



12 colleges  
130+ students  
100+ posters  
3 performances

One great way to learn about  
undergraduate research at LSU

# 1st Annual LSU Discover Research Day

Monday, March 10th, 2014

9:00 AM—4 PM

Student Union Cotillion Ballroom  
and Atchafalaya Room

Open to the public

Performances and welcoming remarks 1:30-2:30 PM

Student presentations 2:30-4 PM

LSU Discover, LSU's Quality Enhancement Plan (QEP), focuses on expanding opportunities for undergraduate students to engage in research and innovation activities that develop new knowledge, applications and creative endeavors.

Learn more at: [www.lsu.edu/discover](http://www.lsu.edu/discover)

# LSU Discover Research Day

MONDAY, MARCH 10, 2014

## Student Union Cotillion Ballroom Posters

On behalf of a large team working on LSU's all-important reaffirmation of academic accreditation, we would like to thank all of you for participating in the 2014 "pilot" edition of LSU Research Day. Research Day is part of LSU Discover, and is associated with our reaffirmation of academic accreditation. For this year, the event will give the LSU community a chance to publicize and reflect on campus wide undergraduate student success in research, creativity, and innovation just before the March 11-13, 2014 SACSCOC on-site review of our campus. In coming years, the event is planned to expand steadily to a "research week" event that will involve much more activity from the colleges and programs across campus. For a glimpse of a college pilot, please visit the Atchafalaya room and see dozens of students from LSU's College of Human Sciences and Education who will tell you about their efforts. Please take time and see the more than 100 displays, posters, and performances that make this year's event and please don't hesitate to give us feedback on how we can make the event more valuable to you and others next year! (Please send comments to [lsudiscover@lsu.edu](mailto:lsudiscover@lsu.edu))

Sincerely,

Randy Duran  
LSU Discover Director  
Director, LSU Office of Undergraduate Research  
Gordon A. Cain Chair for STEM Literacy, and  
Professor of Chemistry

*LSU Discover would like to thank the following for the help with Research Day -*  
*Office of Academic Affairs*  
*Office of Research and Economic Development*  
*Office of Communications and University Relations*  
*Deans of the 12 participating colleges*  
*LSU Student Government*  
*QEP College and Student Advisory Boards*  
*LSU Libraries*  
*University of Florida*  
*Petroleum Institute University and Research Center, Abu Dhabi*  
*And all the faculty mentors who nominated students for participation in this inaugural event!*

*We would also like to thank the following undergraduate research and innovation funders:*  
*NSF, NIH, HHMI, W.M. Keck Foundation, Department of Energy, enOvation, LSU Sea Grant, College of Agriculture, College of Humanities and Social Science, College of Human Science and Education, and many others.*

# LSU Discover Research Day

MONDAY, MARCH 10, 2014

## Student Union Cotillion Ballroom Posters

### College of Art & Design

- |    |   |                                     |
|----|---|-------------------------------------|
| 1  | Belleville House: Building an Independent Future  | Monica Caire                        |
| 2  | Revitalizing Downtown through the Arts  | Cindy Tiek                          |
| 3  | LEVEL EYE LEVEL   | Kaitlyn Kehoe                       |
| 4  | Planting and Growing Sustainable Churches   | Daniel Shaffer                      |
| 5  | Limit Theory  | George “Andy” Thompson              |
| 6  | [untitled second presentation]  | George “Andy” Thompson              |
| 11 | Graphic Design Student Office   | Marci Hargroder and Juan Baldera    |
| 12 | Symbiotic Shorebase   | Elliot Manuel                       |
| 13 | Translating Ecological Systems Models into Parametric Modeling Definitions for the visualization of Louisiana’s dynamic natural systems and settlement patterns | Carolina Rodriguez                  |
| 14 | Model   | Molly Gleason and Dylan Purvis      |
| 15 | Neural Network  | Michelle Couret and David Tonnelier |
| 16 | CIPN Symptom Cups: Selective Damage of Neuronal Subgroups caused by Chemotherapy Induced Peripheral Neuropathy  | Katie Bosley and Weier Liu          |
| 17 | Genetics as Music   | Ginny Lane and Stephanie Lam        |

