



*Season's Greetings*

Wishing You A Joyous Holiday Season

Genomics Summer Research for  
Minorities (GSRM)



**HEALTH**  
UNIVERSITY OF UTAH

# 2020 Newsletter

## GENOMICS SUMMER RESEARCH for MINORITIES (GSRM)

GSRM provides a ten-week summer research program for undergraduate students interested in biosciences or bioinformatics with a focus on genomics research, including ethical, legal and social implications (ELSI) of genomics research. Our mission is to train a cadre of scholars through mentoring, research experience and professional development. Our long-term goal is to successfully prepare them to enter graduate school or biomedical careers and to become leaders in these fields.

### TO THE COMMUNITY:

On a local, national, and global scale the COVID-19 pandemic has tested the strength and resilience of all of us. In spite of the challenges that our Genomics Summer Research for Minorities (GSRM) Program experienced in 2020, we were able to adapt with flexibility and innovation. We are grateful to the GSRM community of trainees, mentors, co-mentors, speakers and alumni for their relentless focus. We greatly appreciate the extra hard work from our students on advancing their professional and academic goals amid uncertain times.

Thank you for making this year's program a one-of-a-kind experience and one that has strengthened the program and the community.

### INNOVATING IN TIMES OF CRISIS:

#### HIGHLIGHTS:

The GSRM Program was one out of only two undergraduate summer programs at the University of Utah that provided a full virtual research program in 2020.

To hear our stories of resiliency and to ask for your support, please visit the link below or scan the QR code.

COVID-19 crisis has shined a harsh bright light on inequities in health care and society. We are particularly concerned that the COVID crisis might negatively impact STEM education and opportunities offered to historically-excluded and minoritized groups. Following the outbreak, many undergraduate students interested in STEM found their internships and job opportunities cancelled or severely disrupted, broadening gaps in STEM education!

The GSRM program explored innovative ways to maintain continuity of services by successfully pivoting from in-person summer experiences to a fully virtual research internship. We were able to provide a GSRM summer experience to three local University of Utah students who had been accepted to enter the 2020 program. To support out-of-state accepted students and alumni, we provided professional and career development virtual workshops throughout the summer and the rest of the year. In addition, we have discovered new approaches and both local and national collaborations that will remain important beyond the pandemic.

**As we start planning our 2021 program, we are confident in our ability to deliver a high-quality research and professional internship experience either in-person or virtually.**



## GSRM: TWO YEARS PROVIDING A PATHWAY TO INCREASE DIVERSITY IN SCIENCE RESEARCH

"In both research and clinical settings, the global genomics workforce -as with the general biomedical research workforce- falls considerably short of reflecting the diversity of the world's population, which limits the opportunity of those systematically excluded to bring their unique ideas to scientific and clinical research" Green, E.D., Gunter, C., Biesecker, L.G. et al. Strategic vision for improving human health at The Forefront of Genomics. Nature 586, 683–692 (2020).

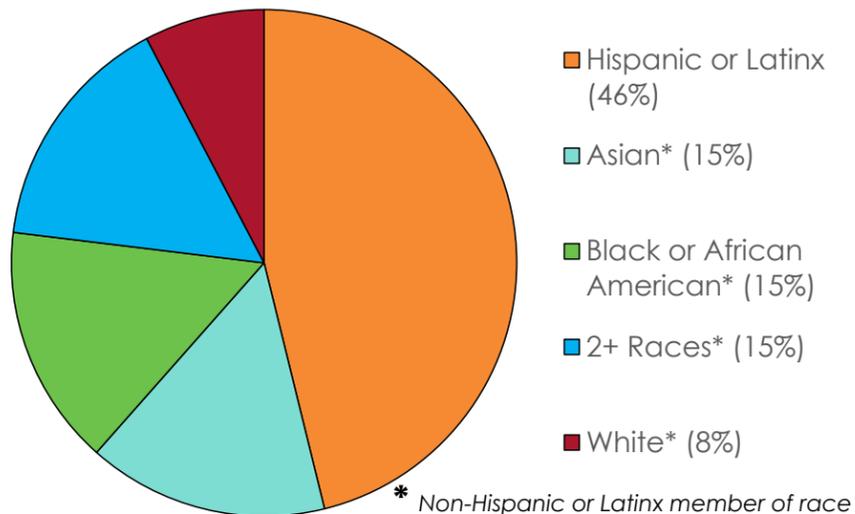
To effectively recruit historically excluded and disadvantaged students into genomics and biomedical careers, the GSRM ten-week internship provides access to quality research and education experiences, both of which provide professional development, mentorship, and addresses community building for the next generation of genomics practitioners.

