Service-Learning
Juried Art Exhibit
Undergraduate Research

McNeese State University
April 19-20, 2012
Dr. Randy Moffett - President

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Mr. Winfred F. Sibille
Academic Summit 2012 Schedule
-at a glance

Thursday, April 19, 2012 - Service-Learning Day

9:00 a.m. - 10:00 a.m. Registration ~ Student Union
10:00 a.m. - 10:15 a.m. Welcome ~ Student Union
10:30 a.m. - 11:30 a.m. Concurrent Sessions ~ Farrar Hall
11:45 a.m. - 12:15 p.m. Lunch ~ Student Union
12:15 p.m. - 1:00 p.m. Keynote Speaker - Eric Rowles ~ Student Union
1:15 p.m. - 2:15 p.m. Concurrent Sessions ~ Farrar Hall
2:30 p.m. - 3:30 p.m. Concurrent Sessions ~ Farrar Hall
3:45 p.m. - 4:45 p.m. Informational Session about the Journal of Service-Learning in Higher Education & Wrap Up of Service-Learning Day ~ Student Union
5:00 p.m. - 7:00 p.m. Reception and Art Exhibition ~ Shearman Fine Arts Annex - Open to Service-Learning and Undergraduate Research Participants

Friday, April 20, 2012 - Undergraduate Research Day

8:00 a.m. - 9:00 a.m. Registration ~ Student Union
9:00 a.m. - 9:15 a.m. Welcome ~ Student Union
9:30 a.m. - 10:30 a.m. Concurrent Sessions ~ Farrar Hall
10:45 a.m. - 11:45 a.m. Concurrent Sessions ~ Farrar Hall
Noon - 12:30 p.m. Lunch ~ Student Union
12:30 p.m. - 1:00 p.m. Keynote Speaker - Dr. Mark Merchant ~ Student Union
1:15 p.m. - 2:15 p.m. Concurrent Sessions ~ Farrar Hall
CUR Faculty Workshop - Dr. Katherine Whatley ~ Student Union
2:30 p.m. - 3:30 p.m. Poster Presentations and Wrap Up ~ Memorial Gym
Dear Colleagues and Friends,

Welcome to McNeese!

We are excited and honored to host the first University of Louisiana System Academic Summit. Students and faculty from the nine ULS campuses are here to share information and their enthusiasm for community service, creative expression, and the investigative process.

Weaving service-learning, undergraduate research and artistic creativity together into one system-wide conference gives you the opportunity to exchange ideas, and discover new opportunities.

I commend the campus representatives that serve on the ULS Service-Learning Council and the Undergraduate Research Council for their work and dedication to student engagement and mentoring.

Here at McNeese the phrase “Excellence with a Personal Touch” is more than a slogan. It is the heart and soul of our campus culture. It is a culture I hope you experience during your short time on our campus.

Sincerely,

Philip C. Williams
President
McNeese State University

The 59,918 square foot addition to the Shearman Fine Arts Building opened in May 2010. This project was named the Best Higher Education Project for 2010 by South Central Construction Magazine.

The addition features a 526-seat theatre and stage, dressing and green rooms, state-of-the-art theatre control booth, costume and scene shops, two exhibition galleries, sculpture and ceramics studios, kiln patio, digital photography and 3-D studios, rehearsal hall, classrooms and faculty offices.
Welcome to the inaugural University of Louisiana System Academic Summit!

Last year, Northwestern State University hosted the first UL System Undergraduate Research Day and Grambling State University hosted the sixth annual UL System Service-Learning Conference. Those two independent activities are now combined into one Academic Summit to provide a richer experience for all involved.

This year, there are 44 service-learning presenters showcasing community impact projects in diverse areas such as robotics, pharmacy, computer information systems, music education, and disaster preparedness. Twenty-two academic disciplines are represented by the 77 student undergraduate research presentations both in oral and poster formats. And not to be outdone, our student artists submitted over 400 pieces for the juried art exhibition ensuring the highest quality pieces made it into the 32 slots available for the show.

The UL System has a long history of commitment to excellence in teaching and collaboration across its institutions. Those tenets culminate in this first annual event, graciously hosted by McNeese State University, and will continue in 2013 at the University of Louisiana at Monroe and then in 2014 at Nicholls State University. Also, the University of New Orleans has established an online conference archive of Academic Summit proceedings through its ScholarWorks@UNO open access digital repository so that the knowledge shared at this conference can continue in a sustainable format.

Your participation, whether as a presenter or an attendee, exemplifies what our system is all about: academic excellence, strong working relationships, and a system-wide approach to collaboration. I hope you make the most of this two-day event, attending as many diverse presentations as possible, broadening your knowledge base, and forging new friendships with colleagues across the system.

Randy Moffett
President
University of Louisiana System
Eric Rowles
Keynote Speaker for Service-Learning Day
President/CEO of Leading To Change

He is a nationally recognized trainer, speaker, and consultant whom has worked with over 150,000 youth, adults, administrators, professionals, and policy makers.

One part motivational speaker, one part DJ, and two parts community organizer, Rowles will focus on Generational Crossroads for the UL System Academic Summit.

Dr. Mark Merchant
Keynote Speaker for Undergraduate Research Day
A professor of biochemistry at McNeese State University, Merchant is recognized internationally for his work in the field of Alligator mississippiensis immunology. His research in alligator serum is integral in the international effort to use crocodilian proteins for disease control.

He has made numerous television appearances including National Geographic, the Discovery Channel, Good Morning America, and Fox In the Morning.

Dr. Katherine Whatley
Faculty Development
Council on Undergraduate Research National Representative Provost and Vice President of Academic Affairs at Berry College in Rome, Georgia.

A nuclear physicist, she served in several leadership roles at the University of North Carolina at Asheville before moving to Berry College including Chair of the Honors Program Task Force and Director of the UNC Asheville Undergraduate Research Program. Whatley has been an active participant in the Council on Undergraduate Research since 1987, serving on the organizing committees for three national conferences.

GENERATIONAL CROSSROADS:
When X, Y, & Boomers Collide!
12:15 p.m., April 19, 2012 Parra Ballroom
What do each of these generations have in common?
And just as important, what makes them so different—in the workplace, in the community, in their day-to-day lives? This POWERFUL presentation helps deepen the connection and communication across the ages.

THE AMERICAN ALLIGATOR:
FROM MARSH TO MEDICINE
12:30 p.m., April 20, 2012 Parra Ballroom
Alligators can be very aggressive toward members of their own species. Territorial disputes often lead to serious injuries, including loss of entire limbs. These enormous injuries often heal without serious infection, despite the fact that alligators live in environments laden with potentially pathogenic microbes. This presentation will describe our quest to learn more about how alligators resist infection, and how this ancient reptile might hold the key to a new class of antibiotics for human use.

FACULTY ROLES IN UNDERGRADUATE RESEARCH
1:15 p.m., April 20, 2012 Parra Ballroom
How can we create powerful learning environments for our students and ourselves through undergraduate research?
How can we encourage faculty to participate with students and colleagues in this highly engaged practice? What elements do the best undergraduate research experiences have in common? This presentation/conversation will explore these questions in a way that invites discussion among participants.
2012 University of Louisiana System Juried Art Exhibition

Summit Reception

All Service-Learning and Undergraduate Research participants are invited to attend the Summit Reception on Thursday from 5-7 p.m. in the Grand Gallery of the Shearman Fine Arts Annex. Enjoy great food and spend time networking with colleagues while you admire the works selected for the Juried Arts Exhibit and listen to the tropical sounds of the McNeese Steel Drum Band. The Gallery Talk will begin at 6 p.m. followed by the awards presentation for the Juried Arts Exhibit.

Works selected for the 25th Annual McNeese National Works on Paper Exhibition are also on display in the Grand Gallery. This exhibit is sponsored by the McNeese Visual Arts Department and is part of the 2012 McNeese Banners Cultural Series.

2012 UNIVERSITY OF LOUISIANA SYSTEM JURIED ART EXHIBITION

Reception and Gallery Talk
5-7 p.m., April 19, 2012
Shearman Fine Arts Annex

A part of the undergraduate research component, this exhibition offers students the opportunity to present their work in a gallery setting and experience art installation, the jurying process, and the promotion of a professional show. Entries from students attending any of the nine universities in the UL System are welcome. This year’s recognitions will be Best in Show and a merit award in each media category.
10:00 a.m. - 10:15 a.m. ........................ Welcome - Parra Ballroom

10:30 a.m. – 11:30 a.m. .......................... Concurrent Sessions - Farrar Hall

**Room 112**  
Pediatric Partnerships: Health Promotion Through Service-Learning  
Tanya Sims Louisiana Tech University

Making a Difference, One Community at a Time  
Kimberly Whorton University of Louisiana at Monroe

**Room 131**  
Portion Distortion: A Nutrition Awareness Service-Learning Project  
Dr. Michelle Morris and Terrie Poehl Northwestern State University

FYI UR BMI IS PDI (For your information your BMI is pretty darn important)  
Dr. Twila Sterling-Guillory McNeese State University

**Room 132**  
Serving on Community Boards  
Dr. Ava Pugh, Rachel Ramsey, University of Louisiana at Monroe  
and Catherine Munhollon

Impact of Service-Learning on Water Quality Outreach  
Dr. Waneene C. Dorsey Grambling State University

**Room 133**  
UL System Students Strong in Service-Fundraising Initiative for St. Jude Children’s Research Hospital  
Erica C. Sherrard University of Louisiana System;  
Kylie Templet University of Louisiana at Lafayette; and  
Matthew Theriot McNeese State University

Think Big. Get Real.  
Kevin Potter Jr. University of New Orleans  
Laura Hasenstein Tulane University

11:45 a.m. - 12:15 p.m. ........................ Lunch  
Student Union - Parra Ballroom

12:15 p.m. - 1:00 p.m. .......................... Keynote Speaker - Generational Crossroads: When X, Y, & Boomers Collide!  
Eric Rowles, Leading to Change  
Student Union - Parra Ballroom

1:15 p.m. – 2:15 p.m. ............................ Concurrent Sessions - Farrar Hall

**Room 112**  
Calcasieu Parish Middle School Robotics Competition  
Dr. Zhuang Li and Daniel LeJeune McNeese State University

INVESTing in Service-Learning at Louisiana Tech  
Lindsey Keith-Vincent Louisiana Tech University

**Room 131**  
Opportunities for High-Level Scholarship and Service in Health Studies and Professional Writing Curriculum  
Dr. Sandra Hill and Paula Griswold University of Louisiana at Monroe

Feasibility Study for ULM Downtown Ouachita Service-Learning Institute  
Dr. Joseph McGahan and Kyle Bullitt University of Louisiana at Monroe

**Room 132**  
Partnering the Classroom and Educational Institution  
Dr. Gary A. Poe Grambling State University

An Open-Source Web Database Designed for Service-Learning  
Dr. Minh Huynh and Nilesh Chitrakar Southeastern Louisiana University
### Room 133

**Service-Learning Projects Are a Great Fit for Marketing Courses**  
Dr. William T. Neese  Nicholls State University

**Possibilities for Service-Learning in Mass Communication Departments**  
Dr. Gaylon E. Murray  Grambling State University

2:30 p.m. – 3:30 p.m. ........................................... **Concurrent Sessions** - **Farrar Hall**

### Room 112

**“My First Patient” and other Pharmacy Service-Learning Projects**  
Dr. Laurel Andrews  University of Louisiana at Monroe

**McNeese State University Music Education Students Provide “Excellence with a Personal Touch”**  
Jan Scott  McNeese State University  
Mickey Smith  Maplewood Middle School

### Room 114

**Colonel Chat**  
Dr. Cynthia Vavasseur and  Nicholls State University  
Courtney Robert

**Service-Learning Models for Online Students in Distance-Learning Degree Programs**  
Dr. Allison Gibbons  McNeese State University

### Room 131

**Horses, Books and Kids: A Combination for Success in Service-Learning**  
Dr. Linda Hurst  McNeese State University

**Service-Learning in Action: Using the Common Core Standards to Enhance the Teaching Learning Process**  
Dr. Loretta Walton Jaggers  Grambling State University

### Room 132

**Recording Historic Structures**  
Robert McKinney  University of Louisiana at Lafayette

**Eleven Years/Eleven Lessons: Notes from Lincoln Parish**  
Karl Puljak  Louisiana Tech University

### Room 133

**Service-Learning and Research in the Unified Public Administration Capstone Course: Small Numbers, Significant Impact**  
Dr. Jack Atherton  Northwestern State University

**Hazard Risk Assessment Template for Houses of Worship**  
Doyle Dennis  Northwestern State University

**Intermediate Level Regional Mass Fatality Plan**  
Gifford Saravia  Northwestern State University

**Standard Operating Procedure for Thermal Imaging Camera for the Cotile Volunteer Fire Department**  
Paula Chandler  Northwestern State University

3:45 p.m. - 4:45 p.m. .............................................. **Informational Session about the Journal of Service-Learning in Higher Education & Wrap Up of Service-Learning Day**  
**Student Union - Parra Ballroom**

5:00 p.m. - 7:00 p.m. .............................................. **Reception and Juried Art Exhibition**  
**Shearman Fine Arts Annex**
Impact of Service-Learning on Water Quality Outreach
Dr. Waneene C. Dorsey, Grambling State University

Environmental stewardship is the key to protecting water, which is a natural resource. The purpose of the Grambling State University water quality, service-learning project was to increase water quality awareness at the university level and communities in the northern Louisiana watershed. One of the highlights of the service-learning project was to provide ‘hands-on’ training in hydrological monitoring, reporting guidelines, the use of water quality monitoring kits, and the integration of the World Wide Web to K-12 teachers in Bienville, Lincoln, and Ouachita parishes. In addition, to improve efficiency storm water drainage on campus, students cleaned storm grids.

