of Georgia

Research interests: Gene regulation at the transcriptional and translational level and the implications for disease

Why did you join Emory's BCDB graduate program? I appreciated how the program seemed genuinely focused on their students' well-being and helping them to achieve their goals post-graduation. I also had many exciting conversations with faculty that made me eager to become a part of their labs.

★**Who is someone from your personal or professional life that significantly influenced your decision to pursue a PhD?** My younger brother, who has grown up with a mitochondrial disorder, has been a big motivating factor for me to pursue a PhD. I always had more questions than I could answer, so I decided to pursue a career where I could investigate some of the unknowns that surround genetic disorders.

★**Outside of academics, is there something you hope to accomplish while in graduate school?** I would like to achieve a somewhat normal sleep schedule (although that might be a lost cause in grad school).



Madison Intemann

New Student Highlights

Welcome to our first years and those starting in Fall 2024. We are excited you are here and cannot wait to see how you will grow over the next year.



Tessa Larsen

Hometown: (somewhere in) Utah

Undergrad: University of Utah

Research interests: I'm interested in antibiotic resistance, especially in gram negative bacteria

Why did you join Emory's BCDB graduate program? I joined because of the good vibes and cool research 😊

★**Who is someone from your personal or professional life that significantly influenced your decision to pursue a PhD?** My family

★**Do you have any unique or unexpected talents?** I play bass (upright and guitar)

★**Outside of academics, is there something you hope to accomplish while in graduate school?** I want to hike the 10 tallest peaks in Georgia

Hometown: Johns Creek, GA

Undergrad: Georgia College and State University

Research interests: RNA biology; gene expression regulation

Why did you join Emory's BCDB graduate program? I was attracted to the diverse and rigorous research, sense of community, and opportunities at Emory and within BCDB!

★**Who is someone from your personal or professional life that significantly influenced your decision to pursue a PhD?** Dr. Arnab Sengupta

★**Do you have any unique or unexpected talents?** I can shake my eyes really fast back and forth!

★**Outside of academics, is there something you hope to accomplish while in graduate school?** I hope to get involved with a local dance company!



Alexandra Furney

Hometown: Duluth, GA

Undergrad: Oglethorpe University

Research interests: Still not totally sure

Why did you join Emory's BCDB graduate program? The diversity of research being conducted here

★**Who is someone from your personal or professional life that significantly influenced your decision to pursue a PhD?** My PI from my undergrad lab

★**Do you have any unique or unexpected talents?** I can crochet

★**Outside of academics, is there something you hope to accomplish while in graduate school?** I want to learn a new language



Sarah Gordon

Hometown: Xian, China

Undergrad: Xian Jiaotong University

Research interests: Investigating the role of heparan sulfate and its binding partners in the bone remodeling process

Why did you join Emory's BCDB graduate program? I transferred with my mentor (Dr. Ding Xu)

★**Who is someone from your personal or professional life that significantly influenced your decision to pursue a PhD?** My mentor during my master's program who cultivated my interests in medical research

★**Do you have any unique or unexpected talents?** Trying to stay positive when bad things happen

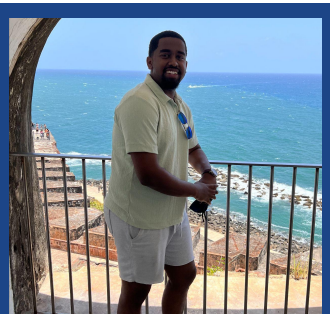
★**Outside of academics, is there something you hope to accomplish while in graduate school?** I would like to connect with more graduates



Huanmeng Hao
Transfer student

New Student Highlights

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Nahum Arefeayne
MD/PhD student

Hometown: Gilbert, AZ

Undergrad: University of Maryland, Baltimore County

Research interests: Cell and developmental biology in relation to cardiac pathology utilizing model organisms and stem cells.

Why did you join Emory's BCDB graduate program? I joined the program for its diverse areas of research and strong community.

