

Sponsored by the UHD Scholars Academy
Funded by the National Science Foundation (0336612), U.S. Army Research Office (W911NF-04-1-0024),
U.S. Department of Education (P120A020069), U.S. Office of Naval Research (N0014-99-1-0950), and UHD.

**A showcase of academic excellence demonstrated by UHD students majoring within the
Colleges of Business, Humanities and Social Science, and Sciences and Technology.**

Friday, April 8, 2005

8:00 - 9:00 am	Continental Breakfast, Coffee House
9:00 am	<i>Dr. Vicky Estrera, Director, UHD Scholars Academy, Lecturer in Biology</i> Introductions, Auditorium
9:00 am	<i>Dr. Max Castillo, President, UHD</i> Welcoming Remarks, Auditorium
9:10 - 9:45 am	<i>Dr. Christopher Matranga, Research Scientist, U.S. Department of Energy's National Energy Technology Laboratory, Pittsburgh, PA; UHD Alumni</i> Keynote Speaker, Auditorium
9:45 - 10:45 am	Oral Presentations, Session I, Auditorium
10:55 - 11:55 am	Oral Presentations, Session II, Auditorium
11:55 - 1:15 pm	Lunch break
1:15 - 4:30 pm	Open Poster Session, Room A300

Conference Planning Committee

UHD Committee Chairperson:

Dr. Ermelinda DeLaVina, Associate Professor of Mathematics

UHD Committee Members:

Dr. Richard Alo, Executive Director, Center for Computational Science, Professor of Mathematics
Dr. Byron Christmas, Associate Professor of Chemistry
Dr. Youn-Sha Chan, Assistant Professor of Mathematics
Dr. Vicky Estrera, Director, Scholars Academy
Dr. Weining Feng, Associate Professor of Engineering Technology
Mr. Rene Garcia, Program Coordinator, Scholars Academy
Dr. Marilyn McShane, Professor of Criminal Justice, Director, Institute for Community Justice
Dr. Lisa Morano, Assistant Professor of Biology and Microbiology
Dr. Janice Nath, Assistant Professor of Urban Teacher Education
Dr. George Pincus, Dean, College of Sciences and Technology
Dr. Herbert Rebhun, Associate Dean, College of Business
Ms. Anne Sherman, Director, Office of Sponsored Programs
Dr. Larry Spears, Professor of Chemistry, Director, Urban Center for Student Success in Science, Technology, Engineering and Mathematics
Dr. Edwin Tecarro, Assistant Professor of Mathematics
Dr. Stephanie Turner, Assistant Professor of English
Dr. Akif Uzman, Chair, Department of Natural Sciences
Ms. Celeste Zamora, Media Relations Coordinator, Communications and Marketing

Keynote Speaker

Dr. Christopher Matranga, Research Scientist, U.S. Department of Energy's National Energy Technology Laboratory, Pittsburgh, PA; UHD Alumnus, Class of 1997.

Keynote Presentation Title:

"Undergraduate Research and My Path to a Federal Research Facility"

Keynote Abstract:

Undergraduate participation in research programs is critical in enhancing the college experience for students, preparing them for post-baccalaureate education, and training undergraduates for careers in the work force. In this talk, I will discuss my experiences as a student at the University of Houston-Downtown and how the research I conducted there assisted me in college, graduate school, and in my current "real world" job as a research chemist with the U.S. Department of Energy. I will also discuss, at both a very general and slightly more technical level, my current research program with the U.S. Department of Energy.

Oral and Poster Presentations

Stephanie Chadwick, "Rousseau and Conscience: Moral Evasion in the Holocaust"

UHD Faculty Mentor: **Dr. Tammis Thomas**
Project Location: University of Houston-Downtown

Arely Yhedid Gonzalez, "Preliminary Annotation of *Francisella tularensis* subspecies holarctica strain (OSU18)"

Co-Author: **Dr. Joseph F. Petrosino**
UHD Faculty Mentor: **Dr. Akif Uzman**
Project Location: Baylor College of Medicine

Iride Gramajo, "Lower Bounds on the Matching Number of Bipartite Graphs"

UHD Faculty Mentor and Co-Author: **Dr. Ermelinda Delavina**
Project Location: University of Houston-Downtown

William Keele, "Fuzzy Logic-Based AI for Real Time Strategy Games"

UHD Faculty Mentor: **Drs. Andre deKorvin and Ongard Sirisaengtaksin**
Project Location: University of Houston-Downtown

Giovanna Patino, "Analysis of the Thermomechanical Properties and Relative Reactivity of UV-Polymerizable Systems Containing Varying Amounts of Single-Walled Carbon Nanotubes"

