

Summer Undergraduate Research Symposium 2017 Category Winners and Runner Ups

Agricultural & Environmental Sciences Category (10 posters)

Winner: *Acid mine drainage coated sand as a soil amendment and phosphate removal system.* **Alex Rubenstein**, Karen Buzby and Lian-Shin Lin. (Alex, a biomedical engineering & mathematics double major and Honors student at WVU from Morgantown, WV, was a participant in the SURE program and was funded primarily via a faculty grant awarded to Lian-Shin Lin.)

Biological Sciences Category (14 posters)

Winner: *Increase in mutant Huntingtin protein aggregation leads to decrease in protein-lipid interaction.* **John Bard**, Albert W. Pilkington, IV and Justin Legleiter. (John, a biochemistry major and Honors student at WVU from Richwood, WV, was a participant in the SURE program and was funded primarily via a faculty grant awarded to Justin Legleiter.)

Runner Up: *Ergot alkaloids in bioactive *Metarhizium* species fungi.* **Caroline E. Leadmon** and Daniel G. Panaccione. (Caroline, a biochemistry major and Honors student at WVU from Hurricane, WV, was a participant in the SURE program.*)

Engineering Category (17 posters)

Winner: *A paper-based lateral flow strip for detection of traumatic brain injury protein biomarker.* **Devan J. Shell**, Xuefei Gao and Nianquiang (Nick) Wu. (Devan, a chemistry major from Catawba College, was a participant in the NSF-funded Nano REU program.)

Runner Up: *Robust empirical modeling of stream Chlorophyll-a across time and space: scaling by a single reference observation.* **Brittany I. Brush**, Omar I. Abdul-Aziz and Mohammad A.Z. Siddik. (Brittany, a geology major at WVU from Savannah, GA, was a participant in the SURE program and was funded via the NSF LSAMP KY-WV Mid-Level Alliance Phase II grant.)

Health Sciences Category (16 posters)

Winner: *Inhibition of mitochondrial respiration in Acute Lymphoblastic Leukemia within the bone marrow microenvironment.* **Patrick M. Thomas**, Rajesh R. Nair, Debra Piktel, Werner Geldenhuys, John Hollander and Laura F. Gibson. (Patrick, a biochemistry major and Honors student at WVU from Hurricane, WV, was a participant in the SURE program.*)

Runner Up: *Assessment of inflammation induced by multi-walled carbon nanotubes and carbon nanofibers from U.S. facilities.* **Sarah Foster**, Kelley E. Smith-Fraser, Vamsi K. Kodali, Tracy Eye and Aaron Erdely. (Sarah, a biochemistry major from Allegheny College, was a participant in the NSF-funded Nano REU program.)

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Nanoscience Category (12 posters)

Winner: *Toxicity of inhaled welding fumes on exposed worker respiratory and reproductive cell lines.* **Karagan A. Mulhall**, Anna M. Morris, Nicole S. Olgun and Stephen S. Leonard. (Karagan, an immunology and medical microbiology major at WVU from Morgantown, WV, was a participant in the SURE program.*)

Runner Up: *Harvesting waste heat for thermoelectric generation through addition of gold nanoparticles in oxide ceramics.* **James Penney**, Xueyan Song, Cullen Boyle and Cesar-Octavio Romo-De-La-Cruz. (James, a biomedical engineering major from the University of Texas at Dallas, was a participant in the NSF-funded Nano REU program.)

Neuroscience Category (14 posters)

Winner: *Utilization of thymidine analogs to analyze neuronal proliferation and migration during cortical development.* **Jawuanna H. McAllister**, Jessica G. Clemente and Eric S. Tucker. (Jawuanna, a biomedical sciences major at North Carolina Wesleyan College, was a participant in the NIH-funded Center for Neuroscience SURI program.)

Runner Up: *miR-34a targets Cytochrome C and shapes stroke outcomes.* **Edward A.P. Provencher**, Heng Hu, Stephanie Rellick, Imran Farooqi, Saumyendra N. Sarkar, Kimberly Grasmick and Xuefang Ren. (Edward, a biochemistry & molecular biology double major at the University of Richmond, was a participant in the NIH-funded Center for Neuroscience SURI program.)

Non-STEM Category (10 posters)

Winner: *Machine learning in statistical arbitrage: forecasting the market to succeed during financial crisis.* **John S. Bowling**, Nathan D. Burks, Bingxin Li, Natalia A. Schmid. (John, a computer and electrical engineering major at WVU from Princeton, WV, was a participant in the SURE program.*)

Physical Sciences Category (15 posters)

Winner: *Lysine location within Alzheimer's protein sequence reveals correlation to structure and membrane toxicity.* **Morgan C. Nyman**, Albert W. Pilkington, IV and Justin Legleiter. (Morgan, a biochemistry major at Gannon University, was a participant in the NSF-funded Chemistry REU program.)

Runner Up: *Mild synthesis of novel boron-based pharmaceutical candidates by copper catalysis with CO₂.* **Natalie R. Ziemer** and Brian V. Popp. (Natalie, a biochemistry major at Grove City College, was a participant in the NSF-funded Chemistry REU program.)

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Category winners and runner ups from the 2017 Summer Undergraduate Research Symposium held at West Virginia University on July 27, 2017. More information about the annual summer symposium, including the 2017 abstracts, can be found at <http://undergraduateresearch.wvu.edu/present-publish/present-your-research#Summer%20Undergraduate%20Research%20Symposium>.