# 2019 Summer Undergraduate Research Forum

**July 26, 2019**

## Schedule of Events

LSU Student Union: Cotillion Ballroom

<table>
<thead>
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<th>Time</th>
<th>Event</th>
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<tr>
<td>9:00 am – 1:00 pm</td>
<td>Poster Setup</td>
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<tr>
<td>1:00 pm – 1:15 pm</td>
<td>Opening Remarks</td>
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<tr>
<td>1:15 pm – 4:00 pm</td>
<td>Poster Session</td>
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The 26th 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:

- Interdisciplinary Research Experience in Computational Sciences (CCT REU)
- Chemical Engineering (CHE REU)
- Consortium of Innovation in Manufacturing and Materials (CIMM REU)
- Initiative for Maximizing Student Development (IMSD)
- Louisiana Biomedical Research Network (LBRN)
- Physics & Astronomy Research Experiences for Undergraduate (P&A REU)
- Smart Polymer Composite Materials and Structures REU (SMART REU)
- Louisiana State University Discover (Discover)
- Army Education Outreach Program (USAEOP)
- Individual student researchers in various laboratories across LSU

SURF is sponsored in part by some of the programs listed above.
1. Raegan Abadie (ULM, LBRN) Sita Withers, LSU, Veterinary Sciences, “Effects of polarized macrophages on canine osteosarcoma cell function”.

2. Elizabeth Amedee (LATECH, CHE) Jack Wei, Daniel Willis, Kevin McPeak, LSU, Chemical Engineering, “Etching titanium dioxide before adding gold-nanoparticles improves sunlight disinfection.”.


4. Shelby Baham (Centenary, LBRN) Sita Withers, LSU, SVM Oncology, “The Effects of STING Downregulation in Human Osteosarcoma on Innate Inflammatory Signals”.


6. Shradha Bhatta (USM, CIMM) Zhongqiang Li, Alexandra Ramos, Meichun Li, Xiaoqian Shan, Zheng Li, Yanping Li, Qinglin Wu, Shaomian Yao, Jian Xu, LSU, SVM Comparative Biomedical Sciences, “3D-bioprinted nanocellulose-alginate aerogel for accommodating tissue-derived stem cells”.


8. Abigail Lynn Caffey (LSU, Discover) Marc Dalecki, LSU, Kinesiology, “Cognitive Deficits in Young Adults with a History of a Concussion: Different in Females and Males?”.


10. Maryn Cavalier (LSU, Discover) Elizabeth C. Martin, LSU, Biological Engineering, “Involvement of Stromal Age in Breast Cancer Endocrine Response”.


17. Emma Galligan (ERAU, P&A) Robert Hynes, Joshua Wetsus, LSU, Physics & Astronomy, “Identifying Variable Counterparts to Galactic Bulge X-Ray Sources using the NOAO Source Catalog”.

18. Angel Galvan (BRCC, CIMM) Juana Moreno, LSU, Physics, “Spinel Ferrites”.


20. Nicholas Gaubatz (Murray State University, CCT) Mayank Tyagi, Joytsna Sharma, LSU, Petroleum Engineering, Center for Computation & Technology, “Improving Seismic Interpretation: Convolutional Neural Networks with Wavelets”.


23. Jacy Haynes (SUNO, LBRN) Sarah Bergeron, Michael Behnke, LSU, SVM Pathobiological Sciences, “Characterization of felid intestinal organoids to create a platform to study the enteric stage of Toxoplasma gondii invi-vito”.

24. Peter Hedlesky (UD, P&A) Scott Marley, Jeff Blackmon, Ashley Hood, Rachel Malecek, Aaron Ryan, Gregory Guzik, Marcus Nauman, Brad Ellison, LSU, Nuclear Physics, “Tiny Detectors for Astrophysical explosions Development of the Position Sensitive Scintillator Detector (PSSD) for ANASEN”.


27. Phong Huynh (Xavier, LBRN) Phong Huynh, Lynn Harrison, LSUHSC-S, Molecular & Cellular Physiology, “Investigation Into SNCA Point Mutations That Alter α-Synuclein Aggregation”.