Co-Author: **Ugo Anyanwu**
UHD Faculty Mentor: **Dr. Byron Christmas**
Project Location: University of Houston-Downtown Center for Applied Polymer Science Research (CAPSR)

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

Susan Fayas, Teresa Houang, Juan Ibarra, Dave Roberts, Crystal Smith, Dawn Tan, “Contingent Fees Paid to an Attorney”

UHD Faculty Mentor: **Dr. Darshan Wadhwa**

Project Location: University of Houston-Downtown

Fransheneka Watson and Summer Rolin, “Students' Perceptions of Professors in Relation to Sexual Orientation and Political Ideology”

UHD Faculty Mentor: **Dr. Kristin Anderson**

Project Location: University of Houston-Downtown

Sarah Xie-DeSoto, “Applied Resonance Principle To A Steel Frame”

Co-Author: **Sergio Gallardo**

UHD Faculty Mentor: **Dr. Jorge Tito-Izquierdo**

Project Location: University of Houston-Downtown

Poster Presentations

Seyed Mohammad Abedi, “Compositional Effects on the Glass Transition Temperature of Obsidian”

UHD Faculty Mentor: **Dr. Ken Johnson**

Project Location: University of Houston-Downtown

Godwin Aduba, “Isolation of the Upstream Regulatory Region of Two Fibroblast Growth Factor Receptor Genes”

UHD Faculty Mentor: **Dr. Akif Uzman**

Project Location: University of Houston-Downtown

Karla Alvarez, “Using Stella Software to Model Blood Glucose Levels in Response to Daily Meals and Exercise”

Co-Author: **Ms. Mitsue Nakamura**

UHD Faculty Mentor: **Dr. Akif Uzman and Ms. Mitsue Nakamura**

Project Location: University of Houston-Downtown

Adolfo Aranzales, Derrick Archer, Lauren Gracia, Estefania Gutierrez, Cynthia Olvera, “Biological Weapons”

Co-Authors: **Christina Mindiola and Jennifer Bustos**

UHD Faculty Mentor: **R. Garcia, M. Nakamura, S. Mouchaty, L. Spears**

Project Location: University of Houston-Downtown

Lee Anne Barkley, “Analysis of Taxa Within Texas *Mimosa* Based on the Plastid rbcL Gene”

Co-Author: **Juan Razo**

UHD Faculty Mentor: **Dr. Deanna McCullough**

Project Location: University of Houston-Downtown

Prince Buzombo, “Analysis of *Xylella Fustidiosa* in the Native Plants of Texas”

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

Project Location: University of Houston-Downtown

Wendy Callejas, “Phototaxis and Aerotaxis in a Calcifying Alga”

Co-Authors: **Lan Doan**, UT-Dental Branch; **Dr. Pauline J. Duke**, UT-Dental Branch; and **Dr. Mary Marsh**, UT Health Science Center at Houston

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

Project Location: University of Texas Dental Branch at Houston

Wendy Callejas, Diamantina Escobedo, Lesslie Hernandez, Ariana Paniagua, Mary Vallesteros, “Human Chips: Will You Be Next?”

Co-Author: **Mai Nguyen**

UHD Faculty Mentor: **R. Garcia, M. Nakamura, S. Mouchaty, L. Spears**

Project Location: University of Houston-Downtown

Kimberly Ann Cantrell, “Investigation of *Xylella Fastidiosa* Levels within Three American Grape Hybrids in a Gulf Coast Vineyard”

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

Project Location: University of Houston-Downtown

Colin Carandang, “Understanding Rheological Behavior and Relative Reactivity of UV-Polymerizable Systems that Contain Single-Walled Carbon Nanotubes (SWNTs)”

Co-Authors: **Ugomma Anyanwu and Giovanna Patino**

UHD Faculty Mentor: **Dr. Byron Christmas**

Project Location: University of Houston-Downtown Center for Applied Polymer Science Research (CAPSR)

Dulce Carbajal, “Social Cooperation in *Dictyostelium purpureum* Aggregations”

Co-Authors: **Chandia Jack, Joan Strussmann, David Queller**

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

Project Location: Ecology and Evolutionary Biology Dept., Rice University

Daisy Cherian, “Molecular Analysis of Fungal Communities in Coastal Prairie Grasses”

Co-Authors: **Lesley Leggett and Dr. Phil Lyons**

UHD Faculty Mentor: **Dr. Phil Lyons**

Project Location: University of Houston-Downtown

David Cherian, “Analysis of Alternate Sharpshooter Species Which May Vector the Bacterium *Xylella Fastidiosa*”

