

Genetics & Epigenetics Newsletter 2024



THE UNIVERSITY OF TEXAS
MD Anderson
Cancer Center
Graduate School of Biomedical Sciences

UTHealth
Houston



What's Inside?

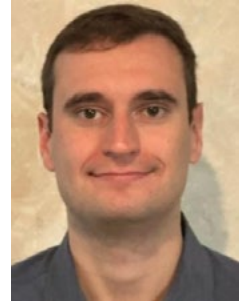
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Genetics & Epigenetics
Retreat

October
25-26, 2024

South Shore
Harbour
Resort

Making the Cut – Changes in the NIH Budget and Academic Research



In conversation with Ambro van Hoof, PhD, Department of Microbiology and Molecular Genetics and Aria Vaishnavi, PhD, Department of Cancer Biology. Written by: Justin Underwood

In March, the National Institutes of Health fiscal year 2024 budget was approved. The Cures Act, signed into law in 2016, was not renewed. The new spending bill allotted an additional \$300 million to the 2024 NIH budget, a \$378 million reduction in total NIH funding. This represents a change in direction after several consecutive years of increases to the NIH budget at the federal level. But what sort of effects can we expect this shift to have on the students and faculty of the Genetics and Epigenetics program and the broader Graduate School community?

Ambro van Hoof, PhD, an experienced G&E faculty member, does not anticipate an immediate impact on basic science research.

“My research is usually investigator driven,” says Van Hoof. “NIH asks for proposals in certain areas but also investigator-driven research. My research is in the latter category, where I’m hoping to convince people at NIH and peer reviewers to fund work that I find interesting. Funding priorities haven’t had much of an effect on me for that reason.”

With little new funding expected in the coming years, there may be delays in NIH approval of grants for new research.

“NIH sets an interim payline at the beginning of the year where they award the best grant applications they got. At the start of the fall, they calculate how much funding they have left over for the current year and fund grants that are on the margin of fundability. For PIs, this can sometimes mean waiting six or nine months to find out whether their grants get funded, which can be nerve wracking [...] with limited

growth, NIH will probably look to fund fewer new proposals.”

Aria Vaishnavi, PhD with the Department of Cancer Biology at MD Anderson offered an additional perspective on how funding changes can affect the grant writing process.

“Knowing that the funding rates are lower can affect how invested investigators have to be before submitting each grant. If the rates of success go down, it means more investigators have to spend more time submitting (and resubmitting) grants to obtain the same success. Target or focus areas may change as priorities shift as well. Luckily, this year the percentiles for funding have gone up, albeit marginally [...] Early Stage Investigator (or ESI) junior faculty have higher R01 funding paylines than established faculty do, which is really helpful as we are learning and building a research program.”

Vaishnavi emphasized the effects of a more stringent grant approval process.

“With trainee wages going up and funding levels going down, there is less money for personnel overall, which deeply affects the potential coverage of each grant that is funded. Less grants are funded with a reduced budget as well, which may require additional applications for each successfully funded grant.”

In the end, when asked how faculty and students can advocate for more NIH funding to support future research, van Hoof and Vaishnavi had the same answer—vote!

From the Director's Desk...

Editor's Note: On the day of our interview, Rachel Miller, PhD chose to visit me in the SCR33 building for an in-person conversation. This decision was a deliberate effort to underscore the significance of face-to-face communication, especially in the post-pandemic era.

"While virtual interactions have enabled greater inclusiveness, it's becoming increasingly clear that in-person events are essential for fostering genuine relationships and a supportive career network. Social media and virtual platforms are valuable, but they cannot replace the depth of connection and collaboration that comes from in-person interactions," Miller emphasized.

Miller's journey with the G&E Program is deeply personal and rooted in her experiences as a postdoctoral fellow and instructor within Pierre McCrea, PhD's laboratory at MD Anderson. Reflecting on her training, she emphasizes the importance of creating a supportive atmosphere for students, which she believes is fundamentally vital in graduate education.

"I have always been passionate about connecting with students and fostering an environment where they can thrive both academically and personally. My own training in one of the G&E legacy programs has greatly influenced my approach to mentorship and education," she shares.

Since joining the faculty at McGovern Medical School and MD Anderson, Miller has made significant contributions to the G&E Program. She has been an integral part of the program's Steering Committee for the past six years and has served as Co-Director for the last two years. Her involvement spans multiple levels, including roles as Chair of the G&E Communications Committee and co-director of the Graduate School core course's Developmental Biology Week.

"I am proud to have trained several outstanding G&E-affiliated graduate students and to serve on advisory and examining committees for many others. My commitment to hands-on research education has also been recognized through teaching opportunities at prestigious institutions like the Marine Biological Laboratory and Cold Spring Harbor Laboratory," she adds.

Miller is dedicated to promoting an inclusive and intellectually stimulating research culture within the G&E Program. She highlights the importance of the program's core activities, such as the annual fall retreat, spring symposium, and rotating monthly events, in fostering scientific and social interactions that enhance student well-being and career development. She also emphasizes the inclusivity of the program, noting that postdoctoral fellows and research staff are actively included in G&E retreats and other events.

"Our inclusivity extends beyond just the students; we make a concerted effort to involve postdocs and research staff in our activities. This approach enriches our community and fosters a broader exchange of ideas," she notes.

Miller places a strong emphasis on mental health and wellness in graduate school. She plans to introduce wellness activities and promote professional development with the support of the Career Development Office.

"Mental health is a critical component of graduate education. I aim to implement wellness activities that support our students' mental health and well-being. By working closely with the Career Development Office, we can also foster professional and career development."

Looking ahead, Miller envisions further developing the G&E Program to enhance student-driven initiatives and promote cross-disciplinary mentorship.

"My central goal as G&E Director will be to facilitate an intellectually stimulating, inclusive, and supportive training environment while fostering diverse career development opportunities for our trainees. I am excited to integrate ideas from our

members to continue developing our vibrant community," she concludes.

Her message to G&E students is clear and inspiring: "Establish a community within the program. This supports your research, collaboration, career, and mental health."

We look forward to Miller's leadership and the continued growth and success of the G&E Program under her guidance. Her dedication and vision promise to elevate our community and provide an enriching experience for all members.

