

Summer Undergraduate Research Forum

Friday, August 2, 2013

2013 Summer Undergraduate Research Forum

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Schedule of Events

Time	Event	Location
9:00 AM - 10:00 AM	Poster Setup	LSU Union Ballroom
10:00 AM - 11:30 AM	SURF Speakers	130 Nicholson
11:30 AM - 1:00 PM	Poster Setup	LSU Union Ballroom
1:00 PM - 4:00 PM	SURF Poster Session	LSU Union Ballroom



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The Development of an Academic Career and Research Highlights

Lydia Wilson

"Medical Zumba-cist Globe Trotting"

Lydia Wilson was born in Chicago, Illinois and graduated from Downers Grove South High School in 2005. She earned her B.A. in physics with a minor in music from the University of California, Berkeley in 2009. After a gap year spent traveling Europe and Australia, she decided to return to graduate school and matriculated into LSU's MS in medical physics program in 2010. Lydia will be defending her master's thesis, Analytical model for out-of-field photon doses, on August 14, 2013. After the completion of her Master's, she will be spending a year in Croatia researching radiotherapy health-care disparities between Croatia and America as Fulbright award recipient. Following this she will begin work as a PhD student in medical physics at MD Anderson in Houston in the Fall of 2014.



Benjamin Dubansky

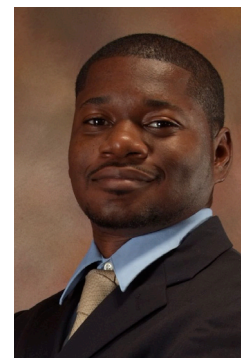


"The effects of environmental stressors on physiological function and our lives"

Benjamin Dubansky is originally from Richmond, Virginia. He became interested in biology at Virginia Commonwealth University after taking an introductory biology class, and subsequently changed his major, although had no aspirations for a career in biology. Within 12 credits of graduation, he moved to Los Angeles where he was a stage manager and artist-in-residence at an independent film studio and art gallery. A few years later, he returned to the East Coast and founded a business specializing in low voltage electrical controls. He slowly finished his degree in biology, and became especially interested in physiology. In 2007 he enrolled in the Ph.D. program in the Department of Biological Sciences at LSU. His interests revolve around the effects of environmental stressors on physiological function, with a focus on embryological development. Much of his recent work has revolved around the Deepwater Horizon oil spill, and he recently defended his dissertation and took a job as a postdoctoral scholar at the University of North Texas in the Department of Biological Science's Developmental Integrative Biology Cluster.

Cornelius Toole, Jr

Dr. Toole is an assistant professor of Computer Science at Tougaloo College in Tougaloo, Mississippi. Before that, he was Huel D. Perkins Doctoral Fellow and graduate research assistant working with the Tangible Visualization Laboratory and Scientific Visualization Group at Louisiana State University's Center for Computation and Technology. In 2012, Cornelius completed doctoral studies in Computer Science at Louisiana State University under the direction of Prof. Brygg Ullmer. He also holds an MS and BS in Computer Science from Jackson State University. Dr. Toole is interested in empowering and connecting others through interactive and distributed computing technologies.



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The 20th Annual Summer Undergraduate Research Forum (SURF) is pleased to showcase the numerous undergraduate students who have engaged in summer research projects this year at institutions throughout the LSU System.

SURF participants represent programs including:

- Center for Computation & Technology Research Experiences for Undergraduates (CCT REU)
- HHMI Professor's Program
- Initiative for Maximizing Student Diversity Program (IMSD)
- LSU/BRCC Bridges to the Baccalaureate Program (Bridges)
- LSU-Howard Hughes Medical Institute (HHMI) Program
- Louisiana Alliance for Simulation-Guided Materials Applications (LA-SiGMA)
- Louisiana Biomedical Research Network (LBRN)
- Louisiana Science, Technology, Engineering, and Mathematics Research Scholars Program (LA-STEM)
- Robert Noyce Scholarship Program (Geaux Teach NOYCE)
- Office of Strategic Initiatives Research Experiences for Undergraduate (OSI REU)
- Ronald E. McNair Research Scholars
- Physics & Astronomy Research Experiences for Undergraduates (P&A REU)
- Supervised Undergraduate Research Experience (SURE)
- Individual student researchers in various laboratories across LSU

SURF is sponsored by the programs listed above. Additional support was provided by LSU through Innovation through Institutional Integration (I³), the College of Science, and the Office of Research and Economic Development.

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Student researchers are listed alphabetically and number assignment indicates poster location.

