



**SUMMER  
UNDERGRADUATE  
RESEARCH  
FORUM**

**JULY 31, 2026**

# WELCOME TO THE LSU SUMMER UNDERGRADUATE RESEARCH FORUM 2026

The Summer Undergraduate Research Forum showcases the numerous undergraduate students who have engaged in summer research projects this year at institutions throughout the LSU System.

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| <b>6-14</b>  | Posters and Visual Displays |
| <b>15-17</b> | Lightning Talks             |
| <b>18</b>    | Keynote Speaker             |

## ABOUT THE COVER PHOTO

*Location: Grand Isle, LA*

### **Photographer: Brooke Chouest**

Brooke Chouest, born and based in southern Louisiana, is a documentary photographer best known for her work exploring and preserving the unique culture and threatened coastline of the United States' Gulf region. Her work often focuses on the fight of these communities combating environmental and emotional hardships due to economical and climate crises.

Brooke received a Bachelor of Fine Arts in Photography from LSU in 2024, where she was Co-President of Photo Club, a member of the Gulf Scholars Program, a Distinguished Undergraduate Research awardee, and undergraduate Dean's Medal Recipient for the School of Art. You can find more of her work on her website: [brookechouest.com](https://brookechouest.com).

# SCHEDULE OF EVENTS

All locations in Patrick F. Taylor Hall

| <u>Time</u>             | <u>Event</u>                                                                      | <u>Location</u>  |
|-------------------------|-----------------------------------------------------------------------------------|------------------|
| 8:00 a.m. - 8:50 a.m.   | Check-in & set-up                                                                 | Cambre Atrium    |
| 9:00 a.m. - 10:00 a.m.  | Welcome Remarks and Keynote Speech<br><i>Keynote Speaker: Dr. Ibrahim Baggili</i> | Room 1100        |
| 10:00 a.m. - 11:30 a.m. | Poster and Visual Display Session                                                 | Cambre Atrium    |
| 11:30 a.m. - 12:30 p.m. | Group Photo and Presenter Lunch Break                                             | Capstone Gallery |
| 12:30 p.m. - 1:30 p.m.  | Career Panel                                                                      | Room 1100        |
| 1:30 p.m. - 2:30 p.m.   | Lightning Talks                                                                   | Room 1100        |
| 2:30 p.m. - 2:45 p.m.   | Closing Remarks                                                                   | Room 1100        |
| 2:45 p.m.               | Poster/display take down                                                          | Cambre Atrium    |

## ABOUT THE OFFICE OF UNDERGRADUATE RESEARCH

The LSU Office of Undergraduate Research, which hosts the Summer Undergraduate Research Forum, promotes and supports student participation in faculty mentored research and creative activities. For students looking to become involved in undergraduate research, we offer assistance in finding a mentor, events to learn more about undergraduate research, and opportunities to talk to research students about their experiences in any major. For students who are currently involved in undergraduate research, we offer funding for research and travel, workshops, and the Distinguished Undergraduate Researcher Program.

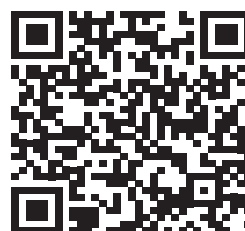
To learn more about the Office of Undergraduate Research, visit [lsu.edu/our](http://lsu.edu/our)

## GUEST WIFI

Wi-Fi Name: **lsuguest**  
Username: **SURF2026**  
Password: **638028**

## PROGRAM QR CODE

To view abstracts please visit the QR code

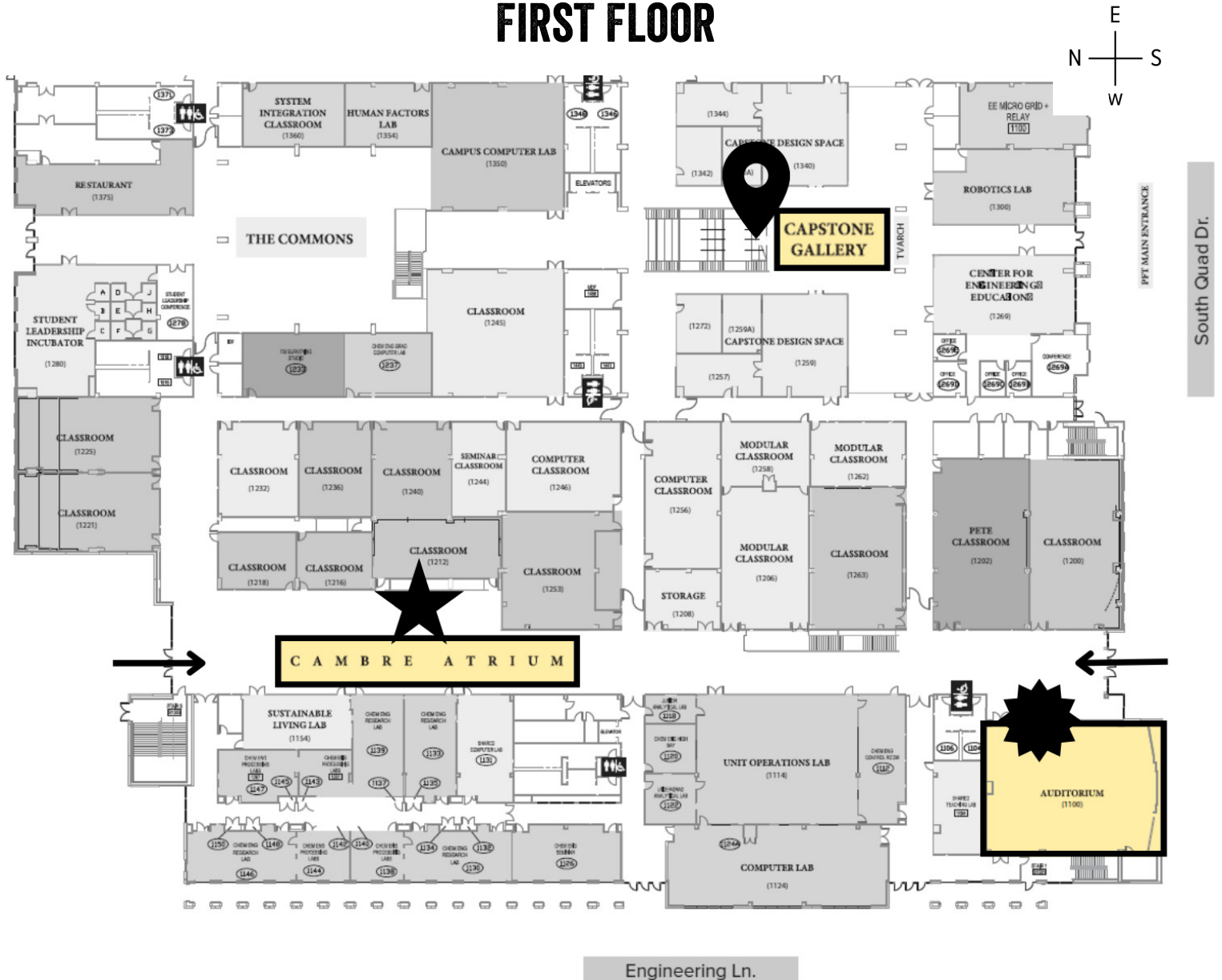


## **SPECIAL THANKS**

- Aquaculture Research Station
  - CCT REU
- Dr. Ahmed Abdelmoneim's Lab
- Dr. Mette Gaarde's Research Group
  - Dr. SeYeon Chung's Lab
- Dr. Theda Daniels-Race's Research Group
  - Dr. Gerald Schneider's Lab
- LBRN Summer Research Program
  - LSU Gulf Scholars Program
    - LSU Museum of Art
- LSU OUR Project Grant Mentors
  - LSU Special Collections
- LSU Vet Med Summer Undergraduate Research Program
  - MissDelta Initiative REU
- Neurobiology of Metabolic Dysfunction
  - NSF EPSCoR iPACERS Program
  - Physics and Astronomy REU
    - SMART Polymers REU