G&E Program Resources

G&E offers a range of resources to support student growth both inside and outside the lab. G&E provides awards annually to ten to twelve students for their outstanding service to our community. Recognizing various contributions such as program committee leadership, career development, research planning, and many more. G&E students can also receive support for one society membership per year, as well as travel awards for conferences or short courses and workshops. Additionally, the G&E library has over 35 books which cover a variety of topics including scientific writing, programming, biomedical sciences, and productivity. Books can be checked out for two weeks and are located at Amy Carter's (Program Manager) office in BSRB.

These are just a few available resources, more detailed information on these resources and others can be found [here](#):



Upcoming Community Events



August

8/8 Faculty Insight Series

September

9/12 Bioinformatics Student Workshop

October

10/25-10/26 G&E Program Retreat

10/10 GEM Series

November

11/14 Easy Science Communication Club

December

12/12 Faculty Insight Series



G&E Program Director

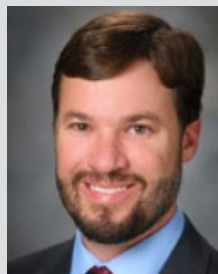
Rachel Miller, PhD

Associate Professor,
Department of Pediatrics, McGovern,
UTHealth-MS

Office: MSE R414

Phone: 713-500-6537

Email: rachel.k.miller@uth.tmc.edu



G&E Program Co-Director

George Eisenhoffer, PhD

Assistant Professor,
Department of Genetics,
MD Anderson Cancer Center

Office: MDA S11.8136C (Unit 1010)

Phone: 713-563-2754

Email: gteisenhoffer@mdanderson.org

Congratulations G&E Graduates!

August 2023 to July 2024



Vahid Bahrambeigi, PhD
Advisor: Anirban Maitra, PhD
PhD Thesis: “Analyzing Extracellular Vesicles for Disease Monitoring in Metastatic Colorectal Cancer Patients”
Postdoctoral Fellow, Translational Molecular Pathology, MD Anderson Cancer Center



Parnaz Merikhian, MS
Advisor: Wenbo Li, PhD
MS Thesis: “Identifying Functional Enhancers for Fibrotic Gene Regulation in Liver Fibrosis”
PhD Student, MD Anderson UTHealth Houston Graduate School of Biomedical Sciences



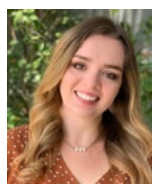
Lanxin Bei, MS
Advisor: Wenbo Li, PhD
MS Thesis: “Acute Manipulation of eRNA Level for Dissecting its Role in Transcriptional Regulation”
PhD Student, MD Anderson UTHealth Houston Graduate School of Biomedical Sciences



Ruoyu Wang, PhD
Advisor: Wenbo Li, PhD
PhD Thesis: “Characterizing 3D Epigenomes in Pathological Conditions”
Postdoctoral Fellow, Biochemistry & Molecular Biology, UTHealth Houston McGovern Medical Center



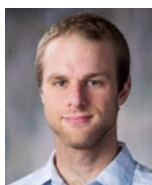
Safia Essien, PhD
Advisor: George Eisenhoffer, PhD
PhD Thesis: “A Signal to Divide: Apoptotic Extracellular Vesicles as Carriers of Mitogenic and Immunogenic Signals”
Fellow, Research Education & Training, MD Anderson Cancer Center



Erin Simpson Woodard, MS
Advisor: Wenbo Li, PhD
MS Thesis: “Molecular Mechanisms Behind SARS-CoV-2 Induced Host Genome Restructuring”
Associate R&D Engineer, Precision for Medicine



Dalia Kabary Hassan, PhD
Advisor: Jichao Chen, PhD
Local Advisor: Sharon Dent, PhD
PhD Thesis: “The Role of the Transcription Factor CEBPA in Regulating Lung Alveolar Type 2 Cell Fate in vivo”
Postdoctoral Fellow, Cold Spring Harbor Laboratory



Tanner Wright, PhD
Advisor: Mark Bedford, PhD
PhD Thesis: “A Study of the SND1/PRMT5 Axis in Liver Cancer by Genetic Mouse Models”
Postdoctoral Fellow, Physiological Chemistry, Ludwig Maximilians University



Celine Shuet Lin Kong, PhD
Advisor: Jichao Chen, PhD
Local Advisor: Harry Karmouty-Quintana, PhD
PhD Thesis: “Uncovering Capillary Endothelial Cells Response During Lung Injury-Repair”
Postdoctoral Scientist – Eli Lilly and Company

Welcome New G&E Students!



Lanxin Bei
PhD Advisor: Wenbo Li, PhD
 Department of Biochemistry and Molecular Biology, McGovern Medical School



Muhammad Luqman
PhD Advisor: Fabien Delerue, PhD
 Department of Genetics, MD Anderson



Guillaume Trusz [2nd ARC]
PhD Advisor: Michael Curran, PhD
 Department of Immunology, MD Anderson



Kiara Bornes
PhD Advisor: Callie Kwartler, PhD
 Department of Internal Medicine (Medical Genetics), McGovern Medical School



Fabian Mendoza
MS Advisor: Angela Ting, PhD
 Department of Epigenetics and Molecular Carcinogenesis, MD Anderson



Justin Underwood
MS Advisor: Ambro van Hoof, PhD
 Department of Microbiology and Molecular Genetics, McGovern Medical School



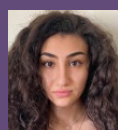
Amaya Craft
MS Advisor: Rachel Miller, PhD
 Department of Pediatrics, McGovern Medical School



Parnaz Merikhian
PhD Advisor: Wenbo Li, PhD
 Department of Biochemistry and Molecular Biology, McGovern Medical School



Charmelle Williams
PhD Advisor: Deepa Sampath, PhD
 Department of Hematopoietic Biology and Malignancy, MD Anderson



Lana Al Hasani
PhD Advisor: Wenbo Li, PhD
 Department of Biochemistry and Molecular Biology, McGovern Medical School



Ryan Sloan [2nd ARC]
PhD Advisor: Jay Hun Lee, PhD
 Department of Microbiology and Molecular Genetics, McGovern Medical School

G&E Student & Faculty Awards & Recognitions 2023-2024



Congratulations to our students for their outstanding achievements!