### Honors College

- |    |   |                |
|----|---|----------------|
| 8  | Cryoprotectant Loading in a Microchannel  | Shelby Pursley |
| 9  | Synthesis and Characterization of Gold Nanoparticles for Studies using Second Harmonic Generation   | Blake Kruger   |
| 10 | La Puesta Cambiante de las Mujeres en la Sociedad Espanola al Comienzo del Siglo XX (The Changing Position of Women in Early Twentieth Century Spanish Society) | Rome Gonsoulin |

### College of Engineering

- |    |  |                  |
|----|--|------------------|
| 21 | Affordable Access to Space: Frozen Propellants and Reusable Engines            | Clay Blanchard   |
| 22 | Operation of the HISTAR Biomass Reactor for Photosynthetic Co-Cultures         | Matthew Johnson  |
| 24 | Plasmon-Mediated Cleavage for Improved Spatiotemporal Control of Gene Delivery | Corey Landry     |
| 25 | Exploration of Heusler Alloys for Giant Magnetocaloric Effect                  | Daniel Lepkowski |
| 26 | FireWorks and the Materials Project: Facilitating Scientific Workflows         | Morgan Hargrove  |

# LSU Discover Research Day

MONDAY, MARCH 10, 2014

## Student Union Cotillion Ballroom Posters

### Manship School of Mass Communication

- |    |  |   |
|----|--|---|
| 27 | Problems with a social media policy for LSU  | Sally Cox, Hannah Solsky,<br>Christina Riviere, Taylor Kimball, and<br>Ashley Finley      |
| 28 | Journalism Adjudication, Elite Polarization,<br>and Social Media Gatekeeping: effects on citizens  | Beiru (Isabelle) Ding, Jacob Irving   |
| 30 | Gauging Public Opinion in Baton Rouge on<br>Human Trafficking  | Hillary Guidry, Kelsey King,<br>Lacy Miller, Rowan Knight, and<br>Monica Raymond          |
| 31 | The majority of university social media policies<br>include a definition of social media, consequences<br>for policy violation, approval for university affiliated<br>accounts and guidelines for personal account use | Joena Broussard, Alexa Arider,<br>Sandra Castillo, Shaunda Johnson, and<br>Rebecca Sotile |
| 32 | Public Opinion of College Athletes   | Danielle Kelley   |
| 33 | LSU Bateman and Popmoney®  | Erin Kenna, Emily Beck, Allison Sage,<br>Elise Bernard, and Anna Long                     |
| 34 | The Effectiveness of Advertisements using the<br>Social Norms Theory versus Guilt Appeals<br>to Motivate College Students  | Victoria Ward, Erin Caruso, Joe Dryer,<br>Caroline Jacobs, and Ashley Porcua              |

### School of Veterinary Medicine

- |    |   |                   |
|----|---|-------------------|
| 35 | The Effects of Duddingtonia flagrans and Rabon<br>on the Survival of Gastrointestinal Nematode Larvae<br>in Small Ruminants | Vicky Kelly       |
| 36 | Intra-articular Filter-derived Platelet Therapy to<br>Alleviate Signs of Equine Osteoarthritis                              | Holly Attuso      |
| 37 | The Potential Dire Consequence of Oiling for<br>Carbon Sequestration and Restoration of<br>Louisiana's Coastal Wetlands     | Quoc Trung Nguyen |

### School of the Coast & Environment

- |    |  |                  |
|----|--|------------------|
| 39 | Factors threatening the sustainability of the<br>Great Barrier Reef                    | Megan Calvit     |
| 40 | Clustering Analysis of High School Students'<br>Perceptions of Wildlife Values         | Jennifer Chi     |
| 42 | Sedimentary Record of Extreme Events in the<br>Lake Maurepas Basin, Southern Louisiana | Jonathan Lambert |