# PATRICK F. TAYLOR HALL

## FIRST FLOOR



### Cambre Atrium

10:00-11:30 a.m. Poster/Visual Display session

### Capstone Gallery

11:30 a.m. - 12:30 p.m. Group Photo and Lunch

### Auditorium Room 1100

9:00 - 10:00 a.m. Welcome Remarks and Keynote Speech

12:30 - 1:30 p.m. Career Panel

1:30 - 2:30 p.m. Lightning Talks

2:30 - 2:45 p.m. Closing Remarks

# POSTERS AND VISUAL DISPLAYS

Student Presenter, co-authors "Title"

School

Mentor

## AQUACULTURE RESEARCH STATION

- |   |                                                                                                                                         |                            |                 |
|---|-----------------------------------------------------------------------------------------------------------------------------------------|----------------------------|-----------------|
| 1 | <b>Alexander "Alex" Aucoin</b> , Drew N. Fowler, Kaelyn J. Fogelman "A Survey of Avian and Amphibian Species Across Five Habitat Types" | Louisiana State University | Kaelyn Fogelman |
|---|-----------------------------------------------------------------------------------------------------------------------------------------|----------------------------|-----------------|

## CCT - REU

- |    |                                                                                                                                                                                                                        |                                                  |                  |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|------------------|
| 2  | <b>Bradley Leventhal</b> , Md Tanvir Emrose, Georgios Veronis "A Transformer-Based Inverse Design Model for Switchable Optical Absorbers"                                                                              | College of William & Mary                        | Georgios Veronis |
| 3  | <b>Sean Ozalpasan</b> , Peyton Tran, Lamine Noureddine, Aisha Ali-Gombe "TinyML Enabled HIDS for Microcontrollers"                                                                                                     | Tufts University                                 | Aisha Ali-Gombe  |
| 4  | <b>Jay Patel</b> , Ka-Ming Tam "Sample-Based Quantum Krylov Diagonalization for Ground State Energy and Green's Function Calculations"                                                                                 | Pennsylvania State University at University Park | Ka-Ming Tam      |
| 5  | <b>Preston Phillips</b> , Parampreet Singh "Understanding the Loitering Bounce through the Power Spectrum of the CMB"                                                                                                  | University of Texas at Austin                    | Parampreet Singh |
| 6  | <b>Sonya Purcell</b> , Seungwon Yang "Digital Vigilantism on YouTube: Exploring the Typology of Content & Topics and Sentiments of Audience Comments"                                                                  | American University                              | Seungwon Yang    |
| 7  | <b>Mohammed Rahman</b> , Ka-Ming Tam "Implementing Non-Equilibrium DMFT onto a Quantum Computer"                                                                                                                       | College of William & Mary                        | Ka-Ming Tam      |
| 8  | <b>Smriti Ramakrishnan</b> , Peter Diener "Parallelizing Numerical Relativity Simulations for Distributed-Memory Systems"                                                                                              | Southern Methodist University                    | Peter Diener     |
| 9  | <b>Elise Remerscheid</b> , Young Woo Kim, Arkanil Roy, Heidi Klem "Development of a Computational Workflow to Rank Beta Lactamase Inhibitor Effectiveness Based on Electric Fields"                                    | Hendrix College                                  | Heidi Klem       |
| 10 | <b>Pablo Rogers</b> , Hyun Choi, Gracen Shepherd, Bryce Davis, Calvin Feldt, David Shepherd "Designing Movement-Based Text Input Techniques for Mixed Reality to Support Physical Activity in Middle School Education" | Pennsylvania State University                    | David Shepherd   |
| 11 | <b>Rhiannon Sizer</b> , Gopal Srivastava, Michal Brylinski "Using Kinase Similarity to Predict Drug Binding Across the Human Kinome"                                                                                   | Virginia Tech                                    | Michal Brylinski |
| 12 | <b>Idden Tsai</b> , Noble Gluscevic, Wei-Ting Lin, James Sauls "Simulations of Vortex Motion and Dissipation In Thin-Film, Dirty Superconductors"                                                                      | University of Illinois Chicago                   | James Sauls      |
| 13 | <b>Gabrielle "Gabby" Washington</b> , Ka-Ming Tam "Generalizing the Anderson Impurity Model for Variational Quantum Eigensolver Simulations"                                                                           | Southern University A&M                          | Ka-Ming Tam      |
| 14 | <b>Jack D. Weide</b> , Tai Hua, Kenneth Lopata "Attosecond Electron Dynamics of Transition Metal Complexes"                                                                                                            | Montana State University                         | Kenneth Lopata   |
| 15 | <b>Angel Zheng</b> , Young Woo Kim, Arkanil Roy, Heidi Klem "Development and Assessment of a QMzyme-LLM Web Application"                                                                                               | Vassar College                                   | Heidi Klem       |
| 16 | <b>Shuwen Zheng</b> , Lindsey E. Hartman, Seungwon Yang "AI-Based Analysis of the Style and Harm Coupling in Violent Manifestos"                                                                                       | Johns Hopkins University                         | Seungwon Yang    |

## POSTERS AND VISUAL DISPLAYS

### DR. AHMED ABDELMONEIM'S LAB

- 17 **Jayla Johnson**, Angel Casillo, Ahmed Abdelmoneim "Effects of Stress and Chemical Exposures on Thigmotactic Behavior of Larval Zebrafish" Grinnell College Ahmed Abdelmoneim

### DR. METTE GAARDE'S RESEARCH GROUP

- 18 **Audrey Phillips**, Mette Gaarde "Simulation of an XUV Pulse Propagating through a Medium with a Fano Resonance" Louisiana State University Mette Gaarde

### DR. SEYEON CHUNG'S LAB

- 19 **Mokshit R. Konda**, Elizabeth L. Taylor, SeYeon Chung "The *Puratrophin-1-like RhoGEF* Regulates Epithelial and Nervous System Morphogenesis during *Drosophila* Embryogenesis" Louisiana State University SeYeon Chung
- 20 **Huy Tran**, Benjamin Almond, SeYeon Chung "Characterizing the Role of the SP1/KLF Transcription Factor *Huckebein* in *Drosophila* CNS Morphogenesis" Louisiana State University SeYeon Chung