STIPEND SCHOLARSHIPS & FELLOWSHIPS

American Legion Auxiliary Fellowship
Nick Newkirk (Swathi Arur, PhD),
2024-2025 Renewal

Cancer Prevention and Research Institute of Texas (CPRIT) BIG-TCR Predoctoral Fellowship in Cancer Research
Sseu-Pei Hwang (Catherine Denicourt, PhD),
Renewal

Center for Clinical and Translational Sciences (CTS) TL1 Training Program pre-doctoral fellowship
Brandy Walker (Rachel Miller, PhD), 2024

Gigli Family Endowed Scholarship
Brandy Walker (Rachel Miller, PhD),
2023-2024

CPRIT Graduate Scholarship
Mennatallah Shaheen (Anirban Maitra, MBBS), 2023-2024

NIH NICHD F31 Diversity Fellowship
Mary Adeyeye (Brendan Lee, MD, PhD & Xiangli Yang, PhD), 2023
Diana Machado (Richard Behringer, PhD), 2024

GSBS Michael E. Kupferman, MD Fellowship
Mary Adeyeye (Brendan Lee, MD, PhD & Xiangli Yang, PhD), 2023

The Academy IMSD T32 Training Fellowship
Annette A Machado (Jason Huse, PhD), 2024

Wei Yu Family Endowed Scholarship
Ericka Humphrey (Yejing Ge, PhD), 2023-2024

Johnson & Johnson Innovative Medicine Scholars of Oncology Diversity Engagement Program Scholar (SOPEP)
Laran Turner (George T. Eisenhoffer, PhD),
2024-2025

Sylvan Rodriguez Foundation Scholarship honoring George M. Stancel, PhD
Guillaume Trusz (Michael Curran, PhD), 2024

GSBS Endowment Scholarship
Mith V (Guillermina Lozano, PhD),
2023-2024

Dean's Excellence Scholarship
Mith V (Guillermina Lozano, PhD),
2023-2024 Renewal

Cold Spring Harbor Laboratory to attend into CSHL's Advanced Graduate Course on Single Cell Analysis Fellowship
Mith V (Guillermina Lozano, PhD) 2023

STUDENT AWARDS

R.W. Butcher Student Achievement Award
Maria Jose Gacha Garay (Jichao Chen, PhD)

Genetics & Epigenetics Retreat Poster Award
Maria Jose Gacha Garay (Jichao Chen, PhD)

American Society of Matrix Biology Travel Award
Maria Jose Gacha Garay (Jichao Chen, PhD)
for on-site travel

GSBS Travel Award
Shannon Erhardt (Jun Wang, PhD)
Maria Jose Gacha Garay (Jichao Chen, PhD)
Nick Newkirk (Swathi Arur, PhD)

G&E Travel Award
Shannon Erhardt (Jun Wang, PhD)
Melissa Frasca (Francesca Cole, PhD)
Maria Jose Gacha Garay (Jichao Chen, PhD)
Rhianon Morrissey (Guillermina Lozano, PhD)

Nick Newkirk (Swathi Arur, PhD)
Justin Underwood (Ambro van Hoof, PhD)
Mith V (Guillermina Lozano, PhD)

2024 Biochemistry and Molecular Biology Retreat Award
Maria Jose Gacha Garay (Jichao Chen, PhD)
for flash talk

2023 Department of Translational Molecular Pathology Annual Retreat Poster Presentation Award
Bhargavi Brahendra Barathi (Jason Huse, MD, PhD), 3rd place

Steve Lasher and Janiece Longoria Graduate Student Research Award
Ahmed Emam (John Tainer, PhD)

Jesse B. Heath, Jr. Family Legacy Award
Shannon Erhardt (Jun Wang, PhD)

EMC Travel Award for the Gordon Research Seminar and Conference on Meiosis
Melissa Frasca (Francesca Cole, PhD)

2023-2024 UTHealth Leads Fellow
Ericka Humphrey (Yejing Ge, PhD)

Top 10 Poster at Leading Edge of Cancer Research Symposium
Ericka Humphrey (Yejing Ge, PhD)

2024 UTHealth Houston Healthcare Innovation Challenge People's Choice Awardee
Laran Turner (George T. Eisenhoffer, PhD)

2024 Genetics & Systems Biology Joint Retreat Poster Presentation Award
Laran Turner (George T. Eisenhoffer, PhD)

2024 Graduate Student Research Day Oral Presentation Skills - Pre-Candidacy PhD, MS & SMS, 1st Year
Xing-Han Zhang (Georgios Karras, PhD), 2nd place

2024 Graduate Student Research Day Poster Competition - Post-Candidacy PhD- Top 4
Guillaume Trusz (Michael Curran, PhD)
Laran Turner (George T. Eisenhoffer, PhD)

2024 Graduate Student Research Day Elevator Pitch Contest- Post-Candidacy PhD
Richa Nayak (Yejing Ge, PhD), 1st place

STUDENT SERVICE AWARD

Vahid Bahrambeigi (Anirban Maitra, M.B.B.S.)
Shannon Erhardt (Jun Wang, PhD)
Maria Jose Gacha Garay (Jichao Chen, PhD)
Dalia Hassan (Jichao Chen, PhD; Local Advisor: Sharon Dent, PhD)
Ericka Humphrey (Yejing Ge, PhD)
Josh Lindenberger (Gigi Lozano, PhD)
Anna Miao (Don Gibbons, MD, PhD)
Richa Nayak (Yejing Ge, PhD)
Nick Newkirk (Swathi Arur, PhD)
Sreeja Sridharan (Michael Galko, PhD)
Heather Tsong (Andrea Stavoe, PhD)
Laran Turner (George T. Eisenhoffer, PhD)

Faculty Awards & Recognitions 2023-2024

Swathi Arur, PhD

Endowed Position: Blanche Bender Professorship in Cancer Research
Elected to the University of Texas Kenneth I Shine Academy of health science education
University of Texas Distinguished Teaching Professor
MD Anderson Academy Inductee
MD Anderson Distinguished Educator

Boyi Gan, PhD

American Association for the Advancement of Science (AAAS) Fellow 2024
Granite Champions Award, 2023
Rotary Club of Houston Lombardi Committee

