Welcome
AT-A-GLANCE SCHEDULE
(Full schedule on page 7)

THURSDAY, MARCH 30

3 p.m.–Ongoing  Registration
Pottle Auditorium

4–5 p.m.  Performing Arts Showcase
Pottle Auditorium

5–7 p.m.  Art Exhibition and Reception
Southeastern Contemporary Art Gallery

FRIDAY, MARCH 31

7 a.m.–Ongoing  Registration
Student Union Ballroom Lobby

8–8:30 a.m.  Service Learning Keynote Speaker
Student Union Ballroom

8:30–9:30 a.m.  Poster Session I
Student Union Ballroom

9:40–11:20 a.m.  Concurrent Session I
Student Union East (rooms 2202, 2203, 2207, 2215, 2216, 2217)

11:30 a.m.–12:45 p.m.  Lunch and Keynote Speaker
Student Union Ballroom

12:45–1:30 p.m.  Poster Session II
Student Union Ballroom

1:40–3:15 p.m.  Concurrent Session II
Student Union East (rooms 2202, 2203, 2207, 2215, 2216, 2217)

3:25–4 p.m.  Wrap-Up, Pictures and Door Prizes
Student Union Ballroom
On behalf of the Board of Supervisors for the University of Louisiana System, I welcome you to Southeastern Louisiana University for the 6th Annual Academic Summit.

For the past six years, we have gathered annually to celebrate and showcase the academic excellence that thrives throughout our nine universities. We are thrilled that you are here to participate in this year’s event and hope it is a productive two days for you.

During the Academic Summit, there will be a focus on a few co-curricular activities—service learning, undergraduate research and artistic expression—that exemplify the mission of the University of Louisiana System, which is to emphasize teaching, research and community service to enhance the quality of life for the state’s citizens.

We are grateful to Southeastern for hosting this year’s Academic Summit, and we look forward to experiencing all that this beautiful campus has to offer. Please enjoy your time in the new state-of-the-art War Memorial Student Union, which serves as the hub of the University with a goal to promote a sense of involvement, engagement, connection and community.

I truly appreciate each faculty and staff member who has contributed to this event. Many of you have dedicated a great deal of time and energy in mentoring our student presenters; know that your efforts are impactful and long-lasting.

Student presenters, you are exemplary as each of you are going beyond the classroom to obtain knowledge. I am proud of the work you have accomplished thus far and encourage you to continue to pursue life-long learning. It is our hope that the Academic Summit medals awarded at the conclusion of this event are worn with pride on graduation day.

To everyone in attendance, please take advantage of the opportunity to network with students, faculty and staff from sister institutions throughout the state; connections made can reap many benefits and possibly spur future collaborative endeavors.

Again, thank you for your support of and participation in the 2017 University of Louisiana System Academic Summit. We hope you benefit greatly from this celebration of academic excellence.

Dr. Jim Henderson
President/CEO
University of Louisiana System
Dear Friends,

Welcome to Southeastern Louisiana University and the City of Hammond. We are pleased to host the 2017 Academic Summit sponsored by the University of Louisiana System featuring participation by our system’s nine universities. We always enjoy the opportunity to share our beautiful, historic campus with colleagues.

At Southeastern we are proud to go the extra mile for our students. The Southeastern experience meets the diverse needs of a large population balanced with a small-town community feel.

A Southeastern degree stands second to none. Unparalleled academics with an emphasis on experiential learning propel our students to take hold of the skills necessary for lifelong success.

As one of Louisiana’s largest universities, Southeastern leads the educational, economic and cultural development of our region.

Thank you for joining us for this year’s summit. We’re glad you’re here.

Dr. John L. Crain  
President  
Southeastern Louisiana University
In March 2016 Dr. Jeannine Kahn joined the University of Louisiana System staff as Vice President for Academic Affairs. She has over 25 years of experience in public post-secondary education in Louisiana. Most recently, she served as Assistant Commissioner for Academic Affairs with the Louisiana Board of Regents, where she focused on articulation and transfer, academic programming, and educational policy. Dr. Kahn’s campus experiences include functioning as the Assistant Vice Chancellor for Academic Affairs at Louisiana State University, as well as holding various positions in the area of student life at the University of New Orleans and Delgado Community College.

Dr. Kahn received a BA in Sociology and MPA from Louisiana State University and a Ph.D. in Educational Administration from the University of New Orleans. Dr. Kahn is a firm believer that an education prepares an individual for a better tomorrow and, as such, has dedicated her career to ensuring that quality public education remains a viable option in Louisiana.

Dr. Jeannine Kahn
Vice President of Academic Affairs
University of Louisiana System
Dr. Tena Golding has been a familiar face at Southeastern since joining the faculty in 1982. Serving in faculty and administrative roles, she has had the opportunity to engage both students and faculty in an exploration of innovative pedagogies and academic programs to enrich teaching and learning. As director of Southeastern’s Center for Faculty Excellence, she worked with faculty on a variety of initiatives designed to enhance teaching effectiveness and the academic environment. As a professor of mathematics, Dr. Golding promoted a student-centered classroom rooted in discovery, problem solving, and hands-on learning.

Always passionate about service-learning, Dr. Golding served for many years on the University of Louisiana System’s Service-Learning Council. She has also served as Southeastern’s Campus Coordinator for the Students in Service program through AmeriCorps and Louisiana Campus Compact; as a member of the editorial board for the Journal of Service-Learning in Higher Education; and as a proposal reviewer for the International Association for Research on Service Learning and Community Engagement (IARSLCE).

Grateful for an amazing group of faculty, staff and students who are committed to academic excellence and service, Dr. Golding is delighted to be serving as Southeastern’s interim Provost and Vice President for Academic Affairs.
Dr. Barbara Forrest

Keynote Presentation

From Plato to Public Service

Barbara Forrest is a Professor of Philosophy in the Department of History and Political Science at Southeastern Louisiana University. She received her bachelor’s degree in English from Southeastern Louisiana University and her doctorate in philosophy from Tulane University. Dr. Forrest’s career has been a blend of teaching, scholarship, and civic engagement. She has authored and co-authored numerous articles in both academic and popular publications. She is co-author with Paul R. Gross of Creationism’s Trojan Horse: The Wedge of Intelligent Design (Oxford University Press, 2004; 2007, 2nd ed.), which details the political and religious aims of the intelligent design creationist movement. In September 2005, she served as an expert witness for the plaintiffs in the first legal case involving intelligent design, Kitzmiller et al. v. Dover Area School District, which was resolved in favor of the plaintiffs.

Dr. Forrest has been interviewed on numerous national television and radio programs including Larry King Live, ABC’s Nightline, and NPR’s Science Friday. She was featured in the PBS NOVA documentary about the Kitzmiller trial, Judgment Day: Intelligent Design on Trial, which aired on November 13, 2007, and received a Peabody Award as one of the best electronic media productions of 2007. She is the 2006 co-recipient of the American Society for Cell Biology’s Public Service Award and the 2009 recipient of the American Humanist Association’s Humanist Pioneer Award. Forrest serves on the board of directors of the National Center for Science Education (NCSE).

Brad Deal

Service-Learning Keynote Presentation

Motivational Collaboration: A Partnership between Louisiana Tech University’s Design Build Studio and Medcamps of Louisiana

Brad Deal is an architect and educator whose career has centered around hands-on design/build projects that emphasize social, economic, and environmental responsibility. He received his Bachelor of Architecture degree from Louisiana Tech University in 2003 and his Master of Architecture degree in sustainable design from the University of Texas at Austin in 2007. He has worked on a variety of residential and light commercial projects in Los Angeles, Houston, and Austin, including many sustainable, infill, affordable housing programs and one of the nation’s first net-zero energy communities. Since 2012 he has taught a variety of courses on architectural design, construction, and energy simulation in the School of Design at Louisiana Tech University, where he coordinates the projects of the ARCH 335 Design Build Studio.

In 2014 Deal forged a partnership with MedCamps of Louisiana, a non-profit organization that provides free summer camp experiences for children with chronic illnesses and disabilities. Each spring quarter, the studio tackles the camp’s most pressing facility needs, which have included a barrier-free central assembly space, an archery range and a canoe launch. Despite the 10-week timeframe, these projects impart tremendous intellectual, creative, emotional and physical lessons not easily replicated in traditional architecture studio courses. The work embodies the belief that education outside of the traditional classroom is not only worthwhile but inwardly meaningful and outwardly powerful; and that design can represent that which we aspire to as compassionate and hopeful educators of the next generation of architects.
THURSDAY, MARCH 30, 2017

3 p.m.–Ongoing  Registration  
Pottle Auditorium

4 p.m.–5 p.m.  Performing Arts Showcase  
Pottle Auditorium  
Master of Ceremonies—Dr. Victor Dresher, Southeastern Louisiana University  
Welcome—Dr. Jim Henderson, President and CEO, UL System

5 p.m.–7 p.m.  Art Exhibition and Reception  
Southeastern Contemporary Art Gallery

FRIDAY, MARCH 31, 2017

7 a.m.–Ongoing  Registration  
Student Union Ballroom Lobby

8 a.m.–8:30 a.m.  Service-Learning Keynote Speaker  
Student Union Ballroom  
Welcome and Introduction of Keynote Speakers—Dr. Erica Calais, ULS Assistant Vice President for Academic Affairs  
Keynote Speakers  
Brad Deal and Caleb Seney—“Motivational Collaboration: A Partnership between Louisiana Tech University’s Design Build Studio and Medcamps of Louisiana”

8:30 a.m.–9:30 a.m.  Poster Session I  
Student Union Ballroom

9:40 a.m.–11:20 a.m.  Concurrent Session I  
Student Union East

ROOM 2202  
High Sugar Diet-Induced Obesity in Drosophila involves a Trip to the ER?  
Grambling State University—Aschel St. Ville

The Microbial Quality of Mechanical Sewer System Effluent and Its Impacts on the Environment  
McNeese State University—Sarah Deeb

Evaluating the Importance of Human Transferrin and Human Factor H Co-Supplementation in the Neisseria gonorrhoeae BALB/c Infection Model  
McNeese State University—Caleb Ardizzone

RNA Methyltransferase Gene Identification in Neisseria gonorrhoeae Isolates Collected from a Regional Medical Center, January–September 2016  
Nicholls State University—Brendon Gros
ROOM 2202 continued
Medical Forensics of a 1940s Sugar Mill Infirmary in Southeast Louisiana
Nicholls State University—Holly Dicharry

ROOM 2203
The Wordless Book as a Data Visualization of Religious Narrative
Nicholls State University—Logan Dougherty

Veteran Resettlement in the Roman World
Northwestern State University—Christopher Das Neves

Bodies, Memory, and Paint
Louisiana Tech University—Sarah Prescott

Heterosexual Parody and Self-Shattering in the Amorous Contexts of La Tortuga Equestre
University of Louisiana Lafayette—Esteban Quispe

Unreachable
University of New Orleans—Diego Enrique Castellanos Chalita

ROOM 2207
The Ergonomic Principles of Industrial Fabrication
Southeastern Louisiana University—Evan Guadet

Characterization of Coastal Sediments Used in Marsh Restoration Projects
University of New Orleans—Brittany Roberts

Hero’s Launch
Louisiana Tech University—Jed Walpole and Sam Crossland

Alabama: Great Destination or Place to Avoid for African Americans?
Grambling State University—Jamie Williams

Affordable Housing and Blight Remediation: Examining the Hoffman Triangle Historic Houses Rehabilitation
University of New Orleans—Michelle Butcher

ROOM 2215
An International Service-Learning Project in Action: Enhancing the Reading/Literacy Skills of Selected First Graders in Montego Bay, Jamaica
Grambling State University—Dr. Loretta Jaggers

Nursing Students Use Service-Learning to Encourage Tobacco-Free Living
Louisiana Tech University—Dewanna Blake

Veterans of Southeast Louisiana Transcript Project
Nicholls State University—Helen Thomas

Efficiency Improvement of Stator Press Workstation at Alliance Compressors
Northwestern State University—Dr. Jafar Al-Sharab, Angelica Galban and Matthew Weems
ROOM 2216
Reduction of ZrB2+20vol%SiC Nano-powders to Minimize Oxidation in Spark Plasma Sintered Nano-Composites
Grambling State University—Cyerra Prevo

Initial Results in the Investigation of (2,10)-Dithia-[3.3]hterophanes as Potential Molecular Switches by Computational Chemistry
Northwestern State University—Nicholas Bailey

Initial Results in the Investigation of Selected [2.2]Furanophanes as Potential Molecular Switches by Computational Chemistry
Northwestern State University—Carly Bourgeois

Development of Coarse Grained Models for Hydrophobic Assemblies
University of New Orleans—Gaurav Gyawali

ROOM 2217
Straight Talk 2
Grambling State University, Cassandra Peoples and Evelyn Jenkins

Spanish Service-Learning: Louisiana Tech Students Experience Helping Spanish-Speaking High Schoolers
Louisiana Tech University—Rachel Madore, Jacob Fontenot and Martin Vasquez

Tiny Houses for Flood Victims
Northwestern State University—Karli Daigle

Motivational Influences on Physical Activity Participation among Children
Southeastern Louisiana University—Debra Perilloux, Chloe Davis and Dr. Holly Kihm

11:30 a.m.–12:45 p.m.  Lunch and Keynote Speaker
Master of Ceremonies—Dr. Tena Golding,
Southeastern Louisiana University Interim Provost and Vice President for Academic Affairs
Welcome—Dr. John Crain, Southeastern Louisiana University President

Keynote Speaker
Dr. Barbara Forrest – “From Plato to Public Service”

12:45 p.m.–1:30 p.m.  Poster Session II
Student Union Ballroom

1:40 p.m.–3:15 p.m.  Concurrent Session II
Student Union East
ROOM 2202
The Role of Notch Signaling in Regulating Stem Cell State
Louisiana Tech University—Demi Sandel

Determination of Mechanisms of Ebola Infection by Protein-Protein Docking
Northwestern State University—Kirsten Fontenot

Developments in Forensic Science — the Use of Proteomics for Identification
Northwestern State University—Tristan Bridges

Development of Coarse-Grained Model of VECA Molecules
Southeastern Louisiana University—Bijay Shrestha

ROOM 2203
Evaluation Factors associated with Pre-race Behaviors in Thoroughbred Race Horses
McNeese State University—Hannah Burnett

Reproductive Physiology of Loggerhead Sea Turtles in a Foraging Area
Southeastern Louisiana University—Sydney Stewart

Hatchlings of the Apple Snail Pomacea maculata Collected from the Barataria-Terrebonne Estuary Can Tolerate Salinities up to 10 Parts per Thousand
Nicholls State University—Ashleigh Lambiotta

Employment of Hair Bundle Mechanoreceptors on the Tentacles of the Model Sea Anemone in Detection and Capture of Benthic Prey
University of Louisiana at Lafayette—Cayman Stephen

Study of Neural Cell Adhesion Molecule Precursor Protein (NCAM) in Different Model Organisms
Grambling State University—Sokunna Yun and Joseph Cropprun

ROOM 2207
How Do You Feed Your Body: College Students and Organic Food
Southeastern Louisiana University—Katie McReynolds

Examining the Construct of Time-On-Task in an iPad Assisted Reading Intervention for At-Risk Students
Nicholls State University—Brooke Mazac

Where Do We Go from Here? International Students' Perceptions of Trump's Restrictions on Immigrants
Grambling State University—Nadale Celestine

Sex Differences in the News Between Presidential Candidates
McNeese State University—Mark Bailes

Observed Driving Behaviors in College Students
University of Louisiana at Lafayette—Lauren Short
ROOM 2215
The Design and Optimization of Subterranean Power Lines for the City of Natchitoches
Northwestern State University—Dr. Jafar Al-Sharab, Nathaniel Dubois and Cade Cramer

Raising Awareness about HIV and AIDS
Grambling State University—Prentiss Smiley, Dr. Rory Bedford and Dr. Ellen Smiley

Nicholls Honors Program Creates a Long-Term Service-Learning Relationship Devoted to Conservation of the Chauvin Sculpture Garden
Nicholls State University—Mallory Robichaux and Dr. Gary Lafleur

W.I.N. Adolescent Project
University of Louisiana, Monroe—Terri Honore and Kimberly Mayberry

Volunteer Income Tax Assistance (VITA) and Tax Counseling for the Elderly (TCE)
Grambling State University—Dr. Aaron Witherspoon

ROOM 2216
Enumeration of Cyclic Self-Converse Tournaments
Louisiana Tech University—John Emory

Using Polymer Bulk Diffusion as a Mechanism for Advancing Tissue Engineering Applications
Louisiana Tech University—Kelsey Phelan

Non-Destructive Methods for Identifying Blisters in Thin-Film Specimens
Southeastern Louisiana University—David Didie

Pressure, Humidity, Temperature Measurements and Long-Range Radio Transmission Using LaACES Balloon
McNeese State University—Tyler Morgan

Halloysite as a Catalyst for Esterification
University of New Orleans—Kaylin Kilgore

ROOM 2217
Stamps for Inmates
Grambling State University—Kevin Sly

Myself Was Formed: Celebrating Women in Architecture and Design
University of Louisiana at Lafayette—Kiwan McClung and Thomas Cline

Seeing Social Research—From Concepts to the Concrete
Nicholls State University—Tina Granger

The Design of Water Booster Station Using Pipeflow Software for the City of Natchitoches
Northwestern State University—Dr. Jafar Al-Sharab, Charlie Caldwell and Anthony Lucus

3:25 p.m.–4 p.m. Wrap-Up, Awards and Door Prizes
Student Union Ballroom
Pottle Auditorium  
March 30, 4–5 p.m.

