



20th ANNUAL STUDENT RESEARCH CONFERENCE



Sponsored by the UHD Scholars Academy

April 16, 2021

A showcase of academic excellence demonstrated by UHD undergraduates and graduates majoring within the Colleges of Marilyn Davies College of Business, Humanities and Social Science, Public Service, and Sciences and Technology.

9:00 AM	Introductory Remarks, Executive Director, Dr. Mary Jo Parker Recognize 2021 SRC Co-Chairs & Committee Members Recognize Special Guests
9:15 AM	Introduction & Welcome Address, UHD President, Dr. Loren Blanchard
9:25 AM	Introduction of College of Sciences & Technology Dean, Dr. Akif Uzman
9:30 AM	Introduction of Keynote Speaker – Dr. Mian Jiang
9:35 AM	Keynote Speaker #1 Presentation – Dr. Desiree Wilson
10:05 AM	Oral Presentations
11:05 AM	Introduction of Keynote Speaker – Dr. Rachna Sadana
11:10 AM	Keynote Speaker #2 - Dr. Anna Garcia
11:35 AM	Lunch on your own/Break – 30 minutes
12:15 PM	Poster Sessions 1 - 9
3:00 PM	Post Conference e-Survey Conference Ends

Conference Co-Chairs:

Dr. Shahnjayla Connors, Assistant Professor of Health and Behavioral Science
Dr. Mian Jiang, Associate Professor of Natural Sciences

Conference Planning Committee:

Dr. Liza Alonzo, Director, Alumni Relations, Advancement & University Relations
Dr. Maria Benavides, Assistant Chair, Natural Sciences Department
Dr. Maria Bhattacharjee, Associate Professor of Urban Education
Dr. Youn-Sha Chan, Associate Professor of Mathematics and Statistics
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Dr. Jeffrey W. Martz, Assistant Professor of Geology
Dr. Lisa Morano, Professor of Biology and Microbiology
Dr. Whitney Botsford Morgan, Associate Professor of Management & Insurance Risk Management
Professor Mitsue Nakamura, Lecturer of Mathematics and SA Peer Mentor Coordinator
Dr. Mary Jo Parker, Executive Director, UHD Scholars Academy
Dr. Rachna Sadana, Associate Professor of Biology
Dr. Dvijesh Shastri, Associate Professor of Computer Science & Engineering Technology
Dr. Katherine Shoemaker, Assistant Professor of Statistics
Dr. Akif Uzman, Dean, College of Sciences and Technology

The **UHD Scholars Academy (SA)** is an academically competitive program in the College of Sciences and Technology (CST) that promotes scholarship and student success for undergraduate students majoring in Science, Technology, Engineering and Mathematics (STEM).

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Desiree Wilson, Ph.D.

Lecturer
Houston Community College

Presentation Title: "Overcoming Failures"

Bio-sketch

I am a self-taught bioinformatician. Upon entering the UT Health San Antonio PhD graduate program, I had limited exposure to computer programming, having only one semester of C++. I did not let this deficit prevent me from breaking into the field of bioinformatics; I knew I wanted a bioinformatics project for my PhD thesis project and was willing to do anything to get in.

I have a deep passion for the field of bioinformatics as seen in my willingness to teach the subject matter. As a graduate student, I was a teaching assistant for two bioinformatics courses taught at UT Health San Antonio: Intro to Bioinformatics, and Intro to Functional Genomics. As a TA for the Intro to Bioinformatics course, taught by Dr. Stephen Harris, I gave lectures on gene expression analysis and how to use data obtained from the UCSC Genome browser for different use cases. In the Intro to Functional Genomics course, I learned that students learn at different rates. One student was failing the course but I intervened. I approached the student about failing grades and spent entire weekends working closely with this student to help them better understand the material. Not only did the student pass the course, but the student applied what they learned from the course to analyze data from their ChIPseq PhD thesis project.

Presentation Abstract

My journey to obtain my PhD was far from perfect having failed numerous times to obtain the degree. I am grateful for this experience because my journey gives me credibility to share with you what I know about life: you can overcome failure. In my talk, I will share with you how I failed numerous times in graduate school (and in my post docs), but more importantly, I want to share with you the five concepts and strategies I know helped me overcome my failures: 1) be careful what you think and say, 2) imposter syndrome is REAL, 3) goal setting is imperative, 4) don't overlook self-care and 5) be your own advocate. It is my hope after hearing my talk people think, "If she can do it, I know I can too."

