



2016 UNDERGRADUATE RESEARCH DAY

Thursday, October 13, 2016 4:00 p.m.

Elizabeth D. Rockwell Pavilion, The Honors College, & 2nd Floor, M.D. Anderson Library
Presented by: The Office of the Provost, The Honors College, and The Office of Undergraduate Research



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- Scholarships for research, undergraduate, and graduate studies
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SAVE THE DATE

PURS
Spring 2017
Application Deadline:
Wednesday, November 30, 2016

Faculty
Mentoring
Awards
Application Deadline:
Monday, February 6, 2017

SURF
Summer 2017
Application Deadline:
Friday, March 24, 2017

HERE
Summer 2017
Application Deadline:
Friday, March 24, 2017

2016 UNDERGRADUATE RESEARCH DAY

October 13, 2016

Elizabeth D. Rockwell Pavilion
2nd floor, M.D. Anderson Library
The Honors College

3:30-4:00 p.m. | Welcome and Opening Remarks to Presenters

Location: Elizabeth D. Rockwell Pavilion

Paula Myrick Short, Ph.D.

Senior Vice Chancellor for Academic Affairs, University of Houston System

Senior Vice President for Academic Affairs and Provost, University of Houston

Mary Ann Ottinger, Ph.D.

Associate Vice Chancellor for Research, University of Houston System

Associate Vice President for Research, University of Houston

Stuart A. Long, Ph.D.

Associate Dean of Undergraduate Research and the Honors College,

University of Houston

4:00-6:00 p.m. | Viewing of Student Posters

*Location: Elizabeth D. Rockwell Pavilion, M.D. Anderson Library,
and the Honors College*

5:00-6:45 p.m. | Oral Presentations

Location: The Honors College Classrooms

Rooms 212J, 212L, and 212S

Thank you to the **Office of the Provost**, the **Division of Research**, and the **Honors College** for their generous support of the Office of Undergraduate Research.

And special thanks to the **Gerald D. Hines College of Architecture** for printing the posters for the event.

WELCOME

Welcome to the 12th annual UH Undergraduate Research Day.

We are delighted you are here to participate in the largest Undergraduate Research Day event to date. We have more than 200 undergraduates presenting, and their work reflects the depth, breadth, and diversity of research being conducted by the University's talented faculty and students. We encourage you to engage, ask questions, and to share in the accomplishments and new insights this past year of research has generated for these remarkable students.

During the 2015-2016 academic year, the Office of Undergraduate Research sponsored over 200 students from across the University in faculty mentored research programs, and provided support to hundreds more through informational sessions and on-line resources. These mentored research programs include: the full-time Summer Undergraduate Research Fellowship (SURF); the part-time fall and spring semester Provost's Undergraduate Research Scholarship (PURS); the 2-week summer intensive Houston Early Research Experience (HERE); and the Senior Honors Thesis program. We also supported approximately 60 students this year in applying for nationally competitive scholarships and internship opportunities, and had 12 recipients and 3 honorable mentions—a record number of UH students participating in, and winning, national competitions.

All of the scholarships and services offered to students would not be possible without the University's strong commitment to providing undergraduates with hands-on learning experiences integral to lifelong success. In particular, the support of the Office of the Provost, Division of Research, and the Honors College has been fundamental in building a strong foundation for undergraduate research activities at the University. In addition, other funders and units across campus continue to contribute to the Office's programs every year. This year, we would like to extend a special thank you to Jeff Beauchamp for supporting the PURS program. We also thank the Biology and Behavior Institute (BoBI) and the Texas Obesity Research Center (TORC) for their financial contributions of student scholarships. In addition to their generous support of our students' success, other UH departments and colleges contributed financially to the Office's programs this year. These units include Biology & Biochemistry; Biomedical Engineering; Chemical & Biomolecular Engineering; Civil & Environmental Engineering; Computer Science; Data Analytics in Student Hands (DASH); Electrical & Computer Engineering; Mechanical Engineering; Physics; and Psychology. As always, we are grateful to our faculty selection and advisory committee for their continued assistance in choosing the student and faculty recipients of our awards each year.

As a result of the increased interest among undergraduate students in pursuing research, the Office of Undergraduate Research launched the new HERE program with an inaugural cohort of 25 students. The research topic for this two-week faculty-led seminar series was an exploration of Houston. In addition to faculty-led discussions and close readings of literature, each day faculty and community partners made presentations on a topic relating to our city. The students concluded the program by presenting group research proposals for exploring and addressing challenges facing the city. The projects ranged from flood crisis management in the refineries and chemical storage plants around the Ship Channel to containing the spread of the Zika virus.

Our motivated undergraduate students are eager and ready to share and discuss their research findings with you as you explore Undergraduate Research Day at the University of Houston.



Stuart A. Long



Karen Weber



Jennifer Asmussen



Lynda Hallmark

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UNIVERSITY of HOUSTON

OFFICE OF UNDERGRADUATE RESEARCH

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October 13, 2016

4:00 – 6:00 p.m. Poster Presentations

5:00 – 6:45 p.m. Oral Presentations

Elizabeth D. Rockwell Pavilion

M.D. Anderson Library

The Honors College

The Office of Undergraduate Research

The Honors College

University of Houston

M.D. Anderson Library

4333 University Drive, Room 212

Houston, TX 77204-2001

(713) 743-3367

UndergraduateResearch.uh.edu

Booklet created by

Julia Brown,

Design and Presentation Development

Office of Undergraduate Research

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Nationally Competitive Scholarships

OFFICE OF UNDERGRADUATE RESEARCH



OUR PROGRAMS

THE PROVOST'S UNDERGRADUATE RESEARCH SCHOLARSHIP (PURS) is a part-time semester research program for juniors and seniors, and awards a \$1,000 scholarship for students to work one-to-one with a faculty mentor. This scholarship is open to students from all colleges and disciplines. Candidates must have at least a 3.0 grade point average to apply. For more information, visit the PURS website at UndergraduateResearch.uh.edu/purs.

THE SUMMER UNDERGRADUATE RESEARCH FELLOWSHIP (SURF) program is a full-time, ten-week summer research program, open to all continuing students, and provides a \$3500 scholarship for students to conduct research under the mentorship of a UH faculty member. Students from all disciplines with at least a 3.0 GPA are encouraged to apply. For more information, visit the SURF website at UndergraduateResearch.uh.edu/surf.

THE HOUSTON EARLY RESEARCH EXPERIENCE (HERE) program is a summer research program intended to orient rising sophomore and junior undergraduates to the fundamentals of conducting research. For more information, visit the HERE website at uh.edu/hereprogram.

THE SENIOR HONORS THESIS is a capstone program for a student's undergraduate career in research. Student participants enroll in 3399H and 4399H, a total of six hours of coursework, which is typically applied toward their major degree requirements during their senior year. For more information, visit the thesis website at UndergraduateResearch.uh.edu/thesis_guidelines.

HOW TO GET STARTED IN RESEARCH

- Peruse your department's website to find out about the research faculty within your discipline are conducting.
- Talk to current and past professors (during their office hours) from courses you have excelled in and have enjoyed. Even if the professor is not currently seeking an undergraduate researcher, he or she may know of a colleague who is seeking an undergraduate research assistant.
- Consult an academic advisor from your department to inquire about faculty members currently conducting research in your discipline.
- Check OUR web page of faculty members currently seeking undergraduate researchers, UndergraduateResearch.uh.edu/facultyresearch.
- Join the UH Undergraduate Research Facebook page and/or the Office of Undergraduate Research's list serve. You will receive postings on available research positions and scholarships for undergraduates.