30. Lukas Kim (LSU, Discover) Visal Subasinghege Don, Rolf David, Pu Du, Anne Milet, Revati Kumar, LSU, Chemistry, “Behavior of Aqueous Salt Solutions at Graphene Oxide Interface”.


33. Rebecca Krueger (LSU, Discover) Alyssa Johnson, LSU, Biological Sciences, “Understanding the Biogenesis of Tubular Lysosomes During Animal Development”.


40. Abigail Moody (Centenary, SMART) Rocio Perez, Caitlan Ayala, Isaiah Warner, LSU, Chemistry, “Cation variation and its effect on the self-healing properties of Surlyn”.

41. Alexandra Nadeau (UNC, SMART) Guoqiang Li, Jizhou Fan, Xaming Feng, LSU, Mechanical & Industrial Engineering, “Free Standing Artificial Muscles Actuated With Electricity”.
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42. Henry Hoang Nguyen (Xavier, LBRN) Susmita Bhattarai, Grace Sun, Christina Acosta, Sudha Sharma, Hosne Ara, Shenuarin Bhuiyan, Hong Sun, Sumitra Mriyala, Manikandan Panchatcharam, LSUHSC-S, Cellular Biology & Anatomy, “Effect of Lysophosphatidic Acid on Blood Brain Barrier”.

43. Chikaodili Osuji (SUNO, LBRN) Sudha, Castillo, Ekpo, Fletcher, Majid, Tulane, Physiology Hypertension & Renal Center of Excellence, “Analysis of tumor necrosis factor-alpha receptor 1 (TNFR1) in renal tissues of nitric oxide deficient mice chronically fed with normal and high salt containing diets”.


45. Katherine Perez (BRCC, CIMM) Brian Novak, Dorel Moldovan, LSU, Mechanical & Industrial Engineering, “Molecular Dynamics Simulation Studies of Thermophysical Properties of Liquid Ni-Cr”.

46. Mekenzie Peshoff (Centenary, LBRN) Sureshbabu Nagarajan, Stephan Witt, LSUHSC-S, Biochemistry & Molecular Biology, “The association between viral infection and Parkinson’s disease: Adenovirus protein VI peptide accelerates α-Synuclein aggregation”.

47. Chari Peter (Grambling, LBRN) Bijay Banstola, Kermit K. Murray, LSU, Chemistry, “MALDI Imaging of Neuropeptides and Neurotransmitters in Mouse Brain Tissue Sections”.

48. Wayncia Porter (SUBR, CIMM) Bin Zhang, LSU, Mechanical & Industrial Engineering, “Micro-scale Molding Replication of Aluminum Based Microchannels”.

49. Keyla Pruett (LSU, Discover) Ian Knight, Nathan Lord, Rodrigo Diaz, LSU, Entomology, “To catch a killer: Developing PCR primers to assess parasitism rates and spatial distributions of parasitoids of the roseau cane scale”.

50. Eric Rachita (Case Western Reserve University, SMART) Guoqiang Li, Jizhou Fan, Xiaming Feng, LSU, Mechanical & Industrial Engineering, “Self-healing polymer blends improve two-way shape-memory properties”.

51. Prerana Chandra Ramesh (LSUS, LBRN) Qinqin Xu, Philip Kilgore, Urska Cvek, Paul Weinberger, LSUHSC-S, Otolaryngology Head & Neck Surgery, “How to Train Your AI: Quantification of R-Loop Expression in Anaplastic Thyroid Carcinoma using Immunohistochemistry and Automated Cell Segmentation Software”.


53. Elizabeth Reiner (LSU, CCT) Theda Daniels-Race, LSU, Electrical & Computer Engineering, “Designing an atomic force microscope (AFM) with a focus on increasing accessibility”.