### DR. THEDA DANIELS-RACE'S LAB

- 21 **Hams Abdulqader**, Theda Daniels-Race "Atomic Force Microscopy: A Study in Use and Functionality" Louisiana State University Theda Daniels-Race
- 22 **Aloka Fernando**, Theda Daniels-Race "Restoration Assessment of an Inert-Atmosphere Glovebox for Air-Sensitive Materials Research" Louisiana State University Theda Daniels-Race
- 23 **Ahsan Gaskins**, Theda Daniels-Race "Flourescence Spectroscopy: A Study in Operational Modernization and User Accessibility" Louisiana State University Theda Daniels-Race
- 24 **Brianna N. Miles**, Theda Daniels-Race "Building the Nest (Nano Electronic Structures & Technology): Website Development for Scientific Communication" Louisiana State University Theda Daniels-Race

### DR. GERALD SCHNEIDER'S LAB

- 25 **Luke Burton**, Gerald Schneider "Building a Prototype Quantum Computing System Using a Qbox Kit for Basic Algorithmic Tasks" Baton Rouge Magnet High School Gerald Schneider



# POSTERS AND VISUAL DISPLAYS

## LBRN SUMMER RESEARCH PROGRAM

- |    |                                                                                                                                                                                                                                                                                            |                                           |                           |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|---------------------------|
| 26 | <b>Christiana Aseyomi</b> , Md Mehedi Hasan "Meta-Analysis of Bulk RNA-Seq Data Uncovers Novel Biomarkers and Repurposable Therapeutic Targets for Triple-Negative Breast Cancer"                                                                                                          | McNeese State University                  | Md Mehedi Hasan           |
| 27 | <b>J'Lea Berry</b> , Joy T. Folahan, Tolulope O. Omelekan, Jean Christopher Chamcheu "Enhancing VMG Oncolytic Vitrotherapy with Usnic Acid for the Treatment of Melanoma"                                                                                                                  | Southern University and A&M College       | Jean Christopher Chamcheu |
| 28 | <b>Aubrey Bordelon</b> , Venkatesh Mayandi, Debajyoti Majumdar, Kabita Kunwar, Arpan Chowdhury, Prajesh Shrestha, Seetharama Jois "Getting at the Heart of Lung Cancer: The Antiproliferative Activity And Stability of a Small Molecule Targeting EGFR/HER2-Expressing Lung Cancer Cells" | University of Louisiana at Monroe         | Seetharama Jois           |
| 29 | <b>Taylor Burket</b> , Lorien Helm, Brandon David, Kade Malone, Srinivas Garlapati "Role of Histone Modifications in Antigenic Variation in <i>Giardia lamblia</i> "                                                                                                                       | University of Louisiana at Monroe         | Srinivas Garlapati        |
| 30 | <b>Genesis Craig</b> , Imran Hossain, Tetiana Melnyk, Vladimir Chouljenko, Tianyi Zhang, Konstantin "Gus" Kousoulas "Next Generation Sequencing (NGS) of Different Herpes Simplex Virus Type 1 (HSV-1) Mutant Viruses"                                                                     | Xavier University of Louisiana            | Vladimir Chouljenko       |
| 31 | <b>Amerino "Tomasso Fennell"</b> , Anat Burger "Quantifying the Enrichment of High-Affinity Decoy Binding Sites Beyond Random Chance in <i>E. coli</i> and <i>C. elegans</i> Genomes"                                                                                                      | Loyola University New Orleans             | Anat Burger               |
| 32 | <b>Rama Hamed</b> , Tan Phuc Le, Md Wasi Ul Kabir, Ayon Dey, Md Tamjidul Hoque "Binding Disorder Region Prediction"                                                                                                                                                                        | Louisiana State University at New Orleans | Md Tamjidul Hoque         |
| 33 | <b>Hannah Kate Hooker</b> , Subhajit Chakrabarty, Devesh Sarda, Udaysinh Rathod "Predicting Alzheimer's Disease Using Biomarkers"                                                                                                                                                          | University of Louisiana at Monroe         | Subhajit Chakrabarty      |
| 34 | <b>Brooke Horridge</b> , Mingli Xia, Teng Yan, Rui Lu "Biased Genetic Screen in Large Scale to Identify Worm Genes Involved in RNAi-Independent Antiviral Immunity"                                                                                                                        | Louisiana State University at New Orleans | Rui Lu                    |
| 35 | <b>Kabu Khadka</b> , Sabina Dahal, Ernest Owusu-Boadi, Seetharama Jois, Siva Murru "Design and Synthesis of Pyrazolone Molecular Hybrids via Nucleophilic Aromatic Substitution and Heck Coupling as Potential Anticancer Agents against Colorectal Cancer"                                | University of Louisiana at Monroe         | Seetharama Jois           |
| 36 | <b>Sarina Khadka</b> , Doreen Aidoo, Philip Le Riche, Shelby Powell, Claudia Olah, Pradip Panta "DedA Proteins Couple Calcium-Dependent Signaling to Oxidative Phosphorylation and Bacterial Fitness"                                                                                      | Southeastern Louisiana University         | Pradip Panta              |
| 37 | <b>Tan Phuc Le</b> , Rama Hamed, Md Wasi Ul Kabir, Ayon Dey, Md Tamjidul Hoque "SemiDisPred: A Machine Learning Framework for Predicting Transitional States in Intrinsically Disordered Proteins"                                                                                         | Louisiana State University at New Orleans | Md Tamjidul Hoque         |
| 38 | <b>Emma Lockwood</b> , Brandon J. Beddingfield "Evaluating the Infectivity of Mayaro and Zika Virus Complementary DNA"                                                                                                                                                                     | Louisiana Tech University                 | Brandon Beddingfield      |
| 39 | <b>Sanaa Luckett</b> , Christopher Bolden, Zuzana Baran, Marcia Henry "Evaluating the Cytotoxic Effects of Schiff-Base Precursor compounds on Human Glioblastoma Cells"                                                                                                                    | Xavier University of Louisiana            | Christopher Bolden        |
| 40 | <b>Gabriel "Gabe" Malone</b> , Shreya Banerjee "ToM-AI: Designing Safe, Responsive AI with Theory of Mind for Effective Human-AI Communication?"                                                                                                                                           | University of New Orleans                 | Shreya Banerjee           |
| 41 | <b>Madeline McClatchey</b> , Subhajit Chakrabarty, Devesh Sarda, Udaysinh Rathod "Spatiotemporal Modeling of Airborne Allergens"                                                                                                                                                           | Louisiana State University at Shreveport  | Subhajit Chakrabarty      |
| 42 | <b>Jace McGee</b> , Fahima Afroja, Siva Murru "Synthesis and Antiproliferative Evaluation of Novel Pyrazolone Derivatives Against Non-Small Cell Lung Cancer"                                                                                                                              | University of Louisiana at Monroe         | Siva Murru                |