Contact Information:

Karen Weber, Director: kweber@uh.edu



THE HONORS COLLEGE

THE HONORS COLLEGE PHILOSOPHY

The Honors College at the University of Houston serves the intellectual needs of gifted undergraduates in more than 100 fields of study. We provide the careful guidance, flexibility, and personal instruction that nurture excellence. We offer the university's finest students *the best of both worlds*—the community and advantages of a small college together with the resources and rich diversity of a large research university. Our faculty and staff believe that a university education should offer more than the acquisition of skills for the workplace. The Honors College challenges students to develop the attributes of mind and character that enhance all facets of life.

HONORS CURRICULUM

Our curriculum is designed to coordinate with all majors and degree plans offered at the University of Houston. You will fulfill many of your university core requirements through Honors courses that take the place of regular required classes. One key sequence of courses, The Human Situation, is team-taught by Honors faculty and is designed to ensure that you are introduced to the great books of the Western tradition. For many Honors students, the Senior Honors Thesis represents the exciting culmination of a bachelor's degree. A thesis provides an excellent opportunity for you to work under the direction of faculty in your chosen field of study, applying your skills and knowledge toward the completion of a scholarly or creative project.



THE HONORS COLLEGE COMMUNITY

Special Classes and Course Selection

We draw on the talents of the finest faculty members within the University to provide a wide range of special courses with limited enrollment. Honors courses encourage student participation, interaction, and discussion.

Membership in a Community

You will enjoy special privileges, including Honors College scholarships, priority course registration, computer facilities, reserved lounge and study areas, study abroad opportunities, and special housing in The Honors College residence halls. Many intangible benefits also come with participation in the Honors community—the friendships that develop in the classroom carry over into other areas of student life. We foster an atmosphere of collegiality and a spirit of camaraderie through informal gatherings, social activities, and on- and off-campus cultural events.

Talented Classmates

When admitted to The Honors College, you will enter the company of the most academically talented undergraduates at the university. Members bring a variety of interests, aptitudes, and ambitions to their studies. Through daily association with other Honors students, you will discover the broad range of academic programs at the University.

Apply Now at www.TheHonorsCollege.com/apply

Contact Information:

Sarah Bhojani, *Director, Admissions:*
sabhhojani@uh.edu

UNDERGRADUATE RESEARCH MENTOR AWARDS

The Office of Undergraduate Research congratulates the 2016 Undergraduate Research Mentor Award recipients: **Bernhard Bodmann**, **Frank J. “Fritz” Claydon**, and **Bradley McConnell**.



BERNHARD BODMANN

Associate Professor Bernhard Bodmann’s research in mathematics explores the interface between pure mathematics and applications; specifically, functional and harmonic analysis, as well as frame theory and uncertainty principles. Since joining the Department of Mathematics in 2007, Dr. Bodmann has been influential in both curriculum development and reform: he created a key course for the new Mathematical Biology major at UH entitled “Introduction to Biostatistics,” and also introduced Matlab computing projects into Linear Algebra courses and R-based simulations into Statistics courses, making the content in these existing classes more relevant and giving students beneficial exposure to computing and software packages. In addition, Dr. Bodmann has written numerous articles accepted into peer review journals, including three (with one more under review) researched and written in collaboration with undergraduate researchers. Dr. Bodmann is also the recipient of more than \$550,000 in grants from the National Science Foundation, Division of Mathematics Sciences, and a Fellowship for Experienced Researchers grant from the Alexander von Humboldt Foundation.

Working with Undergraduate Researchers

Dr. Bernhard Bodmann likens mathematical discovery to experiencing a detective story—the initial suspense, the struggle for clarity, and the thrill at the final resolution of the mystery—and clearly his adventurous and enthusiastic approach has resonated with the undergraduates who seek him out for research experiences. Working in small groups of up to four undergraduates, Dr. Bodmann meets weekly with these students as they methodically work their way through the research process, beginning with 1-2 months learning the context of the research problem, then moving onto the exploratory phase, and keeping a recorded log of all discussions and all results. What this process has revealed to Dr. Bodmann and his students is that often, some of the earlier, seemingly isolated results are ultimately incorporated into the final bigger picture, illustrating an important lesson—patience and attention to detail matter in research, and that the end result may be unexpected and surprising. Since 2007, Dr. Bodmann has worked with 15 UH undergraduates, and several have gone on to pursue advanced degrees at UH, as well as Caltech, Harvard, and MIT. Wherever his students eventually go and whatever they eventually do, Dr. Bodmann is happy to offer them guidance along their way leading to successful careers.



FRANK J. “FRITZ” CLAYDON

As a faculty member in the Department of Electrical and Computer Engineering, Professor Claydon’s research in cardiac electrophysiology has explored the spaces of the human heart and the electrical phenomena associated with its rhythm and functioning. Dr. Claydon has authored or co-authored well over 60 research articles on the topics ranging from defibrillation efficacy to engineering education. As a Principle and Co-Principle Investigator, he has been awarded approximately \$15M in grants and industrial gifts. In 2002, Dr. Claydon developed GRADE - Girls Reaching and Demonstrating Excellence in Engineering, a program with over 900 participants since 2003. Also since 2000, Dr. Claydon has directed a Summer Research Experience (REU) at UH entitled “Innovations in Nanotechnology.” Sponsored by the National Science Foundation (NSF), it is

UNDERGRADUATE RESEARCH MENTOR AWARDS

a nationally recognized program that provides cutting-edge undergraduate research opportunities in nano-materials and structures, and has received \$1.4M in funding from the NSF, to date.

Working with Undergraduate Researchers

For the past 14 years, Professor Frank J. “Fritz” Claydon has conducted “Innovations in Nanotechnology,” which is a 10-week residential Summer Research Experience for Undergraduates (REU) at the University of Houston (UH) that provides an intensive, structured, and closely mentored research experience for more than 140 undergraduates; of those undergraduates who have participated, over 86% have reported they were attending graduate school to continue their studies. In addition to cultivating laboratory research expertise, the students in Dr. Claydon’s program also participate in weekly professional development seminars that offer opportunities to develop additional skills essential to graduate and research careers: technical communication skills, laboratory documentation, navigating scientific literature, research ethics, engineering professionalism, professional publication and presentation, and resume and CV construction. However, students are also asked to think about the responsibility of research, such as the effects of nanotechnology on the environment, side effects of nanomedicine, and the correlation between advances in nanotechnology and the greater inequalities between “developed” and “developing” nations. Through his years of dedication to undergraduate research, Dr. Claydon is preparing future scholars to make a positive and thoughtful difference through research.



BRADLEY MCCONNELL

As an associate professor in the Department of Pharmacological and Pharmaceutical Sciences at the University of Houston, Dr. Bradley McConnell wants to keep our hearts healthy. The research projects in Dr. McConnell’s laboratory focus on the genetics and physiology of heart disease with the hope to better understand the cell communication—the signaling pathways—involved in normal and diseased hearts. In characterizing and defining the mechanisms of cell communication in the heart, Dr. McConnell and his students investigate strategies to improve cardiac function in heart disease. Dr. McConnell is the recipient of grants from the National Institutes of Health and the American Heart Association, and is an Elected Fellow for both the American Heart Association and the American Physiological Society. In addition, Dr. McConnell has authored and co-authored numerous articles in leading journals, as well as serving as a reviewer. In 2015, Dr. McConnell was the recipient of the UH College of Pharmacy Faculty Award for Excellence in Service.

