

U N I V E R S I T Y *of* H O U S T O N

Office of Undergraduate Research • The Honors College present

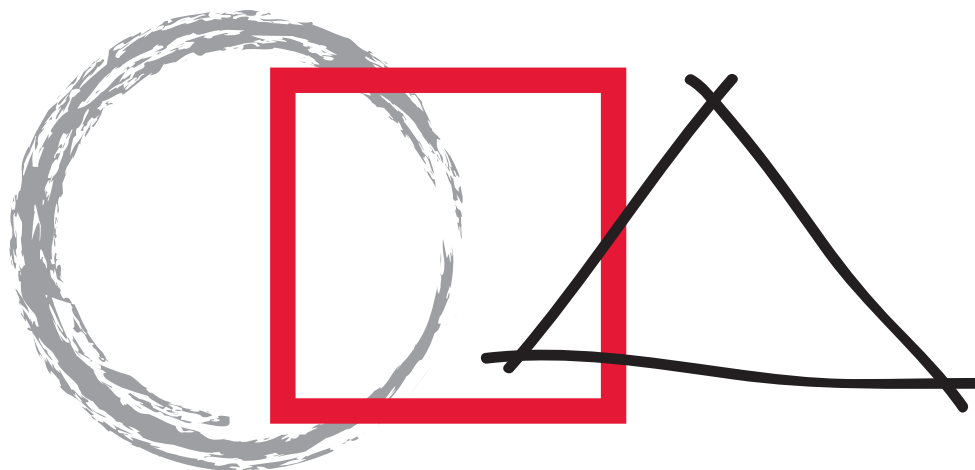
Undergraduate Research Day

poster, oral & creative presentations by UH undergraduates

Thursday, October 2, 2008

Rockwell Pavilion, M.D. Anderson Library

Poster Presentations at 4 p.m.



UNIVERSITY OF HOUSTON

office of undergraduate **RESEARCH**

THE HONORS COLLEGE



OFFICE OF
UNDERGRADUATE **DISCOVERY** PROGRAMS
UNIVERSITY *of* HOUSTON
www.uh.edu/discovery

PROGRAM of Events for Undergraduate Research Day

Program for Event



4:00-4:20 p.m. Viewing of Student Posters

4:20-5:00 p.m. Welcome and Announcements

Dr. Stuart A. Long
Interim Dean of The Honors College
Associate Dean of Undergraduate Research and
The Honors College

Dr. Jerald Strickland
Interim Senior Vice President for Academic Affairs and
Interim Provost for the University of Houston

Dr. Donald L. Birx
Vice President for Research for the University of Houston

5:00 p.m. Reception & Continue Poster Viewings

*A special thanks to the Texas Learning & Computation Center (TLC2)
for printing the posters, the Office of Undergraduate Discovery Programs
for contributing the awards, and the Division of Research
for contributing additional funds for the event.*

Undergraduate Research Day

FROM the Office of Undergraduate Research

We are so pleased to welcome you to our fourth annual Undergraduate Research Day. This is an important and exciting event for the University of Houston for a variety of reasons. Undergraduate Research Day is an opportunity for undergraduates from all colleges and disciplines to display and present their research to the campus community, hence learning and growing from each other. It is a venue for sharing ideas and information with all members of the UH community, including students, faculty, staff and friends of UH. It is also an arena for conveying the University's commitment to promoting undergraduate research activities on campus. Through the support of the Office of Undergraduate Research's programs and the Quality Enhancement Plan, it is evident that UH has made undergraduate research a priority for its students' academic development.

Today you are viewing 42 posters from our Summer Undergraduate Research Fellowship (SURF) participants. These students' projects range from researching Houston's civil rights movement, determining the power of presidential policy proclamations, and studying *Julius Caesar* to examining magnetic resonance imaging for early detection of breast cancer, working with receptors to better understand the neurological pathways underlying schizophrenia, and developing an artificial skin simulant for the testing of a novel type of catheter.

Today we also have other undergraduates' posters on display, as well as students that conducted oral presentations that took place earlier in the day. These students, like our SURF students, have conducted substantive research projects within the last year.

Since its development in 2004, the Office of Undergraduate Research has supported and assisted over 500 students through the Provost's Undergraduate Research Scholarship program, the Summer Undergraduate Research Fellowship program, and the Senior Honors Thesis program. We are thankful to be able to offer these programs to students, and look forward to supporting even more undergraduates throughout the coming years.

Funding these research endeavors, however, would not have been possible without the support from many of our advocates on campus. The Provost's office, the Division of Research, the College of Natural Sciences and Mathematics, the Cullen College of Engineering, the Honors College and the College of Technology have all contributed to our office's programs, hence ensuring that many more undergraduates are able to engage in meaningful mentored research experiences during their collegiate careers.

We also want to extend our appreciation to our first-rate selection committee and advisory board. The members of this committee donate their time and expertise throughout the year to select the student recipients of these highly desirable scholarships and fellowships. This truly is a demanding, thankless job, and therefore we are tremendously grateful to these individuals.

Thank you again for attending Undergraduate Research Day, and supporting undergraduate research endeavors at the University of Houston. If the Office of Undergraduate Research can be of any assistance to you in securing research opportunities or seeking undergraduates to assist you in your ongoing research, do not hesitate to contact us.

Stuart Long
Interim Dean
Honors College,
Associate Dean of
Undergraduate Research,
Professor of Electrical
Engineering



Karen Weber
Program Manager for
Office of Undergraduate
Research



The Office of Undergraduate Research

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October 2, 2008

Rockwell Pavilion

The Office of Undergraduate Research

The Honors College

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University Relations
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Faculty Mentoring Award Recipient

The Office of Undergraduate Research's Faculty Award for Mentoring Undergraduate Research is intended to recognize demonstrated excellence in mentoring undergraduate researchers, to encourage mentoring relationships with undergraduate students, and to convey the campus' high regard for such contributions made by the faculty in the academic and research community. The recipient for the 2007-2008 academic year is Margot Gayle Backus, an associate professor in the Department of English.

Dr. Backus is a specialist in modernist and contemporary Irish literature and culture; her interdisciplinary work reaches into studies in gender and sexuality as well as into trauma theory and the relationship between literature and social issues. She has published articles in journals including *Signs*, *Cultural Critique*, and *American Imago*. Her study, *The Gothic Family Romance: Heterosexuality, Child Sacrifice and the Anglo-Irish Colonial Order* (Duke UP, 1999), won the 2001 American Conference for Irish Studies' prize for an outstanding first book. Most recently, she was the Irish American Cultural Institute's 2007-2008 Research Fellow at the National University of Ireland-Galway, and is writing a book tentatively entitled *Odd Jobs: James Joyce and the Cultural Logic of Scandal*.

In addition to being an accomplished scholar, Dr. Backus is a dedicated educator who is committed to mentoring students through scholarship and fellowship programs, independent study projects, directing theses, and organizing reading groups. She often writes collaborative presentations and articles with students and encourages her students to participate in local, regional, and national meet-

ings and conferences. "I am dedicated to supporting students in their intellectual, academic, and professional development, both at the University of Houston, and beyond," says Dr. Backus.

In addition to these activities, Dr. Backus has earned a reputation as one who goes to great lengths to provide students with educational opportunities. "No matter how busy Dr. Backus may be, she is always available to help improve the lives of her students, to act as mentor both academically and personally. She is not just my favorite professor—she is one of my favorite people," a student said.

Similarly, another student shared that she received a small scholarship to study in Prague, but told Dr. Backus that she planned to decline the award because she could not afford to attend the program overseas. Within 24 hours, Dr. Backus found the student another fellowship to fund the program, and assisted her in applying for the award. The student now cites her time in Prague as one of the highlights of her undergraduate career.

Said one student, "I find Dr. Backus to be an inspiring instructor, a warm and compassionate mentor, and a singular influence in the lives of myself and fellow students."



Margot Backus
Associate Professor
Department of
English





SURF Participants

Role of TRPC Channels in Apoptosis in Podocytes

SURF Student: Aisha Abdullah

Student's Major: Biology & Biochemistry

Faculty Mentor: Stuart Dryer

Podocytes are critical components of the glomerular filtration barrier. Podocytes give rise to foot processes that terminate on the surface of the glomerular capillary, and thereby form a structure known as the slit diaphragm. The slit diaphragm plays a major role in filtration of blood, removing cells and proteins in the initial steps of kidney function. There is evidence that podocytes play an active role in this process. Mutations in several proteins have been shown to alter podocyte function, leading to the presence of protein in the urine, and ultimately to kidney failure. One of these is an ion channel known as TRPC6. Previous research has shown that the TRPC6 ion channel plays a significant role in the regulation of free calcium ion levels in many cell types, and it is required for normal kidney function. My research focuses on gain-of-function mutations in TRPC6 genes. The connection between these mutations and apoptosis in podocytes, due to increased levels of calcium ions, is the particular focus of this project. The experiments will develop a better understanding of the roles that TRPC6 plays in regulating podocytes as well as its respective roles in the progression of renal failure.



SALSA (SAving Lives Staying Active)

SURF Student: Terri Alvarez

Student's Major: Nutrition

Faculty Mentor: Rebecca Lee

The purpose of this study was to determine whether participation in a salsa dance intervention would reduce stress and be perceived as fun. Twenty-four healthy women of color between the ages of 25 and 60 years participated in a 4-week study to increase physical activity by learning salsa dance. Participants completed online surveys and physical health assessments at baseline Time1 (T1) and at post-test Time 2 (T2). Women participated in bi-weekly salsa dance classes for 4 weeks. All classes were taught by a trained instructor at the University of Houston. Results indicated that women who participated in the biweekly salsa dance classes increased weekly reported physical activity. Although women reported the same number of stresses, they felt less impact from weekly stress after participating in the salsa intervention. Salsa dancing may be an effective way to reduce the impact of weekly stressors.



Surety Bond: Protecting Public Works Projects

SURF Student: Xochitl Baez

Student's Major: Constuction Management

Faculty Mentor: Sang-Hoon Lee



Federal, state and local government spend millions of dollars on public works projects each year. Contractors looking to increase their contracting opportunities consequently look to the government for business. However, thousands of contractors experience business failure each year, 26.3% from 2004 to 2006, leaving behind unfinished work. Therefore, protecting the government agency against contractor default is key to the project's success. Surety bonds are an effective tool for an owner to protect itself against insolvent contractors without consequence to the taxpayer. Surety bonds are a three-party contract: the owner (obligee), the contractor (principal), and the surety. Through this agreement, the surety agrees to make the contractor whole in case of default in its performance or payments. Surety bonds protect the owner by shifting risk to the surety company. The rigorous prequalification process ensures that only the most qualified contractors are awarded with the government agency contracts. This research provides a comprehensive examination of current surety bond system.

