

Genetics & Epigenetics Newsletter 2020

THE UNIVERSITY OF TEXAS
MD Anderson
Cancer Center

UTHealth
The University of Texas
Health Science Center at Houston

Graduate School of Biomedical Sciences

What's Inside?

- 2 Director's Message
- 3 Dr. Barton Farewell
- 3 G&E Community News
- 4 Alumni Feature
- 6 Program Events
- 8 Student Publication Highlights
- 9 Science Park Move
- 10 Student & Faculty Awards
- 11 Announcements
- 12 Covid-19 Reflections

Genetics & Epigenetics
2020 Program
Retreat

November
6-7, 2020

Ascent from the Maelstrom

by Richard Wood, PhD

Professor, Department of Epigenetics and Molecular Carcinogenesis, MD Anderson

We won't forget 2020. As we experience the upheaval brought by the coronavirus pandemic, we are simultaneously learning on the fly how to conduct our research during a major health crisis, we are called to redefine our roles in public science education, and we confront the multiple abject effects of racism. There are ways forward on all these subjects, and it's our responsibility to take action on them.

Science during the pandemic. The current pandemic was predictable, as scientists have long warned of the major threat to human society¹. Incredibly rapid data tracking allows us to see infections unfold, and if we are diligent, to act. The lack of leadership and example at top USA governmental levels in managing the pandemic has been deeply disheartening. Locally, leaders at MD Anderson, UTHealth and the GSBS have been exemplary in developing clear guidelines and procedures while providing coping mechanisms. Individuals stepped up early all over the world to organize viral testing. One of my former graduate students, Dr. Anne Jones,

"We can continue to help teach others how science works."

quickly converted her company to supply up to 900,000 COVID-19 tests in Ireland, contributing to the successful suppression of the pandemic in that country². Many of us are learning to analyze rich sets of data that are available to all, and to stay engaged while minimizing lab experiments. For academics, including students, these eventful months present personal challenges, especially for our colleagues with school-aged children. I am grateful for the dedication and flexibility of members of my team, and staff throughout our institutions.

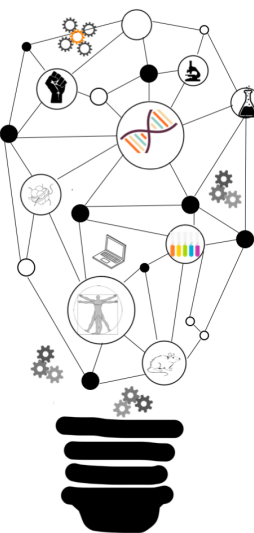
Our responsibility to public education. The

pandemic gives us opportunities to help educate our families and friends, as well as members of the public. It is staggering how people are so influenced by misinformation or poorly interpreted data. We may even have to convince some friends to accept a vaccine, when one becomes available. Wearing face masks is a social responsibility, with a scientific basis. Scientists are used to reevaluating interpretations based on new data, but this is a new concept to some people³. We can continue to help teach others how science works.

Racism. Racial discrimination and the consequential racial disparities are at the forefront of our national discussion. We need to ensure these issues stay there and we need to act. It is clear that it is not enough to be a non-racist, we must be actively anti-racist. The existence of racism based on appearance is sadly prominent in our culture although it has no meaningful genetic basis⁴. Unfortunately, evolution seems to

have set a deeply primitive tendency for primates to attack individuals or groups that look different from them⁵. Our human capacity for reasoning and kindness must overcome this.

Our GSBS has made available a superb resource for anti-racism learning⁶. From my own reading earlier this year, I especially valued "Black is the Body" by the academic scholar Prof. Emily Bernard, for her first-hand accounts of racism⁷, and the powerful voice of the extraordinary Maya Angelou⁸. Reading the striking and poetic "The Souls of Black Folk", published by W.E.B. Du Bois in 1903 in the wake of failed Reconstruction⁹, was exceptionally enlightening. In the 1930s, the innovative artist Billie Holiday sang "Strange Fruit", about the continued use of terror on black people through lynching¹⁰. Yet, in 2020, phone cameras still bear witness to contemporary lynching. I have hope that events in motion may finally bring it to an end. It is our



Continued on page 2

From the Director's Desk...



Addressing meaningful questions in biology will always be a guiding principle in graduate training within the Genetics and Epigenetics Program. G&E arose about three years ago, and it has valued roots in earlier programs (Genes & Development; Human Molecular Genetics; Epigenetics & Molecular Carcinogenesis). We are grateful for the strengths contributed from our predecessor

programs while welcoming entirely new members and the ideas they bring, as reflected in this Newsletter. In fact, in order to get an idea of the exceptional range of student and faculty involvement, it is worth glancing at the many individuals who actively participate in making G&E's goals become a reality <https://gsbs.uth.edu/genetics-and-epigenetics>. G&E truly is what we make it!

With >110 faculty and >50 graduate trainees, G&E consist of a wide range of scientific areas and researchers. For example, using varied animal and non-animal models as well as approaches (e.g. molecular, cellular, developmental), our work spans the genetic, epigenetic, and genomic mechanisms that control cell growth and differentiation, which contributes to cancer or other human diseases. Even as we are one of the larger programs in the GSBS, a core attribute has been to value listening to each other, be it in committee meetings, one-to-one meetings, or other interchanges. Sparked by recent national and worldwide events, this

has never been more important, with ongoing efforts to recognize and address racism and bias against Blacks, as well as intolerance broadly. Further essential opportunities include identifying the means to best advance our exciting science in a Covid-19 and climate-change era. Thus, our ability to pursue scientific understanding as well as human health in its various forms remains at the center of what we seek, and it will continue to benefit from each of us working together.

For those new students to the GSBS and G&E, let us welcome you to a stimulating academic environment where the available opportunities and resources are among the best that can be found anywhere. Please take the time to get to know us in G&E. Then, in the longer term, we suggest taking full advantage of the larger Texas Medical Center. The TMC offers the potential to be a multiplier of your work, if you reach across departmental and institutional boundaries to connect with groups glad to help advance your scientific or training goals.

To our present students, postdoctoral fellows, staff and faculty, we would like to thank you for your work in bringing the shine to our program, and we very much look forward to its future!

If you have any questions or comments, please do not hesitate to contact any one of us.

Pierre McCrea, Outgoing Director

Jichao Chen, Incoming Director

Francesca Cole, Incoming Co-Director

Continued from cover: Ascent from the Maelstrom

responsibility to campaign and vote for those who vouch to make this happen.

Scientists must promote anti-racism not only because our enterprise relies on international diversity for creativity and drive, but because it is just. And it is time. Our students, faculty, and colleagues have origins in many countries¹¹, yet one only has to travel through immigration lines to witness racial profiling of our colleagues. I am determined to work harder to convince government leaders that science is necessarily multicultural and international, and that training and immigration between countries is fundamental.

Changes. Movements like Black Lives Matter have been embraced internationally and show signs of sustained progress. Creative thinkers are engaged in basic discussions about how structures of democracy can be reformed constructively¹². As scientists, we can continue to champion and strengthen aspects of our culture that may serve as models, including diversity of nationality, gender, sexual orientation, and race.

¹ Institute of Medicine Committee on Emerging Microbial Threats to Health in the 21st, C., Microbial Threats to Health: Emergence, Detection, and Response. ed. M.S. Smolinski, M.A. Hamburg, and J. Lederberg. 2003, Washington (DC): National Academies Press (US). [This publicly available e-book](#) includes recommendations regarding how the USA must prepare for the inevitability of global pandemics. It seems to have been ignored.

² Anne (O'Donovan) Jones; see [a description of her achievement here](#).

³ One British prime minister said that scientists are tiresome on government committees, because "they tend to change their minds after studying the evidence".

⁴ Paabo, S., *The mosaic that is our genome*. Nature, 2003. **421**(6921): p. 409-12.