Working with Undergraduate Researchers

When Dr. Bradley McConnell joined the Department of Pharmacological and Pharmaceutical Sciences in 2008, he made a commitment to become “the best teacher-scholar possible.” He continues to achieve this goal through “innovative educational approaches,” such as hands-on experimental opportunities and one-to-one mentoring for undergraduates, and by conducting novel research in order to “provide a well-executed integration of both education and research.” Although the College of Pharmacy is a professional college and does not offer degrees to undergraduates, Dr. McConnell seeks to include undergraduates in his laboratory research, and is also actively involved in various undergraduate programs, such as the selection of Tier One Scholars. Whether students go on to seek further education in the sciences or the law, or whether they pursue a career in medicine or investment banking, Dr. McConnell aims to develop future leaders who are curious and engage in intellectual inquiry, who can think critically and communicate effectively, and who will have a keener understanding of—if not a full-fledged passion for—the STEM fields.

2016 SURF BROWN BAG LECTURE SERIES

Each summer, as part of the SURF program, the Office of Undergraduate Research offers a Brown Bag Lecture Series in which UH faculty present a wide range of interdisciplinary topics, such as research ethics, and applying to graduate and professional school. The Office of Undergraduate Research thanks our 2016 presenters for their participation in this year's lecture series.

WEEK 1

Research Ethics

Drs. Stuart Long and Jeremy May

WEEK 2

Roundtable Chats:

Graduate and Professional School

Faculty from a wide range of disciplines

WEEK 3

Roundtable Chats:

Preparing for the Workforce

Professionals from a wide range of occupations

WEEK 4

Research Tours

Dr. Elizabeth Ostrowski:

Biology and Biochemistry

Dr. Patrick Peters:

Architecture Atrium

Dr. Gangbing Song:

Mechanical Engineering

Dr. Michael Zvolensky:

Psychology

WEEK 5

Midpoint SURF Program Meeting

Karen Weber

WEEK 6

Lecture on Developing an Effective Resume

Caitlin MacNeil, University Career Services

WEEK 7

Applying to and Presenting at Conferences

Drs. Tracey Ledoux and Jonathan Zecher

Drs. Mark Tomforde and Tony Frankino

WEEK 8

Research Tours

Dr. Megan Robertson:

Chemical Engineering

Dr. Tim Cooper:

Biology and Biochemistry

Dr. Clayton Neighbors:

Psychology

Dr. Sujata Sirsat:

Hilton College of Hotel & Restaurant

Management

WEEK 9

Creating a Research Poster

Dr. Stuart Long and Karen Weber

WEEK 10

Final SURF Buffet Luncheon

SURF Students and Faculty Mentors

HOUSTON EARLY RESEARCH EXPERIENCE



The **Houston Early Research Experience (HERE) Program** recognizes freshmen and sophomore students who excel academically and serve the campus and local community. This two-week May seminar series engages students from all majors in various research methodologies through faculty-led small group discussions and research presentations. Twenty-five students participated in the 2016 HERE Program, which focused on issues related

to the city of Houston, including floods, hurricane preparedness, pollution, and public health. Field trips to the Houston Ship Channel and Project Row Houses complemented the research-focused curriculum.

HOUSTON SCHOLARS PROGRAM

Supported by the Office of the Provost and the Honors College, the **Houston Scholars Program** seeks to empower students to be scholars in their fields, ethical leaders, and active contributors to society. The program includes faculty mentoring, the development of a research proposal related to future academic and professional goals, and attendance at a discussion series led by University of Houston faculty across campus. Houston Scholars are encouraged to engage in self-reflection, critical thinking, passionate inquiry, and the application of theory and research to real world problems. Proposals may include opportunities to conduct research, undertake a service project or internship, attend or present at a professional conference, or study abroad. Houston Scholars defend their proposals to a faculty committee for potential funding.



CONDUCTING RESEARCH

1. Define the Problem



- Identifying a compelling research question is the first step to a successful research project. What issue, problem, or topic are you interested in exploring?

2. Review the Literature



- The purpose of conducting research is to “fill in the gaps” of our knowledge about a particular field or subject, to identify a new problem, or to “test” a new solution or recommendation for an existing issue or phenomenon.
- To frame your research project, and to ensure that your research question has not already been examined, you should conduct a literature review.

3. Formulate a Hypothesis or a Problem Statement



- Depending on your research question and methodology, you will be required to formulate a research hypothesis OR a problem statement based on your research question.
- A research hypothesis is an educated prediction that provides an explanation for an observable (measurable) event or condition. A problem statement is both a reiteration of the problem that the study will address and the justification for studying the problem.

4. Select a Research Design



- Deciding what you will research will help to determine how you will design your research project.
- Will it be qualitative or quantitative? What methodology and design will you choose? What methods, techniques, and tools will you use to collect, analyze, and interpret your data?

5. Carry Out the Research



- Now you can finally conduct your research!
- For many, this is the most enjoyable part of the process; but it's also the step that requires the greatest attention to detail to ensure that your research design and methods are followed accurately—to generate good data—and that the research is conducted ethically.

6. Interpret Your Results



- Once your experiment has concluded and/or data have been collected, it is time to analyze the data using methods determined by your research methodology and design. Next, you must interpret the results.
- It is important that the evidence supports your interpretation. Avoid spurious conclusions of causality or correlation!

7. Report the Research Findings



- The purpose of research is to share knowledge.
- Once your research has concluded, it is important to share your results. You might write an article for publication, prepare a white paper, or present your research at a conference either as part of a panel discussion or a poster presentation.

8. Repeat



- Research is an iterative process.
- New knowledge leads to more questions, further research, and the generation of more new knowledge.
- So, return to Step 1 and enjoy a new research experience!

2016 BoBI PARTICIPANT



Jessica Martinez

Mentored by Brigitte Dauwalder
Biology & Biochemistry

Identifying Hormones Present in the
Adult bbb using the Gal4-UAS system

The **Biology of Behavior Institute (BoBI)** promotes research directed at understanding animal behavior from four different perspectives: 1. The molecular, neural, and endocrine mechanisms of behavior, 2. The acquisition or development of the behavior within the organism, 3. The function of the behavior for the organism, and 4. The evolution of the behavior within and among species.

Faster progress and a more complete understanding of the biology of a behavior can only be achieved through the application of all four perspectives. Each perspective informs the other three, and together they provide deep and intellectually satisfying insights into animal behavior. BoBI provides support for undergraduates to conduct full-time summer research experiences with faculty affiliated with the Institute.

A special thanks to our campus and community partners for their support of the Office of Undergraduate Research over our twelve years of serving undergraduate researchers:

- Office of the Provost
- Division of Research
- Honors College
- Heidi Alderman
- BASF Corporation
- Jeff Beauchamp
- Biology & Biochemistry
- Biology of Behavior Institute (BoBI)
- Biomedical Engineering
- Chemical & Biomolecular Engineering
- Civil & Environmental Engineering
- College of Education
- College of Liberal Arts and Social Sciences
- College of Natural Sciences and Mathematics
- College of Pharmacy
- College of Technology
- Computer Science
- Construction Management
- Cullen College of Engineering
- Data Analytics in Student Hands (DASH),
Summer of Apps
- Earth & Atmospheric Sciences
- Electrical & Computer Engineering
- Engineering Leadership Board
- Engineering Technology
- Gerald D. Hines College of Architecture
- Health & Human Performance
- Susan Henning and Vikram Rao
- Hobby Center for Public Policy
- Industrial Engineering
- Mathematics
- Mechanical Engineering
- Medicine & Society Program
- Physics
- Political Science
- Psychology
- Texas Obesity Research Center (TORC)

2016 SURF PARTICIPANTS



Umair Akbar

Mentored by Chandra Mohan
Biomedical Engineering

Identification of Salivary Biomarkers
in Patients with Systemic Lupus
Erythematosus



Atif Ali

Mentored by Katerina Kourentzi
Chemical & Biomolecular
Engineering

Quantification of Catalytic Activity
of Phage Reporters for Use in
Immunoassays



Juan Arevalo

Mentored by Lars Grabow
Chemical & Biomolecular
Engineering

Can silver improve the performance
of the catalytic converter for diesel
engines?