Synthesis & Characterization of a Novel Biodegradable Ovarian Cancer Targeted MRI Contrast Agents

SURF Student: Ifeoluwa Bamgbose

Student's Major: Biology & Biochemistry

Faculty Mentor: Malavosklisk Bikram



Ovarian cancer continues to represent a major challenge to physicians and radiologists due to a lack of established screenings, specific symptoms and signs of the disease. Most imaging techniques for the early detection of ovarian cancer have proved to be unyielding and dangerous to the human body. On the other hand, magnetic resonance imaging (MRI) provides a means of making definitive noninvasive detection. But, the present contrast agents based on gadolinium complexes can be toxic and fatal. The objective of this research was to synthesize nontoxic and biocompatible contrast agents for the purpose of MR Imaging. Hence in this work, we have synthesized novel gadolinium doped superparamagnetic iron oxide nanoparticles as potential MRI contrast agents for the early diagnosis of ovarian cancer. These particles were then coated to render them non-toxic and inert to the human body. The resulting magnetic nanoparticles will be conjugated to a bioresponsive peptide, GRGDSG, by a selectively modified tetra (ethylene glycol) linker. This bioresponsive peptide selectively adheres to the integrin receptors $\alpha V \beta 3$ present on tumor cells, thereby creating a tumor specific marker. Once the bioresponsive magnetic nanoparticles are synthesized, the MRI relaxivities and cytotoxicity would be characterized in *in vivo* and *in vitro*.

The Office of Undergraduate Research

Love, Sex, and RISK: Sexual Risk Behaviors among Mexican American Heroin Sniffers

SURF Student: Alexandra Canga

Student's Major: Sociology

Faculty Mentor: Alice Cepeda

Non-injecting heroin use (NIU) has been identified as a potential precursor for the transition to injecting drug use (IDU) and other related risk behaviors. This study examines and compares high risk sexual behaviors with a focus on gender differences among a cohort of Chicano non injecting heroin users. Data for this analysis are from structured interviews with 300 street-based recruited male and female NIUs in San Antonio, Texas using an adaptive sampling methodology. There were significant differences found in sociodemographic characteristics between males and females in this sample. The findings indicate that females are engaging in high risk sexual behaviors with partners with high risk characteristics such as current injectors. The findings revealed no significant differences in condom use, in that most are engaging in unsafe sex practices (unprotected sex). Findings may be used to inform specific policies and intervention strategies to prevent unprotected sexual behavior and other harmful health consequences among NIUs.



Memory-Inference in Adults with Right Cerebral Hemisphere Damage

SURF Student: Pamela Dixon

Student's Major: English

Faculty Mentor: Margaret Lehman Blake

Damage to the right cerebral hemisphere (RHD) as a result of stroke frequently results in difficulties with comprehension. Existing research is in disagreement in terms of whether or not individuals with RHD are capable of using contextual cues to assist in discourse comprehension. One possible explanation is that comprehension difficulties may be caused by a breakdown in the ability to use contextual cues. *The Memory-Inference Task* was developed to manipulate the type of information that is needed to generate an inference—text-based versus knowledge-based. Pilot data was collected on 4 healthy, older adults and 4 adults with RHD. The results indicated that both groups had slower response times for text inferencing components; however, the RHD group was disproportionately slower across all components of the comprehension task and generally less accurate. Overall, the preliminary data provides some insight into the sources or components of comprehension that might be troublesome for individuals with RHD.



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The Effects of Systemic Inactivation of NMDA Receptor in Protein Synthesis in the Mouse Brain



SURF Student: Mary Elhardt

Student's Major: Biology & Biochemistry

Faculty Mentor: Maria Victoria Tejada-Simon

Schizophrenia is a mental disorder affecting approximately 1% of the world's population and is characterized with problems in learning and memory. Inactivation of the NMDA receptor in the rodent brain produces characteristic behavioral changes that mimic symptoms of schizophrenia. Treatment with dizocilpine (MK-801), a NMDA receptor blocker, impairs learning and memory function in mice. This sensitization induced by repeated doses of MK-801 is suggested as an animal model of schizophrenia. Learning and memory processes (i.e. NMDA receptor dependent long term potentiation or LTP) need the activation of a signal transduction pathway to initiate protein synthesis and plasticity. We hypothesize that systemic inactivation of NMDA receptors with MK-801 will result in deregulation of these signaling pathways. Mouse pups were administered MK-801 for five consecutive days. Brain regions were extracted and levels of proteins involved in translation initiation machinery and plasticity (AKT, mTOR, Rac) were determined by western blot. MK-801 treatment mice showed decreased activation of AKT and Rac in the hippocampus, suggesting dysregulation of protein translation and aberrant actin remodeling. These observations may contribute to an understanding of the action mechanism of MK-801 as a psychotomimetic agent and could aid in understanding the pathways underlying human schizophrenia.



Does Auditor Change Reflect the Value-Relevance or information Content of Financial Disclosures to Investors in the Capital Market?

SURF Student: Mehrnaz Fallah

Student's Major: Accounting

Faculty Mentor: Scott Whisenant



This study involved investigating the Freedom of Information Act (FOIA) that was used to obtain the filings about auditor changes from the Securities and Exchange Commission (SEC) for a period from 1988 to 1994. This period pre-dates the public disclosure of the filings. Although over 2000 files were obtained, the Central Index Keys, that are the identifiers of the file, are not identified in the files.

The Office of Undergraduate Research

18th Century Women Writers: Life-Writing

SURF Student: Sara Gabler

Student's Major: English, Literature

Faculty Mentor: David Mazella

This summer I worked with Dr. Mazella researching 18th Century literary history. I was able to assist Dr. Mazella with some background research on a book he is currently writing on the year 1771. I was also able to focus my own research on particular women writers of the period. In her book, *A Literary History of Women's Writing in Britain, 1660-1789*, Susan Staves catalogues prominent writers with great influence. Staves notes the importance of literary historicism in her study of works of this period because it illuminates more ideas and particularly opens the door for study of previously ignored genres. I soon became aware of the shift from women writing in their own voice to men writing with a female voice around the mid Eighteenth century. This trend reveals the commodification of the female voice and the growing cultural restraints on women. Women writing during this time period is generally attributed to the emergence of print culture. The accessibility of materials, growing literacy and increasing awareness stimulated writers to create and publish. It is then easy to see the link between the print culture and the rise of the epistolary form.



Does the Space Suit's Portable Life Support System Affect Locomotive Stability in a Martian Gravity?

SURF Student: Maria Fatima Garcia

Student's Major: Biology & Biochemistry

Faculty Mentor: Max Kurz

NASA has revitalized its interest in designing the next generation of space suits that will be used for extra vehicular activities on Mars. The purpose of this investigation was to explore the PLSS load placement influence on the lower extremity kinematics while walking in Martian gravity. Participants walked on a treadmill for four minutes while suspended by a custom-built body weight suspension system consisting of a series of cables and springs that counter-act the effects of Earth's gravity. By stretching the springs to various lengths we will be able to off-load each participant to simulate the effects of a Martian gravity on the body while walking. While suspended, the participants will wear a 20 kg rig that can be arranged into five different load placement configurations. The configurations will allow us to determine which load placement results in a walking pattern that is similar to what is seen in the Earth's gravity. Results indicated that the placement of load near the sides of the torso and below improves locomotion stability compared to placing the load in front of an individual.



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Testing for Circadian Rhythms in Mouse Oligodendrocytes in Relation to Multiple Sclerosis



SURF Student: Mariana Guerrero

Student's Major: Biology & Biochemistry

Faculty Mentor: Michael Rea

Circadian rhythms are daily oscillations in physiology and behavior driven by internal biological clocks distributed throughout an organism. Multiple Sclerosis (MS) is a neurological disease caused by loss of myelin surrounding axons of neurons. Demyelination in the optic nerve leads to vision loss, which is often the first symptom in MS patients. After observing that the optic nerve expresses oscillatory rhythms in vitro, we hypothesized that circadian rhythms play a part in myelin maintenance. To test for circadian rhythms in oligodendrocyte genes, we first searched mouse genomic databases for the presence of the E2 E-box, a robust circadian transcriptional enhancer element. We found several myelin-related genes containing one or more copies of this E-box sequence. Next, to test for the presence of circadian transcriptional machinery within oligodendrocytes, we transfected oligodendrocyte cell lines with pGL2, a luciferase reporter vector subcloned with E2. In preliminary experiments, bioluminescence data of these transfected cells showed promising circadian activity.



Pedagogy through Performance: William Shakespeare's *Julius Caesar*



SURF Student: Nicholas Hansen

Student's Major: English Literature

Faculty Mentor: Ann Christensen

This project combines focused literary study of Shakespeare's Roman play, *Julius Caesar*, with first-hand experience working with the Houston Shakespeare Festival on their August 2008 production of the play. The project stems from these **research questions**: first, how can understanding of performance issues such as casting, adaptation, sets, and the use of verse as an indication of acting cues—enhance the understanding of a play, and second, how might aspects of the production history of *Julius Caesar* (including above performance issues) be used in the undergraduate literature classroom? By combining the literary and theatrical contexts in this way, I explore the way in which methods of textual explication used by working actors can be applied to the more literary study of Shakespeare's language and poetic techniques. My project seizes upon the unique opportunity for dialogue between Shakespearean performance and pedagogy.



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Development of an Artificial Skin Simulant

SURF Student: Robert Hood

Student's Major: Biomedical Engineering

Faculty Mentor: Adam Capitano

This research project was centered around the development of an artificial skin simulant for the testing of a novel type of catheter. After extensive background research into the skin simulants currently in medical use, we decided that a modified ballistics gelatin would be best as our testing medium. Correspondence with manufacturers and the FBI informed us that the industry standard for tissue simulation was 10% ordinance gelatin. As this gelatin must be maintained at 5 degrees Celcius and is of moderate clarity, we discovered a gelatin called Perma-Gel that was usable at room temperature and of great clarity. Testing of the gelatin's penetration pressure and strain rate showed it to be a close approximation of human skin tissue.