1. **Jared Able** (LSU, OSI REU), LSU Mathematics, "Correspondence between Weighted Norms of Radon Transforms."
2. **Mohammad Q. Abughazleh** (UNO, LBRN), Jihang Ju, Samuel Okpechi, Youssef Erammi, and A. Hamid Boulares, LSUHSC-NO Pharmacology and Experimental Therapeutics, "DNA-PK Regulates TNF-induced ICAM-1 in a Colon Cancer Cell Line: A Novel Function of DNA-PK."
3. **Francis Afzal** (Truman State University, CCT REU), Christopher Granier, and Georgios Veronis, LSU Electrical Engineering & Computer Science and Center for Computation & Technology, "Optimizing Multilayer Thermo-Photovoltaic Crystals."
4. **Mario Alegre** (The University of Chicago, CCT REU), Mario Alegre, Peter Diener, and Frank Loeffler, LSU Center for Computation & Technology and Physics & Astronomy, "Evolving Scalar Field Waves in the Vicinity of a Black Hole."
5. **Celine Allen** (Quest University Canada, HHMI), Le Zhang, Annadora Bruce-Keller, & Jeffrey Keller, PBRC Institute for Dementia Research and Prevention, "Influence of ApoE on the interaction between objective measures of cognition, physical activity, and physical performance."
6. **Baron Andrus** (LSU, NOYCE), Curtis Colson, Randall Gayda, and Eric Achberger, LSU Biological Sciences, "Tracking Salmonella Strains in Turtles using RAPD DNA Fingerprinting."
7. **Erika L. Arceneaux** (LSU, HHMI), Miriam K. Konkel, Jerilyn A. Walker, Mark A. Batzer, LSU Biological Sciences, "Exploring the Kothi Retrotransposon Through the Common Marmoset Genome."
8. **Sasha A. Bacchus** (LSU, OSI REU), Leah Garber, Michael Tullier, John Pojman, LSU Chemistry, "Incorporation of Nanocellulose Fibers Into Polymeric Materials Using Deep-Eutectic Solvents."
9. **Austin Baldwin** (LSU, Physics & Astronomy REU), Robert Hynes, Christopher Britt, Christopher Johnson, The Galactic Bulge Collaboration, LSU Physics & Astronomy, "Optical Counterparts to XMM-Newton X-ray Sources in the Galactic Bulge Survey."
10. **Addie Jane Barron** (Centenary College of Louisiana, LBRN), Shaoxiao Wang, Stephan Witt, LSUHSC-S Biochemistry and Molecular Biology, "Screening for Compounds that Rescue Cells from Endoplasmic Reticulum Stress Caused by a High PC/PE Ratio."
11. **Jean-Marc Bastien** (LSU, McNair Scholar Program), Sherif Ishak, Jose Rodriguez, Osama Thabet, Shanea Morrison, Joseph Givens, LSU Civil & Environmental Engineering, "Connected Vehicle Technology; Pros and Cons."
12. **De-Andre' T. Beadle** (LSU, McNair Scholar Program), Belinda Davis, Joseph Givens, LSU Department of Political Science, "Social Capital and Education Outcomes in Children of Immigrants."
13. **Emily Bell** (Monmouth College, Physics and Astronomy REU), Thomas Kutter, LSU Physics & Astronomy, "Muon Decay In Prototype Neutrino Detector."
14. **Zachary David Belou** (LSU, OSI REU), Naci Mocan, LSU Economics, "How to Control Your Kids: A Statistical Analysis of Teenage Cell Phone Use and Social Behavior."
15. **Elizabeth R Bergeron** (Nicholls State University, LBRN), L Alice Simmons, John C Larkin, LSU Biological Sciences, "Does Overexpressing MYB3R Transcription Factors Overcome Function of SIAMESE (SIM) in Arabidopsis thaliana?."
16. **Seraphine Bih** (SUNO, LBRN), Dr Eric Lazartigues, Pedersen, Kim Brint, Chhabra, Kavaljit H, Sriramula, Srinivas, LSUHSC-NO Pharmacology, "The effect of angiotensin II and glucose on the ACE2 - shedding enzyme ADAM17."
17. **Mitchell Bogan** (LSU, UROP), Jenessa Kay, and Kenneth Brown, LSU Biological Sciences, "Effect of Hydrocarbon Contamination on Oyster Reef Commensal Assemblage Colonization Rates."
18. **Molly Bourg** (LSU, OSI REU), M'Famara Goita, John Finley, LSU Food Science & Technology, "Benefits of Bean Resistant Starch in Colonic Fermentation."
19. **Bryce A. Bourgeois** (LSU, McNair Scholar Program), LSU Campus Life, "Contact Theory as a Framework to Understand Perceptions of Gay Men and Lesbians in the South."
20. **Mitchell Ian Brickson** (Goshen College, LA-SiGMA) and Dana Browne, LSU Department of Physics & Astronomy and Center for Computation & Technology, "Electronic and Magnetic Properties of MnGe."
21. **Charles Brooks** (LSU, HHMI), Tyler Rodriguez, Vijai Krishnan, Evanna Gleason, LSU Biological Sciences, "Identifying Endosomal Chloride Channels in the Avian Retina."