Partnering the Classroom and Educational Institution
Dr. Gary A. Poe, Grambling State University

How do you provide services needed by the university to survive when your budget is cut yet again and people and equipment are sacrificed in the balancing process? Service-learning of course! Two implementations of service will be showcased while compared and contrasted to demonstrate the flexibility service-learning offers to meet a wide range of learning objectives while meeting the university’s need to provide services in wake of budget shortfalls. One of the features of the program will showcase the transformation experienced by the student as a result of the service-learning experience.

Service-Learning in Action: Using the Common Core Standards to Enhance the Teaching Learning Process
Dr. Loretta Walton Jaggers, Grambling State University

This presentation is designed to focus on three service-learning projects that have been successfully implemented in three Reading/Literacy graduate level courses at Grambling State University during 2010, 2011, and 2012. The phases follow: Phase I-Lesson presentation in the course; Phase II-Lesson implementation at the partnership school site; and Phase III-Conference presentation to the community. There will be a display of instructional materials that were designed by the candidates to implement the lesson. Student work samples will be on display to demonstrate their degree of involvement.

Possibilities for Service-Learning in Mass Communication Departments
Dr. Gaylon E. Murray, Grambling State University

Previously I discussed integrating service-learning into four public relations courses at Grambling State University. Students selected nonprofit organizations and worked toward enhancing the organizations’ reputations. They produced press kits for clients, and students received grades. The students receive hands-on practical experience while enhancing organizations’ visibility. By applying the service-learning principles of learning, service, and reflection, students combined their classroom learning with hands-on experiences that benefited the organizations as well as the students. This presentation will explain how service-learning can be expanded to our entire department, especially internships.

Pediatric Partnerships: Health Promotion Through Service-Learning
Tanya Sims, Louisiana Tech University

Service-learning is an integral component of the Child Health Maintenance course at Louisiana Tech University. Nursing students engage the pediatric population in a variety of community settings to improve health through service-learning education. Topics such as prematurity awareness, shaken baby syndrome, hand washing and illness prevention, hygiene issues, nutrition, dental care and adolescent health needs are addressed. The opportunity to connect with children in the community meets the objective of health promotion and illness prevention for the role of the registered nurse and provides an opportunity for students to participate in a rewarding civic engagement project.

Eleven Years/Eleven Lessons: Notes from Lincoln Parish
Karl Puljak, Louisiana Tech University

Since 2001, the School of Architecture has formally implemented service-learning opportunities into its curricula. The Design/Construct Studio and the Community Design Activism Center offer students an opportunity to query and to partake in the complexities of ‘the real.’ These experiences within the demands of a professional education serve the School and its students (and the communities they serve) well through directly confronting the obligations, challenges, privileges and opportunities inherent within a future professional’s societal responsibilities. This session will provide a cross-section of the body of this work and offer some lessons learned about cultivating, implementing and sustaining a service-learning program.
INVESTing in Service-Learning at Louisiana Tech

Lindsey Keith-Vincent, Louisiana Tech University

Project INVEST (Investing in Volunteer Experiences with Support Tutoring) is an investment by Louisiana Tech University’s IDEA Place, Lincoln Parish School Board, area high schools and a community of volunteers determined to prepare and support students in the community. The program is based on the career ladder explainer model utilized at the New York Hall of Science. Students learn about and work with existing exhibits and experiments and create their own to share. Students have served as guides for the science center and ambassadors to the community. Last year INVEST students were recognized for their contributions at the NYLC conference.

Calcasieu Parish Middle School Robotics Competition

Dr. Zhuang Li and Daniel LeJeune, McNeese State University

Collaborating with the Calcasieu Parish School Board, the first robotics competition was successfully held at McNeese State University on February 25, 2012. Structured as a service-learning project for McNeese students in Spring 2011, McNeese engineering students coached 14 teams from 13 area middle schools in this newly created robotics competition. The PI communicated with the school sponsors regularly and visited all the schools at least once. The ultimate goal was to instill an understanding and appreciation of sciences and engineering. We believe our first efforts were successful as there is interest to hold this competition on an annual basis.

Service-Learning Models for Online Students in Distance-Learning Degree Programs

Dr. Allison Gibbons, McNeese State University

The prevailing ‘Six Models for Service-Learning’ form the backbone of current programs. Conceptually, the common framework integrates community projects into classroom instruction for students perceived to be in a brick and mortar classroom, within reach of a nearby ‘partner agency.’ Universities now offer on-line degrees to non-traditional learners from distant communities. To avoid the inadvertent omission of online learners from the service-learning experience, faculty must accept the challenge to create or adapt service-learning models that would satisfy service-learning ideals while meeting the needs of the growing constituency of online students.

Horses, Books and Kids: A Combination for Success in Service-Learning

Dr. Linda Hurst, McNeese State University

Instilling a love for reading in children at an early age is crucial if they are to become life-long learners. The Horse-Tales Literacy Project uses horses as a motivational tool to encourage children to not only improve their reading skills, but to also develop the desire to read for the simple joy it brings. McNeese education majors enrolled in Methods for Teaching Language Arts participated in this program by working one-on-one with first grade children as reading coaches, developing curriculum for use with this program, and being teachers’ helpers throughout this unit of study. The end result— the children fell in love with reading!

FYI UR BMI IS PDI (For your information your BMI is pretty darn important)

Dr. Twila Sterling-Guillory, McNeese State University

In the United States the prevalence of obesity among children had doubled in the past three decades. The community needs to be made aware of the epidemic of obesity in the adolescent population and the need to address this problem. Nurses and nursing students need to become engaged in the community. Nursing students in the associate degree nursing program at McNeese State University were involved in a service-learning project that included being trained in interviewing skills, collecting height, weight and determining BMI in the classroom setting.

McNeese State University Music Education Students Provide “Excellence with a Personal Touch”

Jan Scott, McNeese State University, and Mickey Smith, Maplewood Middle School

McNeese Department of Performing Arts integrated a service-learning opportunity in partnership with the Maplewood Middle School band program. Junior-level music education students assisted the director, who must work without the aid of an assistant director or teacher’s aide. The mission of McNeese is to provide “Excellence with a Personal Touch.” The McNeese music education students are providing that service by transforming the lives of the beginning band student with this collaboration. This session will discuss the expected and unexpected outcomes of this first-time-tried, service-learning opportunity.
Service-Learning Projects Are a Great Fit for Marketing Courses
Dr. William T. Neese, Nicholls State University
A wide variety of marketing courses are particularly well suited for service-learning projects. Many of the topics commonly discussed in marketing classes (e.g., marketing research) relate to needs in the business and nonprofit communities. Small firms and nonprofit organizations may not have the skills and resources necessary to gather and analyze information about target markets or conduct marketing audits. The presenter first offers a framework for conducting service-learning projects in any class, then describes several service-learning projects previously used in his own marketing classes. The concluding example will overview one currently being implemented in the senior capstone Marketing Strategy course.

Colonel Chat
Dr. Cynthia Vavasseur and Courtney Robert, Nicholls State University
Last semester, we started a new service-learning project known as Colonel Chat, which pairs pre-service teacher candidates to public school students in virtual tutoring sessions. Our pre-service teachers are required to complete a certain amount of service-learning hours for classes and this project has helped them achieve that while decreasing common problems such as time constraints and low public school involvement. It has also increased involvement and achievement of community partners. The public school students who participated in the pilot program showed an increase in vocabulary achievement and motivation to learn.

Portion Distortion: A Nutrition Awareness Service-Learning Project
Dr. Michelle Morris and Terrie Poehl, Northwestern State University
The presentation will explain how a service-learning project united faculty and teacher education candidates from Northwestern State University with first graders to learn about nutrition and serve healthy snacks to other students in the elementary school. The presenters will discuss how they implemented a school gardening project and health instruction as part of the learning activities. They will also explain the service event for other children in the school as part of Global Youth Service Day. Suggestions will be offered for funding opportunities, community partnerships, and evaluation techniques.

Service-Learning and Research in the Unified Public Administration Capstone Course: Small Numbers, Significant Impact
Dr. Jack Atherton, Northwestern State University
Overview of service-learning and research in the Unified Public Administration Capstone Course and introduction of student presenters.

Hazard Risk Assessment Template for Houses of Worship
Doyle Dennis, Northwestern State University
No one person, government, or organizations, to include Houses of Worship, are immune from disaster. Some examples from Louisiana include an earthquake in 1931 that rocked Napoleonville, a killing spree in which five people were murdered in Gonzales during a Baptist church service in 2009, a fire that demolished an Episcopal church in Houma last year. Add to this other events such as molestation, assaults, hurricanes, etc., and the purpose of this service project becomes evident. Creating a risk assessment template for leaders and members of a House of Worship to identify risks and prepare for disasters is quite important.

Intermediate Level Regional Mass Fatality Plan
Gifford Saravia, Northwestern State University
This project seeks to develop a plan for the management of an Intermediate Level Mass Fatality Incident that exceeds the capabilities of a single parish or local government entity, but does not rise to the level of a state or federal response. Local parish coroners or emergency managers will be able to utilize this plan and data collection formats to ensure a rapid, consistent, and comprehensive response to a mass fatality event that coordinates regional resources such as equipment, work force, temporary morgue services, and social support services such as those within Louisiana Region Four.
Concurrent Session Abstracts - Service-Learning

Standard Operating Procedure for Thermal Imaging Camera for the Cotile Volunteer Fire Department
Paula Chandler, Northwestern State University
The Cotile Volunteer Fire Department is in need of a Standard Operating Procedure to be used for the purpose of official operation and care of the Bullard T Max Thermal Imaging Camera. This need was determined when two volunteer fire departments responded to a call for a fire in the chimney of a manufactured home. It was determined that the department needed a thermal imaging camera and the volunteers needed training on standard operation and care. This research will 1. relay the general operation, 2. state appropriate various ethical uses, 3. develop guidelines for official use, 4. define training principles.

An Open-Source Web Database Designed for Service-Learning
Dr. Minh Huynh and Nilesh Chitrakar, Southeastern Louisiana University
Community Development Collaboration Service (CDCS) is an open-source web database designed to provide relevant information about the resources and needs from the community. CDCS serves as a central portal that makes the information on the community easily accessed, updated, and used. The information on CDCS can be used by students, faculty, and community organizations to initiate service-learning projects. More importantly, the framework of CDCS could be adapted into a project community for the development of sustainable and useful open-source web database that is freely available to any institutions/groups who are interested in using it to facilitate their service-learning initiative.