Contextual Utility: An Experimental Study of Its Relevance as a Choice Probability Model

SURF Student: Stacey Joldersma

Student's Major: Economics

Faculty Mentor: Nathaniel Wilcox

In the literature on risky decisions, a bet is just an alternative whose outcome depends partly or wholly on chance. The subjective value of a bet seems to depend on the alternatives available to decision makers, or more accurately, the overall choice context. Context effects, like the "Myers effect" by Lee (1971) are inconsistent with most theories of choice probabilities in decision-making, but can be explained by a choice probability model called contextual utility (Wilcox 2007). In contextual utility, this range of possible outcomes in a bet pair determines the variability of choice. Accounting for this variability allows contextual utility to explain violations of expected utility that have been the topic for discussion amongst decision theorists for decades. The first experiment, having two parts, was designed to replicate the Myers effect using large outcome bets. A second experiment was designed to use subjects' choices from specifically constructed bet pairs to estimate a parameter for the subjects' expected utility. Using the estimated utilities we should be able to predict choices in other bet pairs.



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Preparing for the Lawndale Art Center and Beijing Biennial Art Exhibits



SURF Student: Martin Joyce

Student's Major: Sculpture

Faculty Mentor: Cory Wagner

The project entailed assisting Professor Cory Wagner with two art gallery exhibitions: one at the Lawndale art center and one at the Beijing Biennial. The research involved working with plastic fabrication, inflatable construction, electronics, and kinetics, as well as the creation and installation of sculptures on a fairly large scale. These processes are important to the field because sculptors often combine traditional metal and wood fabrication with modern plastics and electronics in their work. Apart from the actual creation of sculptures, the research also included procuring and setting up an art exhibition. The project investigated the inner-workings of the contemporary art world and the processes used by an established artist in creating his own artwork.



Researching for the Community Design Resource Center (CDRC)

SURF Student: Alex Lahti

Student's Major: Architecture

Faculty Mentor: Susan Rogers



The project involved working with the recently established Community Design Resource Center (CDRC), under the mentorship of Susan Rogers, the Center's Director. The CDRC is an innovative outreach and research program that seeks to actively engage citizens, leaders and students in community design projects that improve and revitalize communities. The CDRC partnered with the Pierce Junction community of Houston during the summer to develop design and community development strategies for the preservation of a historic cultural heritage site and the Taylor-Stevenson Ranch, one of the oldest working ranches in Harris County. Specifically, the summer study included researching and documenting the history and existing conditions in the community through maps, demographics, interviews and other graphic analysis; researching precedents and other case studies to illustrate the potential of the urban/agricultural edge in cities; and identifying program and infrastructural strategies to assist the community in meeting its goal of preserving this important area through new forms of economic and community development. The project also involved directly working with Dr. Rogers and a myriad of civic leaders and citizens, which provided valuable exposure to the processes of decision makers, citizens and leaders.



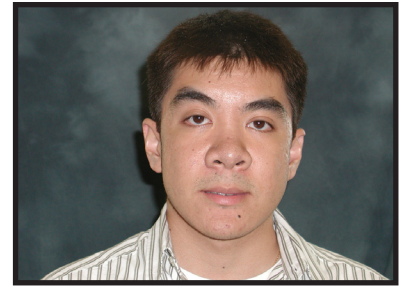
Evaluating the Correlation between Changes in Glucose Concentration and Corneal Thickness with Optical Coherence Tomography

SURF Student: Michael Leba

Student's Major: Biomedical Engineering

Faculty Mentor: Kirill Larin

The cornea plays a huge role in focusing light onto the retina. Thus, small changes in corneal properties can affect vision. This research focuses on the assessment and determination of corneal tissue response to various millimolar concentrations of glucose in terms of thickness changes. Optical Coherence Tomography (OCT) was utilized for its high resolution and nondestructive imaging ability. Essentially, OCT follows the same operational principles as ultrasound, but instead of sound as the source for measurement, OCT uses light. Whole rabbit eyes were held in place in a specially designed dish while immersed in saline for proper hydration, and the cornea was imaged for 10 minutes to record a baseline. In 30 minute increments, a higher concentration of glucose was added, producing an overall glucose concentration of 10, 15, 20, 25, and 30 mM. Ultimately, the increase in glucose concentration yielded a decrease in the corneal thickness. As evidenced by the collected and reported data, OCT might eventually aid in the development of a noninvasive biosensor to monitor glucose levels.



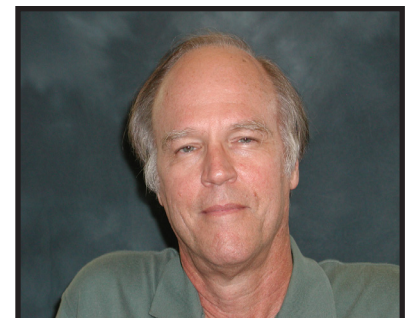
Novel Visualization Techniques for Unwrapping Images of Deployed Coronary Stents

SURF Student: Max Lingamfelter

Student's Major: Biomedical Engineering

Faculty Mentor: Ralph Metcalfe

The use of coronary stents has become a regular practice in the treatment of heart disease. The stent serves to push back the fat deposits, which have caused a blockage. After placing the stent in the artery the struts that makeup the stent cause changes in the flow of the blood through this region. The stent placement can often involve restenosis, the distribution of drugs in drug eluting stents and the deterioration rate of biodegradable stents. The computational flow analysis is performed on mesh's in Fluent. These mesh's are constructed in Gambit by compiling thousands of Dicom images captured from a CT scan of a stent that is deployed in a tube used to simulate an artery. Matlab code was written which performs geometric manipulations on nodal points that define the mesh to essentially unwrap the stent. It is much easier to understand the findings of computational flow analyses on the unwrapped surface as opposed to the cylindrical shaped stent.



Undergraduate Research Day

Monitoring Patients Remotely by Utilizing Wireless Communication

SURF Student: Justin Loop

Student's Major: Computer Engineering Technology

Faculty Mentor: Mequanint Moges



Recent technological advances has allowed for the portability of hospital monitoring systems to become integrated with wireless communication devices. These systems allow for each site to be monitored remotely via wireless communication by a single workstation or doctor's personal digital assistant (PDA). By implementing such technology, patients can be monitored less intrusively all the time. The available wireless connectivity can be utilized for transporting patients' critical information like heartbeat, blood pressure and others. The scope of this project is to design a signal conditioning system using the Cypress's robust, yet compact, Programmable System on a Chip (PSoC) for wireless transmission. My project describes the system interface design and demonstrates its workings.

Second Life: A Virtual World Solution to the Geographical and Material Constraints in Education in Real World

SURF Student: Aboubakar Lougue

Student's Major: Finance

Faculty Mentor: Richard Scamell



A virtual world is a computer-based, three-dimensional environment intended for its users to inhabit and interact via avatars. This research was dedicated to the use of this environment in education. Each year countries around the world budget huge amounts of financial resources to support education. A double barrier exists in the knowledge acquisition process: the instructor and the students are distant from one another geographically, and are sufficient resources available for students to actually work with what is being taught. This is particularly true for people in developing countries. This research focused on the possibilities Second Life offers to reduce barriers faced by students in real world in education in the field of computer networking. We have developed virtual classrooms where students and their respective teachers can meet no matter where they are located on earth. We offer numerous possibilities for students to see and test the ways interconnection devices (router, switch, and hub) in a computer network communicate with nodes in various network topologies (bus, star, ring).

The Office of Undergraduate Research

Role for miRNAs in Embryonic and Trophoblastic Stem Cell Epigenome

SURF Student: Ruchi Maheshwari

Student's Major: Biology & Biochemistry

Faculty Mentor: Preethi Gunaratne

Micro-RNAs (miRNA) are 17-24 nucleotides in length that regulate gene expression post-transcriptionally by binding to the 3' UTR region of the mRNA, leading to translational inhibition. This project is focused on understanding the role of miRNA in embryonic vs. extra-embryonic (trophoblast) lineage restriction in stem cells. Embryonic stem cells (ES cells) are stem cells derived from the inner cell mass of an early stage embryo known as a blastocyst. Trophoblastic stem cells (TS cells) are eroding, invasive, and metastasizing cells forming the outer layer of the blastocyst. Through a series of PCR's, dicer-dependent epigenome of ES cells was studied. Through these experiments, methylated and non-methylated areas of the gene were found. Since methylation alters gene expression, this step would be very useful in knowing what area of the gene is silenced or up-regulated in ES cells and is therefore crucial in comprehending lineage restriction. Understanding epigenetic signals that govern the ES vs. TS lineage restriction may provide important insights into the co-option and subsequent de-regulation of these same pathways in highly invasive ovarian, endometrial, and other cancers.



The Vietnam War in 1968 Triggered a Global Economic Crisis

SURF Student: Nolan Merchan

Student's Major: History

Faculty Mentor: Robert Buzzanco

In 1968, the U.S. was in turmoil due to the assassinations of King and Kennedy coupled with urban riots, college protests and the infamous Democratic convention in Chicago. Created after WWII, the Bretton Woods system made the dollar the world's currency. Capital flowed out of the U.S. to facilitate European reconstruction. With time, this led to the decline of the dollar. After the Tet Offensive in January of 1968, U.S. military arrangements had to be altered in order to prepare for a long, drawn out fight due to the high discipline and relentless fighting displayed by the Viet Cong and the People's Army of Vietnam. The Vietnam War worsened the BOP problem, weakened the dollar and undermined international monetary structure. Lyndon B. Johnson withdrew from the 1968 presidential race, admitting defeat in Vietnam. The U.S. went from an unrivaled prosperous imperial power to "first among equals" in "shared hegemony." Governments and national economies moved to global financial and monetary system.



Undergraduate Research Day



Investigating How the Brain Processes and Discriminates Auditory Stimuli in Different Stages of Sleep

SURF Student: Tony Nguyen

Student's Major: Biology & Biochemistry

Faculty Mentor: Bhavin Sheth



While sleeping, an individual is not consciously aware of most environmental stimuli, but the brain continues to respond to them. In fact, the brain continues to process and distinguish biologically irrelevant tones, as an earlier study in the Sheth laboratory showed. During stage II sleep and in wake, the peak amplitude of the P200 component of the auditory evoked potential increased significantly with increase in tone intensity. The findings suggested that the brain is able to categorize different characteristics of a tone in light sleep (stages I, II), even if the acoustic stimulus has no significance to the individual. We varied the intensity of a 1000 Hz pure tone and recorded the neural response of each subject using EEG (electroencephalography). In brief, we conducted a similar experiment as before, but our subjects slept late at night. As a result, we were successful in obtaining deep sleep (stages III -IV) and REM sleep in addition to light sleep and wake from the subjects (n=9 thus far). The new data promises to help us to generalize our results to other stages of sleep and obtain the neural signature distinguishing sleep from wake.

