

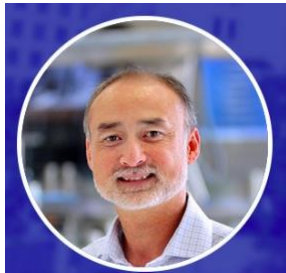


Quarterly Updates from IMSD and PREP
Baylor College of Medicine, Houston, Texas USA
August 2022

In This Issue

- Message from the Director
 - PREP Student Update
 - IMSD Student Update
 - Trainee Spotlight
 - Recent Awards and Publications
 - Interest Group Spotlight
 - On Another Note
 - Resources
-

Message from the Director



Welcome to Academic Year 2021 and the Inaugural Issue of the IMSD Newsletter. Our goal is to highlight the activities and recent accomplishments of our students in the BCM Community as well as to provide key information for success in graduate school. If you wish to provide a story or update in future issues, please email IMSD-program@bcm.edu.

We are also announcing a **contest to name the IMSD NEWSLETTER and LOGO design***. The winning name and logo design will be voted on by IMSD students and program faculty. The winner will receive a **\$25 Amazon gift certificate**. Contest details to follow soon by email.

*Subject to approval by BCM Graphic Communications.



About IMSD and PREP



The Initiative for Maximizing Student Development (IMSD) and the Post-baccalaureate Research Education Programs (PREP) are funded by the National Institute of General Medicine at the National Institutes of Health. The goal of these programs is to increase the number of underrepresented students (UR) in biomedical sciences. This includes racial and ethnic groups (Black or African American, Hispanic or Latino, American Indian or Alaskan Native, Native Hawaiian and other Pacific Islanders), individuals with disabilities, individuals from disadvantages backgrounds, and women in math and engineering fields. Details on NIH's statement on **Underrepresented Populations in the U.S. Biomedical, Clinical, Behavioral and Social Sciences Research Enterprise** can be found at this [link](#).

Director: [Fred Pereira, PhD](#)
Co-Director: [Stephanie Pangas, PhD](#)
Program Manager: [Titi Denloye, PhD](#)

[Administrative Assistant](#): Kerri Mejia, BA
[Finance Administrator](#): Tonya Routt, BA

FAREWELL TO PREP COHORT 18 (2020-21)

BCM PREP enrolls 7 scholars annually for a 12-month program. The PREP scholars spend a year developing their scientific acumen through mentored research and classes in research skills and foundations of cell biology to become exceptional candidates for graduate school. This year, despite the pandemic, they have all presented a poster, attended research conferences, applied to the NSF-GRFP, and applied to graduate schools. To culminate their hard work, they each presented a 10-minute research talk on **May 18th, 2021**.

To highlight a few of their achievements, **Katherine Perks** and **Estephania Balbuena** won awards at the 2020 ABCRMS conference in the Neuroscience E-poster category. **Peter Cruz Parilla** and **Katherine Perks** received Honorable Mention status on their NSF-GRFP grant application.

All the PREP scholars will be attending top-tier graduate programs this fall:

Kathrine Perks	University of Washington.
Peter Cruz Parilla	University of Wisconsin-Madison
Brianna Lopez	Johns Hopkins University
Estephania Balbuena	University of Rochester
Gabriela Gryc	University of Iowa
<u>Harim Delgado-Seo</u>	Baylor College of Medicine
<u>Katie Brandel-Ankrapp</u>	Baylor College of Medicine

We wish them all the very best in their next adventure!



Prep Scholars 2020-2021
(left to right: Katie, Estephania, Harim, Gabriela, Brianna,
Peter, Katherine)



HELLO TO BCM COHORT 19 (2021-22)



Olumide Ayeni

Undergraduate Institution: University of Illinois at Urbana-Champaign

Research Interest: Stem cell research, Biochemistry

PI: Katherine King, MD, PhD Bench Mentor: Bailee Kain

About Me: Houston is honestly the city to be for research in general and I'm excited to be part of a vast network of mentors at such an institution like Baylor.



