The Hal Marcus College of Science and Engineering (HMCSE) celebrates student-centered research by our faculty and research staff. The 2017 Summer Undergraduate Research Program (SURP) is the third year in which we have invested in an intensive undergraduate research experience requiring selected students to devote 250 or more hours to a research project under close supervision of a faculty mentor.

Additionally, HMCSE faculty mentor undergraduate and graduate students over the summer and throughout the year in other programs, from course-based research to graduate thesis projects. Thank you for j oining us for today's celebration of all HMCSE summer research efforts by our faculty, staff, and students.

AGENDA

10:00   Poster Session
Poster presentations are listed by department & floor

12:00   Lunch, 1st Floor

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3rd Annual SUMMER RESEARCH SYMPOSIUM 2017

August 11

Hal Marcus
College of Science and Engineering

UNIVERSITY *of* WEST FLORIDA

SURP

SUMMER
UNDERGRADUATE
RESEARCH PROGRAM

BIOLOGY

Investigating Cell Death Phenomena in Drosophila
Zachary Callahan, Wadey Abdelqader,
Kendra Hammock, and Dr. Hui-Min Chung

Characterization of cytotoxicity and localization of Fluorescent Polycyclic Azaborine Chromophores
Niccole Auld, Dr. Alan Schrock, Dr. Michael Huggins,
Dr. Carl Saint-Louis, and Dr. Peter Cavnar

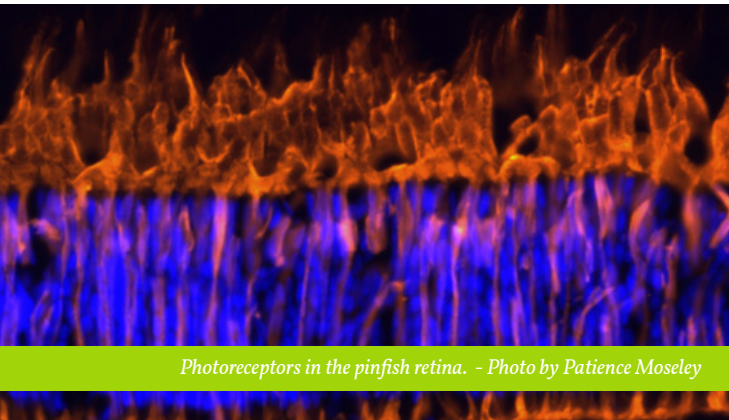*Neutrophil Apoptosis Studies with Atypical Antipsychotics using JC-1 Flow-Based Assays*
Bayla Bessemer, Courtney Swain, and Dr. Peter Cavnar

The Role of Hsp90 in Retinal Regeneration
Alexander Kuss and Dr. Scott Taylor

Mechanisms that Regulate Development of Retinal Neurons in Marine Pinfish, Lagodon rhomboides
Patience Moseley and Dr. Scott Taylor

Photoreceptors in the pinfish retina. - Photo by Patience Moseley

Modulating Inflammasome Activity by Using FcyRlla
Katherine Quintin, Michelle Colbert, Katherine Cascino,
Dr. Michael Chattergoon, and Dr. Andrea Cox

Relatedness of Neuston in the Gulf of Mexico
Jennifer Gibson and Dr. Alexis Janosik

Microplastics Presence in Local Crabs and Waters
Sara Ousley and Dr. Alexis Janosik

Microplastics in the Plankton
Tristan Garza and Dr. Alexis Janosik

Assessing Gopher Tortoise Use and Potential as Receiving Site at Naval Live Oaks
Alexandrea Fox, Daniel Morris and Dr. Philip Darby

c-Abl and PARIS (ZNF746) as a-synuclein Targets in Dopaminergic Neurodegeneration: Validation Strategies Using Genetic and Pre-clinical Animal Models of Parkinson's Disease (PD)
Saurav Brahmachari, Preston Ge, Stephan Quintin,
Esther Kim, Rosa Shi, Senthilkumar Karuppagounder,
Han Seok Ko, Valina Dawson, and Dr. Ted Dawson

Using Phage as a Biomarker Identification tool for Early Alzheimer's Disease Detection
Olivia Brock, Benjamin Medeiros, and Dr. Rodney Guttmann

The Influence of a Major Flood Event on Bottlenose Dolphins (Tursiops truncates)
Tori Stone and Dr. Christina Toms

