Scholars Academy Graduate School & Internship Fair

October 20, 2023 8:00 AM – 1:00 PM

Purpose: The purpose of the 24th Annual UHD Scholars Academy Graduate School and Internship Fair (GSIF) is to help promote students to prospective graduate schools and internships. It additionally serves a second purpose of showcasing the academic projects undertaken by UHD students in science, technology, engineering, and mathematics as mentored by PhD professors. Qualifying activities are projects completed as part of internships and independent or directed study at UHD, or any undergraduate research on or off campus. This conference is sponsored by UHD Scholars Academy in the College of Sciences and Technology, and funded by the National Science Foundation and Department of Education MSEIP. A limited number of research posters will be displayed for invited guests.

Potential Audience: Invitations were sent to over 300 graduate schools or internship programs nationally. In addition to the faculty/students from UHD College of Sciences and Technology anticipated attendance at this year's GSIF a limited capacity of guest exhibitors representing many different programs, such as Baylor College of Medicine, Ohio State Univ., Sam Houston State Univ., Stephen F. Austin State Univ., Texas A&M Health Science Center, Texas Tech Univ., Univ. of North Texas, UT Health Science Centers (Houston, San Antonio, and Tyler), UT M.D. Anderson Cancer Center, Southern Methodist University, and UT Medical Branch.

If you participated in off-campus research/internship and are a graduating senior, **you** are invited to participate in this year's GSIF poster presentation.

Invited Student Presenters: CST undergraduates and Scholars Academy members who will be graduating in the Fall 2023 semester are required to present a poster at GSIF (confer with your PhD faculty member). All other CST posters will be by invitation only. Invitations to present a poster will be made by UHD CST faculty to qualifying undergraduates. Students will complete the forms with approval by their faculty member.

Recognition of Participation: This conference is non-competitive. Participants will receive a copy of the proceedings and an important experience to include within their resumes. Abstracts included in the proceedings may be listed as a publication and the proceedings will be available at the Scholars Academy website.

Important GSIF Deadlines:

Timeline for Entrants:

August 28, 2023	Applications available (Including uploaded application and abstract [Word only]) Weblink: https://uhd.qualtrics.com/jfe/form/SV_24UHD4f9AL8GblQ
September 25, 2023	Applications due.
October 4, 2023	Posters due Weblink: https://uhd.qualtrics.com/jfe/form/SV_0x0kEzwPPfgiGAm Must include PowerPoint files and signed Poster Printing Approval Form
October 20, 2023	24th Graduate School and Internship Fair – UHD 2023

Participants must submit an application and an electronic abstract by Monday, September 25, 2023. Late applications cannot be accepted. The application form requires signatures of a UHD faculty sponsor and the student's academic department chairperson. The faculty sponsor should agree to review their student's abstract and poster file before submission.

All applicants submitting by the deadline will be accepted. We expect to accept a maximum of 25 posters.

Sponsored by the UHD Scholars Academy.
Funded by: The National Science Foundation (0903948) and UH-Downtown.

One Main Street, 813-North; Houston TX 77002-1001
Phone: 713-222-5344; Fax: 713-223-7410; www.uhd.edu/scholars

Abstracts: Abstracts must be submitted electronically with the application (signed). Please be sure to include your name and project title within the submission. Abstracts must not be more than 100 words. Ideally, the abstract should include the objective(s), problem, overview, and an interesting/enticing summary to catch a reader's interest. Accepted abstracts will be published in the GSIF Program and may be listed by the student as a publication. Abstracts that are poorly written will not be accepted.
Application and Abstract Weblink: https://uhd.qualtrics.com/jfe/form/SV_24UHD4f9AL8GblQ

Electronic Posters: Student posters already prepared for other purposes or conference venues, but which also satisfy the above criteria, are welcome. Participants are strongly encouraged to review recordings for "How to prepare a Poster File" located at: SA website under GSIF menu tab.

Students are required to prepare poster files using a PowerPoint template provided by Scholars Academy. Students can obtain the template from the Scholars Academy website (www.uhd.edu/scholars).