GRAMBLING STATE UNIVERSITY

“Collaboration with heART—a tribute to Billie Holiday”  
*Intro, Strange Fruit, Monologue, and God Bless this Child*  
Composer: Billy Holiday and Arthur Herzog  
Performers: Lesli Woods, Erika Goode-Perry, Jessica Barnes  
Accompanied by: Justin Jones  
Visual Artist: Jessica Keyes  
Faculty Mentor: Natorshau Davis, Mary F. Crook, Rodrecas Davis

SOUTHEASTERN LOUISIANA UNIVERSITY

“Fanfare and Fugue”  
Composer: Matt Jays  
Performers: Stephan August, Seth Guerra, Cullen Hinkle, Logan Bergeron, Logan Chaplain, Lupita Mirafuentes, Remi Vedros  
Faculty Mentor: Brian Gallion

McNEESE STATE UNIVERSITY

“Killer Tango”  
Composer: Sonny Kompanek  
Performers: Victor Medina, Mikayla Dupont, Roxie Jo Davis, Andrew Usie, Tyler B. J. Young  
Faculty Mentor: David Scott

UNIVERSITY OF LOUISIANA AT LAFAYETTE

“Questions and Confessions to My Birth Mother”  
Writer: Jasmine Moore  
Performer: Jasmine Moore  
Faculty Mentor: Carl Granieri

NICHOLLS STATE UNIVERSITY

“Der Hölle Rache kocht in meinem Herzen”  
*from Die Zauberflöte*  
Composer: Wolfgang Amadeus Mozart  
Performer: Kellie Gaspard, soprano  
Accompanist: Dr. Shane Anderson  
Faculty Mentor: Dr. Valerie Francis

UNIVERSITY OF NEW ORLEANS

“Scent of a Woman Reenactment”  
Screenwriter: Bo Goldman  
Performer: Prerak Chapagain, Abhisekh Sapkota, Eliz Parajuli, Nishant Dhungel, Shisir Acharya  
Faculty Mentor: Cory Dumesnil

NORTHWESTERN STATE UNIVERSITY

“Sonatina for Clarinet Solo, opus 27”  
*from Die Zauberflöte*  
Composer: Miklos Rozsa  
Performer: Alanna Benoit  
Faculty Mentor: Dr. Melena McClaren
**ART EXHIBITION**

Southeastern Contemporary Art Gallery  
March 30, 5–7 p.m.

**GRAMBLING STATE UNIVERSITY**

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**Lockett Hues**  
Jessica Keyes  
Acrylic on canvas  
2017

**Jealousy 3**  
Carmichael D. Pegross  
Mixed media on canvas  
2017

**Caravan to Timbuktu**  
Aja Taylor  
Mixed media on canvas  
2017

**DJ the Skunk (Vibe State mascot)**  
Jessica Keyes  
Soft sculpture  
2016

**Mindset Abstract**  
Christopher Lewis  
Graphite on paper  
2016
Been a Long Time
Sarah Prescott
Silver platter, latex, hair
2017

Self-Portrait
Sarah Smith
Digital painting
2017

Mom’s Shoes
Catherine Hunter
Digital photo
2017

Sun Gods
Christina Wong
Oil on canvas
2017

Doppelganger
Alaycia Moore
Digital painting
2017
Disarming the Bomb
Chance DeVille
Photograph
2016

Moth
Katy Geymann
Relief print
2016

Industrial Landscape
Collin Adams
Foundations
2016

Self
Kelly Lavergne
Drawing
2016

What is Sufism?
Sajeela Siddiq
Graphic design
2016
Fertile
Gabrielle Dinger
Mixed media
2016

Chaos
Caroline Simoneaux
Silkscreen
2016

Amer a la Maison
Collin Harrelson
Wood block
2016

Rendition of a Vase
Ashley Tabor
Steel fabrication
2016

Isle de Jean Charles
Savanne Solet
Toned silver gelatin print
2016
Jacket and Dress
Ethan Stelly
Linen and silk
2016

Untitled
Abbie Lawson
Charcoal
2016

Kisatchie Forest
Jessica Cross
Digital image of Mazda car wrap
2016

Raku Ware
Patrick Ramke
Raku fired stoneware
2017

Psychedelic Net
Kayla McKern
Watercolor and ink
2016
Abel
Kevin Paninski
Stoneware
2016

Double Standards
Trent Pechon
Newspaper, broom
2015–2016

Matilde The Altruist
Belinda Flores Shinshilllas
Charcoal on archival paper
2017

Dream Journal
Randi Majors
Black & White Photography
2016

Duotone Packaging
Savannah Perrin
Digital print on cardstock
2016
Polaris
Jessica Talbert
Acrylic
2017

Stick Ploughing a Trough
Mark Morris
Bronze
2016

Kitty
Amy Nguyen
Mixed media
2016

Prospectives Through Photogravure: Streched; Mom
Maria Sanchez
Photogravure
2016

Shrine to Lakshmi
Dorian Danos
Wood, paint, ink
2016
A Mute and a Tree
Grant Wooley
Digital Animation
2017

1994
Madeline Bennett
Porcelain and wood fire ceramics
2017

Remember what you came form
Raine Curole
Woodcut print
2017

Noli Me Tangere
Leah Boudreaux
Video
2016

Entangle
Samantha Ulven
Photograph
2017
**GRAMBLING STATE UNIVERSITY**

**An International Service-Learning Project in Action: Enhancing the Reading/Literacy Skills of Selected First Graders in Montego Bay, Jamaica**

*Dr. Loretta Jaggers*

Dr. Loretta Walton Jaggers, a Professor of Education at Grambling State University, was a participant in *The Links, Incorporated 2017 Global Linkage Delegation to Jamaica II*. This dynamic experience provided an excellent opportunity to implement an international service learning project in Montego Bay, Jamaica, during January 24-28, 2017. Since Grambling State University has had continuous local collaboration with the Monroe-Grambling Chapter of the Links, Incorporated, this was an excellent opportunity to expand our collaborations to an international level. Dr. Jaggers worked with a first grade classroom at St. Mary’s Preparatory School and Kindergarten in Montpelier, St. James Parish, Jamaica. Grambling State University students, staff, administrators, and members of the Monroe-Grambling Chapter of Links donated books for the Links Library at St. Mary’s School in Jamaica. First, this multi-media presentation presents various activities and resources used to develop and enhance reading/literacy skills. Secondly, it is a discussion of specific pre-planned and implementation strategies. Thirdly, it is a description of assessment procedures, motivational activities, instructional strategies, and materials used during the implementation process. Next, emphasis will be placed on techniques to promote positive reinforcement and to promote self-esteem for the students in the classroom. Finally, student artifacts that resulted from the implementation of this international service learning reading/literacy initiative will be provided.

**Straight Talk 2**

*Cassandria Peoples, Evelyn Jenkins*

“Straight Talk 2” is a community-service project designed and first implemented in 2013 at Grambling State University School of Social Work. The aim of the project was, and still is, to inform, educate, and motivate elementary, junior high and high school students, administrators, and parents while deterring school dropouts, teen pregnancies, and bullying behaviors. After presenting Straight Talk in 2013, the evaluations suggested that although the information was useful, perhaps it would have been more so if presented to middle school children. Because of this feedback, we worked to get necessary permission to implement at Lincoln Preparatory School. The target group consists of approximately 181 students from such ethnic groups as African Americans (93%), Caucasians (5%), and other minorities (2%), with ages ranging from five to fifteen.

**Raising Awareness About HIV and AIDS**

*Prentiss Smiley, Dr. Rory Bedford, Dr. Ellen Smiley*

Members of Grambling State University’s Earl Lester Cole Honors College hosted the Louisiana Collegiate Honors Council Conference and incorporated a service-learning project as a part of the activities. Students and faculty mentors used the forum to raise awareness about HIV and AIDS among university communities. Five other university honors programs (ULL, ULM, UNO, Southern, and Dillard) participated in the conference. Grambling partnered with the AIDS Healthcare Foundation (AHF). Dr. Condess M. Curley, Member of the Board of Directors of AHF and Co-Founder of Project Africa Global, and Ms. Jacquelyn Harris, Chair AHF Black AIDS Crisis Taskforce Faith Committee, served as onsite experts as it related to testing, careers and becoming an advocate. Over 150 people participated in the conference. Students prepared and passed out educational information, bags, t-shirts, and other paraphernalia that promoted AIDS and HIV awareness. A manned information booth was available during the weekend that provided additional resources and consultations. Grambling State University honors students challenged the other universities to take the information back to their communities and continue to raise awareness about HIV and AIDS.

**Volunteer Income Tax Assistance (VITA) and Tax Counseling for the Elderly (TCE)**

*Dr. Aaron Witherspoon*

Each tax season, the National Association of Black Accountants (NABA) participates in the Volunteer Income Tax Assistance (VITA) and Tax Counseling for the Elderly (TCE) programs. To be a participant, each NABA student and faculty member must become a certified tax preparer by passing the Standards of Conduct, Intake/Interview and Quality Review, and the Advanced Course Scenarios Examinations. VITA offers free tax help by certified volunteers to low to moderate-income taxpayers and the elderly of Grambling and surrounding areas. Certified volunteers help taxpayers with special credits, such as Earned Income Tax Credit (EITC), Child Tax Credit, Child and Dependent Care Credit, and Education Credits. In addition to free tax return preparation assistance, VITA offers free electronic filing (e-file). The process begins in October and culminates in April. Taxpayers call Grambling State University (GSU) for an appointment, and their tax returns are completed on campus. VITA/TCE is one more way GSU gives back to the community and prepares accounting students to use book knowledge with real-world situations. We prepare tax returns in accordance with federal law and the Department of the Treasury.

**Stamps for Inmates**

*Kevin Sly*

Communication is very difficult for individuals who are incarcerated. Telephone service options are expensive, and inmates must establish accounts in order to purchase minutes. Once they have minutes, they can use them to call friends, family
members, and legal representatives. Most prison inmates also do not have access to online communication media that most outsiders take for granted such as texting, email, twitter, and Facebook. Because of this, many who are incarcerated go for weeks, months, and even years without communicating with individuals on the outside. To help inmates keep ties with the community and family members, the CIS 215 Information Systems class from the College of Business, Computer Information Systems Department has implemented a “Stamp for Inmates” campaign. This campaign allows the student to provide community service by giving stamps, which will be placed on envelopes that have 2-3 blank sheets of writing paper enclosed. A simple note is placed inside that says, “Someone at Grambling is thinking of you!” or “Someone at Grambling State University is praying for you!” This service-learning project gives students experiential opportunities to learn in real world contexts and to develop skills of community engagement, while affording community partners opportunities to address significant needs.

**LOUISIANA TECH UNIVERSITY**

**Nursing Students Use Service-Learning to Encourage Tobacco-Free Living**

Dewanna Blake

The Louisiana Tech University Division of Nursing expands learning through active participation in service-learning experiences in diverse community settings. Current trends in literature support the effectiveness of student learning when “hands on” activities are incorporated with course content. Service-learning offers a unique opportunity for students to disseminate knowledge and to develop critical thinking skills. Using data from Healthy People 2020 and Louisiana state statistics on smoking, students designed service-learning projects, to promote awareness and knowledge on Tobacco Free Living. This resulted in the coordination of campus projects including Kick Butt’s Day and at the Homecoming game. Multidisciplinary collaboration resulted in projects with the local Boys and Girls Club and a local peer led mental health support center. Students constructed teaching plans on tobacco free living for each project. School-aged children were shown the chemicals in cigarettes. Middle and high school student projects focused on e-cigarettes. Adult learners were taught the harmful effects of smoking and health benefits of cessation. The tobacco free service-learning projects were overwhelmingly positive. Students shared knowledge and awareness to 765 contacts in Lincoln Parish. Student reflections described service-learning as being “beneficial to process and apply theory material.”

**Spanish Service-Learning: Louisiana Tech Students Experience Helping Spanish-Speaking High Schoolers**

Rachel Madore, Jacob Fontenot, Martin Vasquez

At Louisiana Tech University, any student can participate in a unique program called Spanish Service Learning in Louisiana. At first glance, this class may seem like an easy one-credit-hour add on to a student’s schedule. However, after participating in this program, we have gained more understanding of the school system in the region and its intricate relationship with ESL students. The program requires that students go to a study skills class during the school day at Ruston High School. There the students from the college class will help the high school students who struggle with English to complete assignments, study, or just talk about issues they are experiencing. We have learned how to develop relationships with the teachers and students to further our knowledge of the subject while helping the students better their education and future opportunities. Service-learning, especially for a subject like Spanish, is uniquely important in a region where there is not a great deal of support within the school system for students who struggle with English.

**NICHOLLS STATE UNIVERSITY**

**Veterans of Southeast Louisiana Transcript Project**

Helen Thomas

The Nicholls State University Archives is home to the Veterans of Southeast Louisiana Collection, which includes 95 oral histories with local veterans spanning World War II to the present day. To make these materials more readily available to our user community and to facilitate research using them, the library began an interview transcription project offering service-learning credit to student volunteers. The opportunity is open to all Nicholls students, with volunteers predominantly referred from history and interdisciplinary studies classes. Students are responsible for transcribing the interviews from videos according to a set of instructions, along with any additional reflective assignments given by their instructors. It is a structured assignment that employs critical thinking. Volunteers often report they are more challenged by and interested in the project than they initially expected. The project also provides a convenient service-learning option for non-traditional and distance learning students, since the work can be done at home on their own schedule. The library would not have the resources to create transcriptions and the increased accessibility they provide without the assistance of student volunteers. This presentation will discuss the methods of a successful service-learning opportunity from the perspective of the project manager.

