2 ND FLOOR

BIOLOGY

Isolation of functional mitochondria from the coquina clam, Donax variabilis Jessica Valek & Dr. Peter Cavnar

Characterization of mitochondrial membrane potential in HaxIdeficient neutrophils in response to chemoattractants Matthew Bailey & Dr. Peter Cavnar

The Effect of Presenilin on Motility of Drosophila melanogaster Wadey Abdelqader, Blaine Mershon,

Kendra Chandler, Khursana Duty,

& Dr. Hui-Min Chung

Environmental DNA of Mooneye (Hiodon tergisus) in the Mobile River Basin Amy L. Brower & Dr. Alexis M. Janosik

Phylogeography using molecular and morphological tools of Coquina Clams (Donax variabilis) across the Eastern and Gulf Coast of the United States Sheridan M. Wilkinson, Amelie E. Murrel, & Dr. Alexis M. Janosik

Fishing for Phages Amara Ejikemeuwa, May Zaw, & Dr. Hui-Min Chung



FLOOR

Investigating the Mitochondrial Genome of Donax variabilis Reidy J., Austin Clark, & Dr. Hui-Min Chung

Investigation of Egg Mass Allelopathy in Invasive Lionfish, Pterois volitans, in the Gulf of Mexico Rebecca L. Ivey, Michael A. Cochran,

& Dr. Alexis M. Janosik

Predominance of genetic monogamy in the Gulf spurdog shark, Squalus cf mitsukurii

Alan Brooks, Emily Cornelius, Dean Grubbs, & Dr. Toby Daly-Engel

CEDB

CENTER FOR ENVIRONMENTAL DIAGNOSTICS & BIOREMEDIATION

Photochemical Reactivity of Crude Oil and Dispersants and their Effects on Marine Microbial Production Melissa Brock, Dr. Wade H. Jeffrey, Melissa Ederington-Hagy, & Elba De La Torre-Velazquez

Inhibition of marine microbial activity by the dispersant Corexit 9500A and its constituent surfactants Elba De La Torre-Velazquez.

Dr. Wade H. Jeffrey, Melissa Brock, & Melissa Ederington-Hagy

Distinguishing trends in Fish Crow behavior to decrease predation of Snowy Plovers

Lauren Doubek, Monica Hardin, & Dr. Jeff Eble

CHEMISTRY

FLOOR

Green Synthesis of Chlorine Containing Thiophene and Selenophene Derivatives using "Table Salt"

Dr. Tanay Kesharwani, Krystal Giarudy, & Jordan Morgan

Crystallization of precursors to goldcopper nanoparticles

Chau M. Tran, Costance I. Smylie, & Dr. Timothy Royappa

Development of an Undergraduate Analytical Laboratory Experiment: Fluorescence Quantum Yields by Relative Determination

Cristall Merritt & Dr. Pamela P. Vaughan

Biological Toxicity of Extracts from Photochemically Degraded Oil/Water **Accommodated Fractions** Phillip Bann & Dr. Pamela P. Vaughan

Fractionation and Biological Toxicity Studies of Oil/Water Accommodated Fractions with Dispersant Cheyenne Brannon & Dr. Pamela P. Vaughan

Surface assisted laser desorption/ ionization of asphaltenes using transition metal oxide nanoparticles Lauren F. Barnes, Joseph R. Yount, Karl A. Reyes, Kale E. King, Pristine M. Kirkconnell, Heather S. C. Hamilton, Savanna Ward, Christopher J. Van Leeuwen, Marina Resende da Silva, Abayomi D. Olaitan, & Dr. Karen S. Molek

Synthesis and characterization of titanium dioxide (TiO₂) nanoparticles Heather S. C. Hamilton, Lauren F. Barnes, Savanna Ward, Joseph R. Yount, Abayomi D. Olaitan, & Dr. Karen S. Molek

FLOOR

FLOOR



FLOOR

Design and construction of a nitrogen gas adsorption device

Kale E. King, Savanna Ward, Amelia Leenig, Abayomi D. Olaitan, & Dr. Karen S. Molek

Synthesis and Characterization of Solution Processable n-Channel pi-Conjugated Polymers and Device **Applications**

Amanda Tonnaer, Neal Patel, Prahul Topiwala, Zhibo Yuan, & Elsa Reichmanis*

Photo-induced Spin Crossover Phase Transitions of [Fe(HTrz)₂(trz)](BF₄) Nanoparticles within the Thermal Hysteresis Loop

Aaron Mena, Daniel Munteanu, Thomas Dixon, Cecelia Gentle, Brittany Hagler, Dr. Offir Cohen, & Dr. Renske van der Veen

Synthetic Methods for Benzo[b] thiophene derivatives via Electrophilic Cyclization and Anion Relay Chemistry Ralf Romero*, Cory Kornman, Amanda Tonnaer, Amanda Hayes, & Dr. Tanay Kesharwani

Fractionation and Biological Toxicity Studies of Oil/Water Accommodated Fractions with Dispersant Cheyenne Brannon & Dr. Pamela P. Vaughan

The Synthesis and Characterization of Novel Highly Fluorescent Polycyclic Azaborine Chromophores

Lacey L. Magill, Julie A. Wilson, Andrew R. Schroeder, Sarah E. Harrell, Luke C. Warrensford, Brandon Hinderks, Caleb D. McClinton, Jessica A. Vaughn, Bria M. Wagner, Nicolle S. Jackson, Dr. Carl J. Saint-Louis, Dr. Alan K. Schrock,* and Dr. Micheal T. Huggins*

