

DISCOVER DAY



DISCOVER DAY 2020 SCHEDULE OF EVENTS

Monday, April 27th – Tuesday, April 28th 2020

Questions or Concerns? Contact us at lsudiscover@lsu.edu

WELCOME TO LSU DISCOVER DAY 2020!

LSU Discover Day is a university-wide undergraduate symposium that provides a platform for students from all disciplines to share their research and creative projects. Student presentations include posters and oral presentations. This event allows the LSU community a chance to publicize and reflect on undergraduate student success in discovery, creativity, and research.

ABOUT LSU DISCOVER

LSU Discover, a program under the LSU Office of Academic Affairs, promotes and supports undergraduate research and creative opportunities to students from all disciplines at LSU. With a focus on information literacy, original ideas, research methods, research ethics, and communication, the LSU Discover program strives to provide a supportive environment where all undergraduate students can engage in mentored research and creative endeavors.

To learn more about LSU Discover, visit lsu.edu/discover

LSU DISCOVER STAFF

Dr. Matt Lee, *Interim Director* • Sarah Ferstel, *Associate Director*

Victoria Burges, *Office Coordinator* • Lauren Verrett, *Graduate Assistant*

Jasmine Filut, *Student Worker* • Nicholas Nugent, *Student Worker* • Margaret DeLaney, *Student Worker*

MONDAY PRESENTATION SCHEDULES

Welcome Remarks

| <u>Time</u> | <u>Information</u> |
|-------------|--|
| 8:00 AM | Join us at 8:00 AM on Monday, April 27th for welcome remarks from LSU Provost Dr. Stacia Haynie! The link to view Dr. Haynie's remarks will be sent to all presenters, judges, moderators, and registered visitors. |

Zoom Room #1

| <u>Time</u> | <u>Presentation Type</u> | <u>Topic</u> | <u>Presenter Name</u> | <u>Presentation Title</u> |
|---------------------|--------------------------|---------------------------|--------------------------------------|---|
| 11:30 - 11:45 AM | Live Poster | Biological Engineering | Timothy King | Evaluation of Stromal Remodeling Following Chemotherapy in Adipose Derived Stem Cells |
| 11:45 AM - 12:00 PM | Pre-recorded PowerPoint | Environmental Engineering | Gabrielle Langlois & Grace Lowry | Viruses Disinfection and Regrowth |
| 12:00 - 12:15 PM | Live PowerPoint | Environmental Engineering | Gabrielle Langlois | Investigating the Role of Halide Radicals in the Photochemical Inactivation of Viruses |
| 12:15 - 12:30 PM | Live Poster | Civil Engineering | Catharine Kehoe & Madison Hasenkampf | Lower Mississippi River Physical Model: Spatial and Temporal Trends in Dredge Quantities |
| 12:30 - 12:45 PM | Live Poster | Biological Engineering | Sahana Padumane | High-Throughput Preparation Methods of Crude Extract for Robust Cell-Free Protein Synthesis |

Zoom Room #1 Continued

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|-----------------|--------------------------|------------------------|-----------------------------|--|
| 12:45 – 1:00 PM | Live Poster | Biological Engineering | Jacqueline Begue | Preparation of PLGF2 Moiety Fusion Proteins Using the Cell-Free Protein Synthesis (CFPS) System |
| 1:00 – 1:15 PM | [break] | | | |
| 1:15 – 1:30 PM | Live Poster | Industrial Engineering | Jennafer Zimmerman | Industrial Engineering Approaches to Assist Global Aquatic Germplasm Repository Development |
| 1:30 – 1:45 PM | [break] | | | |
| 1:45 – 2:00 PM | Live Poster | Chemical Engineering | Emmaline Miller | A Novel Microfluidic Device to Study Cell to Cell Communication by Dynamic Sampling of Paracrine Factors |
| 2:00 – 2:15 PM | Live Poster | Chemical Engineering | Emily Marionneaux | 3D Tumor Spheroid Generation Using a Droplet Microfluidic Device |
| 2:15 – 2:30 PM | Pre-recorded Poster | Chemical Engineering | Sarah Glass | Solar Water Disinfection Using Visible Light |
| 2:30 – 2:45 PM | Live Power Point | Chemical Engineering | Noah Lott & Trevor Thrasher | Evaluation of Algal Decision-Making During Nitrogen-Mediated Chemotaxis Using an Orthogonal, 'Flow-Free' Microfluidic Gradient Generator |
| 2:45 – 3:00 PM | Live Poster | Chemical Engineering | Jay Iyer | Synthesis and Characterization of a Novel PROTAC Containing a β -Hairpin Sequence Motif |
| 3:00 – 3:15 PM | Pre-recorded Power Point | Biological Engineering | Victoria Byrd | 3-Dimensional Printing of Devices for Standardization of Cryopreservation Methods |
| 3:15 – 3:30 PM | Live Power Point | Computer Science | Raphaela Mettig | Malware DB - Pre-processing Malicious Samples for Preliminary Analysis |