⁵ See Diamond, J.M., *The third chimpanzee: the evolution and future of the human animal*. 1992, New York, NY: HarperCollins.

⁶ For example, see section 5 of [Scientists and Health Professionals for Black Lives: Resources & Action Items](#).

⁷ Bernard, E., *Black is the body: stories from my grandmother's time, my mother's time, and mine*. 2019, New York: Alfred A. Knopf. You can obtain [this](#) and other books at small independent bookstores, which run excellent mail order services. See also [this New Yorker article](#).

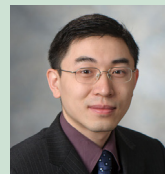
⁸ For [her account](#) of 50's and 60's civil rights activism, living in Africa, meeting Malcolm X and Martin Luther King – and more jazz – check out Angelou, M., *The heart of a woman*. 1982, New York: Bantam Books.

⁹ Du Bois, W.E.B., *The souls of Black folk*. 1994, New York: Dover.

¹⁰ "Strange Fruit" was written for Holiday, but Columbia Records was frightened to release it. She later sang and recorded the song many times. For its clarity, I recommend a [1946 version from a California concert](#). "I do hope you like it", she announces to the crowd. The anthem contributed to [Holiday's sad end](#).

¹¹ For example, the microcosm of my current research group includes members born in Venezuela, China, Nepal, and the USA. Previous members heralded from the UK, Japan, Spain, France, Germany, Switzerland, Kenya, Morocco, Portugal, Korea, Sweden, Ireland, and Italy; visiting scientists came from many further countries.

¹² I highly recommend "[Reinventing Democracy for the 21st Century](#)" from the American Academy of Arts and Sciences, published in June 2020. It is easy to read and important for our common purpose.



G&E Program Director

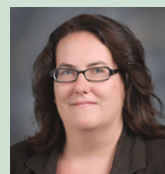
Jichao Chen, PhD

Associate Professor, Dept. of Pulmonary Medicine – Research
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G&E Program Co-Director

Francesca Cole, PhD

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The Genetics & Epigenetics (G&E) newsletter is published by the G&E Graduate Program at the MD Anderson Cancer Center UTHealth Graduate School of Biomedical Sciences in Houston, Texas.

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All illustrations are by **Pranavi Koppula**, G&E student
Publication Date: September 2020

We'll miss you, Dr. Michelle Barton!

by Anna Miao and Hieu Van

Michelle Barton, PhD, dean of our graduate school, professor of Epigenetics and Molecular Carcinogenesis at MD Anderson, and member of the Genetics and Epigenetics Program faculty, left GSBS and MD Anderson in August for a leadership role at the Cancer Early Detection Advanced Research Center of the OHSU Knight Cancer Institute in Portland, Oregon. To GSBS students, Dean Barton is an inspiring and kind mentor, a respected legend; to the GSBS faculty and staff, Dean Barton is a dear friend, a collaborative colleague, and a leader who brings out the best potential in people. Her 20 years at MD Anderson have had a tremendous impact on students, trainees, staff, and faculty.



Dr. Barton at 2014 retreat

As an educator, Barton helped train many students and postdoctoral fellows who are now PIs and lead scientists in their fields. They are her legacy. Amber Johnson, PhD, Barton's first graduate student and a precision oncology scientist at MD Anderson, said "... Shelley's confidence in my ability really meant the world to me. She fostered students' scientific curiosity, allowed us to explore our own hypothesis, and entertained hundreds of hours of ideas on the white board with a cup of tea. She knows I can't think without a marker or pen in my hand! I am forever grateful to have had Shelley as my mentor and supporter for the last 19 years."

Svitlana Kurinna, PhD, another former graduate student and now group leader at the University of Manchester, said "[Dr. Barton] set me on the path I am still following, and all my past insecurities as a postdoc and all my current concerns as a PI, I've overcome because Shelley is my PhD mama. If I have to concentrate all my memories, thoughts, and feelings down to a few words, I would say that Dr. Shelley Barton is an outstanding scientist and the best mentor one could wish for, and that I am forever thankful for meeting her."

Abhinav Jain, PhD, Barton's former trainee and now an assistant professor at MD Anderson, wrote "Shelley has been an awesome mentor and source of strength for me since the day I joined her lab. I still remember our first meeting. I was so moved by her warm personality and the endless scientific opportunities that were on the offer, that to this day, I feel coming to Shelley's lab was one of the best decisions I ever made. Shelley is an inspiration to many, a quintessential mentor who educates, motivates, and really cares for her trainees. There is nothing that Shelley can't do, except say 'No', which underscores her endless commitment to education and training. I consider myself fortunate to have received a few drops from Shelley's vast ocean of knowledge and kindness, and my mentor for life."

Continued on back cover

Welcome to G&E!!

Vahid Bahrambeigi
(PhD Advisor, Dr. Anirban Maitra)
Department of Translational
Molecular Pathology, MD Anderson

Heather Newkirk
(PhD Advisor, Dr. Swathi Arur)
Department of Genetics,
MD Anderson

Ruth De Paula
(MS Advisor, Dr. John Tainer)
Department of Biochemistry &
Molecular Biology, McGovern
Medical School, UTHealth

Phuoc Nguyen
(MS Advisor, Dr. Wenbo Li)
Department of Biochemistry &
Molecular Biology, McGovern
Medical School, UTHealth

Dalia Hassan
(PhD Advisor, Dr. Jichao Chen)
Department of Pulmonary
Medicine-Research, MD Anderson

Mennatallah Shaheen
(PhD Advisor, Dr. Anirban Maitra)
Department of Translational
Molecular Pathology, MD Anderson

Zian Liao
(MS Advisor, Dr. Wenbo Li)
Department of Biochemistry &
Molecular Biology, McGovern
Medical School, UTHealth

Ruoyu Wang
(PhD Advisor, Dr. Wenbo Li)
Department of Biochemistry &
Molecular Biology, McGovern
Medical School, UTHealth

Anna Miao
(MS Advisors, Drs. Michelle
Barton and Gigi Lozano)
Department of Genetics,
MD Anderson

Jiah Yang
(PhD Advisor, Dr. Kunal Rai)
Department of Genomic Medicine,
MD Anderson

Welcome New G&E Faculty!



Michael Green, PhD
Associate Professor, Department of Lymphoma-Myeloma-
Research, MD Anderson
Research Interests: Epigenetic regulation of B-cell
development and lymphomagenesis.



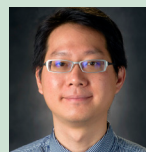
Xiangli Yang, PhD
Associate Professor, Department of Pediatrics, McGovern
Medical School, UTHealth
Research Interests: Gene transcriptional regulation of cell
differentiation, development, organogenesis, and metabolic
homeostasis.

Congratulations G&E Graduates!

August 2019 to July 2020



Scott Casey, MS
(Advisor: Dr. Ellen Richie)
Thesis: Determination of Thymic Epithelial Composition
and Proliferation during the Perinatal to Adult Transition
Research Assistant II, MD Anderson, Smithville



Alex (Chieh-Yuan) Li, PhD
(Advisor: Dr. Giulio Draetta)
Thesis: Longitudinal Clonal Lineage Dynamics and
Functional Characterization of Chemoresistance and
Metastasis in Pancreatic Cancer
Position to be decided



Jintan Liu, PhD
(Advisor: Dr. Giulio Draetta)
Thesis: Pooled Functional Genomics Screening with
Multiplexed Cpfl Library
Senior Scientist, Discovery Oncology at Merck (Boston)



Roxsan Manshouri, PhD
(Advisor: Dr. Don Gibbons)
Thesis: Uncovering the ZEB1 Interactome to Identify Novel
Regulators of Metastatic Non-Small Cell Lung Cancer
Technology Commercialization Analyst, MD Anderson



Amber Thomas-Gordon, MS
(Advisor: Dr. Jan Parker-Thornburg)
Thesis: Artificial Intron Technology to Generate Conditional
Knock-out Mice
Clinical Research Coordinator, ThreeWire

G&E Alumni Success



Svitlana Kurinna, PhD

*Group Leader, University of Manchester, United Kingdom
PhD 2010*

*Advisor: Michelle Barton, PhD
svitlana.kurinna@manchester.ac.uk*

Please describe your current role and job responsibilities.