Recording Historic Structures
Robert McKinney, University of Louisiana at Lafayette
The Historic Documentation course at University of Louisiana at Lafayette provides students an opportunity to learn in-depth about the historic buildings of Louisiana and engage its history through recording historic structures. Each year the Louisiana Division of Historic Preservation provides grant funding to have teams of students complete field work and measured documentation for the Historic American Building Survey, a program of the National Park Service. Documentation the students complete is archived in the Library of Congress. This presentation will present the process students used to perform the documentation and an overview of buildings that students have documented.

Making a Difference, One Community at a Time
Kimberly Whorton, University of Louisiana at Monroe
In 2010, through a federal grant, a mobile dental hygiene unit was purchased with two goals in mind: providing care to citizens in rural parishes of Louisiana while providing community clinical experience to dental hygiene students. Provision of these services on the MDHU is helping to address affordability and accessibility to dental care. Underserved children and adults receive clinical and educational services creating oral health awareness for the entire family. The ULM’s Dental Hygiene Mobile Unit provides dental hygiene students with an irreplaceable and unique educational setting while providing needed services to the underserved residents in the region.

Serving on Community Boards
Dr. Ava Pugh, Rachel Ramsey and Catherine Munhollen, University of Louisiana at Monroe
For the past three years, the Departments of Curriculum and Instruction and Instructional Leadership have formed a partnership with four community boards in the City of Monroe: Children’s Coalition, United Way, YMCA, and Wellspring. Each semester, both elementary and secondary students in senior methods courses have the opportunity to apply for sitting on these boards as a ‘guest board member.’ When selected, the students are required to attend two or three board meetings and present a proposal for a community service-learning project that is to be presented to both the classes on campus and the community board.

Feasibility Study for ULM Downtown Ouachita Service-Learning Institute
Dr. Joseph McGahan and Kyle Bullitt, University of Louisiana at Monroe
With the goal of strengthening literacy and critical thinking on our campus as well as the general community, the Social Science Research Lab at ULM is working with community members to determine whether a downtown presence on and around the Ouachita River is feasible. The proposed institute would have three basic functions: service, education, as well as research and development. A team of interdisciplinary students is preparing a service-learning grant proposal for State Farm and another team of students is helping to define a proposal that would target college students, high school students and parents at risk for health issues.
Opportunities for High-Level Scholarship and Service in Health Studies and Professional Writing Curriculum

Dr. Sandra Hill and Paula Griswold, University of Louisiana at Monroe

Two professors at ULM are working to create service-learning projects in their classes that not only provide extensive civic engagement but also rigorous scholarly training. They employ different methodologies for service-learning but pursue similar goals and outcomes. This presentation describes their pedagogical designs for community-based writing and health-related service-learning projects as well as their goals and outcomes for scholarship and service. Their different teaching methods are presented to show the different ways that community-based writing and health-related service work can be implemented. Significantly, both professors are working to achieve opportunities for higher scholarly inquiry with civic application.

“My First Patient” and other Pharmacy Service-Learning Projects

Dr. Laurel Andrews, University of Louisiana at Monroe

The University of Louisiana at Monroe College of Pharmacy has incorporated a longitudinal service-learning program throughout the didactic portion of the curriculum. Every semester, each class is assigned a service-learning project beginning in the fall semester of the P1 year with the “My First Patient” project. This project entails students becoming their own first patients, completing medical histories and a behavior change and action plan assignment as well as writing a reflective essay. Our students participate in many more service-learning projects during their time in the College of Pharmacy, examples of which will be discussed.

UL System Students Strong in Service-Fundraising Initiative for St. Jude Children’s Research Hospital

Erica C. Sherrard, University of Louisiana System, Kylie Templet, University of Louisiana at Lafayette, and Matthew Theriot, McNeese State University

The University of Louisiana System Student Advisory Council (SAC) held its annual service-learning project to promote awareness and raise funds for St. Jude Children’s Research Hospital. Except for Tennessee, Louisiana sends more children to be treated at St. Jude Children’s Research Hospital than any other state. SAC members gained valuable experience by organizing and implementing a series of week-long activities that engaged their respective campuses and local communities. This project provided students with an opportunity to impact lives of children world-wide while actively participating in a system-wide promotion.

Think Big. Get Real.

Kevin Potter Jr., University of New Orleans, and Laura Hasenstein, Tulane University

The theory of the Golden Circle emphasizes that success is not determined by what you do, but why you do it. At Recrear, an international nonprofit founded by a UNO alumnus as in 2010, we give young people an opportunity to not only exchange ideas, but also to engage in an intercultural environment, push creative boundaries, and generate more inclusive and powerful reflections. We want to share this model of discourse into action with UL students in order to further facilitate youth driven initiatives in the state of Louisiana.
Juried Student Art Exhibit

Jennifer Ashburn
Southeastern

Pankaj Khadka
Implied Authority
McNeese

Michhel Rabalais
#2
Southeastern

Matt Bell
the Era of Truth
UL Lafayette

Katharine King
the Lost and the Vulnerable
UL Lafayette

Jill Roy
the Hand that Feeds, Bites
UL Lafayette

Benjamin Koch
#1
UL Lafayette

Emily Lewis
10 Commandments: Stride
McNeese

Marlana Stokes
Foggy Snow
Northwestern

Blake Trahan
Painting After Performance #1
UL Lafayette

Sarah Lonthier
Whale
McNeese

Kellie Trilicek
Kiwi
Nicholls

Harriet Burbeck
Garden
UNO

Ray Markasa
a dead Affair
UL Lafayette

Anthony Verret
Untitled #2
Nicholls

Kathlene Chene
Tabasco Ad
McNeese

Jessica Malbrough
Land of Opportunity
Nicholls

Tessa Weatherall
Body
Nicholls

Seth Coldren
#2
UL Lafayette

Melanie Pardo
Buffalo
UL Lafayette

Tessa Weatherall
Still Life
Nicholls

Andre Dugal
book
UL Lafayette

Christen Parker
Nature, to be commanded, must be obeyed
ULM

Kevin Wilson
the Ooze 3
University of New Orleans

Jacob Dugas
Where to Now?
McNeese

Georgia Polkey
#1
Southeastern

Vanessa Wright
book
UL Lafayette

Tessa Weatherall
Still Life
Nicholls

Cody Hebert
book
UL Lafayette

Jeremy Price
Hello Ms. Lady
McNeese

Ying Yen
Surreal vs. Realistic
UL Lafayette

Jonathan Kendal
ceramic
Southeastern

Tiffany Pruitt
Yellow Baby Blue
McNeese
Undergraduate Research Day - April 20, 2012

9:00 a.m. - 9:15 a.m. .......................... Welcome  
Student Union - Parra Ballroom

9:30 a.m. - 10:30 a.m. .......................... Concurrent Sessions - Farrar Hall

**Room 131**

Implementing a Wireless Sensor Network  
Stephen Ellis  Grambling State University

Implementing Learning Approaches  
Lacey Williams  Southeastern Louisiana University

Modeling Studies of the HIV GP160 Envelope Protein  
Manuel Zubieta  University of New Orleans

**Room 132**

Panoptic Paradoxes: Control and Captivity in Morrison’s Beloved  
Patrick Boyd  Louisiana Tech University

The Fame Monster: Lady Gaga Versus Madonna and the Never Ending Battle of Blond Bombshells  
Gavin Johnson  Nicholls State University

The Wife of Bath: A Tragic Caricature of Women  
Lillian Grappe  Louisiana Tech University

**Room 133**

New Antioxidant Prenylated Benzophenone Derivative from Native Louisiana Species of Hypericum hypericoides  
Shreedu Pradhan and Anjela Manandhar  McNeese State University

Characterization of Ubiquitin/Proteasome-Dependent Degradation of Hap4 in the Regulation of Hap2/3/4  
Arielle Hunter  University of New Orleans

Is EROD Activity Affected by the Molting Cycle in the Fiddler Crab, Uca pugilator?  
Kate Hotard  Nicholls State University

10:45 a.m. - 11:45 a.m. .......................... Concurrent Sessions - Farrar Hall

**Room 112**

The Effect of Television on Senate Discourse  
Catherine David  McNeese State University

Is French Toast?: The Fall of French as the Leading Lingua Franca  
Kyle May  Northwestern State University

A Critical Assessment of the Incident Command System  
Al Landry and Elizabeth Mrak  Northwestern State University

**Room 114**

Torrefaction of Pine, Willow, and Arundo to Improve Fuel Characteristics  
Philip Aucoin  University of Louisiana at Lafayette

Expedient Wind Energy Potential in Louisiana  
Jasmin Honegger  University of Louisiana at Lafayette

Evaluation of Erosion for Coastal Highways and Levees  
Lane Blocker  McNeese State University
## Friday Agenda

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<td>The Impact of Virtual Classrooms in a Rural Community</td>
<td>Alana Sandidge</td>
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### Schedule

- **Noon - 12:30 p.m.** Lunch
  
  **Student Union - Parra Ballroom**

- **12:30 p.m. - 1:00 p.m.** Keynote Speaker - The American Alligator: From Marsh to Medicine
  
  Dr. Mark Merchant
  
  **Student Union - Parra Ballroom**

- **1:15 p.m. - 2:15 p.m.** Faculty Workshop - Faculty Roles in Undergraduate Research
  
  Dr. Katherine Whatley, Council of Undergraduate Research
  
  **Student Union - La Jeunesse Room**

- **1:15 p.m. – 2:15 p.m.** Concurrent Sessions - Farrar Hall

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Room 114
A Temperature Warning System Design
Gavin Richard  Grambling State University

Positron Lifetime Studies of Cu/Mn3O4 Core/Shell Nanoparticles
Damilola Fasheru  Grambling State University

Thermal and Morphological Characterization of Carbon Nanofiber Reinforced Low Density Polyethylene
Camille Hebert  University of Louisiana at Lafayette

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Insertion of a Used CIDR on Day 3 to 5 Post-Insemination in Heifers to Improve Pregnancy Rate
Heather Nordberg and Jennifer Veillon  McNeese State University

Bio-Ethanol Production from Eastern Gamagrass, Tripsacum dactyloides
David Samaha  Nicholls State University

Room 132
The Price of Education
Cody Culpepper  University of Louisiana at Monroe

Reflections of Mallarmé: A Comparative Study of Manet’s A Bar at the Folies-Bergère
Marguerite Li Bassi  Nicholls State University

Room 133
Species Delimitation of a Hybrizing Complex Through Phylogeographic Inference
George Tiley  Southeastern Louisiana University

Isolation and Characterization of Bacteria Inhibiting the Growth of Mycobacterium marinum
Ariane Martin  University of Louisiana at Lafayette

Determining If Louisiana Populations of Sheepshead Minnows (Cyprinodon variegatus) Practice Intra-Species Cleaning Behavior or Lepidophagy and Documenting Behavioral Interactions
Charles Johnson-Day  University of New Orleans

2:30 p.m. - 3:30 p.m. ........ Poster Presentations and Wrap Up
Memorial Gym

* Poster Presenters: Memorial Gym will be open at 8:30 a.m. on April 20 for setup. All posters must be set up by 10:30 a.m. when the room will be open for the general public. Student presenters must stand by their posters during the 2:30 - 3:30 p.m. designated presentation time. Posters must be taken down by 4:30 p.m., April 20.
Curriculum Redesigning of an Introductory Macroeconomics Course
Kimberly Waddles, Developmental Education, Grambling State University
FACULTY MENTOR(S): Dr. John Nwoha; Dr. Olatunde Ogunyemi
Macroeconomics is a “general education” course. With technology constantly evolving and online-learning becoming more popular, more and more students are turning to obtaining their degrees online. The curriculum design process reviews courses offered within various colleges to determine if the course is still needed, or to determine if modifications need to be made to improve the quality of the courses being offered in an effort to meet the needs of institutions, the community, and students as a whole. In the summer of 2011, Grambling State University’s Department of Business implemented a curriculum redesign of its Macroeconomics course.