Co-Author: **Jose Jaimes**

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

Project Location: University of Houston-Downtown

Eric Contreras, Alicia Corazon, Marlin Matthews, Kristi Pennington, “The China Syndrome of Today”

Co-Authors: **Tammie Clanton and Daniel Brenes**

UHD Faculty Mentor: **R. Garcia, M. Nakamura, S. Mouchaty, L. Spears**

Project Location: University of Houston-Downtown

Leslie Cook, “Characterization of Basidiomycete rDNA Operational Taxonomic Units of Texas Coastal Prairie Soils”

Co-Authors: **Tittu Mathew and Dr. Phil Lyons**

UHD Faculty Mentor: **Dr. Phil Lyons**

Project Location: University of Houston-Downtown

Jannie Marie Dilber, “Surveying Bacterial Populations in Soil Samples from Sheldon Lake State Park and from Coastal Prairie, Dickinson”

Co-Authors: **Moses Osoro and Dr. Poonam Gulati**

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

Project Location: University of Houston-Downtown

Mary Anne Fogarty, “Texas Borderlands: A Changing Culture in the Early 20th Century”

UHD Faculty Mentor: **Dr. Jane Creighton**

Project Location: University of Houston-Downtown

Edgar Fuentes, “Same-Sex Desire and Compulsory Heterosexuality in Robert Musil's *The Confusions of Young Törless*”

UHD Faculty Mentor: **Dr. Tammis Thomas**

Project Location: University of Houston-Downtown

Sergio Gallardo, “Reinforced Concrete Beam Test”

Co-Author: **Sarah Xie-DeSoto**

UHD Faculty Mentor: **Dr. Jorge Tito-Izquierdo**

Project Location: University of Houston-Downtown

Sergio Gallardo, “Dynamic Test on Simple Supported Beam”

Co-Author: **Sarah Xie-DeSoto**

UHD Faculty Mentor: **Dr. Weining Feng**

Project Location: University of Houston-Downtown

Celina Y. Guillen, “Bacterial Inhibition by Fungi in Coastal Prairie Soils”