I am an MRC CDA Fellow at the University of Manchester, U.K. The

fellowship is a career development award from the Medical Research Council UK that came with enough funding to start and maintain my own small laboratory. Together with my postdoctoral research assistant, I supervise undergraduate and graduate students, teach tutorials, and of course, continue my own research project on transcriptional and translational regulation of keratinocytes in regenerating skin.

Please tell us your career path since completing your PhD.

I completed a short follow-up postdoctoral project in Dr. Barton's laboratory, and moved to Switzerland. There, I was trained as a postdoc and then a senior postdoc in the group of Prof. Sabine Werner at the ETH Zurich. Together with my awesome colleagues, we used mouse models to study the roles of transcription factors and microRNAs in formation of the skin and in wound healing. This project had lead me to a family of microRNAs, which I continue to study at the University of Manchester.

You have done research in different part of the world. Have you noticed any similarities and differences about science in different cultures? How the experience have shaped your professional perspective?

Shelley's lab in MD Anderson was more like a family, we worked, ate, exercised, and did amazing trips together. My Swiss and German colleagues were much more conserved about their work/life balance, and at first, I really struggled to fit (it didn't help that my German was sehr schlecht!) However, when I learned a bit more of language and the culture, I started making friends with colleagues and in fact, became partially responsible for making Sabine's group more international by paving the way to recruitment from other countries. Science was excellent in both of my PhD and postdoc labs. I would not be able to compare, it was a top-top experience!

What advice would you love to give to the current students who want to do research outside of the U.S.?

Do it, go for it! There are many very good research places outside of the U.S. You will see science from a new perspective and will meet people with a different worldview. This experience will shape you in such a way that is not possible to achieve otherwise. Also, if you set up your mind to learn a different language, don't give up. Lab hours can be long and exhausting, but try to carve out time to study the local language or the dialect. Otherwise, you will miss on a lot of cultural experiences and local life. This is the only part in which I utterly failed during my postdoc times - I have not learnt Swiss German, a beautiful language of its own.

Current social and political events have brought anxiety, stress, and uncertainties to the international student community. As a "global citizen" in research, drawing from your experience, what advice would you give to our international student body, and perhaps others also, to encourage them in this circumstance?

The key is to have the assurance that going for the international life is the right thing for you. Start small - go for a short trip to meet a collaborator,

for a conference, or at least speak to a couple of colleagues from other countries on Skype. Contact me if you don't know anyone else! Then, do the very next step in the direction, in which your research interests lead you.



Joseph Taube, PhD

*Assistant Professor, Department of Biology, Baylor University
PhD 2009*

*Advisor: Michelle Barton, PhD
Joseph_Taube@baylor.edu*

Please describe your current role and job responsibilities.

I am an assistant professor in a Biology department in an undergraduate and

graduate student-serving university. My primary role is to conduct research, that is, obtain funding and publish papers. The path to tenure centers on building a sustainable research program so that is the #1 priority. Alongside this role are teaching and service roles. My teaching responsibilities are usually 1 lecture course (graduate or undergraduate) per semester. I also commit to service on student committees and as a graduate program co-director for the Biology graduate program.

Please describe your career path since completing your PhD.

After my PhD in 2009, I trained as a postdoctoral fellow in Dr. Sendurai Mani's lab in the Department of Translational Molecular Pathology at MD Anderson. There, I learned the ins and outs of breast cancer metastasis research and how to work with mouse models. It was also a crucible to develop grant writing skills. Securing a DOD postdoctoral fellowship early in my time there was key as it gave me independent research dollars and external validation of my ideas. I believe it also played a big factor in Baylor University's hiring committee decision.

How has your training and your experience at the GSBS shaped your career trajectory?

One of the benefits of the GSBS is the ability to commit to 100% research time. Even though I was applying to an undergraduate-serving university, the hiring committee viewed me as a "research-first" hire. Nevertheless, a successful applicant to an undergrad/grad university must demonstrate at least an interest in teaching. For me, I had just enough experience teaching a handful of lectures for GSBS, volunteering to teach for visiting high school students in the summer and mentoring summer undergrads and new graduate students.

The other major benefit of GSBS has been the network of peers. Going through graduate school together is a bit like a military boot camp. The people you struggle alongside during your PhD years understand you and will answer the call when you need them. Don't neglect the importance of helping each other succeed!

What advice would you give to current graduate students?

As graduate students and postdocs, we toil for years becoming experts within an ever-narrowing corner of the scientific landscape. While necessary, the mindset imposed by this approach has drawbacks. By continually narrowing our focus, we lose the ability to communicate the importance of our work to other scientists. To secure an academic appointment in a diverse department (like a Biology department), you must communicate with colleagues who may not be interested in genetics or epigenetics. The hiring decision for my position was in the hand of several ecologists who were not interested in the details of my scientific

presentation but were instead looking at my collegiality, confidence in my scientific approach, ideas for enhancing the department, and plans for involving students in research. While any successful candidate must still play the numbers game (publications and grants), other skills including communication and self-confidence are essential for pushing yourself to the top of the list.

What's the biggest motivation of staying in academia and how do you maintain it?

Motivation is key but difficult to sustain. During my third year of graduate school, I seriously considered leaving. Part of what got me through was realizing that they don't award PhDs for simple easy work. Most hypotheses will be disproven, most grants will not be funded, and most papers will be rejected. This is normal. You must keep clawing forward one data point at a time and have faith that the bigger picture will emerge. No matter the particulars of your research topic, your work, when done well, has value and you should be proud of it.



Zeynep Coban, PhD
Assistant Professor, Department of
Epidemiology, Human Genetics and
Environmental Sciences, UTHealth
School of Public Health
PhD 2014
Advisor: Michelle Barton, PhD
Zeynep.H.CobanAkdemir@uth.tmc.edu
**Please describe your current role
and job responsibilities.**

I have been a tenure-track assistant professor at UTHealth School of Public Health in the Epidemiology, Human Genetics & Environmental Sciences Department since January. I lead a research group that facilitates an improved understanding of the relationship between gene function and human phenotypes and fascinating, yet understudied, genetic mechanisms of disease in Mendelian disease biology through developing computational tools, analytical frameworks and machine learning algorithms. I will also be involved in teaching activities starting next year.

Please tell us your career path since completing your PhD.

After my PhD training with Dr. Michelle Barton at GSBS, I did my postdoctoral training under the mentorship of Dr. James Lupski in the Department of Molecular and Human Genetics at Baylor College of Medicine as a part of the Baylor-Hopkins Center for Mendelian Genomics (BHCMG). My work was integral to the development of computational algorithms and methods and also to the integration of different kinds of genomic datasets, to facilitate a better understanding of Mendelian disease. My successful research endeavors resulted in 85 co-authored articles as a postdoctoral fellow; five of these were first author papers.

How has your training and your experience at GSBS prepared you for your career in academia?

During my PhD training at GSBS, I strongly believe that I increased my potential for learning through a productive and successful graduate study while contributing to life sciences through research, teaching, or any other means. My training in Dr. Barton's lab enhanced my biological knowledge to a great extent in various biological processes, disease models, and different experimental approaches. In addition, my training in Dr. Wei Li's lab, a computational biology lab, strengthened my understanding of various bioinformatics methods and algorithms

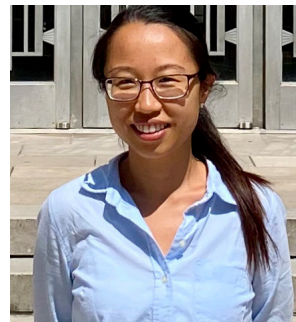
applied to comprehensive biological datasets. Besides those, I had a chance to carry a few leadership roles such as I co-organized a two-day short course named "Nanotechnology in Biomedical Sciences" to enhance knowledge about nanotechnology in a group of scholars. I also had a chance to interact with a quite number of eminent scientists at the meetings, seminars, conferences and courses that I attended.