# POSTERS AND VISUAL DISPLAYS

## LBRN SUMMER RESEARCH PROGRAM

- |    |                                                                                                                                                                                                                                   |                                          |                           |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|---------------------------|
| 43 | <b>Jemilda Naperaisa</b> , Nasrine Ningbinnin, Sarah Bergeron, Chris Bonvillain, John Doucet "Comparative Retrotranscriptomics in Louisiana Crawfish: Sequence-Level Analysis of Interspersed Repeat Elements Across Native Taxa" | Nicholls State University                | John Doucet               |
| 44 | <b>Juan Otero, Camila Lamy</b> , Allyn Schoeffler "The Molecular Basis for RNA Binding by Erythromycin Resistance Methyltransferase"                                                                                              | Loyola University New Orleans            | Allyn Schoeffler          |
| 45 | <b>Lucian Peck</b> , Anat Burger "Synthesizing Optimal Voltage Waveforms to Discriminate Shaker K <sup>+</sup> Channel Gating Models"                                                                                             | Loyola University New Orleans            | Anat Burger               |
| 46 | <b>Kaleb Schmidley</b> , Subhajit Chakrabarty, Devesh Sarda, Udaysinh Rathod, Mike Maguigan "Predicting Groundwater Levels Using Ground and Surface Water Data in Red River Basin"                                                | Louisiana State University at Shreveport | Subhajit Chakrabarty      |
| 47 | <b>Imoh Thomas</b> , Sarina Khadka, Doreen Aidoo, Philip Le Riche, Shelby Powell, Claudia Olah, Pradip Panta "Osmotic Regulation of Phage Susceptibility Through the DedA-PhoPQ Signaling Axis in <i>Klebsiella pneumoniae</i> "  | Southeastern Louisiana University        | Pradip Panta              |
| 48 | <b>Daniela A. Torres Martir</b> , Margaret Woods-Crawford, Hogyoung Kim, Amrita Datta "Time-Course Induction of a Pre-EMT State in MCF-10A Breast Cancer Spheroids Using MDA-MB-231 Conditioned Media Treatment"                  | Loyola University New Orleans            | Amrita Datta              |
| 49 | <b>Ximena Walker</b> , Marisa Connell "Investigating Oxaliplatin Resistance through Kin17 and ABCG2 in Colorectal Cancer"                                                                                                         | Louisiana State University at Shreveport | Marisa Connell            |
| 50 | <b>Christen Woods</b> , Tolulope O. Omolekan, Susanna Anovunga, Nana Bonsu, Jean Christopher Chamcheu "Potentiating VMG Oncolytic Virotherapy with Fisetin for the Treatment of Melanoma"                                         | Southern University and A&M College      | Jean Christopher Chamcheu |



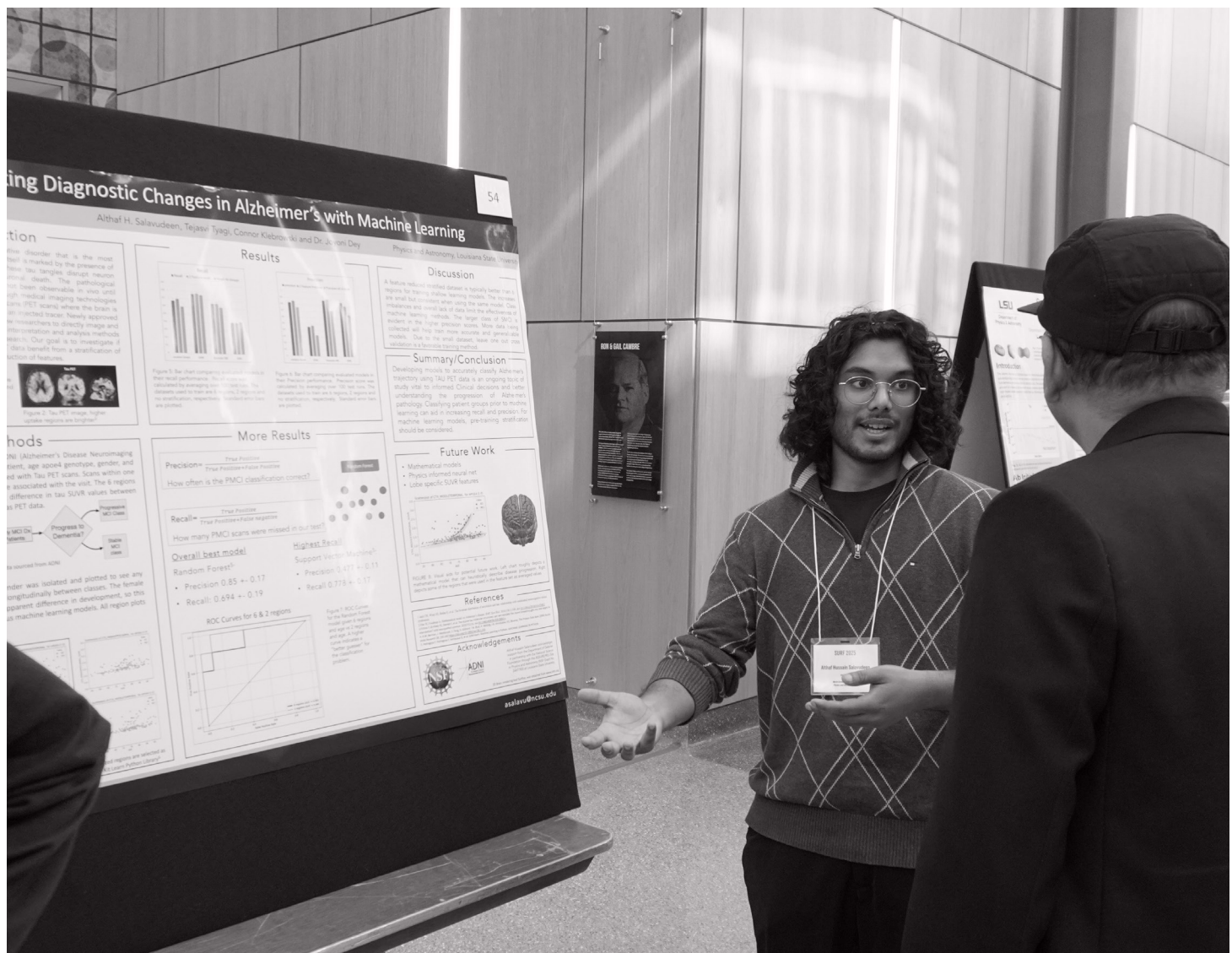
# POSTERS AND VISUAL DISPLAYS

## LSU GULF SCHOLARS PROGRAM

- 51 **Natali A. Barnes**, Kadee R. Gonzales, Giancarlo J. Portocarrero, Samuel J. Bentley, Emily A. Wei, Faith Walton "A Tale of Two Bays: Tracking the Evolving Subaqueous Delta of the Mississippi River" Louisiana State University Samuel Bentley

## LSU VET MED SUMMER UNDERGRADUATE RESEARCH PROGRAM

- 52 **Kelsey P. McFarlane**, Hannah E. Shaw, Thomas R. Bradford, Martha A. Schwall, Ethan M. Anderson "The Effect of Accumbal Ubiquitin-Specific Protease 5 Knockdown on Heroin Seeking Behavior in Rats" Clemson University Ethan Anderson
- 53 **Jasmyn Sorapuru**, Melanie Wilson, Ahmed Abdelmoneim "Investigating the Noradrenergic System's Role in Rescuing Lead [Pb]-Induced Stress Behaviors in Zebrafish (*Danio rerio*)" California State University at San Marcos Ahmed Abdelmoneim
- 54 **Ella Thomakos**, Prajesh Shrestha, Debajyoti Majumdar, Caroline S. Gwaro, Venkatesh Mayandi, Graca M.H. Vicente, Seetharama D. Jois "Liposomal Formulation Of Near Infrared BODIPY-Based Theranostic Agents For Colorectal Adenocarcinoma" Loyola University Chicago Seetharama Jois