Tristan Garza and Dr. Alexis Janosik - sampling for project

CEDB

CENTER FOR ENVIRONMENTAL
DIAGNOSTICS & BIOREMEDIATION

*Photochemical Reactivity of Motor Oils and
Their Toxicity to Marine Bacterioplankton*
Sarah Zarn, Erika Neat, Melissa Ederington-Hagy,
and Dr. Wade H. Jeffrey

*Pensacola Bay & Gulf of Mexico Photoheterotrophy:
Proteorhodopsin-containing and Aerobic
Anoxygenic Phototrophic Bacteria Community
Seasonal Shifts and Light-Induced Growth*
Meredith Snyder, M. Overton, Dr. Wade H. Jeffrey,
and Dr. Lisa Waidner

*Connectivity among Esturaine Fish
of the Gulf of Mexico*
Logan Walker, Chris Bijou, Ashley Barham,
Grace Turnage, Trey Welch, and Dr. Jeff Eble

*The Bacterial and Nutrient Analysis of the Effects
of Storm Events on Bayou Chico's Watershed*
Sierra Hobbs, Son Truong, Dr. Jane Caffrey,
and Dr. Matthew Schwartz

*Comparative Analysis of Nitrate Levels in
Pensacola Area Rain Water*
Jade Jacobs and Dr. Jane Caffrey

*Evaluating Primary Productivity, Respiration
and Nutrient Fluxes on Artificial Reefs using
Biofilm Samplers*
Beija Gore, Florian Cesbron, Kendra Brooks,
Will Patterson and Dr. Jane Caffrey

CHEMISTRY

*Analysis of DDT and its Metabolites
in Polluted Sediments*
Jeffery Wright, Jr., Michael Hopko, Frazer Mayson,
Dr. Pamela P. Vaughan, and Dr. Johan Liebens.

*Synthesis and Biological Activity of
Novel 1,3-Oxazole Sulfonamides*
Esam Almanasrah and Dr. Korry Barnes

Let it glow! (L to R): Ashton Taylor, Caleb McClinton and Haleigh Castonguay

*Succinate Polyester Polyol Copolymers and Blends:
Synthesis, Compatibility, Crystallization Kinetics,
and Crystal Morphologies*
Jacqueline Blue, Clay Finley, Heather Hamilton,
Thomas Hunt, Marshal Stitt and Dr. Alan K. Schrock

*Succinate Polyester Block Copolymers: Synthesis and
Morphology Characterization*
Hannah Booher, Thomas Hunt, Marshall Stitt,
and Dr. Alan K. Schrock

*The Synthesis and Spectroscopic Analysis of
Tunable Highly Fluorescent Polycyclic Azaborine
Chromophores*
Breanna Brown, Caleb McClinton, Julie Wilson,
Lacey Magill, Renee Shavnore, Dr. Carl Saint-Louis,
Dr. Alan K. Schrock, and Dr. Michael Huggins

*The Synthesis and Characterization of Highly
Fluorescent Polycyclic Aromatic Hydrocarbons*
Ashton Taylor, Haleigh Castonguay, Breanna Brown,
Caleb McClinton, Dr. Carl Saint-Louis,
Dr. Alan K. Schrock, and Dr. Michael Huggins

*Metal Organic Framework Cu9cl2(cap)6
as a Tunable Molecular Magnet*
William Farmer, Sam Skinner, and Dr. Leo ter Haar

CHEMISTRY CONT.

Crystal Structure of 1,10-Phenanthroline Trifluoromethyl Copper(I)
Kassandra Oldham, Wendy Teuchtler, Jade Jacobs, Niccole Auld, Kaleigh Haga, Brett Bookheimer, and Dr. Timothy Royappa

Progress Towards the Synthesis of 1,10-Phenanthroline Trifluoromethyl Copper(I)
Matthew Leighton, Benjamin Friedman, William Farmer, Elisey Shcherbina, and Dr. Timothy Royappa

High-Yielding Synthesis of Copper(I) and Gold(I) Thiolates
Chau Tran, Mohsan Khan, and Dr. Timothy Royappa

A Facile New Route to Ligandless Copper(I) Carboxylates
Joshua Sockman, Anthony Noll, Mackenzie Kidd, Sherry Sandri, John Ducilon, Amy Ishver, and Dr. Timothy Royappa

Joshua Sockman gets hands-on experience working in the glovebox.