Molecular Characterization of the Two-partner Secretion Pathway of *Haemophilus influenzae*

SURF Student: Vincent Nguyen

Student's Major: Biology & Biochemistry

Faculty Mentor: Hye-Jeong Yeo



Haemophilus influenzae is an important human pathogen that causes middle ear infection, sinusitis, conjunctivitis, and also exacerbates lung diseases. The ability to colonize and infect is facilitated by two-partner secretion (TPS) pathways, which secrete protein virulence factors that adhere to mucus and human epithelial cells. The TPS systems consist of an exoprotein (called TpsA), and an outer membrane translocator (called TpsB). HMW1, the major adhesin of nontypeable *H. influenzae*, is an example of TpsA proteins, and is translocated to the cell surface through HMW1B (a TpsB protein). HMW1C is required for glycosylation of HMW1. The goal is to characterize the protein-protein interaction involved in the TPS pathway. Various proteins and/or protein domains of HMW1, HMW1B and HMW1C were constructed, expressed, and purified as His-tagged or GST-fusion proteins. Affinity chromatography, anion exchange, and gel filtration were used to purify the proteins. The interaction between HMW1B and HMW1 and the interaction between HMW1B and HMW1C were examined using an enzyme-lined immunosorbent assay-based protein-binding assay.

The Office of Undergraduate Research

Marc Blitzstein's Unfinished Opera, *Sacco and Vanzetti*

SURF Student: Gail O'Brien

Student's Major: Music

Faculty Mentor: Howard Pollack

The American composer Marc Blitzstein worked on the opera *Sacco and Vanzetti* for four years and left it unfinished at the time of his death in 1964. A careful study of relevant materials in the Blitzstein Collection reveals how much time and effort Blitzstein put into the opera. He apparently knew how he wanted to develop the plot, who the main characters would be, and what the style of music would be like. Unfortunately, only a few scenes from the opera survive.

Leonard Lehrman completed *Sacco and Vanzetti* in 2001. His completion uses Blitzstein's sketches and parts of other Blitzstein works like *Reuben, Reuben* and *The Cradle Will Rock*. Lehrman obviously took great liberties with the surviving material. And yet, without this completion, Blitzstein's *Sacco and Vanzetti* would only exist in an archive.



Studying Houston's Modernist Domestic Architecture

SURF Student: Allison Parrott

Student's Major: Architecture

Faculty Mentor: Michelangelo Sabatino

During the 1950s individuals like Aaron Joseph Farfel and George Mitchell (friends of UH) advocated Modernist architecture that is now being threatened with destruction by real-estate speculators. I studied how the combination of enlightened patronage and persistence of a group of committed architects anxious to adapt Modernism to Houston's climate and culture inspired the design of a considerable number of refined residential buildings in Houston during the 1950s and 1960s. By enlarging the agenda of international modernism to engage with local and regional qualities of climate and light, Houston architects designed memorable environments for the city's elite. Houston was enthralled with the new and embraced the idea of a new architecture emblematic of its modern life. The prototypical modern home had less interior walls, was built on a slab foundation, had built in storage rather than attic or basement space, and was finished with inexpensive pink brick or wood cladding. All of these trends tended to reduce the cost of building (or offset the cost of expensive steel and glass). However, by the 1960s, many of the young architects who began the trends of the 1950s became entrenched in modern theories and found it difficult to build modern houses for modest budgets without compromising their modern ideas. Today, as townhouses loom large, modernist principles have all but disappeared.



Undergraduate Research Day

Does Levodopa Improve the Consistency of the Walking Pattern in Ind. with Parkinson's Disease?

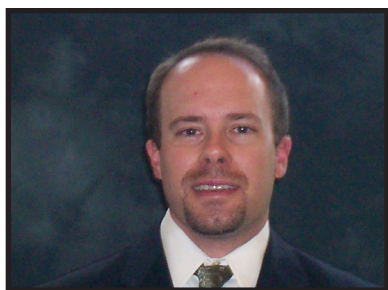


SURF Student: Srinivas Pushpala

Student's Major: Biology & Biochemistry

Faculty Mentor: Max Kurz

Parkinson's disease (PD) is a neurological disease that results mainly from a loss of dopaminergic neurons in the substantia nigra, which is largely attributed to controlling the amplitude and timing of movement patterns. The impairment of the basal ganglion functions appears to be the cause for the larger amount of stride-to-stride variability seen in PD patients. Levodopa is a metabolic precursor for dopamine, which is largely effective in improving motor symptoms in PD, including gait. The purpose of this investigation is to explore the effect of levodopa on the variations present in the lower extremity joint kinematics. We tested nine participants with idiopathic PD will walk on a treadmill for three minutes while "off" and then "on" their levodopa therapy. All participants were initially assessed in the morning without taking their PD medications. Immediately after walking on the treadmill while "off" levodopa, the participants took their morning dose of levodopa, and their movements were recorded. The results suggested that there was no change in gait while on and off levadopa.



Mobile Interface and Database for Wireless Sensor Network in Healthcare Application



SURF Student: Bao Quach

Student's Major: Computer Engineering Technology

Faculty Mentor: Driss Benhaddou

Wireless sensor networks are envisioned to create city-wide or larger medical networks that can continuously monitor patients' vital signs using low-power smart sensor motes. However, these motes only communicate amongst themselves. Although the sensor network is wireless and portable, there is a restraint to stay close to the workstation. This project researched and implemented a client application for mobile platform such as PDA that allows the motes to interface with the mobile platform to create a mobile database that can temporarily store data for analysis. The application acquires data from the mote through the USB port of the mobile device, stores the data into local database, determines if the patient is in critical situation, and then sends a summary of the patient's status to a central server. The mobile device can communicate with the main server via the Internet through a WiFi or mobile phone connection. The application creates a working model for a mobile factor to wireless sensor networks that allows patients to be monitored anywhere with cell phone or WiFi coverage.



Finding a New Audience

SURF Student: Alexandria Ragsdale

Student's Major: Political Science

Faculty Mentor: Carroll Blue

My research this summer was centered around *Houston History*, a magazine that has existed in several different incarnations since 1978, providing subscribers with a substantial history of Houston from a wide range of perspectives. This summer, the magazine's current editor, Dr. Joe Pratt, assembled a team made up of graphic designer Lisa Garrett, web designer Josten Ma, creative director Dr. Carroll Blue, and research assistant Alex Ragsdale to achieve several goals through a new website. We aimed to create an interactive space for the magazine's current readers, encourage contributions from readers to give the magazine a "people's perspective" on Houston's history, and open the magazine up to a wider and potentially younger audience.



Investigating the Optical Properties of Inorganic- Organic Hybrid Nanocomposites Fabricated by the Sequential Deposition of Metal Oxides and Conducting Polymers

SURF Student: Andrea Schlather

Student's Major: Chemistry

Faculty Mentor: Rigoberto Advincula

Thin films composed of inorganic-organic hybrid materials have applications in many electro-optical devices, including light-emitting diodes (LEDs) and photovoltaic cells. This is due to their excellent conductive properties. Using the Layer-by-Layer deposition method, we fabricated hybrid thin films consisting of titanium (IV) ethoxide, polyacrylic acid and polyaniline, a conductive polymer with interesting doping-dedoping properties. Thin films were also made without titanium (IV) ethoxide to investigate the contribution of the inorganic component to the film. The TiO_x was found to hinder the movement of cations and anions through the film by confining the conductive layer and acting as a directing material to any applied voltage within the potential window. Film growth was monitored using ellipsometry and UV-visible spectroscopy. We performed cyclic voltammetry to measure the oxidation and reduction potentials of the film and UV-visible spectroelectrochemistry to further confirm the doping-dedoping capabilities of the polyaniline monolayer.



Undergraduate Research Day

Archaeological Investigation into the Occupation of Magnolia Plantation Prior to 1835

SURF Student: Crystal Shannon

Student's Major: Anthropology and Art History

Faculty Mentor: Kenneth Brown



This summer, archaeological investigations at Magnolia Plantation in Natchitoches Parish, Louisiana continued under the direction of Dr. Kenneth Brown. The investigations into Magnolia Plantation's Slave/Tenant Quarters represent one part of a larger comparative study that explores the processes related to the origin and development of African American culture within the "plantation south." Summer 2008 marked my second year to be involved with the archaeological excavations being conducted there, and my role this year was to supervise the digging of several units around slave/tenant cabin #4. The research I did stemmed from the discovery of a previous structure found under cabin #4. I looked not only at the units excavated this year and artifacts recovered from those units, but also at historical documents, maps, and artifacts and field notes from previous years in order to determine what this previous structure was used for, when it could be dated to, and who it belonged to. Based on soil stratigraphy, analysis of ceramic artifacts, and the study of several historical documents, we were able to get a general date for the structure and deduce that it was a dwelling belonging to prior residents.

A Low Level Laser Irradiation Platform to Test Mechanisms Associated with Fibroblastic Wound Healing *In vitro*

SURF Student: Basilios Sideris

Student's Major: Biomedical Engineering

Faculty Mentor: Daniel Martinez



An automated platform was designed and built for running low power laser irradiation treatments on cell cultures. The platform utilizes an X-Y recorder (Hewlett Packard) to move a plate containing cell culture wells over a laser mount (Thor Labs). The laser mount is capable of using different laser diodes to emit a beam ranging from ~ 600 – 900 nm in wavelength. A program written in LabView offers control of the X-Y recorder and allows for adjustment of the time each individual well is exposed to the laser beam. A diffuser lens (Thor Labs) was also incorporated to homogenize the intensity across the diameter of the laser beam so that all cells within a well receive equivalent energy. An experiment was run to test the platform using Rat 2 fibroblast cells grown *in vitro*. The cells were injured artificially (scratch test) and the healing time was compared between cell cultures which did or did not receive the laser treatment. The experiment validated the effectiveness of the platform.

The Office of Undergraduate Research

Sacrifice, Death and Rebirth; Religious Power Structures in Early Aegean Society

SURF Student: David Thomas

Student's Major: Art History

Faculty Mentor: Casey Due-Hackney

I researched the prehistoric Aegean society popularly termed 'Minoan' and their neighbors, the Mycenaeans. I was particularly interested in the nature of political and religious structures of the Bronze Age and how conceptions of Divinity may have influenced their development. The artifacts and images of antiquity were studied as well as their architectural contexts. The myths of a Minotaur and fabled king Minos have long interfered with any true understanding of the sophisticated society. I have identified scholarship articulating theories compatible to mine as well as in depth discussion of possible alternative interpretations. Most significant for my work is the discovery of Lucy Goodison and her important work on ancient goddesses, the name of one of her books. Goodison also correlates her findings with the significance of women in the religion. I have discovered the principal arguments made against the existence of an early Mother Goddess, seem to be a backlash reaction to nineteenth century broad, all encompassing assertions, made without demonstrated evidential support.