Zoom Room #2

| <u>Time</u> | <u>Presentation Type</u> | <u>Topic</u> | <u>Presenter Name</u> | <u>Presentation Title</u> |
|---------------------|--------------------------|---------------------------------|-----------------------|---|
| 11:30 – 11:45 AM | Live Poster | Oceanography & Coastal Sciences | Noel Dudeck | Waves and Mixing in an Urban Subtropical Lake: Restoration Implications |
| 11:45 AM – 12:00 PM | Live Poster | Biological Sciences | Jackson Green | Bacterial Polysaccharides in Cancer Treatment |
| 12:00 – 12:15 PM | Pre-recorded Power Point | Biological Sciences | Jordan Wall | Using CRISPR Engineered Flies to Study VCP Disease Mutations |
| 12:15 – 12:30 PM | Live Poster | Biological Sciences | Jessica Elliot | Bluebonnet Swamp Sediment Lag Time and CO Uptake Rate Following Exposure to Substrates |
| 12:30 – 12:45 PM | Pre-recorded Poster | Biological Sciences | Gabrielle Lewis | <i>Drosophila Melanogaster</i> ADH N-terminal His Tag |
| 12:45 – 1:00 PM | Live Poster | Biomedical Science | Olivia Drago | Correlation Between Rate of Adiposity in Infants and Maternal Body Mass Index (BMI) Preceding Pregnancy |
| 1:00 – 1:15 PM | Live Poster | Biological Sciences | Peter Issa | Baculovirus Translocation Through Maize: Examining a Novel Route for Insect Herbivore Infection |
| 1:15 – 1:30 PM | Live Poster | Biological Sciences | Eden Gallegos | Elucidating the Open and Active Form of Human 5-Lipoxygenase |
| 1:30 – 1:45 PM | Live Poster | Biological Sciences | Abigail Vinson | House Sparrows Show Wide and Repeatable Individual Variation in Behavioral Responses to Novel Objects and Foods |
| 1:45 – 2:00 PM | Live Poster | Biological Sciences | Nicholas Nugent | Investigation into Heterochromatin Silencing under RPD3 Absence in <i>Saccharomyces cerevisiae</i> |
| 2:00 – 2:15 PM | Pre-recorded Power Point | Biological Sciences | Lindsey McDonald | Senquencing and Purification of D39N Mutant <i>Drosophila melanogaster</i> Alcohol Dehydrogenase |