What advice would you love to give to the current student who want to pursue an academic career?

My advice to them would be that they should enjoy performing their experiments and analyses, thinking about the research questions of their interest deeply, learning from each other and their mentors, getting to know the literature well. They also should look for any possible networking opportunity. Last but not the least, they should always keep in mind that graduate school is the best place that they can learn a lot while having fun.

What do you miss the most about your graduate training?

I miss the most being surrounded by my great friends, peers and lab members, the fruitful discussions that we had during the lab meetings about our projects, Genes & Development program retreats and occasions.



Jane Wu, PhD, JD
Assistant City Attorney II
City of Houston
PhD 2009
Advisor: Michael Galcko, PhD

**Please describe your current role
and job responsibilities.**

I am currently an attorney for the City of Houston in their Legal Department doing primarily transactional IT and

IP work for the City of Houston.

Please describe your career path since completing your PhD.

After receiving my PhD, I worked in technology transfer for the University of Texas Health Science Center at Houston in their Office of Technology Management doing IP protection and IP licensing.

How has your training and your experience at the GSBS shaped your career trajectory?

Having a PhD background allowed me to better understand in depth the inventions and technology created by the faculty and students at UTHealth and to provide the necessary technical background to thrive in the IP protection and transactional world. IP is closely tied with the transactional field as IP is bought/sold and licensed in the business world. This leads me into the world of contracts - drafting and negotiation.

What advice would you give to current graduate students?

Think outside of the box, and follow your interest. There isn't a set road for a PhD graduate.

What's the biggest obstacle during the transition from a bench scientist to an attorney?

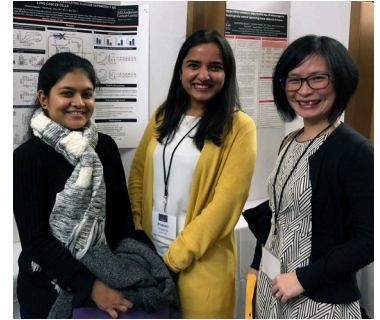
I actually didn't think there were any obstacles. Both being a scientist and attorney required critical thinking skills and ability to communicate to the appropriate audience.

2019 G&E Retreat Round-Up

The annual G&E retreat was held November 8-9, 2019, at the San Luis Resort in Galveston. Students, faculty, and other trainees came together for a weekend of oral presentations, poster presentations, entertainment sessions, and camaraderie. The keynote address was presented by Dr. Michael Bassik from Stanford University. The retreat program also included oral presentations from students and postdoctoral fellows affiliated with G&E labs. Other retreat program highlights included career panels from scientists in both academic and non-academic positions, giving our students clear perspective of the range of opportunities available to them when they graduate from GSBS. Drs. Michelle Barton and Sharon Dent also served as panelists in a town hall-style session, fielding questions about their experiences during the development of their scientific careers. The entertainment session included Taboo, as well as a game of Bingo where the game board consisted of G&E faculty headshots. The retreat was organized by a student panel chaired by Rhiannon Morrissey and Hieu Van Thuan. This panel received oversight from two faculty members, Drs. Nidhi Sahni and Michelle Hildebrandt. The G&E Directors, as well as Elisabeth Lindheim and Rebecca Deen, provided immense support planning and executing the retreat. Check out the oral presentation and poster presentation winners in the Student Awards section on page 10.



Poster and platform winners with G&E Directors (L-R): Dr. Jichao Chen (Co-Director), Archit Ghosh, Alex Li, Jacob Ortega, Yang Zeng, Dr. Brandon Dunn, Mabel Perez Oquendo, Dr. Lisandra Vila Ellis, Dr. Pierre McCrea (Director)



2019 Retreat Organizers (L-R): Dhruv Chachad, Hieu Van, Rhiannon Morrissey, Safia Essien



G&E Events Round-Up

Sponsored by the Genetics & Epigenetics Graduate Program

G&E Monthly Student Seminar Series

For Faculty, Postdocs, Students and all interested!

The G&E Student Seminar Series is held the 2nd Thursday of each month. Mark your calendars!



N-terminal Histone H3 Mimicry Drives a Novel Network of PHD Interactions
Jianli Chen
 Advisor: Mark Bedford, PhD
 Department of Epigenetics & Molecular Carcinogenesis,
 MD Anderson



Understanding the Role of SWI/SNF in the Pathogenesis of Renal Medullary Carcinoma
Melinda Soeung
 Advisor: Giulio Draetta, MD, PhD
 Department of Genomic Medicine,
 MD Anderson

Thursday, November 14, 2019
12:00 - 1:00 pm
 Houston: Large Classroom, BSRB 53.8371
 Smithville: Science Park Auditorium
Lunch served. Please bring your own drink.

For more information, contact GEM Series Coordinators
 Amelie Albrecht & Rhiannon Morrissey
 aalbrecht@mdanderson.org • rmorrissey@mdanderson.org

MDAnderson Cancer Center
 UTH Health
 University of Texas at Houston

GEM Student Seminar Series

Now in its second year, the student-run G&E GEM Seminar Series features two 20-minute talks by students on their thesis research. In May, Mabel Perez-Oquendo and Melissa Frasca took over as series coordinators from Amelie Albrecht and Rhiannon Morrissey. We thank Amelie and Rhiannon for their great leadership and for ensuring a seamless transition of coordinators. The GEM seminars are at noon, on the second Thursday of every month.

Arts Showcase

The 2019 annual G&E Arts Showcase celebrated the amazing artistic talents in our program community. Held jointly with the Neuroscience program, the showcase featured 28 visual art exhibitors, a musical performance, poetry reading, culinary arts tasting and reception.



Lozano lab watercolor exhibit



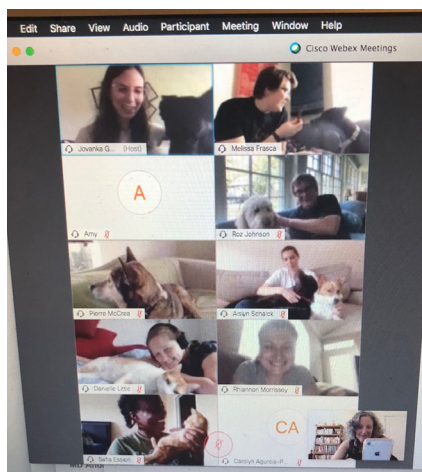
Sydney Moyer and Amanda Wasylishin at their ceramics exhibit



Arts Showcase organizers (L-R): Iman Sahnoun, Han Bit Baek, Pranavi Koppula, Jeanne Manalo, Melinda Soeung

Covid-19 Virtual Meet-ups

After the labs shut-down in March, G&E students began hosting bi-weekly virtual meet-ups through the spring. One of the highlights was our Bring-Your-Pet gathering.



Students and faculty with their pets at G&E virtual meet-up during pandemic

Lunar New Year Event

To celebrate the Year of the Rat, Smithville held a campuswide international potluck lunch in February, organized by Melissa Frasca, in which attendees brought a favorite dish celebrating their heritage. In Houston, the G&E and Quantitative Sciences (QS) programs jointly hosted a celebration organized by Anna Miao, Zian Liao, Celine Kong, Sanjana Srinivasan, and Xingdi Ma. Students, postdocs and faculty in G&E and QS labs enjoyed traditional new year's refreshments, practiced Chinese calligraphy and made origami rats, stars and other creatures.