54. Kiarra Richardson (University of New Haven, CHE) Connor T. King, Charles E. Byrne, Bert Lynn, Shadrack Asare, Elizabeth C. Martin, LSU, Biological & Agricultural Engineering, “In-Vitro Analysis of Plant Derived Phenolic Compounds in Stem Cells”.


57. Lainé Nicole Rogers (ULM, LBRN) Srikhar Chilukuri, J. Steven Alexander, J. Arthur Saus, LSUHSC-S, Molecular & Cellular Physiology, Anesthesiology, “The Use of Surface Electromyography to Compare Methods of Nasotracheal Intubation”.


59. William Sands (Clemson University, SMART) Harry Frederick, Wencai Li, Genevieve Palardy, LSU, Mechanical Engineering, “Structural Health Monitoring of Ultrasonically Welded Thermoplastic Composites”.

60. Amani Sanyurah (Kent State University, CIMM) Shuai Shoa, LSU, Mechanical & Industrial Engineering, “2D Dislocation Dynamics”.
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64. Lauren Spahn (MTU, CHE) Jin Gyun Lee, Ahmed Al Harraq, Bhuvnesh Bharti, LSU, Chemical Engineering, “Disordering Colloidal Monolayers”.

65. Jamuna Tandukar (ULM, LBRN) Sunday Negedu, Craig M. Hart, LSU, Biological Sciences, “Searching for Physical Interactions Between The Drosophila Boundary Element-Associated Factor (BEAF) And Other Chromatin Proteins”.

66. Ganga Tandukar (ULM, LBRN) Karen P. Maruska, Julie M. Butler, Chase Anselmo, Erandi Herath, LSU, Biological Sciences, “Female Reproductive State-Dependent Expression of Aromatase in the Brain of the Mouthbrooding Cichlid Fish, A. burtoni”.


69. Tristan Tran (Xavier, LBRN) Bruce Bunnell, Benjamin T. O’Donnell, Justin Magrath, Tulane, Stem Cell Research & Regenerative Medicine, “Modeling Subcutaneous Fat upon UV Crosslinked Methacrylated Gelatin Scaffolds”.


71. Christopher Vairogs (ULM, P&A) Vishal Katariya, Mark Wilde, LSU, Physics, “Quantum State Discrimination Circuits Inspired by Deutschian Closed Timelike Curves”.


73. LeighAnn Vincik (FranU, LBRN) Thomas W. Gettys, Kirsten Stone, Landon Sims, Gabby Walker, PBRC, Nutrient Sensing & Adipocyte Signaling Laboratory, “Hepatic Deletion of Nuclear Factor Erythroid 2-related Factor 2 (NRF2) Does Not Change the Physiological Response to Dietary Methionine Restriction in Mice”.

74. Heather M. Vogel (LATECH, LBRN) Rachel Wise, Bruce Bunnell, Tulane, Stem Cell & Regenerative Medicine, Pharmacology, “Optimization of Autophagy Regulation in Human Adipose Stem Cells”.


76. Olivia Warren (NSULA, LBRN) Suresh Nagarajan, Stephan Witt, LSUHSC-S, Biochemistry, “a-Synuclein, a Parkinson’s disease-associated protein, blocks the binding of sorting nexin 3 (Snx3) but not EEA1 to phosphatidylinositol 3-phosphate. Implications for Snx3-retromer mediated recycling of cell surface proteins”.


78. Han Hsuan Wu (LSU, Discover) Mohammad Saghayezhian, Scot Mullen, Joel E Taylor, David Howe, LSU, Physics, “MOKE: Magnetometry using photons”.

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SURF would like to give a special thanks to all of the program administrators and sponsors for making this event possible!

Program Administrators

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution</th>
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<td>LSU Center for Computation &amp; Technology</td>
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<td>Dr. Mike Benton</td>
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<td>Louisiana Biomedical Research Network</td>
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<tr>
<td>Heather Lavender</td>
<td>CIMM &amp; SMART Polymer</td>
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<td>John Quebedeaux, Jr.</td>
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<tr>
<td>Alexis M. White</td>
<td>Louisiana Biomedical Research Network</td>
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Sponsors

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