# POSTERS AND VISUAL DISPLAYS

## MISSDELTA INITIATIVE - REU

- |    |                                                                                                                                                                                                                                                                                            |                                        |                       |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|-----------------------|
| 55 | <b>Seth Allhiser</b> , Amber Tymul, Giulio Mariotti "Clay's Impact on Wave Transport in Sandy Substrates"                                                                                                                                                                                  | The University of Southern Mississippi | Giulio Mariotti       |
| 56 | <b>Malai Harrington</b> , Maya Maes-Johnson, Hemanta Pohkarel, Bijaya Adhikari, Claire Perrault, Traci Birch "Co-Production of Adaptive Management Strategies in Birdfoot Delta"                                                                                                           | Tulane University                      | Traci Birch           |
| 57 | <b>Zoe Kirejczyk</b> , Mariam Afuwape, Dominique Garello, Zakiya S. Wilson-Kennedy "Investigating How a Coastal Louisiana Professional Development Shapes Teachers"                                                                                                                        | Louisiana State University             | Zakiya Wilson-Kennedy |
| 58 | <b>Nikko Robinson</b> , Garrett Rogers, Aaron Ridall, Kim de Mutsert "The Effect of Size, Habitat, and Water Quality on the Diets of Lower Trophic Level Fishes in the Mississippi Sound"                                                                                                  | Jackson State University               | Kim de Mutsert        |
| 59 | <b>Kadee Rose Rodriguez-Gonzales</b> , Natali A. Barnes, Giancarlo J. Portocarrero, Faith Walton, Samuel J. Bentley, Emily A. Wei "A Recent History of the Subaqueous Lower Mississippi River Delta: Radionuclide Chronologies and Sedimentological Analyses of Gravity Core PS25_01-06GC" | Alcorn State University                | Samuel J. Bentley     |
| 60 | <b>Garrett Rogers</b> , Nikko Robinson, Aaron Ridall, Kim de Mutsert "Dietary Overlap Among Predatory Fishes in the Mississippi Sound"                                                                                                                                                     | University of Southern Mississippi     | Kim de Mutsert        |
| 61 | <b>Joshua Sherman</b> , Yanda Ou "Investigating the Variability of Low-salinity plume in the Mississippi River Birds-foot Delta Using ROMS Simulations"                                                                                                                                    | Louisiana State University             | Yanda Ou              |
| 62 | <b>Tatiana "Tai" Valenzuela</b> , Tracy Quirk "Development of Soil Properties in Beneficial Use Sites in the Lower Mississippi River Delta: The Influence of Age and Elevation"                                                                                                            | College of Coastal Georgia             | Tracy Quirk           |

## NEUROBIOLOGY OF METABOLIC DYSFUNCTION

- |    |                                                                                                                                                                                                         |                            |                |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|----------------|
| 63 | <b>Layla DePrimo</b> , David McDougal, Arline Narez "GLP-1-Induced Weight Loss May Impair Hypoglycemic Counterregulation in Rats: Preliminary Evidence from Glucose Infusion Requirements during Clamp" | Louisiana State University | David McDougal |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|----------------|

## NSF EPSCOR IPACERS PROGRAM

- |    |                                                                                                                                                                                                                |                                          |                 |
|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|-----------------|
| 64 | <b>Naya Furr</b> , Ashmita Acharya, Jong Hyun Ham "Potential of Seed Treatment with <i>Burkholderia glumae</i> to Increase Resistance to Rhizoctonia Root and Stem Rot of Soybean"                             | Louisiana State University               | Jong Hyun Ham   |
| 65 | <b>Mycroft Mitchell</b> , Nestor Alvarez-Rodriguez, Hobbs McAllister, Cooper King, Alexander Lee, Kevin Hoffseth "Optimizing Soybean Spatial Distribution on 3D-Printed Plates"                                | Louisiana State University               | Kevin Hoffseth  |
| 66 | <b>Macie St. Romain</b> , Emmanuel Lacueva, Sandeep Gouli, Jong Hyun Ham "Characterization, Identification, and Evaluation of Soybean-Associated Bacteria for Soybean Growth Promotion and Drought Resilience" | Louisiana State University               | Jong Hyun Ham   |
| 67 | <b>A'Rianna Taylor</b> , Kevin Brown, Jae Wook Chung, Changyoon Jeong "Testing Levels of Greenhouse Gas Emissions from Rice using Different Irrigation Methods and Hydrochar Soil Amendment"                   | Centenary College of Louisiana           | Changyoon Jeong |
| 68 | <b>Yoshua Washington</b> , Hayley Laidlaw, Changyoon Jeong "Comparative Effects of Biochar and Hydrochar on Soil Carboxylesterase Activity Using <i>Lumbricus terrestris</i> as a Bioindicator"                | Louisiana State University at Shreveport | Changyoon Jeong |

# POSTERS AND VISUAL DISPLAYS

## PHYSICS AND ASTRONOMY - REU

|    |                                                                                                                                                                                                                                     |                                             |                    |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|--------------------|
| 69 | <b>Charlotte Adams</b> , Kip Matthews "MR Measurements of Gel Dosimeters"                                                                                                                                                           | Colgate University                          | Kenneth Matthews   |
| 70 | <b>Snigdha Agasthyaraju</b> , Preeti Sharma, Gabriela González "Investigating LIGO Livingston Detector's Robustness to Earthquakes in Observing Run 4"                                                                              | University of North Carolina at Chapel Hill | Gabriela González  |
| 71 | <b>Joshua Chesal</b> , Ali Parastesh, Anthony Engler, Phillip Sprunger "EUV Beamline Commissioning for Next-Generation Photolithography"                                                                                            | Louisiana State University                  | Phillip Sprunger   |
| 72 | <b>Haley Cole</b> , Peter Diener "Implementing an Apparent Horizon Tracker in SPHINCS_BSSN"                                                                                                                                         | University of Alabama at Huntsville         | Peter Diener       |
| 73 | <b>Rishabh Gala</b> , Darin C. Mumma, Alexis Mercenne, Kristina D. Launey "Quantifying Confidence of Quantum Estimates of the Carbon-12 Ground-State Energy with Dual VQE"                                                          | Baton Rouge Magnet Highschool               | Alexis Mercenne    |
| 74 | <b>Caitlyn Garrett</b> , Rahul Devarakonda, Omar Magana-Loaiza "Distilling EPR Correlations from Classical Light"                                                                                                                   | Kennesaw State University                   | Omar Magana-Loaiza |
| 75 | <b>Domenica Giaime</b> , Pluto Steudlein, Rebekah Slocum, Tabata Ferreira, Gabriela González "Tinte Glitch Investigation in the LIGO Hanford Gravitational Wave Detector"                                                           | Baton Rouge Magnet High School              | Gabriela González  |
| 76 | <b>Sandra Killeen</b> , Zach Yarbrough, Gabriela González "Investigating Environmental Correlations With Gravitational Wave Triggers in the LIGO Livingston Detector"                                                               | Louisiana State University                  | Gabriela González  |
| 77 | <b>Michael Lan</b> , Daniel E. Sheehy "Density and Entanglement Dynamics of Analog Hawking Radiation in Strained Graphene"                                                                                                          | University of California at Berkeley        | Daniel Sheehy      |
| 78 | <b>Maxwell Mahaffey</b> , Neethu Leyo, Arnaud Pastel Nono Tchiomo, Sethulakshmi Sajeew, Prosper Ngabonziza "Investigating Correlated Electron Physics in LaRuO <sub>3</sub> : A Trivalent Ruthenium Perovskite Epitaxial Thin Film" | Georgia Tech                                | Prosper Ngabonziza |
| 79 | <b>Adhrit Maiti</b> , Eunjin In, Kristina Launey "Optimizing Simulations of Carbon Isotopes on Quantum Computers"                                                                                                                   | Baton Rouge Magnet High School              | Eunjin In          |
| 80 | <b>Neil Maynes</b> , Ali Crisp, Matthew Penny "A Complete Search of 47 Tucanae for Hot Jupiters: The Multiband Imaging Survey for High-alpha PlanetS [MISHAPS]"                                                                     | California State University at Chico        | Matthew Penny      |
| 81 | <b>Carson Netherton</b> , Aidan Murray, Joyoni Dey "Estimation of Breast Glandular Fraction from Simulated Mammography Images with Polyspectral Modeling"                                                                           | Ohio University                             | Joyoni Dey         |
| 82 | <b>Evan Peng</b> , Parampreet Singh "Dynamical Systems Portrait of the Bounce in LQC"                                                                                                                                               | University of Alabama                       | Parampreet Singh   |
| 83 | <b>Regan Reese</b> , Catherine Deibel, George Zimba "Understanding the $38\text{K}[\text{p},\gamma]39\text{Ca}$ Reaction Rate In Classical Novae via the $40\text{Ca}(3\text{He},4\text{He})39\text{Ca}$ Reaction"                  | Sam Houston State University                | Catherine Deibel   |
| 84 | <b>Pluto Steudlein</b> , Gabriela González "Tomte, Koi Fish, and Extremely Loud Glitches' Potential Origins in the LIGO Livingston Detector"                                                                                        | Louisiana State University                  | Gabriela González  |
| 85 | <b>Ziang Zhuang, Aadi Singh</b> , Mehedi Hasan, Ian Baum, Chenglong You, Omar Magana-Loaiza, "Characterization of Multiphoton Entangled States from Sources of Spontaneous Parametric Down-Conversion"                              | Baton Rouge Magnet Highschool               | Omar Magana-Loaiza |