Power of Presidential Policy Proclamations

SURF Student: Erin Toolan

Student's Major: Political Science and French

Faculty Mentor: Brandon Rottinghaus

The power of presidential proclamations in the policy making process of the U.S. government is currently uncharted territory. It is clear that the powers of the executive have changed and grown since the birth of our government, yet the role of decree is a pertinent contributor to this growth has been long overlooked. Proclamations have made a noteworthy impact on history—particularly in the areas of immigration, trade, and the environment. Consequently, it is important to know the history of presidential unilateral decrees on such topics because of their relevance in the current world with increasing globalization. However, no academic works have been written that examine these important tools in detail. The purpose of this research was to provide a complete source of presidential proclamations throughout history (there are estimated to be around 14,000) and to examine several specific policy-based proclamations in detail to reveal the importance of these to the growth of executive power. By collecting all of the modern presidential proclamations from George Washington to George W. Bush we will be able to scrutinize the use of proclamations through the years.



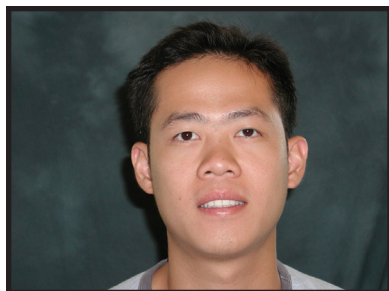
Undergraduate Research Day

Producing Endfire Omnidirectional Radiation Patterns from Leaky-Wave Antennas

SURF Student: Minh Tran

Student's Major: Electrical Engineering

Faculty Mentor: David Jackson



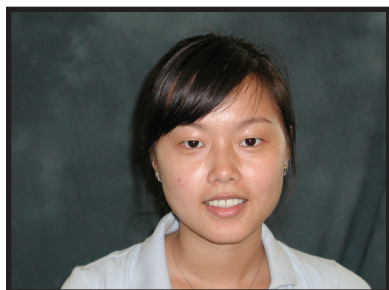
Leaky-wave antennas (LWAs) are very attractive in many high-frequency applications due to their low-profile structure, ease of fabrication, and the ability to focus energy in a certain direction. This research investigates the possibility of providing a low-profile LWA that has the following radiation properties: omnidirectional in azimuth, and focused towards the horizon in elevation. This type of low-profile antenna could be mounted on the roof-top of vehicles for communication with ground-based users in many civil, commercial and military applications. The antenna beam is required to be omnidirectional in azimuth to effectively communicate at any azimuthal angle with respect to the vehicle. The beam is also required to be focused toward the horizon for high directivity and effective communication with users on the ground. The research has proposed a structure that consists of N number of one-dimensional LWAs arranged radially, like the spokes of a wheel. This structure is found to be capable of producing radiation patterns that are omnidirectional to within 3 dB in azimuth, with an elevation beamwidth that can be controlled by the number of antenna elements used and the radius of the antenna.

Regional Variations in Vocalization of *Eleutherodactylus Cystignathoides Campi* in Texas

SURF Student: Thu Tran

Student's Major: Biology & Biochemistry

Faculty Mentor: Dan Wells



Vocalization in amphibians is highly developed, and frogs are known to produce a variety of sounds to attract mates, advertise territories, or express distress. The Rio Grande chirping frog (RGCF), *Eleutherodactylus cystignathoides*, is native to southeastern Texas and northern Mexico, but has expanded their habitat locations to the Houston and San Antonio regions. Since the populations in these locations are isolated from one another, it is possible that variations in the vocalization patterns of RGCF have developed, which may lead to reproductive isolation and speciation. The purpose of this study is to determine whether differences in location and environment affect the vocalization patterns of this species. Variations among these locations have been analyzed using RAVEN software. Our result indicates that there is a significant difference in various call traits among these populations. Frogs in Brownsville produce the quietest calls and the lowest pitch with less number of notes per unit of time in one call compared to the other locations.

The South Central YMCA: the Crucible of the Civil Rights Movement in Houston (1955-67)

SURF Student: Ronnie Turner

Student's Major: Print Journalism

Faculty Mentor: Charles Orson Cook

The doors of Houston's South Central YMCA have been shut since 2005, but back in the 1950s and 1960s, the building was the forum for Houston's civil rights movement. The city's white and black community leaders met there regularly and worked together, often behind the scenes, to improve race relations. The discussions that took place in the South Central branch overshadowed the collective effort of the city's black churches, who seemed to be reluctant to throw their full support behind the movement. Quentin R. Mease, who served as executive director of the YMCA branch for a quarter of a century, was a key figure associated with the South Central branch's heyday. Mease used his Y to build partnerships between influential blacks and whites. He even allowed Texas Southern University activists involved in the 1960 sit-ins to meet there. This project examines some key moments in Houston's desegregation that occurred were planned and carried out by persons and organizations that met at the YMCA. This research also attempts to place Houston's South Central branch in the broader historical context of the YMCA's role in civil rights.



High Fat Feeding is Associated with Weight Gain and an Increase in Disease Risk Factors in Wild Type CD-1 Mice

SURF Student: Amy Van Natta

Student's Major: Kinesiology-Exercise Science

Faculty Mentor: Brian McFarlin

Obesity is a pro-inflammatory condition, which leads to the development of type II diabetes and cardiovascular disease. Despite the relationship between weight gain and inflammation, it is not known how long it takes the effects of gained weight to manifest in terms of whole body inflammatory capacity. Thus, the purpose of this study is to examine mice over time during the consumption of a high-fat diet. Wild-type CD-1 mice were divided into two groups: High-Fat (60% of calories from fat, HF) or Lean Control (10% of calories from fat, LN). Plasma was analyzed for biomarkers associated with: cholesterol profile and glucose sensitivity. The key findings of this study were that weight gain was associated with an increase in biomarkers of cholesterol profile, glucose sensitivity, adipose tissue accumulation, and systemic low-grade inflammation. Fourteen weeks of HF increased risk of type II diabetes, but may not have changed cardiovascular disease risk.



Undergraduate Research Day

Role of Sleep in Verbal Memory & Associative Interference

SURF Student: Reni Varghese

Student's Major: Biology & Biochemistry

Faculty Mentor: Bhavin Sheth



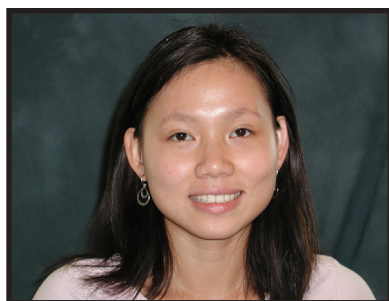
It is believed that memory is stored in the junctions or synapses of neurons. Studies have shown that sleep helps protect non-declarative memory from interference with newly acquired data. In 2006, a landmark study led by Ellenbogen et.al. demonstrated that sleep plays a vital role in preserving declarative memory. Our summer research project hoped to challenge these findings and learn the extent to which sleep helps protect verbal memory from associative interference. Subjects were required to recall a set of twenty word pairs and after a specific amount of time, were tested on the words they had learnt. The original experiment of Ellenbogen et al., 2006 was repeated and the results were successfully reproduced, demonstrating that sleep consolidates verbal memory by sheltering the memory from interference. Our studies show that with decreasing the amount of rehearsal of word-pairs, the sheltering effect of sleep has even larger benefits. However, doubling the amount of rehearsal in training prior to sleep substituted for the beneficial effects of sleep. We also found the harder it is for a subject to learn the word pairs while training, the worse his or her performance will be in the test. Thus, we can predict how well the subject will perform at test from how many trials he or she takes to reach threshold 12 hours earlier during training.

Analyzing Crystallographic Structure of Protein Complex between TEM-1 and BLIP Y50A

SURF Student: De Vo

Student's Major: Chemistry

Faculty Mentor: Dar-Chone Chow



β -lactamase inhibitor protein (BLIP) inhibits β -lactamase strongly and therefore provides a good candidate for the design of drug against antibiotic resistance. BLIP Y50A mutant inhibits TEM-1 β -lactamase (TEM-1) at least 50 times stronger than that of the wild type. In order to explain the strong interaction between TEM-1 and BLIP Y50A, we crystallized the protein complex and then collected an X-ray diffraction data set. The initial structure was obtained by molecular replacement. Afterward, several cycles of refinement and simulated annealed process were carried out until the R-factor decreases to 22% and R-free reaches 24%. Analysis of our structure shows that 2544.4 up to 2603.9 Å² of solvent accessible surface area was buried in between TEM-1 and BLIP Y50; in contrast, the shape complementarity statistic reflects poor structural complementarity. Based on the analysis, we hypothesize the enhancement of affinity of BLIP-Y50A and TEM-1 is a result of more putative hydrogen bonds, stronger salt bridges, less steric hindrance and more dynamic interface.

The Office of Undergraduate Research

Goals Assessment Questionnaire for Health Psychology: Preliminary Research

SURF Student: Brian Weisinger

Student's Major: Psychology

Faculty Mentor: Mary Naus

Various areas of psychology have investigated goals and their impact of quality of life. However, there has been little research in health psychology addressing the role of serious illness upon goals and how goal changes might impact quality of life. This project was designed to provide background information toward the construction of a goal assessment questionnaire that can be used with a variety of medical/disability populations. First, an extensive review of the literatures was completed to determine common themes across these various fields of psychology and to locate instruments that have been developed to measure goals in various domains. Next, the individual items from the existing questionnaire were categorized by three independent judges. Finally, a group of 7 raters evaluated the appropriateness of the assignment of items to categories and reassignments were made accordingly resulting in a large matrix of goal categories with a variety of sample items in each category. Future work will include category and item selection, pilot testing, and reliability and validity evaluation across different medical samples.



“Translating” Magnolia Plantation Ownership and Slave/Tenant Population

SURF Student: Kathleen Wiesenthal

Student's Major: Anthropology

Faculty Mentor: Kenneth Brown

Working for Dr. Kenneth L. Brown, I have translated baptismal records, letters, succession records and land documents from the historical document files of Natchitoches, LA. The records, dating from the 17th and 18th century are primarily in French, some in Spanish, and I am detailing each entry pertaining to the families who have occupied or owned the Magnolia Plantation in Natchitoches. Among these valuable records are detailed accounts of marriages deaths, and the legal transference of property and slaves. Each record will become a part of the development of the history of Magnolia Plantation, shedding light on the relationship of the slaves to the landowners, allowing interpretation of the physical data with the historical data. I have also interviewed Ms. Elizabeth Hertzog, last direct descendant in the ownership of Magnolia Plantation, originally acquired by Jean Baptiste Lecomte in 1753. Ms. Hertzog has furnished us with valuable information as to the physical location of areas of interest to Dr. Brown's research, and to the accuracy of our timeline and facts.



