Welcome to the fall edition of our UNC IMSD newsletter, *The Mosaic*!

The events of 2020 so far have placed a heavy emotional burden on many of our UNC IMSD family, but our students and leaders have gained additional momentum in addressing the racial inequalities brought upon and further illuminated during the pandemic. The members of our IMSD community have worked tirelessly researching COVID-19, securing resources for relatives afflicted with COVID-19, spearheading new initiatives to support our members, and developing programs that address unmet needs of our community.

With this latest issue of *“The Mosaic”*, we highlight the passion, leadership, and commitment to increasing and supporting diversity in the biomedical sciences. We celebrate years of hard work that have culminated in presentations, publications, and fellowships. Therefore, we hope you can join us in recognizing these feats despite the hardships 2020 has brought on. Lastly, please help us welcome our newest IMSD family members from the incoming PREP and BBSP cohorts!

Keep on keeping on,

Team IMSD Newsletter
PhinisheD: Spring/Summer 2020 Graduates!

Edhriz Siraliev-Perez, PhD
"Dynamics of allosteric activation of the PLC-γ isoforms"
March 27, 2020
PI: Dr. John Sondek

Nur Shahir, PhD
"IBD Differentially Affects Region Specific Composition and Aerotolerance Profiles of Mucosally-Adherent Bacteria"
March 31, 2020
PIs: Dr. Terry Furey and Dr. Shehzad Sheikh

Kezia Addo, PhD
"A translational approach to examine the effects of acetaminophen on the human placenta"
May 6, 2020
PI: Dr. Rebecca Fry

Raquel Martinez Chacin, PhD
"The chain elongating E2 UBE2S activates the RING E3 ligase APC/C for substrate priming"
July 2, 2020
PI: Dr. Nick Brown

Aspen Gutsgell, PhD
"Novel Strategies to Enhance LPL Activity In Vivo"
March 30, 2020
PI: Dr. Saskia Neher

Jared Baisden PhD
"Probing Excited Conformational States Involved in microRNA Biogenesis"
April 9, 2020
PI: Dr. Qi Zhang

Jennifer Michelle Potter-Birriel, PhD
"A region of Drosophila SLBP distinct from the histone pre-mRNA binding and processing domains is essential for deposition of histone mRNA in the oocyte"
June 3, 2020
PI: Dr. Bill Marzluff

Raquel Martinez Chacin, PhD
"The chain elongating E2 UBE2S activates the RING E3 ligase APC/C for substrate priming"
July 2, 2020
PI: Dr. Nick Brown

Stephan Kudlacek, PhD
"Computer-based design of dengue virus envelope protein subunit vaccines"
July 2, 2020
PI: Dr. Brian Kuhlman

IMSD Alumni Lunch
UNC alumna, Dr. Lonna Mollison, was the speaker for the IMSD alumni lunch. She received her undergraduate training from North Carolina Central University and her doctorate from UNC in the Curriculum of Genetics and Molecular Biology. Upon completion of her PhD, she decided to pursue her postdoctoral training in genomic medicine research in the lab of Dr. Jonathan Berg. Lonna has shifted her focus from working at the bench to engaging with African American communities. Her goal is to understand unique views toward genomics that can help shape the implementation of genomic medicine in diverse settings. At the IMSD lunch meeting, she offered insight on acknowledging public perception of genomics, and working with community leaders to develop partnerships.

Welcome Dr. Debra Ragland!
Please welcome Dr. Debra Ragland, the Assistant Director of Diversity Affairs, Director of the UNC Summer of Learning and Research (SOLAR) program, and Co-Director of IMSD! Dr. Ragland is originally from North Carolina and had completed her undergraduate studies at NC A&T State University. She holds a MS degree in Data Science from Lewis University and a PhD in Structural Bioinformatics from the University of Massachusetts Medical School. She completed her postdoctoral training at both UMass and UNC (co-advised by Dr. Ron Swanstrom), became a lecturer for the Department of Genetics and Biochemistry at Clemson University, before joining us here at UNC.
IMSD Highlights!