Co-Authors: **Stephanie Cabrera, Dr. Phil Lyons**

UHD Faculty Mentor: **Dr. Phil Lyons**

Project Location: University of Houston-Downtown

- Ngan Ha**, “Gene Regulation at Multiple Foci”
UHD Faculty Mentor: **Dr. Akif Uzman**
Project Location: University of Houston-Downtown
- Fadi Haikal**, “Photodynamic Effects of Soluble Chlorophyll and Cure-lights on Oral Pathogen Survival”
Co-Author: **Dr. Goldschmidt**, UT-Dental Branch
UHD Faculty Mentor: **Dr. Poonam Gulati**
Project Location: UT-Dental Branch
- Malik Muhammad Hassan**, “Network Security and Intrusion Detection Systems (IDS)”
UHD Faculty Mentor: **Dr. Ping Chen**
Project Location: University of Houston-Downtown
- Sean Hattenbach**, “Evaluation of Biofilm Formation on Antibiotic Delivery Materials”
UHD Faculty Mentor: **Dr. Poonam Gulati**
Project Location: University of Houston-Downtown
- Moses Hernandez and Daniel Valadez**, “The Application of Virtual Environment Technology to a Publicly Accessed Directory Service”
Co-Author: **Lac Nguyen**, NASA
UHD Faculty Mentor: **Dr. Ongard Sirisaengtaksin**
Project Location: University of Houston-Downtown
- Hilda Hinojosa**, “Stabilization of Thiol/Acrylate Systems Containing an Acrylated Urethane Oligomer Using N-PAL”
UHD Faculty Mentor and Co-Author: **Dr. Byron Christmas**
Project Location: Center for Applied Polymer Science Research
- William Holtkamp and William Stegall**, “Influences of Basket and Stellate cells on Cerebellar Purkinje cells”
UHD Faculty Mentors: **Dr. Richard Alo, Sangeeta Gad, Yash Gad**
Project Location: University of Houston-Downtown
- Jose Jaimes**, “Comparison of Three Potential Insect Vectors of Pierce's Disease across Eight Texas Vineyards”
Co-Authors: **Isabelle Lauziere, Dr. Lisa Morano**
UHD Faculty Mentor: **Dr. Lisa Morano**
Project Location: University of Houston-Downtown
- Jonathan Keele, Victoria Morillon, Shafeeq Noorudeen, Jennie Orellana**, “An Insight into In vitro Fertilization and Germline Gene Therapy as Presented in *Gattaca*”
Co-Author: **Patricia Ramon**
UHD Faculty Mentor: **R. Garcia, M. Nakamura, S. Mouchaty, L. Spears**
Project Location: University of Houston-Downtown
- Amna Khan, Lou McLean, Diana Quinones, Glenn Castaneda, Israel Mondragon**, “Offer in Compromise”
UHD Faculty Mentor: **Dr. Darshan Wadhwa**
Project Location: University of Houston-Downtown
- Jeeba Kuriakose**, “Analysis of the Upstream Regulatory Region of a Novel Gene, *ashwin*, in *Xenopus laevis*”
UHD Faculty Mentor: **Dr. Akif Uzman**
Project Location: University of Houston-Downtown
- Vien Lam and Shivang Bhatt**, “Evaluation of a Novel Technology for the Detection of *Xylella fastidiosa* cells”
UHD Faculty Mentor: **Dr. Lisa Morano**
Project Location: University of Houston-Downtown
- David Lambert, William Hellela, Hayden Arnold, Marshal Sulayman, Bernika Scott, Fowzia Mizan**, “Reduced Maximum Exclusion of Gain from Sale or Exchange of Principal Residence”
UHD Faculty Mentor: **Dr. Darshan Wadhwa**
Project Location: University of Houston-Downtown
- David Lang**, “Diatoms as Indicators of Wetland Mitigation Success”
UHD Faculty Mentor: **Dr. Brad Hoge**
Project Location: University of Houston-Downtown, Greens Bayou Wetlands Mitigation Bank, and Anahuac National Wildlife Refuge
- Lisa Leija**, “Dissolved Metal Abundances in the Buffalo and White Oak Bayous, Houston, TX”
UHD Faculty Mentor: **Dr. Ken Johnson**
Project Location: University of Houston-Downtown, Texas Tech University
- Nadia Lera**, “Targeting Signaling Pathways to Radiosensitize Human Tumor Cells”
Co-Author: **Dr. Raymond E. Meyn**, University of Texas M.D. Anderson Cancer Center
UHD Faculty Mentor: **Dr. Lisa Morano**
Project Location: Department of Experimental Radiation Oncology, University of Texas M.D. Anderson Cancer Center
- Whitman Liu**, “The Use of Trimethylolpropane Trimethacrylate (TMPTMA) as a Stabilizer for UV-Polymerizable Thiol/Acrylate Systems”
UHD Faculty Mentor: **Dr. Byron Christmas**
Project Location: University of Houston-Downtown
- Qudus Abayomi Majiyagbe**, “Development of an Intraductal Cell and Gene Therapy Approach For Treatment of Early Stage Breast Cancer”
Co-Authors: **Nikeshia Harrington (1), Nicole Cain (2), Ricardo C. Moraes(1) and Michael T. Lewis, Ph.D (1)**; Breast Center, Baylor College of Medicine, Houston, TX 77030(1), Luther College Decorah, Iowa 52101(2).
UHD Faculty Mentor: **Dr. Poonam Gulati**
Project Location: Baylor College of Medicine
- Claudia Martinez**, “On the Chromatic Number of a Graph”
UHD Faculty Mentor: **Dr. Ermelinda Delavina**
Project Location: University of Houston-Downtown
- Rodolfo Alberto Moreno**, “Localization Studies of Plant cation/H⁺ exchangers (CAX)”
UHD Faculty Mentor: **Dr. Akif Uzman**
Project Location: Baylor College of Medicine Children's Nutrition Research Center
- Aaron Murray**, “Activities of Parallel Fibers on Cerebellar Purkinje Cells”
Co-Authors: **Christopher McIntyre**
UHD Faculty Mentor: **Ms. Sangeeta Gad**
Project Location: University of Houston-Downtown
- Mai Nguyen, Jennifer Bustos**, “Qualitative Analysis of Tumor-Immune Non-Linear ODE System”
Co-Author: **Ron Hoppe**
UHD Faculty Mentor: **Dr. Jeong-Mi Yoon**
Project Location: University of Houston-Downtown
- Moses Osoro**, “The Study of Soil Bacterial Patterns During Restoration of Coastal Prairie at Sheldon Lake State Park”
Co-Authors: **Jannie Dilber, Dr. Poonam Gulati**
UHD Faculty Mentor: **Dr. Poonam Gulati**
Project Location: University of Houston-Downtown
- Sohail G. Penkar**, “Study and Apply Brute Force Attack on Advance Encryption Standard/Rijndael”
UHD Faculty Mentor: **Dr. Ping Chen**
Project Location: University of Houston-Downtown
- Amy Kristen Pieri**, “Why Accessibility Matters: Examining the Digital Divide”
UHD Faculty Mentor: **Dr. Molly K. Johnson**
Project Location: University of Houston-Downtown