Undergraduate Research Day



Participants of the Summer Undergraduate Research Fellowship program have the privilege of attending the weekly Brown Bag Lecture Series, in addition to conducting their research endeavors with their faculty mentors. The lecture series presents a wide range of topics that are of interest to undergraduate students, such as confronting issues related to research ethics, applying to graduate and professional school, and learning to become proficient in the language of their particular disciplines.

The next few pages are comprised of biographical information on some of our highly esteemed lecturers that participate in our program. Through their involvement, they contribute in making the SURF program a first-rate research program at the University of Houston.



Miranda Bennett

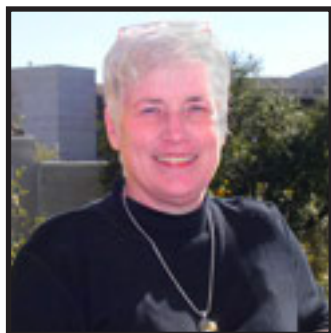
Miranda Bennett serves as Instruction Librarian at the University of Houston M. D. Anderson Library and is the subject librarian for philosophy, religious studies, and history, as well as library liaison to the Honors College. In addition to the M.L.S., she holds an M.A. and Ph.D. in religious studies from the University of Virginia, where she studied European and American religious history. She enjoys working with UH students pursuing research projects in a wide variety of fields and likes to help them learn to use library resources and services effectively and efficiently. She hopes many of them will someday have the thrill of looking up their own work in a library catalog or database! Dr. Bennett presented a lecture on conducting a literature review for our SURF students this past summer.





SURF Brown Bag Lecturers

Mary Gray



Mary Gray received her Ph.D. in English from the University of Houston with a primary emphasis in rhetoric and composition. Her dissertation critically evaluates a UH linked course learning community, which integrates first-year composition, American history, and technology. She also holds a Master of Liberal Arts, concentrating in English and Art History, from St. Thomas University. With research and teaching interests in interdisciplinary learning, she designs first-year writing classes linked to courses in American History, Art History, and Theater. Her other projects at the Writing Center include workshops for graduate students in the Department of Art History and the Bauer College of Business. This past summer, Dr. Gray and Michelle Miley conducted a lecture for the SURF students on learning the language of their disciplines.

Darryl Lauster



Darryl Lauster is a sculptor and lecturer specializing in the art history of the ancient world. He has received numerous awards including grants, residencies and exhibits nationally, and also teaches for The Honors College. He presented a lecture to the SURF students on the research that he conducts when he recreates furniture and china. Darryl takes measurements and visual observations of objects in the collections of Bayou Bend, the Smithsonian and the Winterthur Museum, and then attempts to duplicate pitchers, teacups, tea tables and chairs. His work can be found in the permanent collection of the Museum of Fine Arts in Houston. Darryl earned his M.F.A. from the University of Houston.

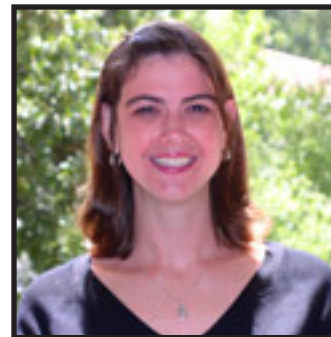
Undergraduate Research Day



SURF Brown Bag Lecturers

Michelle Miley

Michelle Miley holds an M.A. in English Literature from Baylor University as well as a B.A. in English and Psychology. She has taught freshman and sophomore composition classes at Lubbock Christian University and Wayland Baptist University, and has coordinated and taught in the XL: Strategies for Learning program at Texas Tech University. She also coordinated the recruiting for the Petroleum Engineering Department at Tech. As the Writing in the Disciplines Assistant Director, Michelle develops and delivers writing instruction for courses across campus. Her course partnerships range from one-time presentations to teaching semester-long writing classes specific to particular disciplines. This past summer, Michelle and Dr. Mary Gray conducted a lecture for the SURF students on learning the language of their disciplines.



Anna P. Newman

Dr. Anna Newman is a geneticist who has studied protein secretion in the yeast *S. cerevisiae* and the development of the nematode *C. elegans*. In *C. elegans*, she discovered cell-cell interactions that occur during uterine development and characterized genes required for these processes. She performed her undergraduate studies at Harvard and received a Ph.D. in Cell Biology from Yale. She is the coauthor of over twenty research articles as well as of scientific review articles. Her work has been published in journals including *Nature*, *Genetics*, *Development*, and the *Journal of Cell Biology*. She has taught and mentored students at the high school, undergraduate, and graduate levels. At the University of Houston, she teaches Introductory Biology and Genetics. She also organizes the Colloquium for Undergraduate Research in Biology, which provides students with a forum in which to present their research results. Dr. Newman participated on the faculty panel, this past summer, on applying to professional and graduate school, and was also the facilitator on the student panel on undergraduate research.





SURF Brown Bag Lecturers



Stacey Peebles

Dr. Stacey Peebles teaches in the Honors College Human Situation sequence and in the Department of English. She specializes in modern American literature, particularly the fiction of Cormac McCarthy, and in the interdisciplinary field of violence studies. Her current project explores the prose, poetry, and film from America's wars in Iraq. She attained her Ph.D., from the University of Texas at Austin. Dr. Peebles conducted a lecture this past summer on research ethics for the SURF participants.



Hanadi S. Rifai

Dr. Rifai is an Associate Professor in the Civil and Environmental Engineering Department at the University of Houston. Her expertise includes ground water flow and transport modeling, risk assessment, natural attenuation, hazardous waste, hydrology, urban storm water quality, non-point source pollution, Total Maximum Daily Loads, Decision Support Systems and Geographic Information Systems. In addition to authoring the widely-used BIOPLUME II, BIOPLUME III and BIOPLUME IV computer models for biodegradation and natural attenuation modeling, Dr. Rifai has built and manages the GIS (Geographical Information Systems) computer laboratory in the department. She also teaches professional courses on groundwater contaminant transport, remediation and groundwater modeling, natural attenuation, and risk assessment. Dr. Rifai conducted a lecture on pollutants in the Houston Ship Channel for the SURF participants.



Additional Research Participants

RNA Editing of Mouse miRNA Affects Predicted miRNA-mRNA Relationships

Student Researcher: Noor Alzarka

Faculty Mentor: Preethi Gunaratne

Presenting a poster in the field of biology and biochemistry.

Breeding Strategy to Obtain a Site-specific Rac Deficient Mouse to Study Cognitive Impairment

Student Researcher: Jermeece Augustine

Faculty Mentor: Maria Victoria Tejada-Simon

Presenting a poster in the field of pharmacological and pharmaceutical sciences.

Visual Psychophysics as a Measure of Fatigue

Student Researcher: Gregory Bohuslav

Faculty Mentor: David Eagleman, Baylor College of Medicine

Conducting an oral presentation in the field of neuroscience.

FBG Setup as a Sensor of Vibration and Sound Using Discrimination Method

Student Researcher: Ligia Gramajo

Faculty Mentor: Deniz Gurkan

Presenting a poster in the field of engineering technology.



Additional Research Participants

Silicon and Germanium Nanowires: Predicting the Properties of New Materials for Electronic Applications

Student Researcher: Steven Houle

Faculty Mentor: Eric Bittner

Presenting a poster in the field of chemistry.

Masculinity Ideologies from a Female Perspective: Further Validation of a Construct

Student Researchers: Silky Joshi and Brian Schulz

Faculty Mentor: Jonathan Schwartz

Presenting a poster in the field of counseling psychology.

Isolation of Polymyxin B Fractions and Determination of Antimicrobial Activity of Polymyxin B1

Student Researcher: Wai-Ying Lam

Faculty Mentor: Vincent Tam

Presenting a poster in the field of clinical sciences and administration.

Stochastic Modeling of Virotherapy

Student Researcher: José Manuel López

Faculty Mentor: Krešimir Josić

Presenting a poster in the field of mathematics.



Additional Research Participants

Can the Brain Learn to Make Associations in Sleep?

Student Researcher: Thuan Pham

Faculty Mentor: Bhavin Sheth

Presenting a poster in the field of computer and electrical engineering.

Mitigating the Bullwhip Effect Through Retailer Selection

Student Researcher: Lindsay Roberts

Faculty Mentor: Jamison Day

Conducting an oral presentation in the field of decision and information sciences.

Design of a Proportional-Integral-Derivative (PID) Controller for a Tank Level System

Student Researcher: Daniel Siddiqui

Faculty Mentor: Heidar Malki

Presenting a poster in the field of engineering technology.

Analysis of the Perspiration Component of the Facial Thermal Signature

Student Researcher: Adina-Raluca Stoica

Faculty Mentor: Dvijesh Shastri and Ioannis Pavlidis

Presenting a poster in the field of computer science.



Additional Research Participants

Improving Customer Service for a Construction Department Using SERVQUAL

Student Researcher: Radie Stroud

Faculty Mentor: Jamison Kovach

Conducting an oral presentation in the field of information and logistics technology.

Establishing a Method to Study TXAS and its Ligands

Student Researcher: Mina Tabatabai

Faculty Mentor: Ke-He Ruan

Presenting a poster in the field of pharmacological and pharmaceutical sciences.

Nanoenergetic Gas-Generators: Impact of Bi₂O₃ Particle Properties

Student Researcher: Arol Vicent

Faculty Mentor: Karen S. Martirosyan

Presenting a poster in the field of chemical and biomolecular engineering.

Designing a Home Spirometry Device for Children with Asthma

Student Researcher: Jamie Xu

Faculty Mentor: Clifford Dacso

Conducting an oral presentation in the field of health and medicine.