American Education and the Impact of Reduced Resources
Bionca Ball, Social Work, Grambling State University
FACULTY MENTOR(S): Clarence Williams
Individualism imposes principal responsibility for both achievements and failures on the individual. For a child who is privileged, institutionalized individualism provides an endorsed explanation for his/her success. For minority, low income, and other non-dominant culture children, it acts to undermine the support from their family/community resources while embracing the misleading notion that opportunities abound for all. This study explores/describes the experiences of several students who encounter poor education systems and their individual perceptions of these systems. This study discusses the psychological/emotional/educational impacts of these systems on individuals.

A Temperature Warning System Design
Gavin Richard, Electronics Engineering Technology, Grambling State University
CO-INVESTIGATOR(S): Antonio Smith
FACULTY MENTOR(S): Dr. Shueh-Ji Lee
Temperature warning systems are in high demand for safety reasons. In this project, a temperature warning system was designed by using both hardware and software approaches. By hardware, the system was designed and constructed using electric/electronic components and devices. By software, a temperature sensing circuitry was constructed on NI-Elvis II, a computer integrated platform. The real time signal was acquired and processed by LabVIEW. Warning signals and actions are triggered off when the measured temperature is either above or below the set-points. Experiments were performed to demonstrate the performance of the designed system.

Positron Lifetime Studies of Cu/Mn3O4 Core/Shell Nanoparticles
Damilola Fasheru, Engineering Technology, Grambling State University
CO-INVESTIGATOR(S): Nachal D. Subramanian; James J. Spivey
FACULTY MENTOR(S): Dr. Naidu V. Seetala
A wet-chemical method was used for the synthesis of Cu core – porous Mn3O4 shell nanoparticles. We used positron lifetime spectroscopy to study the variations in nano-porosity due to oxidation. Positron lifetime in pure Cu has been reported to be 0.115 ns. Thus, the observed 0.169 ns value indicates that Cu-core has some disorders such as vacancies/dislocations. The positronium lifetime variations indicate that there is no significant change in the pore structure (pore size and concentration) due to oxidation. However, a drastic change in first and second lifetime components between as-made and oxidized particles indicates the oxidation of the Cu-core.

Implementing a Wireless Sensor Network
Stephen Ellis, Computer Science, Grambling State University
CO-INVESTIGATOR(S): Lorson Blair
FACULTY MENTOR(S): Yenumula B. Reddy
The Wireless sensor network using MEMSICS Professional Kit was designed and developed to collect the data based on events (temperature and light). Initially, we achieved the network functionality including connecting motes and transferring the data. Next, we developed a system to monitor light and temperature in four rooms in the TL James building. As a result, we programmed four of the motes with a custom program that collects and reports only light and temperature (humidity temperature and present temperature) back to the base station. Visualization software (MoteView) provided by MEMSIC was used to view and analyze the data.
Panoptic Paradoxes: Control and Captivity in Morrison’s Beloved
Patrick Boyd, English, Louisiana Tech University
FACULTY MENTOR(S): Dr. Dorothy Robbins
In my paper, I show how slavery serves as a panoptic prison system, or "constant surveillance" of captivity for the characters in Toni Morrison’s Beloved. I utilize contemporary social, feminist, and literary theories to demonstrate the connections between this sense of control slavery has on each character. I focus on spatial captivity with the main character, Sethe, and how this translates into a more psychological control when applying Foucaultian theory on the entire family. My intention is to show how relentless this type of control is on the psyche, as it is in a traditional panoptic system.

The Wife of Bath: a Tragic Caricature of Women
Lillian Grappe, English, Louisiana Tech University
FACULTY MENTOR(S): Dr. Robert Jungman; Dr. Dorothy Robbins
Alisoun of Bath has long been considered one of Chaucer’s most memorable characters, both for her candid vivacity and her spoken dedication to the concept of female “sovereynetee.” However, it is impossible not to detect the inconsistencies between what she avows and how she actually behaves. Through this interpretation, Alisoun’s Prologue and Tale can be seen as a tragic caricature of women in that she at once dismisses and embodies the misogynistic medieval stereotype, while also adhering to the suppressive ideals of the patriarchal power continuum she verbally abandons. This paper is a reexamination of Chaucer’s purportedly feminist masterpiece.

New Antioxidant Prenylated Benzophenone Derivative from Native Louisiana Species of Hypericum hypericoides
Shreedu Pradhan, Biochemistry, McNeese State University
CO-INVESTIGATOR(S): Anjela Manandhar
FACULTY MENTOR(S): Dr. Omar Christian
Oxidation plays a critical role in cell senescence and the progression of disorders like cancer and cardiovascular disease. Antioxidants are known to modulate several of these disease pathways. In our survey of plants native to Louisiana, a new prenylated benzophenone derivative was isolated from the ethyl acetate extract of the aerial parts of Hypericum hypericoides. Inspection of other plant parts yielded the known metabolites, 7-epiclusianone and clusianone. The structure and stereochemistry of the metabolites were determined by spectroscopic methods. The new derivative displayed antioxidant activity at a concentration of 1 mg/mL in the 3-(4,5-dimethylthiazole-2-yl)-2,5-diphenyltetrazolium bromide colorimetric assay.

Insertion of a Used CIDR on Day 3 to 5 Post-Insemination in Heifers to Improve Pregnancy Rate
Heather Nordberg, Agricultural Sciences, McNeese State University
CO-INVESTIGATOR(S): Jennifer Veillon
FACULTY MENTOR(S): Dr. Edward Ferguson
The study was designed to determine if increasing progesterone (P4) post-insemination could improve pregnancy rates. Beef heifers were randomly allotted to receive a controlled internal drug, P4, releasing device (CIDR) on day 3 to 5 or serve as a control. In Replicate 1, significantly more treated heifers became pregnant than control heifers (P < 0.05); however, there was no difference (P > 0.05) in the pregnancy rate in Replicate 2. Among control heifers in Replicate 2, pregnant heifers had significantly higher (P < 0.05) plasma P4 on day 4 and 5 compared with non-pregnant heifers.

Evaluation of Erosion for Coastal Highways and Levees
Lane Blocker, Mechanical Engineering, McNeese State University
FACULTY MENTOR(S): Dr. Ning Zhang; Dr. Zhaung Li
In this study, experimental analyses were conducted to uncover the erosion-causing flow physics, which aims to improve the erosion-resistant design of coastal structures. The impacts of wave actions, especially frequency components, on coastal structures were investigated. A test levee was built and placed on Long Beach, Cameron Parish, Louisiana. Real time wave action pressure data on the surface of the test levee were collected and analyzed. The frequency components of the pressure data agree with a numerical simulation that was conducted to view hidden anomalies inside the waves.
Undergraduate Research Oral Presentations

The Effect of Television on Senate Discourse
Catherine David, Government, McNeese State University
FACULTY MENTOR(S): Dr. Thomas Laehn

In 1986, the U.S. Senate voted to allow the televising of Senate proceedings. While proponents hoped the presence of cameras would improve the quality of Senate debates, opponents feared it would destroy the Senate’s character as a deliberative forum. To determine the true impact of television on senatorial speechmaking, a measure of the “deliberative richness” of legislative discourse was developed and applied to 5,251 speeches delivered on the Senate floor between 1979 and 1993. Employing logistic regression, it was found that the presence of cameras has resulted in a significant increase (p < 0.001) in the deliberative richness of senatorial discourse.

The Superhalogen Properties of Gold Oxide Nanoclusters
Sonia Adtani, Biochemistry, McNeese State University
CO-INVESTIGATOR(S): Pratik Koirala
FACULTY MENTOR(S): Dr. Anil Kandalam

Nanoclusters possessing anomalously large electron affinity (EA) values (EA > 3.7 eV) are termed “superhalogens.” Superhalogens play an important role in a wide variety of areas, such as oxidizing agents, nucleating centers of aerosols in the atmosphere, and bio-catalysis. The existence of several superhalogens were first predicted and later verified experimentally. In this work, we present results of our density functional theory-based calculations, along with supporting experimental results, of the superhalogen behavior of Au3Ox [x = 0 - 4] clusters. This is the first-time gold oxide clusters have been reported to show superhalogen characteristics.

“Take a Walk in My Shoes”: A Qualitative Analysis of Participant Impressions
Binita Adhikari, Nursing, Nicholls State University
CO-INVESTIGATOR(S): 13 other College of Nursing and Allied Health students
FACULTY MENTOR(S): Amanda Eymard

“Take a Walk in My Shoes” is an interactive, educational service-learning project for senior level nursing students that is designed to in-service health care employees at local hospitals and nursing homes. Through the use of simulation equipment, participants experienced the difficulties associated with activities of daily living experienced by geriatric clients. Results were generated through qualitative analysis of student journals and observations; major themes that were identified are “nervous/anxious”, “fun”, “teacher/educating”, and “empathy”. Participants expressed an increase in empathy and understanding with regard to the elderly. In conclusion, this project has the potential to be implemented in additional health care settings.

Reflections of Mallarmé: A Comparative Study of Manet’s A Bar at the Folies-Bergère
Marguerite Li Bassi, Art, Nicholls State University
FACULTY MENTOR(S): Dr. Deborah Cibelli

Given that painting and poetry are sister disciplines concerned with communication through the power of images and their symbolic meanings, I will argue the uncanny relevance of Mallarmé’s Hérodiade and The Afternoon of a Faun to Manet’s A Bar at the Folies Bergère. Manet, in the words of Mallarmé, “paints, not the object, but the effect” using forms that can be found in these poems which encompass Mallarmé’s most cherished ideations: Dream, Beauty, and Ideal. Haunting allusions to these themes subtly permeate the splendid, recondite imagery Manet developed for his last Salon entry and still resonate today.

The Fame Monster: Lady Gaga Versus Madonna and the Never Ending Battle of Blond Bombshells
Gavin Johnson, English, Nicholls State University
FACULTY MENTOR(S): Dr. Shana Walton

Rolling Stone magazine proclaimed Lady Gaga the “defining pop star” of 2009. However, there are those (critics, fans, etc.) who question Lady Gaga's artistic individuality and sincerity. In this presentation, I will reveal the striking similarities and the even more striking differences between Lady Gaga and her supposed muse Madonna. By comparing these two blond bombshells' musical style, fashion trends, media persona, fan followings, and personal philosophies with select feminist and postmodern theory I hope to settle the debate over artistic integrity of not only Lady Gaga, but also the pop stars she has supposedly “ripped off.”
Bio-Ethanol Production from Eastern Gamagrass, *Tripsacum dactyloides*

David Samaha, Environmental Science, Nicholls State University
FACULTY MENTOR(S): Dr. Raj Boopathy

Lignocellulosic ethanol production is a great option to meet the demand of energy for the transportation sector of our country. The production of ethanol from the local feed grass, eastern gamagrass (*Tripsacum dactyloides*), is very attractive because it grows well in the wet and marshy environment that is common in Southeast Louisiana. Using a pretreatment and fermentation we demonstrated that a promising amount of fuel grade ethanol could be produced from eastern gamagrass. However, further studies are needed to scale up the fermentation process to pilot scale and eventually commercial scale to meet the energy demand of our country.

Is EROD Activity Affected by the Molting Cycle in the Fiddler Crab, *Uca pugilator*?

Kate Hotard, Biology/Pre-Med, Nicholls State University
FACULTY MENTOR(S): Dr. Enmin Zou

If crustacean ethoxyresorufin O-deethylase (EROD) activity varies with the molting physiology, then the use of random crustacean EROD activity and whole tissue samples as biomarkers for pollution can be questioned. This study determined if mitochondrial or microsomal EROD activities in the hepatopancreas were affected by the molting physiology in the fiddler crab, *Uca pugilator*. Intermolt crabs were injected with the exogenous molting hormone 20-hydroxyecdysone. Results showed a significant increase in mitochondrial EROD activity suggesting that mitochondrial EROD activity is influenced by molting physiology. Only microsomal cell fractions should be used to perform crustacean EROD assays when evaluating aquatic pollution.