# POSTERS AND VISUAL DISPLAYS

## SMART POLYMER - REU

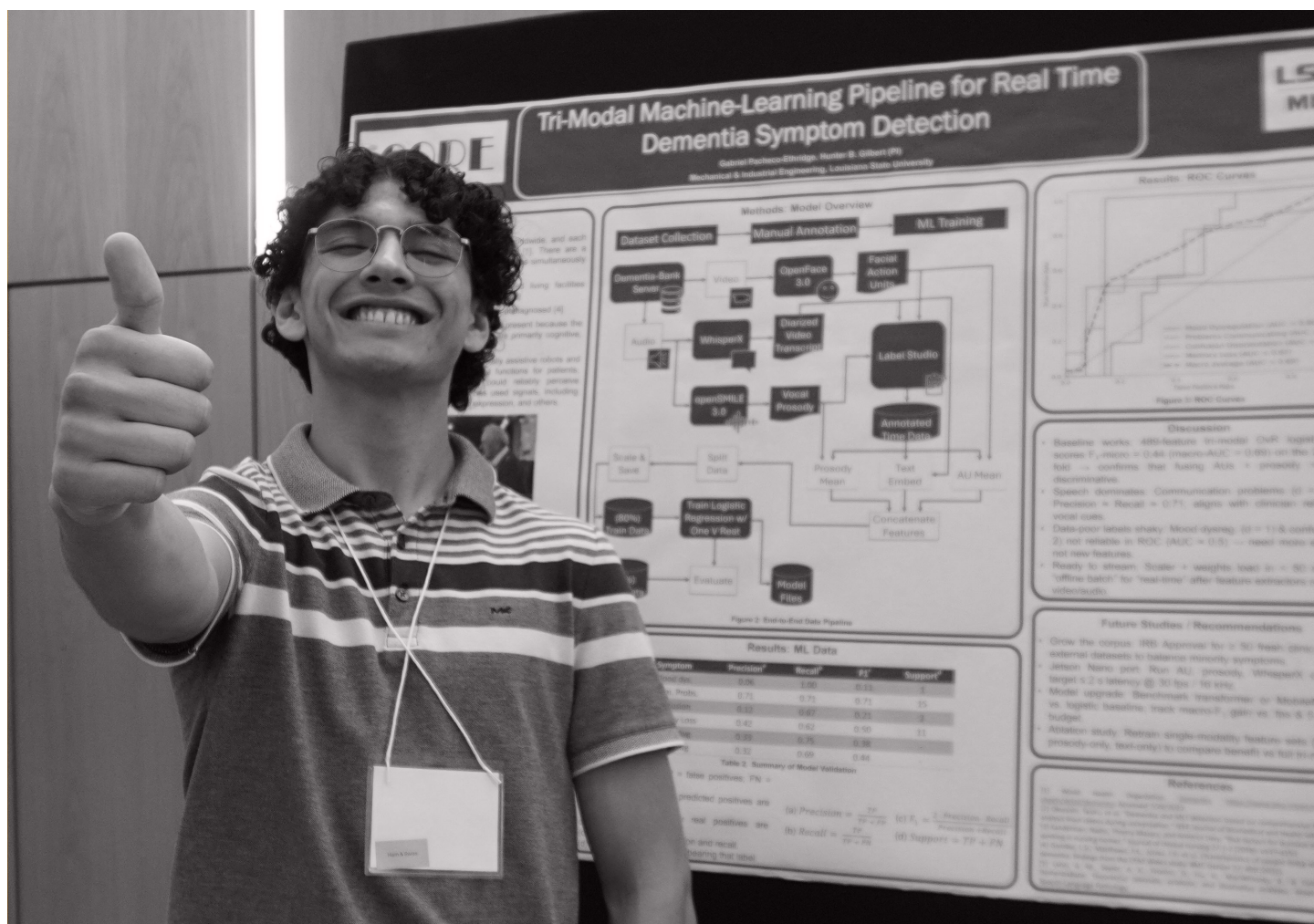
- |    |                                                                                                                                                                                                                 |                                                   |                    |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|--------------------|
| 86 | <b>Elie Gringauz</b> , Emma McCarthy, Christopher Marvel<br>"Johnson-Mehl-Avrami-Kolmogorov (JMAK) Kinetics for the Mechanochemical Reduction of Iron Titanium Oxide (FeTiO <sub>3</sub> ) with Manganese (Mn)" | University of Wisconsin at Madison                | Christopher Marvel |
| 87 | <b>Rachel Haase</b> , Hannah Heinz, David Spivak "Functionalization of Polymers into Semi-Telechelics via Sonication for Use in Upcycling"                                                                      | Louisiana State University at New Orleans         | David Spivak       |
| 88 | <b>Kevin Hu</b> , Lutfun Hilary, Donghui Zhang "Synthesis and Characterization of Molecular Dynamics Simulation-Designed Peptoids for PFAS Capture"                                                             | The University of Chicago                         | Donghui Zhang      |
| 89 | <b>Jasmine L. Hunter</b> , Sulochana R. Ekanayaka Mudiyansele, Amy Xu "Investigating the Capabilities of Complex Coacervates to Encapsulate Insoluble Dyes: A Step Toward Environmental Remediation"            | Centenary College of Louisiana                    | Amy Xu             |
| 90 | <b>Noah Littleton</b> , Md Masud Rana, Genevieve Palardy "Elucidating Bonding Behavior of Thermoplastic Composites via Rheometer"                                                                               | University of Southern Mississippi at Hattiesburg | Genevieve Palardy  |
| 91 | <b>James Marlowe</b> , Alejandro Ramirez, Jimmy Lawrence "Observation of a Single Glass Transition in Discrete Janus Bottlebrush Polymers Despite Immiscible Side Chains"                                       | North Carolina State University                   | Jimmy Lawrence     |
| 92 | <b>Grant Mathis</b> , Guoqiang Li, Chengbin Yu, Obed Nyavor, "Effect of Phase Change Material Incorporation on the Mechanical Properties of Glass Fiber/Epoxy Composite Laminates"                              | University of Miami                               | Guoqiang Li        |
| 93 | <b>Andrew Poh</b> , Md Abdullah Al Mahmud, John A. Pojman "A Combined Cationic-Radical Approach to Frontal Polymerization of [3,4-Epoxy cyclohexyl]methyl Acrylate"                                             | Pennsylvania State University                     | John Pojman        |
| 94 | <b>Annalise Roe</b> , Amir Teimouri, Obed T. Nyavor, Guoqiang Li "Synthesis and Experimental Characterization of a Machine Learning-Predicted Shape Memory Polymer"                                             | Southeastern Louisiana University                 | Guoqiang Li        |
| 95 | <b>Nicholas "Nick" Smith</b> , Hannah Saia, Brittney Woods, Bruno Jakobi, Gerald Schneider "Advancing Dynamic Light Scattering for Accurate Nanoparticle Characterization"                                      | Southeastern Louisiana University                 | Gerald Schneider   |