★**Who is someone from your personal or professional life that significantly influenced your decision to pursue a PhD?** Dr. Michael Summers

★**Do you have any unique or unexpected talents?** I have played viola since the 3rd grade.

★**Outside of academics, is there something you hope to accomplish while in graduate school?** I want to create a network in which I can actively network and engage with among my peers and faculty with in the program both academically and socially.

Hometown: Savannah, GA

Undergrad: Hampden-Sydney College

Research interests: While my research interests include cell biology and the cytoskeleton, I am still open to exploring multiple research topics within the BCDB program.

Why did you join Emory's BCDB graduate program? The wide array of faculty that students are able to work with and diversity amongst faculty research were key aspects of me choosing Emory's BCDB graduate program.

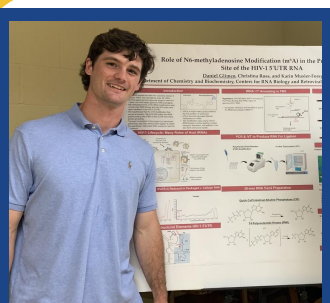
★**Who is someone from your personal or professional life that significantly influenced your decision to pursue a PhD?** My PI in undergrad heavily influenced my career path. While in their lab, I got to work on several biomaterials projects, attend research conferences, and participate in research programs, all of which reinforced for me that pursuing a PhD was what I wanted to do for my next phase in life.

★**Do you have any unique or unexpected talents?** I'm really good at board games. One of my favorites is *Wingspan*.

★**Outside of academics, is there something you hope to accomplish while in graduate school?** I've been really into running lately and a recent goal of mine is to complete a marathon in the coming years.



David Banks



Danny Glimco

Hometown: Western Springs, IL

Undergrad: DePauw University

Why did you join Emory's BCDB graduate program? I joined the BCDB because the cross-disciplinary nature of the program allows for me to explore and find what scientific questions I want to dedicate my professional career toward solving.

★**Who is someone from your personal or professional life that significantly influenced your decision to pursue a PhD?** Drs. Sharon Crary and Daniel Gurnon

STUDENT AWARDS AND ACCOMPLISHMENTS

PUBLICATIONS



Jacob Mattingly- [‘Structural analysis of noncanonical translation initiation complexes’](#)

Colby Schweibenz- [‘The Drosophila EcR-Hippo component Taiman promotes epithelial cell fitness by control of the Dally-like glypican and Wg gradient’](#)

Shreya Ravichandran, Will McFadden, and Lexi Snyder - [‘State of the ART \(antiretroviral therapy\): Long-acting HIV-1 therapeutics’](#)

Will McFadden - [‘Quinazolinone-based subchemotypes for targeting HIV-1 capsid protein: design and synthesis’](#)

Hannah Hrcir- [‘Tunable fluorescent probes for detecting aldehydes in living systems’](#)

AWARDS

Nasab Ghazal: ARCS Award

Anthony Gacasan- Early Career Investigator Award at DDW 2024 Conference

Will McFadden- Margaret and Thomas Lew Publication Award, Career Award and Program Scholar of the Year

Shreya Ravichandran- Margaret and Thomas Lew First-Year Award

Steven Cai- Margaret and Thomas Lew First-Year Award

Hannah Hrcir- John B. Lyon Memorial Scholarship and Summer Liver Academy Meeting Trainee Scholar Award

Funding

Mohamed Barmada- F31, ‘Intrinsic Ribosomal Decoding Center Methylation and the Bacterial Antibiotic Response’

Megan Hinrichsen- T32 BDCI

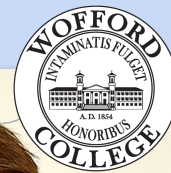
Shreya Ravichandran- T32 BDCI

Anthony Gacasan- F30, ‘Beneficial microbe driven rewiring of metabolic pathways in the gut and liver’

George Dangas- Educational Grant from [The A.G. Leventis Foundation](#)

Alumni Corner

Life as a Visiting Assistant Professor - an alumni interview with Michael Lee Cato, Ph.D.