Marco Avendano

Mentored by Bernhard
Rappenglueck
Earth & Atmospheric Sciences

Characterization of Houston's Air
Pollution



Sean Bailey

Mentored by Mehmet Sen
Biology & Biochemistry

Recombinant production of
functional human MAdCAM-1



Camila Blanc

Mentored by Anny Castilla-Earls
Communication Sciences &
Disorders

Training Spanish-Speaking
Laypersons to Use the GL-Scale



Adriano Cabrita Lavino

Mentored by Dong Liu
Mechanical Engineering

Electrowetting Actuated Micro pump



Mijin Choi

Mentored by Qian Lu
Psychology

The Mediating Role of Perceived
Stress between Intergenerational
Family Conflict and Depression



Macey Crockett

Mentored by Shuhab Khan
Earth & Atmospheric Sciences

Ground-based Hyperspectral
Analysis of Asphalt Deposits at
Outcrop Scale for High Resolution
Mapping and Quantification of
Resources

2016 SURF PARTICIPANTS



Nicholas Daily

Mentored by Hayan Charara
English

Daoud and Camus; Theories of Rebellion and Revolution in Existentialist and Postcolonial Literature



Dakota Dalton

Mentored by Gangbing Song
Mechanical Engineering

Vibration Control using Eddy Current Tuned Mass Damper



Vijay Dharmaraj

Mentored by Bhavin Sheth
Electrical & Computer Engineering

Developing a Computational Model of Cortical Orientation Selectivity in V1 During and After Early Development



Mangalaa Dinivahi

Mentored by Jeffrey Rimer
Chemical & Biomolecular Engineering

The Role of Cyclic Trimetaphosphate on Calcium Oxalate Monohydrate Crystallization



Bionka Edmundson

Mentored by Konstantinos Kostarelos
Petroleum Engineering

Experimental Study of Electrostatic Field on Asphaltene Behavior



Josh Eguia

Mentored by John Beasant III
Theater & Dance

A Study of Trends in Dance Training and Choreography



J Ehlinger

Mentored by Ling Zhu
Political Science

The Relationship between Growth in the Hispanic Population and Anglo Vote Choice



Camila Escobar

Mentored by Christian Eberhart
Comparative Cultural Studies

Preaching of the Old Testament in Megachurches in the Houston Area



Dave Giang

Mentored by Norman Johnson
Decision & Information Sciences

Quantifying Human Interaction for Use in Information Systems



Catherine Godfrey

Mentored by Mark Tomforde
Mathematics

Voting Methods for Elections with
Three or More Candidates



Idene Hadjizamani

Mentored by Mina Dawood
Civil & Environmental Engineering

Rehabilitation of Deteriorated
Concrete Infrastructure using Shape
Memory Alloys



Christina Hamilton

Mentored by Islam Rizvanoglu
Economics

The Role of Gold as a Safe Haven
Asset in Emerging Markets



Lauren Hauser

Mentored by Leanne Atwater
Management

Gender and Self-Other Agreement



Momin Hussain

Mentored by Loi Do
Chemistry

Protection of Copper Cryptand
Complexes Against Biological Thiols



Ana Ibague

Mentored by Lydia Tiede and
Francisco Cantu
Political Science

Economic Growth in Developing
Countries: A Closer Look at the
Effects of Property Rights



Kristina Infante

Mentored by Sujata Sirsat
Hotel & Restaurant Management

Leafy Greens: Risk Reduction &
Interventions



Donya Iranpoor

Mentored by Charles Layne
Health & Human Performance

Portable head mount displays to
project virtual reality sensorimotor
adaptation trainings and aid in
spaceflight countermeasures



Sharon John

Mentored by Megan Robertson
Chemical & Biomolecular
Engineering

Morphology Development and
Industrially-Relevant Processing of
Polylactide/Vegetable Oil Blends

**Mai Kolkailah**

Mentored by Rex Koontz
Art

The Art of Islamic Spain

**Anastasiya Kopteva**

Mentored by Jose Contreras-Vidal
Electrical & Computer Engineering

MusEEG: Real time translation of neural information into multisensory feedback

**Robert Laroche**

Mentored by Marc Hanke
Biology & Biochemistry

The influence of habitat setting on *Panopeus simpsonii* reproductive output

**Laura-Gaile Lim**

Mentored by William Epling
Chemical & Biomolecular Engineering

SO₂ poisoning in NH₃-SCR over Cu-SSZ-13: mechanistic and kinetic study

**Lillian Lin**

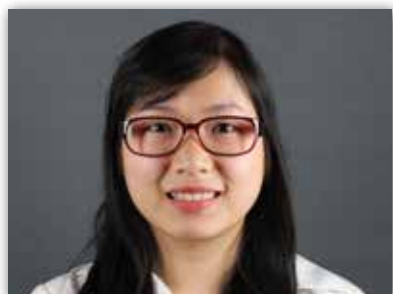
Mentored by Aaron Becker
Electrical & Computer Engineering

Using Potential Fields to Flow Around

**Mingxi Lin**

Mentored by Yandi Hu
Civil & Environmental Engineering

Analyzing the Redox Reaction of As(III) and Cr(VI) on Different Materials with the Implication for Wastewater Treatment

**Van My Luong**

Mentored by Priyanko Guchait
Hotel & Restaurant Management

Employee Health in the Hospitality Industry: Impact of Error Management Culture, Job Burnout, & Job Engagement

**Kayla Tran Mai**

Mentored by Kerri Crawford
Biology & Biochemistry

Effect of Nematodes on Plant Diversity & Microbial Symbioses in a Competitive Plant Community

**Nubia Mayorga**

Mentored by Michael Zvolensky
Psychology

Acculturative Stress and Internalizing Symptoms: The Role of Difficulties in Emotion Regulation



Erich McMillan

Mentored by Kevin Bassler
Physics

Generating Power-Law Networks
with Soft Degree Constraints



Hadiqa Memon

Mentored by Elizabeth Anderson
Fletcher

Decision & Information Sciences

Primum non nocere: Applying
Business Principles to Analyze
Medical Errors



Julie Monluc

Mentored by Craig Glennie
Civil & Environmental Engineering

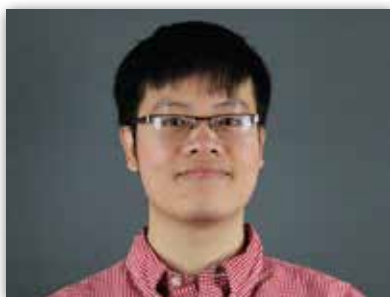
Analysis of Movement on Long Point
Fault