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22. **Arielle Brown** (LSU, McNair Scholar Program), Cassandra Chaney Ph.D., LSU School of Human Ecology, "Is Black Motherhood A Symbol of Oppression or Empowerment? Hip-Hop and R&B Lessons about 'Mama'."
23. **Savannah Burch** (LATECH, LBRN), Rebecca Hill, Emily Creekmore, Masami Yoshimura, LSU-SVM, Comparative Biomedical Sciences, "Does alcohol modulate phosphorylation state and functional state of CREB (cAMP-responsive element-binding protein)?"
24. **Scott Lincoln Burke** (LSU, Physics & Astronomy REU), M. Alleman, D. Branch, N. Bryan, B. Christner, B. Ellison, J. Giammanco, D. Granger, T. G. Guzik, M. F. Stewart, LSU Physics & Astronomy, "HADES High Altitude Dry Environmental Sampling."
25. **Amber Bux** (ULL, LBRN), Nicolas Bazan, William Gordon, Yongdong Zhou, Eric Knott, LSUHSC-NO Neuroscience, "Optical Coherence Tomography and the effects of DHA on retinal degeneration in the retinitis pigmentosa rat model undergoing oxidative stress."
26. **Jannet Bux** (ULL, LBRN), Pranab K. Mukherjee, Nicolas G. Bazan, LSUHSC-NO Neuroscience, "Antioxidant Responsive Element (ARE)-mediated antioxidant response in oxidative- stressed retinal pigment epithelial (ARPE-19) cells is a target in DHA-PEDF mediated cell survival."
27. **Grégoire Ceugniet** (Université Joseph Fourier, HHMI), LSU Chemistry, "How Do Ultrasounds Affect a Rod-like Polypeptide?"
28. **Anju Chaudhari** (LATECH, LBRN), Srinivas Sriramula, Eric Lazartigues, LSUHSC-NO Pharmacology & Experimental Therapeutics, "Enhanced Angiotensin II results in ACE2 shedding by increasing ADAM 17 in neurons."
29. **Tyler Chaves** (LSU, NOYCE), Diana Coulon, Michael Keenan, Diana Carvajal-Aldaz, LSU AgCenter, "Who's Colonizing Your Intestines? A Change in Microbiota in Rats."
30. **Chelsea Cloutre** (LSU, HHMI), Merritt L. Drewery, Terri Thomas, D' Andreas Williams, Shirley Ennis, David Burk, William T. Cefalu, Carol J. Lammi-Keefe, and Holiday A. Durham, LSU Human Nutrition and Food, "Lipid Droplet Accumulation in Human Placental Tissue."
31. **Cody Coryell-Turpin** (LSU, SURE), Luke Stamper, William Platt, LSU Biological Sciences, "Distribution of woody plant species along an elevation gradient in a Louisiana pine savanna."
32. **Lara Crawford** (ULM, LBRN), Donna Rogers, Gloria McClure, LSUHSC-S Pediatrics, "Construction of a Chimeric BKV and Squirrel Monkey Polyomavirus."
33. **Margerie Elizabeth Crawford-Drake** (BRCC, OSI-HHMI), Theresia Lavergne, LSU AgCenter School of Animal Science, "Comparing different Bedding Types Used in Poultry Production."
34. **Samuel Cupp** (Austin Peay State University, Physics & Astronomy REU), Peter Diener, LSU Physics & Astronomy, "Evolving the Wave Equation on Hyperboloidal Slices."
35. **Preston T. Danielson** (Louisiana School for Math, Science, and the Arts), Warren Waggenspack, Li, and Kang Zhang, LSU Engineering and Center for Computation and Technology, "Ancestry Determination of Skulls Utilizing 3D Scanning and Identification Software."
36. **Sherrard M. Davidson** (LSU, OSI REU), Maria Gutierrez-Wing; Kelly Rusch, LSU Environmental Engineering, "Cyanobacterial Pigments as Sensitizers for Nanomaterials-based Solar Cells."
37. **Christian J. Davis** (Xavier University of Louisiana, LBRN), Jeffrey Wang, Mohamed A. Ghonim, Amarjit S. Naura, A. Hamid Boulares, LSUHSC-NO Pharmacology and Experimental Therapeutics, "Olaparib, a clinically approved PARP inhibitor harbors a therapeutic potential for treatment of allergic airway inflammation in asthma."
38. **Jared DeSoto** (LSU) Anirban Sarkar, Theda Daniels-Race, LSU Electrical & Computer Engineering, "Deposition of carbon nanotubes (CNTs) for next generation consumer electronics."
39. **Mark Feuer DiTusa** (LSU, LA-SIGMA), Chad Thibodeaux, Matthew Patterson, Hunter McDaniel, Phillip Sprunger, LSU Department of Physics & Astronomy, "Phenol on the Surface of Zinc Oxide."
40. **Dieu T. Doan** (LSU, HHMI), Kelley G. Nunez, Brent C. Christner, John R. Battista, LSU Biological Sciences, "Directed evolution of desiccation tolerance in Escherichia coli."
41. **Andrew B. Doyle** (LSU, HHMI), Ammar Qureshi, Daniel Hayes, LSU Biological & Agricultural Engineering, "Effect of scaffold composition on the steogenic differentiation of human adipose stem cells with photo-activated nanoparticles."
42. **Tristan Doyle** (BRCC, BRCC Bridges to Baccalaureate Program), Dylan Shannon, Frank M Andrews, LSU SVM Equine Health Studies Program, "Antibody Response of Pony Foals After Vaccination for West Nile Virus and Eastern Equine Encephalitis."
43. **Victoria Dugas** (LSU, OSI REU), Paria Avij, Kalliat Valsaraj, LSU Chemical Engineering, "Transportation of Oil Spill Matter to Atmosphere"

