



University Marketing and Communications  
1 University Blvd.  
St. Louis, MO 63121  
[blogs.umsl.edu/news/](http://blogs.umsl.edu/news/)

## **NEWS RELEASE**

**August 20, 2013**  
**FOR IMMEDIATE RELEASE**

Contact: Myra Lopez  
Phone: 314-516-5851  
Email: [lopezmb@umsl.edu](mailto:lopezmb@umsl.edu)

### **Teenage scientists earn research awards from** **University of Missouri–St. Louis STARS program** **Nearly 90 students participated in the STARS program**

Thirty-five aspiring scientists who spent six weeks this summer conducting intensive research with St. Louis-area professors have earned research rewards.

The students have been named winners of the LMI Aerospace Inc./D3 Technologies Award for Excellence in Research. The award is presented to students who distinguished themselves during the 2013 Students and Teachers as Research Scientists program at the University of Missouri–St. Louis. This year nearly 90 high school students participated in the program.

“We thank the teachers and mentors for dedicating their time and lending their expertise to the students of the STARS program,” said Ron Saks, president and chief executive officer, LMI Aerospace Inc. “The education the students receive while participating in STARS is so valuable to young people yearning for a memorable experience they can take with them for the rest of their lives. Many of us remember the teachers from a young age who provided that special spark at a time when we most needed it. Our hope is that the teachers and students at STARS received that gift this summer.”

**-MORE-**

STARS introduces rising high school juniors and seniors to the various aspects of the scientific enterprise as practiced by scientists in academic, private or corporate research institutions. UMSL partners with the Donald Danforth Plant Science Center in Creve Coeur, Mo., Saint Louis University and Washington University in St. Louis to provide research opportunities for the participants.

Experts from the four institutions took on student apprentices in laboratories and directed them in research projects. Also, students attended lectures by nationally known scientists from the St. Louis science community, learned information concerning the higher education admission process and enjoyed social events.

Following six weeks of research, the participants presented their research papers to their peers, parents and research mentors.

Senior scientists at UMSL, Southern Illinois University Edwardsville, Monsanto, LMI Aerospace Inc., and Confluence Life Sciences reviewed the papers. Winning papers best exemplified the following qualities: difficulty and complexity of research; appropriateness of the research methodology; findings; quality of writing; and overall quality of the research process.

Below is a complete listing of winners and their projects from the 2013 STARS program. Also listed are the winner's school, the student's mentor and the mentor's university:

**Apurva Belsare**, Mount Prospect High School (Ill.), "Imaging tumors via one-step functionalization of commercially available NIR dye by click reaction." Samuel Achilefu, Washington University

**Katelyn Billings**, Villa Duchesne, "Ascorbate recycling in cultured muscle cells." Jonathan Fisher, Saint Louis University

**Andrew Cammon**, Saint Louis Priory School, “Selectivity of artificial antibodies based on molecularly imprinted siloxane copolymers.” Srikanth Singamaneni, Washington University

**Amanda Cao**, John Burroughs School, “Study of the efficiency of new promoters to improve transgene expression in *Chlamydomonas reinhardtii*.” James Umen, Donald Danforth Plant Science Center

**Christopher Chivetta**, Saint Louis Priory School, “System modeling of chemical looping with oxygen uncoupling (CLOU).” Ramesh Agarwal, Washington University

**Anna Coyle**, Villa Duchesne, “Thermodynamic characterization of naphthalimide derivatives complexed with nucleic acids.” Brent Znosko, Saint Louis University

**Lucy Freitag**, Notre Dame, “Spectroscopic assays analyzing the redox activities of NAD<sup>+</sup> and FAD when bound to aptamers.” Dana Baum, Saint Louis University

**Sachith Gamlath**, Francis Howell High School, “Selectivity of artificial antibodies based on molecularly imprinted siloxane copolymers.” Srikanth Singamaneni, Washington University

**Elle Gruebbeling**, Timberland High School, “Testing the conservation of circadian clock genes in *Arabidopsis thaliana* and *Setaria viridis*.” Dmitri Nusinow, Donald Danforth Plant Science Center

**Harshath Gupta**, American Heritage School (FL), “Proliferative effects of DIAPH2 knockdown in multiple myeloma.” Michael Tomasson, Washington University

**Sarah Jacob**, Ladue Horton Watkins High School, “Plexin signaling and axon guidance in zebrafish.” Mark Voigt, Saint Louis University

**Denish Jaswal**, Pattonville High School, “The role of cations in the structural stability of a potassium channel.” Decha Enkvetchakul, Saint Louis University

**-MORE-**

**Brian Ji**, Marquette High School, “Synthesis of nickel and zinc substituted delta-MnO<sub>2</sub> and hexagonal birnessite.” Jeffrey Catalano, Washington University

**Claire Ji**, Parkway Central High School, “The effect of chemically doped bioactive glass on neuronal survival.” Amy Harkins, Saint Louis University.