IMSD Scholars in Outreach and Professional Development

Christian Agosto Burgos (Falk Lab) and Lucas Apon-nte-Collazo (Graves Lab) traveled to Puerto Rico in 2019 to lead the "Bench to Bedside" workshop with University of Puerto Rico Cayey students, exposing them to potential careers in science (pictured below).

Christian received the Boka W. Hadzija Award for Distinguished University Service for his dedication to encouraging and promoting excellence among the next generation of scientists, commitment to increasing diversity, and great rapport with scientific peers, including faculty and clinicians. This award is presented annually to one graduate or professional student “who has been judged the most outstanding in character, scholarship and leadership”.

Lucas Aponte-Collazo (Graves Lab) and Natalie Hewitt-Valentin (Dohlman Lab) were recognized for their commitment to science outreach, and were presented with the Pharmacology Service and Outreach Award.

Juanita Limas (Cook Lab) and Blaide Woodburn (Swans-trom Lab) received the Graduate Student Scholar Awards for their contributions to the department, outreach, and scholarship.

Waylin Yu (Kash Lab) was awarded the Thomas Collum Butler Award that recognizes the outstanding work and merit of a MD/PhD or PhD student.

Career Talk: Being a Scientist in the Government

On July 30, Dr. Antonio Baines hosted the IMSD Career Awareness Panel titled, “FBI, EPA, DOEd, USDA: Navigating Today’s Government as a Scientist”. The panelists included Marquea Kina, PhD (USDA), Cle Jones, MSE (FBI), and Mark S. Hochberg, PE, PMP, FMP (US Department of Education). All the speakers offered their insights on how to find resources and apply to government positions, the expectations of the application process, the comparison between entry level positions and their current positions, and how to hone skills necessary for career advancement in government jobs.

Ernesto Leon (Savoldo Lab), Sofia Neira (Kash Lab), Jessica Jimenez (Zylka Lab), and Ana Cartaya (Bahn-son Lab) organized an interactive event for students of the Chatham Middle School STEM club, as part of UNC SACNAS outreach initiatives (pictured below).

Additionally, Ernesto participated as a panelist in a SACNAS sponsored webinar on creating an individual development plan to meet personal and professional objectives.
IMSD Scholars at Conferences

Cyril Anyetei-Anum and Alexis Stutzman (Dowen and McKay labs) presented on their research at virtual conferences this year. Cyril’s research on “Investigation into the Role of Histone H3 Lysine 4 in Developmental Gene Regulation” can be watched in youtu.be/ci85rO18LD8 during the 2020 ASBMB (Annual Meeting Twitter poster session). Alexis presented on “Interrogating the role of the histone mark H3K9me3 in D. melano-gaster Genome Organization and Gene Regulation” at the The Allied Genetics Conference (TAGC) 2020 Virtual Conference.

Carissa Harvest (Miao lab) presented on “Granuloma formation during Chromobacterium violaceum infection” at the UNC Immunology T32 Symposium, Lineberger Comprehensive Cancer Center at UNC.

Jean Marie Mwiza (Bergmeier lab) presented on “GPCR and ITAM signaling in platelets are critical for venous thrombogenesis in mice” at the IVB-MHI symposium. Jean Marie also presented at the UNC School of Medicine Grand rounds on “Investigating the role of platelets in the pathogenesis of venous thrombosis.”

Adelaide Tovar (Kelada lab) presented on “A GxE QTL on Chr. 15 underlies susceptibility to air pollution-induced lung injury in mice” at the Allied Genetics Conference in April.

Juanita Limas (Cook lab) was a panelist at the McNair Scholars Program at Westminster College, Salt Lake City, UT in July 2020. Juanita also participated in Skype-A-Scientist, speaking with Jeehyun Park’s 10-11-12th grade class about herself and her research in May 2020. She also spoke with Sabrina Lee’s 3rd grade class about her research in May 2020, explaining biosensors and cell cycle research in Spanish and showed videos of cells with biosensors in them.

Mastering the Art of Science!

Ana Cartaya (Bahnson Lab) is determined to increase the accessibility of science through the use of visual aids. She was selected as a BioRender graphical abstract expert’s choice finalist. Submissions were judged based on visual appeal, accuracy and clarity of the depicted science.