Undergraduate Research Day



Senior Honors Thesis Participants

Thesis Participants 2007-2008

Nancy Elena Agin
English-Creative Writing
Thesis Director: James Cleghorn

Robert Armstrong
Mechanical Engineering
Thesis Director: Fazle Hussain

Sarah Elizabeth Barnier
Art History
Thesis Director: Rex Koontz

Viridiana Benitez
Psychology
Thesis Director: Hanako Yoshida

Anne Marie Bosch
Biology & Biochemistry
Thesis Director: Hye-Jeong Yeo

Christie Brewton
Psychology
Thesis Director: Mary Naus

Julie Brookshire
Psychology
Thesis Director: Peter Norton

Christiana Chang
Mechanical Engineering
Thesis Director: Gangbing Song

Mallory Lauren Chesser
English-Creative Writing
Thesis Director: William Monroe

Roanna Yuk Heng Cheung
History
Thesis Director: Xiaoping Cong

Laura DeLaCruz
Sociology
Thesis Director: Anthony Dworkin

Corbin B. P. Dodge
English-Creative Writing
Thesis Director: Natalie Houston

Jeffrey Dinh
Biochemical-Biophysical Sciences
Thesis Director: Masaya Fujita

Haonhien Duong
Chemical Engineering
Thesis Director: Kishore Mohanty

Nicole R. Egley
Classical Studies
Thesis Director: Casey Due-Hackney

Portia Elaine Shizuyo Gant
Theatre
Thesis Director: Sydney Berger

Brent Anthony Garza
Accounting
Thesis in English-Creative Writing
Thesis Director: Darryl Lauster

Jorge Garza
Mechanical Engineering
Thesis Director: Charles Dalton

Lucia Elizabeth Guillory
Psychology
Thesis Director: Christiane Spitzmueller

Joy Sandy Hannush
Architecture
Thesis Director: Leonard Bachman

Heath Hayner
Theatre
Thesis Director: Rob Shimko

Meghan O'Neil Hendley
Music
Thesis Director: Buck Ross

Erik Henson
Political Science
Thesis Director: Robert Carp

Darrel Alexander Holmes Gournet
English
Thesis Director: Mark Doty

Arman Jahangiri
Biology & Biochemistry
Thesis Director: Preethi Gunaratne

Saba Javed
Chemistry
Thesis Director: David Hoffman

George Khoury
Mechanical Engineering
Thesis Director: David Zimmerman

The Office of Undergraduate Research



Senior Honors Thesis Participants

Thesis Participants 2007-2008

Nina Korsaeva

Biology & Biochemistry
Thesis Director: Anna Newman

Cory LaFevers

History
Thesis Director: Gerald Horne

Doreen Lee

Spanish
Thesis Director: Marie Hernandez

Christopher Lucas

English
Thesis Director: Aaron Reynolds

Jana Svancarova McCloskey

Accounting
Thesis Director: Thomas Noland

Adrien Mobley

Political Science
Thesis Director: Robert Carp

Jose Mojica

Chemical Engineering
Thesis Director: Peter Strasser

Thuc Ngo

Chemical Engineering
Thesis Director: Kishore Mohanty

Barrett Patrick O'Donnell

Finance
Thesis Director: Natalia Piqueira

Kinal Patel

History
Thesis Director: Landon Storrs

Ngoc Pham

Chemistry
Thesis Director: Dar-Chone Chow

Ileana Porras Garcia

Psychology
Thesis Director: Merrill Hiscock

Esmeralda Ramirez-Pena

Biology & Biochemistry
Thesis Director: Masaya Fujita

Lindsay Reid

Psychology
Thesis Director: Peter Norton

Lynn Elizabeth Sanders

Studio Art-Painting
Thesis Director: Aaron Parazette

Leah Catherine Shearer

History
Thesis Director: Andy Achenbaum

Ruqiat Shifatu

Mechanical Engineering
Thesis Director: Karolos Grigoriadis

Martha Stallman

English – Creative Writing
Thesis Director: Margot Backus

Alfred Frank Thomas

Mechanical Engineering
Thesis Director: David Zimmerman

Ellen Marie Thomas

English & Anthropology
Thesis Director: Susan Rasmussen

Julian Vargas

Mechanical Engineering
Thesis Director: Gangbing Song

Aja Young

Art History
Thesis Director: Hugh Nevitt

Samantha Zabaneh

Chemistry
Thesis Director: Roman Czernuszewicz

Laura M. Zavala

Psychology
Thesis Director: Mary Naus



Undergraduate Research Day



Provost's Undergraduate Research Scholarship (PURS) Recipients

PURS Recipients Spring 2008

Alley, Laura

Exercise Science

Faculty Mentor: Brian McFarlin

Ameka, Magdalene

Biology & Biochemistry

Faculty Mentor: Vincent Tam

Cano, Genaro

Biology & Biochemistry

Faculty Mentor: Brigitte Dauwalder

Chamberlain, Alain

Civil & Environmental Engineering

Faculty Mentor: Kyle Strom

Chandra, Monalisa

Sociology

Faculty Mentor: Nestor Rodriguez

Chubinidze, Zina

Marketing

Faculty Mentor: Jill Sundie

Curtis, Jim

Hotel & Restaurant Management

Faculty Mentor: Nancy Graves

Davidson, Amanda

English

Faculty Mentor: Lorraine Stock

Dinh, Jeffrey

Biology & Biochemistry

Faculty Mentor: Masaya Fujita

Dinh, Tram

Electrical Engineering

Faculty Mentor: Ben Jansen

Gerig, Dan

History & Political Science

Faculty Mentor: Orson Cook

Ivers, Kevin

Biomedical Engineering

Faculty Mentor: Jason Porter

Javed, Syed

Biomedical Engineering

John Glover

Khoury, George

Mechanical Engineering

Faculty Mentor: David Zimmerman

Liu, James

Biomedical Engineering

Faculty Mentor: Bhavin Sheth

McDaniel, Amora

Political Science

Faculty Mentor: Steven Craig

McGee, Edmond

Marketing and Finance

Faculty Mentor: Partha Krishnamurthy

Nguyen, Lien Thuy

Biology & Biochemistry

Faculty Mentor: Shuhab Khan

Nguyen, Minh

Mathematics

Faculty Mentor: Giles Auchmuty

Nguyen, Nhi-Quynh

Biology & Biochemistry

Faculty Mentor: Chad Wayne

Pickett, Christopher

Photography/Digital Media

Faculty Mentor: Stephan Hillerbrand

Quach, Bao

Engineering Technology

Faculty Mentor: Driss Benhaddou

Trevitz, Ashley

Political Science/History

Faculty Mentor: Dina Al-Sowayel

Weisinger, Brian

Psychology

Faculty Mentor: Mary Naus

Wiesenthal, Kathleen

Anthropology

Faculty Mentor: Kenneth Brown

Yiu, Ting Ting

Biology & Biochemistry

Faculty Mentor: Michael Rea



The Office of Undergraduate Research



Provost's Undergraduate Research Scholarship (PURS) Recipients

PURS Recipients Fall 2008

Akinyele, Misturat

Mechanical Engineering

Faculty Mentor: Pradeep Sharma

Alzarka, Noor

Biology & Biochemistry

Faculty Mentor: Preethi Gunaratne

Berry, Amanda

History

Faculty Mentor: Nancy Beck-Young

Brokhin, Paul

Economics

Faculty Mentor: Steven Craig

Doan, Hieu

Chemical Engineering

Faculty Mentor: Dan Luss

Doss, Zachary

Theatre

Faculty Mentor: Robert Shimko

Dowla, Nadia

Biomedical Engineering

Faculty Mentor: William Foster

Elhardt, Mary

Biology & Biochemistry

Faculty Mentor: Maria Tejada-Simon

Elquza, Hannan

Biology & Biochemistry

Faculty Mentor: Adam Thrasher

Fallah, Mehrnaz

Accounting

Faculty Mentor: Scott Whisenant

Forgie, Kiza

Architecture

Faculty Mentor: Susan Rogers

Garg, Anvit

Mechanical Engineering

Faculty Mentor: Pradeep Sharma

Greenberg, Elysse

Geology

Faculty Mentor: Jonathan Snow

Hahn, Jordan

Hotel Restaurant Management

Faculty Mentor: Jay Neal

Halpern, Katelyn

English, Literature

Faculty Mentor: William Monroe

Harper, Kristina

Psychology

Faculty Mentor: Mary Naus

Hoang, Hung

Psychology

Faculty Mentor: Christiane

Spitzmueller

Johnson, Rithu

Chemistry

Faculty Mentor: Malavosklis Bikram

Ouk, Theany

Pre-Pharmacy

Faculty Mentor: Randolph Thummel

Phung, Vu

Electrical Engineering

Faculty Mentor: Len Trombetta

Stockwell, Patrick

English, Literature

Faculty Mentor: Lynn Voskuil

Van Natta, Amy

Exercise Science

Faculty Mentor: Brian McFarlin

Varghese, Reni

Biology & Biochemistry

Faculty Mentor: Bhavin Sheth

Williams, Dylan

Construction Management Technology

Faculty Mentor: Lingguang Song

Yelaka, Ravichandar

Electrical Engineering

Faculty Mentor: David Jackson



Undergraduate Research Day

Office of Undergraduate Research's Programs

How to Get Started Conducting Research

All of the programs offered by the Office of Undergraduate Research require that students secure a faculty member with whom they would like to conduct research with before applying to one of the programs. This leads many students wondering how they should initiate the process.

Here are a few tips on how to secure a research opportunity at UH:

- 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 that 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 the webpage of faculty members currently seeking undergraduate researchers for ongoing projects, www.undergraduateresearch.uh.edu/facultyresearch.html. Also peruse your department's website to find out about the research the faculty within your discipline are conducting.

The PURS is a research program offering junior and senior students \$1,000 scholarships to conduct research projects during the fall and spring semesters. This scholarship is open to students of all disciplines, including research proposals in the natural sciences, engineering, social sciences, humanities, business, technology, fine arts, architecture, education, and hotel and restaurant management. Candidates must have at least a 3.0 grade point average to apply. For more information and to view the online application, visit the PURS website at www.undergraduateresearch.uh.edu/purs.html.



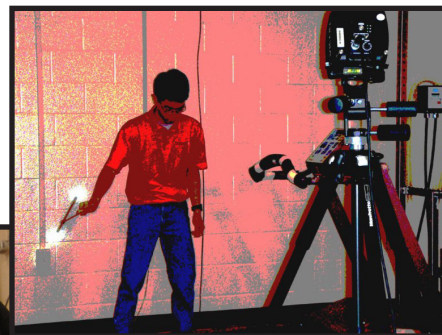
The Office of Undergraduate Research

Office of Undergraduate Research's Programs

SURF-UH is a full-time, 10-week summer research program, open to all continuing students, that provides a \$2,800 stipend to conduct research under the mentorship of a UH faculty member. The projects run the gamut from analyzing texts in the library, to conducting fieldwork, to experimenting with specimens in laboratories. Students from all disciplines are encouraged to apply. The deadline for SURF is in the middle of March each year. For more information and to view the online application, visit the SURF-UH website at www.undergraduateresearch.uh.edu/surf.html.

The Senior Honors Thesis is a capstone program that serves as the pinnacle of the 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 in their senior year. The student secures a thesis director that serves as the instructor of record and mentor of the project. A second reader and Honors reader also serve on the student's thesis committee, offering their advice during the research and writing process as well as at the student's defense of the thesis.