Synthetic Methods for Benzo[b] thiophene derivatives via Electrophilic Cyclization and oxidative iodocyclization MCR Cory Kornman*, Ralf Romero, Amanda Tonnaer, Amanda Hayes, & Dr. Tanay Kesharwani

Synthesis, characterization, and growth kinetics of surface modified zinc oxide quantum dots at room and cold temperatures

De'Zhanae M. McCall-Butler, Sabina C. Cabrera, Christopher Walter, Brandon A. Colon, Aaron D. Mena, Dillion A. Francis, Jessica Davis-Gunn, Jessica Cook, Dr. Timothy Royappa, Dr. Pamela P. Vaughan, Dr. Alan K. Schrock, Abayomi D. Olaitan, & Dr. Karen S. Molek

COMPUTER SCIENCE

Climate Data Analysis using the Hadoop Distributed File System William B. Spaid III, Dr. Jason Ortegren, & Dr. Dallas Snider

An Evaluation of Machine Learning Algorithms for Classification of Shelter **Animal Outcomes** Mikayla Timm & Dr. Eman El-Sheikh

PankRank and Markov Chains-Solving Linear Systems Valeria Gamboa & Dr. Jia Liu

ENGINEERING

FLOOR

FLOOR

The role of arm configuration to the stability of human-robot physical intercation Spencer Lash & Dr. Oscar Chuy

The Implication of Renewables, BES, and EV's in a Sustainable Power System Eric D. Collins & Dr. Bhuvana Ramachandran

Electric Powered Wheelchair Control Addressing User and Terrain Interaction Everette Petsinger & Dr. Oscar Chuy

Using Demand Response as Resource in Distribution Grid Operation Armand Keyhani & Dr. Bhuvana Ramachandran

A Novel Statistical Approach to Short Term Electricity Price Forecasting Winston Riley, Dr. Bhuvana Ramachandran, & Dr. Achraf Cohen

ENVIRONMENTAL SCIENCE

Detection of DDT in Wetland Sediments, Escambia Bay, Florida

Edward Stamborski, Dr. Geoffrey Marchal, & Dr. Johan Liebens

Algae to fuel: initiating a green fuel project to create coal from local marine algae

Arnesha Harris, Shawnee Doling-Tye, Dr. Allison Schwartz, Dr. Matthew Schwartz, & Dr. Alan K. Schrock

Oceanic Precursors to Tornado Outbreaks

Tyler Mitchell, Rebecca Foglietti, & Dr. Jason Ortegren

Examining the effect of gravel lag on beach sediment transport at Santa Rosa Island

Tynon Briggs & Dr. Phillip Schmutz

MATHEMATICS

The Impact of Quizzes & Workshops on the Performance of Calculus I Students & the Effect of Calculus on Retention in STEM Majors at UWF

Jonathan Guy & Dr. Anthony Okafor

Numerical solvers for Ordinary and Partial Differential Equations
Nicholas Dunn & Dr. Jia Liu

PHYSICS

Using Inversion/Rotational Symmetries to Enhance Exact Diagonalization Performance

Spencer Leeper & Dr. Christopher N. Varney

 ${\it LIBS of LIB: Lithium Identification of Batteries Using LIBS} \\ {\it Trevor Olsson, Zachary Gryb, \& Dr. Laszlo Ujj}$

High Spectral Resolution LIBS Measurements on Calcium Carbonate Structures: Calcite and Sea Shells
Zachary Gryb, Trevor Olsson, & Dr. Laszlo Ujj

Fabrication and Characterization of Langmuir(-Blodgett) Thin Films of Fatty Acids, Benzene Derivatives, and Their Salts

Michael Taylor, Andrew Truman, Ross Goodwin, Katherine Lyster,
Tyler Milkeris-Zellar, Dr. Chandra Prayaga, & Dr. Aaron Wade

FINANCIAL SUPPORT PROVIDED BY:

Ascend Performance Materials Research Scholar

Burr Undergraduate Research Scholar

CEDB Research Scholar

CSE Research Scholar

GDIT Undergraduate Research Scholar

Hal Marcus Research Scholar

Manziek Research Scholar

Seifert Chemistry Research Scholar

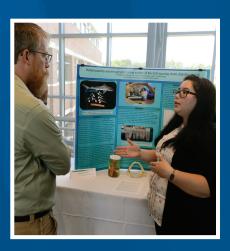
SURP EES Scholar

SURP Engineering Scholar

SURP Math Scholar

SURP Physics Scholar

Webb Electric Research Scholar





2ND ANNUAL SYMPOSIUM

The Hal Marcus College of Science and Engineering (HMCSE) Summer Undergraduate Research Program (SURP) is designed to expose undergraduate students to advanced research in their field of study. The selected students spent 250 hours or more working on a research project in their program of study and in close supervision of a faculty mentor. The SURP engaged students in hands-on learning experiences in order to help them be truly competitive once they leave the University.

AGENDA

10:00 Poster SessionPoster presentations are listed by department & floor12:00 Lunch, 1st Floor



SUMMER UNDERGRADUATE RESEARCH PROGRAM

> Hal Marcus College of Science and Engineering

UNIVERSITY of WEST FLORIDA