# LSU Discover Research Day

MONDAY, MARCH 10, 2014

## Student Union Cotillion Ballroom Posters

- |    |   |   |
|----|---|---|
| 43 | Methods of monitoring plankton after BP oil spill   | Lauren McDaniel, Dimitry Morvant,<br>and Hilary Young |
| 44 | Mapping of Vibrio Species in Breton Sound<br>and Barataria Bay  | Morgan Taylor   |
| 45 | Documenting Deep Dives of Sperm Whales<br>in the Gulf of Mexico Through ROV Footage Analysis  | Julia Winters   |
| 46 | Assessing Millimeter-Scale Sr/Ca Variability<br>within the Corallite Fan Structure of Porites Lutea<br>for Improving Coral Based Paleoclimate Reconstructions | Alison Borjarski                                      |

### College of Human Science and Education

- |    |   |                              |
|----|---|------------------------------|
| 47 | Motivating Students to excel in the Classroom   | Angela Sansone               |
| 48 | The Effects of Mental Load and Auditory Noise<br>on the Acquisition and Learning of a Motor Task    | Sarah Odom                   |
| 49 | Increasing Letter Recognition through Technology  | Stacy Allen                  |
| 50 | Recollections of a First Dating Relationship:<br>A Two-Subject Case Study                           | Elizabeth Casten             |
| 53 | Is Black Motherhood A Marker of Oppression or<br>Empowerment? Hip-Hop and R&B Lessons about “Mama.” | Arielle Brown<br>Rachel Ginn |
| 54 | Increasing a Child’s Physical Activity Through<br>Peer Intervention at Recess                       |                              |
| 55 | Control of direction and control of amplitude are<br>interdependent in bimanual coordination        | Kristina Hickey              |
| 56 | Differences in handwriting and typing on<br>information retention                                   | Angelo Sayo                  |

### College of Agriculture

- |    |  |                |
|----|--|----------------|
| 59 | Prevalence of the symbiont Lagenophrys callinectes<br>in blue crabs Callinectes sapidus  | Megan Arias    |
| 60 | Can the heat tolerance of mesophilic dairy bacterial<br>cultures be enhanced?  | Rachel Brown   |
| 61 | Effects of Salinity on the Aggressiveness and Venom<br>Production of the Red Imported Fire Ant, Solenopsis invicta   | Matthew Landry |
| 62 | Weekend intake is associated with poorer diet quality,<br>and increased intake energy and nutrients to limit and<br>poorer food choices in children and adults than weekday<br>intake: National Health and Nutrition Examination Survey<br>2001-2008 | Taylor Ledet   |

# LSU Discover Research Day

MONDAY, MARCH 10, 2014

## Student Union Cotillion Ballroom Posters

- 63 Dietary intake of younger and older female adolescents in Louisiana and their adherence to national dietary recommendations Markita Lewis
- 64 Assessment of a Termite Gut-Specific Bacterium, *Trabulsiella odontotermitis*, as a Potential 'Trojan Horse' for a Paratransgenesis Based Method of Termite Control Thomas Martin

### College of Humanities and Social Sciences

- 67 Tropical Cyclone Induced High Water Marks in Coastal Louisiana Parishes Bryant Garcin
- 68 3D Imaging and 3D Printing of Coffin Handles from St. Thomas Anglican Churchyard, Belleville, Canada Dana Gaudé
- 69 Believe the lie: Source monitoring errors for repeated lies Laura Heisick
- 70 Empowerment: The Formation of Black Women in America Natalie Hughes
- 71 Perceived Effects of Color on Clothing Jessica Campbell
- 72 The Community Impact that Battle Ground Baptist Church has had since Hurricane Katrina AshLee Smith
- 73 Digital Reconstruction of Ancient Maya Salt Evaporation Pottery Vessels Patrick Vines
- 74 Attitudes toward Same-Sex Marriage in Latin America Claire Q. Evans