**Nicholls Honors Program Creates a Long-Term Service-Learning Relationship Devoted to Conservation of the Chauvin Sculpture Garden**

Helen Thomas

The Nicholls State University Archives is home to the Veterans of Southeast Louisiana Collection, which includes 95 oral histories with local veterans spanning World War II to the present day. To make these materials more readily available to our user community and to facilitate research using them, the library began an interview transcription project offering service-learning credit to student volunteers. The opportunity is open to all Nicholls students, with volunteers predominantly referred from history and interdisciplinary studies classes. Students are responsible for transcribing the interviews from videos according to a set of instructions, along with any additional reflective assignments given by their instructors. It is a structured assignment that employs critical thinking. Volunteers often report they are more challenged by and interested in the project than they initially expected. The project also provides a convenient service-learning option for non-traditional and distance learning students, since the work can be done at home on their own schedule. The library would not have the resources to create transcriptions and the increased accessibility they provide without the assistance of student volunteers. This presentation will discuss the methods of a successful service-learning opportunity from the perspective of the project manager.

**Helen Thomas**

The Chauvin Sculpture Garden was created by artist Kenny Hill over a 13-year period on the banks of Bayou Petit Canot in Chauvin, LA. After Hill walked away from the site in 2000, the Kohler Foundation purchased the land, restored the garden, and donated the site to Nicholls State University. Since then, Nicholls has sought ways to integrate the garden into its educational initiatives. A relationship was created between the Nicholls Honors Program and the Chauvin Sculpture Garden that highlights service-learning as a vehicle for student engagement and lasting community stewardship. Since 2015, our Honors Program has logged nearly 200 person-hours in its efforts to provide labor and public awareness to the unique
art installment. The project offers an opportunity for students to appreciate what life is like in Chauvin, a traditional fishing village under threat from accelerated coastal land loss. It also provides training in art conservation, using the work of Kenny Hill as a rare example of visionary art requiring interaction with conservators for its survival. As a result, we have found that the project nurtures a strong sense of connection to the Louisiana coast as well as to the visionary work of Kenny Hill.

Seeing Social Research: From Concepts to the Concrete
Tina Granger

This presentation focuses on instructional strategies that produce higher student competency levels when taking social research concepts from the classroom to the real world and providing a transition from student to researcher. Discussion of the current Cajun Heritage Preservation Research project will demonstrate how the instructional strategies are easily incorporated into ongoing research projects, from research design to interpretation of data.

NORTHEASTERN STATE UNIVERSITY

Efficiency Improvement of Stator Press Workstation at Alliance Compressors
Dr. Jafar Al-Sharab, Angelica Galban, Matthew Weems

NSU IET/EET students’ capstone course requires that student(s) identify a local problem, research possible solutions, and propose a viable solution. In this case, students were assigned a project at Alliance Compressors Company to study and analyze the efficiency of the stator change over workstations. The proposal will be presented to the Alliance Compressors in late April of 2017 with their recommendations. In this project, students applied theory and techniques learned through the IET/EET curriculum to solve problems of the type that they would encounter in the real world. Faculty members guided preliminary research, application of theory, and analysis of the proposal to ensure that students remained on target.

Tiny Houses for Flood Victims
Karli Daigle

The Service-Learning Project focuses on creating tiny homes for flood victims still living in temporary housing. Utilizing various departments within Northwestern State University, I would like to develop a program where students, faculty, and service organizations on campus work together to create tiny homes for the flood victims in Louisiana. The Communication Department could research how to solicit money and resources from large corporations like Lowe’s, Home Depot, and 84 Lumber. The English Department would be able to determine what grants might be available to fund the projects. The Mathematics and Finance departments could research how to draw plans using geometry and how to budget for the materials required for each house. Lastly, the Engineering Departments could facilitate the construction of the buildings. These homes could be long-term solutions for Louisiana residents in desperate need of permanent structures. By working together, this project could positively impact not only the economy by providing a sense of security, it could also install a sense of state pride within the participants of the project.

The Design and Optimization of Subterranean Power Lines for the City of Natchitoches
Dr. Jafar Al-Sharab, Nathaniel Dubois, Cade Cramer

NSU IET/EET students’ capstone course requires that student(s) identify a local problem, research possible solutions, and propose a viable solution. In this case, students designed and optimized a subterranean power line for the City of Natchitoches. Students will present the proposal to the City of Natchitoches Engineering Department in late April of 2017. In this project, students applied theory and techniques learned through the IET/EET curriculum to solve problems of the type that they would encounter in the real world. Faculty members guided preliminary research, application of theory, and analysis of the proposal to ensure that students remained on target.

SOUTHEASTERN LOUISIANA UNIVERSITY

Motivational Influences on Physical Activity Participation Among Children
Debra Perilloux, Chloe Davis, Dr. Holly Kihm

Project I-PAL (Interactive Physical Activity Lab) is a multi-institutional, collaborative research effort between Southeastern Louisiana University’s Family and Consumer Science program and the Pennington Biomedical Research Center. Project I-PAL aims to identify innovative methods to increase children's physical activity levels and combat childhood obesity. Associate Professor Dr. Holly Kihm of Southeastern and Assistant Professor Dr. Amanda Staiano of Pennington Biomedical were awarded a Board of Regents grant in the spring of 2015 to develop an interactive teaching space that provides students with unprecedented opportunities to develop skills and garner experience working with children who struggle with
obesity. Supervised by Dr. Kihm, undergraduate students are given hands-on research and applied experience by coaching children on how to use physical activity tools including heart rate monitors, child-sized cardio equipment, and interactive gaming technology. Concurrently, the undergraduate students collect data for a series of psychology experiments with the 21 child participants in order to better understand how the social environment—including peers, music, and coach support—influences children’s exertion and enjoyment of a variety of physical activities. This presentation highlights research findings from the first two semesters of Project I-PAL, and touches on the unique service-learning opportunities students have had while working with children.

UNIVERSITY OF LOUISIANA AT LAFAYETTE

Myself Was Formed: Celebrating Women in Architecture and Design
Kiwana McClung, Thomas Cline

Diversity and gender issues are some of the most discussed issues of the current time. Although there are severe inequalities across several disciplines in the United States, the architecture profession is one on the worst offenders—continually perpetuating a homogenous, gender discriminatory work culture. In order to challenge this damaging trend, we must raise awareness of the contributions and abilities of women in the architecture profession. Encouraging student involvement in the research and exhibition of the accomplishments of women in architecture provides a means of educating future generations of designers about the importance of diversity in the architecture and design professions. In an effort to facilitate discussion concerning women in architecture among students in the UL School of Architecture and Design, the College of the Arts, and the UL campus, members of the National Organization of Minority Architecture students conducted research that culminated in an exhibition and built installation in the Fletcher Hall Gallery. This exhibition celebrates the contributions of women and minorities in the architecture and design professions and also serves as a unique learning opportunity for the students involved, allowing them to explore and research players in their field that do not fit within the traditional architect typology.

UNIVERSITY OF LOUISIANA AT MONROE

W.I.N. Adolescent Project
Terri Honire, Kimberly Mayberry

The school-based clinic at a local junior high school solicited the services of social work students in their sophomore year to assist with a project on self-esteem and communication perceptions of the students. The goal of the project was to increase the junior high school students’ understanding of the importance of self-esteem, self-efficacy, and peer-to-peer communication, as well as adolescent and adult communication. The ULM students created the survey instrument for students in the seventh and eighth grades. The ULM students collected the data, analyzed it, and put the results in a presentation format, which was presented to the 100 junior high students who participated. The findings indicated males’ self-esteem is related to being smart, cool, and a good person. Athletic ability was also related to self-esteem and self-efficacy for males. Females in the survey related self-esteem to being smart, nice, talented and cute. Physical attributes and performance were important indicators of self-esteem for the females. Males communicated with parents with more easily than did the girls in the survey.

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**GRAMBLING STATE UNIVERSITY**

**Where Do We Go from Here? International Students’ Perceptions of Trump’s Restrictions on Immigrants**  
**Presenter:** Nadale Celestine  
**Faculty Mentor:** Matthew Sheptoski

President Trump’s recent actions on immigration have caused much controversy and have been a topic of conversation. The national media, including the *New York Times*, have published numerous, in-depth analyses of these developments. Closer to home, on January 31, the *Ruston Daily Leader* ran a front-page article pointing to the acute importance of this issue in the communities of Ruston and Grambling, home to two universities, Louisiana Tech University and Grambling State University. Universities. University communities are typically understood to be welcoming places for immigrants, both students and professors. But is this still the case? Relying on surveys and brief, semi-structured interviews with a number of international students at Grambling, I explore the perception and impact of President Trump’s actions on this important segment of the Grambling community and address the concerns of these international students on campus who may be wondering, “Where do we go from here”?

**Alabama: Great Destination or Place to Avoid for African Americans?**  
**Presenter:** Jamie Williams  
**Faculty Mentor:** Steve Favors

This research is intended to collect data from undergraduate students at Grambling State University about economic and educational opportunities in the state of Alabama. This project will provide information about the history of Alabama, past and present. The research is intended to provide information on the progressive social, economic, and educational situation of African Americans in the state. This project is aimed to determine if students have an interest in a career or education in Alabama, whether they know of the opportunities available to African Americans or not. Students will also indicate their opinion on race relations in the state today. A survey will be conducted on the campus and given to students, and results and conclusions will be included in the project.

**Study of Neural Cell Adhesion Molecule Precursor Protein (NCAMP) in Different Model Organisms**  
**Presenter:** Sokunna Yun, Joseph Cropprue  
**Faculty Mentor:** Hung-Tat Tony Leung

Neural Cell Adhesion Molecule (NCAM) has been shown to play a role in cell–cell adhesion and neurite outgrowth, which are important for synaptic plasticity, learning and memory. The NCAM precursor protein (NCAMP) is converted into NCAM in vivo on demand. We compared the amino acid sequences of NCAMP found among six vertebrates (three mammals, a bird, an amphibian, and a fish) using the NCBI blast function. NCAMs of the three mammals share high homologs but not in the non-mammals. However, our previous study of serotonin did not show a drastic decrease in homology between mammals and chicken. So we checked the protein homologs of five other proteins in the organisms. We found that all five other proteins shared significant higher homologies to their human counterparts than NCAMP. Thus, NCAMP is among a group of proteins that set birds apart from their counterparts found in mammals.

**High Sugar Diet-Induced Obesity in Drosophila Involves a Trip to the ER?**  
**Presenter:** Aschel St. Ville  
**Faculty Mentor:** Paul Kim

*Drosophila melanogaster* has been used as a model for understanding the relationship between obesity and health problems such as diabetes (*Musselman* *et al*., 2011) and heart disease (*Na* *et al*., 2013). In these studies, flies raised on a high sugar diet became fat, hyperglycemic, insulin-resistant and developed cardiomyopathy, similar to the pathologies observed in human obesity. In humans, obesity also induces endoplasmic reticulum (ER) stress, which is thought to play an important role in mediating insulin resistance and inflammation. Therefore, the present study seeks to use *Drosophila* as a model to study the relationship between obesity and ER stress. *Drosophila melanogaster* (Oregon-R, Bloomington Stock Center) will be placed on a high sugar diet during the larval and adult stages to induce obesity. These flies will be compared to flies on a normal diet. Genes involved in ER stress and other genes of interest will be analyzed by qPCR.

**Reduction of ZrB2+20vol%SiC Nano-powders to Minimize Oxidation in Spark Plasma Sintered Nano-composites**  
**Presenter:** Cyerra Prevo  
**Faculty Mentor:** Naidu Seetala

ZrB2+SiC ceramic composites are useful for application in leading edge material of hypersonic vehicles. Uniform distribution of SiC with high densification, low grain growth, and low porosity were achieved by spark plasma sintering (SPS) of nano-powder composites with smaller grains and minimal segregation of SiC compared to coarse-powder composites. But oxidation of ZrB2 to form ZrO2 is observed during SPS process of nano-composites which is not seen in coarse composites. To minimize the oxidation problem during SPS, a set of ZrB2+20vol%SiC nano-powders was reduced using dry hydrogen flow at 400°C for about eight hours to minimize absorbed moisture from the nanoparticle surfaces. The results are encouraging with no ZrO2 peaks in the XRD spectra of reduced nano-powders or in their SPS consolidated nano-composites. Four-point beam bend tests were carried out to find the flexure strength of the nano-composites. The flexure strength is improved by reducing the powders prior...
to SPS consolidation. The flexure strength is 415 MPa for reduced nano-composite, while it is only 296 MPa for unreduced nano-composite.

LOUISIANA TECH UNIVERSITY

The Role of Notch Signaling in Regulating Stem Cell State  
**Presenter:** Demi Sandel  
**Faculty Mentor:** Dr. Jamie Newman

Notch signaling is a conserved signaling pathway that is especially active in development mediating many cell fate decisions. Notch signaling is responsible for many different cellular responses, including maintenance of stemness in neural stem cells, differentiation of muscle stem cells, and osteogenic differentiation of umbilical cord-derived MSCs. Studies have also shown that Notch signaling is one of the primary misregulated pathways in some developmental diseases and cancers. Thus, it is important to understand how Notch signaling regulates stem cell fate and to better understand how this pathway can be used to optimize the therapeutic potential of adult stem cells. The goal of this study is to understand how Notch signaling modulates the self-renewing and multipotent characteristics of adult stem cells. Using adipose-derived mesenchymal stem cells (ASCs), we characterized the basal activity of Notch signaling. Results from our study suggest that all Notch receptors are expressed with notch3 having the highest level of expression. To determine if notch3 has an effect on differentiation, we performed notch3 siRNA mediated knockdowns followed by differentiation assays. We also performed Alamar blue assays and viability staining to determine if a knockdown of notch3 has an effect on the proliferation of ASCs. Results from our study suggest that a knockdown of notch3 results in increased adipogenesis as observed by increased Oil-Red O staining and quantitative measurement of the adipogenic markers. This suggests that Notch signaling may modulate adipogenic differentiation of ASCs. Further experiments are underway to determine if notch3 has an effect on osteogenic differentiation.

Enumeration of Cyclic Self-Converse Tournaments  
**Presenter:** John Emory  
**Faculty Mentor:** Dr. Jinko Kanno

A tournament is a mathematical object consisting of a set of vertices and a set of “dominance” relations between every pair of distinct vertices where one of each pair dominates the other. These dominance relations are represented visually as an arrow, called an arc, pointing from the dominating vertex to the dominated. The converse of a tournament is obtained by reversing the direction of every arc. A tournament is self-converse if there is a way to rearrange the vertices in the converse that gives the same set of arcs as the tournament. A spanning cycle is an ordering of all vertices in a tournament where each vertex dominates the next and the last vertex dominates the first. A tournament is cyclic if rotating the vertex labels along a spanning cycle does not change the set of arcs. It can be proven “a cyclic self-converse tournament with n vertices exists if and only if n is odd.” A simple construction of one tournament for each odd n that satisfies the proposition; however, there is the question of whether this construction is unique. Prior works have provided a different construction that result in the same tournaments and the number of cyclic tournaments. The present research focuses on demonstrating that every cyclic tournament is self-converse even if not all self-converse tournaments are cyclic. Due to this result, the proposition can be more simply stated without the self-converse condition as “there exists a cyclic tournament Tn if and only if n is odd.”

**Hero’s Launch**  
**Presenter:** Jed Walpole, Sam Crossland  
**Faculty Mentor:** Brad Deal, Robert Brooks

In spring of 2016, our Design Build Studio was called to design and construct an ADA accessible canoe and paddle boat launch for MedCamps of Louisiana — a non-profit organization that provides medically supervised residential camping experiences for children with chronic illnesses and disabilities. MedCamps’ mission aligns perfectly with Joseph Campbell’s concept of the Hero’s Journey, whereby a layman is called to a great challenge, struggles through the journey, and returns from the adventure a hero and a mentor. This concept was the driving force behind our design and construction efforts for the Hero’s Launch, allowing us to provide a place for campers to do more than simply canoe and paddle boat, but to return from the experience with a sense of pride and accomplishment. The launch revitalizes an old activity, allowing campers to participate in a brand new way. This presentation will tell the story of the students and the campers’ journey toward the creation of a new experience at MedCamps.