A Novel Mechanism for Regulating Glycolysis and Glutaminolysis During the Cell Cycle

Saul Carcamo, Liberal Arts/Scientific Inquiry, Northwestern State University
CO-INVESTIGATOR(S): Professor Sir Salvador Moncada, University College-London
FACULTY MENTOR(S): Dr. Curt Phifer

Cell division is critically important in human development and disease (e.g., cancer). Numerous proteins regulate cell division, and two protein complexes, SCF (SKP1/CUL-1/F-box protein) and APC/C (anaphase-promoting complex/cyclosome), control degradation of some of these proteins. These complexes also regulate the glycolysis-promoting enzyme 6-phosphofructo-2-kinase/fructose-2,6-bisphosphatase, and glutaminase 1, the enzyme that initiates glutamine breakdown. SCF and APC/C utilize ubiquitin, a protein that targets regulatory proteins for degradation using specific amino acids sequences called degradation motifs. Our discovery that SCF and APC/C use the same degradation motifs for regulating metabolism and cell division provides an important link between energy regulation and cell reproduction.

An Analysis of Adiponectin Levels in High Fat And mCMV Infected Mice

Bethany Lavergne, Liberal Arts/Scientific Inquiry/Biology, Northwestern State University
FACULTY MENTOR(S): Dr. Curt Phifer

Adiponectin is an anti-inflammatory molecule. An influx of anti-inflammatories may counteract the inflammation caused by disease. Certain diseases are directly correlated with inflammation in the host, such as cardiovascular disease, colitis, and atherosclerosis. Inflammation is also associated with adipose tissue since adiponectin levels usually increase with an increase in fat tissue. Understanding how disease and mild obesity affect inflammation could improve public health. To address whether inflammation increases under disease and mild obesity, adiponectin levels were measured by PCR in mildly obese mice infected with murine cytomegalovirus (mCMV). By measuring adiponectin levels, the activity related to inflammation can be observed.

Is French Toast?: The Fall of French as the Leading Lingua Franca

Kyle May, Liberal Arts/Foreign Language, Northwestern State University
FACULTY MENTOR(S): Dr. Lisa Wolffe

French was the dominant international language until the 20th century, but in 1919, the Treaty of Versailles was written in both French and English. The French language as a leading lingua franca reached its height during the reign of Louis XIV and the era of the salons. However, the French Revolution and Napoleonic Empire brought an end to the ancient regime and subsequently an end to the era in which French prestige originated. These events also helped English to take the mantle of leading lingua franca. The language repositioned itself, and it survives internationally today.
Concurrent Session Abstracts - Undergraduate Research Oral Presentations

Construction and Validation of a Stage-Classified Matrix Model of *Alligator mississippiensis*
Mary Hebert, Liberal Arts/Scientific Inquiry, Northwestern State University
FACULTY MENTOR(S): Dr. Margaret Cochran

The American alligator, *Alligator mississippiensis*, is a keystone species and ecosystem engineer. Once critically endangered, alligator populations in most regions have recovered, but continued conservation and management are still in effect to keep them in check. Due to the long-lived nature of this species and limited data on growth, mortality, and reproduction in the wild, few models exist to guide these efforts. Using techniques developed by Cochran and Ellner (1992), we used age-based measures of life history traits and population parameters to validate a stage-transition model. With elasticity analysis, we determined which stages contribute most to the population growth rate.

A Critical Assessment of the Incident Command System
Al Landry, Unified Public Safety Administration, Northwestern State University
CO-INVESTIGATOR(S): Elizabeth Mrak
FACULTY MENTOR(S): Dr. Jack Atherton

To address the response deficiencies identified after 9/11, use of the Incident Command System (ICS) was mandated. Although effective in fire services, researchers are critical of this decision. Issues of concern include appropriate utilization of volunteer personnel, integration of both hierarchy and network management philosophies, and elevation of a practitioner-based response strategy to the level of a federal bureaucracy. A review of the literature substantiates these concerns and indicates a need for regionalization of training. We suggest significant improvements would be realized by creating a partnership between state educational institutions and the emergency preparedness agencies to prepare responders.

Species Delimitation of a Hybrizing Complex Through Phylogeographic Inference
George Tiley, Biology, Southeastern Louisiana University
FACULTY MENTOR(S): Rick Miller

Morning glories generally exhibit low levels of hybridization between species. An exception to this notion is the monophyletic syngameon Ipomoea section Batatas. Strict molecular phylogenetic analyses have left the evolutionary relationships of this system unresolved. Thus a population geographic approach may be more appropriate. Statistical phylogeographic methods can be used to elucidate hybrid zones, introgression, and geographic reasons for isolation. These implications can further invoke complex patterns of species distributions and speciation. Hence our intent is to parameterize the evolutionary relationships among population samples of the named species in I. sect. Batatas, such that we might reconstruct their evolutionary history.

Comparison of Various Force Fields of GROMACS Using Polymer Matrix Systems
Daniel Huggett, Physics, Southeastern Louisiana University
FACULTY MENTOR(S): Dr. Hye-Young Kim

A series of Molecular Dynamic (MD) simulations have been performed on a simple polymer matrix system using GROMACS (Groningen Machine for Chemical Simulations) software. The matrix system contains 100 polymer chains, each chain with 100 carbon atoms. One of the major components in the simulation is the force field used. MD simulations have been performed for the same system using various force fields that are already implemented to GROMACS in order to compare and understand how the formulations and parameters of each force field affect the simulation result.

Implementing Learning Approaches
Lacey Williams, Computer Science, Southeastern Louisiana University
FACULTY MENTOR(S): Theresa Beaubouef

As part of my undergraduate research, I have studied different types of learning approaches, which are ways to enhance students’ knowledge of basic computer science skills. The three most common types of learning approaches are: verification-driven learning, test-driven learning, and problem-based learning. Each method brings something different, but valuable, to a classroom. They all differ from traditional teaching methods, and give students encouragement and advantages in their undergraduate career. All three of these learning methods can be effectively and efficiently implemented in the classroom. However, they are most effective when applied in the earliest CS courses.
Isolation and Characterization of Bacteria Inhibiting the Growth of Mycobacterium marinum

Ariane Martin, Biology, University of Louisiana at Lafayette
FACULTY MENTOR(S): Dr. Don Ennis

Worldwide, TB is one of the leading causes of death, second only to HIV. With an increasing percent of resistance to current antibiotics, alternatives must be researched. Luckily, bacteria naturally produce many types of bactericidal compounds and are potential, untapped resources for new antibiotics. Mycobacterium tuberculosis, the bacteria causing TB, is dangerous to work with and study. Fortunately, Mycobacterium marinum is a close relative, sharing 85% nucleotide identity. In the lab, a group of unidentified bacteria have been observed to inhibit the growth of M. marinum. These bacteria were identified to most likely be Pseudomonas stutzeri, which merits further research.

Torrefaction of Pine, Willow, and Arundo to Improve Fuel Characteristics

Philip Aucoin, Mechanical Engineering, University of Louisiana at Lafayette
FACULTY MENTOR(S): Dr. Prashanth Buchireddy

Torrefaction is a thermal pretreatment technology that serves as an important step in the utilization of biomass as a fuel source during thermochemical processing techniques, such as combustion, co-combustion, and gasification. The product from torrefaction has improved fuel properties in terms of increased mass energy density, possesses hydrophobic nature, and is more uniform, in comparison with unprocessed biomass. Also, the grindability characteristics of the torrefied biomass are greatly improved and are comparable with coal and petroleum coke. This allows for effective utilization of torrefied biomass in coal fired power plants using the existing burners with minor modifications.

Expedient Wind Energy Potential in Louisiana

Jasmin Honegger, Mechanical Engineering, University of Louisiana at Lafayette
FACULTY MENTOR(S): Dr. Yucheng Liu

Wind power is growing in popularity and usage, especially in countries such as China, the United States, and Germany. The United States is currently building more wind farms. Certain states are quite advantageous for benefiting from wind power and some have not implemented the use of wind power yet. Louisiana’s current involvement with wind energy is absent because Louisiana is primarily an oil and gas state. An overview of the development of this industry worldwide will validate that wind energy is a feasible source of green energy for Louisiana.

Thermal and Morphological Characterization of Carbon Nanofiber Reinforced Low Density Polyethylene

Camille Hebert, Chemical Engineering, University of Louisiana at Lafayette
FACULTY MENTOR(S): Dr. Ahmed Khattab; Dr. William Chirdon

The thermal and morphological characterization of low density polyethylene (LDPE) composites reinforced with carbon nanofibers (CNF) is presented in this study. CNF/LDPE composites with varying weight ratios were prepared and analyzed by differential scanning calorimetry (DSC) and cross polarized light microscopy. This thermal analysis provided significant information on the thermal histories of each specimen, and revealed an overall increase in crystallization temperature when compared to neat LDPE. Microscopic analysis provided visual representation of uniform CNF dispersion within the polymer matrix and independent spherulitic data.

A Comparison of Wason Selection Task Reasoning in Social and Non-Social Contextual Domains

Alexis Smith, Psychology, University of Louisiana at Monroe
FACULTY MENTOR(S): Dr. Jack A. Palmer

A large body of research using the Wason Selection Task supports the view that human cognitive architecture includes evolved reasoning programs that were shaped by selection for distinct adaptive problems, such as social exchange and evading hazards. The purpose of this study was to investigate further the nuances of social exchange by comparing human reasoning in the Social Exchange sub-domains of Social Stigma and Social Privilege to the non-social domain of Environmental Hazard. It was hypothesized that variations in the contextual domains for Wason Selection Task problems would affect the ability of participants to arrive at the logically correct solutions to these problems.
Concurrent Session Abstracts -
Undergraduate Research Oral Presentations

The Price of Education
Cody Culpepper, History, University of Louisiana at Monroe
FACULTY MENTOR(S): Monica Bontty
Without a doubt, the current education system for elementary, junior high, and high school has many issues that require attention. Creating an effective teacher payment system is one of these matters. However, using student performance to gauge teacher pay is not the most prudent course of action, as a teacher, a principal, several economists, and a scholarly study revealed. These changes have the potential to affect everyone from the students, to the teachers, all the way to the very administration that wants to set these changes in motion.

A Comparison of Significant Tornadoes in the Central Plains and Southeastern United States
Justin Pullin, Atmospheric Science, University of Louisiana at Monroe
FACULTY MENTOR(S): Larry Hopper
This study develops a climatology of storm structures that caused significant tornadoes between 2007-2010 in the Central Plains and Southeastern United States. Storms are analyzed using NEXRAD Level-II radar data to group them into discrete supercells, quasi-linear and mesoscale convective systems, or other storm types. Storms are further subdivided into mergers and non-mergers depending on whether or not tornadogenesis occurs within one hour of convective cells or lines merging. Statistical distributions of storm types and diurnal characteristics between the two regions are compared to help convey these regions' different tornado risks to society (Supported by the NSF/BoR's SURE program).

The Impact of Virtual Classrooms in a Rural Community
Alana Sandidge, Business Major - CBA, University of Louisiana at Monroe
FACULTY MENTOR(S): Dr. Arturo Rodriguez
A survey form, disseminated in the setting of a rural community, asked recipients their thoughts on virtual classrooms in a rural community. Individuals answered 12 multiple-choice questions, and two discussion questions. All subjects currently live or have lived in a rural community, which is relevant given the point of the research. Data collected provided information on community and student perception of online classes (both positive and negative).

Tradition, Culture, and the Effects of Colonialism in Things Fall Apart
Caitlin Fife, English Education, University of Louisiana at Monroe
FACULTY MENTOR(S): Dr. Helen Lock
Chinua Achebe's Things Fall Apart presents many issues that come along with colonialism. In Things Fall Apart, culture and tradition were challenged through the missionaries coming in to change the Igbo way of life. The Igbo people were beginning to question their values and traditions, so they quickly accepted these new European ways. Although Things Fall Apart is fictional, it is based upon true events which Achebe is trying to record to remind Nigerians of the past and what their culture once looked like.