Patricia Azucena Ramon, “An Investigation of the Use of Song and Territory Defense in Paternity Guarding Behavior of the Carolina Wren”

Co-Author: **Dr. Diane Neudorf**, Department of Biological Sciences, Sam Houston State University

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

Project Location: Sam Houston State University

Juan Carlos Razo, “Reassessment of Texas *Mimosa* Based on Analysis of the Internal Transcribed Spacers (ITS-1, ITS-2) of the RRNA Gene”

Co-Author: **Joshua Burr**

UHD Faculty Mentor: **Dr. Deanna McCullough**

Project Location: University of Houston-Downtown

Brian Rodriguez and Kanisha Patel, “An Investigation of the Effects of Inert Gases on UV-Polymerizable Systems”

UHD Faculty Mentor: **Dr. Byron Christmas**

Project Location: Center for Applied Polymer Science Research

Luis Roldan, “Simple Reading Models: Identifying Salient Subskills”

UHD Faculty Mentor: **Dr. Graham Neuhaus**

Project Location: University of Houston-Downtown, N.E.C.

Janeth Sanchez, Lucio Patino, Robyn Hanna, “The Effects of Varying Amounts of Water on the Rheological Properties of an Acrylated Aliphatic Urethane Oligomer”

UHD Faculty Mentor: **Dr. Byron Christmas**

Project Location: Center for Applied Polymer Science Research

Muna Saqer, “Design Lab Packages on PC Cluster for Parallel Computing and Networking Courses”

UHD Faculty Mentor: **Dr. Hong Lin**

Project Location: University of Houston-Downtown

Ping Tang, “Data Mining on Business Financial Reports”

UHD Faculty Mentor: **Dr. Ping Chen**

Project Location: University of Houston-Downtown

Justin Varghese, “Diatom Succession Within the Greens Bayou Wetlands Mitigation Bank”

UHD Faculty Mentor: **Dr. Brad Hoge**

Project Location: University of Houston-Downtown, Greens Bayou Wetlands Mitigation Bank, and Anahuac National Wildlife Refuge

Tek Williams, “Cheating: Yes, Unicellular Organisms Do It Too”

Co-Authors: **Dr. Gad Shaulsky, Vedangi Sample**

UHD Faculty Mentor: **Dr. Akif Uzman**

Project Location: Baylor College of Medicine

Heather Wyatt and Nesreen Elsayegh, “Students' Perceptions of Professors Based on Professor Gender and Perceived Competence”

UHD Faculty Mentor: **Dr. Kristin Anderson**

Project Location: University of Houston-Downtown

Acknowledgements

We are proud to have made this conference a campus-wide collaboration from the Colleges of Business, Humanities and Social Science, Public Service, and Sciences and Technology. It is a pleasure to recognize the many individuals, organizations, and institutions supporting UHD students in their research endeavors. These include the National Science Foundation (0336612), U.S. Army Research Office (W911NF-04-1-0024), U.S. Department of Education (P120A020069), U.S. Office of Naval Research (N0014-99-1-0950), Welch Foundation (BJ-0027), and UHD.

We greatly appreciate Drs. Byron Christmas, Vicky Estrera, and Larry Spears, who are Principal Investigators for the above mentioned grants that generously fund this conference and the majority of on-campus research at UHD within the College of Sciences and Technology. Plus, we would like to thank The Coca-Cola Company for sponsoring refreshments for the conference.

Many of our students conducted their research during summer internships at collaborating institutions, including Baylor College of Medicine, NASA Johnson Space Center, Sam Houston State University, the UHD SA Summer Undergraduate Research Program (S.U.R.P.), University of Texas Medical Branch-Galveston, and the UT Health Science Center at Houston. Faculty and staff members of these and many other academic institutions, as well as personnel at industrial facilities, have done much to support and mentor our students. In addition, we thank the UHD faculty and staff who have worked tirelessly to support undergraduate research experiences, as well as the SRC Planning Committee, and university administrators who have helped make this a successful event. We especially thank UHD President Dr. Max Castillo and Dean George Pincus of the College of Sciences and Technology.

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

One Main Street, 725-North; Houston TX 77002-1001
Phone: 713-222-5344; Fax: 713-222-5356; scholars@dt.uh.edu; www.uhd.edu/scholars