Michael Green, PhD

Janet Rowley Award (for dedication and contributions to the field of cellular therapy)
- Jonas Center for Cellular Therapy, University of Chicago

Abhinav Jain, PhD

Promoted to Associate Professor

Han Liang, PhD

Elected Fellow, American Institute for Medical and Biological Engineering

Li Ma, PhD

American Association for the Advancement of Science (AAAS) Fellow

Rachel Miller, PhD

Senior Breakthrough Discovery Symposium at the Annual McGovern Medical School Research Retreat
Co-Instructor, Cell & Developmental Biology of Xenopus: Gene Discovery & Disease Course, Cold Spring Harbor Laboratory
Instructor, 2025-29, Cell & Developmental Biology of Xenopus: Gene Discovery & Disease Course, Cold Spring Harbor Laboratory

Keila E. Torres, MD, PhD, MBA, FACS

Promoted to full professor

Zhongming Zhao, PhD

President's Scholar Award for Excellence in Research, UTHealth, 2023

EMC faculty elected to NAS

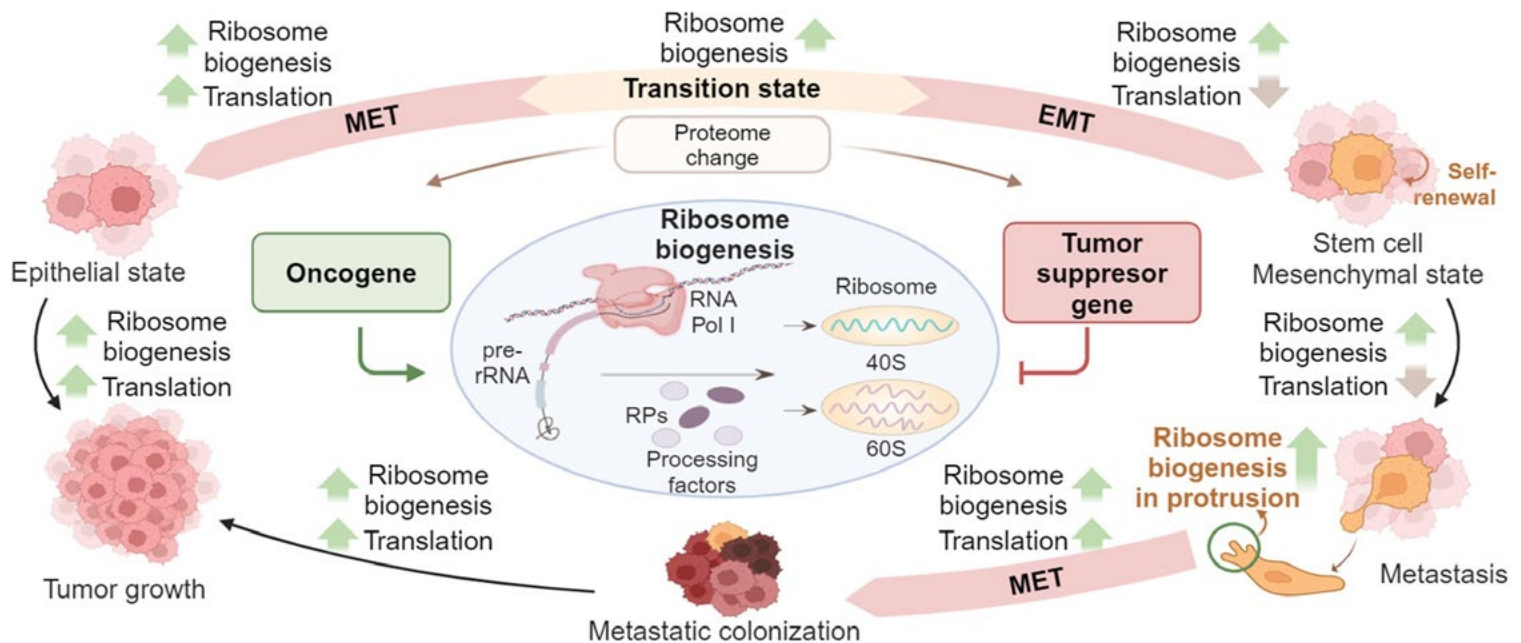
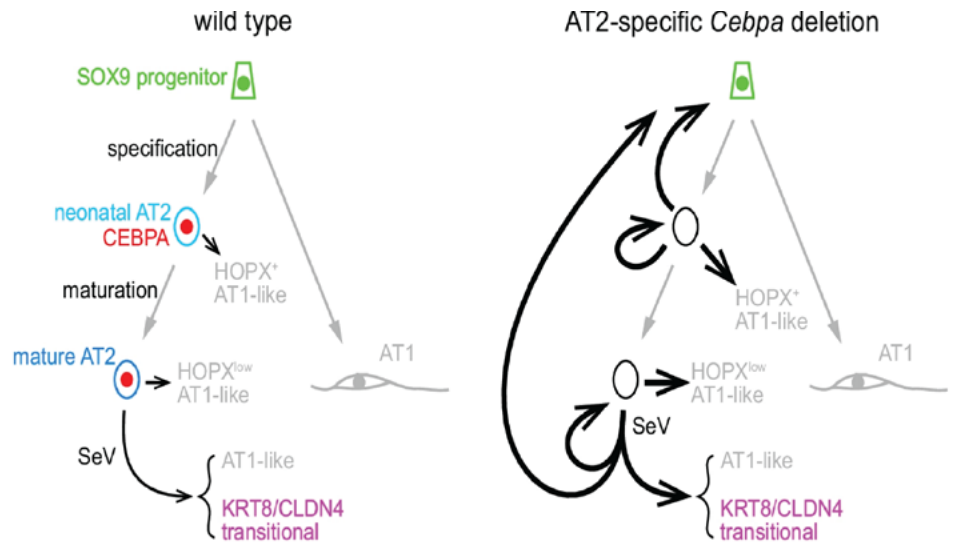


Congratulations to Shannon Y.R. Dent, PhD on being elected to the National Academy of Sciences! Dent is one of three G&E faculty to be elected to NAS, the first being Gigi Lozano, PhD, (elected 2017) and the second being Richard D. Wood (elected 2023). Dent's work is in the field of epigenetics, which studies how human behaviors and the environment can cause changes that affect genes and lead to inherited traits without changing the DNA sequence. Unlike genetic mutations, epigenetic changes, which alter how the body reads a particular DNA sequence, are reversible. For her outstanding work, Dent was elected as a member of the American Academy of Arts and Sciences and as a fellow of the American Association for the Advancement of Science (AAAS). Her honors include induction into the Greater Houston Women's Chamber of Commerce Hall of Fame, the John Mendelsohn Award for Faculty Leadership, the Ruth Legett Jones Distinguished Chair in the Department of Epigenetics and Molecular Carcinogenesis, and the President's Leadership Award from MD Anderson Cancer Center.