## GSRM INTERNSHIP BENEFITS

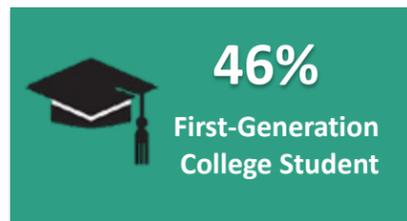
- Interns are paired with world class research faculty & receive tailored mentorship
- Free on-campus housing (not possible in 2020 due to closed on-campus accommodations)
- Travel to and from SLC for non-local students
- \$5500 stipend
- Attendance and opportunity to present research results at a national conference (Fall 2020 and Spring 2021)
- Inclusive experience with focus on diversity and equity training
- Weekly genomics seminars, professional workshops and an intensive clinical genetics course

## DEMOGRAPHIC DISTRIBUTION - ACCEPTED STUDENTS

Cumulative 2019 and 2020 students

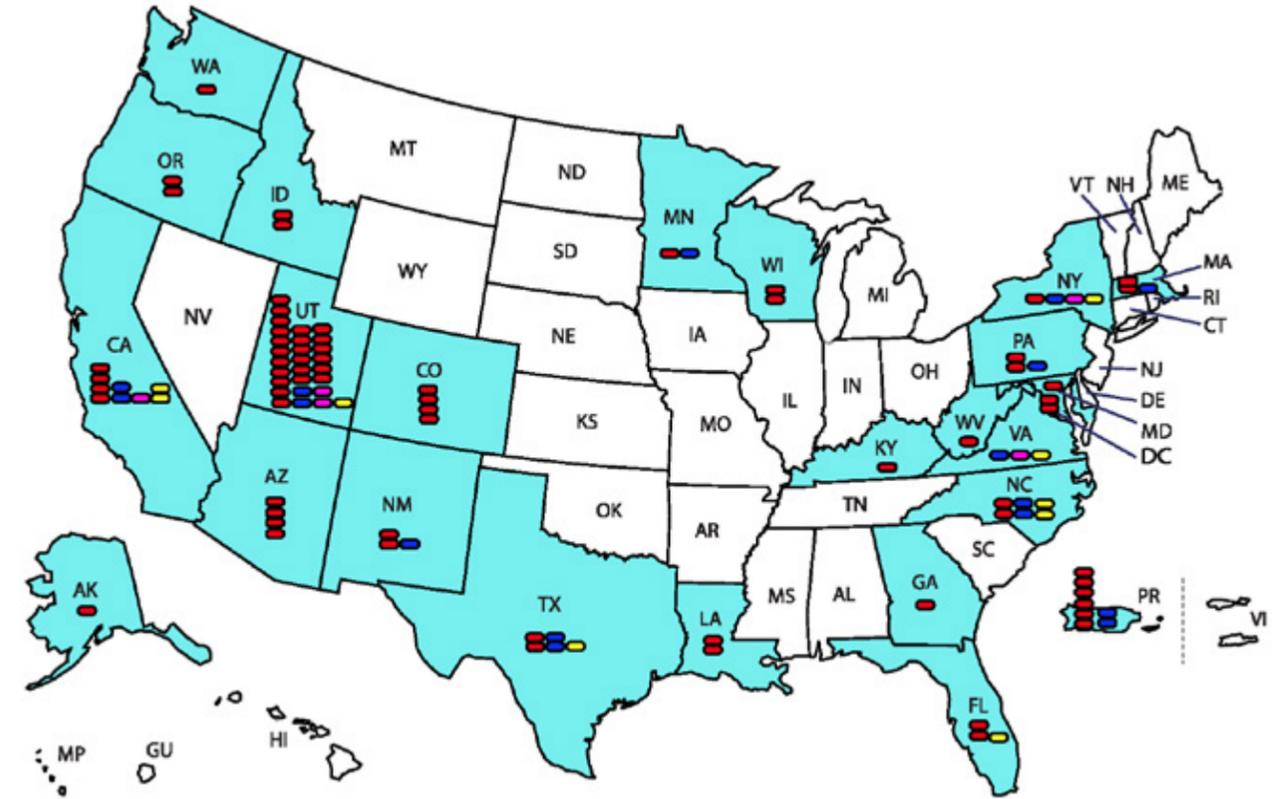


Overview of race and ethnicity



## GSRM NATIONAL OUTREACH & RECRUITMENT

Strong collaborations with various local and out-of-state universities, colleges, organizations and community leaders have helped us to promote the GSRM program. Indicative of our success, we had received 101 applications in total, from students attending 46 different universities and colleges located across 25 states and U.S territories including Alaska and Puerto Rico.