**Bodies, Memory, and Paint**  
**Presenter:** Sarah Prescott  
**Faculty Mentor:** Nicole Duet

Women have a specific relationship to trauma and its after-effects. The levels of severity and the systems through which trauma is experienced are varied and convoluted. I am most interested in the life of traumatic memory after experience and the after-images that come from it. The female body and the representation of it in media, Bible Belt religions, and art history are the sources from which I harvest imagery. The forms in my work come from my perception and distortion of these images as they are filtered through my own experience. They are not meant to be representations of the event of trauma but of the way post traumatic memory presents itself. Obsessive repetition married with the loss of clarity becomes language for a hauntingly pervasive memory that cannot be fully known and that exists outside of linear time. It’s a utopic hope that these memories can be caught. This still image lends itself to the language of post traumatic memory by the ability to revisit the picture plane in the present. There is power in the voluntary capacity with which one can view or not view. Paint and canvas become flesh, and spaces are activated through light and shadow, a body that holds the memory. I create a tactile sensation that is affective in nature through saturation and relationship of color, weight or lack thereof of material, and a movement of shape through space. I hope to create a hyper awareness, a shift in the way of seeing.
Advances in biopolymers have long been sought to advance fields of biomedical engineering, with particular focus in biomicrofluidics. We recently demonstrated that PDMS, a commonly used polymer in biological applications, can be used to intentionally leach molecules into a sample. In this work, we characterize the diffusion of fluorescein into water from the bulk PDMS, with a focus on calculating the diffusion rate of molecules from the polymer bulk into its surrounding aqueous environment. We look at diffusion from the bulk over a period of days in an attempt to formulate a fluorescein diffusion model from PDMS. We establish a framework with fluorescein for determining the properties of molecules capable of diffusion from bulk PDMS. This strategy can be used as a tool for creating self-regulating microfluidic chambers.

**Using Polymer Bulk Diffusion as a Mechanism for Advancing Tissue Engineering Applications**  
*Presenter: Kelsey Phelan*  
*Faculty Mentor: Dr. Bryant Hollins*

**Evaluating the Importance of Human Transferrin and Human Factor H Co-Supplementation in the Neisseria gonorrhoeae BALb/c Infection Model**  
*Presenter: Caleb Ardizzone*  
*Faculty Mentor: Dr. William Dees, Dr. Ann Jerse*

**McNEESE STATE UNIVERSITY**

**Sex Differences in the News Between Presidential Candidates**  
*Presenter: Mark Bailes*  
*Faculty Mentor: Dr. Tracy Standley*

Throughout history the role of women has been that of a domestic wife and mother. Only over the past century have Western women gained important political rights, such as voting, and the ability to enter the workforce as productive members of society. Traditionally regarded as the realm of men, more and more women have run for and been elected to public office in recent decades. Unfortunately, old perceptions between the differences of men and women still exist and are prevalent in the coverage of campaign races in the news media. A content analysis was conducted on newspaper articles from the largest national publications during the two-month period preceding the 2016 presidential election to determine if there was a substantial difference in the way reporters covered male candidate Donald J. Trump over candidate Hillary R. Clinton, the first female to run for president under a major party nomination. Results indicate that there is a significant difference between the ways these two candidates were treated by the news media. In the future, standards should be created for the news media to follow when reporting on candidates of two different sexes to ensure that no bias is created by the news media.

**The Microbial Quality of Mechanical Sewer System Effluent and Its Impacts on the Environment**  
*Presenter: Sarah Deeb*  
*Faculty Mentor: Dr. Christopher Struchtemeyer*

Mechanical sewer systems are used to treat wastewater in rural areas of Louisiana. Very little is known about the environmental impacts of these systems, which is concerning since the water from these systems is discharged into ditches and ravines that are either located in close proximity to or flow directly into major water bodies. The goal of this work was to assess the environmental impacts of mechanical sewer systems. This goal was accomplished by quantifying the numbers of *Escherichia coli*, fecal coliforms, and antibiotic resistant bacteria in discharge waters from several mechanical sewer systems in rural areas of Calcasieu Parish. The numbers of *E. coli* and fecal coliforms were quantified in samples since these microorganisms are used as indicators of fecal contamination. Concentrations of amoxicillin resistant microorganisms were monitored since very few, if any, studies have quantified antibiotic resistant microorganisms in mechanical sewer systems. Nearly all of the mechanical sewer systems that were monitored in this study contained high concentrations of *E. coli* (1.8 x 10^3 to 7.3 x 10^5 CFU/100 ml), fecal coliforms (1.1 x 10^3 to 1.4 x 10^6 CFU/100 ml), and antibiotic resistant microorganisms (9.3 x 10^3 to > 1.1 x 10^7 CFU/ml) in their effluent. The concentrations of *E. coli* and fecal coliforms in most effluent samples exceeded federal and state regulations that are commonly used to evaluate the quality of treated wastewater and environmental water bodies that receive sewage effluent. Thus, it appears likely that mechanical sewer systems are negatively impacting the environment.

**Evaluation Factors Associated with Pre-Race Behaviors in Thoroughbred Race Horses**  
*Presenter: Hannah Burnett*  
*Faculty Mentor: Dr. Edward Ferguson*

This study analyzed pre-race behaviors in 1,040 racing quarter horses over 137 races during a 14-night duration at the Delta Downs Racetrack located in Vinton, LA. The main variables of interest were the primary behavior (calm, ready, or nervous) during the pre-saddling, saddling, post-saddling and post-parade period. During this time the primary position of the head, tail, position of leg wrappings, lead chain placement and primary paddock activity also were noted. These variables were analyzed using a chi-square test in SAS. In this study, horses that held their head in a high position were significantly younger than others (p < 0.05) and had significantly fewer races in their lifetime and at Delta Downs (p < 0.05). Additionally, significantly more horses with a low head position were classified as calm (p < 0.05), while significantly more horses with a high head position were classified as ready (p < 0.05). These results indicate there are clear behavior differences among race quarter horses prior to the race that can identify if the horse is calm, ready, or nervous which is known to impact race performance.
called for the development of novel treatment alternatives for gonorrhea, e.g., vaccines. *Neisseria gonorrhoeae* infection is regularly studied in the BALB/c mouse model. However, mice lack human-specific host-protective factors necessary for accurately representing human infection. We investigated the influence of human factor H (hFH) and human transferrin (hTF) supplementation on colonization loads in the murine genital tract. Human transferrin-supplemented mice were infected with *N. gonorrhoeae* for seven days, supplemented with hFH, and monitored for colonization load in the lower genital tract, uterine horns, and oviducts. Dose regimen, dose response, and strain differences were evaluated. Greater numbers of *gonococci* (Gc) were recovered from both lower and upper genital tracts in treated mice compared to the controls. A greater percentage of treated mice also were culture positive in uterine horns and oviducts compared to the controls. *Gonococci* were recovered and cultured from the oviducts of treated mice on days 3, 5, and 7 post-inoculation; up until now, Gc has only been detected in oviducts using PCR.

**Pressure, Humidity, Temperature Measurements, and Long-Range Radio Transmission Using LaACES Balloon**

*Presenter: Tyler Morgan*

*Faculty Mentor: Dr. Zhuang Li, Dr. Ning Zhang*

We obtained a range of atmospheric data gained using temperature, pressure, and humidity sensors placed on a payload for altitudes ranging from 0 to 100,000 feet above sea level. In addition to a sensor suite, the payload stored data onto an SD card while simultaneously transmitting recordings to the team’s location using a 900 MHz quadrifilar helix antenna. The payload’s construction consisted of two polystyrene layers which limited the transfer of heat from the inside of the box to the outside of the box. The total payload mass was 496 g which satisfied LaACES requirements. Two impact tests conducted from a 1.8-meter height showed the payload unharmed after landing at a speed of approximately 4 to 6 m/s. The payload also was put in a –80°C freezer for thermal testing. Electronics were completed with sensor interface, data acquisition, data storage, and power supply. All three sensor types were calibrated and displayed appropriate function. Antenna testing was performed at the McNeese State University parking garage and long range testing was conducted on two fire towers in Pitkin, Louisiana. Power consumption also was calculated. Power was supplied by a 2CR5 camera battery. Project software was developed for the Arduino Due and Xbee modules and included functionality for storage and communications. Balloon launches were conducted on May 24 and May 25, 2015. The payload was safely recovered and data were retrieved from both the SD card and the antenna transmissions on both flights. Temperature, pressure, and humidity data conformed to expected trends.

**NICHOLLS STATE UNIVERSITY**

**Medical Forensics of a 1940s Sugar Mill Infirmary in Southeast Louisiana**

*Presenter: Holly Dicharry*

*Faculty Mentor: Dean John Doucet*

We report on a series of medical ledgers from the historic Montegut Sugar Mill, active 1885-1972, near Houma, Louisiana. The three ledger books were recovered from rubbish during deconstruction of mill buildings and donated to Archives and Special Collections at Nicholls State University for preservation. Information recorded in these ledgers consists of two years of patient visits, diagnoses, and treatments from what was apparently a medical infirmary provided by the company to its community of employees during the years 1946-1947. We assessed the diagnosis frequencies of infections and other medical issues, including application of contemporaneous drugs and other treatments. These ledgers provide insight on the state of medical practice and pharmacy during operation of a sugar mill in the mid-20th century. Analysis of this information provides a unique picture of Louisiana medicine during the pivotal, circa-WWII period of U.S. history, as well as of life in rural bayou sugar lands.

**The Wordless Book as a Data Visualization of Religious Narrative**

*Presenter: Logan Dougherty*

*Faculty Mentor: Dr. Scott Banville*

This essay focuses on the similarities between *The Wordless Book*, a Victorian Evangelical tract, and a variety of different “data visualizations” that were popularized by Victorian scientists and social reformers. Throughout the Victorian period, the statistical work of those like William Playfair, Florence Nightingale, and John Snow found larger readership through pictorial representations of non-geometric data. Likewise, *The Wordless Book* attempts to distill the Gospel message to its most basic parts and then presents those components using concise visuals. The similarities between the use of image in Evangelical circles and the work of political reformers raises questions related to the interconnectedness of Victorian visual culture. By recognizing how disparate groups of the Victorian Era used image theory to advance their individual causes, broader conclusions about the overlapping nature of religion, science, and politics can be drawn.

**RNA Methyltransferase Gene Identification in Neisseria gonorrhoeae Isolates Collected from a Regional Medical Center, January-September 2016**

*Presenter: Brendon Gros*

*Faculty Mentor: Dr. Aimee Hollander*

Antimicrobial resistance in *Neisseria gonorrhoeae* is a major public health concern. Erythromycin ribosome methylation (erm) genes contribute to the loss of macrolide sensitivity (specifically to erythromycin and in part to azithromycin) in clinical isolates. The goal of this study was to identify the presence of a series of erythromycin resistance genes (ermA, ermB, ermC, and ermF) in *N. gonorrhoeae* in clinical isolates collected from a regional hospital over a nine-month period. PCR analysis predicted that 14 of the 16 confirmed gonococcal isolates were found to carry the *ermB* genes, three of which also carried the *ermC* gene. Two isolates carried no *erm* genes. Although erythromycin is not used to treat gonococcal infections per CDC treatment recommendations, the presence of these antimicrobial determinants may be due to increased azi-
thromycin resistance, which is part of the CDC recommended dual therapy to treat gonococcal infections.

**Hatchlings of the Apple Snail Pomacea maculata**
*Collected from the Barataria-Terrebonne Estuary Can Tolerate Salinities up to 10 Parts per Thousand*

*Presenter: Ashleigh Lambiote*
*Faculty Mentor: Dr. Gary LaFleur Jr.*

Over the past decade, the invasive apple snail *Pomacea maculata* has been increasing its range in Louisiana waterways. The species poses the threat of denuding flooded ponds containing aquatic crops and altering wetland structure wherever it colonizes. In this experiment, the salinity tolerance of *Pomacea maculata* was analyzed to develop a predictor of the snail’s possible range. Snails were collected from sites above and below the Gulf Intracoastal Waterway (GIWW) and exposed to a range of salinities. We found that the number of snails surviving an increase of 5 ppt was significantly lower for snails hatched in 0 ppt compared to 5 ppt. The LC-50 for snails above the GIWW was approximately 7.5 ppt while the LC-50 for snails below the GIWW was 2.5 ppt. Although no snails survived at 15 ppt, percent survival reached 64% in 10 ppt after a three-day period, showing that the apple snail can tolerate brackish conditions.

**Examining the Construct of Time-On-Task in an iPad Assisted Reading Intervention for At-Risk Students**

*Presenter: Brooke Mazac*
*Faculty Mentor: Dr. Cynthia Vavasseur*

The growing presence of technology in the field of education has sparked both interest and controversy, leading educators and researchers to attempt to measure its impact in the classroom. At Nicholls State University, teacher education candidates have the opportunity to help students from local schools by facilitating reading intervention using the Apple iPad as well as traditional methods, like reading stories and completing activities. The purpose of this study was to determine if the use of the iPad during intervention affected the percentage of time the student was on-task during the session. Using momentary time sampling, students were observed during intervention and recorded at set intervals as being either on- or off-task. Each candidate-student pair was recorded three times with the iPad and three times without the iPad. The findings suggest that student time-on-task is higher during intervention using the iPad than with more traditional intervention materials.

**NORTHEASTERN STATE UNIVERSITY**

**Determination of Mechanisms of Ebola Infection by Protein-Protein Docking**

*Presenter: Kirsten Fontenot*
*Co-Investigator: Dr. Massimo D. Bezoari*

Faculty Mentor: Dr. Massimo D. Bezoari

The Ebola glycoprotein (GP) is the only surface protein found on the Ebola virion and is used to interact with the host cell to facilitate attachment and entry into the cell. Ebola GP first interacts with the lectin cellular receptor, DC-SIGN, present on specialized immune cells. The Ebola virion is engulfed into an endosome containing cathepsins B and L. These enzymes cleave the Ebola GP, removing particular domains that block the interaction of the binding site of the GP to NPC1, a receptor on the endosome membrane. After binding of Ebola GP and NPC1, the viral genome is released from the endosome, entering the cytoplasm and beginning viral replication and assembly. The presence of TIM-1, another receptor on the endosome membrane, is known to facilitate the binding of NPC1 and Ebola GP. In the present work, computational docking (Schrodinger©) was used to analyze the interactions between DC-SIGN and Ebola GP, cathepsins B and L and Ebola GP, NPC1 and Ebola GP, and TIM-1 and NPC1. Thus, the PIPER program was used to dock the proteins and the interaction areas, residues involved, and the types of interactions occurring were investigated with other programs. This work promotes the discovery of small molecules or drugs that can be used to inhibit these interaction sites, preventing the spread of the Ebola virus in an infected host.