Samuel Morelos

Mentored by Andrew Renshaw
Physics

A Novel Microbe Trap



An Nguyen

Mentored by Rakesh Verma
Computer Science

Extracting Named Entities utilizing
Web Search Engine



Diep Nguyen

Mentored by Patrick Cirino
Chemical & Biomolecular
Engineering

Design and use of multi-promoter
plasmids for temporal optimization
of high-throughput colony screening



Thao Nguyen

Mentored by Raymond Knee
Psychology

Social Interactions and Goal Progress



Andrew Pearson

Mentored by Clayton Neighbors
Psychology

Understanding Flow as a Mediator
Between Smartphone Use and Life
Satisfaction



Brinda Penmetsa

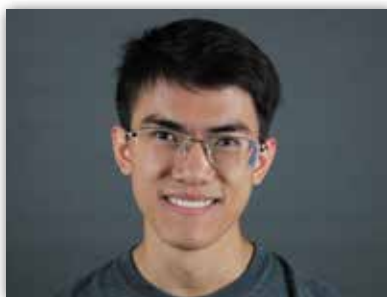
Mentored by Alison Leland
Political Science

Studying the finances of the City of
Houston through a focused analysis
of the underfunding of pensions


Karissa Pepin

Mentored by Aibing Li
Earth & Atmospheric Sciences

Rayleigh Wave Phase Velocities
in Alaska from Ambient Noise
Tomography


Phu-Cuong Phan

Mentored by Jakoah Brgoch
Chemistry

Synthesis and characterization of the
solid solution $\text{Ba}_2\text{Y}_5\text{-xLuxB}_5\text{O}_{17}:\text{Ce}^{3+}$


Itay Porat

Mentored by Haleh Ardebili
Mechanical Engineering

Study of Mechanical Properties and
Strain-dependent Ion Conductivity
Enhancement in Polymer Electrolytes


Arian Pourmotamed

Mentored by David Jackson
Electrical & Computer Engineering

Active Electromagnetic Control of
Scattering by Objects


Rebecca Rea

Mentored by Juan Carlos Silva-
Tamayo
Earth & Atmospheric Sciences

Framboids and the OAE2


Phillip Reid

Mentored by Peter Vekilov
Chemical & Biomolecular
Engineering

Assessing the Effects of Combined
Antimalarial Drugs on Hematin
Crystallization and Complexation


Kelli Restivo

Mentored by Tony Frankino
Biology & Biochemistry

Variation among individuals in
cryptic morphological scaling
relationships


Suezen Salinas

Mentored by Sheila Katz
Sociology

Visual Approaches: New Dimensions
in Research Methods


Taha Shafquat

Mentored by Daniel Araya
Mechanical Engineering

Flow Control in a Magnetic Soap Film



Rakshak Talwar

Mentored by Ioannis Kakadiaris
Computer Science

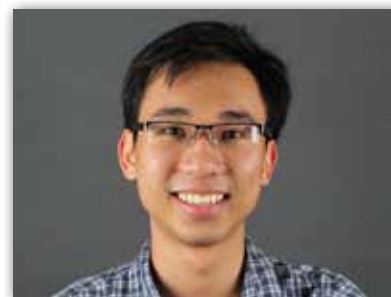
Roz: Automatic Music Creation



Andrew Thompson

Mentored by Jose Baez-Franceschi
Information & Logistics Technology

Virtual Reality in Medical Trainings



Luc To

Mentored by Edgar Bering
Physics

Stabilize a Weather Balloon Payload
by Using Gyroscope, Ball Bearing
Swivel and Increasing the Moment
of Inertia



Brittany Trinh

Mentored by Debora Rodrigues
Civil & Environmental Engineering

Efficient Treatment of Chromium
Plating Wastewater Using a Chitosan
Composite Polymer



Jared Turner

Mentored by William Ott
Mathematics

Role of Noise in Resource-Limited
Genetic Networks



Mable Wan

Mentored by Aaron Becker
Electrical & Computer Engineering

Swarm Object Manipulation



Joshua Weibling

Mentored by Badri Roysam
Electrical & Computer Engineering

Neuroinformatic Analysis of
Cytoarchitectural Neighborhoods

2016 ORAL PRESENTATION SCHEDULE

Oral Presentation Session 1 The Honors College, Room 212J *Moderator: Bradley McConnell*

5:00 p.m.

Ahad Azimuddin

Manasa Kanukurthy

Mentored by Bradley McConnell
Pharmacological & Pharmaceutical Sciences
Cardiomyocyte Regeneration Using Stem Cell Therapy

5:20 p.m.

Alexander Le

Mentored by Bradley McConnell
Pharmacological & Pharmaceutical Sciences
Knock-in mice harboring a Ca²⁺ desensitizing mutation in cardiac troponin C develop early onset dilated cardiomyopathy

5:40 p.m.

David Lankford-Bravo

Mentored by Paul Mann
Earth & Atmospheric Sciences
Delineation of the Mesozoic “step-up” at the continent-ocean boundary in the US Gulf of Mexico and its Cenozoic role as a thrust-ramp for passive margin fold-belts

6:00 p.m.

Jeffrey Hong

Mentored by Kelly Boysen
Emergency Management
Drones in Emergency Management

Oral Presentation Session 2 The Honors College, Room 212L *Moderator: Chandra Mohan*

5:00 p.m.

Divya Kurian

Melissa Yang

Mentored by Chandra Mohan
Biomedical Engineering
Fish Oil Supplements in Arthritis and Lupus

5:20 p.m.

Ayesha Masood

Mentored by Jason Johnson, University of Texas MD Anderson Cancer Center, Neuroradiology Department
Health & Human Performance
Evaluation of delayed FDG-PET in differentiating progressive disease from pseudoprogession in brain tumors

5:40 p.m.

Joel Thomas

Mentored by Simon Bott
Chemistry
A Tale of Two States: Health Literacy in Two Models of Medicaid

6:00 p.m.

Jennifer Cleveland

Mentored by Daphne Hernandez
Health & Human Performance
From PURS to ePortfolio: Effects of icon-based menu labeling on sales at a community center cafe

6:20 p.m.

Maeli Zapata

Mentored by Yuliya Summers
Curriculum & Instruction
Effects of Dual Language Schools In Monolingual Children

Oral Presentation Session 3 The Honors College, Room 212S *Moderator: James Conyers*

5:00 p.m.

Delana Beacham

Evvan-Joi Croll

Alia Foley

Davonte Lyons

Janessia Prince

Jasmin Weaver

Mentored by James Conyers
African American Studies
Project Homeland: African Philosophy & Spirituality

5:20 p.m.

Jennifer Reiss

Mentored by Mary Ann Ottinger and Hanneline Smit-Robinson, BirdLife South Africa
Biology
Environmental Lead in South Africa

5:40 p.m.

Denise Gomez

Mentored by Dina Alsowayel
Women's, Gender & Sexuality Studies
Why Oil the Fuss: Iraq, Iran and Saudi Arabia

6:00 p.m.

Emma Tutko

Mentored by Sally Vaughn
History
It's Not Corruption, It's Fashion: The presence of fashion in the high Middle Ages

6:20 p.m.