GSIF Application **Approval Forms** must be signed by their faculty sponsor.

Poster files previously printed for other venues should be submitted to the GSIF Poster files weblink:
Electronic poster files are uploaded for the GSIF.
Weblink: https://uhd.qualtrics.com/jfe/form/SV_0x0kEzwPPfgiGAm

Acknowledgment of Assistance and Sponsorship: Faculty advisors of these off-campus research projects (or those acting as on-campus surrogates) will mentor the participants during the preparation of their poster files. Participants must list all acknowledgements on their poster; this includes any assistance of individuals and/or organizations/agencies that worked on the research or sponsored the project. Proper acknowledgment of co-authorships should also be included on the poster.

Timeline of Deadlines and Events:

August 28, 2023	Applications for Presenters become available.
September 25, 2023	Application and electronic abstracts are due.
October 4, 2023	Poster files are due (PowerPoint file). Must include PowerPoint file and signed Poster Printing Approval Form
October 20, 2023	UHD SA Graduate School and Internship Fair

Property: All posters files will become the property of UHD. These poster files may be printed and released to the faculty sponsors at a future date to be on regular display in the areas of the hosting departments.

Photographs/Publications: Photographs/videos of participants may be taken during presentations and throughout the event. These photographs/videos, abstracts, posters and release of information deemed necessary for publications may also be used in associated UHD reports and promotional media.

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GRADUATE SCHOOL AND INTERNSHIP FAIR

University of Houston-Downtown

Friday, October 20, 2023

Application due electronically **by September 25, 2023**.

Presenter's Full Name	
Major and Degree	
Career Plans	
Expected Graduation Date	
Email Address	
Phone Number(s)	
Project Supervisor(s)	
Project Location(s)	
Official Title of Project	
Co-authors (see guidelines)	

Abstracts (100 word limit) must be sent electronically **by September 25, 2023** to Weblink: https://uhd.qualtrics.com/jfe/form/SV_24UHD4f9AL8GblQ. Sample abstracts are attached.

UHD FACULTY SPONSOR:

By signing below, I agree to serve as the faculty sponsor for the above applicant. I agree to review the applicant's abstract (due September 25, 2023) and poster file (due October 4, 2023) and ensure that these are in accordance with standards similar to those in my academic discipline. I also agree to attend the GSIF on Oct. 20, 2023 to support this student (unless other arrangements are made) and to encourage other CST students/faculty to attend.

_____

UHD Faculty Sponsor (please print name and sign using Adobe/PDF certified signature) Date

_____

UHD Department Chair (please print name and sign using Adobe/PDF certified signature) Date

_____

Applicant Signature (please print name and sign using Adobe/PDF certified signature) Date

If accepted to present, I fully intend to attend the GSIF and meet all deadlines and requirements. If accepted, I further authorize use of photos/videos, material I have submitted/completed in this application, and release of information deemed necessary for publications by the university and the GSIF staff/sponsors.

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SAMPLE ABSTRACTS

1. **Stabilization of Thiol/Acrylate Systems Using N-PAL**
   Hilda Hinojosa, Christopher Lopez, Colin Carandang, and Lucio Patino
   Dr. Byron Christmas, Research Mentor, Center for Applied Polymer Science Research, UHD
   Abstract: Using *tris*-nitroso-N-phenylhydroxylamine (N-PAL) as a free radical polymerization inhibitor, an investigation was conducted to characterize the shelf-life stability and relative reactivity of UV-polymerizable, thiol/acrylate-based formulations containing various concentrations of N-PAL. These formulations were characterized for their relative reactivity using differential photocalorimetry (DPC) techniques. The shelf-life stability data generated thus far indicate that N-PAL provides adequate stability without significantly reducing the relative reactivity of the formulations.