**Initial Results in the Investigation of (2,10)-Dithia-[3.3] Heterophanes as Potential Molecular Switches by Computational Chemistry**

*Presenter: Nicholas Bailey*
*Co-Investigator: Dr. Massimo D. Bezoari*
*Faculty Mentor: Dr. Massimo D. Bezoari*

Current research is being directed toward the discovery of molecular machines that combine molecular components, including molecular switches, to form sophisticated nanomachinery. Molecular switches consist of molecules that switch from one stable conformation to another in response to external triggers such as heat, electricity, electromagnetic radiation, or a change in chemical environments. Four thioether-bridged heterophanes were investigated: (2,10)-dithia-[3.3](2,5)furanophane, (2,10)-dithia-[3.3](2,5) pyrrolophane, (2,10)-dithia-[3.3](2,5)thiophenophane, and (2,10)-dithia-[3.3](2,5)selenophenophane. The computational chemistry programs HyperChem® and SpartanTM were used to evaluate the thermodynamic and physical properties of the molecules. The selected compounds were found to be viable candidates for molecular switches because of the ability to adopt either anti or syn conformations. The authors gratefully acknowledge support of the Richard Lounsbery Foundation, in the form of a Research Professorship to Massimo D. Bezoari.

**Initial Results in the Investigation of Selected [2.2] Furanophanes as Potential Molecular Switches by Computational Chemistry**

*Presenter: Carly Bourgeois*
*Co-Investigator: Dr. Massimo D. Bezoari*
*Faculty Mentor: Dr. Massimo D. Bezoari*

The search for molecular switches is a crucial element of the development of nanotechnology. In recognition of the importance of molecular switches, the Nobel Prize in Chemistry was awarded in 2016 to researchers in this area. A molecular...
switch is a molecule that can be shifted reversibly between two or more configurations which are energetically stable. Stereocombination switching may occur in response to various external stimuli, including changes in pH, exposure to light of a specific wavelength, and temperature increases or decreases. This project is centered on the investigation by computational chemistry on the viability of [2.2]furanophanes to determine their viability as potential molecular switches. Initial approaches in conformational analysis using HyperChem® and Spartan™ indicate that furanophanes and derivatives are promising candidates for molecular switching applications, because they have various conformational states that are stable and differ in molecular properties (such as dipole moment). The authors gratefully acknowledge support of the Richard Lounsbery Foundation, in the form of a Research Professorship to Massimo D. Bezoari.

Developments in Forensic Science—the Use of Proteomics for Identification
Presenter: Tristan Bridges
Co-Investigator: Dr. Massimo D. Bezoari
Faculty Mentor: Dr. Massimo D. Bezoari

Due to limitations in the use of DNA in forensic science, research is being directed toward the use of proteins to identify individuals associated with crimes. Progress in protein separation, mass spectrometry, genome sequencing, gene annotation, and protein-search algorithms have added to this application of proteomics. Since proteins are chemically more stable, abundant, and environmentally persistent than DNA, they are more viable for analysis. Scientists at the Lawrence Livermore National Laboratory (LLNL) are developing technology that will allow hair samples to be used for identification with the same degree of certainty as DNA samples are currently used. Slight mutations in DNA—single nucleotide polymorphisms (SNPs)—can be further transcribed into recognizable markers known as single amino acid polymorphisms (SAPs). SAPs are protein markers, similar to genetic markers that make differentiation of samples and their sources (human beings) possible. This research shows that scientists currently have identified 190 SAPs that span the 22 autosomal chromosome pairs that can now be used for identification purposes. As of 2017, protein extraction from a hair shaft takes about two and a half days to complete. At its current stage in research, the protein extraction method requires a relatively large sample size, compared to that needed by DNA analysis. With further experimentation, this process could revolutionize the way in which investigators proceed with crime scene investigations.

Veteran Resettlement in the Roman World
Presenter: Christopher Das Neves
Faculty Mentor:

Disagreements regarding policy for care or treatment of veterans after their time of discharge are not new; they were as active and prevalent in the Roman world as they are today. By the end of the second century BC, veteran resettlement became a core feature in Roman social and political conversation, resulting in a series of civil wars when politician-generals realized the value of being able to offer the best deal to men who would follow them to the grave. Understanding the interactions between soldiers and generals, as well as how the transition to a state-owned army changed the treatment of those veterans, is key to learning how that treatment affected them and the wider locale. The benefits and improved settlement options afforded to these men gave them the opportunity to not only live among fellow veterans, but also the option to create a thriving city with a distinctly Roman flair. Specific Roman settlements throughout different time periods, as well as the position of the Roman government towards these veterans, are an essential point of study to understand the era as a whole.

SOUTHEASTERN LOUISIANA UNIVERSITY

How Do You Feed Your Body: College Students and Organic Food
Presenter: Katie McReynolds
Faculty Mentor: Dr. Wynn Gillan

Background: Although organic foods have been available for decades, it is an emerging trend with increasing prevalence of organic food choices in mainstream markets. College-aged students’ consumer behaviors are understudied in this industry. Purpose: This study examined college students’ knowledge, perceptions, and current behaviors regarding organic food, and factors that affect their knowledge, perceptions, and behaviors. Methods: Students were randomly selected from an active student database and sent an email link to an online survey. A total of 238 participants responded to the 58-item survey. Results: Higher knowledge levels correlated with higher positive perceptions. College students do consider buying and are buying organic food. However, age, college, and declared major had no relationship to knowledge of organic food. Discussion: Other studies have found no differences in gender with regards to purchasing organic food. This study found that females indicated intent to purchase organic food more than males.

The Ergonomic Principles of Industrial Fabrication
Presenter: Evan Guadet
Faculty Mentor: Dr. Lu Yuan

The objective of my study was to identify the ergonomic hazards in an industrial fabrication shop, especially during the fabrication of steel pipe. My research also intended to offer practical solutions and control methods for the ergonomic hazards that are associated with the fabrication of steel pipe. I performed several walk-through audits and spoke with numerous groups of employees. Through observing their daily work activities and speaking with the employees, I developed a greater understanding of the industrial fabrication process. I used the resources and materials presented during Dr. Lu Yuan’s OSHE 242 Ergonomics class along with several ergonomic tools developed by NIOSH (National Institute for Occupational Safety and Health). Some of the ergonomic complications included repetitive motions, excess vibrations, awkward postures, eye strain, and muscle strain. During the ergonomic analysis I used the stroke width and letter height
formula, and I found that employees were struggling to read signs around the shop. Also, REBA and RULA assessments showed that certain body motions can also present ergonomic hazards. These hazards could be mitigated through the use of control measures such as training of employees, better designed signs, routine breaks throughout the day, and purchasing updated equipment. This project demonstrated that implementing positive ergonomic principles during the industrial fabrication process would help reduce ergonomic hazards and create a safer and healthier work environment.

**Reproductive Physiology of Loggerhead Sea Turtles in a Foraging Area**
*Presenter: Sydney Stewart  
Faculty Mentor: Dr. Roldan Valverde*

Sea turtles produce a large number of eggs (in as many as nine clutches) every breeding season. The objective of this study was to generate pre-nesting testosterone and vitellogenin (VTG) circulating profiles in sea turtles caught at their foraging ground. We quantified testosterone and VTG concentration in wild, free-ranging Loggerhead (*Caretta caretta*) captured at the Florida Keys foraging grounds. Loggerheads were captured during the month of March over 10 years and a blood sample was drawn from each of 44 females captured. Plasma was assayed via an in-house ELISA using an antibody specifically generated against Loggerhead VTG. Testosterone ELISA kits were purchased from Enzo. Results showed that 77% of the females had a VTG/Testosterone concentration consistent with a recrudescing ovary. This suggested that the Florida Key foraging population contains a large number of animals that may join the breeding population any given year. Our working hypothesis was that VTG may be used as a predictor of nesting numbers in the state of Florida. However, because samples came from different years, the sample size for any given year is insufficient to draw a conclusion in this regard. More data is required to understand the control of ovarian recrudescence. The novel information generated by our study will contribute to fill in the gaps of our knowledge of sea turtle reproductive physiology. Understanding sea turtle reproductive biology can greatly assist conservation organizations by providing them with the knowledge needed to better allocate resources to effectively support their efforts.

**Development of Coarse-Grained Model of VECAR Molecules**
*Presenter: Bijay Shrestha  
Faculty Mentor: Hye-Young Kim, Ph.D.*

A series of atomistic molecular dynamics (MD) simulations has shown that aqueous solution of novel bolaamphiphilic molecules, VECAR, forms nano-size micelles at low concentration. These micelles are potential candidates for a nontoxic drug-delivery system. To be able to study the plausibility of the use of the micelles as a drug delivery system, however, we need to study the interactions of these micelles with each other or with a lipid bilayer membrane. For such systems of large temporal and spatial scale, we need to utilize coarse-grained (CG) molecular dynamics simulations. We implemented coarse graining method using VOTCA to develop an atomistically informed coarse-grained model of the molecule. We used the Boltzmann Inversion to derive CG bonded interactions and the Iterative Boltzmann Inversion (IBI) to obtain CG non-bonded interactions. Here, the results obtained from the atomistic MD simulations serve as the reference as well as the input for the coarse-grained model of the molecule. In the presentation, the methodology and the CG simulation results of our research will be presented.

**Non-Destructive Methods for Identifying Blisters in Thin-Film Specimens**
*Presenter: David Didie  
Faculty Mentor: Dr. Sanichiro Yoshida*

In finding blisters in thin-film specimens, we developed two non-destructive techniques. In this method, we use the optical interferometry known as Michelson interferometer. This interferometer can be operated in two modes. In mode one, the specimen is static and is covered by a larger beam size that is used to cover the entire specimen. In mode two, the specimen is dynamic in which the specimen is oscillated from the rear by an acoustic transducer and a smaller beam size is used for a local analysis. Mode one allows us to evaluate local radius of curvature across the film surface which is associated with blisters. From the radius of curvature, we can estimate the residual stress and corresponding resonant frequency of oscillation. Mode two allows us to measure the sinusoidal response of the film surface when the entire film oscillates acoustically. Our experimental study found consistency between both mode one and two.

**UNIVERSITY OF LOUISIANA AT LAFAYETTE**

**Observed Driving Behaviors in College Students**
*Presenter: Lauren Short  
Faculty Mentor: Dr. Theodore Scott Smith*

Cell phones represent a cognitive distraction that reduces individuals’ ability to pay attention, process information, and make good decisions. Pertaining to the task of driving, many people perform distracting behaviors that affect their driving ability. As such, within the present study we identify driver distractions, observe their frequencies, and examine their effects on driving performance. Participants were required to allow dash cam to observe their driving behaviors. An Excel spreadsheet was used to record the frequency of distracting events while driving and while stopped, contextual variables, and outcome measures. Summary and descriptive measures were obtained and analyzed. Through these results, educational efforts may be directed.

**Employment of Hair Bundle Mechanoreceptors on the Tentacles of the Model Sea Anemone in Detection and Capture of Benthic Prey**
*Presenter: Cayman Stephen  
Faculty Mentor: Dr. Patricia Mire*

The starlet sea anemone, *Nematostella vectensis*, has emerged as the model sea anemone for its fully sequenced genome,
astounding regenerative properties, and speedy reproduction. The sea anemone's tentacles are covered in hair bundles, which are mechanoreceptors used in the detection and capture of swimming prey. This study addressed whether or not hair bundle mechanoreceptors are used in the detection and capture of benthic, or crawling, prey. *Nematostella vectensis'* body column is submerged with tentacles exposed at the sediment layer. Therefore, this animal would likely benefit from capturing prey along the sediment layer. Experiments were conducted using the annelid worm *Tubifex tubifex* as benthic prey for individual anemones in petri dishes. Assaying the amount of time required to both capture and ingest the worms, while mechanoreceptors were both functional and inhibited by streptomycin, showed that the mean time to capture benthic prey in the presence of mechanoreceptor inhibition significantly increased. Ingestion time was unaffected. Results suggest that hair bundle mechanoreceptors on anemone tentacles are employed in the detection and capture of benthic prey. In order to study the viability of benthic prey versus swimming prey in a more natural habitat, ongoing experiments test prey capture by anemones in dishes containing sand in which they are partially buried. In order to test if the diffusible chemicals required to stimulate hair bundle elongation, which facilitate prey capture in the sea anemone, are also present in the worms, ongoing experiments involve measuring hair bundle lengths after exposure to worm-inhabited seawater compared to control seawater.

**Homosexual Parody and Self-Shattering in the Amorous Contexts of La Tortuga Ecuestre**  
**Presenter:** Esteban Quispe  
**Faculty Mentor:** Dr. Leslie Barry

The poet and painter César Moro (Lima, Peru, 1903-1956) was a key figure in the Latin American surrealist movement and one of Peru’s most important modern writers. *La tortuga ecuestre*, widely considered his best collection of poetry, was written in Mexico where Moro lived while working on the second Latin American surrealist exhibition, his *zine El uso de la palabra*, and other projects in poetry and the visual arts. This paper examines heterosexual parody in *La tortuga ecuestre* (written 1938-1939 in Mexico, published 1957 in Peru) and other closely related works from the same time period. *La tortuga ecuestre* evokes Moro’s intense love relationship with another man, Antonio Acosta, in Mexico. The exploration and revision of gender identity in this collection is closely related to the complete self-shattering of self. This self-shattering enables the reinterpretation of gender and also self as fluid or interstitial. In doing so, Moro’s work joins that of contemporaries like Claude Cahun, Marcel Duchamp, and others who experimented in their work with non-unitary gender identities, androgyny, and gender-switching.

**University of New Orleans**

**Characterization of Coastal Sediments Used in Marsh Restoration Projects**  
**Presenter:** Brittany Roberts  
**Faculty Mentor:** Malay Ghose Hajra

In Louisiana approximately 2,000 square miles of land has eroded since the 1930s, and the state continues to lose a football field an hour. The coastal wetlands provide ecosystem services vital to people and the environment. Some of the vital roles wetlands serve are wildlife habitat, erosion control, flood protection, carbon sequestration, and maintenance of healthy water quality. If the trend continues, many communities are at severe risk of physical and infrastructural damage. Significant infrastructure would be exposed to open water conditions making those areas less suitable for human life as well as other creatures. Restoring the wetlands is paramount to the survival of the surrounding wildlife and communities. One of the goals towards reestablishing a healthy coastal ecosystem is to rebuild the coastal wetlands with river diversion or sediment conveyance projects that will optimally manage and allocate sediments, minimally impact native flora and fauna, and positively affect the water quality. Restoring the marshes through deposition of dredged material from adjoining navigation channels and close by riverbed and subsequent reestablishment of emergent wetland vegetation will help to protect the levees and storm protection systems from accumulated damage due to elevated water levels and storm surge forces as well as create a sustainable coastal environment to boost economic, social, and recreational opportunities for millions of people. Material properties and characteristics of dredged material and foundation soils are used in several mathematical models. These models are used to predict the long-term behavior of the dredged material and foundation soils.

**Unreachable**  
**Presenter:** Diego Enrique Castellanos Chalita  
**Faculty Mentor:** Laura Medina

A short film about a depressed girl trying to cope with a misfortune.

**Development of Coarse Grained Models for Hydrophobic Assemblies**  
**Presenter:** Gaurav Gyawali  
**Faculty Mentor:** Steven Rick

Modeling aggregation in aqueous solution is a challenge for molecular simulations as it involves long time scales, a range of length scales, and the correct balance of hydrophobic and hydrophilic interactions. We have developed a coarse-grained model fast enough for the rapid testing of molecular structures for their aggregation properties. This model, using the Stillinger-Weber potential, achieves efficiency through a reduction in the number of interaction sites and the use of short-ranged interactions. The model can be two to three orders of magnitude more efficient than conventional all atom simulations, yet through a careful parameterization process and the use of many-body interactions can be remarkably accurate. We have developed models for long chain alkanes in water that reproduce the thermodynamics and structure of water-alkane and liquid alkane systems.
Halloysite as a Catalyst for Esterification
Presenter: Kaylin Kilgore
Faculty Mentor: Mark Trudell

Halloysite, a natural clay with a hollow tubular structure, was studied as a catalyst for the esterification of organic carboxylic acid. The study was performed with five different organic acids along with four different alcohols. The alcohols included methanol, ethanol, propanol, and butanol. All reactions were performed with 10% halloysite at 150 °C in a sealed tube oil for 48 hours. The results showed overall isolated yields of the corresponding esters ranged from 37%-70%. The scope and limitations of halloysite catalyzed esterification of organic acids will be presented.