Many students site the thesis project as the highlight of their experience as an undergraduate. Students who complete a Senior Honors Thesis will graduate with Honors in Major (for students who complete a thesis, but not the curriculum of The Honors College), University Honors (for theses outside the major), or both University Honors and Honors in Major (for Honors College students who complete a thesis in their major). For more information on the Senior Honors Thesis program and to download the required forms for enrollment, please visit the thesis website at www.undergraduateresearch.uh.edu/thesis_guidelines.htm.



Undergraduate Research Day

Office of Undergraduate Research's Programs

The Honors College and The Office of Undergraduate Research assist students in finding and applying for nationally and internationally competitive scholarships. Nationally competitive scholarships are awards that require university endorsement to apply. Contact Karen Weber at kweber@uh.edu or at 713-743-3367 for more information. A more detailed listing of competitive awards can be found at www.undergraduateresearch.uh.edu/scholarshipindex.html. Among these scholarships are the following:

Rhodes Scholarships

The Rhodes awards 32 scholarships each year to American students for study at Oxford for 2-3 years. The Rhodes covers tuition and all other educational costs for the scholars' tenure at Oxford. Applicants must be full-time graduating seniors that have at least a 3.75 GPA, demonstrate strong leadership abilities, and possess a strong sense of social purpose. Candidates should also be U.S. citizens, unmarried, under the age of 24, and have attained a bachelor's degree before beginning their first term at Oxford. The deadline is in the beginning of October each year, but interested candidates should contact Karen Weber no later than the end of the spring semester of their junior year.

Rotary Ambassadorial Scholarships

The Rotary Ambassadorial Scholarship awards \$13,000-\$25,000 to fund at least one year of a study abroad program and the costs associated with the program. The purpose of the scholarship is to further international understanding and friendly relations among people of different countries. The Rotary Ambassadorial Scholarships' deadline is over a year before the period of study would begin. All applicants must be citizens of a country in which there are Rotary clubs. The deadline for the Rotary Ambassadorial Scholarship is at the beginning of February each year.

Marshall Fellowships

The Marshall Foundation offers 40 awards each year for two years of study at any university in the United Kingdom. The Marshall covers tuition, cost of living expenses, travel expenses, and other academic fees. Candidates should be graduating seniors with at least a 3.75 GPA, U.S. citizens, demonstrate strong leadership abilities and a commitment to public service, and have a clear rationale for studying in the United Kingdom. The deadline is in the beginning of October of each year, but interested candidates should contact Karen Weber no later than the end of the spring semester of their junior year.

Goldwater Fellowships

The Barry Goldwater scholarship funds up to \$7500 each year to sophomores and juniors interested in pursuing a research career in math, science or engineering. Candidates must have at least a 3.8 GPA, be U.S. citizens or permanent residents, and have demonstrated research experience. The national deadline is in the beginning of February of each year, but the campus deadline is in late November.

Fulbright Grants and Teaching Assistantships

The Fulbright funds all expenses for a one-year research grant or graduate study in over 140 countries. Fulbright teaching assistantships are also available in a variety of different regions. Candidates must be U.S. citizens and have a bachelor's degree by the time they begin their project overseas. The Fulbright deadline is October 21st of each year, but the campus deadline is typically about a month before the national deadline.

The Office of Undergraduate Research

HONORS College at the University of Houston

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. For the 300 students who join us each fall, we offer the advantages of a small college without sacrificing the resources and rich diversity of a large 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 the University's finest students to develop the attributes of mind and character that enhance all facets of life.

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 The Honors College scholarships, priority registration, computer facilities, reserved lounge and study areas, study abroad opportunities, and special housing in The Honors College residence halls. Many intangible benefits come with participation in the Honors community—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.

Honors Curriculum

Our curriculum is designed to coordinate with the University of Houston's core curriculum. 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 creative project.



The Honors College • University of Houston • www.uh.edu/honors • 713.743.9010

Undergraduate Research Day



PHRONESIS Honors College, University of Houston

“What is justice?”

“What is justice?” asked Socrates, the self-described “gadfly” of ancient Athens. For centuries, great thinkers from Plato and Aristotle to Machiavelli and Nietzsche have addressed such fundamental questions as the nature of war and peace, the relation between freedom and authority, and the origins of moral and political order. Reflecting on our own American experience, writers and political actors such as Jefferson, Hamilton, and Madison call us to consider the character of democracy, the grounds of liberal constitutionalism and the problems and promise of a free society. In the long course of intellectual history, these and other thinkers have taken up the issues of gender, the family, religion, commerce, and science, and, like the gadfly of Athens, urged us to reflect on the fundamental question of the human good.



Questions such as these will be the focus of a new program in Politics and Ethics established by the Honors College in collaboration with the College of Liberal Arts and Social Sciences. The program’s name, *Phronesis*, is the Greek word for prudence or practical wisdom, the quality that distinguishes good citizens and political leaders.

Students who participate in *Phronesis* will be part of a vibrant intellectual community engaged with some of the most profound and enduring questions of human life as well as central and current topics in politics and ethics. The program is housed in the Honors College as an interdisciplinary minor, established with the cooperation of faculty in Political Science, Philosophy, and Classical Studies. The curriculum will draw on the foundation provided by “The Human Situation,” the year-long intellectual history course required of all Honors freshmen. Students of any major can then choose from a variety of courses in political theory, philosophy, and classics. Representative offerings include “Liberalism and its Critics,” “Law, Society, and Morality,” “History of Ancient Philosophy,” “The Roman Republic,” and “Recent Islamic Political Thought.” In addition to course offerings that draw on the expertise of faculty across disciplinary boundaries, *Phronesis* also hosts public events that engage the wider University and community.



Contact Information:

Susan Collins, Director suecoll724@uh.edu
Stacey Peebles, Coordinator speebles@uh.edu
Andy Little, Advisor alittle@uh.edu

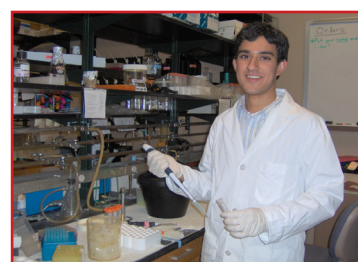
The Office of Undergraduate Research

Medicine & Society Honors College, UH

Medicine & Society Program at the University of Houston

Science, technology, and medicine are profoundly important to our understandings of our selves, our bodies and the modern world around us. The Program in Medicine & Society at Houston was established in fall 2005 to coordinate the efforts of Houston's leaders in health studies to reach student and lay public audiences for interaction and discussion of the social impact of scientific and medical advance.

Located in The Honors College at UH, the program is directed by William Monroe (Executive Associate Dean of The Honors College), with Andrew Achenbaum, from the Graduate College of Social Work, acting as associate director, and Helen Valier (from The Honors College) as the academic coordinator. The core faculty of the program is well supported by an extensive network of affiliated faculty from across the UH system, and together they have been able to build a truly interdisciplinary framework for this new venture. By providing public lectures and opportunities for networking between students and professionals, they anticipate the program will nurture a growing community of interests of health-care and health-studies.



The Medicine and Society Program at the University of Houston is a venture aimed at bringing together health-care and health-studies specialists from across the city to offer college classes and public events on a wide variety of medical, technology and health related issues in order to bring this “great conversation” to the University of Houston.

Houston is a city in which health care is an industry and social practice of immense importance, historically, economically, and culturally. The Texas Medical Center is the largest in the world and home to two medical schools, two schools of nursing, and a score of programs in the allied health sciences, as well more than a dozen major hospitals, clinics, research laboratories, and other medical facilities. The richness of the medical heritage of this city, combined with the wide range of outstanding medical expertise we are able to draw upon, have gotten this new program off to a flying start.

Contact Information:

William Monroe, Director wmonroe@uh.edu
W. Andrew Achenbaum, Associate Director wachenba@central.uh.edu
Helen Valier, Coordinator hkvalier@uh.edu

Undergraduate Research Day



for the University of Houston

UH Learning *through* DISCOVERY

Transforming the Undergraduate Experience through Research

The *Learning through Discovery Initiative* is the University of Houston's comprehensive Quality Enhancement Plan (QEP). The initiative promotes a teaching and learning culture supportive of research in all disciplines for all undergraduate students. The initiative focuses on 1) providing research skills training and 2) expanding student research opportunities both on and off campus. Research skills and experience will equip our talented and diverse students with the valuable tools they need to compete in the global marketplace or as they pursue graduate studies.



Photo by Lacy/Shea

Bauer Business Students

Discovery Resources and Programs

Beginning in 2008, many new resources will be available such as:

- Discovery Workshops & Tutorials – introductory research skills training via in person workshops or online tutorials
- eDiscovery – an online portal connecting students to research opportunities and mentors
- Reality Chats – in person and online chats with alumni and mentors about their career paths and research experiences in industry, academia, etc.
- Research Dissemination - opportunities to showcase student research including support for expansion of Undergraduate Research Day and student travel fellowships to present at national conferences
- Research-Supportive Curriculum – a QEP Curriculum Development Grant Program provides support for enhancements to existing courses or development

About the Office of Undergraduate Discovery Programs

The Office of Undergraduate Discovery Programs was created in 2008 to coordinate and oversee implementation of the *Learning through Discovery Initiative*. The Office of Undergraduate Discovery Programs functions under the aegis of the Office of the Senior Vice President for Academic Affairs and Provost. This alignment facilitates coordination among various implementation partners on and off campus and centralizes support for students, faculty, and staff.

For more information and to learn how you can become involved, please visit www.uh.edu/discovery.

The Office of Undergraduate Research



SAVE THE DATE!



PURS Spring 2009 Application Deadline:
November 19, 2008

SURF 2009 Application Deadline:
March 25, 2009

Faculty Mentoring Award Nomination Deadline:
February 9, 2009



Coming Soon...



The Center for Creative Work

The Center for Creative Work seeks to encourage the development of writers and artists at The Honors College by providing undergraduate students pursuing degrees in the creative arts with an innovative course and enrichment plan.

Students in The Center will:

- Collaborate with local theater companies to present dramatic performances and readings;
- Conduct research and theses projects related to their chosen fields;
- Enroll in creative writing workshops and special topics classes;
- Attend screenings of national and international films outside the mainstream circuit and view world premiers of original dramatic works in Houston performed by nationally-recognized theater companies; and
- Attend week-long retreats to encourage their artistic development.

To find out more contact **Dr. John Harvey** at jrharvey@mail.uh.edu.



The Office of Undergraduate Research
The Honors College
The University of Houston
212 MD Anderson Library

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Office fax: 713/743-9015
www.undergraduateresearch.uh.edu

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UNIVERSITY OF HOUSTON

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