### E.J. Ourso College of Business

- 75 The Role the Private Market Can Play in Wetland Restoration: Wetland Mitigation Banking Eric Maxwell Newberry
- 76 The Poverty Trap: Financial Disincentives of Our Welfare System Douglas Secrest

### College of Science

- 77 An animated 3D model of the synchronous movements of the trachea, cervical vertebral column, and oro-pharyngo-esophageal cavity of a vocalizing songbird, the Northern Cardinal (*Cardinalis cardinalis*) Caroline Blevins
- 78 Adaptation of Gamma Camera System for Small Field-of-View Applications Melanie Carroll
- 79 Dosage of Phenol upon ZnO (10-10) & (0001) Mark DiTusa
- 80 Development of a position-sensitive gas ionization detector for ANASEN Hannah Gardiner



# LSU Discover Research Day

MONDAY, MARCH 10, 2014

## Student Union Cotillion Ballroom Posters

- |     |  |                  |
|-----|--|------------------|
| 81  | An investigation of event driven sedimentation along the southwest shore of Lake Pontchartrain, Frenier, Louisiana | Gregory Keller   |
| 82  | SNP-Only Data Sets and the Accuracy of Phylogenetic Inference  | Chelsea Kliebert |
| 83  | Targeting Colorectal Cancer with Novel Peptidic-BODIPY Conjugates  | Logan LeBlanc    |
| 84  | Filling in the Holes: Synthesis and Structure of LnMnxGA3 (Ln=Ho-Tm; z<0.15)                                       | Jacob McAlpin    |
| 85  | The effect of an ice-binding protein on E. coli survivability  | Erin Oliver      |
| 86  | The Role of Endoreplication Gene Siamese in Arabidopsis thaliana Trichome Division Inactivation                    | Ashley Willis    |
| 87a | “Cultivation-dependent and Independent Characterization of Unique Geothermally Heated Hawaiian Microbial Mats”     | Marisa Russell   |
| 87b | The pH Dependence of the DNA Binding of D. radiodurans and T. aquaticus  | Katelyn Jackson  |

## College of Music and Dramatic Arts

- |     |   |                              |
|-----|---|------------------------------|
| 100 | ORIGIN  | Mark Gibson and Joshua Brown |
| 105 | Goodness Gracious: A Piano Improvisation Game | Trey Duplantis               |

## Undergraduate research/innovation programs and invited guests

### Aspire

- |     |   |               |
|-----|---|---------------|
| 104 | Age and Season of Harvest for Mesodesma donacium shells found at an archaeological site in coastal Peru | Rebecca Hood  |
|     | The Women of Shakespeare’s Hamlet in Modern Film Adaptations  | Meredith Will |

### McNair

- |     |   |                 |
|-----|---|-----------------|
| 102 | College Student Covitality  | Natasha Lee     |
|     | Implementation Intention’s Effect on Treatment Integrity to a Classroom Management system | Yvonne Thompson |

### Petroleum Institute

- |    |   |                |
|----|---|----------------|
| 95 | Electrochemical Characterization of Silicon Nanowires Using Ionic Liquids       | Isaiah Woodson |
|    | Droplet Dynamics and mass transfer of single organic droplets in a water column | Allen Huang    |

# LSU Discover Research Day

MONDAY, MARCH 10, 2014

## Student Union Cotillion Ballroom Posters

- 96 Fabrication methodology for a combinatorial approach to Poly-3-hexylthiopene and phenyl-C61-butyric acid methyl ester based inverted organic photovoltaic cells  
Malcolm Davidson

### La-STEM

- 88 A New Twist on the Matrix Exponential  
Novel Antimicrobial Biocompatible PETA Composite Scaffolds for Orthopaedic Implants  
Bruno Beltran  
Mollie Smoak
- 89 Preparation of Molecular Hydrogen into Quantum Rovibrational States  
Cedric Williams