Anna Miao leading calligraphy demonstration

Houston organizers: (L-R): Celine Kong, Zian Liao, Xingdi Ma, Anna Miao, Sanjana Srinivasan



Students and faculty at Smithville's lunar new year celebration

Ice Cream Social & Cookie Decorating Contest

We couldn't have our annual ice cream event this summer because of the coronavirus, but this photo from 2019 is a reminder of what we can look forward to next year.

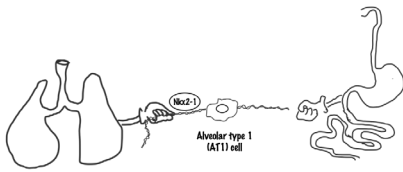


Students at 2019 ice cream social

Directors Roundtable

Twice a year, G&E directors meet with students over lunch to talk about program activities, resources, policies, new initiatives, concerns, ideas for professional development workshops and more. The new G&E Historical Perspectives in Science series was suggested at a Roundtable this year (see page 11).

Student Publication Highlights



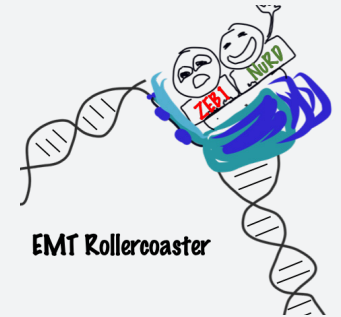
G&E student **Danielle Little**, from Dr. Jichao Chen's lab, published her work in *Proceedings of the National Academy of Sciences* (PNAS) last October. Her research focused on transcriptional control of lung alveolar type 1 (AT1) cell development. Through the cell-specific knockout mouse model, genomic profiling and 3D imaging, they identified NK homeobox 2-1 (Nkx2-1) expression in AT1 is required for the development and maintenance of AT1 cells. AT1 cells would lose molecular marker, expansive morphology and cellular quiescence without Nkx2-1,

resulting in alveolar simplification and lethality. Intriguingly, Nkx2-1 mutant AT1 cells activated gastrointestinal (GI) gene transcription and shifted toward a GI fate. Their study place Nkx2-1 at the top of the AT1 cell transcriptional hierarchy and demonstrated its potential to alter cell fate, and the story is on the cover of the journal.

Little DR, Gerner-Mauro KN, Flodby P, Crandall ED, Borok Z, Akiyama H, Kimura S, Ostrin EJ, Chen J. Transcriptional control of lung alveolar type 1 cell development and maintenance by NK homeobox 2-1. *Proc Natl Acad Sci U S A.* 2019 Oct 8;116(41).

Roxsan Manshouri, PhD, a G&E alumna from Dr. Don Gibbons' lab, published her paper about lung cancer metastasis in *Nature Communication* in November 2019. Among EMT-associated transcription factors, ZEB1 specifically promotes non-small cell lung cancer progression. With BioID and an Epigenome shRNA dropout screen, they identified NuRD complex as a ZEB1 co-repressor and Rab22 GTPase-activating protein TBC1D2b as the target of ZEB1/NuRD complex. Then they discovered TBC1D2b is responsible for suppressing E-cadherin internalization, resulting in inhibiting invasion and metastasis. Aberrant downregulation of TBC1D2b contributes to the endocytosis and degradation of E-cadherin to promote EMT.

Manshouri R, Coyaud E, Kundu ST, Peng DH, Stratton SA, Alton K, Bajaj R, Fradette JJ, Minelli R, Peoples MD, Carugo A, Chen F, Bristow C, Kovacs JJ, Barton MC, Heffernan T, Creighton CJ, Raught B, Gibbons DL. ZEB1/NuRD complex suppresses TBC1D2b to stimulate E-cadherin internalization and promote metastasis in lung cancer. *Nat Commun.* 2019 Nov 12;10(1):5125.

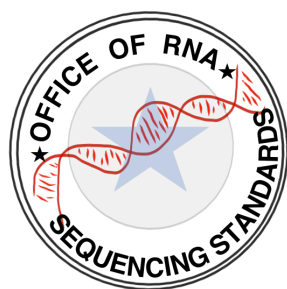
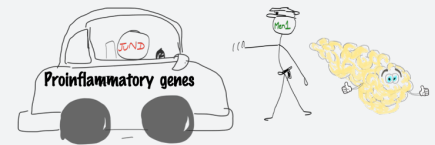


G&E student **Pranavi Koppula**, from Dr. Boyi Gan's lab, recently published her second-authored paper in *Cell Research* about the role of ferroptosis in cell death and tumor suppression. In this paper they showed ionizing radiation (IR) induces ferroptosis in cancer cells. IR can increase reactive oxygen species and the expression of ACSL4 - an enzyme in lipid metabolism which is required for ferroptosis. IR also induces the expression of ferroptosis inhibitors SLC7A11 and GPX4 which is an adaptive response for cells to combat ROS. Furthermore, in cancer patients, radiotherapy can induce ferroptosis and upregulated ferroptosis correlates with better survival in patients. Their study revealed an unrecognized link between IR and ferroptosis that could benefit cancer patients.

Lei G, Zhang Y, Koppula P, Liu X, Zhang J, Lin SH, Ajani JA, Xiao Q, Liao Z, Wang H, Gan B. The role of ferroptosis in ionizing radiation-induced cell death and tumor suppression. *Cell Res.* 2020 Feb;30(2):146-162.

G&E student **Chang Sun**, from Dr. Guillermina Lozano's lab, recently published his collaborative research demonstrating how pancreas homeostasis in response to inflammatory stress can be regulated by Men1 on PNAS. Using physiologically relevant mouse models they identify that Men1 plays an essential role in the normal tissue response to both inflammatory and oncogenic stress. In addition, loss of Men1 induces a proinflammatory gene expression program, associated with the deregulation of JunD transcriptional activity. This study provides insights into a regulatory axis that maintains pancreas homeostasis *in vivo*.

Wasylishen AR, Sun C, Chau GP, Qi Y, Su X, Kim MP, Estrella JS, Lozano G. Men1 maintains exocrine pancreas homeostasis in response to inflammation and oncogenic stress. *Proc Natl Acad Sci U S A* 117(12):6622-6629.



Hsueh-Ping (Eva) Chao, G&E alumna from Dr. Dean Tang's lab, published her first-author research in *BMC Genomics*. She systematically evaluated the RNA-Seq preparation protocol performance across four RNA-Seq kits focusing on following aspects, overall reproducibility, 5' and 3' end-bias, and the identification of DEGs, lncRNAs, and alternatively spliced transcripts. They conclude that the TruSeq Stranded mRNA kit was universally applicable to studies focusing on protein-coding gene profiles. This study shows that the choice of RNA-Seq library preparation kit can profoundly affect data outcomes and it is a pivotal parameter to consider when designing an RNA-Seq experiment.

Chao HP, Chen Y, Takata Y, Tomida MW, Lin K, Kirk JS, Simper MS, Mikulec CD, Rundhaug JE, Fischer SM, Chen T, Tang DG, Lu Y, Shen J. Systematic evaluation of RNA-Seq preparation protocol performance. *BMC Genomics.* 2019 Jul 11;20(1):571.

Extending a Warm Welcome to our Smithville Colleagues

by Hieu Van and EMC faculty & staff



MD Anderson's Science Park Campus in Smithville, TX

Most G&E members are familiar with the labs and institutions across the TMC that contribute to our program. But, did you know about our colleagues in Smithville, Texas, a small town just east of Austin, who are slated to move to Houston in summer 2021?

The Smithville campus opened in 1977 and the “Carcinogenesis Research Laboratories” were officially dedicated the next year. In 1998, the Cockrell Foundation granted The University of Texas Board of Regents a \$5 million gift that was used to establish the Virginia Harris Cockrell Cancer Research Center at The University of Texas MD Anderson Science Park.