Benjamin Gephart

Undergraduate Institution: Nebraska Wesleyan University

Research Interest: Cancer immunotherapy, molecular biology, immunology

PI: William Decker, PhD Bench Mentor: Giselle De La Torredo Pinedo

About Me: I am originally from Henderson, NV. My hobbies include martial arts, lifting weights, and listening to podcasts. My favorite type of food is Mexican and Chinese.



Tia Gordon

Undergraduate Institution: Kennesaw State University; Biology, 2021

Research Interest: Genetics, Microbiology, Immunology

PI: Rachel Schiff, PhD Bench Mentor: Sreyashree Bose, PhD

About Me: I am passionate about genetics and translational research. In my leisure time I enjoy running, biking, trying new food, and improving my Spanish as a second language.



Anthony Grichuk

Undergraduate Institution: University of Houston Clear Lake

Research Interest: Telomere, Oncogene, Aging, and Burn Trauma Research

PI: Alison Bertuch, MD, PhD Bench Mentor: Danna Morris

About Me: I have known research is something I wanted to do since a very young age! I was motivated by both a family history of cancer as well as an interest in prolonging human life expectancy for applications such a space travel. I am proud to say I can solve any type of Rubiks cube, and I accomplished this on my own!



Karina Moreno

Undergraduate Institution: St. Edward's University; BS Biology and BA Spanish, 2021

Research Interest: Cellular and Molecular Biology, Neuroscience

PI: Ganesh Rao, MD Bench Mentor: Anantha Marisetti, PhD

About Me: I am a first-generation, Mexican American. At St. Edward's, I was a Ronald E. McNair Scholar, President and Captain on the Women's Club Soccer team, an Ambassador for the Club Sports Program, and I conducted research at both St. Edward's and The University of Texas at Austin. In my free time, I enjoy running, working out, and trying new foods!



Nathaniel Smith

Undergraduate Institution: Arizona State University; BS. Psychology, BS. Neuroscience (2021)

Research Interest: Dementia/Alzheimer's

PI: Josh Schulman, MD, PhD Bench Mentor: David Li-Kroger, PhD

About Me: I'm a nontraditional student who likes nature and art but gravitates toward science because it offers a greater sense of purpose for me. My fun fact is that I wrote and directed a few short films, it was pretty flattering that other people wanted to pay for my production costs because they liked the script.



Karen Zuniga

Undergraduate Institution: University of Houston-Victoria; BS. Biology 2020

Research Interest: Cancer research (Breast, Ovarian, Pancreatic, Cervical)

PI: Lisa Bouchier-Hayes, PhD Bench Mentor: Alexandra Brown

About Me: I enjoy exploring broad categories of biomedical research because science is an abundance of puzzles – and I like puzzles! In my free time, I love to read, paint, and do photography.

WELCOME AY2021 IMSD MATRICULANTS

Cancer & Cell Biology (CCB)

Anaya, Elizabeth
Mendoza Mendoza, Erika
Rivas, Bryan

Chemical, Physical & Structural Biology (CPSB)

Bullock, Zaniqua
Ewing, Alexander
Monroy, Erika

Development, Disease Models & Therapeutics (DDMT)

Jackson, Devine
Perez, Ross

Genetics & Genomics (GG)

Aceves, Natalie
Garcia, Brandon
Laserna, English
Polo Prieto, Rafael

Immunology Microbiology (IM)

Chirman, Dylan
Jones, Brittany
Neves, Larissa

Neuroscience (NB)

Brandel-Ankrapp, Katie
Danstrom, Isabel
Delgado-Seo, Harim
Denghausen, Elise
Kirunda, Andre
Quazi, Noushin

Quantitative & Computational Biosciences (QCB)

McCown, Michaela
Ramirez, Juan





IMSD Graduates Class of 2021

Congratulations! We are pleased to celebrate trainee graduations in 2021:

Ian Copeland, Ph.D. is currently a consultant at BCM.

Graduate Program: Genetics

Mentor: Neil Hanchard, Ph.D.

Thesis: Mendelian Analysis of Pediatric Hypertension

Darius Devlin, Ph.D. is currently an ORISE postdoctoral fellow at the US Food and Drug Administration.

Graduate Program: Translational Biology & Molecular Medicine

Mentor: Martin Matzuk, Ph.D.