Synthesis of a Hydrolytic Enzyme Mimic
Grace Tegenkamp, Lacey Carroll, and Dr. Ajay Lajmi

Development of New Synthetic Methodologies Involving Iodine Mediated One-pot Cyclization/Alkylation Sequence and Electrophilic Diazocyclization
Hailee Hawkins, Katherine Whalen, Cory Kornman, and Dr. Tanay Kesharwani

Synthesis of Dihaloisoquinolines Via Iodine Mediated One-pot Cyclization/Chlorination Sequence and Electrophilic Nitrocyclization
Christopher Cunningham, Cory Kornman, and Dr. Tanay Kesharwani

Synthesis of Biologically Useful Azaindole Derivatives Using Electrophilic Cyclization
Aimee Phillips, Kajal Naran, and Dr. Tanay Kesharwani

Unprecedented Cu Catalyzed Green Electrophilic Chlorocyclization Using Table Salt
Christopher Walter, Natalie Fallows, and Dr. Tanay Kesharwani

Synthesis of Oxygen and Sulfur Containing Heterocycles via Electrophilic Chlorocyclization
Sohail Mirza, Soha Khan, Alex Tran, and Dr. Tanay Kesharwani

Sample Preparation Methods for Surface-Assisted Laser Desorption/Ionization Mass Spectrometry of Biomolecules Using Transition Metal Oxide Nanoparticles
Alyssa McCoy, Julia Schwieg, Lauren Barnes, Bryan Zanca, Joseph Yount, Michelle Lapak, Dr. Abayomi Olaitan, and Dr. Karen S. Molek

Surface-assisted Laser Desorption/Ionization Mass Spectrometry of Carbohydrates and Nucleic Acid Using Metal Oxide Nanoparticles
Savanna Ward, Lauren Barnes, Julia Schwieg, Alyssa McCoy, Bryan Zanca, Joseph Yount, Michelle Lapak, Jesse Taylor, Dr. Abayomi Olaitan, and Dr, Karen S. Molek

SURP students gather with their mentors to finalize their collaborative project: (l to r standing) Dr. Dallas Snider, Dr. Jason Ortegren, and Dr. Anthony Okafor; (l to r sitting) Jared White, Allen Ward, and Zackary Bruley.

COMPUTER SCIENCE

Big Data and Interdisciplinary Geosciences Research: Examining the Rainfall Influences of the North Atlantic Subtropical High
Jared White, Allen Ward, Zackary Bruley, Dr. Dallas Snider, Dr. Anthony Okafor and Dr. Jason Ortegren

Leveraging Database Technologies to Analyze the Correlation Between Atmospheric Pressures in the North Atlantic Ocean and Rainfall Totals in the Eastern United States
Allen Ward, Dr. Dallas Snider, and Dr. Jason Ortegren

Creating a Classroom Programming Lab Environment Using Android and Blocky
Don Kerrigan and Dr. Brian Eddy

Understanding the Role of Class Information in Method Level Feature Location
Jonathan Jurczak and Dr. Brian Eddy

Generating Flow Maps for Efficient Water Simulation in Opengl
Hunter Werenskjold and Dr. Brian Eddy

Developing a Testbed of Microservices for Research and Education
Bhavyansh Mishra, Valeria Gamboa, and Dr. Brian Eddy

A Case-based Reasoning Approach to Activity Recognition in Smart Home Environments
Ruben Ramirez and Dr. Thomas Reichherzer

A Case Study on the Impact of Cloud Service Configurations in Building Secure, Scalable, and Efficient IoTNetworks
Ruben Ramirez, Dr. Thomas Reichherzer, Dr. Norman Wilde, Dr. Amitabh Mishra, and Dr. Ezhil Kalaimannan

Hacking Wearable Devices to Track Individuals & Their Fitness Activities
Nathaniel Reyes and Dr. Thomas Reichherzer

Growth Kinetics of Surface Modified Zinc Oxide Quantum Dots at Room and Cold Temperatures Using LiOH and KOH
Dillion Francis, De'Zhanae McCall-Butler, Jessica Davis-Gunn, Aaron Mena, Brandon Colon, Dr. Pamela P. Vaughan, Dr. Alan K. Schrock, Dr. Peter Cavnar, and Dr, Karen S. Molek

Growth Kinetics of Surface Modified Zinc Oxide Quantum Dots at Room and Cold Temperatures UsingNaOH and CsOH
Jessica Davis-Gunn, De'Zhanae McCall-Butler, Dillion Francis, Aaron Mena, Brandon Colon, Dr. Pamela P. Vaughan, Dr. Alan K. Schrock, Dr. Peter Cavnar, and Dr, Karen S. Molek

Biological Toxicity Testing of Photochemically Degraded Oil/Water Accommodated Fractions
Savannah Bifulco, Phillip Bann, Lauryn Reid, Cheyenne Brannon, Dr. Wade H. Jeffrey, and Dr. Pamela P. Vaughan

EARTH AND ENVIRONMENTAL SCIENCES

EES SURP student, Amber Huggins, measuring elevation of submerged site in Bayou Texar.