Affordable Housing and Blight Remediation: Examining the Hoffman Triangle Historic Houses Rehabilitation
Presenter: Michelle Butcher
Faculty Mentor: Dr. Michelle Thompson

The goal of this research was to understand the current trends in affordable housing in New Orleans through blight remediation initiatives. The focus rested on 73 properties that were moved from the new site of the VA/LSU hospital. These historic homes were chosen to be part of a blight remediation initiative led by the city of New Orleans through BlightSTAT. This case study provides a lens to examine the progress of BlightSTAT and analyze various policy pitfalls and successes. Focusing on the intersection of affordable housing policy, historic preservation, and blight remediation will provide a comprehensive look at the state of affordable housing in New Orleans. Methods included a field survey using a quality and condition survey instrument through WhoData. There is a visual survey of all properties and unique property record profiles for each one. The data used in the profiles was integrated using government websites like the New Orleans Assessor and Bureau of Treasury websites. This qualitative information will be supplemented with a content analysis of current affordable housing, blight, and historic preservation policy.
GRAMBLING STATE UNIVERSITY

Study of Neural Cell Adhesion Molecule Precursor Protein (NCAMP) and Its Associated Proteins in Different Model Organisms

Presenter: Shanon Joseph
Faculty Mentor: Hung-Tat Tony Leung

Neural Cell Adhesion Molecule (NCAM) is an important protein involved in cell–cell adhesion and neurite outgrowth. Molecular defects in these proteins will lead to neural degeneration. In one study, we noticed that NCAM found in birds is very different from that found in humans. In this study, we compared the amino acid sequences of five proteins that are known to interact with NCAM to see if they also are very different from their human counterparts. We used proteins found in six vertebrates (three mammals, a bird, an amphibian, and a fish) and the NCBI blast function to do the comparison. The results showed that only NCAM and integrin B4 show drastic differences in amino acid sequences between humans and birds. The FGF, Neuropilin, Integrin B1 and Contactin all show significant but not drastic differences between humans and birds.

Development of a Smart Tailgating Cooler

Presenter: Gecoba Robinson, Cordero Simmons, Jazmyne Lewis
Faculty Mentor: Lane Elien, Kazi Rashed

The smart tailgating cooler has added features to increase convenience and utility to its owner in addition to keeping its contents chilled. The researchers used knowledge gained through their coursework in the electronics engineering technology program at Grambling State University to research available existing smart coolers, select features for their smart tailgating cooler, design the necessary logic, sensor interface circuits and the microcontroller programs to implement their project features. The result is a cooler modified to include the following features: darkness sensing internal lights, ultrasonic capacity monitoring, internal temperature monitoring, integrated Bluetooth speaker, solar energy harvesting, battery voltage monitoring, and USB ports for cell phone charging. Other components of the project which are near completion are motor-assisted wheel, and charging circuit. This project allowed the researchers to hone their technical skills and ability to make project tradeoffs between product features, cost and value to develop a competitive product.

Impact of Passing and Colorism on the Racial Identity of African American Women in Jessie Fauset’s Plum Bun: A Novel Without a Moral and Gwendolyn Brooks’ Maud Martha

Presenter: Ashayla L. Woolfolk
Faculty Mentor: Evelyn Wynn

This poster session illustrates the effects of passing and colorism in the works of two African American women authors during the 20th century. The research was driven by three questions: 1) why were 20th century African American women writers so concerned with the image of the African American woman? 2) what were the thematic concerns of these writers? and 3) why are passing and colorism still relevant in the 21st century? Jessie Fauset’s Plum Bun: A Novel Without a Moral takes place in Philadelphia and New York during the 1920s, while Gwendolyn Brooks’ Maud Martha takes place in Chicago during the 1950s.

Computational Studies on Oxidation of Iron-Chromium Alloys

Presenter: Alexa Robinson
Faculty Mentor: Pedro Derosa

Iron-chromium alloys exhibit exceptional scientific properties including magnetism and crystallographic characteristics. In an industrial sense, iron-chromium alloys possess impressive properties including strong resistance to both swelling and high temperature corrosion and low ductile to brittle transition temperatures. These notable properties make iron-chromium alloys ideal for steel manufacturing, and this alloy is often used as a basic ingredient. Iron-chromium alloys have been deemed exceptional models for testing many theories. In this work, computational analysis is used to study the structural and electronic properties of surface oxidation of iron-chromium clusters. Molecular interactions are examined to understand the mechanism of oxidation on the surface of iron-chromium alloys. These analyses provide insight on the growth mechanisms and composition of surface oxide films.

The Diagnosis-Remediation Connection: A Field-Based Research Project

Presenter: Ginger Abney, Amber Williams
Faculty Mentor: Loretta Walton Jaggers

This field-based research project serves as the culminating signature assessment for ED 431 (Diagnosis and Correction of Reading Difficulties). This project provides an opportunity for the candidates to apply and transfer the information presented during the semester to the diagnosis-remediation process in the actual classroom setting. First, candidates are assigned a student by the cooperating teacher at the on-site partnership school. Second, each candidate administers formal and informal assessments to gather data. Third, candidates analyze and interpret the results of the data collection process to identify appropriate strategies and resource for remediation.

LOUISIANA TECH UNIVERSITY

The Use of Biocompatible Hydrogels to Direct Stem Cell Differentiation

Presenter: Justin Philobos, Rachel Eddy, India Pursell
Faculty Mentor: Dr. Jamie Newman

One of the leading causes of death in America is myocardial infarction, which can lead to severe heart tissue damage. As the heart lacks regenerative properties and donor organs remain sparse, researchers must make efforts to find more efficient methods of tissue repair. One such solution may be found in tissue engineering using biocompatible scaffolds seeded with stem cells using mouse embryonic stem cells (mESCs), which can successfully differentiate into spontaneously contracting cardiomyocytes. This project seeks to optimize differentiation of mESCs on synthesized biocompatible hydrogels that will mimic the matrices of muscle cells. Gene expression is being used to characterize these cells to determine the extent of their differentiation towards either an atrial or ventricular myocardial lineage. Human mesenchymal stem cells (hMSCs) are also being used as further proof of the differentiation capabilities of the hydrogels into other lineages such as fat and bone for application in related biomanufacturing fields.

The Role of Notch3 in Determining Mesenchymal Stem Cell Fate
Presenter: Marcus Kety, Jacob Cambre, Natalee Dinkins
Faculty Mentor: Dr. Jamie Newman

The NOTCH signaling pathway has been shown to play a vital role in determining cell fate of human adipose stem cells (hASCs). Misregulation of the pathway is associated with some diseases and cancers, including breast cancer. To date, the four individual NOTCH ligands have not yet been characterized for their role in adult stem cells. The aim of this project is to characterize the role of NOTCH3 in the maintenance and differentiation of hASCs. NOTCH3 appears to have the highest level of expression in hASCs. Preliminary results using siRNA-mediated knockdown of NOTCH3 show that while self-renewal and cell viability is unaffected by the loss of NOTCH3, there is a significant increase in adipogenesis when cells are encouraged to differentiate into adipocytes. Experiments are on-going to determine the role of NOTCH3 in bone differentiation. Since regenerative medicine relies heavily on controlling stem cell fate, the characterization of the NOTCH signaling pathway will act as a gateway for further advances.

Development of Hydrogel Resins for 3D-Printed Wound Dressings
Presenter: Luke Villermin, Ethan Sullivan, Andrew Leblanc
Faculty Mentor: Dr. Mary Calдорera-Moore

The autonomous creation of three-dimensional structures has been heavily investigated in recent years as a niche function in the materials world. One of the current limitations of commercial 3D printers is that they lack the ability to print using a wide variety of materials, especially biocompatible ones. Hydrogels are biocompatible, cross-linked, hydrophilic polymers that are host to a wide range of applications in the pharmaceutical and biomedical industries, such as drug delivery, tissue engineering, and wound dressing. This project aims to develop a novel hydrogel polymer blend to be used in 3D printing to create patient specific, customizable-geometry wound dressings. Using a bandage that perfectly conforms to the shape of the wound site will reduce patient pain, increase healing rate, and diminish the chance of infection.

The Role of Med31 in Mesenchymal Stem Cells
Presenter: Matthew Busby
Faculty Mentor: Dr. Jamie Newman

Med31 is a part of a large protein complex called Mediator. The Mediator complex is a key regulator of cell-type specific transcription. Mediator is composed of 31 distinct subunits divided between four modules: the head, middle, tail, and CDK8 modules. Mediator plays a crucial role in the regulation of gene expression and is present in all eukaryotes. This complex is required for cell-type specific transcription of protein-coding genes, meaning that without Mediator, proper development would not occur. Med31, located in the middle module, is the specific subunit that we are interested in and we are investigating its role by knocking it down and then evaluating expression of both fat and bone differentiation markers using bone marrow derived mesenchymal stem cells (MSCs). MSCs are used both because of their self-renewing properties and their differentiation potential. Knock down tells us if the lack of Med31 from the mediator complex will promote differentiation of MSCs in one direction over another. So far, what we have found is that when Med31 is knocked down, a reduction in cell proliferation occurs. We have seen that early fat markers are reduced and a reduction in adipogenesis is observed. In the future, we plan to evaluate osteogenic differentiation in the absence of Med31.

McNENEE STATE UNIVERSITY

Evaluation of Cold-Pressed Coconut Oil on the Properties of Braunschweiger
Presenter: Eric Santini
Faculty Mentor: Dr. Wannee Tangkhong, Dr. Frederick Lemieux

Braunschweiger is a cooked pork liver sausage that originated in Germany. The aim of this study was to evaluate Braunschweiger made with three levels (0%, 4.5%, and 9%) of cold-pressed coconut oil and pork fat stored at 3°C under vacuum packaging for 21 days. Treatments were analyzed for total protein, total fat, moisture, pH, and macro and micro-nutrient content. In addition, color (L*, a*, b*), lipid stability (TBARS), aerobic plate counts, Escherichia coli, Enterobacteriaceae, and sensory testing (23 trained panelists) were completed. Results indicate that pH values for all samples decreased with storage time (p < 0.05). The initial protein, fat, salt, moisture and ash contents in this experiment ranged from 17.38-18.21%, 14.08-16.22%, 0.89-1.20%, 54.25-57.12% and 3.64-3.73%, respectively. Braunschweiger prepared with cold-pressed coconut oil contained the highest boron (12.2 ppm), copper (4.0 ppm), iron (76.2 ppm), and zinc (68.8 ppm). The combination of 4.5% pork fat and 4.5% coconut oil of Braunschweiger had the highest (p < 0.05) a* redness (18.10) but lowest in TBARS values (0.70 mg MDA/kg) and aerobic plate counts (2 log CFU/g) throughout 21 days of storage. No E. coli and Enterobacteriaceae were detected. The replacement of pork
fat with cold-pressed coconut oil had no significant effect ($p > 0.05$) on the acceptability of flavor, texture, taste, saltiness, firmness, and overall liking of Braunschweiger. From the intent questionnaires, Braunschweiger with 9% cold-pressed coconut oil had the highest acceptability (78.3%) and purchase (43.5%) scores. The results of this experiment may help meat industry producers increase market share through this innovative product.

The Effects of Biweekly Administration of an Aspergillus oryzae Supplement on Body Temperatures and Average Daily Gains of Gulf Coast Native Lambs
Presenter: Kealy Stelly
Faculty Mentor: Dr. Thomas Shields, Dr. Frederick LeMieux

The objective of this experiment was to determine the effects of administration of an oral Aspergillus oryzae supplement on various physiological and growth parameters within a sub-tropically adapted breed of sheep. Thirty-eight Gulf Coast Native (GCN) lambs were evaluated to determine the effects of fleece density and oral administration of an Aspergillus oryzae-based dietary supplement (AOS) on various growth and physiological traits. Initially, all lambs were weighed and randomly assigned to one of two dietary treatments. Weights and sexes of the lambs were equally distributed among the two treatments. Half of the lambs within each treatment were sheared to evaluate differences between fleece densities. Lambs were weighed and rectal temperatures recorded biweekly for 8 weeks. Six lambs were removed from the study for various health reasons. Criteria evaluated include: average daily gain (ADG) and average rectal temperature (RT). There were no differences between ewes ($n=17$) and wethers ($n=15$) for ADG (0.23 vs. 0.23 lbs.) or RT (103.18 vs. 103.09°F). There were no differences between AOS treatment for either ADG (0.24 vs. 0.23) or RT (103.11 vs. 103.17°F). Shorn lambs ($n=15$) did have higher ADG (0.25 vs. 0.23) and lower RT (102.96 vs. 103.30°F) than wooled lambs ($n=17$). This would indicate that the physiological adaption in GCN sheep may supersede normal management effects inherent to other breeds of sheep.

Genetic Characterization and Protein Expression of Crocodilian NF-B
Presenter: Yassara Shaikh
Faculty Mentor: Dr. Amber Hale, Dr. Mark Merchant

Nuclear Factor kappa B (NF-κB) is a pleiotropic transcription factor that plays a vital role in various biological processes. Its regulatory role in the early phases of inflammation is critical for proper immune function. We found the NF-κB gene in all three lineages of crocodilians, and the deduced amino acid sequences show a high degree of identity with mammalian and avian species. We identified Dimerization, Death, and Rel domains, a nuclear localization signal, and ankyrin repeats. Western blot analysis showed the presence of both the 50 kDa mature protein and the 105 kDa precursor protein in the liver of infected alligators. Immunohistochemical analysis revealed a broad distribution of hepatic expression, and altered sub-cellular localization following infection. Alligator NF-κB has the ability to bind DNA resembling human NF-κB. We have shown that the structure, processing, expression, and DNA binding function of crocodilian NF-κB is similar to the mammalian homologue.

Federalism: The Struggle of Power
Presenter: Rachel Zachary
Faculty Mentor: Dr. Henry Sirgo

This research focuses on the struggle of power between the state and national levels of government in the United States and its effect on legislation and the court systems, thus interrupting political party unity. Summarized is the definition of federalism, how federalism was established in the Constitution, which level has what powers, and why it is important to Americans today. Information found in the form of journals and websites, as well as the different types of legislation prevailing at both levels, indicates that the Supremacy Clause continues to have much influence in this battle. Cases are described where the states tried and failed to implement new laws that the Supreme Court would not allow to be enforced. The case of United States v. Lopez (1995) suggests that the Supreme Court in some instances has overstepped its boundaries given through the Supremacy Clause. Lastly, federalism has proven to divide political parties with concern to power. The two main parties, Republican and Democratic, have continued to fight each other for power for many years. Research shows that the governor and presidential elections from 2000 to 2016 continue to change the national and state agendas. The numbers of electoral and popular votes at the national level reveal this struggle over power that has divided the country, while highlighting different policy ambitions and ideologies of how the government should function.