Modeling Studies of the HIV GP160 Envelope Protein
Manuel Zubieta, Computer Science and Mathematics, University of New Orleans
CO-INVESTIGATOR(S): Seth Pincus (Research Institute for Children, LSUHSC); Ryan Craig (LSUHSC)
FACULTY MENTOR(S): Christopher Summa
The HIV surface protein GP160 (composed of 6 subunits) is displayed on the surface of the HIV virion and is required for viral fusion with cell membranes, making it an attractive target for HIV vaccines and design of protective antibodies. We presently know only the low-resolution architecture of the full GP160 complex from electron microscopy studies and partial high-resolution (X-ray and NMR) structures of the individual subunits from HIV and SIV. Using a combination of molecular modeling techniques, we present new high-resolution models of the complex consistent with experimental data, molecular energetics, and symmetry constraints to aid future experimental studies.
Determining If Louisiana Populations of Sheepshead Minnows (*Cyprinodon variegatus*) Practice Intra-Species Cleaning Behavior or Lepidophagy and Documenting Behavioral Interactions

Charles Johnson-Day, Earth and Environmental Science, University of New Orleans

FACULTY MENTOR(S): Dr. Martin T. O’Connell

Previous research suggested a freshwater fish, the sheepshead minnow (*Cyprinodon variegatus*) practiced cleaning behavior similar to that observed in coral reef fishes (Able 1976). Cleaning behavior was initiated when an individual fish assumed a 'head-up' position (Able 1976). I investigated Louisiana populations of *C. variegatus* to determine if they behaved similarly. I recorded the behavior of 30 males and 30 females of *C. variegatus* under laboratory conditions, and compared male-male, female-female, and male-female interactions. My results suggest that these fish are not cleaning one another. Their behavior more likely represents either courtship or dominance activity depending upon gender.

Characterization of Ubiquitin/Proteasome-Dependent Degradation of Hap4 in the Regulation of Hap2/3/4

Arielle Hunter, Biological Sciences, University of New Orleans

CO-INVESTIGATOR(S): Denise Capps; Mengying Chiang; Tammy Pracheil

FACULTY MENTOR(S): Zhengchang Liu

The Hap2/3/4/5 complex is a heme-activated, CCAATT binding, global transcriptional activator of genes involved in respiration and mitochondrial biogenesis in yeast species *Saccharomyces cerevisiae*. Hap4 is the regulatory subunit of the complex and its levels determine the activity of the complex. Little is known about the regulation of Hap4 levels or its response to a cell's functional state. It has been observed that the activity of Hap2-5 complex is reduced in respiratory-deficient cells. We have found a link between Hap4 stability, as mediated through 26S proteasome degradation and dependence on mitochondrial functional state, as playing a regulatory role on downstream targets of the Hap complex.
**Synthesis and Characterization of Polyimide-CNT Composite Films**  
Naeem Rull-Walker, Mathematics and Physics, Grambling State University  
CO-INVESTIGATOR(S): Cassandra R. Hendon; Johan Van Behr; Barry Hester  
FACULTY MENTOR(S): Dr. Naidu V. Seetala  
We prepared carbon nanotubes (CNT)-polyimide composites with 0 and 1 wt% single wall-, double wall- CNTs using BPADA, BAPP, and refluxing in NMP. The FT-IR spectra for all the samples showed the characteristic peaks of polyimide. TGA curves showed the residual weight at 750°C of ~ 40% for pure/functionalized-CNT polyimide composites, and ~ 80% for non-functionalizes-CNT polyimide composites. DSC curves of all samples showed two distinguishable endothermic peaks at around 90°C and 200°C. Positron lifetime has a correlation with tensile strength showing a decrease in tensile strength with increasing pore size in CNT-polyimide composites.

**Pseudo Five-Component Synthesis of Benzo[g]chromenes**  
Lynsey Carrier, Biology, Grambling State University  
FACULTY MENTOR(S): Dr. Tony L. Perry  
Multi-component reaction that affords high-functionalized benzo[g]chromenes is reported. The overall transformation consists of three reactions: Dehydration, Vilsmeier-Haack and Knoevenagel condensation.

**A Study of Polaron and Exciton Transport in Organic Semi-Conductors**  
Verne Edward, Physics, Grambling State University  
CO- INVESTIGATOR(S): Nenian Charles  
FACULTY MENTOR(S): Pedro Derosa  
The popularity of organic semiconductors for use in microelectronics has grown in both academia and industry. Several models have been developed within a variety of theoretical frameworks. We describe here our progress towards an integrated model able to account for charge transport in conductive polymers under different regimes, including polaron-free transport, polaron transport and exciton transport in realistic geometrical arrangements. In the first step, polaron transport based on the Marcus formalism. The results are compared with the (modified) time-of-flight experiment (Tofet) algorithm developed by Kwiatkowski et al., and experimental results.

**Exploring Social Identities, Symbols, and Architectural Designs in a Rural Black Cemetery**  
Barry Calahan, Sociology, Grambling State University  
CO- INVESTIGATOR(S): Ayanna Dugas; Devita Edwards; Danielle Martin; Kimberly Campbell  
FACULTY MENTOR(S): Dr. Frances Staten; Mr. Clarence Williams  
This study explored social identities and symbols in a rural black cemetery in Northern Louisiana. Tombstones and grave markers were used to obtain social/demographic information about historical families of the late 1800s to present. They were also used to identify artifacts depicting the cultural practices, beliefs, and values of the deceased. Some of the preliminary findings included: the identification of a co-founder of Grambling State University; the inscription on a tombstone which identifies who requested the first president of Grambling to come; a tomb with a picture of a piano and a car, suggesting maybe the occupation of the couple.

**A Solar Tracker System Design**  
Jelani Ali, Electronics Engineering Technology, Grambling State University  
FACULTY MENTOR(S): Dr. Shueh-Ji Lee  
A solar tracker is a device that orients payloads toward the sun. The objective of this project is to design a pilot solar tracker system to improve the energy conversion efficiency of solar panels. The designed system consists of a servo motor, polycrystalline solar panels, sensors, a 555 timer, and other components. The photo sensors which react to sunlight are integrated with the timer circuit to generate pulse signals to control the motor action. The NI MultiSim was used to simulate and troubleshoot this system. The prototype of the system was constructed and tested. Experimental results demonstrated the efficiency improvement of the designed system.
Undergraduate Research Poster Presentation Abstracts

Selective Separation of Biomass Hydrolysates by Supported Ionic Liquid Membranes
Holly Butcher, Nanosystems Engineering, Louisiana Tech University
CO-INVESTIGATOR(S): Fred Zhao
FACULTY MENTOR(S): Daniel F. Shantz (Texas A&M University)
This project investigates the use of Trihexyltetradecylphosphonium bis(2,4,4-trimethylepentyl)phosphinate, an ionic liquid, in conjunction with a supported liquid membrane of Polypropylene to selectively separate biomass hydrosates: glucose, xylose, furfural, levulinic acid, formic acid, and acetic acid. The transport properties were studied for mixtures of the biomass hydrolysates and the results of these tests were analyzed using high performance liquid chromatography. The permeability for each of the compounds in the mixture was found. The permeability for the acids and furfural were much higher than xylose and glucose. This shows that the SILM is capable of selectively separating the sugars from the other products.

Effects of Genistein on Phototropism and Gravitropism in Green Bean Seedlings
Mitchell McCarthy, Environmental Science, Louisiana Tech University
CO-INVESTIGATOR(S): Yogesh Ghimire
FACULTY MENTOR(S): Thea Edwards
Auxin is a primary plant hormone that regulates lateral growth, phototropism, and gravitropism. We investigated whether or not genistein, a phytoestrogen, affects the plant's phototropic and gravitropic responses. Seeds were germinated in water containing one of four doses of genistein, plus control. After 5 days of growth, the rhizotrons were turned 90 degrees from their original orientation. We measured the angle of the stems and roots as they turned in response to the new orientation relative to gravity and the overhead light source. The purpose of this study was to determine the effects of genistein, a phytoestrogen, on the development of green bean seedlings.

Phytoestrogen Variation Among Organs of Soybeans over the Span of Three Growth Stages
Howard Morgan, Biology, Louisiana Tech University
CO-INVESTIGATOR(S): Sunita Maharjan
FACULTY MENTOR(S): Thea M. Edwards
We collected tissue samples from different organs of soybeans at various growth stages to examine how phytoestrogen concentrations vary throughout the plant over time. For phytoestrogen analysis, fresh plant tissues from leaves, roots, shoots, stems, seeds, pods, and flowers were disrupted using a blender or mortar and pestle and extracted for 24 to 48 hours in 55% ethanol. Extracts were filtered, concentrated by evaporation under nitrogen, and reconstituted to a known concentration. Extracts were tested for estrogenicity using a yeast reporter gene system expressing human ESR1 and ESR2. Our results suggest that phytoestrogen concentrations vary among plant organs.

Urban Ecology of Water Bears in Southwest Louisiana
Cari Samletzka, Biology & Biochemistry, McNeese State University
FACULTY MENTOR(S): Dr. Julianna Hinton
Urban ecology of tardigrades in Southwest Louisiana is a research project aimed at determining the effect of commercial development on tardigrades. Tardigrades were collected from lichens, moss, tree fern, and leaf litter from 10 different sites located in rural Sam Houston Jones State Park (SHJSP) and urban areas of Lake Charles, Louisiana. Areas selected included developed and underdeveloped regions. Once collected, they were fixed for identification. Data indicated greater density in SHJSP and greater diversity in Lake Charles. Samples analyzed were 68% and 50% positive respectively for tardigrades. The most common species found was Minibiotis acadianus.

Jupiter Chemical Company Incident, Lake Charles, Louisiana, January 15, 1976
Sonja Renee' Davis, History, McNeese State University
FACULTY MENTOR(S): Dr. Janet Allured
Research on circumstances leading to the violence at the Jupiter Chemical Company on January 15, 1976, was conducted, including the individuals responsible for orchestrating the attack, the consequences of the violence, and its effect on the passage of Right-to-Work legislation in Louisiana. Newspapers, court records, and interviews with law enforcement and union leaders were the main sources. Only one person served a short prison sentence for the violence. Right-to-Work legislation passed the Louisiana Legislature July 6, 1976, as a direct result of events that happened at Jupiter. Labor unions also lost their power, influence, and members.
Lack of Effect of Dehydration on Cutaneous Resistance to Evaporative Water Loss in Green Tree Frogs
Caitlin Richard, Biological Sciences & Visual Arts, McNeese State University
FACULTY MENTOR(S): Dr. Mark Wygoda
This study aimed to determine whether dehydration causes increased cutaneous resistance to evaporative water loss (EWL) in *Hyla cinerea*. Total resistance was determined by measuring EWL and body temperature of 10 animals at varying hydration states using a wind tunnel measuring system. Boundary layer resistance was determined using agar replicas. Hydration state had no effect on cutaneous resistance. Based on evidence of increased ventral skin blood flow, circulating levels of arginine vasotocin and angiotensin II likely were elevated. Thus, water loss reduction appears not to be controlled by the same factors that govern the rate of water uptake.

The Representation of Obsessive Compulsive Disorder in Film-Accurate or Inaccurate?
Jesse Freeman, Mass Communication, McNeese State University
FACULTY MENTOR(S): Tracy Standley
Mental health disorders are misunderstood and stigmatized. The objective of this research is to expose this stigmatization. Three movies containing a character with obsessive compulsive disorder (OCD) were screened for accurate and inaccurate symptoms of the disorder as exhibited by the afflicted character. After screening, it was found that two of the three movies contained a large proportion of inaccurate symptoms that accounted for 36% of symptoms shown. With this many inaccurate OCD symptoms portrayed in film, it is difficult for individuals ignorant of mental disorders to know what the disorders actually entail. This leads to inaccurate public perception of the disorder.

Characterization of Serum Phospholipase A\textsubscript{2} Activity in Three Species of West African Crocodiles
Taylor Hood, Chemistry & Biochemistry, McNeese State University
FACULTY MENTOR(S): Dr. Mark Merchant
Phospholipase A\textsubscript{2} (PLA\textsubscript{2}), an enzyme that exhibits immunological activity, was measured in the serum of three species of diverse West African crocodiles. Incubation of different volumes of serum with bacteria labeled with a fluorescent fatty acid in membrane lipids, resulted in titer-dependent activity. The Nile crocodile (*Crocodylus niloticus*) exhibited slightly higher activity than the slender-snouted crocodile (*Mecistops cataphractus*) and the African dwarf crocodile (*Osteolaemus tetraspis*). Product formation was inhibited by p-bromophenacyl bromide, a specific PLA\textsubscript{2} inhibitor, and kinetic analysis showed that *C. niloticus* serum produced product more rapidly than *M. cataphractus* or *O. tetraspis*. Serum from all three crocodilians exhibited temperature-dependent activities, but with slightly different thermal profiles.