Cell plasticity theoretically extends to all possible cell types, but naturally decreases as cells differentiate. However, injury-repair processes can re-engage this developmental plasticity. In this study, alumna **Dalia Hassan, PhD**, from the lab of Jichao Chen, PhD, demonstrates that the lung alveolar type 2 (AT2)-specific transcription factor (TF), CEBPA, restricts AT2 cell plasticity in the mouse lung. Postnatally, AT2 cells undergo transcriptional and epigenetic maturation. When CEBPA is absent, both neonatal and mature AT2 cells reduce their AT2 program, but only the neonatal cells reactivate the SOX9 progenitor program. Infection with Sendai virus induces neonatal plasticity in mature AT2 cells, where Cebpa mutant AT2 cells, but not wild-type ones, express SOX9 and more readily proliferate and form KRT8/CLDN4⁺ transitional cells. CEBPA enhances the AT2 program by recruiting the lung lineage TF NKX2-1. The temporal changes in CEBPA-dependent plasticity reflect the developmental history of AT2 cells. Understanding the ontogeny of AT2 cell plasticity and its transcriptional and epigenetic mechanisms has significant implications for lung regeneration and cancer research.

Hassan, D., Chen, J. CEBPA restricts alveolar type 2 cell plasticity during development and injury-repair. *Nat Commun* 15, 4148 (2024). <https://doi.org/10.1038/s41467-024-48632-3>



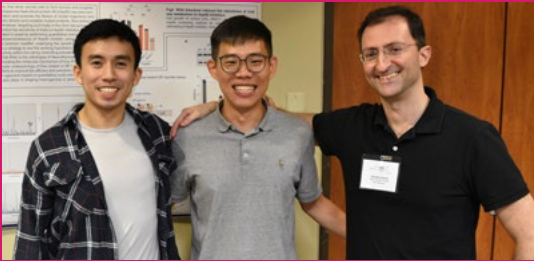
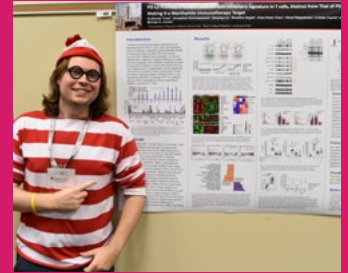
The dysregulation of ribosome biogenesis is a hallmark of cancer, facilitating the adaptation to altered translational demands essential for various aspects of tumor progression. In this review, **Sseu-Pei Hwang** and her mentor Catherine Denicourt, PhD explore the intricate interplay between ribosome biogenesis and cancer development, highlighting dynamic regulation orchestrated by key oncogenic signaling pathways. Recent studies reveal the multifaceted roles of ribosomes, extending beyond protein factories to include regulatory functions in mRNA translation. Dysregulated ribosome biogenesis not only hampers precise control of global protein production and proliferation but also influences processes such as the maintenance of stem cell-like properties and epithelial-mesenchymal transition, contributing to cancer progression. Interference with ribosome biogenesis, notably through RNA Pol I inhibition, elicits a stress response marked by nucleolar integrity loss, and subsequent G1-cell cycle arrest or cell death. These findings suggest that cancer cells may rely on heightened RNA Pol I transcription, rendering ribosomal RNA synthesis a potential therapeutic vulnerability. The review further explores targeting ribosome biogenesis vulnerabilities as a promising strategy to disrupt global ribosome production, presenting therapeutic opportunities for cancer treatment.

Hwang, S. P., & Denicourt, C. (2024). The impact of ribosome biogenesis in cancer: from proliferation to metastasis. *NAR cancer*, 6(2), zcae017. <https://doi.org/10.1093/narcan/zcae017>

G&E Events Round-Up

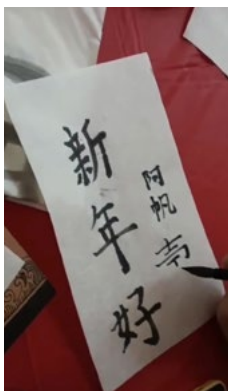
G&E Retreat 2023

This year our annual retreat was held at Camp Allen in Navasota, TX. Students, faculty and other trainees gathered together for a three-day retreat full of engaging activities such as poster sessions, flash-talks, and an exciting costume contest.



Art Showcase

Each year, an arts showcase is co-hosted by the G&E and Neuroscience programs. This year's showcase featured musical performances, poetry reading, and visual and culinary arts.



Celebrating the Lunar New Year

This year we celebrated the Year of the Dragon. G&E hosts an annual Lunar new year celebration where we make clay animals, origami, and indulge in delicious traditional Lunar New Year food and refreshments.



G&E Science Night

The Community Outreach Association hosts an annual Science Night, aimed at inspiring the next generation of scientists. The G&E program helped grades student in grades 3-5 learn about DNA with a bracelet-making activity.



G&E Summer Socials

Hot Texas summers call for the annual ice cream social, bringing together G&E directors and students.

G&E Alumni Success



Safia Essien, PhD

MDA Office of Education and Training

Could you briefly overview your current job and your journey from graduate school to getting your current job? What pivotal moments or decisions significantly influenced your career direction?

I am currently an administrative postdoctoral fellow at MD Anderson's Office of Education and Training. I work on developing and evaluating career development programs for graduate students and postdoctoral fellows. Unlike the traditional postdoctoral route, I wanted to stay involved in research but in an administrative and supportive role. During graduate school, I interacted with peers who explored non-traditional career paths and kept in touch with those who pursued administrative roles in academia. This network and my interest in alternative career paths helped me gain relevant experiences that led me to my current position.