The campus is the primary site of the Department of Epigenetics and Molecular Carcinogenesis (EMC), which also has several labs and shared resources in the BSRB building in Houston. The department labs and cores form a community of dedicated basic research scientists who are defining the mechanisms that control normal cell proliferation, differentiation, survival, and genome maintenance, to identify processes that drive cancer.

Throughout its history, Science Park has been home to incredible scientists, including Nobel Prize-winning immunologist Jim Allison, PhD, who started his independent research career at Science Park; Moon-Shong Tang, PhD who identified the critical link between smoking and cancer; David Mitchell, PhD who found, using a fish model, that contrary to what was then current dogma, UVB and not UVA is important for melanoma development; and Richard Wood, PhD who is a member of both the British Royal Society and the American Academy of Arts and Sciences. This legacy is continued by newer faculty members like **Han Xu, PhD**, and **Kevin McBride, PhD**.



Dr. Han Xu (2nd from right) with his lab

The long-term interest of the **Xu laboratory** is to apply computational methods combined with high-throughput biotechnologies to discover mechanisms of transcriptional and epigenetic regulations, which enables new therapeutic approaches to the treatment of cancer patients. The Xu laboratory has developed a series of computational tools to aid in performing genetic functional screens and analyzing protein-DNA interactions. These tools have been widely used for the studies of protein functions, regulatory relationships, and molecular mechanisms in a high-throughput manner. They are currently employing CRISPR-based systems for systematic perturbational studies of transcription factors and epigenetic regulators.

The **McBride lab** has interests in both virology and immunology. They are defining how viruses, like gammaherpesvirus, impact B cell development and are exploring how an enzyme, activation induced deaminase (AID), which induces programmed DNA damage to diversify the immune repertoire and instigate epigenetic reprogramming, can also create cancer-inducing collateral damage. The lab is using a novel cutting-edge technique that



Dr. Kevin McBride (2nd from left) with his lab

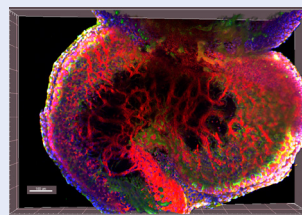
allows single-cell mutation analysis that they are using to dissect the genetic, environmental and cell signaling pathways that underlie nucleic acid mutation.

EMC is also well-known for developing unique shared resources, such as the Flow Cytometry and Cellular Imaging Core (FCCIC), the Protein Array and Analysis Core (PAAC) and the Recombinant Antibody Production Core (RAPC). These cores will relocate to Houston when the department moves.

For more information about Science Park, its shared resources and the people who will join us in Houston soon, please visit: <https://www.mdanderson.org/research/departments-labs-institutes/departments-divisions/science-park-smithville.html>.

Thank you Science Park for all of your years of service!
We look forward to welcoming you to Houston!

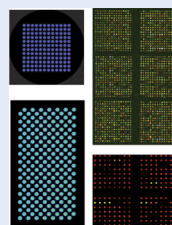
Core Facility Highlights



Courtesy of the Flow Cytometry and Cell Imaging Core

Flow Cytometry and Cell Imaging Core (FCCIC)

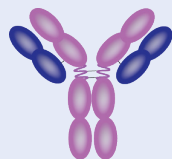
The FCCIC aids researchers as they identify, isolate and quantify cancer and normal cell subsets, as well as image cells and their constituent molecules in situ. The core provides flow cytometry, confocal, and two-photon microscopy services. The core can aid researchers in isolating rare viable cell subsets, cellular and molecular phenotyping, analysis of subcellular and nuclear architecture, identification of drug-genome interactions, 3-D reconstructions and time-lapse imaging, as well as imaging thick sections, intact organs and in vivo processes.



Courtesy of the Protein Array and Analysis Core

Protein Array and Analysis Core (PAAC)

The PAAC provides investigators access to innovative and cutting-edge cancer research tools for the discovery and characterization of novel protein-protein interactions. The power of this approach lies in the ability of this platform to identify protein interactions that are driven by posttranslational modification (PTM), like phosphorylation, methylation, acetylation and ubiquitination. All the PAAC needs to perform these screens is a biotinylated peptide that harbors the PTM.



Courtesy of the Recombinant Antibody Production Core

Recombinant Antibody Production Core (RAPC)

The RAPC has developed a methodology to make custom, sequence-defined, recombinant antibodies in a fast, inexpensive, and high-throughput manner. The core cannot only help produce custom standard recombinant antibodies, but can also aid in converting hybridoma cell lines to recombinant antibody production stocks.

G&E Student & Faculty Awards 2019-2020



Congratulations to our students for their outstanding accomplishments!

STIPEND SCHOLARSHIPS & FELLOWSHIPS

Center for Cancer Epigenetics (CCE) Scholar Fellowship

Melinda Soeung (Dr. Giulio Draetta)

NIH F31 NRSA Predoctoral Fellowship

Danielle Little (Dr. Jichao Chen) 3rd year
Lorena Maili (Dr. Jacqueline Hecht) 2nd year
Rhiannon Morrissey (Dr. Gigi Lozano), 1st year
Odemaris Narvaez del Pilar (Dr. Jichao Chen); Diversity Fellowship, 2nd year

Pauline Altman-Goldstein Foundation Discovery Fellowship

I-Lin Ho (Dr. Andrea Viale/Dr. Giulio Draetta)

Rosalie B. Hite Fellowship

Jovanka Gencel Augusto (Dr. Gigi Lozano); 2nd year

SCHOLARSHIPS, AWARDS & RECOGNITIONS

Alfred G. Knudson Jr. Outstanding Dissertation Award (\$5000)

Rhea Kang, PhD (Dr. Francesca Cole) for her 2019 thesis

American Legion Auxiliary Fellowship in Cancer Research (\$5000)

Safia Essien (Dr. George Eisenhoffer)
Rhiannon Morrissey (Dr. Gigi Lozano)

Dr. John J. Kopchick Fellowship (\$7500 to student and \$7500 research support)

Sydney Moyer (Dr. Gigi Lozano) renewal

Gigli Family Endowed Scholarship (\$5000)

Danielle Little (Dr. Jichao Chen)

GSBS Elevator Speech Competition, 1st Place MS & Pre-Candidacy (\$1000)

Ruth Barros De Paula (Dr. John Tainer)

GSBS Elevator Speech Competition, 2nd Place in Writing (Digital Notebook)

Mabel Perez-Oquendo (Dr. Don Gibbons)

Jesse B. Heath, Jr. Family Legacy Award (\$5000)

Sanjana Srinivasan (Dr. Giulio Draetta)

Linda M. Wells GSBS Outreach Award (\$1000)

Safia Essien (2020) (Dr. George Eisenhoffer)
Lorena Maili (2019) (Dr. Jacqueline Hecht)

McGovern Medical School Dean's Research Award (\$1500)

Alexandria Blackburn (Dr. Rachel Miller)

GSBS Presidents' Research Scholarship-2020 (\$5000)

Alexandria Blackburn (Dr. Rachel Miller)
Danielle Little (Dr. Jichao Chen)

T.C. Hsu Memorial Scholarship (\$5000)

I-Lin Ho (Dr. Giulio Draetta & Dr. Andrea Viale)

Tzu Chi Scholar (\$1000)

Safia Essien (Dr. George Eisenhoffer)
Jovanka Gencel Augusto (Dr. Gigi Lozano)

G&E PROGRAM AWARDS

2019 G&E Retreat Poster Awards

Archit Ghosh (Dr. Kunal Rai): Poster Award, Pre-Candidacy Category (sole awardee)
Alex Li (Dr. Giulio Draetta): Poster Award, 2nd Place, Post Candidacy Category
Mabel Perez-Oquendo (Dr. Don Gibbons): Poster Award, People's Choice
Yang Zeng (Dr. Taiping Chen): Poster Award, 1st Place, Post Candidacy Category

G&E Student Service Awards

Amelie Albrecht
Melissa Frasca
Jovanka Gencel Augusto
Pranavi Koppula
Zian Liao
Rhiannon Morrissey
Sydney Moyer
Melinda Soeung
Hieu Van

G&E Travel Awards (2019-2020)

Alem Belachew (Dr. Michelle Hildebrandt) to attend 12th annual AACR Conference on the Science of Cancer Health Disparities in Racial/Ethnic Minorities and the Medically Underserved in San Francisco, California (2019).