**Daniel Kaganov**, Mary Institute Country Day School, “Assessment of metalloprobes in live human epidermal carcinoma cells.” Vijay Sharma, Washington University

**Sumrah Khan**, Parkway South High School, “Characterizing serum iron binding proteins: is there a unique form of ferritin?” Robert Fleming, Saint Louis University

**Sabrina Ha Rim Kim**, Missouri Academy, “Behavioral measures in assessment of a rodent model of Parkinson's Disease.” Michael Anch, Saint Louis University

**Matthew Kovac**, Saint Louis Priory School, “Computational measurements of guanine-substituted naphthalene.” Mike Lewis, Saint Louis University

**Mariagni Lalioti**, Anatolia College (Greece), “In vivo analysis of membrane-anchored ubiquitin-fold protein (MUB) function in Arabidopsis thaliana.” Brian Downes, Saint Louis University

**Jeffrey Lu**, Lafayette High School, “Thermodynamic characterization of naphthalimide derivatives complexed with nucleic acids.” Brent Znosko, Saint Louis University

**Kaela Lumbantobing**, Lafayette High School, “Automated color harmonization and fractal geometry.” Henry Kang, University of Missouri-St. Louis

**Joshua Luthy**, Lindbergh High School, “Observing electronic spectra of diatomic molecules such as zirconium carbide (ZrC) using high resolution Fourier transform spectroscopy.” James O’Brien and Leah O’Brien, University of Missouri-St. Louis and Southern Illinois University at Edwardsville

**Aimun Malik**, Mary Institute Country Day School, “Extraction of battery parameters for optimal performance using the non-linear circuit model with

a multi-objective genetic algorithm.” Ramesh Agarwal, Washington University

**Alexander Mesnier**, Parkway Central High School, “Detection of carcinoembryonicaAntigen through the use of localized surface plasmon resonance spectroscopy.” Keith Stine, University of Missouri-St. Louis

**Varun Mohan**, Francis Howell High School, “Enzymatic activity and kinetics of calcium-independent phospholipase A<sub>2</sub>.” Sergey Korolev, Saint Louis University

**Addison Ogonoski**, John Burroughs School, “The effect of list-wide congruency repetition on cognitive control in the Stroop task.” David Balota, Washington University

**Ciarra Peters**, Westminster Christian Academy, “Construction and testing of anisotropic white matter tissue mimics: a tool for the study of traumatic brain injury.” Ruth Okamoto, Washington University

**Benjamin Ratliff**, Parkway West High School, “Effects of GLUT1-T478 and p38 mitogen activated kinase on GLUT1-mediated transport and reactive oxygen species in cultured muscle cells.” Jonathan Fisher, Saint Louis University

**Aliki Stogiannou**, Anatolia College (Greece), “Occurrence of soil bacteria that participate in the nitrogen cycle.” Blythe Janowiak, Saint Louis University

**Shiori Tomatsu**, Clayton High School, “26S proteasome inhibition in aggregation of the protein antitrypsin.” Dorota Skowrya, Saint Louis University

**Darby Turner**, Webster Groves High School, “Variance in the clinical phenotype of siblings with hypophosphatasia.” Steve Mumm, Washington University

**Ellen Wang**, Parkway North High School, “Investigation of the genetic transmission of the AtGLE1 mutation and its effect on embryogenesis in Arabidopsis thaliana.” Wenyan Xiao, Saint Louis University

**Victoria Williams**, John Burroughs School, “The association between awd and echinoid in Drosophila.” Susan Spencer, Saint Louis University

**Andrew Witherspoon**, Crossroads College Preparatory School, “Changes in workers’ resilience following a tornado: a survey of hospital personnel in Joplin, Missouri.” Terri Rebmann, Saint Louis University

**Emily Yueyi Zhao**, John Burroughs School, “Correlation between past 1 and echinoid in Drosophila.” Susan Spencer, Saint Louis University

For more information contact Ken Mares at 314-516-6155 or [maresk@umsl.edu](mailto:maresk@umsl.edu).