A Laboratory Study on the Investigation of the 3-dimensional Turbulent Flow Characteristics Around Submerged, Permeable Breakwaters
Presenter: Caleb Stanley
Faculty Mentor: Dr. Dimitrios Dermisis

Submerged breakwaters are favored for their design simplicity in projects intended to dissipate wave energy and reduce erosion on coastlines. Despite their popularity, the effects that submerged breakwaters exhibit on the surrounding hydrodynamics are not clearly understood. This is mainly due to the flow complexity generated from 3-dimensional turbulent structures in the vicinity of the breakwaters that affect the mean flow characteristics and the transport of sediment. The objective of this study is to experimentally evaluate the effects that various geometric designs of submerged, permeable breakwaters have on turbulent flow characteristics. To meet the objective of this study, laboratory experiments are performed in a water-recirculating flume, in which the 3-dimensional velocity field is recorded in the vicinity of scaled breakwater models, with and without geometric irregularities of various sizes and shapes, using an Acoustic Doppler Velocimeter (ADV). Data were processed using the Horizon ADV software to determine the magnitude of the turbulent velocity fluctuations. Preliminary results from other studies have revealed that turbulence is increased in the presence of breakwaters; the nature of this relationship, however, is
not completely understood, especially for a wide variety of geometric irregularities. In summary, this comprehensive study provides valuable information by (1) determining the relation between the geometric properties and turbulent flow characteristics, and (2) identifying the optimum geometric characteristics of submerged breakwaters. Results from this study can be used to enhance the performance of restoration projects in coastal areas in Louisiana.

**Nicholls State University**

The Effect of Antibiotics on Bacteria Responsible for the Nitrogen Cycle Present in Louisiana Estuaries  
**Presenter:** Justin Homer  
**Faculty Mentor:** Dr. Ramaraj Boopathy

Louisiana wetlands act as an important resource for local economy and culture. Water from these wetlands travels through the Mississippi River. This water consists of runoff that contains nutrients in the form of nitrogen as well as antibiotics used primarily in the agriculture industry. Nitrogen cycle bacteria help remove this excess nitrogen but may be impaired by increasing concentrations of antibiotics. The goal of this project was to study the impact of streptomycin on the nitrogen cycle of Louisiana wetlands. Water samples were collected from the wetlands that directly receive Mississippi River water, and these samples were exposed to various concentrations of streptomycin. Nitrification rates were monitored along with bacteria responsible for these processes, such as Nitrosomonas, Nitrobacter, and Pseudomonas denitrificans. Ammonia, nitrate, oxygen demand, and chemical oxygen demand were measured. Results show that addition of streptomycin of up to 100 mg/L had an effect on bacteria growth but not on nitrification. These results show the effect of antibiotics on nitrogen cycle and how this natural process is impacted by human activity.

Applying Information Technologies to Small Businesses: A Service-Learning Project  
**Presenter:** Richard Lau  
**Faculty Mentor:** Dr. En Mao

The restaurant industry in the southeast Louisiana region has been affected by the oilfield recession. This service-learning project, totaling 500 hours, aimed to help Osaka Japanese Restaurant, a small family business in Houma, LA, to increase sales and reach more customers by applying information technologies (IT). We utilized a variety of research methods, including observations, surveys, interviews, data analytics, and social media marketing. Based on data collected, we developed a trifold placement card to market Osaka’s customer loyalty program and a Christmas gift card to increase their Facebook engagement. We analyzed resulting sales data, and these results led to a simplified menu. The Facebook campaign reached 19,021 customers. It is clear from these results that small businesses can be successful through capitalizing on the benefits of IT. Furthermore, it is critical to educate small businesses about the application of IT and how social media can be a highly effective marketing tool.

Physical and Physiological Thermal Stress Responses of Two Sympatric Crayfish Species Procambarus clarkii and Procambarus zonangulus in Louisiana  
**Presenter:** Jordan Logarbo  
**Co-Investigator:** Dr. Christopher Bonvillain  
**Faculty Mentor:** Dr. Christopher Bonvillain

Water temperature is an important abiotic consideration in farmed and wild crayfish as it influences individual and population characteristics (Bonvillain et al., 2013). The goal of this project was to identify thermal maxima for the crayfish P. clarkii and P. zonangulus physically and physiologically. By determining temperatures that these crayfish can withstand, we are able to understand the adaptability of these animals in the Southeast Louisiana region. We quantified critical thermal maxima by thermally adapting specimens using the right response. We found that after 36°C, the concentration of hemolymph glucose increased significantly in both P. clarkii and P. zonangulus. P. zonangulus had a higher glucose concentration on average at any experimental temperature. Results from both experiments are congruent and consistent. The findings show that both crayfish species can withstand unexpectedly high temperatures, higher than they would ever be exposed to in their native environments.

Isolation of Bacteriophage with Lytic Activity Against Staphylococcus aureus from the Anterior Nares of Colonized Individuals  
**Presenter:** Alyssa Ross  
**Co-Investigator:** Rachante Corebrook, Bryant Autin  
**Faculty Mentor:** Ms. Angela Corbin

Staphylococcus aureus is often found colonized in the anterior nares and skin. Just as S. aureus colonizes nares, we hypothesized that their bacteriophage do as well. Forty-four nasal swabs were streaked on mannitol salt agar (MSA) for the isolation of S. aureus. These swabs were then transferred to PBS to preserve potential bacteriophage. Fermentative colonies from MSA cultures were identified as S. aureus using Gram stain, catalase, coagulase, and sensitivity testing. Ten cultures (22.7%) were positive for S. aureus, and one isolate was confirmed as methicillin-resistant S. aureus (2.3%). These isolates were used to amplify corresponding nasal samples for recovery of bacteriophage. Bacteriophage were isolated from four samples. Host specificity of these bacteriophages was determined by cross infectivity with recovered isolates. Six of the S. aureus isolates showed sensitivity to one of the bacteriophage isolates. Identification of lytic phage against S. aureus supports the hypothesis.

Purification and Characterization of Bacteriophage Protein Isolated from V. parahaemolyticus in Oysters  
**Presenter:** Sarah Soorya  
**Faculty Mentor:** Dr. Rajkumar Nathaniel, Ms. Angela Corbin

Vibrio parahaemolyticus is a halophilic, gram-negative, bacterium which causes bacterial diarrhea and septicemia after ingesting raw or improperly cooked seafood. Isolated V. parahaemolyticus is found to be multi-drug resistant, limiting our
ability control this pathogen in aquaculture. Bacteriophage, however, are proving useful as bactericidal agents to address issues of multi-drug resistance. The use of host-specific bacteriophages with lytic activity may be effective at controlling V. parahaemolyticus in recirculating aquaculture systems. The objective of this study is to enrich and purify phage preparations to obtain sufficient quantities for evaluation of phage proteins by SDS-PAGE analysis. V. parahaemolyticus isolated from oysters are infected with varying strains of bacteriophage collected from different sites. Isolated phage proteins are characterized and compared to known phage proteins. Purified proteins can be used in future study as immunogens to produce antisera and possibly facilitate virus phage therapy in aquaculture disease management and control.

**NORTHWESTERN STATE UNIVERSITY**

**The Effects of Depression and Anxiety on Self-Stigma and Intentions to Seek Help**  
*Presenter: Michael Thrower*  
*Faculty Mentor: Dr. Magaret E. Cochran*

Mental health stigma is associated with decreased help-seeking for mental illness. It is important to identify potential causes of mental health stigma to better understand why people do not seek help. The aim of this study was to determine levels of self-stigma in college students and to identify the likelihood that they would seek help for depression or anxiety from the following sources: friend, family member, or intimate partner; mental health professional; or medical doctor. This study assessed levels of depression and anxiety as predictors of self-stigma among college students and the degree to which self-stigma predicts which sources students are likely to utilize. A convenience sample of \( n = 249 \) undergraduates completed the Depression, Anxiety, and Stress Scale-21 (DASS-21), a modified version of the General Help-Seeking Questionnaire—Vignette Version (GHSQ), and the Self-Stigma of Seeking-Help Scale (SSOSH). Depression and gender were significant predictors of self-stigma \((p < .001)\), while anxiety was not \((p = .332)\); the multiple linear regression explained 10.3% of the variation in self-stigma. Self-stigma was negatively related to the likelihood of seeking help from a mental health professional and predicted 10.4% of the variation in that variable.

**Design and Manufacturing of an Eddy Current Probe for Surface Analysis**  
*Presenter: Angelica Galban*  
*Faculty Mentor: Jafar Al Sharab*

Today’s demanding world requires improved devices that can be used for checking and assuring quality of everyday products and services. That is why the purpose of this project was to design and manufacture a high sensitivity prototype device for surface analysis of principally non-ferrous materials. This device uses the electrical properties of inductance and eddy current testing to obtain information from surface or underneath surface, depending on the applied frequency. For this device, all signal processing will be done by microcontrollers. Three dimensional (3D) printing was also utilized for fabricating required components for this surface analysis probe.

**Computational Docking of Teixobactin to Cellular Receptors**  
*Presenter: Christina Arrechavala*  
*Co-Investigator: Dr. Massimo Bezoari*  
*Faculty Mentor: Dr. Massimo Bezoari*

“Superbugs” such as Staphylococcus aureus, Streptococcus pneumoniae, and Mycobacterium tuberculosis continue to evolve, developing resistance to known antibiotics. Biomedical research is being directed to new methods of deriving antibiotics from natural resources. Thus, teixobactin was extracted from Eleftheria terrae using iChip technology. Teixobactin’s unique structure consists of euduracididine, methlyphenylalanine, and four D-amino acids, and is highly effective against many gram-positive bacteria. Teixobactin inhibits cell wall biosynthesis by binding to both lipid II and lipid III, destroying the peptidoglycan and teichoic acid as it is formed. Using computational chemistry in the form of molecular modelling and docking software, such as HyperChem®, SpartanTM, and Glide, the three-dimensional structure of teixobactin and its interactions with bacterial cell metabolic intermediates will be simulated to determine its binding mode of action. This will be used as a basis to determine what suitable compounds can emulate its antibacterial activity and if current antibiotics can be manipulated to reactivate their antibacterial activity.

**SOUTHEASTERN LOUISIANA UNIVERSITY**

**The Origins and the Rise of the Euskadi Ta Askatasuna**  
*Presenter: Christine Tarride*  
*Faculty Mentor: Samantha Perez*

Francisco Franco rose to power as the dictator of Spain in 1937 during the Spanish Civil War. The Spanish Civil War saw the first aerial attack on civilians in the Basque city of Gernika. He declared war on the language and culture of the Basque people. Following the Civil War, the Basque gave aide to the Allied powers during World War II. Many believed that the Allied powers would remove Franco from power and help bring about an independent Basque state. However, their hopes were dashed by threats of communism. Many of the Allied nations created diplomatic relationships with anti-communist Spain. The war against the Basque and the perceived inaction of the Basque government led to the rise and creation of the Euskadi Ta Askatasuna, or ETA. The ancestor groups to the ETA, the ATA and Ekin were founded by intellectuals who wanted to promote the culture and create an independent nation. They were more peaceful than their successor. The ETA is a militant nationalist organization whose goals include creating an independent nation. In my presentation I hope to explain the facts and events that led to the rise of the ETA. I collected all my data from multiple books, articles, and primary sources. I learned that the origins of one of the most notable terrorist groups evolved from a group of intellectual freedom fighters who wanted to preserve and promote their culture. I also learned about how the post-world war ideals affected Basque nationalism.
Illicit Usage of Prescription Stimulants Among College Students
Presenter: Madison Fontenot, Julia Smith
Faculty Mentor: Bonnie Ahn

The goal of this study is to examine how illicit prescription stimulant use is correlated to common internal and external stressors found in college students. Specific questions include: (1) Is there a higher rate of illicit use of prescription stimulants among college students who are enrolled in universities with higher academic expectations? (2) Are college students with higher parental pressures regarding college success more likely to partake in the illicit use of prescription stimulant use? (3) Do college students with larger course loads have higher rates of illicit prescription stimulant use? (4) Are students involved in non-academic activities more likely to be active in the illicit use of prescription stimulants than those who are not? Our research hypothesis is that the more stressors influencing college students, the more likely they are to take part in illicit use of prescription stimulants. The research design will utilize a cross-sectional survey approach. The study will be based on the senior class population of four universities, all with different sizes and academic expectations. A survey will be sent to 400 randomly selected college students classified as seniors by the university’s standards. There will be two instruments used; the Perceived Stress Scale, which consists of 10 questions measuring the participant’s stress level, and a self-made questionnaire. Multiple regression analysis will be performed to address the study’s hypothesis.

Visual Strategies in Dyad Practice
Presenter: Jamie Hewitt
Faculty Mentor: Dr. Charlotte Humphries

Dyad practice is the learning of a motor skill through observation and dialogue. This was used to collect data by cup stacking. Cup stacking is a simple motor skill task that calls for participants to stack patterns in a certain way. How fast the participant was taken into account, but what participants saw and thought of during their practice was the underlying reason for the study. There were two groups, one with a partner to converse with and observe, while the others worked alone. Participants were asked their age, gender, and previous sports history before testing. Throughout data collection, each trial performed was timed to the nearest hundredth of a second. Acquisition, retention, and transfer tests were done to test the participants’ grasp of the motor skill. The acquisition test was done on day one, and the retention and transfer trials were done on day two. After each trial, participants were asked what they were thinking of and what they saw during cup stacking. Both groups in this study had similar times, which concluded that dyad is as effective as traditional teaching of motor skills. Participants wrote more about what they were thinking than what they saw happening with stacking; the true difference came from whether participants were previously athletes. If participants were athletes, the task was viewed more as a competition and strived to get better. Those who were not athletes dwelled on their mistakes more often than their successes.

Robot Control through 3D Web Application
Presenter: Cory Oliphant, Cleland Montecillo, Joseph Regard
Faculty Mentor: Dr. Mohammad Saadeh

Robotic arms are in widespread use throughout multiple industries. This is, in part, due to their exceptional usefulness in processes such as manufacturing. One downside to the use of these automation tools is the requirement of a fairly skilled individual with a competent understanding of coding in order to give the arm instructions. The direction of this project is to develop a 3D application to control a robotic arm from anywhere in the world. Such an application would allow unskilled users to manipulate and program tasks for an automated arm with simple click and drag commands. This type of application can be created using the Unity Game Engine, a popular 3D application creation software. Remote access can be achieved through the use of the Internet. A microcontroller will be used to communicate between the web application and the physical robotic arm. A live camera feed of the physical arm will provide a real-time update of the arm’s current position and verify if it matches the desired position defined by a user within the web application. Remote access of this application can provide easy and accessible reprogramming for any automated arm or control for a robotic arm placed in a hazardous environment.

Species Comparison of the Vision Role of the Cornea Among Colubrid Snakes
Presenter: Sydney Ferguson
Faculty Mentor: Clifford Fontenot

Vertebrates diving underwater lose refractive power of the cornea because it is the same refractive index as water, resulting in defocus. To determine the amount of defocus imposed by this in the semi-aquatic snakes Nerodia fasciata and N. erythrogaster, we measured cornea curvature (optical power = 1/radius of curvature) with a Zeiss dissecting microscope and ZenPro software. Because eye size increases as snakes grow, we also measured body size to determine its effect on cornea curvature. There was a significant linear increase in corneal radius of curvature with increasing body size in both species, meaning that these snakes lose corneal focal power as they grow in size. However, there was no significant difference between species in the slope of this relationship, but N. erythrogaster had a significantly larger mean radius of curvature than N. fasciata. This gradual loss of corneal refractive power with increasing body size may be important in air if other accommodation mechanisms cannot compensate for the defocus. On the other hand, a flatter cornea has less power to lose when diving underwater.