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- by Bursting Bubbles.”
44. **Casey Duvall** (LSU, McNair Scholar Program), LSU SVM Comparative Biomedical Sciences, “The Effects of Early-Life Second-Hand Smoke Exposure on Adult Susceptibility to Bacterial Infection of the Lungs.”
 45. **Edidiong D. Ekpo** (BRCC, HHMI Professors Program), Leslie G. Butler and Shawn Liner, LSU Chemistry Department, “LabView programs to wear lithium ion batteries before X ray and Neutron Interferometry imaging.”
 46. **Mariel Escobar** (BRCC, BRCC Bridges to Baccalaureate Program), Javier Garza, James E. Miller, LSU SVM Pathobiological Sciences, “The Efficacy of Four Novel Ketone Compounds as an Anthelmintic against Trichostrongyle Nematode Larvae.”
 47. **Vicente Estrada-Carpenter** (Southwestern University, Physics and Astronomy REU), Robert I. Hynes, LSU Physics & Astronomy, “Examining XMM Observations in the Galactic Bulge Survey Region.”
 48. **Jordan Falgoust** (LSU, OSI REU), LSU Mechanical & Industrial Engineering, “Design of an Experiment for Measurement of Free-Convective Heat Transfer in the Transition from Continuum to Non-Equilibrium.”
 49. **Jennifer Farrar** (LSU, LSU), Matthew Williams, Brent Christner, LSU Biological Sciences, “Presence of Biological Ice Nucleating Bacteria in Louisiana Rainfall.”
 50. **Kara Fellner** (BRCC, BRCC Bridges to Baccalaureate Program), Sue Hagius, Katherine Petersson (University of Rhode Island), James E. Miller, LSU SVM Pathobiological Sciences, “Vitamin E Boosts Lambs’ Immune Response To Brucellosis.”
 51. **Catherine Fielder** (Texas Tech University, Physics and Astronomy REU), Tom Maccarone, Rob Hynes, LSU Physics & Astronomy, “The Galactic Bulge Survey: UV Observations.”
 52. **Morgan Fine-Morris** (Bryn Mawr College, Physics and Astronomy REU), James Matthews, LSU Physics & Astronomy, “Determining Cosmic Ray Composition Trends from Patterns in Air Shower Development.”
 53. **Azzy Francis** (LSU, OSI REU), Lauren E. Englade-Franklin, Steve M. Deese, and Jayne C. Garno, LSU Chemistry, “Spatially selective attachment of metal nanoparticles onto designed nanopatterns of organosilane self-assembled monolayers.”
 54. **Jermain Franklin** (BRCC, LA-SiGMA), Xiaoxia He, and Francisco Hung, LSU Cain Department of Chemical Engineering and Center for Computation & Technology, “Molecular Simulation Studies of Ionic Liquids Inside Titania Nanopores.”
 55. **Hannah Gardiner** (LSU, OSI REU), J.C. Blackmon, C. Deibel, E.R. Gardiner, J. Lai, A. Lauer, L.E. Linhardt, K.T. Macon, M. Matos, B.C. Rasco, L. Baby, E. Koschiy, G. Rogachev, D. Santiago-Gonzales, I. Wiedenhofer, D.W. Bardayan, LSU Physics & Astronomy, “Development of the Position Sensitive Ionization Chamber for ANASEN.”
 56. **Prentice Garrett** (Southern University, LBRN), Craig Hart, LSU Biological Sciences, “Affinity Purification of IgG Binding Domain tagged BEAF 32-B.”
 57. **Kay Gauthier** (BRCC, BRCC Bridges to Baccalaureate Program), Nabin Timilsina, William J. Platt, LSU Biological Sciences, “Growth Mechanism and Ecological Behavior of Carnivorous Pitcher Plant (*Sarracenia alata*) Found in the Abita Springs Flatwood Preserve.”
 58. **Adam Glover** (BRCC, BRCC Bridges to Baccalaureate Program), Tianyun Long, Rui Lu, LSU Biological Sciences, “An essential role of DRH-3 in antiviral RNA silencing and RNA silencing targeting cellular transcripts.”
 59. **Vilien C Gomez** (LSU, OSI REU) and Xin Li, LSU School of Electrical Engineering & Computer Science and Center for Computation & Technology, “Ancestry Determination.”
 60. **Carrie Elizabeth Gormanous** (LSU, NOYCE), Anu Susan Charles, and Konstantin Gus Kousoulas, LSU SVM Pathobiological Sciences, “Understanding Herpes Simplex Virus Infections Using Molecular and Cellular Biology Tools.”
 61. **Charles Graham** (LSU) Kalyan Kanakamedala, Theda Daniels-Race, LSU Electrical & Computer Engineering, “Printing nano-structures using Near-field Electrospraying.”
 62. **Adrian Guerrero** (University of Texas-Pan American, HHMI), Saroj Yadav, Chyree S. Batton, Carol Taylor, LSU Chemistry, “Constructing the Building Blocks: Progress Toward the Total Synthesis of Theonellamide C.”
 63. **Edgar Guerrero** (University of Texas-Pan American, UTPA - HHMI), Joel Manrique, Pamela Chavero, Nathalie Quach, James Bullard, UTPA Chemistry, “Purification and Characterization of Glutamyl-tRNA Synthetase from *Pseudomonas aeruginosa*.”
 64. **Simone Guidry** (LSU, OSI REU), Hang Yin, Guoping Zhang, LSU Civil & Environmental Engineering, “Particle Size Kinetics of Suspended Cohesive Sediments Affected by Exopolymers.”
 65. **Benjamin K Guitreau** (LSU, OSI REU), Chris