### Demarcus D. Smith III Mathematics Scholarship

- 91 Introducing Advanced Math Concepts through a Geometry Project  
Characteristic Polynomials of Non-Commuting Graphs  
Emelie Mativi
- 92 The Ant and the Plant  
Discrete Calculus on a Scaled Number Line  
Colleen Robichaux  
Mandonesia Maurice  
Avery St.Dizier
- 93 Resonance in Graphene Tubes  
The field of sequences and the asymptotic z-transform  
Jeremy Tillay  
Morgan Landry

### NIST grant for undergraduates

- 98 Putting NIST on Your List  
Daniel Lepkowski, Matt Wolff,  
and Matt Johnson

### Performances

- 1:40 Quintet No. 1 by Victor Ewald, Movement 1  
Anthony Ficklin, Brent Gosset, Francis Steib,  
Phil Shapiro, and John Lenoir

### 2:15 ORIGIN

Alaina Dugas, Sanchavis Torns, John Michael Moore, Erica Mix, Jennifer Downes, Mark Gibson Joshua Brown, Mason Robin, Rachel Waesche, Amber Arnold, Rio Givens, Matt Reed, Lacey Berggren, Devin Williams, Regionna Foster, Alexis O'Connell, Scott Mitchell

- 2:30 Genetics as Music  
Virginia Lane and Stephanie Lam



# LSU Discover Research Day

MONDAY, MARCH 10, 2014

## Student Union Cotillion Ballroom Posters

### College of Human Science and Education presentation room, Atchafalaya 339

Shape Recognition	Lauren Armstrong
Function- Based Intervention During Whole Group Activity	Olivia Artall
Sibling Separation in Adolescence	Ashley Bares
Using Technology Intervention to Promote Literacy Skills	Dorothy Beach
Increasing Appropriate Reporting in the Classroom	Caroline Berry
How do Mothers Prepare their Daughters for the Transition into Puberty?	Ansha 'La Braswell
Increasing Expressive Language	Courtney Braud
Length of Whole Group and Attention	Morgan Clinkscales
Behavior Intervention	Libby Dupre
Behavioral Intervention of a 6 year old child	"Mary ""Molly"" Dutel"
Using a Coaching Intervention for Proper Social Behavior	Kimberly Esteves
Mylee's Compliance	Madelynn Fish
Father's Impact on Adolescents	Carson Garand
Attention During Independent Work	Briana Guillory
Effects of Cyberbullying on the Adolescent: A Parent's Perspective	Emily Haynes
Behavior Modification Through Feedback	Noelle Hill
Task Analysis	Taylor Hoffman
Attention Seeking Behavior	Alexandra Huffman
Increasing Hand Raising During Whole Group Instruction	Kristen Johnston
Behavior modification of a 4 year old pre-kindergarten student	Katheryn Lloyd
Handwriting Intervention	Kiara McKee
Increasing a Child's Numeracy skills with a Computer Based Intervention	Catherine Messina
Increasing Appropriate Behavior in Whole Group Instruction Through Appropriate Praise	Chelsea Pere
Attention in Whole Group	Kaitlen Perkins
Increasing Shoe Tying Skills using a Picture Activity Schedule	Megan Prudhomme
Disruptive Behavior Intervention	Samantha Prudhomme
Increasing Participation & Completion of Activities	Olivia Robe
Using a Reinforcer Menu	
Prolonging Engagement Through Choice	Allie Ryan

# LSU Discover Research Day

MONDAY, MARCH 10, 2014

## Student Union Cotillion Ballroom Posters

### College of Human Science and Education presentation room, Atchafalaya 339 (continued)

Improving Name Writing Using Sensory Activities	Simone Smith
Using Social Stories to Influence Social Behaviors	Hannah Strain
Increase Appropriate Behaviors During Whole Group Instruction Using Self-monitoring and Rewards	Tracy Templet
Staying Awake at School- Implementing a Bedtime Routine	Michelle Trahan
Using Recommended Practices for Increasing Attention During Whole-Group Instruction	Sarah West
Using Structured Choice to Increase Engagement During Center Time	Jasmine Whittington
Increasing Child Attention in the Whole Group Setting	Christine Wiegel

**LSU**