Zoom Room #2 Continued

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| 2:15 – 2:30 PM | [break] | | | |
| 2:30 – 2:45 PM | Live Poster | Oceanography & Coastal Sciences | Jenna Cheramie & Jessica Bonin | A Contrast of E-mail and Random Mail Distribution Methodologies for the 2018-2019 Louisiana Game Harvest Survey |
| 2:45 – 3:00 PM | Live Poster | Oceanography & Coastal Sciences | Denise Poveda | Decomposition Rates Across Different Marsh Types and its Effects on Soil Elevation Change |
| 3:00 – 3:15 PM | Live Poster | Oceanography & Coastal Sciences | Philip Brahana | Ontogenetic Variation in the Trophic Ecology of Gulf Killifish in Created and Natural Salt Marshes |
| 3:15 – 3:30 PM | Live Poster | Renewable Natural Resources | Genesis Mize | Testing the Consistency of a 3D Print Cryopreservation Device |
| 3:30 – 3:45 PM | Live Poster | Oceanography & Coastal Sciences | Abigail Bordelon | Relative Potential Soil Respiration Across Hydrogeomorphic Zones in a Louisiana Coastal Deltaic Floodplain |
| 3:45 – 4:00 PM | Live Power Point | Oceanography & Coastal Sciences | Mercedes Pinzon Delgado | Microbial Respiration in Louisiana Wetland and its Implications for Coastal Acidification |
| 4:00 – 4:15 PM | Live Power Point | Renewable Natural Resources | Kathryn Davis | Population Structure and Genetic Variation in Seaside Sparrows (<i>Ammospiza maritima</i>) Using a Next-Generation Sequencing Approach |
| 4:15 – 4:30 PM | Live Power Point | Oceanography & Coastal Sciences | Josef Schuster | Diet Composition of Swordfish (<i>Xiphias gladius</i>) in the Gulf of Mexico |
| 4:30 – 4:45 PM | Live Poster | Plant Pathology & Crop Physiology | Brooklyn Squiers | Developing and Evaluating the Utility of Species-specific Primers for the Detection of an Emerging Fungal Disease of Soybean |
| 4:45 – 5:00 PM | Live PowerPoint | Oceanography & Coastal Sciences | Callie Snow | 2019 Toxic Cyanobacteria Bloom Development in Lake Pontchartrain Estuary |
| 5:00 – 5:15 PM | Live PowerPoint | Oceanography & Coastal Sciences | Elise Peyroux & Victoria Rittel | Effect of Coastal Viruses on Novel Marine Bacteria LSUCC96 and LSUCC261 |

Zoom Room #3

| <u>Time</u> | <u>Presentation Type</u> | <u>Topic</u> | <u>Presenter Name</u> | <u>Presentation Title</u> |
|---------------------|--------------------------|--------------|-----------------------------|---|
| 9:45 -10:00 AM | Live Poster | Psychology | Jackson Green | Psychosocial Factors Related to Greater Context-Specific Drinking Among Socially Anxious Drinkers |
| 10:00-10:15 AM | Live Poster | Psychology | Matthew Johnson & Emily Loe | The Effect of a Brief Mindfulness Training on Employee Well-Being |
| 10:15 - 10:30 AM | Live Poster | Education | Karley Doyle | Using a Multi-Sensory Intervention to Increase Letter Recognition, Phoneme Identification, and Letter Formation in a Kindergarten Classroom |
| 10:30 - 10:45 AM | Live Poster | Psychology | Horatio Traylor | Why are Minority Women of a Managerial Position Propelled to Voluntary Turnover? |
| 10:45 - 11:00 AM | Live Poster | Psychology | Gaurangi Das | Personality and Effect of COVID-19 on Employee Experiences |
| 11:00 - 11:15 AM | Live Poster | Kinesiology | Abby Caffey | Cognitive Deficits in Young Adults with a Concussion History from High School |
| 11:15 - 11:30 AM | Pre-recorded Poster | Psychology | Ryan Averitt | Induced Anxiety, Schizotypy, and Saccadic Eye Movements |
| 11:30 - 11:45 AM | Live Poster | Psychology | Brynne Babin | Does Wishing Lead to Seeing? A Registered Replication Report [RRR]: Balcetis & Dunning [2010] |
| 11:45 AM - 12:00 PM | Live Poster | Psychology | Quintrele Jones | Exploring the Relationship Between Memory Span Performance and Metamemory in College Students |
| 12:00 - 12:15 PM | Live Poster | Education | Katherine Estes | Using a Teacher Play Invitation to Increase Social Play in a Preschool Child |