What are your primary responsibilities? Can you describe a typical day in your role?

My role is quite diverse and does not follow a strict template, especially since I'm relatively new to the position. My primary responsibilities include coordinating the recruitment of postdocs and focusing on enhancing the overall experience for international postdoctoral fellows. This requires a deep understanding of recruitment processes and finding initiatives and programs that add value to postdocs. I work on developing and evaluating programs that support career development, and I am involved in areas such as departmental and university policies, institutional research offices, teaching and learning centers, and career services. An interesting aspect of my job, like a traditional postdoc, is that I have my own research project. This blend of duties makes my role more rewarding for me. My typical day involves shadowing everyone, especially the Director for the Office of Postdoctoral Affairs, to gain more experience.

Looking back, what is one thing you wish you had known as a graduate student?

One thing I wish I had known is how much the job market can fluctuate, especially pre- and post-COVID. I waited until my final year to start reaching out to recruiters and building industry relationships. In hindsight, I would start this process much earlier. The end of graduate school can be chaotic, and the uncertainty of graduation timelines can make interviews stressful. I was initially reluctant to take time off, but when I eventually did after graduation, it helped me to de-stress and focus on my next steps without external pressures. Some companies, like consulting firms, hire in cohorts and have flexible start dates. Additionally, don't wait to apply for internships during graduate school—experience and networking are invaluable.

Any message you would like to share with current G&E students?

Cherish the sense of freedom you have in graduate school. It's a unique time when you can steer your research projects in the direction you want. This level of autonomy is rare in the professional working world. Also, value the transferable skills you develop during this time, and be sure to market yourself effectively. These skills are highly valuable and can open many doors for your future career.



Celine Shuet Lin Kong, PhD

Postdoctoral Scientist, Eli Lilly and Company

Could you briefly overview your current job and your journey from graduate school to getting your current job?

My journey has been quite a rollercoaster. I initially joined a lab in the Department of Epigenetics and Molecular Carcinogenesis but realized after a year that it wasn't the right fit for me. I then joined the lab of Jichao Chen, PhD, where I spent the next three and a half years of my PhD. During my final year, Jichao announced he was taking up a new position at Cincinnati Children's Hospital. Around the same time, I went for a summer internship at Eli Lilly and Company, where I really enjoyed the work and environment. When Jichao moved to Cincinnati, I chose to stay at MD Anderson in the Department of Pulmonary Medicine to complete my dissertation and successfully defended my PhD in April 2024. My summer internship resulted in an offer for a Postdoctoral Scientist position at Eli Lilly and Company. While it was altogether a challenging journey, everything worked out for the best in the end.

What pivotal moments or decisions significantly influenced your career direction?

The most influential moment that influenced my career direction was my decision to do a graduate internship. I wanted to experience the industry-level research before committing to it as a career. I took on the internship relatively late in my graduate studies, just as I was wrapping up my dissertation project, prior to manuscript submission. It was a very risky decision, balancing the internship with the demands of completing all the requirements for my PhD. Even though I was offered a spring 2022 internship, it took almost a year to materialize, and I ended up doing a summer 2023 internship. As an international student, doing an internship is incredibly challenging due to visa issues, which made it impossible to do an internship in the spring. Fortunately, the company was very understanding and extended a summer internship offer. The GSBS Administration and Career Development Office played critical roles in facilitating this opportunity for me; their support was instrumental in navigating the visa challenges and ultimately made the internship possible. The internship was designed as an Intern-to-Hire program and I thoroughly enjoyed the research and work I performed at Lilly during the internship - this experience instantly shaped my career direction.



Malcolm Moses, PhD

Instructor, Texas Southern University

Could you briefly overview your career journey from graduate school to becoming an Instructor at Texas Southern University College of Pharmacy and Health Sciences? What pivotal moments or decisions significantly influenced your career direction?

My career journey has been quite an evolving path. From my time in graduate school, I was deeply inspired by the challenges of health disparity and thus pursued biomedical sciences. Initially, I found myself disenchanted with the structural aspects of academia and never saw myself as a professor. However, a significant turning point in my perspective came with the Supreme Court's decision to overturn affirmative action. This ruling made me acutely aware of how

underserved some minority groups could become in the academic sphere. This shift in perspective prompted me to consider academia more seriously. When an opportunity at Texas Southern University arose, my wife encouraged me to apply. Her belief in the potential fulfillment I might find in this role, combined with my renewed purpose, led me to where I am today as an instructor, dedicated to making a positive impact in a diverse academic environment. Now, I have gained an appreciation for being in academia.

As an instructor, what are your primary responsibilities? Can you describe a typical day in your role?

Being relatively new in my position, my days are quite dynamic. I spend a significant amount of time reviewing literature and preparing presentations for my lectures. Each day includes about an hour and a half of office hours where I tutor and mentor students.

Additionally, I attend up to three meetings a week and regularly attend seminars on campus, which helps me stay connected with colleagues and the latest developments in my field. I also dedicate around two hours daily to literature review for grant writing and research.

What have been some of the most challenging aspects of your role?

One of the main challenges I face is engaging undergraduate students. They often ask intriguing questions, but keeping their attention during lectures can be tough, especially since many of them are overworked and juggling multiple responsibilities. To address this, I've implemented a system to incentivize attendance and participation. For instance, I set up a snack cabinet to encourage students to meet their hourly requirements and stay engaged in class. This small effort has made a noticeable difference in maintaining their focus and interest.



Mabel Perez-Oquendo, PhD
SOAR Director

Could you briefly overview your career journey from graduate school to becoming the Director of SOAR?