Chance Smith

Mentored by Gary Dworkin
Sociology
Diversity in Colleges: Opinions on Moral Laws in the United States

2016 POSTER AND ORAL PRESENTATIONS

Omar Abousaway

Mentored by Montgomery Pettitt, Sealy Center for Structural Biology & Molecular Biophysics, University of Texas Medical Branch

Biology & Biochemistry

Investigation of the Binding of Cyclin-Dependent Kinase 6 Inhibitors Using Molecular Modeling Methods

Pooja Agrawal

Mentored by Rosenda Murillo

Psychological, Health & Learning Sciences

The Association between Alcohol Use and Sedentary Behavior among Adults: the National Health and Nutrition Examination Survey (NHANES) 2007-2014

Rasheed Ajala

Mentored by Paul Mann

Earth & Atmospheric Sciences

Gravity modeling of the flexural response of loading of the Niger and Amazon deltas on their underlying thinned continental and oceanic crust

Uchechukwu Akoma

Mentored by Erin Kelleher

Biology & Biochemistry

Genetic variation in resistance and tolerance of an invading transposon in *Drosophila melanogaster*

Rawan AlMallahi

Mentored by Chad Vecitis, Harvard University

Environmental Science & Engineering

Creating a freestanding, fully-carbon and polymer-free membrane for separation technologies

Mohammad Almatrood

Mentored by Paul Mann

Earth & Atmospheric Sciences

Mesozoic to Recent, regional tectonic controls on subsidence patterns in the Gulf of Mexico basin

Sahar Anjum

Mentored by Michael Zvolensky

Psychology

Financial Strain and Cognitive-Based Smoking Processes: The Explanatory Role of Depressive Symptoms among Adult Daily Smokers

Candace Atkins

Mentored by Norma Olvera

Psychological, Health & Learning Sciences

The Relationship between Hispanic Maternal Acculturation and Early Adolescent Daughter's Engagement in Disordered Eating

Ahad Azimuddin

Mentored by Bradley McConnell

Pharmacological & Pharmaceutical Sciences

Cardiomyocyte Regeneration Using Stem Cell Therapy

Zachery Baker

Mentored by Jeffrey Rimer

Chemical & Biomolecular Engineering

Identifying Effective Inhibitors for Pathological Cholesterol Crystallization

Delana Beacham

Mentored by James Conyers

African American Studies

Project Homeland: African Philosophy & Spirituality

Christian Behrend

Mentored by Edgar Bering

Physics

Results from the USIP-UH contribution to the BARREL-4 campaign

Josue Benitez

Mentored by Mequanint Moges

Engineering Technology

Mobile Classroom Security

Christopher Bias

Mentored by Edgar Bering

Physics

High Altitude DC Electric Field Measurements Using Balloons

Francisco Blanco

Mentored by Joydip Das

Pharmacological & Pharmaceutical Sciences

Mammalian Unc13-1 and Unc13-2 Isoforms as Potential Novel Bryostatins-1 Targets

2016 POSTER AND ORAL PRESENTATIONS

Samantha Bryant

Mentored by Lars Grabow

Chemical & Biomolecular Engineering

Theoretical Insights into the Hydrodeoxygenation Mechanism of Phenol on Palladium(111)

Steven Canales

Mentored by Daphne Hernandez and Larry Lipshultz, Baylor College of Medicine, Scott Department of Urology Health & Human Performance

The Use Of Performance Enhancing Drugs In Professional Male Bodybuilders Is Associated With Increased Mortality

Eduardo Carranza

Mentored by Mequanint Moges & Jayashree Soman, Department of BioSciences at Rice University Engineering Technology

Expression, Purification, and Crystallization of the Recombinant Hemoglobin Mutant Protein alpha E7LE11F/ beta wildtype for X- ray Diffraction Studies

Liliana Carreno

Mentored by Ziad Qureshi

Interior Architecture

Labor Saving Machines: The Human and Environmental Impact via Dose

Joshua Chakranarayan

Mentored by Simon Bott and Stephen Wong, Houston Methodist Research Institute Chemistry

OD1: Potential Regulator of Amyloidogenesis via Endosomal Trafficking

Courtney Chatman

Mentored by Mequanint Moges

Engineering Technology

TruForce Tracker

Divya Chilukuri

Mentored by Maria Bondesson, MD Anderson Cancer Center Pharmacological & Pharmaceutical Sciences

Determining the Relationship between Triple-Negative Breast Cancer Metastasis and Posterior Lateral Line Migration in Zebrafish Embryos

Jennifer Cleveland

Mentored by Daphne Hernandez

Health & Human Performance

From PURS to ePortfolio: Effects of icon-based menu labeling on sales at a community center cafe

Joanna Crabtree

Mentored by Ziad Qureshi

Interior Architecture

Delivery Drones: Opening the Door to the Future of Retail

Evvan-Joi Croll

Mentored by James Conyers

African American Studies

Project Homeland: African Philosophy & Spirituality

Caleb Daugherty

Mentored by Margaret Cheung

Physics

Investigation of the effect of crowding on cooperativity in the folding of phosphoglycerate kinase

Matthew Davis

Mentored by Mequanint Moges

Engineering Technology

Mobile Classroom Security

Safia Essien

Mentored by David Stewart and Robert Bast, MD Anderson Cancer Center, Experimental Therapeutics Biology & Biochemistry

Autophagy Protects Ovarian Cancer Cells from Olaparib-induced Toxicity

Alexis Fenton

Mentored by Edgar Bering

Physics

Results from the USIP-UH contribution to the BARREL-4 campaign

Allia Foley

Mentored by James Conyers

African American Studies

Project Homeland: African Philosophy & Spirituality

Sohan Gadkari

Mentored by Jose Contreras-Vidal
Electrical & Computer Engineering

Evaluation of EEG Systems for Continuous Monitoring of Brain Dynamics in an Unconstrained Museum Setting

Anisleidys Garcia

Mentored by Jacinta Conrad
Chemical & Biomolecular Engineering

Enhanced Oil Recovery Method

Kiana Garcia Darlington

Mentored by Edgar Bering
Physics

A New Approach on Sampling Microorganisms from the Lower Stratosphere

Craig George

Mentored by Bernhard Bodmann
Mathematics

Cluster with Caution!

Denise Gomez

Mentored by Dina Alsowayel
Women's, Gender & Sexuality Studies

Why Oil the Fuss: Iraq, Iran and Saudi Arabia

Eliud Gonzalez

Mentored by Megan Robertson
Chemical & Biomolecular Engineering

Hydrolytic Degradation of Biorenewable Epoxy Resins Derived from Soybean Oil and Phenolic Acid

Michael Greer

Mentored by Edgar Bering
Physics

Time Code Encoder using the IRIG-B Protocol

Bryan Gunawan

Mentored by Edgar Bering
Physics

A New Approach on Sampling Microorganisms from the Lower Stratosphere

Steven Guzman

Mentored by Yan Yao
Electrical & Computer Engineering

A polyimide with divalent ion storage capabilities for aqueous batteries

Brooks Hale

Mentored by Mequanint Moges
Engineering Technology

TruForce Tracker

Aya Hasan

Mentored by Jose Contreras-Vidal
Electrical & Computer Engineering

How does the brain experience art? Part A: Behavioral Findings

Munib Hasnain

Mentored by Margaret Cheung
Physics

Biochemical Oscillators and Synchronization

Jamila Hassanali

Mentored by Rosenda Murillo
Psychological, Health & Learning Sciences

The Association between Alcohol Use and Sedentary Behavior among Adults: The National Health and Nutrition Examination Survey (NHANES) 2007-2014

Jessica Hedge

Mentored by EunSook Kwon
Industrial Design

POCO: Design for Portion Control

Stacy Hernandez

Mentored by Ziad Qureshi
Interior Architecture

The Inevitable Anthropomorphic Takeover: Future Impact of Space in Commercial Kitchens