ELECTRICAL AND COMPUTER ENGINEERING

Maneuverability evaluation of an Attendant Controlled Wheelchair with Desired Dynamics
Jonathan Herrero and Dr. Oscar Chuy

Utilizing Arm Configuration to Stabilize an Assistive Motorized Wheelchair
Adam Mooers and Dr. Oscar Chuy

Transient Stability Assessment using Big Data and Data Mining Techniques
Zachary Pannell, Dr. Bhuvaneswari Ramachandran, and Dr. Dallas Snider

Short-Term Load Forecasting Including Uncertainties Using Stochastic Optimization
Tyler Stevens, Eric Collins, Dr. Achraf Cohen, and Dr. Bhuvaneswari Ramachandran

MECHANICAL ENGINEERING

Using Reinforcement Learning for Balancing an Inverted Pendulum
Renan Barbosa and Dr. Michael Reynolds

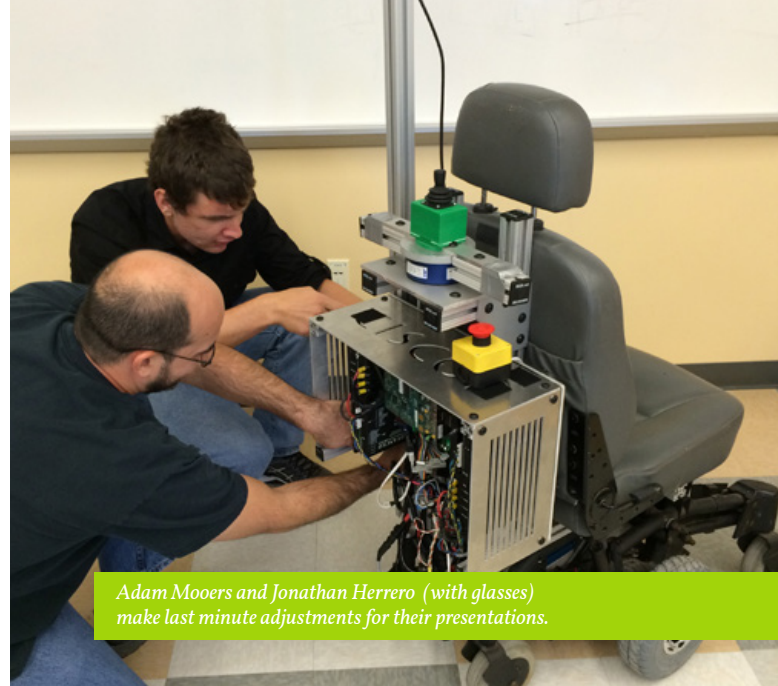*Towards Reduction of Wind Turbine Noise by Using Biomimetic Blade Designs*
Murilo Basso and Dr. Cheng Zhang

Improving Solar Car Shell Design by using Computational Fluid Dynamics Modeling
Marcus Jackson and Dr. Cheng Zhang

Detached Eddy Simulation of the Flow around Model Cars
Michael Taylor and Dr. Cheng Zhang

Adam Mooers and Jonathan Herrero (with glasses) make last minute adjustments for their presentations.

MATHEMATICS

Preliminary Exploratory Analysis of the Effect of the North Atlantic Subtropical High (NASH) on Warm Season Rainfall
Zackary Bruley and Dr. Anthony Okafor

Predictive Modeling: Batter/Pitcher Matchup
Joseph Kennedy, Stacey Burchette, Talia Baraco, and Dr. Anthony Okafor

The Numerical Solutions of Ordinary Differential Equations Using Python
Nicholas Dunn and Dr. Jia Liu

Page Rank and Markov Chains - Solving Linear Systems
Valeria Gamboa and Dr. Jia Liu

PHYSICS

Using Symmetries to Generate Building Blocks for Simulations of Quantum Magnetism
Amy Platt, David Smith, and Dr. Christopher Varney

Investigating High Speed Deflagrations through Rock Rubble Resulting from Methane Gas Explosions in Confined Spaces
Davy Pardonner, Brianne Treffner, Claire Strebinger, Dr. Jergen Brune, and Dr. Gregory Bogin