Thesis: Characterizing the Roles of New Proteins Required for Male Fertility and Targeting Sperm Acrosome Proteins for Contraception

Grady Gastelum, Ph.D. is currently a biomedical scientist in Kansas.

Graduate Program: Translational Biology & Molecular Medicine

Mentor: Yi Li, Ph.D.

Thesis: Mechanistic Role of Phase I Metabolic Enzymes in Polycyclic Aromatic Hydrocarbon Mediated Lung Tumorigenesis

Sabrina Green, Ph.D. is currently the Director of Research, BCM TAILOR Labs.

Graduate Program: Immunology & Microbiology

Mentor: Anthony Maresso, PhD

Thesis: Factors Required for Niche-Specific Phage Therapy Treatment of Invasive E.coli infection.

Jarrod Martinez, Ph.D. is currently a clinical research coordinator at Texas Tech University Health Sciences Center

Graduate Program: Molecular & Cellular Biology

Mentor: Jianming Xu, Ph.D.

Thesis: Identification of the Global Genetic Alterations Associated with the TP53 and PTEN Null Mutations and the PIK3CA and AKT1 Activation Mutations in Human and Mouse Breast Cancers

Jonathan Mercado, Ph.D. is currently a biotechnology consultant at IsoPlexis.

Graduate Program: Molecular & Cellular Biology

Mentor: Francis Tsai, PhD

Thesis: Investigations on the Leishmania Hsp100 N domain

Marissa Minor, Ph.D. is currently a postdoctoral fellow at BCM.

Graduate Program: Molecular Virology & Microbiology

Mentor: Betty Slagle, Ph.D.

Thesis: Hepatitis B Virus HBX Protein Mediates the Degradation of Host Restriction Factors Through the Cullin 4 DDB1 E3 Ligase Complex

Oscar Murillo, Ph.D. is currently a staff scientist at Fred Hutchinson Cancer Research Center.

Graduate Program: Genetics

Mentor: Alex Milosavljevic, Ph.D.

Thesis: Exosome Mediated Pre-Metastatic Microenvironments

Alejandra Ontiveros, Ph.D. is currently a postdoctoral fellow at University of California San Francisco

Graduate Program: Developmental Biology

Mentor: Richard Behringer, Ph.D.

Thesis: Transcriptional Networks of Mammalian Female Reproductive Organ Formation

Tiffany Rolle, Ph.D. is currently a postdoctoral fellow at the National Human Genome Research Institute

Graduate Program: Genetics

Mentor: Mary Dickinson, Ph.D.

Thesis: Characterization of Glycogen Storage Disease XV Mouse Model

Larry Scott Ph.D. is currently a product development engineer at PolyVascular

Graduate Program: Molecular Physiology & Biophysics

Mentor: Na Li, Ph.D.

Thesis: Investigating the Role of the NLRP3 Inflammasome in the Progression of Atrial Fibrillation

Doris Taylor, Ph.D. is currently a postdoctoral fellow at California Institute of Technology.

Graduate Program: Pharmacology and Chemical Biology

Mentors: Timothy Palzkill, PhD and Martin Matzuk, PhD

Thesis: Blocking Antibiotic Resistance via Discovery of β -Lactamase Inhibitors

TRAINEE SPOTLIGHT

Robert Fullem

PI: Aleksandar Milosavljevic, PhD

Program: Quantitative & Computational Biosciences

Fun fact: In my free time I love to play chess. Moving to Texas was a big change for me! I'd never lived more than a couple hours from where I grew up in New Jersey.

Research: I am studying the roles of extracellular RNA and RNA Binding Proteins (RBPs) in Alzheimer's disease.

Innovative technology used: CLIP-Seq is an interesting new RNA assay that can determine which RNA species a protein interacts with on a genome-wide scale.



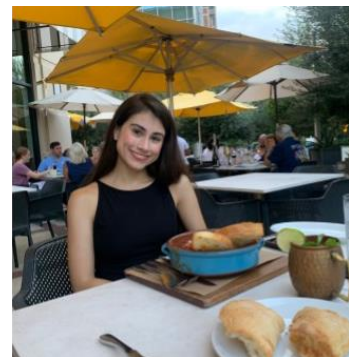
Kelli Restivo

PI: Andreas Tolias, PhD

Program: Neuroscience

Fun fact: I was a concert pianist for 12 years.