Selena Romero (Deshmukh Lab) showcased her microscopy skills in a captured image of mouse peripheral neurons grown in a three compartment microfluidic chamber titled, “Triple Connections”. This image demonstrates the intricate network of neurons. The microfluidic chamber allows researchers to “assess how neurons regulate axonal health and overall neuron survival”. This piece has garnered multiple awards including first place in the in 2018, for the UNC Research Week science art competition, and second place in the 2019 Chapel Hill Analytical and Nanofabrication Laboratory (CHANL) Scientific Art Competition. Most recently, Selena and her artwork were just featured in “The Scientist” eBook Seeing the Unseen: The Art of Microscopy.

Awards & Fellowships
*recently received as of September 2020*

NIH T32 Awards
Kaitlan Smith (Schisler lab)
Ana Berglind (Sheikh lab)
Marta Cruz Cisneros (Heise lab)
Alexis Stutzman (McKay lab)

NRSA Individual Predoctoral Fellowship (F31)
Eva Vittucci (McCullough lab)
Kevin Currin (Mohlke lab)
Waylin Yu (Kash lab)
Luis Quintanilla (Song lab)
Jean Marie Mwiza (Bergmeier lab)

NIH Predoctoral to Postdoctoral Transition Fellowship (F99/K00)
Rachel Battaglia (Snider lab)

NIH Diversity Supplement
Carmen Marable (Fry lab)

American Heart Association Predoctoral Fellowship
Jean Marie Mwiza (Bergmeier lab)

Graduate School Dissertation Completion Fellowship
Adelaide Tovar (Kelada lab)
Karel Alcedo (Snider Lab)

HHMI Gilliam Fellowship
Herman Mendez (Caron lab)
Sofia Neira (Kash lab)

Enoch Gordis Award at the Research Society on Alcoholism
Maria Luisa Torruella Suarez (McElligot lab)

¡Lánzate!/Take Off! Higher Education Travel Award Program
Juanita Limas (Cook lab)

Boka W. Hadzija Award for Distinguished University Service by a Graduate or Professional Student
Christian Agosto-Burgos (Falk lab)

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Welcome PREP11!

Please take some time to also welcome Meagan Colie, Cynthia Thomas, Zipporah Bush, Rubén García, Kwame Forbes, Lindsey Hernandez, Kate Giffin, Joshua García Colón, (pictured from left to right), and Priscila Santa Rosa (not pictured) to the IMSD family! They will be applying to graduate school this fall, while conducting research in the following labs:

Zipporah Bush – Mentor: Dr. Hyejung Won
Megan Colie – Mentor: Dr. Mohanish Deshmukh
Kwame Forbes – Mentor: Dr. Mike Love
Rubén García-Reyes – Mentor: Dr. Jose Rodriguez-Romaguera
Kaitlin Giffin – Mentor: Dr. Joyce Besheer
Joshua García Colón – Mentor: Dr. Peggy Cotter
Lindsey Hernandez – Mentor: Dr. Mauro Calebrese
Priscila Santa Rosa – Mentor: Dr. Bob Duronio
Cynthia Thomas – Mentor: Dr. Rita Tamayo

In addition to finding community within the PREP cohort, we hope you all can find support from the IMSD family and UNC at large!
Check Out What’s New!

Starting this year, the incoming IMSD cohort will be paired with a mentoring team composed of more senior IMSD students. The mentoring team will work together to provide the incoming students with resources and guidance based on their experiences throughout their first year. An additional goal is to expand this model to include throughout various stages of their graduate career. Thank you to all who worked to make this possible!

Several IMSD students recognized that there is a gap in networking and professional societies for black biomedical scientists outside of individual disciplines at the graduate level, which led them to form the Society for Black Biomedical Scientists (SBBS). The mission of SBBS is to represent the first of many national chapters to come. The inaugural executive board (Below, From L-R) Xavier Bonner (President), Brea Hampton (Vice President), LaKeya Hardy (Recording Secretary), Dre’Von Dobson (Parliamentarian), and Alexis Stutzman (Treasurer) will lead the events for the year alongside committee chairs Danielle Williams (Chair of Professional Development and Education Committee) and Taylor Dismuke (Chair of Social Committee). Check out their social media pages for more information to see how you can get involved and spread the word to friends and colleagues at other universities to support the expansion of this new organization!