Jeffrey Hong

Mentored by Kelly Boysen
Emergency Management

Drones in Emergency Management

Skyler Howell

Mentored by James Briggs
Biology & Biochemistry

Effect of Various Inhibitors on Enzymatic Activity of Fructose-1,6-Bisphosphatase

Shelby Ivy

Mentored by Qian Lu
Psychology

You and I are not the same: The role of generational status in the mechanism of social constraints in Asian Americans

Jaweria Jaweria

Mentored by Richard Meisel
Biology & Biochemistry

The Effect of Temperature on the Regulation of Genes in the House Fly Sex Determination Pathway

Emily Johnson

Mentored by Anjali Kanojia
International & Global Studies

The Role of NGOs in Democracy Building in Malaysia

Elizabeth Joseph

Mentored by Helekar Santosh, Methodist Research Institute
Biology & Biochemistry

Interactive Magnetic Brain Stimulation in Sensory Perception

Manasa Kanukurthy

Mentored by Bradley McConnell
Pharmacological & Pharmaceutical Sciences

Cardiomyocyte Regeneration Using Stem Cell Therapy

Jasneet Kaur

Mentored by Tim Cooper and James You, Hematopathologist
Biology & Biochemistry

Role of p53R172H in Pten Deficient Prostate Cancer

Elizabeth Knuppel

Mentored by Margaret Cheung
Physics

Mechanism of chemotaxis in Myxococcus xanthus bacteria

Marie Kouassi

Mentored by Paul Mann
Earth & Atmospheric Sciences

Paleozoic origins and pre-rift locations of continental blocks of the Gulf of Mexico and South America based on a regional compilation of detrital zircon ages

Divya Kurian

Mentored by Chandra Mohan
Biomedical Engineering

Fish Oil Supplements in Arthritis and Lupus

Maria Ciara Lalata

Mentored by Margaret Cheung and Rajesh Balagam, Rice University, Center for Theoretical Biological Physics
Physics

Effect of cell reversals on colony expansion of Myxococcus xanthus bacteria

David Lankford-Bravo

Mentored by Paul Mann
Earth & Atmospheric Sciences

Delineation of the Mesozoic "step-up" at the continent-ocean boundary in the US Gulf of Mexico and its Cenozoic role as a thrust-ramp for passive margin fold-belts

Alexander Le

Mentored by Bradley McConnell
Pharmacological & Pharmaceutical Sciences

Knock-in mice harboring a Ca²⁺ desensitizing mutation in cardiac troponin C develop early onset dilated cardiomyopathy

Jamie Lehn

Mentored by Edgar Bering
Physics

A New Approach on Sampling Microorganisms from the Lower Stratosphere

Erin Lew

Mentored by EunSook Kwon
Industrial Design

Takto: Smart Toys

Davonte Lyons

Mentored by James Conyers
African American Studies

Project Homeland: African Philosophy & Spirituality

Tara Mars

Mentored by Jacinta Conrad
Chemical & Biomolecular Engineering

Flow and Transport of Complex Fluids in Porous Media

Anthony Martinez

Mentored by Edgar Bering
Physics

Studying Atmospheric Gravity Waves Through Airglow

Cristian Martinez

Mentored by María Pérez
Hispanic Studies

Making a difference in the Hispanic Community: A study about the Impact of Obesity and Diabetes Education at the ECHOS Food Bank

Sabrina Martinez

Mentored by Paul Mann
Earth & Atmospheric Sciences

Calculation of Regional Geomorphic Indices to
Constrain the Mechanisms of Tectonic Uplift and Active
Deformation of the Island of Puerto Rico

Ayesha Masood

Mentored by Lee Beom and Jason Johnson, University
of Texas MD Anderson Cancer Center, Neuroradiology
Department
Health & Human Performance

Evaluation of delayed FDG-PET in differentiating
progressive disease from pseudoprogression in brain
tumors

Samar Mathur

Mentored by Edgar Bering
Physics

Time Code Encoder using the IRIG-B Protocol

Shane Meadows

Mentored by EunSook Kwon
Industrial Design

ALERT: Never Forget Your Items

Michel Medellin

Mentored by Edgar Bering
Physics

Gas Analysis using Auroral Spectroscopy

Emma Moore

Mentored by Vida Thomas and Richard Behringer, University
of Texas MD Anderson Cancer Center, Department of
Genetics
Biology & Biochemistry

Epithelial Regression During Male Sex Differentiation

Terry Nguyen

Mentored by Mequanint Moges
Engineering Technology

TruForce Tracker

Tri Nguyen

Mentored by Edgar Bering
Physics

Undergraduate Student Instrumentation Project:
Fundamentals of a Star Tracker

Tu Van Nguyen

Mentored by Edgar Bering
Physics

Studying Atmospheric Gravity Waves Through Airglow

Michelle Nowling

Mentored by Edgar Bering
Physics

Undergraduate Student Instrumentation Project:
Fundamentals of a Star Tracker

Lily Ortega

Mentored by Erin Kelleher
Biology & Biochemistry

Genetic variation in resistance and tolerance of an
invading transposon in *Drosophila melanogaster*

Juan Peredo

Mentored by Mequanint Moges
Engineering Technology

Mobile Classroom Security

Diego Perez

Mentored by Edgar Bering
Physics

Ozone UV-C Spectroscopy

Khoa Pham

Mentored by Margaret Cheung
Physics

Cooperative DNA binding and deformation by FoxM1
transcription factors

Minh Pham

Mentored by Edgar Bering
Physics

Undergraduate Student Instrumentation Project:
Fundamentals of a Star Tracker

Preston Pierott

Mentored by Mequanint Moges
Engineering Technology

Security Drones

Megan Pina

Mentored by Edgar Bering
Physics

Student Instrumentation in Atmospheric Profiling

Rafael Polo Prieto

Mentored by Elizabeth Ostrowski, Andrés Bendesky, and
and Hopi Hoekstra, Harvard University, Department of
Organismic & Evolutionary Biology and Department of
Molecular & Cell Biology
Biology & Biochemistry

Characterizing the Vasopressinergic System to Understand
the Neurobiology of Parental Behavior in *Peromyscus*

Itay Porat

Mentored by Edgar Bering
Physics

Studying Atmospheric Gravity Waves Through Airglow

Ana Prebisch

Mentored by Katerina Kourentzi
Chemical & Biomolecular Engineering

Purification of Recombinant NPM-ALK Fusion Protein and
Development of a Sensitive Detection Immunoassay

Janessia Prince

Mentored by James Conyers
African American Studies

Project Homeland: African Philosophy & Spirituality

John Prince

Mentored by Edgar Bering
Physics

A New Approach on Sampling Microorganisms from the
Lower Stratosphere

Karina Ramos

Mentored by Ziad Qureshi
Interior Architecture

Continuous Change: The Circle of Manufacturing

Serrae Reed

Mentored by Pavel Dutta
Mechanical Engineering

Antireflection Coatings for Thin Film Photovoltaics on
Flexible Substrates

Jennifer Reiss

Mentored by Mary Ann Ottinger and Hanneline Smit-
Robinson, BirdLife South Africa
Biology & Biochemistry

Environmental Lead in South Africa

Zeshan Rizvi

Mentored by Megan Robertson
Chemical & Biomolecular Engineering

Hydrolytic Degradation of Biorenewable Epoxy Resins
Derived from Soybean Oil and Phenolic Acid

Micaela Rodriguez

Mentored by Leslie Frankel
Psychological, Health & Learning Sciences

Stressors of College Students Who Are Parents: A
Systematic Review

Elizabeth Rogers

Mentored by Anjali Kanojia
International & Global Studies

Agenda Setting in the Media: The Indian Case

Manuel Rojas

Mentored by Lars Grabow
Chemical & Biomolecular Engineering

Computational Study of Single Metal-Alloy Catalysts in the
Synthesis of Ammonia

Vanesa Romero

Mentored by Hanako Yoshida
Psychology

Relevance of Analogical Reasoning in Scale Error

Jacob Rose

Mentored by Claudia Ratti
Physics

Properties of Strongly Interacting Matter

Minahil Samee

Mentored by Ralph Metcalfe
Mechanical Engineering

Can Mechanical Heart Pumps Cause Blood Clots?