# POSTERS AND VISUAL DISPLAYS

## SUMMER PROJECT GRANT RECIPIENTS

|     |                                                                                                                                                                                                      |                            |                     |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|---------------------|
| 96  | <b>Thomas Bradford</b> , Ethan Anderson, Martha Schwall "The Role of C-Terminal Binding Protein 1 in Heroin Seeking Behavior"                                                                        | Louisiana State University | Ethan Anderson      |
| 97  | <b>Ethan G. Carmen</b> , Ashok Sivasailam, Brian A. Irving "Myogenic Differentiation Enhances Mitochondrial Oxidative Metabolism While Preserving NAD <sup>+</sup> /NADH Redox Homeostasis"          | Louisiana State University | Brian Irving        |
| 98  | <b>Elizabeth S. Heneghan</b> , Daleth Del Salto Villeda, Morgan Kelly "Exploring the Effects of Environmental Contaminants [Benzophenone-1] on Marine Crustaceans ( <i>Tigriopus californicus</i> )" | Louisiana State University | Morgan Kelly        |
| 99  | <b>Tran Hoang</b> , Fabio Capra-Ribeiro "SpineWing Canopy: A Knitted Temporary Urban Habitat for Migratory Birds"                                                                                    | Louisiana State University | Fabio Capra-Ribeiro |
| 100 | <b>Younghyun Ko</b> , Jader Barbosa "From Idle Wells to Energy Storage: Power-to-Heat-to-Power (P2H2P) Conversion using Repurposed Oil Infrastructure"                                               | Louisiana State University | Jader Barbosa       |
| 101 | <b>Ashleigh Phillips</b> , Leonardo Barzi, Chris Hill "Brain Dynamics of Motor Inhibition in Anxiety Disorders"                                                                                      | Louisiana State University | Chris Hill          |
| 102 | <b>Brianna "Bree" Simon</b> , Amitava Roy, Phillip Sprunger "Synchrotron-based Characterization of Critical Elements in Bauxite Residue"                                                             | Louisiana State University | Phillip Sprunger    |
| 103 | <b>Michaela Tsanova</b> , Josane Sousa, Igor Schneider "The Role of mTOR Signaling in Regulating Epidermal Homeostasis During Fin Regeneration"                                                      | Louisiana State University | Igor Schneider      |



# LIGHTNING TALKS

## AQUACULTURE RESEARCH STATION

|                                                                                                                                                                                |                            |                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|-----------------|
| <b>Alexander "Alex" Aucoin</b> , Drew N. Fowler, Kaelyn J. Fogelman "A Survey of Avian and Amphibian Species Across Five Habitat Types"                                        | Louisiana State University | Kaelyn Fogelman |
| <b>Branson Melancon</b> , Alex Aucoin, Matthew Lunger, Drew Folwer, Kaelyn Fogelman "Burrow Ecology of Red Swamp Crayfish [ <i>Procambarus clarkii</i> ] in a Production Pond" | Louisiana State University | Kaelyn Fogelman |

## CCT - REU

|                                                                                                                                                   |                                |                  |
|---------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|------------------|
| <b>Sean Ozalpasan</b> , Peyton Tran, Lamine Nouredine, Aisha Ali-Gombe "TinyML Enabled HIDS for Microcontrollers"                                 | Tufts University               | Aisha Ali-Gombe  |
| <b>Preston Phillips</b> , Parampreet Singh "Understanding the Loitering Bounce through the Power Spectrum of the CMB"                             | University of Texas at Austin  | Parampreet Singh |
| <b>Mohommed Rahman</b> , Ka-Ming Tam "Implementing Non-Equilibrium DMFT onto a Quantum Computer."                                                 | College of William & Mary      | Ka-Ming Tam      |
| <b>Idden Tsai</b> , Noble Gluscevic, Wei-Ting Lin, James Sauls "Simulations of Vortex Motion and Dissipation In Thin-Film, Dirty Superconductors" | University of Illinois Chicago | James Sauls      |
| <b>Jack D. Weide</b> , Tai Hua, Kenneth Lopata "Attosecond Electron Dynamics of Transition Metal Complexes"                                       | Montana State University       | Kenneth Lopata   |

## DR. THEDA DANIELS-RACE'S LAB

|                                                                                                                                          |                            |                    |
|------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|--------------------|
| <b>Hams Abdulqader</b> , Theda Daniels-Race "Atomic Force Microscopy: A Study in Use and Functionality"                                  | Louisiana State Univeristy | Theda Daniels-Race |
| <b>Aloka Fernando</b> , Theda Daniels-Race "Restoration Assessment of an Inert-Atmosphere Glovebox for Air-Sensitive Materials Research" | Louisiana State University | Theda Daniels-Race |
| <b>Ahsan Gaskins</b> , Theda Daniels-Race "Flourescence Spectroscopy: A Study in Operational Modernization and User Accessibility"       | Louisiana State University | Theda Daniels-Race |