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- Branton, Brygg Ullmer, LSU Center for Computation & Technology, "Using web based technologies to create interactive and accessible scientific visualizations."
66. **Daniel M. Halbe** (Western Illinois University, Physics and Astronomy REU), Marissa Walker, Thomas Abbott, Keiko Kokeyama, and Gabriela Gonzalez, LSU Physics & Astronomy, "Characterization of motion of suspended optics in Advanced LIGO gravitational wave detectors."
 67. **Ryan Hanson** (UNO, LBRN) and Joy Sturtevant, LSUHSC-NO Microbiology, Immunology, and Parasitology, "When Opportunistic Pathogens Take Over: Microtool Construction for Understanding Biofilm Formation in *Candida albicans*."
 68. **Jonathan Heath** (Francis Marion University, CCT REU), Shawn Walker, LSU Mathematics and Center for Computation & Technology, "Triangular Mesh Optimization."
 69. **Elizabeth Hilliard** (Rensselaer Polytechnic Institute, CCT REU), Chinedu Ekuma, Juana Moreno, and Mark Jarrell, LSU Center for Computation & Technology and LSU Physics & Astronomy, "First Principles Study of the Electronic Properties of $\text{Ca}_{10}(\text{Pt}_3\text{As}_8)(\text{Fe}_2\text{As}_2)_5$."
 70. **Damond D Howard** (LSU, OSI REU), LSU Computer Science, "Scalability of Monte Carlo Pi calculation under HPX."
 71. **Stephanie Howard** (Southeast Missouri State University, CCT REU), Peter Diener, Jorge Pullin, and Parampreet Singh, LSU Department of Physics & Astronomy, "Numerical Analysis of Cyclic Model in Bianchi-I Spacetime in Loop Quantum Cosmology."
 72. **Sierra Jackson** (LSU, McNair Scholar Program), Kermit Murray, Hollie Hale- Donze, Jon Beusse, LSU Chemistry, "MALDI Mass Spectrometry Imaging of Whole-Body *Drosophila*."
 73. **Ariel Jones** (LSU, OSI REU), Marcia Newcomer, Yong-Hwan Lee, and Sue Bartlett, LSU Biological Sciences, "Post Translational Modification of Human 5-LOX and PFKFB in the Regulation of Inflammatory and Metabolic Processes."
 74. **Stephen Jones** (LSU, OSI REU), Aubrey Heath, Kalliat Valsaraj, LSU Chemical Engineering, "Atmospheric Oxidation of Benzene: Effect of High Concentration of Ammonium Sulfate Solution with Phenol and Biphenyl Formation."
 75. **Lisa Kam** (Baton Rouge Magnet High School, LA-SiGMA), Brian Sayre, Robert Beaird, and Les Butler, LSU Chemistry, "How Round Art Thou, Fair Particle?"
 76. **Kristin Kendrick** (LSU, OSI REU), Yasmin Mohammad, LSU Civil & Environmental Engineering, "Polycyclic Aromatic Hydrocarbons from MC252 Crude Oil on *Spartina alterniflora* Leaves."
 77. **Jennifer Kenyon** (LSU, OSI REU), Lindsay Prothro, Brooks Ellwood, LSU Geology & Geophysics, "Interpreting The Stratigraphy In Florissant Fossil Beds National Monument Using Magnetic Susceptibility And Geochemical Comparison."
 78. **Aimee LaCour** (LATECH, LBRN), Ranjita Shrestha, Alan Mouton, Jason Gardner, PhD, LSUHSC-NO Physiology, "ECIS Wound Healing Assay Demonstrates Mechanism of Alcohol Induced Fibrosis."
 79. **Morgan Landry** (LSU, NOYCE), Frank Neubrander, LSU Mathematics, "The Field of Sequences and the Z-Transform."
 80. **Anya Leach** (West Virginia University, CCT REU), Brian Novak, Jieqiong Lin, and Dorel Moldovan, LSU Mechanical Engineering and Center for Computation & Technology, "Molecular dynamics simulations of bile salts and their acids interacting with a DMPC lipid bilayer."
 81. **Natasha Lee** (LSU, McNair Scholar Program), Tyler Renshaw, LSU Psychology, "Relationship Between Global and Academic Positive Psychology."
 82. **Yan (Asta) Li** (Cornell University, CCT REU), Kang Zhang, and Xin Li, LSU School of Electrical Engineering & Computer Science and Center for Computation & Technology, "Optimizing 3D Environment Reconstruction."
 83. **Michelle Limbaugh** (LSU, HHMI), Miriam Konkell Jerilyn Walker Mark A. Batzer, LSU Biological Sciences, "Examining Young Alu Elements in the Squirrel Monkey Genome."
 84. **Shane Lindemann** (LSU, OSI REU), Harper Meng, Guoqiang Li, LSU Mechanical Engineering, "A Smart Asphalt Sealant."
 85. **Michelle Lollie** (Rose-Hulman Institute of Technology, Physics and Astronomy REU), Kebei Jiang, Jonathan P. Dowling, PhD, LSU Physics & Astronomy, "Super-Resolving Single-Photon States from N-Photon NOON States."
 86. **Jesse Lu** (LSU, OSI REU), Van Scotter, LSU ISDS, "Optimization Models Based On Modern Portfolio Theory."
 87. **Brian Mackel** (LSU,) Hao Huang, Anne Grove, LSU Biological Sciences, "Streptomyces coelicolor encodes a urate-responsive transcriptional regulator with homology to PecS from plant pathogens."
 88. **Raquel C Martinez-Chacin** (University of Texas-Pan American, UTPA - HHMI), Megan Keniry and Robert K. Dearth, UTPA UTPA Biology Department, "Investigating genes induced by high fat diet for a role in prognosis of breast