Zoom Room #3 Continued

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| 12:15 – 12:30 PM | Live Poster | Communication Sciences & Disorders | Senea Diaz & Dianna Roxas | The Prevalence of ADHD Traits in Adults Who Stutter: A Follow-Up Study |
| 12:30 – 12:45 PM | [break] | | | |
| 12:45 – 1:00 PM | Live Poster | Physics & Astronomy | Hunter Meyer | Muon Momentum Estimation Using Multiple Coulomb Scattering |
| 1:00 – 1:15 PM | Live Poster | Physics & Astronomy | Hayden Scott | Development of 3D printed Immobilizers for Gamma Knife Treatments |
| 1:15 – 1:30 PM | Live Poster | Chemistry | Breona Leonard | Hydrophobic GUMBOS used for VOC Detection and Discrimination in Humid Conditions |
| 1:30 – 1:45 PM | Live Poster | Chemistry | Salim Lutfallah | Increasing the Bioavailability of Poorly Soluble Anticancer Prodrugs through Encapsulation in Platinum Based Nanocages |
| 1:45 – 2:00 PM | Live Power Point | Mathematics | Rohin Gilman | Operator-Splitting Product Formulas for Systems of Nonlinear ODEs |

TUESDAY PRESENTATION SCHEDULES

Zoom Room #1

| <u>Time</u> | <u>Presentation Type</u> | <u>Topic</u> | <u>Presenter Name</u> | <u>Presentation Title</u> |
|---------------------|--------------------------|-------------------------------|-----------------------|--|
| 9:00 – 9:15 AM | Live PowerPoint | Interior Design | Kim Nguyen | New Orleans Immigrant Welcome Center |
| 9:15 – 9:30 AM | Live Poster | Interior Design | Cassidy Blank | What is the True Cost of Sustainability? |
| 9:30 – 9:45 AM | Pre-recorded Art Show | Music | Connor Underwood | Indeterminate Clock |
| 9:45 – 10:00 AM | Live Art Show | Art | Macy West | The Impact of Human Perception of Light and Color on Design |
| 10:00 – 10:15 AM | Live Power Point | Landscape Architecture | Austin (Chunfeng) Lu | The Levee Park: Revisioning the Interaction with the Mississippi River on the Water Campus |
| 10:15 – 10:30 AM | Live Power Point | History | Kris Plunkett | How Epistemic Bubbles Entrench the Confederate Historical Narrative |
| 10:30 – 10:45 AM | Live Power Point | Foreign Language & Literature | Kiersten Barnette | Construction of Double Inflected Verb Phrases Southern United States English |
| 10:45 – 11:00 AM | Pre-recorded PowerPoint | Interior Design | Rainey Charbonnet | The Museum of Lost Art and Monuments |
| 11:00 – 11:15 AM | [break] | | | |
| 11:15 – 11:30 AM | Live Power Point | Psychology | Madeleine Hansen | Transgender and Gender Diverse Individuals Experience with Mental Health Care Providers |
| 11:30 – 11:45 AM | Live Poster | Sociology | Tyler Scott | Socio-Spatial Distribution of Arts in East Baton Rouge Parish |
| 11:45 AM – 12:00 PM | Live Power Point | Psychology | Zachary Traylor | Cheap Thrills: An Affordable and Effective Fear Conditioning Device |