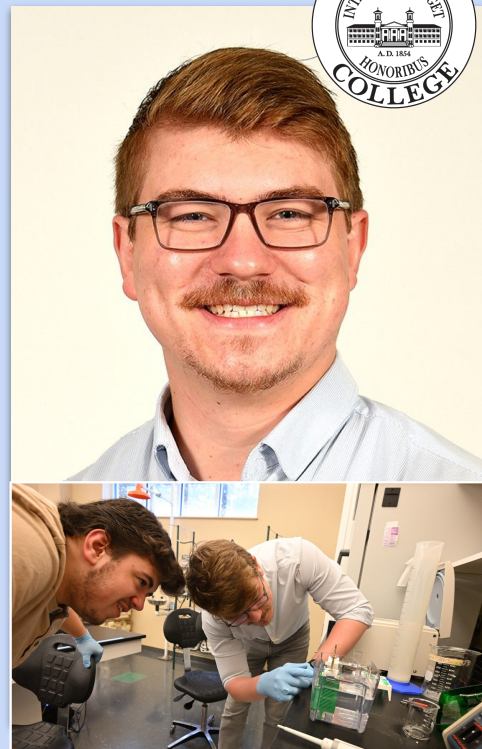


What attracted you to a job in this field?

"I graduated from Wofford College, where I now teach, in 2017. As an undergraduate, it was easy to have conversations with my professors in and out of class, and classroom education was highly interactive. My experience there was transformative because of the education I received and the relationships I had with my professors. I thought that a position like theirs would give me **the greatest ability to leave a meaningful impact on as many people as possible**. After teaching here for a year, my belief has been solidified that **smaller institutions are one of the best avenues to provide a personalized education for undergraduate students**. It is a privilege to lead students in and out of class and work to enhance their likelihood of success in the future."

What are skills you acquired during your PhD that made you a strong candidate for your job?

"I made sure to **teach, tutor, and TA as much as possible** during my time at Emory, and Eric Orlund (my PI) was very accommodating. I highly recommend that students pursue teaching opportunities like these as soon as possible in their graduate education. As for the program itself, Intro and Advanced Seminar (both observing others and giving presentations myself) was particularly helpful for crafting my lecture style. The active learning setting of the Foundations course has also had a huge impact on my approach to classroom interactions and activities. **Most teaching positions appear to have an increasing expectation for research, and my time in lab at Emory was obviously especially helpful with that**. I did make sure to become familiar with experimental approaches that would be translatable to an institution where funding and equipment was more limited (MD simulations, RT-qPCR, etc.)."



What was the interview process like?

"I had the written application, and I took about **two months to craft my application materials**, which included a cover letter, CV, teaching philosophy, and research goals. I had at least **20 different peers, mentors, and friends/family read these** to give me as much feedback as possible. **The interview was over Zoom with three faculty members on the call. I then had a conversation with the Chair of the Department over the phone.**

The hardest question dealt with going into detail about strategies that I found helpful with teaching undergraduates in the classroom. This was difficult primarily due to my limited experience (~ 2 years) teaching classes at Emory, and at that point I had yet to teach a class without supervision from another professor or post-doc. Working on my teaching philosophy prior to the interview helped with this, but I couldn't help but feel that I was glossing over the limited experience that I had.

The easiest question dealt with how I would pursue research with more limited funds available at a smaller institution. Because I had my sights on returning to a small liberal arts school from the beginning of my time in BCDB, I was very intentional about exploring experimental techniques that would be **translatable to an institution with more limited funding**. This is one reason why I spent the latter half of my graduate work becoming more familiar with computational approaches to biochemical questions. This type of work can be far less expensive and software in this space is becoming quite impressive (see AlphaFold3 for a good example of this)."

What would you recommend to current PhD students who are interested in a job in the same field as you?

"As noted above, I highly recommend talking with your PI and finding reasonable opportunities to **teach as soon as possible**. This can take up quite a bit of time, so it is **more persuasive to ask once your research is moving forward**. I recommend **reaching out to Dr. Megan Cole, who can help you get started with some teaching opportunities in introductory Biology lab courses**. Also, if you expect to pursue positions at smaller institutions, begin to integrate less expensive experiments into your doctorate work so that you get accustomed to working with more limited resources."