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- cancer.”
89. **Mandonesia Maurice** (LSU, NOYCE), Robert Perlis, LSU Mathematics, “The Ant and The Plant.”
 90. **Daniel McBride** (LSU-S, LBRN), Alberto Musto, LSUHSC-NO Neuroscience Center of Excellence, “Disruption of Neuronal Networks During Epileptogenesis.”
 91. **Caitlin Mitchell** (LSU, OSI REU), Matthew Kobe, Marcia Newcomer, Sue Bartlett, LSU Biological Sciences, “Membrane Binding and Substrate Specificity of Human 15 Lox 2.”
 92. **Patrick Mooney** (BRCC, HHMI Professors Program), Jim T. Cronin, Ganesh Bhattarai, LSU Biological Sciences, “The Role of Herbivores in the Invasion Success of *Phragmites australis*.”
 93. **Colleen Murphy** (LSU, NOYCE), LSU Biological Sciences, “Can Culverts Be A Suitable Habitat For Bats In Louisiana?”
 94. **Zackari Murphy** (LSU, OSI REU), Nick Tortaro, Daniel Hayes, LSU Biological Engineering, “Biocompatibility properties of Thiol/HA based medical scaffolds utilizing frontal polymerization.”
 95. **Dustin Myers** (West Virginia University, CCT REU), Mayank Tyagi, LSU Craft & Hawkins Department of Petroleum Engineering and Center for Computation & Technology, “Numerical simulation of natural gas flow through gravel packed fractured well completions.”
 96. **Erik Juvenal Navarro** (California State University, Chico, Physics and Astronomy REU), Manish Gupta, Todd Moulder, Jonathan Dowling, LSU Physics & Astronomy, “Time-Reversing Photonic Qubit Evolution.”
 97. **Brittini Naylor** (LSU, OSI REU), Paul Magut, Isiah Warner, LSU Chemistry, “Studies of Induced Hydrophobicity of GUMBOS.”
 98. **Cody J. Neal** (LSU, Honors Thesis), Sara Zahraeifard, Aaron Smith, John Larkin, LSU Biological Sciences, “The Role of the Arabidopsis SIAMESE-RELATED Family on Root Growth during Phosphate Deprivation and Salt Stresses.”
 99. **William Nichols** (LSU Laboratory School, SURE), Waduge Indika Galpothdeniya, Isiah M. Warner, LSU Chemistry, “Cigarette Smoke Analysis by Using Optoelectronic Ionic Liquid Sensor Arrays.”
 100. **Anne-Laure Niepceron** (Université Joseph Fourier, HHMI), Elizabeth Jee, Department of Chemistry, “Development of Time-Lapse Crosslinking Triggered by the Change in pH of a Programmable pH Clock Reaction”.
 101. **Ngozi Oden Shobayo** (Northwestern State University, LBRN), Joy Sturtevant, LSUHSC-NO Microbiology, Immunology and Parasitology, “Effect of anaerobiosis on adherence to host matrix by the opportunistic fungal pathogen, *Candida albicans*.”
 102. **Samuel C. Okpechi** (SUNO, LBRN), Mohammad Ghonim, Bashir M. Rezk, Amarjit S. Naura and Hamid A. Boulares, LSUHSC-NO Pharmacology and Experimental Therapeutics, The Stanley Scott Cancer Center, “Eosinophil recruitment into the airways following intravenous injection of spleen cells isolated from sensitized mice.”
 103. **Andrew Olivier** (LSU, OSI REU), LSU Physics & Astronomy, “Design and Testing of a Punch-Through Veto for LArIAT.”
 104. **Eric Pavlovich** (BRCC, BRCC Bridges to Baccalaureate Program), Alexandra Evans, Grover Waldrop, LSU Biological Sciences, “Mutation of *Escherichia coli* Biotin Carboxylase-Biotin Carboxyl Carrier Protein Interface Residue E147.”
 105. **Ariel Pereira** (BRCC, BRCC Bridges to Baccalaureate Program), Javier Garza, Christine Navarre, James E. Miller, LSU SVM Pathobiological Sciences, “Efficacy of Ivermectin in comparison to Ivermectin in Bovine Species.”
 106. **Andrew Pham** (LSU, OSI REU), Nicole K. Richards, Amie K. Hansel, Cort Anastasio, Kalliat T. Valsaraj, LSU Chemical Engineering, “Oxidation of Green Leaf Volatiles in Fog Droplets as a Source of Secondary Organic Aerosols.”
 107. **Bao Pham** (LSU, NOYCE), Sarah Schott, David Shea Vela-Vick, LSU Mathematics, “Invariants of Transverse Braids Coming From Knot Floer Homology.”
 108. **Boyang Piao** (LSU, OSI REU) Maria Plata, Rocio Banos, LSU School of Veterinary Medicine, “The Production of Mucins in Vitro and in Vivo with infection of Human Metapneumovirus.”
 109. **Quintin Picard** (LSU, NOYCE), Carl Knopf, LSU Chemical Engineering, “Centrifugal Heat Transfer.”
 110. **Evan Plunkett** (Rensselaer Polytechnic Institute, LA-SIGMA), D. M. Gautreau, B. W. Fulfer, J. F. DiTusa, and D. P. Young, LSU Department of Physics & Astronomy, “Study on Doping Effects in Noncentrosymmetric Crystal Structures.”
 111. **Anupa S Prajapati** (ULM, LBRN), Karen E Field, Karen P Maruska, LSU Biological Sciences, “Social status influences different modulatory receptors in the olfactory bulb of an African cichlid fish.”
 112. **Katherine Prutz** (Louisiana School for Math, Science, and the Art) Warren Waggenpack Xin Li, and Kang Zhang, LSU Engineering and Center for Computation & Technology, “Digital