The mission of the HHMI Gilliam fellowship is to support URM students to “assume leadership roles, including as college and university faculty”, and fostering “the development of a healthier, more inclusive academic scientific ecosystem.” Sofia Neira (Kash lab) and Hernán Méndez (Caron lab) are 2 of the 45 recipients of this prestigious fellowship for 2020!

Aligning with this mission, Juanita Limas and 18 other HHMI Gilliam fellows created the Transforming Academic Ecosystems (TAE) Consortium to “start a national dialogue regarding mental health and well-being focusing on URMs.” Juanita has since founded the Mental Health Awareness/Anti-Racism Task Force for the Pharmacology Department, which meets monthly, to address racism and toxicity in academia, and to develop a program on mental health/well-being for the department’s annual retreat.

Taylor has also been busy over the last year preparing to launch the Building Relationships to Diversify Graduate Education (BRDGE) Alliance. The goal of the BRDGE Alliance is to “bridge the gap between HBCU undergraduate students and the STEM community by creating mentor-mentee relationships that supports personal and professional development, provides a sense of belonging, and promotes STEM awareness.”

Reach out if you are interested in becoming a mentor!
Finding Balance

Written by: Taylor Dismuke, MS

1:35 pm: Just left another Zoom meeting focused on diversity in my department. I am optimistic about the recruitment of black and brown faculty with the support of the department and administration. Maybe change will happen sooner rather than later.

2:30 pm: Got an email from the department encouraging us to attend a faculty candidate seminar. Surprise! The candidate is a white male. *Takes a deep breath

It seems that I am riding an emotional teeter-totter with optimism on one side and frustration on the other. My thoughts betray me as I try to balance and give myself space for the hope that my department, school, and research community will become proactive in making the changes we say we want: not just statements but measurable action.

During these last few months, our collective and individual philosophies have been reassessed as we grapple with who we are and who we want to be in light of glaring racial inequities in our country. For far too long the research community has separated itself from the ugly realities that people face outside of the research bubble. But the time is now for all facets of this community to be re-engineered as we co-create something that is great for us all.

I am not sure when we will get the diverse representation of faculty that is equitable and just. But I am glad my voice is being heard. This is a movement and not just a moment. I have the time.

Written by: Mark Peifer, PhD

This summer the murders of George Floyd, Breonna Taylor, and Ahmaud Arbery reminded us all of the many impacts our nation’s history of systemic racism have on our nation, our state and our community. While it’s easy to blame those in power in the nation, it’s been more painful to take a look closer to home, recognizing that racist words are spoken in our own labs at UNC and acknowledging the constant drumbeat of macro- and microaggressions that make the lives of some of my colleagues much more challenging than my own. I grew up in Minneapolis and the murder of George Floyd brought me back to those days. Looking backward, I am now beginning to see the way white privilege and male sex opened doors for me, with working class parents without a college education, that were closed for others who grew up just 10 miles away in North Minneapolis. I could learn to pass and enter college and graduate school, while others were denied the basic education I was given. It’s up to me to act, locally and globally, to change the system. One essential is to learn more about our past and how its shaped our present. I’d highly recommend “The Warmth of Other Suns”, by Isabel Wilkerson, about the Great Migration bringing Black American’s north, and Taylor Branch’s trilogy of books chronicling the Civil Rights movement. If we cannot remember the past we’re condemned to repeat it.
Biochemistry & Biophysics

Bioinformatics & Computational Biology

Cell Biology & Physiology

Genetics & Molecular Biology


Chemical Biology and Medicinal Chemistry

Microbiology & Immunology

Genetics & Molecular Biology

Neuroscience


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Pharmacology


Pathology


Toxicology & Environmental Medicine


Stay connected to IMSD!

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