Melissa Frasca (Dr. Francesca Cole) to attend the Genome Organization and Nuclear Function conference at Cold Spring Harbor Lab, New York (2020).

Lorena Maili (Dr. Jacqueline Hecht) to attend Gordon Conference & Seminar on Craniofacial Morphogenesis & Tissue Regeneration in Lucca, Italy (2020).

Travel Awards Continued.

Sara Martin (Dr. Richard Wood) to attend 4th DNA Repair/Replication Structures and Cancer Conference in Nassau, Bahamas (2020).

Tolkappiyam Premkumar (Dr. Francesca Cole) to attend Meiosis (GRS) Gordon Research Seminar and Research Conference on Meiosis in New London, New Hampshire (2020).

Sreepradha Sridharan (Dr. Vidya Gopalkarishnan) to attend the Society for Neuro-Oncology Annual Meeting in Phoenix, Arizona (2019).

Hieu Van (Dr. Margarida Santos) to attend 2020 Keystone Symposium on Cancer Epigenetics: New Mechanisms & Therapeutic Opportunities in Keystone, Colorado (2020).

Scientific Meeting Session Leadership

Malcolm Moses (Dr. Richard Behringer): Co-Chair, Session on Genotype, Phenotype & Evolution at the 2020 Society for Developmental Biology Annual Meeting

Odemaris Narvaez del Pilar (Dr. Jichao Chen); Discussion Leader on Wnt Signaling in Development and Disease at the 2019 Wnt Signaling Gordon Research Seminar.



G&E Faculty Awards, Recognitions & Promotions 2019-2020

Swathi Arur, PhD

Editor, Development (published by The Company of Biologists)
Member, Board of Directors, Genetics Society of America, 2019-2022

Michael Green, PhD

Promoted to Associate Professor, effective September 1, 2020
Co-Chair, AACR 2020 Advances in Malignant Lymphoma meeting

Ralf Krahe, PhD

Deans' Recognition for Outstanding Contributions towards Graduate Education, GSBS
President's Recognition of Faculty Excellence Award for Education & Mentorship Advancement, MD Anderson

Gigi Lozano, PhD

Jack and Beverly Randall Prize for Excellence in Cancer Research 2019, MD Anderson
Member, American Academy of Arts and Sciences, 2020

Pierre McCrea, PhD

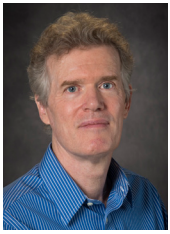
Graduate School of Biomedical Sciences Faculty Recognition Award

Diane Milewicz, MD, PhD

Genetic Aortic Disorders Association Canada ACTA2 Alliance Board of Directors Co-Chair 2019
American Heart Association Research Strategic Outcomes Subcommittee Member 2019-2021
Sarnoff Foundation's Scientific Committee Member 2019-2022
Sarnoff Fellowship Review Committee Member 2020
Councilor of the Association of American Physicians (AAP) 2020-2026
Organizer, Aortic Dissection Awareness Week –September 2020

Rachel Miller, PhD

Promoted to Associate Professor, effective September 1, 2020
Whitman Early Career Fellow, Marine Biological Laboratory, 2019
Organizer, Xenopus Resources and Emerging Technologies Meeting (October 2019)
Chair, International Day for Women and Girls in Science Symposium, McGovern Medical School (February 2020)



Dr. Pierre McCrea,
outgoing G&E Director

G&E Directors News

Pierre McCrea, PhD, ended his two-year term as G&E program director on August 31, 2020. His unwavering dedication to our students informed his every decision, as he helped shape the program these last two years. We thank him for his devotion to an outstanding scientific education for our trainees, and his understanding and thoughtful leadership for all of the students, faculty and staff. Student Hieu Van said this about him, *"If we reach*

out to Dr. McCrea with any questions or concerns, he would be happy to meet with us, listen to us, and give us his opinions. His straightforward, strategic, and helpful advice have helped me resolve concerns, and provided me with the strength to move forward, and faith that everything will be all right." On September 1, 2020, Jichao Chen, PhD, began his term as program director and Francesca Cole, PhD as program co-director. G&E students, faculty, and staff look forward to working with Chen and Cole in continuing to build the G&E community.

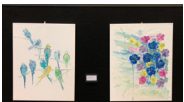
New Date for G&E Spring Career Symposium



Due to Covid-19, the 2020 G&E Spring Symposium was rescheduled to April 23, 2021. This exciting, all-day, interactive event will include a keynote address, panel discussions, breakout sessions and, just for G&E students, a special Myers Briggs assessment

session. The keynote speaker will be **William Sellers, MD**, of the Broad Institute and Harvard Medical School, and previously VP and Global Head of Oncology at Novartis. Symposium organizers are Melissa Frasca (co-chair), Jovanka Gencel Augusto (co-chair), Ahmed Emam and Celine Kong. Faculty advisors are Dr. Timothy McDonnell and Dr. Ambro van Hoof. Mark your calendars!

Fall Events & Opportunities



Paintings by Melinda Soeung

G&E and Neuroscience Virtual Arts Showcase Coming in December

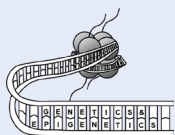
Our annual arts showcase will go virtual this year during the week of December 7th. The event celebrates the artistic talents in our two graduate program communities, and will feature a visual arts exhibition, musical performances, poetry reading and other virtual activities being planned. More information to come!



Genetics Society of America

Professional Society Student Memberships:

G&E reimburses G&E students for their membership fees for one scientific society of their choice annually.



G&E Retreat 2020

Our annual program retreat is **November 6-7, 2020**, and will be an all-virtual meeting with traditional retreat components: keynote address, trainee talks,

poster sessions, breakout sessions & entertainment. The keynote speaker will be **Daniel Jarosz, PhD**, of Stanford University. The organizing committee co-chaired by Amelie Albrecht and Jace Aloway, includes Jellisa Ewan, Rhiannon Morrissey, Mabel Perez-Oquendo, Jie Ye, Rebecca Deen, Elisabeth Lindheim, Dr. Ashish Kapoor, and Dr. Nidhi Sahni. Information: <https://gsbs.uth.edu/genetics-and-epigenetics/ge-retreat>.

G&E Students Use BioRender to Make Scientific Figures

In September 2020, G&E students will receive licenses for BioRender, a scientific figure-making application. Students are excited to use it for their presentations and publications.

New G&E Series on "Historical Perspectives in Science"

G&E students will launch a new seminar series next spring called "Historical Perspectives in Science" that will focus on important discoveries that transformed biology/medicine within approximately the past 100 years. The series is organized by Amelie Albrecht, who came up with the series concept, Melissa Frasca, Mabel Perez-Oquendo, and Hieu Van; Richard Behringer, PhD, serves as faculty advisor.

G&E Curated List of Online Resources

Early this summer, G&E posted a curated list of online scientific, health, wellness and learning resources to support our program community during the coronavirus pandemic. Check it out! <https://gsbs.uth.edu/genetics-and-epigenetics/scientific-online-learning-and-productivity-resources>.



G&E Students Lead GSBS Student Groups

G&E students hold many leadership positions in GSBS student groups.