Zoom Room #1 Continued

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|------------------|---------------------|------------------------------------|---|---|
| 12:00 – 12:15 PM | Live Power Point | English | Lydia Weaver | Julia Edwards' 19th-Century Scrapbook: An Individualized Craft for the Masses |
| 12:15 – 12:30 PM | Pre-recorded Poster | Communication Sciences & Disorders | Kaela Powery | English /l/ and /w/ sound development in young children with and without Speech Sound Disorders |
| 12:30 – 12:45 PM | [break] | | | |
| 12:45 – 1:00 PM | Pre-recorded Poster | Biological Sciences | Corey Cooper | Using a Drosophila Optogenetic Model to Identify Factors That Suppress Negative Effects of Sleep Deprivation |
| 1:00 – 1:15 PM | Live Power Point | Biological Sciences | Ryan Asgunod | Regulation of Apical Constriction by Protein Trafficking Components in Drosophila Salivary Gland Invagination |
| 1:15 – 1:30 PM | Live Power Point | Biological Sciences | Mark Maier | Gonadotropin-Releasing Hormone as a Neuromodulator in Midbrain Sensory Regions during the Female Cichlid Reproductive Cycle |
| 1:30 – 1:45 PM | Live Power Point | Molecular Biosciences | Mari Brady | The Role of the Atrophin Domain in the Function of AFF1-SEC as a Transcription Inhibitor |
| 1:45 – 2:00 PM | Live Power Point | Chemistry | Bridget Cadigan | 3D-Printed Structured-Illumination Neutron Optics for Phase Contrast Imaging with a TRIGA Neutron Source |
| 2:00 – 2:15 PM | Live Power Point | Chemistry | Anne D'Armond, Juliette Lincoln & Megan MacNaughtan | <i>E. coli</i> Expression of Chlamydia Trachomatis Mutant Protein, Scc4{V95A} |
| 2:15 – 2:30 PM | [break] | | | |
| 2:30 – 2:45 PM | Live Poster | Chemical Engineering | Kelly Cohen | Micro Heat Exchanger for Direct Methane to Methanol Oxidation |
| 2:45 – 3:00 PM | Live Poster | Chemical Engineering | Michael Dearman | Multiphysics Modeling of the Separation of Polymeric Materials into Discrete Species |
| 3:00 – 3:15 PM | Pre-recorded Poster | Biological Engineering | Eban Hanna | Biodistribution of Fluorescent Lignin Nanoparticles in Soybean Seed |
| 3:15 – 3:30 PM | Live PowerPoint | Petroleum Engineering | Cory Lautenschlager | Bi-Material Toughness Characterization in Wellbore Integrity Application |

Zoom Room #2

| <u>Time</u> | <u>Presentation Type</u> | <u>Topic</u> | <u>Presenter Name</u> | <u>Presentation Title</u> |
|---------------------|--------------------------|------------------------------|--------------------------|--|
| 10:00 – 10:15 AM | Live PowerPoint | Geology & Anthropology | Kendall Brome | Fossilized Corals from the Holocene Reveal Sea Surface Temperature Shifts in the Caribbean Sea |
| 10:15 – 10:30 AM | Live Poster | Entomology | Ryan Nguyen | The Effects of Early Death Cues on Feeding Behavior of the Formosan Subterranean Termite |
| 10:30 – 10:45 AM | Live Poster | Entomology | Nathan Le | Characterization of Chemosensilla on the Antennae of the Formosan Subterranean Termite |
| 10:45 – 11:00 AM | Live Poster | Nutrition & Obesity Research | Sai Pochana | Bidirectional Relationship between Objectively Measured Sleep and Depressive Symptomology in Adolescents |
| 11:00 – 11:15 AM | Live Poster | Nutrition & Obesity Research | Gracie Wilburn | Association of Night-time Screen Viewing with Adolescents' Sleep, Diet, Waist Circumference, and Weight Status |
| 11:15 – 11:30 AM | Live Poster | Nutrition & Obesity Research | Jourdan Blair (Staffier) | Comparison of Recruitment Methods for the Lifestyle Intervention in Preparation for Pregnancy (LIPP) Clinical Trial |
| 11:30 – 11:45 AM | Pre-recorded PowerPoint | Nutrition & Food Sciences | Morgan Mayeux | A Short, Comprehensive Nutrition Education/Culinary Skill-Building Program Improved Young Adults' Self-Reported Behaviors to Consume Healthy Foods |
| 11:45 AM – 12:00 PM | Live Power Point | Industrial Engineering | Sarah Dunn | Implementing a Transporter Performance Management System in a Hospital Imaging Department |
| 12:00 – 12:15 PM | Live Power Point | Mechanical Engineering | Patrick Herke | Using Granular Jamming to Provide a Rapidly Deployable Custom-Fitted Cervical Collar |
| 12:15 – 12:30 PM | Live Power Point | Computer Engineering | Christian Fontenot | Teaching Using a Robot Swarm Simulator |
| 12:30 – 12:45 PM | Live Power Point | Chemical Engineering | Jarod Larriviere | Optimizing Synthesis Methods for Perovskite-Oxide Crystal Structures in Solid Oxide Fuel Cells |