To support the professional development of other students' careers in STEM and further my own training in research and leadership, I graduated with a PhD in Genetics and Epigenetics at MD Anderson Cancer Center in 2023. Early in my doctoral training, I developed an interest in learning about the intricacies of research administration policies and procedures. The Cancer Research Administration and Management Program provided me with in-depth training in research and grant administration in 2019-2020, which also inspired me to conduct an internship in the Office of Diversity, Career Development, and Alumni Affairs from 2020-2023. As an intern, I implemented, managed, and developed educational programs that directly supported the career success of students and faculty. After my PhD, I became a Postdoctoral Fellow in Academic Administration in the Research Education and Training Department at MD Anderson Cancer Center. In my role, I contributed to initiatives that support the educational training and professional development of graduate and postdoctoral trainees. My nine years of training in scientific research and educational programming have provided me with skills in critical thinking, teamwork, networking, problem-solving, and a goal-oriented personality. Currently, I serve as the Director of the Student Opportunity for Advancement in Research (SOAR) Office, where I contribute to the professional growth of BCM medical students by strategically designing and accomplishing a learning plan that focuses on the components of educational administration, with

an emphasis on research skills and opportunities.

What pivotal moments or decisions significantly influenced your career direction?

My interest in serving as an educational administrator in research and career development for students began in my undergraduate training, where I had the opportunity to conduct biomedical research and serve as President of the American Society for Biochemistry and Molecular Biology (ASBMB) student association in Puerto Rico. While serving as ASBMB President, I developed a conference grant application that funded the Cellular and Molecular Biology Research Regional Meetings 2016-2018, the primary venue for networking among 450+ students, trainees, and faculty members. This accomplishment sparked my professional mission: to ensure that trainees have a supportive scientific community and access to resources to advance their educational and career goals.



Tolka Premkumar, PhD
Postdoctoral Research Associate
Stowers Institute for Medical Research, Zanders Lab

What are your primary responsibilities? Can you describe a typical day in your role?

The main difference between a graduate student and a postdoctoral fellow is that a graduate student develops a project, while a postdoc develops a research program. I have more ownership of on time and effort. My job is now and to lay the groundwork for the next 5-10 years.

As I have recently started my role as a postdoctoral researcher and switched fields, much of my time is dedicated to reading and writing. It is important to split my working hours into 'writing' and 'experimenting' time. My typical day begins with writing and reading. In the afternoons, I do experiments and troubleshoot any issues that arise. I spend a significant portion of my 'experiment' time formulating hypotheses and planning, which saves me time in the long run. Another part of my routine includes attending seminars and weekly meetings with my mentor, where we discuss new ideas, progress, and strategies for advancing my research. These sessions are invaluable for gaining insights and aligning my work with broader research goals.

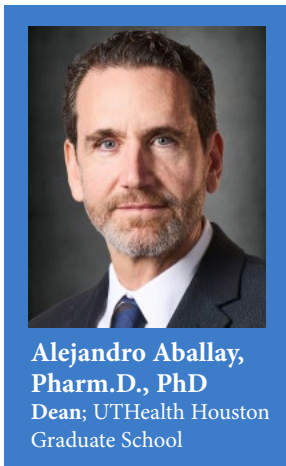
How do you balance the demands of your career with your personal life? How do you keep yourself motivated?

I find it helps to have something you love outside of work. For me, that's biking and exercise. They challenge me outside of work, and therefore, provide me with a sense of progress. I also have a cat, who I love spending time with, which adds a comforting and relaxing aspect to my life. I view science and research like endurance training—it's about the long haul, not just short bursts of intense effort. If you're having a tough day or things aren't going as planned, sometimes the best thing to do is go home, rest, and come back with a fresh perspective the next day. If you find yourself consistently unhappy, it's important to consider exploring different areas of research, different kinds of questions or even changing fields. Take risks until you find something that makes you happy. It's okay to quit and move on if something isn't the right fit for you. Science is >99% grind so you have to like what you do. Finding your niche is essential for maintaining motivation and satisfaction in your career.

Complete alumni interviews can be found here:



Dean's Corner & New Faculty



Written by: *Ericka Humphrey*

On January 2, 2024, the Graduate School welcomed its 12th Dean, Alejandro Aballay, PhD. After receiving his doctorate in Molecular and Cell Biology and Pharmacology, Dr. Aballay completed his postdoctoral fellowships in Molecular pathogenesis at Harvard Medical School and Massachusetts General Hospital, during which he developed a novel pathogenesis system using *C. elegans*. He began his academic career at Duke University Medical Center in Durham, NC, where he would eventually serve as

the director of Duke's Center for Host-Microbial Interactions from 2014-2017. Prior to joining GSBS, Dr. Aballay served as professor and chair of the Department of Molecular Microbiology and Immunology at Oregon Health & Science University, serving 6 years in that position. During that time, he focused on faculty recruitment, intradepartmental collaboration, and leading the department's response during the pandemic to rapidly build a biosafety Level 2 Plus lab to enhance grant applications aimed at studying the new virus. During my conversation with Aballay, we discussed the importance of balance while being Dean to maintain an active laboratory in the Department of Genetics "I'm both scientist and administrator [...] I maintain a very active lab and still meet [all the lab members] at least once a week; while on the other hand, in the administrator role, I think a lot about student needs and faculty

needs in terms of graduate education. Balancing the two is difficult, but having scheduled uninterrupted time for lab business [one on one meetings, grant writing, etc.] which I call "science day" at least 2 days a week allows me to focus on the science and keep up with my administrator responsibilities."

As Dean of the Graduate School, Dr. Aballay aims to enhance graduate education by "listening to the needs of [student and faculty] to ensure that [they] have the infrastructure, as much as we can provide from the Graduate School that they need to be successful." One of the ways he hopes to do this is by adapting the education to match the current job market, by standardizing grant writing courses across the Graduate School to better prepare students for the grant writing and review process. Other initiatives Aballay hopes to begin would provide students with highly transferable skills that can be applied to both academic and non-academic job markets.

One of my favorite things to ask people in leadership positions is how they define success? While the answers vary there is always one commonality between successful leaders, it is that they all understand that success looks different for everyone, and they are only successful if the people around them succeed. Aballay is no different saying that "as long as people are happy with their lives and career, I would say that is success. As Dean, I can't force anything, only make suggestions and anything further from students or faculty has to be self-driven". After talking with Dr. Aballay, I see that his unique perspective of both scientist and administrator puts him in a great position to push the community into new heights, and I look forward to all he will do for the Graduate School!

Welcome New G&E Faculty!