Research: I use electrophysiological recordings and machine learning models to uncover the functions of neurons in the visual cortex and advance artificial intelligence. Innovative technology used: I am using a novel computational technique to create images that will make visual neurons fire at their maximum rate.



RECENT AWARDS AND PUBLICATIONS

We would like to highlight your achievements, please fill out the feature form

AWARDS and FELLOWSHIPS



Lehman Award Commencement Speaker

Sabrina Green, 2021

Howard Hughes Medical Institute Gilliam Predoctoral Fellowship:

Jacob Ortega, 2020

Gabriella Perez, 2020

National Institutes of Health Ruth L. Kirschstein National Service Research Award Predoctoral Fellowship (F31):

Kali Deans-Fielder, 2021

Andrea Ortiz, 2021

Matthew Penna, 2021

Navish Bosquez, 2020

National Science Foundation Graduate Research Fellowship Program:

Alyssa Paparella 2020

American Society of Hematology Minority Graduate Student Abstract Achievement Award:

Marcus Florez 2020

PUBLICATIONS HIGHLIGHTS (select 2020-2021 articles)

Christian Valladolid Brown, Secretion of von Willebrand Factor and Suppression of ADAMTS-13 Activity by Markedly High Concentration of Ferritin. Clin. Aopl. Thromb Hemost. 2021 PMID: 33539188

Darius Devlin, Knockout of mouse receptor accessory protein 6 leads to sperm function and morphology defects. Biol Reprod. 2020 PMID: [32101290](#)

Jessica Felix, Ube2i deletion in adipocytes causes lipoatrophy in mice. Molecular Metabolism. 2021 PMID: [33771728](#)

Jessica Felix, Acetyl-CoA and Metabolite Fluxes Regulate White Adipose Tissue Expansion. Trends in Endocrinology and Metabolism. 2021 PMID: [33712368](#)

Grady Gastelum, Molecular mechanisms of pulmonary carcinogenesis by polycyclic aromatic hydrocarbons (PAHs): Implications for human lung cancer. Semin Cancer Biol. 2021, PMID: [34242741](#)

Janet Bruno-Gaston, Prevalence of Polycystic Ovary Syndrome in Patients with McCune Albright Syndrome. 2021 PMID: [34118374](#)

Sabrina Green, Targeting of Mammalian Glycans Enhances Phage Predation in the Gastrointestinal Tract. mBio 2021 PMID: [33563833](#)

Leah Kafer, Calcium-Regulated Protein CarP Responds to Multiple Host Signals and Mediates Regulation of Pseudomonas aeruginosa Virulence by Calcium. Applied and Environmental Microbiology. 2021 PMID: [33674436](#)

Alisha Kardian, ZFTA-RELA Dictates Oncogenic Transcriptional Programs to Drive Aggressive Supratentorial Ependymoma. Cancer Discovery. 2021 PMID: [33741710](#)

Andrew Lopez, Dynamic Imaging of Mouse Embryos and Cardiac Development in Static Culture. Methods Mol. Biol. 2021 PMID: [32754815](#)

Marissa Minor, Hepatitis B Virus HBx Protein Mediates the Degradation of Host Restriction Factors through the Cullin 4 DDB1 E3 Ubiquitin Ligase Complex. Cells 2020 PMID: [32235678](#)

Oscar Murillo, Dissecting the contribution of host genetics and the microbiome in complex behaviors. Cell 2021 PMID: [33705688](#)

Larry Scott, Jr., From Neutrophil Calcium Sensor to Myocardial Remodeling-A Double-Edged Pathway Guided by the Inflammasome. Can J. Cardiol. 2020 PMID: [32173053](#)

Doris Taylor, Identifying Oxacillinase-48 Carbapenemase Inhibitors Using DNA-Encoded Chemical Libraries. ACS Infectious Disease. 2020 PMID: [32182432](#)