UHD Alumnus Speakers



Anna R. Garcia, MD & Capt USAF (USA)

Obstetrics and Gynecology Resident
San Antonio Military Medical Center, San Antonio, Texas

Presentation Title: “Taking the Long Way”

Bio-sketch

Dr. Garcia graduated from UHD in 2014 as a member of the Scholars Academy, and went on to go to medical school at McGovern Medical School in Houston. She is currently a Captain in the Air Force and a third year resident in Obstetrics and Gynecology at Brooke Army Medical Center in San Antonio, TX.

She and her husband both went back to college at the same time and both graduated from UHD in 2014. Together, they have 7 children ranging in ages from 3 to 21 years old, so most of her spare time is spent doing family activities. They are all eagerly awaiting news on where the Air Force will station them for the next four years after she graduates residency.

Presentation Abstract

A brief discussion on the importance of life experience, the value of the non-traditional path in educational and career success, and venturing into unexpected career trajectories as a means of growth.

Oral Presentations

1 - Satya Mehta & Jeff Cayax, "Synthesis and characterization of Polymerizable Catanionic Surfactants"

Research Mentor(s): **Dr. Robin Jose**

Project Location: University of Houston – Downtown

The project involves the synthesis of cationic surfactants using various organic reactions. The surfactant will be characterized using various spectroscopic and analytical techniques. Once the surfactant is fully synthesized, then it will be subjected to UV polymerization. The polymer film formed will be analyzed for its properties. To synthesize the surfactant, 1,12-dodecanediol was reacted with excess HBr to create 1,12-dibromododecane. It was then reacted with trimethylamine to replace one of the bromine atoms to form the cationic part of the surfactant while the other bromine was replaced with sodium acrylate to form the polymerizable part of the surfactant.

2 - Desiree Frantz, "How Does Alcohol Use and Depression Affect Physical Performance among Middle-Aged and Older Adults?"

Co-Authors: **Linda Dune, Lavolette Laurel, Changwei Li, Mary Njuguna, Xianping Tang, Zhe Wei**

Research Mentor(s): **Dr. Song Ge**

Project Location: University of Houston – Downtown

Background: Physical performance is an important indicator that reflects current and predicts future health. In this study, we examined the association of alcohol use and depression with physical performance in a national sample of middle aged and older Chinese adults. **Methods:** We used the baseline data from the China Health and Retirement Longitudinal Study (CHARLS) and constructed a multivariate linear regression using SAS 9.4 to examine the independent association of alcohol use (never, former, moderate, and at-risk drinkers) and depression with grip strength controlling for socio-economic factors and domestic partner status.

Results: The study population consisted of 12,488 Chinese adults (mean age 59). The prevalence of ever drinking during lifetime and current at-risk drinking (>14 standard drinks [one standard drink contains 14 grams of pure alcohol] per week) in this population was 25.7% and 15.2% respectively. 28.4% of the study population had depression. Compared with never drinkers, moderate and at-risk alcohol use were independently associated with better grip strength ($P < 0.0001$). Depression was independently negatively associated with grip strength ($P < 0.0001$). **Conclusions:** We found that current alcohol use might be protective of physical performance while depression might be detrimental to physical performance among middle-aged adults. However, the underlying mechanism is unclear. Given the negative impact of alcohol and depression on adults' overall health, clinicians should assess alcohol use and depression in middle-aged and older patients using validated tools and provide resources and strategies to effectively manage alcohol use or depression. Clinicians should counsel patients that if symptoms of depression are not managed, patients may suffer from depression associated health consequences such as declined physical performance.

3 - Omar Haq, "Germany Political Risk Report Abstract"

Co-Authors: **Ricky Cline**

Research Mentor(s): **Dr. John Linantud**

Project Location: University of Houston – Downtown

This report studies the political, economic, and social situation of Germany post World War 2. Germany is the largest economy in Europe and has managed to rebuild itself following the destructive impact of World War 2. There are however, certain risks it faces. A major component is the migrant crisis because of the devastating Syrian civil war. The large influx of migrants has resulted in severe backlash from some fringe elements of German society. Along with that, the social and economic burden of the massive influx is serious in of itself. Germany also faces issues of inequality resulting from its reunification in 1990. What was then East Germany still lags behind its counterpart. COVID as well is a major threat as it is all over the world. While Germany had a lot of promise in its early efforts, the situation recently grew dire. Overall, Germany is still on a relatively promising path if it is able to deal effectively with threats to its stability and continue to grow its economy.