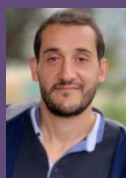
Alejandro Aballay, PhD
MDACC & UT Health - Department of Genetics; Department of Microbiology and Molecular Genetics
Research Interest: Epigenetics, Immune pathways, probiotics, neurodegenerative diseases, neural development
Accepting Students; MS and PhD



Byron Lee, MD, PhD
MDACC - Department of Urology
Research Interest: Carcinoma, epigenetics, chromatin modifier genes, cancer immunotherapy
Accepting Students; PhD only



Wenyi Wang, PhD
MDACC - Department of Bioinformatics and Computational Biology
Research Interest: Statistical genomics, tumor heterogeneity, tumor microenvironment and evolution, risk prediction
Accepting Students; MS and PhD



Victor Lopez del Amo, PhD
UT Health - Department of Epidemiology
Research Interest: CRISPR-based genome editing, neurodegenerative diseases, drug discovery
Accepting Students; MS and PhD



Ruoyan Li, PhD
MDACC - Department of Systems Biology
Research Interest: Cancer evolution, somatic mutation, cancer genomics, single-cell genomics
Accepting Students; PhD only



Sieh Weiva, PhD
MDACC - Department of Epidemiology
Research Interest: Genetic epidemiology, risk prediction, breast cancer, mammographic density, imaging analysis
Accepting Students; PhD only



Priyatansh Gurha, PhD
UT Health - Center for Cardiovascular Genetics
Research Interest: Epigenetics, Heart failure, non-coding RNase, Cardiomyopathies
Accepting Students; MS and PhD



Angela Ting, PhD
MDACC - Department of Epigenetics and Molecular Carcinogenesis
Research Interest: Transcriptome regulation, DNA methylation, bladder cancer, bladder development, systems biology
Accepting Students; PhD only



Zhen Xu, PhD
UT Health - Center for Cardiovascular Genetics
Research Interest: Intracranial aneurysms, vascular integrity, endothelial function, dysfunction, advanced imaging
Accepting Students



Charles Ishak, PhD
MDACC - Department of Epigenetics and Molecular Carcinogenesis
Research Interest: Epigenetics, Ovarian Cancer, Repetitive elements, immunology
Accepting Students; PhD only



Jennifer Wang, PhD
MDACC - Department of Head and Neck Surgery
Research Interest: Genomic Biomarker, genomic test development, thyroid cancer, personalized therapy, multi-omics
Accepting Students; MS and PhD



Xiaotian Zhang, PhD
UT Health - Department of Biochemistry and Molecular Biology
Research Interest: Epigenetics, Leukemia, gene regulation, 3D genome, small molecule
Accepting Students; MS and PhD

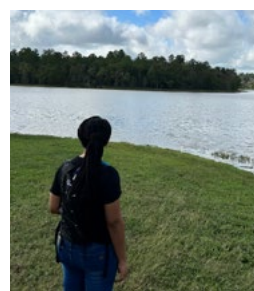
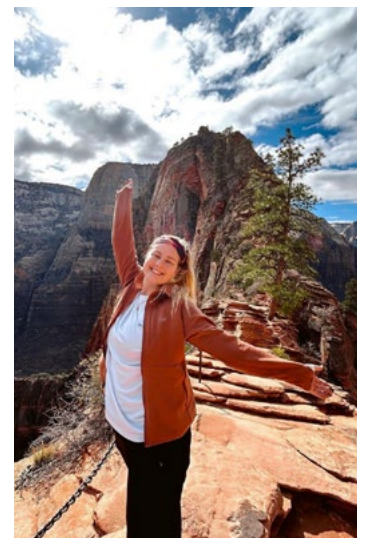


Student Organization Highlights

GSBS is home to official student-led organizations that aim to enrich the overall learning experience. G&E students participate and lead many of these organizations. If you are wanted to learn more, please see the QR code:



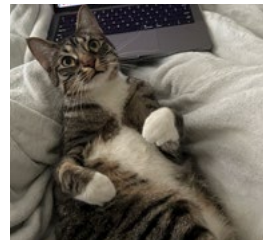
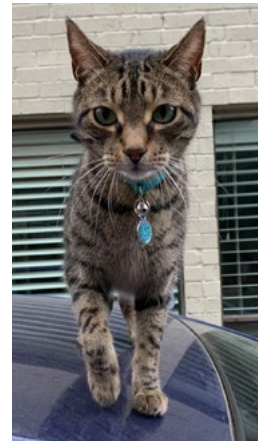
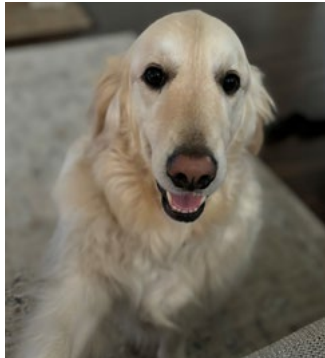
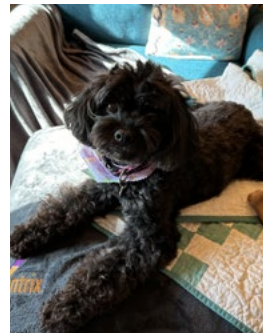
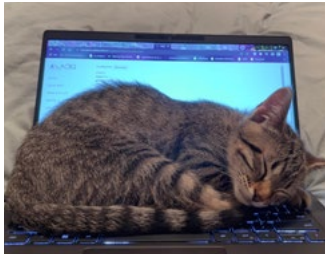
Oh, the places you'll go





Meet Your Editors & Pets

The Pets That Keep Us Smiling



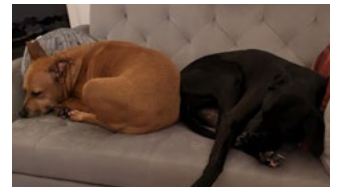
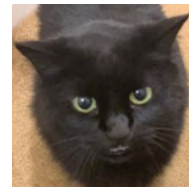
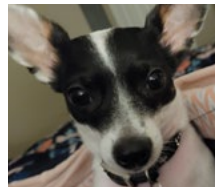
The true heroes who help us get through graduate school. Even though they believe they work harder than we do...they are always there to put a smile on our face.



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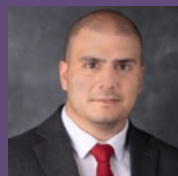
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