**MAP:** Turquoise color highlights the state or territory from which applications were received. Each coin-shaped bar shows the numbers of applications per state. Coin color identifies a particular university within the state or territory.

**Fact:** The largest number of applications submitted to the GSRM were from the state of Utah (28 out of 101), most students attend the University of Utah.



### GSRM Alumna, Jazmine Abril, joins the MD/PhD program at the University of Utah!

Jazmine graduated from the University of New Mexico in May 2020 with a major in Population Health. In the summer of 2019, Jazmine joined the GSRM program to do research in the group of Dr. Angela Fagerlin, at the Department of Pediatrics, focusing on Behaviors During an Outbreak: demographic and psychological associations with Zika preventive behavioral intentions. We are thrilled Jazmine came back to University of Utah and we wish her a great and fulfilling time with us.

## MEET THE EXTRAORDINARY GSRM 2020 CLASS:



**Alexandra Acuna**  
GSRM Returning Fellow

Alex is a senior undergraduate student at the University of Utah majoring in Biology with a Cell and Molecular Emphasis.

**Summer Project:** Nfatc1 as a Novel Atrial Fibrillation Susceptibility Gene.

**Mentor:** Dr. Martin Tristani-Firouzi

**Co-mentor:** Dr. Natalia Torres  
Cardio Vascular Research Training Institute (CVRTI)



To access a short video featuring Alex's research, scan the QR code or visit the link.

"I feel that my summer as a returning fellow with the GSRM program was reasonably productive. The NHGRI-DAP and KGI intensive course helped me deeply engage with the genomics field as did the URES and DEI talks with how to be a better, more inclusive, researcher"



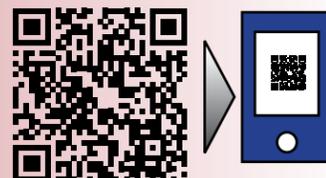
**Debora Brito de Andrade**  
GSRM First-Year Fellow

Debora is a senior undergraduate student at the University of Utah majoring in Health, Society & Policy, Spanish.

**Summer Project:** Genetic Labeling of Stress-Regulating Cells in the Zebrafish Hypothalamus.

**Mentor:** Dr. Richard Dorsky

**Co-mentor:** Priscilla Figueroa  
Neurobiology and Anatomy Department



To access a short video featuring Debora's research, scan the QR code or visit the link.

"I am so grateful for the opportunities I have had through this internship. The COVID-19 pandemic presented various challenges, but all at the program were so resilient and supportive during these trying times"



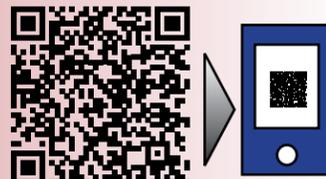
**Celine Slam**  
GSRM Returning Fellow &  
Diversity Supplement Grant Recipient

Celine is a senior undergraduate student at the University of Utah majoring in Chemistry.

**Summer Project:** A Divergent Heme Oxygenase Regulates Organelle Biogenesis in the Malaria Parasite.

**Mentor:** Dr. Paul Sigala

**Co-mentor:** Amanda Mixon  
Biochemistry Department



To access all the posters including Celine's, scan the QR code or visit the link.

"I was very happy to see how much everyone and myself grew throughout the summer, despite the challenges of this internship being online, through our research presentation talks and thankful for this experience to be part of GSRM"

## 2020 OUTCOMES & ACADEMIC FACTS:

- **100%** Program Completion Rate
- **5 out of 13 students graduated from college**
  - 2 students accepted into MD/PhD and MD programs. 1 student has a pending admission
  - 1 student accepted into the Postbaccalaureate Intramural Research Training at the NIH Academy Enrichment Program
  - 1 student is actively looking for a job in a STEM lab in the LA area in California (any leads?)

- **8 GSRM students who have not yet graduated, are still involved in research projects.** The majority plan to apply to graduate school.

### Program Research and Academic Facts

- 16 local invited speakers: lectures in genomics, bioscience, professional development, ethics, inclusion and diversity
- GSRM Organized 3 virtual workshops and 1 symposium:

- How to present and make a scientific poster
- Writing winning scientific abstracts
- How to use R Program and intro to coding
- Graduate and Professional School Virtual Mini-Expo (multiple speakers)

- **Outside the box collaborations:**
  - NHGRI funded summer programs around the country teamed up to provide basic learning opportunities in genomics and to promote networking among the students and programs
  - To expose our students and alumni to opportunities in clinical genetics and genomics, we collaborated with the Keck Graduate Institute (KGI) who offered an intensive 5-day course during the summer.