3 - Sonya Simmons, "Will Women Bosses Ever Be as Good as Men Bosses?"

Research Mentor(s): **Kara Winkler**

Project Location: University of Houston – Downtown

The goal of this study was to determine if male and female leaders are perceived differently in terms of leadership characteristics. Utilizing an experimental survey design, participants were asked to read a vignette and respond to questions about leadership in the workplace. Results revealed that, in an identical scenario, a woman boss was perceived more positively in overall leadership characteristics than a man boss. These findings suggest that once preconceived notions are eliminated, women are perceived to exhibit more leader like qualities than men.

Poster Session I:

1 - **Omar Haq**, "Political Risk Report- Germany"
Co-Authors: **Ricky Cline**
UHD Faculty Mentor: **Dr. John Linantud**
Project Location: University of Houston- Downtown

2 - **Makesha Robinson, Tina Nguyen, Britney Mixon, Porche Mills, Candace Bustos**, "The Diffusion of Culpability for Intimate Partner Violence: The Role of Victim and Observer Characteristics"
Co-Authors:
UHD Faculty Mentor: **Dr. Cindy Stewart**
Project Location: University of Houston-Downtown

3 - **Sonya Simmons**, "Will Women Bosses Ever Be as Good as Men Bosses?"
UHD Faculty Mentor: **Kara Winkler**
Project Location: University of Houston - Downtown

4 - **Katherin Enamorado, Josi Ordoyno, Clarissa Ramirez**, "The Role of Trauma in Causal Attributions of Victim Blame"
UHD Faculty Mentor: **Dr. Cindy Stewart**
Project Location: University of Houston - Downtown

Poster Session II:

5 - **Fikir Tadesse**, "Exploring Retinoblastoma: An Eye Tumor in Children"
UHD Faculty Mentor: **Dr. Hamida Qavi**
Project Location: University of Houston-Downtown

6 - **Desiree Frantz**, "How Does Alcohol Use and Depression Affect Physical Performance among Middle-Aged and Older Adults?"
Co-Authors: **Linda Dune, Song Ge, Lavolette Laurel, Changwei Li, Mary Njuguna, Xianping Tang, Zhe Wei**
UHD Faculty Mentor: **Dr. Song Ge**
Project Location: University of Houston-Downtown

7 - **Christina Nguyen, Titilayo Kuloyo**, "Relationship between sleep and neurological behaviors in Drosophila melanogaster"
UHD Faculty Mentor: **Dr. Yuan Yuan Kang**
Project Location: University of Houston – Downtown

Poster Session III:

8 - **Phi Le, Jeffrey Tijerina**, "Clustering Boundaries of Topologically Associated Domains in Epigenetic Landscape"
UHD Faculty Mentor: **Dr. Benjamin Soibam**
Project Location: University of Houston-Downtown

9 - **Huy Huynh, Minh Nguyen**, "Predicting Fruit Fly Genotype from Locomotion Trajectories"
UHD Faculty Mentor: **Dr. Benjamin Soibam**
Project Location: University of Houston-Downtown

10 - **Blanca Olivares, Mario Perez**, "Investigation of 24-hour locomotive activities in Drosophila interspecies"
UHD Faculty Mentor: **Dr. Yuan Yuan Kang**
Project Location: University of Houston-Downtown

11 - **Robert Rosales, Kantrell Gorman**, "Investigation of food preference in several Drosophila interspecies lines using the CAFE assay"
UHD Faculty Mentor: **Dr. Yuan Yuan Kang**
Project Location: University of Houston-Downtown

Poster Session IV:

12 - **Ana Santibanez, Angelica Escobar, Younus Zuberi**, "Antibiotic Sensitivities of Bacteria in Mixed Cultures"
Co-Authors: **Ana Garay, Danniela Herrera, Jackie Rocha, and Nicolette Vallot**
UHD Faculty Mentor: **Dr. Poonam Gulati Salhotra**
Project Location: University of Houston-Downtown

13 - **Emily Fritsche, Daniela Castro**, "Epigenetics and Forensics"
UHD Faculty Mentor: **Dr. Jacob A. Theruvathu**
Project Location: University of Houston-Downtown

14 - **Atta Ali**, "Phylogenetic analysis of Whale lice"
UHD Faculty Mentor: **Dr. Amy Baird**
Project Location: University of Houston-Downtown

Poster Session V:

15 - **Alina Ali, Rafael Galvan, Salman Khan**, "Data Science Methods in Solving Differential Equations"
UHD Faculty Mentor: **Dr. Katarina Jegdic**
Project Location: University of Houston-Downtown

16 - **Anh Do, Deisharrah Allen-Benson, Jaskiran Sur, Myo Thane**, "Effect of Meditation on Brain Training"
UHD Faculty Mentor: **Dr. Hong Lin**
Project Location: University of Houston-Downtown

17 - **Emily Stashak**, "Modeling melt evolution using trace element compositions of clinopyroxenes, Big Bend Ranch State Park – West Texas"
UHD Faculty Mentor: **Dr. Kenneth Johnson**
Project Location: University of Houston-Downtown

Poster Session VI:

18 - **Jenny Huynh**, "Anthocyanin containing plant extracts as new indicators for water electrolysis"
UHD Faculty Mentor: **Dr. Mian Jiang**
Project Location: University of Houston-Downtown

19 - **Elvira Perez**, "Computational Analysis of Polyetherimide using DFT"
UHD Faculty Mentor: **Dr. Maria Benavides**
Project Location: University of Houston-Downtown

20 - **Rhett Taylor**, "Computational Study on a Novel Antibacterial Compound Extracted from Bacillus cereus"
UHD Faculty Mentor: **Dr. Maria Benavides**
Project Location: University of Houston-Downtown

21 - **Satya Mehta, Jeff Cayax**, "Synthesis and characterization of Polymerizable Catanionic Surfactants"
UHD Faculty Mentor: **Dr. Robin Jose**
Project Location: University of Houston – Downtown

Poster Session VII:

22 - **Megan Kalogeras**, "Computational Analysis of FE399"
UHD Faculty Mentor: **Dr. Maria Benavides**
Project Location: University of Houston-Downtown

23 - **Wilmer Ortez**, "Computational Chemical Study of Transition Metal Complexes"
UHD Faculty Mentor: **Dr. Maria Benavides**
Project Location: University of Houston-Downtown

24 - **Araceli Garza**, "Study of Irradiation Impact On Red Cabbage Chemistry and Bioactivity"
UHD Faculty Mentor: **Dr. Mian Jiang**
Project Location: University of Houston-Downtown

Poster Session VIII:

25 - **Huy Huynh, Ani Vu, Anna Cybulski**, "Degradation of Biodegradable Plastics in Soil Environment"

Co-Authors: **Anthony Bui, Nhi Le**

UHD Faculty Mentor: **Dr. Poonam Gulati Salhotra**

Project Location: University of Houston-Downtown

26 - **Gretty Suarez**, "Evaluation of Oyster Mushroom Varieties on Different Spawn Grains"

Co-Authors: **Jimmy Ha**

UHD Faculty Mentor: **Dr. Lisa Morano**

Project Location: University of Houston-Downtown

27 - **Praise Oderinde**, "Testing Synthetic Compounds for their Cytotoxic Effect on Cancer Cell lines MOLT-4 and BT-474."

Co-Authors: **Andrea Guzman**

UHD Faculty Mentor: **Dr. Rachna Sadana**

Project Location: University of Houston-Downtown

Poster Session IX:

28 - **Jose Guzman, Irvin Solano**, "Bioinformatics and Genome Annotation of Genome FORGE"

Co-Authors: **Tori Sky-Eagle, Sabrina Portilla, Ashanti Walker, Younus Zuberi**

UHD Faculty Mentor: **Dr. Sanghamitra Saha**

Project Location: University of Houston-Downtown

29 - **Bertha Garza, Jo Hernandez, George Arias, Daniel Rivera, Timothy Oyewale**, "Pine Oil as a Biofriendly Xylene Substitution for H&E Staining"

Co-Authors: **Christina Nguyen**

UHD Faculty Mentor: **Dr. Adriana Visbal**

Project Location: University of Houston-Downtown

30 - **Younus Zuberi**, "Isolation and annotation of Xitlalli, a cluster EK1 phage"

UHD Faculty Mentor: **Dr. Sanghamitra Saha**

Project Location: University of Houston-Downtown

Acknowledgments

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In addition, we would like to thank the UHD faculty and staff who have worked tirelessly to support undergraduate and graduate research experiences as well as the UHD staff, faculty and administrators who have helped make this conference a success.

Thank you for participating in the 20th Annual UHD Student Research Conference.

Thanks to the generous supporters of this student conference:

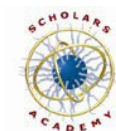
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