For the 2020-2021 school year, they are:

GSBS Graduate Student Association

President: Malcolm Moses; **Vice President:** Rhiannon Morrissey

GSBS Association of Minority Biomedical Researchers (AMBR)

President: Sreeja Sridharan

GSBS First Generation Student Group

President: Safia Essien

GSBS International Student Association

Vice President: Jovanka Gencel Augusto

GSBS Association for Science Communications

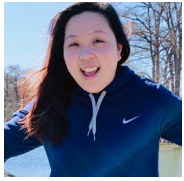
Treasurer: Ruth De Paula

New G&E Course: "Pragmatic Bioinformatics for Bench Scientists"

Bioinformatics is becoming essential in the genomic era. Witnessing both the power and the complexity of bioinformatics, bench scientists, despite providing most of the biological insights, often feel left out as simply data generators, and frustrated when collaborating with data analyzers. As a result, Dr. Jichao Chen designed the Pragmatic Bioinformatics for Bench Scientist course that went online in July 2020. This course is taught by bench scientists (Drs. Jichao Chen, George Eisenhoffer, Ed Ostrin, Kunal Rai, Sydney Wang) who have published on specific bioinformatics topics, and it aims to empower bench scientists with valid statistical and computational methods to be able to explore data and communicate with computational scientists. It is pragmatic because it covers as-needed theoretical background and teaches usable programming in the format of a dry-lab protocol that generates publication-quality figures. It consists of six modules covering principles, RNA, DNA, protein, images, and freeware. Each module takes four hours of class time, including one 30-minute background and three one-hour sessions with significant hands-on time. The one-credit course will be offered each summer for students of all levels.

Student reflections on living through Covid-19

Our lifestyles and work-styles have been tremendously altered since the pandemic started. As scientists, it could be depressing to work without labs and cheerful colleagues. However, working-from-home is also a great opportunity to learn new skills, write literature reviews, reflect on our experiment design, add building blocks to our projects or just relax. We asked G&E students to reflect on their experiences living through the Covid-19 pandemic. –the newsletter editors



Celine Kong, PhD Student

“COVID-19 definitely changed the plans I had for my graduate life and made everything seem so uncertain; the timing, the seriousness of the pandemic, the fear - everything felt so up in the air. On top of that, it also took some getting used to not being physically in lab and actively working on experiments to progress my graduate studies. But, in hindsight, I’ve actually gained more than I’ve lost - I actually had time to learn new skills during this period and read more papers and really practice having a balanced lifestyle. I genuinely think I’ve come out of it so much stronger as a person and have gained so much knowledge and experience. I’m someone who believes everything happens for a reason and though I may not know why COVID-19 had to happen, I can say that I have been tremendously blessed to have been safe during this period and have had the time to improve and better my life. My only hope now is that things will get better in the world and we can all try to return to our “normal” life, however that may look.”



Zian Liao, MS Student

“To cook or to order, that is the question. Exhausted by cooking during quarantine.”



Sanjana Srinivasan, PhD Student

“I decided to foster kittens during the pandemic since I am home all the time. It has been such a rewarding experience to watch them grow up and find their forever homes and it definitely adds a source of fun while working from home. Sometimes taking care of them is so much work, I forget there is a pandemic happening.”



Tanner Wright, PhD Student

“Three people in ~400 square feet would have driven some people crazy. But my little family has thrived being together in our tiny home during this pandemic. I’ve re-started making Texas-style kolaches, read a great biography, and taught my daughter the alphabet. Every day is exhaustingly full! I’ve been able to reconsider how I approach science and I feel like I have a much better handle on my field. Though I was looking forward to an exciting international conference this summer, my disappointments have been more than made up by reigniting some hobbies, finally starting to learn that second language, and really getting to “Daddy”. My wife has made quarantine a wonderful experience, and we have simply loved being together as a family. I know this time has been really hard for many, but after our really rough 2019, 2020, for us, has actually been great!” **Please enjoy a kolache recipe here:** <https://gsbs.uth.edu/genetics-and-epigenetics/newsletter>.



Ruth De Paula, MS Student

“These quarantine times made me feel creative again. When I was a child I used to paint, draw and assemble puzzles. When I started high school I gradually started to dig more and more into studying and working, which are good things, but should not be the only things in your life. Since March this year, I was “forced” to be creative with my time. Staying so long at home allowed me to be more creative in my work and also made me recover some of my childhood creativity - I painted and will start assembling a puzzle soon! I guess everything in life has a good and a bad side, and COVID is showing me some of that.”



Anna Miao, MS Student

“Four things other than science that keep me sane during quarantine: sketching, cocktail mixology, and two newly adopted baby hamsters. I guess everyone missed the lab so much while working from home. One day my roommate posted a video of my hamster running on a wheel, a friend saw the clip and asked “what kind of mouse model is this?”

Continued from Page 3: We'll miss you, Dr. Michelle Barton!



Dr. Barton with students at Faculty Insight Series in 2015

Barton also touched the personal lives of her trainees, and many hold cherished memories of her. Zeynep Coban Akdemir, PhD, another of her many graduate students and now an assistant professor at UTHealth, shared this. “I feel so fortunate that I had a chance to learn

so much from you, both professionally and personally. But most importantly, you have not only been an exemplary scientific role model but also a personal role model to me. I feel so lucky to have had your precious support and guidance all along the way. As an example, along with Sharon [Dent] and Aundrietta [Duncan], you traveled all the way to Turkey to attend our wedding and your presence made our wedding day more memorable and even more magical. Kadir and I will miss you a lot.” Barton has truly left a remarkable impact on both the professional and personal lives of her trainees.

Michael Blackburn, PhD, UTHealth executive vice president, chief academic officer and dean of the GSBS wrote this about his “partner in crime.” “As scientists, we understand the value of a productive collaboration. Having a trusting relationship with a colleague who brings variety and strength to a common goal makes answering difficult questions fun. For me, Shelley Barton has been the best collaborator anyone could ask for. Our partnership at the graduate school has been unique and rewarding, and I am proud to have been able to work closely with her. I never imagined it would be so great to work with anyone. Shelley is not only one of the smartest people I know, but one of the most caring. And of course, there is her amazing sense of humor. She has mentored me, put up with me, and taught me the value of true compassion. Few

will ever know just how much she has done for this graduate school and for MD Anderson, but I for one know that she has made all the difference in my career as a scientist and leader. I will miss her tremendously and wish her all the best in Oregon.”

As a cherished friend and colleague, Sharon Dent, PhD, professor and chair of MD Anderson’s Department of Epigenetics and Molecular Carcinogenesis, shared these memories. “It is always bittersweet when friends and colleagues move on to new positions, and it is especially so as we say farewell to Dean Barton. Shelley and I have known each other for at least 25 years. One of our earliest interactions was at a Chromatin and Transcription FASEB meeting in Colorado in 1995. We had both signed up for the same whitewater rafting excursion. As we were loading into the boat, I was a little hesitant, but Shelley said something like, “come on, Sharon, just get in”. I did, and we had a great time. Our rafting trip showed me Shelley’s sense of fun and her devotion to friends, even new ones. I was thrilled when she joined us at MD Anderson in 2000. I was lucky to share lab space with her in the BSRB, and we shared many conversations about chromatin, transcription, life, and mentoring in our adjoining offices. I am so thankful for her friendship, her service to MD Anderson, and her groundbreaking work as the first MD Anderson Co-Dean of GSBS. I will miss her dearly, but I am also excited for the new adventures that she and her husband Rick will enjoy in Portland.”

Barton’s journey here with the GSBS and G&E faculty and students may end, but her lasting impact on our scientific journeys continues. The long-lasting gifts that she has given us throughout the years will surely help us navigate through obstacles, push our limits, achieve both personal and professional growth, and pay her legacy forward. **We will all miss you wholeheartedly and wish you all the best in Oregon! Thank you very much for everything, Dr. Michelle Barton!**