Growth of Smooth Cordgrass Is Increased by Adding Fiddler Crabs
Aimee Hafkesbring, Environmental Biology, Nicholls State University
FACULTY MENTOR(S): Dr. Gary LaFleur, Jr. and Dr. Quenton Fontenot
To support the restoration of coastal Louisiana, there is a high demand to cultivate Smooth Cordgrass *Spartina alterniflora*. We tested whether Spartina growth in the presence of the Long-wave Fiddler Crab *Uca longisignalis* was different from Spartina growth without the fiddler crab by culturing plants in greenhouse microcosms. Average plant lengths from three replicates were 59.71 +/- 19.33 cm with no crabs, 61.16 +/- 18.83 cm with 6 crabs, 75.75 +/- 7.74 cm with 12 crabs, and 78.75 +/- 10.1 cm with 24 crabs. We suggest that the growth of Spartina is increased in the presence of fiddler crabs.

The Transgender Community in South Louisiana: An Initial Investigation
Peter Jenkins, Government, Nicholls State University
FACULTY MENTOR(S): Dr. Shana Walton
People who fall into the category of transgender have been “othered” by the majority in most societies throughout history. Despite the advancements made in the area of human rights over the past two centuries this group has maintained the same level of stigma. The people of Louisiana who fall into the transgender category have never been the object of cultural research, and remain, for the most part, a submerged cultural identity. This paper focuses on what it means to be transgender in South Louisiana, drawing on ethnographic research conducted in the fall of 2010 with people who identify as a part of the transgender continuum.
Biocontrol of *Vibrio harveyi* in Shrimp Aquaculture with Host Specific Lytic Bacteriophage

Lillian Barber, Biology, Nicholls State University

CO-INVESTIGATOR(S): Lyndi Matherne; Elizabeth Bergeron, and Angela L. Corbin, Department of Biological Sciences

FACULTY MENTOR(S): Angela Corbin

The current decline in shrimp farm production has been related to a variety of issues associated with survivability of shrimp grown in the aquaculture setting. The presence of Vibrio pathogens has been identified as a cause of high mortality in the post larval and juvenile shrimp in aquaculture. The use of bacteriophage to control infections has seen increased interest with the emergence of antibiotic resistant pathogens in a variety of human and animal infections. The use of a host-specific bacteriophage with lytic activity may be effective at controlling *Vibrio harveyi* in recirculating aquaculture systems for shrimp in the larval, post larval, and juvenile stages.

A Regional GIS Initiative to Standardize Road Center Line Dataset for Mission Critical Applications

Janssen Robichaux, Geomatics, Nicholls State University

FACULTY MENTOR(S): Dr. Balaji Ramachandran

Nicholls State University Geospatial Technology Center (GTC) has been conducting a research project involving the road databases of seven parishes in the region. The main objective of this project is to produce a regional standardized dataset for integration with other datasets in a Geographic Information System (GIS) application. The datasets were standardized using the Urban and Regional Information Systems and Association (URISA), United States Postal Service (USPS), and parish address standards. The standardized dataset increased the spatial and attribute accuracy which is important in mission critical applications such as emergency response, post-hurricane recovery, school bus routing, and waste management.

In Praise of Stan Brakhage’s Vision: Mainstream Cinema and the Avant-Garde

Ross Durocher, Art, Nicholls State University

FACULTY MENTOR(S): Dr. Deborah Cibelli

Stan Brakhage’s filmmaking has influenced mainstream cinema and forged a link between avant-garde art and Hollywood movies. With his innovative use of camera movement, camera placement, and his painterly use of color, Brakhage changed the world of experimental film. My research provides a comparison of the techniques used by Brakhage with more modern, mainstream work by contemporary filmmakers. Visual analysis yields evidence of the appropriation of Brakhage’s style, particularly when portraying intense psychological abnormality.

Investigations into Alignment of Carbon Nanotubes (CNTs) in Nanocomposites Using Fluorescence Spectr

Serena Senegal, Chemistry, Northwestern State University

CO-INVESTIGATOR(S): Kena M. Senegal; Tamika Thomas; Dr. Bruce Weisman (Rice University)

FACULTY MENTOR(S): Dr. Paul Withey

Carbon Nanotubes (CNTs) in nanocomposites have exceptional strengths which can be advantageous if and only if they are both dispersed and aligned. We tested for alignment in a variety of samples, using synthetic nanolithography, magnetism, and electric fields. We found signals of alignment in samples that were made using synthetic nanolithography and electric field techniques. A possible implication of this research is that our techniques may be used to design coating materials with exceptional strength properties that can be used in areas of mechanics.

Can Positive Thoughts Prevent Illnesses?

Jasmine Scott, Psychology, Northwestern State University

FACULTY MENTOR(S): Dr. Curt Phifer

Do positive thoughts facilitate optimal health? The Perceived Stress Scale (PSS, Cohen et al., 1983), the most widely used psychological instrument for measuring the perception of stress, was administered to 85 undergraduate students from Northwestern State University along with a survey asking them to circle illnesses they had experienced in the last month. Participants were sent daily messages containing positive thoughts for 21 days and the questionnaires were readministered. A paired sample t-test showed that thinking positive thoughts reduced stress levels and the number of illnesses. The moderating hypothesis that positive thoughts help decrease health problems was confirmed.
Cellular Localization of TRPV2 and Molecular Mechanisms of TRPV2 Translocation

Christian Marks, Liberal Arts/Scientific Inquiry, Northwestern State University

CO-INVESTIGATOR(S): Matthew R. Cohen; Hisashi Fujioka; Mariana Rosca; Charles L. Hoppel; Vera Moiseenkova-Bell (Case Western Reserve University)

FACULTY MENTOR(S): Dr. Margaret Cochran

Transient receptor potential (TRP) channels perform a diverse range of functions throughout the body. The function of the ubiquitously expressed TRPV2 protein is unknown. Preliminary immunoprecipitation experiments probing for binding partners that may affect TRPV2 trafficking in mouse brain lysate revealed Norbin as a candidate. Co-immunoprecipitation experiments confirmed TRPV2 and Norbin as binding partners under physiological conditions. Immunofluorescence showed that TRPV2 and Norbin co-localize in human neuroblastoma cells. When TRPV2 and Norbin were inserted into an overexpression system, the proteins did not co-immunoprecipitate. This discovery leads to questions about the direct binding capability of Norbin to TRPV2.

Histologic Types and Risk Factors in Familial Lung Cancer Cases from Southern Louisiana

Matthew Haskins, Liberal Arts/Scientific Inquiry, Northwestern State University

CO-INVESTIGATOR(S): Angelle Bencaz; Jill Hutchinson; and Diptasri Mandal (PI) (Louisiana State University Health Sciences Center-New Orleans)

FACULTY MENTOR(S): Dr. Margaret Cochran

Histologic subtypes and their association with smoking behaviors and other risk factors contribute to familial lung cancer cases. Diagnosis of primary lung cancer was confirmed through medical records of 148 patients with two or more relatives affected with primary lung cancer; histologic subtype was determined for 114. Age of diagnosis did not differ between cases with non-small cell lung cancer and those with small cell lung cancer and mean number of pack years was twice as high in cases with non-small cell lung cancer. These results suggest the need for population-specific evaluation of risk factors in familial lung cancer cases.

Morphological Variation and Trophic Partitioning Among Central Mexican Lake Silversides

Daniel Powell, Biology, Southeastern Louisiana University

FACULTY MENTOR(S): Dr. Kyle Piller

Central Mexican Lakes Silversides species (i.e. Chirostoma) show limited genetic variation for individuals with significant levels of morphological variation. Trophic partitioning is believed to influence the elevated diversity in the region but is not well understood. This study examined the association between diet and morphology, focusing on internal digestive anatomy and head shape. Dissections were performed to determine relative intestine length as related to trophic position. No clear relationship was determined. Head shape was analyzed using geometric morphometric analysis to help quantify replicated patterns of divergence between lakes. Results largely support independent divergence along the same axes in mophospace.

Web-Based Case Studies for Verification-Driven CS Learning

Joseph Desselle, Computer Science, Southeastern Louisiana University

FACULTY MENTOR(S): Dr. Wendy Zhang; Dr. Theresa Beaubouef

Students typically learn to program by beginning with simple coding requirements and work their way into more difficult and complex systems. This approach exposes students to advanced coding and design techniques in existing code with the goal of having them learn to program by figuring out things that are incorrect in this code. Students using the test cases are able to practice their problem-solving and debugging skills, while students developing the cases are putting into practice their experience in design, coding, and user interaction.

Thermal Lensing Effect on a Beam Splitter of a Michelson Interferometer

Ramesh Shrestha, Physics, Southeastern Louisiana University

FACULTY MENTOR(S): Dr. Sanichiro Yoshida

With ground-based, laser interferometric gravitational wave detectors in mind, laser-induced thermal effects in the beam splitter of a Michelson type interferometer are discussed. Thermal lensing effect on beam splitter arising from the non-spatial heat distribution has been discussed. A finite element model has been built to compute the temperature profile in the beam splitter. The optical phase shift resulting from the temperature dependence of the refractive index has been analyzed.
Characterization of Thin-Film Adhesion with Michelson Interferometer
Sushovit Adhikari, Physics, Southeastern Louisiana University
FACULTY MENTOR(S): Dr. Sanichiro Yoshida
A Michelson Interferometer is used to evaluate the adhesion strength of thin-film systems. The specimens (gold-coated silicon wafers) are configured as the end mirrors and are driven from rear with an acoustic transducer so that the specimens oscillate parallel to optical axis at moderate frequencies. The resulting film surface displacement is detected as a fringe shift of the interference intensity pattern behind the beam splitter with a digital imaging system. The difference in adhesion strength between two types of specimens is successfully visualized as the difference in the fringe contrast. Fourier analysis on the fringe pattern quantifies the fringe contrast.

Torrefaction of Pine, Willow, and Arundo to Improve Fuel Characteristics
Molli Dugas, Mechanical Engineering, University of Louisiana at Lafayette
CO-INVESTIGATOR(S): Ethan Wyble
FACULTY MENTOR(S): Prof. Prashanth R. Buchirreddy; Dr. John L. Guillory
Torrefaction is an important step in using biomass as a fuel source. The advantages of torrefaction are in the product. The product is a torrefied biomass that has a higher mass energy density, possesses a hydrophobic nature, and is more uniform in comparison with unprocessed biomass. Also, the grindability characteristics of torrefied biomass greatly improve and are comparable with coal and coke. Tests are being conducted on lab scale to evaluate the effect of torrefaction on biomass properties. The effect of torrefaction on heating value, grindability, and hydrophobicity of pine feedstock has been determined and will be presented.

Use of Sandpacks to Test Oil Recovery Methods
Stephen Schafer, Petroleum Engineering, University of Louisiana at Lafayette
FACULTY MENTOR(S): Dr. Rich Carlus
Sandpack studies are useful to simulate reservoir conditions and determine the effectiveness of chemical compounds for Enhanced Oil Recovery (EOR). The purpose of the experiments was to test the effectiveness of various compounds by determining the percentage of crude oil they could extract from a sandpack. The results from these would be contrasted to determine which liquids were effective for EOR. The experiments proved that simple water-flooding extracts approximately 0.05% more crude oil than freshwater. This gives a very consistent control group.

Middle School Solar Energy Education
Daniel Newman, Mechanical Engineering, University of Louisiana at Lafayette
FACULTY MENTOR(S): Dr. Johnathan Rausch
Designed as an educational tool to teach middle school students about what solar energy is, why we should use it, and how it works, the poster will focus on using parabolic troughs to power a solar thermal power plant and the basics of how that process works. Additionally, it highlights the research being done by UL Lafayette in this particular area in order to portray the fact that this university is leading Louisiana in renewable energy research. The accompanying model parabolic trough will serve as a tactile educational tool for the students who will be able to build and test it in order to ignite an interest in renewable energy.