What excites you most about your new job?

"I could list 100 things that excite me about my job but I will list a few.

A) Wofford students have been exceptional academics and are very self-motivated.

B) I love getting to bring to class an awareness of new, innovative research in the fields of molecular biology and biochemistry, and students find this interesting as well.

C) One of the most important opportunities at a smaller institution like Wofford is the ability to have **meaningful interactions with students** in and out of class. I love getting to know my students during the semester and keeping up with them afterwards.

D) Especially teaching in the fields of molecular biology/biochemistry, many of my students use this information to apply to graduate/medical schools and will use the knowledge gained from my courses in their professional lives.

E) I love giving lectures and working through problems/questions with students. Seeing students progress in their understanding of complex topics like enzyme kinetics or metabolism of carbon fuels is extremely satisfying."

Program Leadership

Thank you to past and present BCDB Executive Committee Members!

Director: Mike Koval, Ph.D.

Director of Graduate Studies: Larry Boise, Ph.D.

Director of Student Admissions: Jitendra Thakur, Ph.D.

Rotations: Guy Benian, M.D.

BCDB Curriculum: Lefteris Michailidis, Ph.D.

Senior Student Progression: Dorothy Lerit, Ph.D.

Qualifying Examinations: Homa Ghalei, Ph.D.

Faculty Membership and Review: Graeme Conn, Ph.D.

Communications: Bo Liang, Ph.D.

Diversity Equity & Inclusion (DEI): Jennifer Kwong, Ph.D.

At-Large Faculty Members: Robert Dick, Ph.D.,
Shashank Shekhar, Ph.D. and Christine Dunham, Ph.D.

NIH Training Grant Principal Investigators: Larry Boise, Ph.D. and Anita Corbett, Ph.D.

BCDB Student Representatives: Joey Buehler and
Jordan Goldy

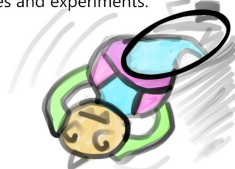


You make be thinking "that's ridiculous," but one glance through my spectral oculus will reveal that you are quite wrong. Labs are full of ghosts, which love to cause mischief.

Allow me to introduce some now!



Next, say hello to **Wheezeel**. Pipette tip boxes are labeled with a flakey substance that comes off easily. Wheezeels that inspirit tip boxes are very allergic to this dust and spread it around, getting it into samples and experiments.

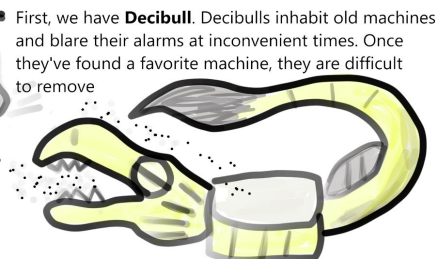


Finally, have you noticed your sharpies and other commonly-used office supplies have disappeared? Instead of blaming your coworker, consider the thievish **Plunkmunk**.

With that, I can finally move on.

No I'm not dying, I can finally graduate!

Comic designed and illustrated by Zachary Bressman.



First, we have **Decibull**. Decibulls inhabit old machines and blare their alarms at inconvenient times. Once they've found a favorite machine, they are difficult to remove.

Have you ever been sent a plasmid from a collaborator that they swear they verified, but it's wrong and wastes a lot of time until you sequence it? You're dealing with a **Swirlone** who loves to swap plasmids before they are sent.



Communications Committee is Recruiting!

Come join, we would love to have you! If you are interested in joining please fill out this form:

<https://forms.gle/8ob9BIpN7yg25Ty88>

Thank you to contributors to the Fall 2024 BCDB newsletter. This newsletter was compiled by the BCDB Communications Committee. Pictured to the left.

(Top left to bottom right: Abby Frederick, GiGi Arias, Hannah Hrcir, Mike Koval, Zachary Bressman, Heidi Ulrichs, and Bo Liang.)