Sarah Sanchez

Mentored by Ziad Qureshi
Interior Architecture

The Eternal Journey: The Impact of the Automobile

Erick Santos

Mentored by Mequanint Moges
Engineering Technology

Security Drones

Alfredo Serrano

Mentored by Mequanint Moges
Engineering Technology
Mobile Classroom Security

Asit Shah

Mentored by Elizabeth Anderson Fletcher
Decision & Information Sciences
Humanitarian Supply Chain Management and Infectious Diseases: Strategically Sourcing Medical Supplies & Human Capital to Save the World

Khalid Sheikh

Mentored by Daniel DeSalvo, MD, Department of Pediatric Diabetes & Endocrinology, Texas Children's Hospital and Baylor College of Medicine
Biology & Biochemistry
Measuring the Prevalence and Efficacy of Advanced Diabetes Technology in Pediatric Patients with Type 1 Diabetes

Devanshi Singh

Mentored by Amy Sater
Biology & Biochemistry
The Response of Astrocytes to Pressure

Chance Smith

Mentored by Gary Dworkin
Sociology
Diversity in Colleges: Opinions on Moral Laws in the United States

Mina Song

Mentored by Bernhard Rappenglueck
Earth & Atmospheric Sciences
Characterization of Korea's Air Pollution

Brooklyn Tanner

Mentored by Margaret Cheung
Physics
Bayesian Analysis of Reaction Coordinates for Protein Folding and Transitions

George Thomas

Mentored by Edgar Bering
Physics
Gas Analysis using Auroral Spectroscopy

Joel Thomas

Mentored by Simon Bott
Chemistry
A Tale of Two States: Health Literacy in Two Models of Medicaid

Ray Torres

Mentored by Amy Sater
Biology & Biochemistry
Controlled Cortical Impact on *Xenopus laevis*

Emma Tutko

Mentored by Sally Vaughn
History
It's Not Corruption, It's Fashion: The presence of fashion in the high Middle Ages

Alondra Uribe

Mentored by María Pérez
Hispanic Studies
Making a difference in the Hispanic Community: A study about the Impact of Obesity and Diabetes Education at the ECHOS Food Bank

Gerardo Vasquez

Mentored by Mequanint Moges
Engineering Technology
Security Drones

Brett Velasquez

Mentored by Edgar Bering
Physics
Total Electron Content Results from the UH/BARREL-4 Campaign

Luis Victor

Mentored by Edgar Bering
Physics
Undergraduate Student Instrumentation Project: Fundamentals of a Star Tracker

Tung Vu

Mentored by Margaret Warner and Dekai Zhang, TAMHSC Institute of Biosciences & Technology, Center for Infectious and Inflammatory Diseases
Biology & Biochemistry
HOXA11 hypermethylation: a novel breast cancer biomarker

Jasmin Weaver

Mentored by James Conyers

African American Studies

Project Homeland: African Philosophy & Spirituality

Megan Whelen

Mentored by Hanako Yoshida

Psychology

Words (But Not Tones) Refer to Objects

Chathuri Wickramaratne

Mentored by Hanadi Rifai

Civil & Environmental Engineering

Confocal Laser Fluorescence Microscopy (CLFM)

Methodology to Measure Oil in Water

Quentaxia Wrighting

Mentored by Lorraine Reitzel

Psychological, Health & Learning Sciences

Relationship between Cigarette Purchasing Patterns,
Readiness to Quit, and Quit Attempts among Homeless
Smokers**Melissa Yang**

Mentored by Chandra Mohan

Biomedical Engineering

Fish Oil Supplements in Arthritis and Lupus

Ernest Yarro

Mentored by Mequanint Moges

Engineering Technology

TruForce Tracker

Yang Yu

Mentored by Juan-Carlos Silva-Tamayo

Earth & Atmospheric Sciences

Understanding Oceanic Anoxic Event via Sulfur Isotope
Analysis**Safiyya Zaidi**

Mentored by Samina Salim

Pharmacological & Pharmaceutical Sciences

Protective Effect of Propranolol and Nadolol on PTSD-Like
Behavior in Rats**Dina Zamil**

Mentored by Hua Chen

Pharmacological & Pharmaceutical Sciences

ADHD Demographic Diagnosis Trends in U.S. Children
Between 2004 and 2012: an Analysis of NHANES Data**Maeli Zapata**

Mentored by Yuliya Summers

Bilingual Education

Effects of Dual Language Schools In Monolingual Children

Apply for these nationally competitive scholarships!

BARRY GOLDWATER SCHOLARSHIP

For sophomores and juniors who demonstrate academic excellence and intend to pursue research careers in mathematics, the natural sciences, or engineering. This competitive scholarship covers eligible expenses for undergraduate tuition, fees, books, and room and board, up to a maximum of \$7,500 annually.

Campus Deadline: Dec 2, 2016

HARRY S. TRUMAN SCHOLARSHIP

For college juniors with exceptional leadership potential who are committed to careers in government, the nonprofit or advocacy sectors, education or elsewhere in public service. Each Truman Scholar receives up to \$30,000 for graduate study.

Campus Deadline: Dec 2, 2016

MORRIS K. UDALL & STEWART L. UDALL SCHOLARSHIP

For sophomore and junior level college students committed to careers related to the environment, tribal public policy, or Native American health care. Awards of up to \$7,000 annually.

Campus Deadline: Feb 3, 2017

CRITICAL LANGUAGE SCHOLARSHIP

Language immersion program for freshmen, sophomores, and juniors from all academic disciplines. Sponsored by the U.S. Department of State, this summer program allows students to study one of 14 critical languages, including Arabic, Korean, and Hindi.

National Deadline: Nov 16, 2016

NSF GRADUATE RESEARCH FELLOWSHIP

For graduating seniors who intend to pursue a research-based master's or doctoral degree in natural science, engineering, mathematics, or STEM education. The award includes a \$34,000 living stipend and \$12,000 cost-of-education allowance.

National Deadline: Oct 24-28, 2016

FULBRIGHT U.S. STUDENT PROGRAM

For graduating seniors, current graduate students, and alumni. Students may apply to teach English, enroll in a graduate degree program, or conduct research for one year in more than 140 countries around the world. Recipients receive a living stipend, travel accommodations, and basic health insurance.

Campus Deadline: Early Sept 2017



Application for these awards requires a strong academic, leadership, and service record. You must be nominated to apply. For more information, visit the **Office of Undergraduate Research**.

2016 SURF STUDENTS IN ACTION



University of Houston

The Honors College

Office of Undergraduate Research

M.D. Anderson Library

4333 University Drive, Room 212

Houston, TX 77204-2001

Telephone: 713.743.3367

Fax: 713.743.9015

UndergraduateResearch.uh.edu