Copper Precipitate in Steel
Khang Mai, Chemical Engineering, University of Louisiana at Lafayette
FACULTY MENTOR(S): Dr. Devish Misra; Dr. Zhiyong Jia
The phenomenon of high strength in steel, induced by copper precipitate, was investigated using a combination of metallographic and microscopic techniques in conjunction with the determination of mechanical properties. It was observed that the presence of copper precipitate during the aging process increased the strength of the steel from 495 MPa to 526 MPa. The investigation confirmed that copper is a viable element to be used to increase the strength of steel for structural application.
Undergraduate Research Poster Presentation Abstracts

Discrete Time Juvenile Adult Beverton Holt Type Model
Jesse Pope, Mathematics, University of Louisiana at Monroe
FACULTY MENTOR(S): Youssef M. Dib; Mariette R. Maroun

We propose a discrete time juvenile model where survivorship of juvenile stage to adult stage depends on the multiple of these two stages. This survivorship is of Beverton-Holt Type. Equilibria study, local asymptotic stability, and bifurcation analysis are studied depending on the net recruit number (R) of juvenile per life time of a single species of this model. It is also shown that this model depends on initial conditions. Numerical sensitivity study is also provided to show that solutions going through the saddle equilibrium may crash or stay positive depending on initial conditions as well when R > 1.

Costly Signaling and Moral Behavior
Logan Hale, Psychology, University of Louisiana at Monroe
FACULTY MENTOR(S): Dr. Jack Palmer

Costly Signaling Theory (CST) explains costly, altruistic acts by arguing that such individually problematic acts may benefit the altruist indirectly by establishing a positively perceived reputation for the individual. The purpose of this study was to compare undergraduate participants from conservative Christian backgrounds in the strength of their convictions (religiosity) to these costly signals, as well as other seemingly related beliefs, on a 7-point Likert scale. Using SPSS, significant correlations were found between religiosity and several types of altruism. With regards to religiosity, the strength of correlations with types of altruism increased as rewards for altruism became less apparent.

Use of Novel Restriction Digestion Patterns to Predict Cluster Assignment of Mycobacteriophage
Amanda Scott, Biology, University of Louisiana at Monroe
CO-INVESTIGATOR(S): Daniel Bonnette
FACULTY MENTOR(S): A.M. Findley; C.R. Gissendanner; A.D.M. Wiedemeier

Mycobacteriophages were isolated from soil samples via direct plating or enrichment. Isolates were subjected to spot testing, repetitive purification plating, and an empirical testing protocol that led to the harvesting of high-titer lysates. DNA was isolated from each phage and characterized with a battery of 13 restriction enzymes to gain additional insight into their probable cluster assignment. Our analysis resulted in the following predictions: Hades = F1; JAWS = K; Tarball = A4. Mycobacteriophage sp. JAWS and Hades were finished and annotated using the Consed, Glimmer/GeneMark and Phamerator programs and the predictive power of our approach was confirmed.

The Evaluation of Novel Beta-lactam Antibiotics on Clinical Bacterial Isolates
Melvin Grimes, Biology, University of Louisiana at Monroe
CO-INVESTIGATOR(S): Adrienne Murphy
FACULTY MENTOR(S): Dr. Debra Jackson

The distribution and occurrence of multi-drug resistant bacteria is an increasing public health problem. The emergence of resistant bacteria makes the task of synthesizing new antibiotics imperative to combating these bacteria. In this study, new beta-lactam antibiotics are tested for broad spectrum activity using clinical E. coli and Staphylococcus aureus strains. The clinical isolates were grown on Mueller Hinton (MH) agar. The novel beta-lactam antibiotics were placed on sterile disc and placed on the MH plates, incubated overnight, and each zone of inhibition was measured. Our results show several novel antibiotics are effective against the clinical isolates.

SCIAMACHY Data Validation Using MODIS Band Spectral Response Function
Brody Bourque, Atmospheric Science, University of Louisiana at Monroe
FACULTY MENTOR(S): Constantine Lukashin; Anne Case Hanks

Due to the increasing concern of global climate change, it is important that spaceborne sensors are properly calibrated to ensure the most accurate and consistent observations possible. In an effort to test the accuracy of the instruments relevant to climate studies, we developed algorithms to validate calibration of instruments used in climate research – SCIAMACHY/ENVISAT – with the goal of inter-calibration with MODIS/TERRA. To make SCIAMACHY and MODIS measurements comparable, first, the spectral convolution algorithm was used to simulate MODIS narrow-band measurement. Then, we obtained seasonal averages of nadir reflectance measured over clear sky ocean and deep convective clouds scenes using MODIS Relative Spectral Response (RSR) for bands in visible wavelength range.
Synthesis of a-O-benzyl 2-D-glucosamine Derivatives as Organogelators

Sadia Akram, Biological Sciences & Chemistry, University of New Orleans
CO-INVESTIGATOR(S): Hari Prasad Reddy Mangunuru
FACULTY MENTOR(S): Dr. Guijun Wang

Low molecular weight gelators (LMWGs) are molecules that can convert liquids into gels. The formation of supramolecular gels is based on non-covalent intermolecular forces; therefore, the gels are reversible. We have been working on carbohydrate based LMWGs and found key structure features that will facilitate the gelation. In this research, we designed and synthesized a-O-benzyl glycoside of D-glucosamine analogs and evaluated their self-assembling properties in several solvents. In this presentation, the synthesis and gelation properties of these novel analogs will be reported.

Cytosolic Role for a Nuclear RNA Binding Protein.

Jenisha Ghimire, Biological Sciences, University of New Orleans
CO-INVESTIGATOR(S): Patricia Dehon
FACULTY MENTOR(S): Mary J. Clancy

Ime4 protein is essential for sporulation in yeast cells and for viability of higher eukaryotic cells. The precise locations of the Ime4 protein and the functions of the Ime4-mediated methylated mRNA are still largely unknown. We have observed the yeast Ime4 protein in the nucleus, in the cytosol, and within cytosolic particles. We tested the hypothesis that the punctate cytosolic particles formed by Ime4 are P bodies, aggregates of proteins and RNAs formed as a result of stresses. Our experiments concluded that the Ime4 granules are not P-bodies and could rather represent a different type of RNP granules.

Secondary Protein Structure Analysis of Cu, Zn Superoxide Dismutase Aggregates Found in ALS

Daphne Meza, Mechanical Engineering, University of New Orleans
CO-INVESTIGATOR(S): Megan Bourassa (Stony Brook University); Joan S. Valentine (University of California); David R. Borchelt (University of Florida); Lisa Miller (Brookhaven National Laboratory)
FACULTY MENTOR(S): Dr. Ashok Puri

This study seeks to compare the secondary structure of the protein aggregates in four common mutations of Cu/Zn Superoxide Dismutase (SOD1) in order to understand how SOD1 mutant protein aggregates cause motor neuron cell apoptosis. Chinese hamster ovary (CHO) cells were grown on silicon nitride windows and transfected to express SOD1 mutations (A4V, H80R, D125H, G37R, wild type, and non-transgenic controls) co-expressed with yellow fluorescent protein. CHO cells were later subjected to transmission mode Fourier transform infrared spectroscopy from which amide I peaks was analyzed for protein secondary structures. Different transfection time rates with different degrees of aggregation were discovered among the mutations.

Measurement of Critical Switching Curve of Interacting Nanomagnets

Rabin Haiju, Physics, University of New Orleans
CO-INVESTIGATOR(S): Jose Marcelo Vargas
FACULTY MENTOR(S): Dr. Leonard Spinu

In this work we present a study of static and dynamic properties of two-dimensional arrays of permalloy (Py) Ni80Fe20 ellipsoidal nanomagnets. The samples were studied by dc-magnetization and reversible susceptibility measurements. The magnetization loops at room temperature showed wasp-waisted shapes that can be correlated with the magnetic shape anisotropy contribution of these samples. The critical curves were measured by the method of reversible susceptibility, where the angular variation was conducted with magnetic field in plane.
University of Louisiana System
Service-Learning Council

GRAMBLING STATE UNIVERSITY
Dr. Rory Bedford
bedfordr@gram.edu

LOUISIANA TECH UNIVERSITY
Nancy Darland
ndarland@latech.edu

MCNEESE STATE UNIVERSITY
Dr. Michael Buckles
mbuckles@mcneese.edu

NICHOLLS STATE UNIVERSITY
Dr. Morris Coats
Morris.Coats@nicholls.edu

NORTHWESTERN STATE UNIVERSITY
Steve Gruesbeck, Chair
sgruesbeck@nsula.edu

SOUTHEASTERN LOUISIANA UNIVERSITY
Dr. Tena Golding
tgolding@selu.edu

UNIVERSITY OF LOUISIANA AT LAFAYETTE
Dr. David Yarbrough
dny4423@louisiana.edu

UNIVERSITY OF LOUISIANA AT MONROE
Dr. Sandra Hill
shill@ulm.edu

UNIVERSITY OF NEW ORLEANS
Susan Danielson
sndaniel@uno.edu

NORTHWESTERN STATE UNIVERSITY
Mathew Cochran
Cochran@nsula.edu

SOUTHEASTERN LOUISIANA UNIVERSITY
Dr. Gerard Blanchard
gblanchard@selu.edu

UNIVERSITY OF LOUISIANA AT LAFAYETTE
Dr. Terry Chambers
tlchambers@louisiana.edu

UNIVERSITY OF LOUISIANA AT MONROE
Dr. Anne Case Hanks
casehanks@ulm.edu

UNIVERSITY OF LOUISIANA SYSTEM
Jackie Tisdell
jtisdell@uls.state.la.us

UNIVERSITY OF NEW ORLEANS
Dr. Steve Johnson
sgjohnso@uno.edu

UNIVERSITY OF LOUISIANA SYSTEM
Dr. Brad O’Hara
bohara@uls.state.la.us

University of Louisiana System
Undergraduate Research Council

GRAMBLING STATE UNIVERSITY
Dr. Shueh-Ji Lee
leesj@gram.edu

LOUISIANA TECH UNIVERSITY
Dr. Bill Campbell
Campbell@latech.edu

MCNEESE STATE UNIVERSITY
Janet Woolman
jwoolman@mcneese.edu

NICHOLLS STATE UNIVERSITY
Ms. Debi Benoit
debi.benoit@nicholls.edu

NORTHWESTERN STATE UNIVERSITY
Dr. Margaret Cochran
Cochran@nsula.edu

SOUTHEASTERN LOUISIANA UNIVERSITY
Dr. Gerard Blanchard
gblanchard@selu.edu

UNIVERSITY OF LOUISIANA AT LAFAYETTE
Dr. Terry Chambers
tlchambers@louisiana.edu

UNIVERSITY OF LOUISIANA AT MONROE
Dr. Anne Case Hanks
casehanks@ulm.edu

UNIVERSITY OF NEW ORLEANS
Dr. Steve Johnson
sgjohnso@uno.edu

UNIVERSITY OF LOUISIANA SYSTEM
Dr. Brad O’Hara
bohara@uls.state.la.us
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Dean's Conference Room
Room 100, Farrar Hall (enter through Dean's Office, Room 102)

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A special wireless network has been created for the Academic Summit.
The SSID is Summit

Snacks
McNeese offers several on-campus options to grab a cup of gourmet coffee, juice, soft drink or snack.

Einstein Bros. Bagels, located in the Student Union across from Parra Ballroom, is open from 7 a.m.-2 p.m. and offers fresh gourmet coffees, iced coffees, juices and fruit cups.

Community Coffee at the Library offers Louisiana's favorite coffees, blended drinks and snacks and is open Thursday from 7:45 a.m.-9 p.m. and Friday from 7:45 a.m.-2 p.m.

Outtakes Convenience Store, located in the Student Union across from Parra Ballroom, offers a variety of cold drinks, snack foods and fruit. It is open Thursday from 7 a.m.-8 p.m. and Friday from 7 a.m.-2 p.m.

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