Alex Acuna meeting speaker Dr. Angie Serrano



### Students' Participation in National Conferences

- 11 students attended and presented posters at the 2020 NHGRI Training and Career Development Virtual Annual Meeting, March 31, 2020
- 3 students attended and presented their summer research at the Society for the Advancement of Chicanos Latinos and Native Americans in Science (SACNAS) Virtual Conference. One student attended as an ambassador. October 19-24, 2020



Trainees Alex Acuna and Debora Brito. Photo credit: Marilyn Jones

## Academic Recognition

- **James Banks**, 2019 alumnus, is a co-author on a publication related to his GSRM research (Claudio Villanueva Lab): "Mitochondrial pyruvate carrier is required for optimal brown fat thermogenesis". *eLife* 2020;9:e52558
- **Alexandra Acuna**, 2019 and 2020 trainee (Martin Tristani-Firouzi Lab), was an invited oral speaker at the 2020 NHGRI Training and Career Development Virtual Annual Meeting, as the only undergraduate presenter at the meeting.
- **Full registration scholarships** awarded from SACNAS to all three 2020 GSRM trainees.



- **Obadiah Kirk**, 2019 alumnus, conducted an Honors Capstone Experience/ Thesis project at Western Kentucky University from his work at the Stavros G. Drakos Lab: "The role of mitochondrial pyruvate carrier 1 (MPC1) in heart failure and its implication for cardiac recovery".

## Faculty and Staff Awards



- **H. Joseph Yost**, GSRM PI, is the 2020 recipient of the Gary C. Schoenwolf Mentorship Award by the University of Utah Department of Pediatrics. This award recognizes sustained commitment to mentoring and success of trainees.



- **Gloria Slattum**, GSRM Training Manager, received the 2020-2021 Inclusive Excellence Award by the University of Utah, Office of Health Equity, Diversity, and Inclusion. The award honors and recognizes the commitment to reducing health disparities and putting equity and inclusion at the center of the recipient's work.

## ACKNOWLEDGMENTS

We are thankful to the GSRM community including our trainees, mentors, co-mentors, speakers, advocates, selection committee members, and friends. Many thanks for the continuous support of our mission.

**We appreciate you.**



## GSRM Speakers 2020



- H. Joseph Yost: Program Welcoming and Expectations
- Chelsea Herdman: Intro to LabArchives
- Bradley L. Demarest: R Workshop & Intro to Coding
- Angie Serrano: How to Make a Scientific Poster - Workshop
- Natalia Torres: How to Write Winning Abstracts - Workshop & How to Crack Imposter Syndrome
- Gloria Slattum: Intro to Genomics & Equity in Genomics Research
- Meligha Garfield: Intro to The Black Cultural Center at the University of Utah
- Cindy Barba: A personal Journey, Intro to SACNAS Chapter at the University of Utah
- David Derezotes: Dealing with Microaggressions - Workshop
- Maija Holsti: Professionalism & Honing your Interviewing Skills
- David Kieda: Applying to Graduate School in the Era of COVID-19
- Jeanette Ducut-Sigala: Getting Into Graduate School in Bioscience Programs
- Janet Bassett: How to Ace your MD-PhD Application? - Interactive panel with Michael S. Kay, Jason Kunasaki and Jazmine Abril
- Sushma Patel: Navigating Career Pathways in Pharmacy from Managed Care to Pharmaceutical Industry

## NHGRI-Diversity Action Plan Programs: 2020 Genomics Seminars

- Bruce Korf (University of Alabama): Genomics of Rare Disorders & Publishing a Scientific Paper
- Gail Geller (Johns Hopkins): Genomics and Ethics
- Mike Snyder (Stanford): Big Data and Health
- Richard Gibbs (Baylor College of Medicine): Integrating Genetic Research and Clinical Care
- **Aaron Quinlan (University of Utah): The Critical Role of Computers in Genomics**
- Ting Wang (Washington University): Transposable Elements
- Tychelle Turner (Washington University): De Novo Mutations in the Human Genome
- Timothy Thorton (University of Washington): Statistical Genetics

## GSRM Collaborators:

- Office of Undergraduate Research (OUR) University of Utah
- MD/PhD Program University of Utah
- Office of Health Equity & Inclusion (OHEI) University of Utah
- SACNAS Chapter - University of Utah
- Keck Graduate Institute
- NHGRI-Diversity Action Plan Programs

## GSRM Mentors and Co-mentors

- Paul A. Sigala
- Amanda Mixon
- Martin Tristani-Firouzi
- Natalia Torres
- Richard Dorsky
- Priscilla Figueroa



## FINANCIAL SUPPORT

GSRM is funded by the National Human Genome Research Institute (NHGRI) under award number 5R25HG009886-02 and supported by the Department of Pediatrics at the University of Utah. We are grateful for your support!



*We Thank You!*

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