2. **The Good Samaritan**
   Tudon Martinez, Alisha Romero
   Dr. Heidi Ziemer, Research Mentor, Department of Social Sciences, UHD
   Abstract: We studied whether gender determines the likelihood of a driver stopping to assist a casually dressed gentleman stranded on the side of the road. Many studies report differences between men and women when helping others is involved. The probable explanation lies in the nature of the help required in the situation. Active doing, spontaneous, and anonymous acts are more likely to be carried out by men than by women. Women are more likely to help than men when helping is more planned, formal, personal, and less likely to involve direct intervention. We considered a number of variables: situation, type of help necessary, time of the day, physical condition of the person offering help, and previous experiences. Some studies have found that interveners in several kinds of dangerous events had more exposure to crime, both in personal experience and in witnessing others' victimization, they were also taller, heavier, better trained to cope with emergencies (e.g. trained in life saving skills, medical and/or police trained) and were more likely to see themselves as physically strong, aggressive, emotional and principled.

3. **Diatoms as Indicators of Wetland Mitigation Success**
   David Lang
   Dr. Brad Hoge, Research Mentor, Department of Natural Sciences, UHD
   Location: UHD, Greens Bayou Wetlands Mitigation Bank, and Anahuac National Wildlife Refuge
   Abstract: Diatoms were chosen to assess wetlands mitigation success in The Greens Bayou Wetlands Mitigation Bank, a project of The Harris County Flood Control District. Diatoms respond rapidly to environmental changes, thus diatom succession provides a good model of wetland mitigation success. Samples were collected from surface water and the first 10 centimeters of soil at the GBWMB and The Anahuac National Wildlife Refuge, a relatively undisturbed wetland comparable to those at the GBWMB. Results show statistically different assemblages at the GBWMB compared the ANWR. These results suggest the GBWMB, although planted with climax community plants, is still undergoing succession.

4. **Combating SpamThrough Proofs of Effort**
   Cyril Harris III
   Dr. Ping Chen, Research Mentor, Department of Computer and Mathematical Sciences, UHD
   Abstract: Spam is rapidly degrading the value of the Internet. Current methods to block spam are becoming less and less effective. Because of this several researchers from Microsoft Research proposed a new type of solution at Crypto 2003. To combat spam these researchers proposed that prices be accompanied with the act of sending email. These prices are easy to verify proofs of computational effort which would be hard to compute for the sender but easy to verify for the receiver.

5. **Lower Bounds on the Matching Number of Bipartite Graphs**
   Iride Gramajo
   Dr. Ermelinda DeLaVina, Research Mentor, Department of Computer and Mathematical Sciences, UHD
   Abstract: This presentation is a summary of an undergraduate research project in graph theory that involved resolving conjectures on the matching number of bipartite graphs generated by a computer program called Graffiti.pc, designed by Dr. Ermelinda DeLaVina. One main objective of this project was to obtain a collection of lower bounds on the matching number involving other easily computed graph invariants, which collectively predict the matching number of bipartite graphs. We present the collection of lower bounds obtained. A couple of the results were found in texts and research papers, and some were mathematical applications of Hall's Marriage Theorem and Berge's M-Augmenting Path Theorem; however, many were resolved with seemingly original strategies.

6. **Cheating; Yes Unicellular Organisms Do It Too**
   Tek Williams and Vedangi Sample
   Dr. Akif Uzman, Faculty Mentor, Department of Natural Sciences, UHD
   Dr. Gad Shaulsky, Research Mentor, Department of Molecular and Human Genetics, Baylor College of Medicine
   Abstract: Altruistic behavior is exhibited in *Dictyostelium* during reproduction. This form of group selection, also observed in higher organisms, ensures that genetic traits shared by a related group of individuals persist through subsequent generations via the sacrifice of some members. Certain mutations often become over-represented compared to other mutants. Mutants were created using restriction enzyme-mediated integration. Cultures containing different mutants were randomly mixed, then allowed to undergo 10 rounds of replication. Cultures were then characterized using cheating assays to screen for dominant mutants. *Dictyostelium* strain AX4 was used to compare the level of cheating. Swindling ones way into the spores ensures that your genetic make up will be directly passed on to the next generation.

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