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- Reassembly of 3D Scanned Skull Fragments Parallelized Utilizing MPI and Spectral Bisection.”
113. **Jennifer Quebedeaux** (LSU, OSI REU), DiMario RJ, Bice KM, Longstreth DJ, and Moroney JV, LSU Biological Sciences, “Investigating the Differences Between Two Chloroplast Carbonic Anhydrases in Arabidopsis thaliana.”
 114. **Tierra Range** (Centenary College of Louisiana, LBRN), Seiichi Omura, Ph.D., Ikuo Tsunoda, M.D., Ph.D. Nicholas E. Martinez, M.S., Fumitaka Sato, Ph.D., Eiichiro Kawai, Ph.D., Liam Morris, M.D., Sadie Elliott, Lesya Ekshyyan, LSUHSC-NO Microbiology & Immunology, “Disease Modifying Drug Suppresses Inflammatory Demyelination in Viral Model of Multiple Sclerosis.”
 115. **Patrick M. Rayle** (LSU, HHMI), Maria L. Vozzo, and Kenneth M. Brown, LSU Biological Sciences, “Effects of the Deepwater Horizon oil spill on Long Term Growth and Survival of Oysters and Barnacles in Barataria Bay.”
 116. **Mario Reyes Jr** (California State University, San Bernardino, CCT REU), Christopher Granier, and Georgios Veronis, LSU Electrical Engineering & Computer Science and Center for Computation & Technology, “Enhancing Thermo Photovoltaic Panels.”
 117. **Alex Reynolds** (LSU, HHMI), Aaron P Smith, LSU Biological Sciences, “Selective expression of Pht1 family phosphate transporters to manipulate arsenate uptake.”
 118. **Anthony Risolio II** (St. John’s College, NM, Physics and Astronomy REU), K. D. Launey, T. Dytrych, and J. P. Draayer, LSU Physics & Astronomy, “The puzzle of nucleosynthesis -- nuclear structure and reactions beyond stability.”
 119. **Erin Rizzo** (LSU-S, LBRN), Elvira Kurmaeva, Dmitry Ostanin, LSUHSC-S Division of Medicine Department of Arthritis and Rheumatology, “Pegylated Arginase as a Potential Therapy for the Inflammatory Bowel Diseases (IBD): Results from Experimental Colitis Model.”
 120. **Bridget Rogers** (LSU, SURE), Maria L. Vozzo Kenneth M. Brown, LSU Biological Sciences, “Short term effects of oil exposure on fouling communities in Barataria Bay, LA.”
 121. **Erin D. Rogers** (LSU, LBRN), Ramesh Subramanian and Konstantin G. Kousoulas, LSU SVM BioMMED and Pathobiological Sciences, “Role of HSV-1 envelope glycoprotein K (gK) in viral entry into neuronal axons.”
 122. **Marisa L. Russell** (LSU, HHMI), G. M. King, LSU Biological Sciences, “Cultivation-dependent and Independent Characterization of Unique Geothermally Heated Hawaiian Microbial Mats.”
 123. **Emily Safron** (The University of Toledo, Physics and Astronomy REU), Parampreet Singh, LSU Physics & Astronomy, “Cosmological Horizons in Loop Quantum Cosmology.”
 124. **Pranav Santapuram** (Vanderbilt University, HHMI), Amanda Laque, Sangho Yu, Cory Cortez, Heike Munzberg, Thomas Gettys, PBRC Nutrient Sensing and Adipocyte Signaling, “Exploration of the Central Sensing of Dietary Methionine Restriction.”
 75. **Brian Sayre** (Muskingum University, LA-SiGMA), Lisa Kam, Robert Beaird, and Les Butler, LSU Chemistry, “How Round Art Thou, Fair Particle?”
 125. **Sarah Schott** (LSU, NOYCE), Bao Pham, David Shea Vela-Vick, LSU Mathematics, “Invariants of Transverse Braids Coming from Knot Floer Homology.”
 126. **Amanda Scott** (ULM, LBRN), Surabhi Chowdhary, Shaoxiao Wang, Jennifer Terrebonne, Cori Runfalo, Donald K. Ingram, Michael F. Salvatore, and Stephan N. Witt, “Initial Analysis of Phosphatidylserine Decarboxylase and Ethanolamine Kinase Levels in Calorie-Restricted Rats.”
 127. **Richard Sherwin** (BRCC, HHMI Professors Program), LSU CROM, “Modern Advancements in Tribology Equipment.”
 128. **Dibendra Shrestha** (LATECH, LBRN), Flavia M. Souza-Smith, LSUHSC-NO Physiology, “Characterize the Morphology and Histology of Perilymphatic Adipose Tissue Post Acute Alcohol Intoxication.”
 78. **Ranjita Shrestha** (LATECH, LBRN), Aimee LaCour, Alan Mouton, Jason D. Gardner, PhD, LSUHSC-NO Physiology, “Ethanol Induced Cardiac Fibrosis-Role of Myofibroblasts.”
 130. **April Simmons** (BRCC, BRCC Bridges to Baccalaureate Program), Warwick Allen, and James Cronin, LSU Biological Sciences, “The Affect of Water and Salinity Stress on Phragmites australis.”
 131. **Mollie Smoak** (LSU, OSI REU), Cong Chen, Leah Garber, Caleb Blackburn, Cameron Triay, LSU Biological & Agricultural Engineering, “Novel Antimicrobial Biocompatible PETA Composite Scaffolds for Orthopaedic Implants.”
 132. **Israel Soto** (LSU-S, LBRN), Kui Chen, W. Todd Monroe, J. Steven Alexander, LSUHSC-S Physiology, “Optimization of Gold Nanoshell-Mediated Photothermalolysis of Lymphatic Endothelial Cells.”
 133. **Diamond Spears** (Episcopal High School, Warner Research Group), Suzana Hamdan, Susmita Das, Naseem Alammam, Isiah M. Warner, LSU Chemistry, “Surface Modification of Ionic Liquid-Based Nanomaterials.”