Zoom Room #2 Continued

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|-----------------|--------------------------|---------------------------------|-----------------|---|
| 12:45 – 1:00 PM | Pre-recorded Power Point | Computer Science | Jun Lin | Automatic Fake News Detection |
| 1:00 – 1:15 PM | [break] | | | |
| 1:15 – 1:30 PM | [break] | | | |
| 1:30 – 1:45 PM | Pre-recorded Poster | Comparative Biomedical Sciences | Myrna Brunson | The Toxicity and Mutagenicity of Electronic-Cigarette Aerosol Extracts |
| 1:45 – 2:00 PM | Live Power Point | Comparative Biomedical Sciences | Hannah Guidry | Endocrine Regulation of Stem Cell Differentiation |
| 2:00 – 2:15 PM | Live Power Point | Biological Sciences | Yasmeen Kawji | An Investigation of the Proline Biosynthesis Pathway in Response to Osmotic Stress in <i>Tigriopus californicus</i> |
| 2:15 – 2:30 PM | Live Power Point | Pathobiological Sciences | Rachel Welch | Alteration of XRN-2 Exonuclease Activity by HSV-1 Infection and Antiviral Treatments |
| 2:30 – 2:45 PM | Pre-recorded Poster | Veterinary Clinical Sciences | Emily Halphen | Transplantable Pancreatic Islet Organoids Derived from Feline Reproductive Organ-Associated Adipose Multipotent Stromal Cells |
| 2:45 – 3:00 PM | Live Poster | Comparative Biomedical Sciences | Samantha Jindia | Comparative Mutagenetic and Toxic effects of flavored JUUL aerosol extracts using the Ames and Toxi-Chromo tests |
| 3:00 – 3:15 PM | Pre-recorded PowerPoint | Biological Sciences | Stephen Lopez | Understanding How a Human Short Sleep Mutation Offsets Negative Effects of Sleep Deprivation |
| 3:15 – 3:30 PM | Live Poster | Pathobiological Sciences | Pilar Ruiz | Investigating the Antibacterial Effect of Sca1+ Lung Mesenchymal Stem Cells on Carbapenem-resistant <i>Klebsiella pneumoniae</i> -Induced Pneumonia |
| 3:30 – 3:45 PM | Live Poster | Biological Sciences | Eric Martinez | Analysis of Geographic and Developmental Variability of Fecal Microbiomes of <i>Fratercula arctica</i> |

Keynote Speech & Closing Remarks

| <u>Time</u> | <u>Information</u> |
|-------------|---|
| 4:30 PM | Join us for a Keynote Speech by Dr. Becky Carmichael. |
| 5:00 PM | Closing remarks from LSU Vice Provost of Academic Affairs, Dr. Matthew Lee. |

Keynote Speaker: Dr. Becky Carmichael



An Indiana native, Dr. Carmichael received her doctorate from LSU and has been the science coordinator of CxC since 2012.

Dr. Carmichael works hard to emphasize the need for communication training in science disciplines. As the science coordinator, she works closely with students to improve their communication skills, including writing and public speaking. She also works with the Howard Hughes Medical Institute (HHMI) and the summer undergraduate research program assisting students with their scientific presentations. She enjoys working with a diverse group of students. Dr. Carmichael also gets the opportunity to work with a creative faculty. She enjoys attending the Science Café and that allows her to learn more about the research taking place on campus.

In her free time, away from work, Dr. Carmichael spends time with her 2-year-old son. As an ecologist, Dr. Carmichael loves spending time outside and playing with rocks. Most of her hobbies involve food, as she loves to bake and discover new cuisine. While she enjoys photography, she says she gets most of her great shots from “dumb luck.”