# LIGHTNING TALKS

## LBRN SUMMER RESEARCH PROGRAM

|                                                                                                                                                                                                                                                                                               |                                           |                       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|-----------------------|
| <b>Aubrey Bordelon</b> , Venkatesh Mayandi, Debajyoti Majumdar, Kabita Kunwar, Arpan Chowdhury, Prajesh Shrestha, Seetharama Jois<br>"Getting at the Heart of Lung Cancer: The Antiproliferative Activity And Stability of a Small Molecule Targeting EGFR/HER2-Expressing Lung Cancer Cells" | University of Louisiana at Monroe         | Seetharama Jois       |
| <b>Taylor Burket</b> , Lorien Helm, Brandon David, Kade Malone, Srinivas Garlapati "Role of Histone Modifications in Antigenic Variation in <i>Giardia lamblia</i> "                                                                                                                          | University of Louisiana at Monroe         | Srinivas Garlapati    |
| <b>Rama Hamed</b> , Tan Phuc Le, Md Wasi Ul Kabir, Ayon Dey, Md Tamjidul Hoque "Binding Disorder Region Prediction"                                                                                                                                                                           | Louisiana State University at New Orleans | Md Tamjidul Hoque     |
| <b>Hannah Kate Hooker</b> , Subhajit Chakrabarty, Devesh Sarda, Udaysinh Rathod "Predicting Alzheimer's Disease Using Biomarkers"                                                                                                                                                             | University of Louisiana at Monroe         | Subhajit Charkrabarty |
| <b>Sarina Khadka</b> , Doreen Aidoo, Philip Le Riche, Shelby Powell, Claudia Olah, Pradip Panta "DedA Proteins Couple Calcium-Dependent Signaling to Oxidative Phosphorylation and Bacterial Fitness"                                                                                         | Southeastern Louisiana University         | Pradip Panta          |
| <b>Tan Phuc Le</b> , Rama Hamed, Md Wasi Ul Kabir, Ayon Dey, Md Tamjidul Hoque "SemiDisPred: A Machine Learning Framework for Predicting Transitional States in Intrinsically Disordered Proteins"                                                                                            | Louisiana State University at New Orleans | Md Tamjidul Hoque     |
| <b>Madeline McClatchey</b> , Subhajit Chakrabarty, Devesh Sarda, Udaysinh Rathod "Spatiotemporal Modeling of Airborne Allergens"                                                                                                                                                              | Louisiana State University at Shreveport  | Subhajit Chakrabarty  |
| <b>Juan Otero, Camila Lamy</b> , Allyn Schoeffler "The Molecular Basis for RNA Binding by Erythromycin Resistance Methyltransferase"                                                                                                                                                          | Loyola University New Orleans             | Allyn Schoeffler      |
| <b>Kaleb Schmidley</b> , Subhajit Chakrabarty, Devesh Sarda, Udaysinh Rathod, Mike Maguigan "Predicting Groundwater Levels Using Ground and Surface Water Data in Red River Basin"                                                                                                            | Louisiana State University at Shreveport  | Subhajit Chakrabarty  |
| <b>Imoh Thomas</b> , Sarina Khadka, Doreen Aidoo, Philip Le Riche, Shelby Powell, Claudia Olah, Pradip Panta "Osmotic Regulation of Phage Susceptibility Through the DedA-PhoPQ Signaling Axis in <i>Klebsiella pneumoniae</i> "                                                              | Southeastern Louisiana University         | Pradip Panta          |
| <b>Charles Worrell</b> , Joel Atallah "TE mobilization and the Evolution of Insecticide Resistance in <i>Drosophila</i> Species"                                                                                                                                                              | Louisiana State University at New Orleans | Joel Atallah          |

## LSU MUSEUM OF ART

|                                                                                                                                    |                            |                  |
|------------------------------------------------------------------------------------------------------------------------------------|----------------------------|------------------|
| <b>Sebastian Crandall</b> , Michelle Schulte, Marianna Luquette<br>"Radioactive Prints: Caroline Durieux and Electron Printmaking" | Louisiana State University | Michelle Schulte |
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## LSU VET MED SUMMER UNDERGRADUATE RESEARCH PROGRAM

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| <b>Ella Thomakos</b> , Prajesh Shrestha, Debajyoti Majumdar, Caroline S. Gwaro, Venkatesh Mayandi, Graca M.H. Vicente, Seetharama D. Jois<br>"Liposomal Formulation Of Near Infrared BODIPY-Based Theranostic Agents For Colorectal Adenocarcinoma" | Loyola University Chicago | Seetharama Jois |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|-----------------|

## LIGHTNING TALKS

### MISSDELTA INITIATIVE - REU

**Malai Harrington**, Maya Maes-Johnson, Hemanta Pohkarel, Bijaya Adhikari, Claire Perrault, Traci Birch "Co-Production of Adaptive Management Strategies in Birdfoot Delta"

Tulane University

Traci Birch

### PHYSICS AND ASTRONOMY - REU

**Michael Lan**, Daniel E. Sheehy "Density and Entanglement Dynamics of Analog Hawking Radiation in Strained Graphene"

University of California at Berkeley

Daniel Sheehy

### SMART POLYMER - REU

**Elie Gringauz**, Emma McCarthy, Christopher Marvel "Johnson-Mehl-Avrami-Kolmogorov (JMAK) Kinetics for the Mechanochemical Reduction of Iron Titanium Oxide (FeTiO<sub>3</sub>) with Manganese (Mn)"

University of Wisconsin at Madison

Christopher Marvel

**Kevin Hu**, Lutfun Hilary, Donghui Zhang "Synthesis and Characterization of Molecular Dynamics Simulation-Designed Peptoids for PFAS Capture"

The University of Chicago

Donghui Zhang

**Andrew Poh**, Md Abdullah Al Mahmud, John A. Pojman "A Combined Cationic-Radical Approach to Frontal Polymerization of [3,4-Epoxy cyclohexyl]methyl Acrylate"

Pennsylvania State University

John Pojman

### SPECIAL COLLECTIONS SUMMER PROJECTS

**Jessie Bourgeois**, Kelly Larson "From the Outside Looking In: Writing About New Orleans at the Turn of the Century"

Louisiana State University

Kelly Larson

**McKenzie Franklin**, Brandon Layton "The Integration of LSU and the Enduring Legacy of Maxine Crump"

Louisiana State University

Brandon Layton

### SUMMER PROJECT GRANT RECIPIENT

**Shelby Krieger**, Laura Ikuma, Isabelina Nahmens, Caren Montiero, Frank Amankwah, Maria Rodriguez, Tavius Turner, Sydney Silverstein "Standardizing Indoor Air Quality Monitoring: An Industrial Engineering Approach to Continuous Multi-Pollutant Data Analytics in Residential Environments"

Louisiana State University

Isabelina Nahmens

# KEYNOTE SPEAKER

***Dr. Ibrahim Baggili***

*Join us at 9:00 a.m. in Room 1100, Patrick F. Taylor Hall to hear Dr. Ibrahim Baggili's keynote speech.*



## ***About Dr. Baggili***

Abe Baggili serves as the Chair of the Division of Computer Science and Engineering and Roger Richardson Professor at LSU. He is the founder of the BiT Lab and has published extensively in the domain of digital forensics and cybersecurity.

Baggili has won numerous awards, including the CT Civil Medal of Merit, the Medal of Thor from the Military Cyber Professional Association, CT 40 under 40, and is a fellow of the European Alliance for Innovation.

Previously he was the director of the Connecticut Institute of Technology and Elder Family Endowed Chair of Computer Science and Cybersecurity at the Tagliatela College of Engineering at the University of New Haven. He received his BSc, MSc and PhD all from Purdue University, where he worked as a researcher in CERIAS.

Baggili's work with his students has uncovered vulnerabilities that impact over a billion people worldwide and has been featured in news and TV outlets in over 20 languages. He has also published extensively in the domain of digital forensics.

# NOTES

# LSU

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