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134. **DJ Speed** (LSU, HHMI), Nadine Jungnick, James Moroney, LSU Biological Sciences, "Identification of the DNA Insertion Sites in *C. reinhardtii* Mutants that are Unable to Grow on Low Levels of CO₂."
135. **Caleb Stanfield** (Northwestern State University, LBRN), Dhruva Bhattacharya, Elvira Kurmaeva, Erin Rizzo, Dmitry Ostanin, LSUHSC-S Arthritis and Rheumatology, "Potential Role of Intestinal Bacterial Flora to Lymphoma Growth in Mice."
136. **Brad Strylowski** (George Mason University, CCT REU), Jesse Allison, and Shantanu Thatte, LSU School of Music and Center for Computation & Technology, "Canvas: Touchscreen-Inspired Musical Instrument."
137. **Kevin Tchokouani** (Morehouse College, HHMI), Sara Orlik, James E. Miller, LSU Veterinary Medicine, "A Comparison of Multiple Brands of Copper Oxide Wire Particles and Their Effects on Trichostrongyle Type Larvae."
138. **Sarah Beth Theriot** (LSU, HHMI), Kelley G. Nunez, Jerome F. La Peyre, Gregg S. Pettis, and John R. Battista, LSU Biological Sciences, "Assessment of the human pathogen *Vibrio vulnificus* in Gulf of Mexico oyster *Crassostrea virginica* harvested from estuaries of different salinities with subsequent depuration treatment."
139. **Jeremy Tillay** (LSU, OSI REU), LSU Mathematics, "Resonance in Carbon Nanotubes."
57. **Nabin Timilsina** (ULM, LBRN), Kaitlynn Gauthier, William J. Platt, LSU Biological Sciences, "Growth Mechanism and Ecological Behavior of Carnivorous Pitcher Plant (*Sarracenia alata*) Found in the Abita Springs Flatwood Preserve."
140. **Julia Tobacyk** (LATECH, LBRN), Shannan Washington, Donna Neumann, LSUHSC-NO Pharmacology and Therapeutics, "HCMV-mediated dysregulation of epigenetic pathways in persistently-infected colon cells."
141. **Sydney J Turner** (Xavier University of Louisiana, LBRN), Noreen Siraj, Susmita Das, Isiah M. Warner, LSU Chemistry, "Detection of Nitroaromatic Explosives Using Carbazole-Based Fluorescent GUMBOS."
142. **John Tyler** (University of Massachusetts, CCT REU), and Seung-Jong Park, LSU Computer Science and Center for Computation & Technology, "Constructing a De Bruijn Graph for De Novo Genome Assembly."
143. **John Underwood** (Denham Springs Freshman High, LA-SiGMA), Cyrill Slezak, Ray Chastain, Juana Moreno, and Dana Browne, LSU Center for Computation & Technology and Department of Physics & Astronomy, "Tracking Student Persistence On The Force Motion Conceptual Evaluation."
144. **Vallmer Jordan** (Morehouse College, HHMI), Miriam K. Konkel, Jerilyn A. Walker, & Mark A. Batzer, LSU Biological Sciences, "An Inv-Albumin Glimpse into the Evolutionary Past of the Squirrel Monkey (*Saimiri*)."
145. **Marcus Vasquez** (LSU, OSI REU), AJ Pisano, LSU Mechanical Engineering, "Heat Recirculating Combustion for Aerospace Applications."
146. **John Vu** (LSU, LBRN), Allison J. Richard, Diana Obanda, and Jacqueline M. Stephens, PBRC, Adipocyte Biology Laboratory, "Effects of TNF α and botanical extracts from *Artemisia* species on fat cell function and ceramide metabolism in 3T3-L1 adipocytes."
147. **Tylar Walker** (BRCC, BRCC Bridges to Baccalaureate Program), Kandi Thompkins, William Doerrler, LSU Biological Sciences, "Topological analysis of *E. coli* YqjA."
148. **Marc H. Webb** (University of Maryland Baltimore County, HHMI EXROP), Bishnu P. Regmi, Susmita Das and Isiah M. Warner, LSU Chemistry, "A Quartz Crystal Microbalance Sensor Coated with Macrocyclic-based GUMBOS for Sensitive Detection of Organic Vapors."
149. **Maggie Whitsell** (LSU, OSI REU), Scott Allen, LSU Renewable Natural Resources, "Calibration of the LAI 2000 for *Taxodium distichum* using direct and indirect leaf area measurements."
150. **Jared Willard** (Macalester College, Physics and Astronomy REU), Ka Ming Tam, LSU Physics & Astronomy, "Parallel Tempering Monte Carlo Techniques in the Ising Model."
151. **Erin Williams** (BRCC, HHMI Professors Program), Kelly Rusch and Maria Teresa Gutierrez-Wing, LSU Civil & Environmental Engineering, "Algae Growth."
152. **Ashley Willis** (LSU), L. Alice Simmons, John C. Larkin, LSU Biological Sciences, "Overexpression of Endoreplication Gene SIAMESE Using Constitutive Activator VP16 and its Effects in *Arabidopsis thaliana* Trichomes."
153. **Kirby Winstead** (LSU, NOYCE), Natalie Polizopoulos, Taylor Christensen, Laura K. Stewart, LSU Kinesiology, "The Impact of Alcohol on Physical Activity and Health of Social Runners."
154. **Austin Wong** (LSU, HHMI), Muhammad B. Ekram, Joomeyong Kim, LSU Biology, "DNA Methylation Analysis of IAPLTR Retrotransposons."
155. **Diana Zacarias** (LSU, OSI REU), Joel Bugayong, Gregory Griffin, LSU Chemical Engineering, "The Effect of Nafion Supported Cu₂O Nanoparticles during CO₂ Electrochemical Reduction."

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WE GRATEFULLY ACKNOWLEDGE THE EFFORT, PARTICIPATION AND SUPPORT OF THE MANY LSU STAFF, FACULTY AND ADMINISTRATORS WHO MAKE THIS FORUM A SUCCESS EACH YEAR

BRCC-OSI HHMI Professors Program projects were supported by the Howard Hughes Medical Institute grant awarded to HHMI Professor Isiah M. Warner

CCT REU, LA-SIGMA, OSI REU, P&A REU and Robert Noyce Scholarship Program projects are supported by the National Science Foundation Award Number OCI-1263236 (CCT REU) and EPS-1003897 (LA-SIGMA).

LSU-HHMI projects were supported in part by a Howard Hughes Medical Institute grant to Louisiana State University through the Precollege and Undergraduate Science Education Program.

LBRN projects were supported by the National Institute of General Medical Sciences of the National Institutes of Health under Award Number P20GM103424 and by the Louisiana Board of Regents Support Fund. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health or Louisiana Board of Regents.

Bridges research reported in this publication was supported by a "Bridges to the Baccalaureate" award from the National Institute of General Medical Science of the National Institutes of Health under award number IR25GM102765.

SURE projects were supported by the Louisiana Board of Regents.

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