UNIVERSITY OF LOUISIANA AT LAFAYETTE

Characterization of Scaffolds Composed of Chitosan, Collagrem, and Hydroxyapatite for Use in Cancer Therapy Studies
Presenter: Katelyn Musumeche
Faculty Mentor: Dr. Dilip Depan

A main obstacle in the initial phase of cancer therapy research
is the creation of a three-dimensional environment which mimics that of the cancer cells in the human body. Past studies have typically been done in two dimensional spaces which do not allow for the considerations that human bones are three dimensional and extremely porous. Our research focused on creating such an environment for the study of breast cancer cells and osteoblasts. Three dimensional scaffolds were created using chitosan (CS), a natural polymer, collagen (CO), and hydroxyapatite (HAp) to optimize the mechanical and biological properties of the scaffolds. Glutaraldehyde (GLU) was used as a cross-linking agent. Different concentrations of GLU were studied in order to determine which concentration would most closely mimic human bone. The CS-CS-HAp scaffolds were prepared by using lyophilization techniques to create porous scaffolds. Scanning electron microscopy (SEM) was utilized to study porosity and pore interconnectivity. Fourier transform infra-red (FTIR) spectroscopy was used to determine the crosslinking degree for each concentration of GLU. X-ray powder diffraction (XRD) was completed to determine the crystal structure and crystallinity for different concentrations. Water absorption and retention were also studied. The scaffolds created are an attempt to more closely resemble human bone. Creating an environment that closely resembles the characteristics of bone is crucial to the study of the interaction between cancer cells and normal cells inside the bones. Our goal is to fully understand the extracellular matrix interactions of bone cells and breast cancer cells in an area outside the body.

Mimicking Red Blood Cell Flow in Arterioles with Florescent Particles in Microchannels
Presenter: Fabian Strauss
Faculty Mentor: Dr. Molly Frame

In the human body red blood cells (RBCs) travel in different flow paths, such as arteries, arterioles, veins, and capillaries. From the lungs, RBCs transport oxygen to the body. To study the relationship between (RBCs) flux at bifurcations in blood vessels with respect to angles, radius of curvature, and flow rate, we use nine polydimethylsiloxane (PDMS) microchannels with 3 bifurcations angles (45°, 90°, 135°), and 3 radius of curvatures (0.5d, 1d, 2d). Since our focus is the physics of the flow, we use florescent particles with sizes similar to RBCs (6μm). Particles that travel along the feed are referred to as feed continuation (FC) and those that end up in the branch are called branch (B). The flow rate is set using a syringe pump ranging between 0.5μlphr and 7μlphr. Using ImageJ (an image processing program), we track 50 florescent particles for each angle, radius of curvature, and flow rate to determine their velocity. Particles in the middle of a branch whether it is feed continuation or branch move faster than those that lie closer to the edge due to lower shear forces. We observe that there are three possibilities for these particles 1) continue in the continuation direction, 2) curve and then continue in the continuation direction, and 3) curve and go through the branch. Particles closer to the wall as predicted have a slower velocity due to fluid friction. In conclusion, percentage of flux of RBCs at bifurcations depends on bifurcation angle and radius of curvature.

Capture the Flag with Game Theory and Algorithms
Presenter: Matthew Furka, Kaleb Matherne
Faculty Mentor: Dr. Paul Darby

A test phase of a communication and swarm robotics project, this research is used to study the relationship between the different robots and their ability to collaborate and work effectively with each other. Collecting data from a simulation created to mimic a physical swarm of robots playing a game of capture the flag, it will be logged and analyzed to find an effective strategy algorithm. Using game theory, the simulation will take into account different types of conflict and cooperation between different robots. This algorithm will soon proceed to be applied to a prototype which will test its effectiveness and more accurately demonstrate the significance of environmental and physical factors that would be too difficult to create in a simulation. In creating this algorithm there will be an effective method of collaborative communication and teamwork that will be integral in its implementation into the swarm.

College Students’ Responses to Disruption of Social Flow
Presenter: Steven Stringfellow, Ashley Hughes
Faculty Mentor: Dr. Hung-Chu Lin

Research studies show that conversational flow is associated with positive feelings of belonging, control, social validation, and perceived consensus (Koudenburg, 2011). Disruption of conversational flow instigate feelings of rejection and negatively affect emotions (Koudenburg, 2011). In a paradigm designed to elicit feelings of social rejection, college students’ (27 females and 29 males with mean age of 20.2, SD = 3.5) behaviors were examined in relation to their internal working models (IWMs—cognitive representations of the self and others) and general response propensity towards negative emotions (neuroticism), one of which being embarrassability (susceptibility to experience embarrassment). Before the social rejection scenario, participants filled out questionnaires, including the Relationship Scale Questionnaire (RSQ; Griffin & Bartholomew, 1994), the IPIP Neuroticism Scale (Costa & McCrae, 1992), and the Susceptibility to Embarrassment Scale (SES; Kelly & Jones, 1997) assessing the IWM’s, neuroticism, and embarrassability, respectively. Participants then were encountered by a confederate of the experiment. The confederate engaged the participant in conversation based upon a script. Towards the end of the script, the confederate cut off the conversation and engaged in behavior designed to be perceived as passively socially rejecting. Participants’ behavioral responses were coded and categorized into re-engaging behaviors, disengaging behaviors, and behaviors that reflect embarrassment or unease. The findings reveal potential correlates of individual response patterns within interpersonal context, particularly under the circumstance of perceived rejection and threat.
The Effects of University Students’ Majors on Their Attitude Toward Same-sex Parenting  
**Presenter:** Jamie Collins  
**Faculty Mentor:** Dr. Sun-a Lee

With the recent legalization of same-sex marriage in the United States by the Supreme Court, this opens the door to more rights for same-sex couples, such as parenting. However, in reality people still debate same-sex relationships. What makes people different in their attitudes toward same-sex relationships, such as same-sex parents? This study will examine the attitudes of the students at the University of Louisiana at Lafayette and potential factors that might affect their attitudes toward same-sex parenting. For example, it is found that religious people are less likely to accept same-sex relationships, and younger generations are also more accepting than previous generations. How about the majors then? How about the class materials and topics that they learn in class? Would curriculum, majors, classes, topics in class, and other factors that students are exposed to during college life make a difference in students? The current study will explore the possible dynamics among various factors (e.g., major, class, classification) and students’ attitude toward same-sex parenting. The undergraduate students at the University of Louisiana at Lafayette will be asked to fill out the survey regarding the variables addressed above.

**UNIVERSITY OF LAFAYETTE AT MONROE**

Role of Initiation factor 4A in Translation Initiation of *Giardia lamblia*  
**Presenter:** Siddhartha Dhakal  
**Faculty Mentor:** Srinivas Garlapati

*Giardia lamblia*, also known as *G. intestinalis* or *G. duodenalis*, is a flagellated protozoan parasite that is responsible for the broad spectrum gastrointestinal symptoms, including diarrhea, abdominal cramping, nausea, malabsorption, and chills. It infects up to 20% of the world’s population, and is the most commonly diagnosed intestinal parasite in US Public health laboratories. *Giardia* Initiation factor, GElf4A, is identified as a homologue to eukaryotic Initiation factor, elf4A2. Eukaryotic elf4A, in association with elf4G, unwinds secondary RNA structures facilitating ribosome binding to mRNA, and hence translation. However, elf4A interacting protein elf4G has not been identified in Giardia, and it is thus unclear whether Giardia elf4A functions similarly. Therefore, in this project, we aim to elucidate the role of initiation factor 4A in *Giardia lamblia*. To accomplish our goal, first we treated Giardia with pateamine A, a compound which has been demonstrated to inhibit translation initiation by reducing elf4A concentration. The results showed significant decrease in number of Giardia cells after 3 days. Then we cloned the bacterial plasmid to overexpress elf4A in Giardia. When these overexpressed cells were treated with Pateamine A, they continued to grow normally after drug treatment compared to the normal cells. This showed that the drug specifically inhibits Giardia 4A. We are in the process of purifying Giardia elf4A expressed in *E. coli*. Once purified, we will perform protein activity test in vitro and determine its structure.

**African Easterly Wave Cloud and Precipitation Structure and Implications for Tropical Cyclogenesis**  
**Presenter:** Nicholas Slaughter  
**Faculty Mentor:** Ken Leppert II

African easterly waves (AEWs) are important for tropical cyclogenesis in the Atlantic and East Pacific. But it is not completely clear why some waves spawn tropical cyclones (developing waves [DWs]) while others do not (non-developing waves [NDWs]). One factor that may play a role in tropical cyclone development is the structure and distribution of clouds/precipitation in AEWs. Another factor that may influence development is the Saharan Air Layer (SAL), a dry, dusty layer of air often blown over the Atlantic from North Africa. Earlier work has suggested that the dry air and/or enhanced stability associated with the SAL may inhibit convection and tropical cyclogenesis beneath the SAL itself, while other studies have suggested that temperature gradients associated with the SAL may strengthen AEWs to the south of the SAL, potentially enhancing the likelihood of tropical cyclogenesis there. The first of two objectives of this project is to use the Cloud Profiling Radar on NASA’s CloudSat satellite to examine the detailed cloud and precipitation structure of DWs and NDWs to determine any significant differences between them. The second objective is to use aerosol information derived from NASA Moderate Resolution Imaging Spectroradiometer (MODIS) data to infer information about the characteristics of the SAL and determine whether these characteristics significantly differ between the two wave types. Ultimately, this project aims to improve forecasts of tropical cyclogenesis from AEWs.

**UNIVERSITY OF NEW ORLEANS**

Mig1, Mig2, and Mig3 Mediate Glucose Repression of Hap4, a Global Regulator of Mitochondrial Biogenesis  
**Presenter:** Natasha Bourgeois  
**Faculty Mentor:** Dr. Zhengchang Liu

Mitochondrial biogenesis is an essential cellular process by which the size and/or number of mitochondria increase(s) to promote energy production under respiratory growth conditions. Hap4 is a transcriptional activator of the expression of genes involved in respiration. In the budding yeast *Saccharomyces cerevisiae*, glucose repression inhibits mitochondrial biogenesis. Hap4 expression itself is subject to glucose repression, but the underlying mechanism is unknown. Here we examined the roles of three functionally redundant transcriptional repressors, Mig1, Mig2, and Mig3, as potential regulators of Hap4 expression because of their known role in mediating glucose repression. Using a HAP4-lacZ reporter gene and beta-galactosidase assays, we discovered that Mig1/2/3 are negative regulators of Hap4 expression. We show that Hap4 protein level is increased in mig mutant cells. We also show that increased Hap4 expression in mig mutant cells results in increased expression of Hap4-target genes under glucose repression conditions. In addition, beta-galactosidase assays of various HAP4 promoter truncation constructs revealed two regions in the HAP4 promoter that mediate HAP4 expression through Mig1/2/3. Together, our data provides important mechanistic insights into the regulation of mitochondrial biogenesis.
Synthesis of 3,3-Diarylazetidines
Presenter: Nam Ly
Faculty Mentor: Dr. Mark Trudell

Diaryl heterocyclic amines are important building blocks in medicinal chemistry. While diarylpiperidine and diarylpyrrolidine structures are found in a variety of compounds used in drug discovery studies, the 4-membered ring diarylazetidines are much less prominent in the medicinal chemistry literature. Presumably this is due to limited availability of diarylazetidine derivatives and few methods for the preparation of diarylazetidines. Herein we describe a short and convenient method for the preparation of 3,3-diarylazetidines. Commercially available N-Boc-azetidin-3-one was readily converted into N-Boc-3-phenylazetidin-3-ol by the addition reaction of phenyllithium in THF at -78 °C. The N-Boc-3-phenylazetidin-3-ol was obtained in a high yield and high purity. Subsequent arylation of N-Boc-3-phenylazetidine-3-ol using a Friedel-Crafts reaction conditions (toluene/AlCl3) afforded the desired 3,3-diarylazetidine ring system in good yields. The scope and limitations of this new synthetic sequence for the preparation of 3,3-diarylazetidines will be presented.

The Question of Authenticity: Transforming Consumption in Mid-City, New Orleans
Presenter: Lyndsey Nuebel
Faculty Mentor: David Beriss

What can a cluster of restaurants tell us about an entire city? The Mid-City neighborhood of New Orleans has long been characterized by a collection of restaurants that reflect the surrounding community. The post-Katrina years have brought many more restaurants to the neighborhood than any other type of business, marking the area as a restaurant cluster. Though the neighborhood is home to some of the oldest restaurants in the city, the latest collection of restaurants reflects the city’s changing demographics as there are more residents and restaurateurs from Latin America and elsewhere, as well as bohemian U.S. transplants populating the area. The neighborhood from 2005 to 2017. The motivation for this project is to demonstrate lyase activity of recombinant MpeY, but the protein was not soluble in E. coli. Therefore, the mpeY gene was amplified from Synecochoccus sp. RS 9916 chromosomal DNA by PCR and cloned in the pET-44b vector in order to produce recombinant NusA-tagged MpeY (Nus-MpeY) protein in E. coli. The Nus-MpeY protein produced in E. coli was soluble. Results from recombinant protein co-expression experiments to characterize the lyase activity of MpeY will be presented. References: Six, Christophe, et al. Diversity and evolution of phycobilisomes in marine Synecochoccus spp.: a comparative genomics study. Genome Biol 8.12 (2007): R259.

Computational Analysis of Drosophila Transcriptomes at the MZT Stage
Presenter: Ahmad Karkoutli
Faculty Mentor: Joel Atallah

More than 3000 Drosophila species have been described. They live in a wide variety of environments, with great variation in size and appearance. Some of these species are used as model organisms in developmental biology, genetics, and biochemistry. Twelve of these species’ genomes were sequenced as part of the Drosophila 12 Genomes Project, and additional species were sequenced in recent years. The factors that caused this variation in Drosophila have been studied extensively. The maternal-zygotic transition (MZT) is thought to be one of these factors. The MZT refers to the switch from using maternally deposited mRNA to zygotically transcribed mRNA. The MZT requires two processes: the degradation of maternal mRNA and zygotic genome activation (ZGA). The ultimate goal of the project is to computationally identify micro-RNA binding sites controlling the degradation of the maternal mRNA in the first step of MZT, and of the transcription factors binding site motifs controlling the second step of ZGA, in multiple Drosophila species. This will be followed by an interspecific comparative analysis to study how these identified motifs differ across species. So far, several over-represented motifs have been identified as possible transcription factors’ binding sites in each species. When these motifs were studied and compared against the other 11 species, multiple motifs were shared between members of certain group and subgroups. The results for miRNA target sites extraction were not significant, which indicates that more work must be done to develop more sophisticated prediction techniques.

Characterization of the Putative Lyase MpeY and its Activity on A-phycoerythrin II in Synechococcus sp. RS 9916
Presenter: Suman Pokhrel
Faculty Mentor: Dr. Wendy Schluchter

Cyanobacteria harvest light for photosynthesis using phycobilisomes, mega-dalton protein complexes that sit on top of the thylakoid membrane. Phycobilisomes are comprised of rods and a core containing phycobiliproteins (PBP) interconnected by linker polypeptides. The rods of the PBP have protein-pigment complexes called phycoerythrin (PE), comprised of a- and b-subunits. Some species of Synechococcus contain two types of PE in the distal part of their rods, S. phycoerythrin I (PE I) and S. phycoerythrin II (PE II). Both PE I and PE II bind phycoerythrobilin (PEB) and phycourobilin (PUB). These pigments are bound to PE due to the enzymatic activity of phycobilin lyases. The operon encoding various PE II-specific genes encodes a putative lyase gene mpeY. The goal of this project is to demonstrate lyase activity of recombinant MpeY, but the protein was not soluble in E. coli. Therefore, the mpeY gene was amplified from Synecochoccus sp. RS 9916 chromosomal DNA by PCR and cloned in the pET-44b vector in order to produce recombinant NusA-tagged MpeY (Nus-MpeY) protein in E. coli. The Nus-MpeY protein produced in E. coli was soluble. Results from recombinant protein co-expression experiments to characterize the lyase activity of MpeY will be presented. References: Six, Christophe, et al. Diversity and evolution of phycobilisomes in marine Synecochoccus spp.: a comparative genomics study. Genome Biol 8.12 (2007): R259.
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