IMSD INTEREST GROUP SPOTLIGHT: BCM PRIDE



BCM Pride is a college-wide organization representing the LGBTQ+ communities within the School of Medicine, the Graduate School of Biomedical Sciences, and the School of Health Professions. Originally Baylor College of Medicine had separate LGBTQ+ organizations for the graduate school of biomedical sciences (Spectrum) and the medical school (BCM Pride) that had events tailored to either a scientific or healthcare community. Over time, events held by both groups were attended by a variety of members from the college irrespective of their school. As a result, the leadership of Spectrum and BCM Pride thought that our resources would be better utilized if a college-wide organization was formed. In January 2021, we applied to form this organization and in June 2021 the new BCM Pride was officially designated here at Baylor College of Medicine.

BCM Pride is a student-interest group to represent the diversity and pride of the LGBTQ+ communities at Baylor College of Medicine. Through social events with other LGBTQ+ organizations at the Texas Medical Center and community engagement with the Montrose Center, Hatch Youth (LGBTQ+ Youth Program) and Pride Houston, we strive to promote positive representation in the STEM and healthcare fields. We've worked with the office of institutional diversity on BCM's new OutList that will create a directory of LGBTQ+ students, staff, faculty, residents, and postdocs to promote engagement, networking, and awareness of the community here at Baylor. In the past BCM Pride has co-sponsored the lecture series "Compassionate Conversations" highlighting the unique healthcare needs of the LGBTQ+ community to training medical students.

To kick off our new organization and highlight pride month we held a social mixer at Brass Tap restaurant in midtown at the end of June attended by over 75 members of the Baylor community. We will be having a welcome event for new students as well as a general club meeting on campus towards the end of August. When the official Houston Pride parade is rescheduled for this fall.

If you would like further information or have questions, contact
Christopher Grochowski (Graduate School): grochows@bcm.edu
Isabel Draper (Medical School): isabel.draper@bcm.edu
Cort Wernz (Medical School):



ON ANOTHER NOTE

In this section, we will highlight facts and figures about graduate education, science life, and diversity efforts of the GSBS and BCM



Higher Education's GRExit

The Graduate Records Examination or "GRE" was instituted in 1936 for admission to Master's and Doctoral Programs within the US and Canada, and first implemented at Ivy League Schools: Harvard, Yale, Columbia, and Princeton. Like other standardized test, its aim was to measure a student's general academic knowledge, including verbal and quantitative skills, and later, abstract thinking. While it was overhauled in 2011, the ability of the GRE to predict success in graduate school has been increasingly questioned with little agreement among educators about its value and continued usage¹. However, it has long been known that standardized tests are subject to cultural and underlying biases that may influence test score and thus indirectly limit access to higher education programs.

Prior to 2020, graduate school admission at BCM was based on holistic review of multiple criteria, including GPA, GRE scores, personal and research statements, and letters of recommendations. **To obtain a more equitable approach, the GRE requirement was dropped in 2020**, similar to approximately 50% of other US life science PhD programs¹. What will be the result of this "GRExit"? It's too early to tell, but Academic Year 2020 saw a large jump in GSBS applications from underrepresented (UR) individuals (246 in 2020 versus 165 in 2019), following a five-year trend of increased UR applications in the graduate school. Not only are applications up for UR groups, but so were program offers and matriculants to the graduate programs. It is hoped that this change in admissions requirements along with other initiatives, such as required Graduate Faculty training in Implicit Bias and Holistic Admissions, will increasingly diversify the student body and help to make scientific research a community of all.

¹Langin, K (2019) A wave of graduate programs drop the GRE application requirement. Science doi:10.1126/science.caredit.aay2093

RESOURCES AT BCM

Click on the links below for the BCM websites:

[Graduate School of Biomedical Sciences \(GSBS\)](#)

[Student Organizations \(GSBS\)](#)

[Career Development Center](#)

[Student Wellness Services](#)

[Integrity Hotline](#)

[Student Support Services](#)



Baylor
College of
Medicine®

Contact Us

We welcome your comments and suggestions for future publications

Initiative for Maximizing Student Development

Baylor College of Medicine

Houston, TX 77030 USA

EMAIL IMSD-PROGRAM@bcm.edu

Visit us on the web at this [link](#)
