The University of Tennessee STEM REU Symposium

July 19, 2013

Toyota Auditorium, Baker Center

A Showcase of Summer Research by Undergraduates, High School Students & Teachers in Science, Technology, Engineering and Mathematics at UT-Knoxville
CURRENT Posters

1. Joe Foy (L&N STEM Academy). Introduction of JAVA and Assembly Language Programming into STEM Academy High School

2. Jessica Minton (Grandview Heights Middle School). Using Bulletproof Electronic Boxes to Teach Electricity in Middle School.


10. Matthew Lambert (Univ. of Tennessee), Alfredo Bermudez (Univ. del Turabo). Emulator for Energy Management System in order to Test New Control Strategies.


15. Clifton Blalock (Univ. of Tennessee). Energy storage Using Flywheels.


17. Andrew Chitwood (Hardin Valley Academy), Emmanuel Gyebison (West High School). Energy and its Role in Turning the Wheels of Tomorrow.


20. Erin Carter (Lenoir City High School), Clara Park (Farragut High School). Experimental Investigation on the Integration of Renewable Distributed Energy Resources into the Smart Grid.


NIMBioS Posters

23. Samuel Estes (Univ. of Tennessee), Erick Kalobwe (LeMoyne-Owen College), Kiersten Utsey (Carroll College). An interactive Mathematica notebook for synthetic fetal electrocardiograms.
24. Brittany Hale (Univ. of Tennessee), Kevin Hoang (Emory Univ.), Kathryn Schaber (Univ. of Dayton), Hunter Rice (Univ. of Tennessee). *Modeling feline infectious peritonitis in a cattery.*

25. Robert Adams (Maryville College), Christopher Oballe (Univ. of Texas-Austin), Natasha Rudy (Wofford College). *Predicting codon usage bias from a probabilistic model using codon position and gene expression.*

26. Nicole Bender (Marist College), Christian Mason (Harvey Mudd College), Sunil Shahi (Southeastern Louisiana Univ.). *Automatic detection of Prairie Warbler through audio recordings.*

27. Conrad Beckmann (Univ. of Vermont), Judy Bloom (Eastern Connecticut State Univ.), Jacob Lambert (Univ. of Tennessee), Rachael Ward (Rhodes College). *Modeling social network dynamics in the spotted hyena (Crocuta crocuta).*

28. Jocelyn Keung (Univ. of North Carolina at Chapel Hill), Monica Naples (Humboldt State Univ.), Michael Vella (Univ. of Notre Dame). *Agent-based model to investigate Escherichia coli transmission between pastoral beef cattle.*

**SCALE-IT Poster**


**NICS Posters**

30. James W. Herndon III (New Mexico State Univ.). *The Effect of Nitrogen Oxide Emissions from Automobile Traffic on the Concentration of Tropospheric Ozone in the Great Smoky Mountains National Park.*

31. Erin Yancey (Henderson State Univ.), Nicholas Wang (Georgia Tech). *Computational Simulation of Fullerene Collisions.*

32. Ciara Thompson (Embry-Riddle Aeronautical Univ.). *Multiphysics Simulation of Biomedical Process - Heart Electrophysiology.*

33. Huston Rogers (Univ. of Alabama). *Computational Numerical Integration for Use with Model Boltzmann Equations.*

34. Angela Pelle (Univ. of Tennessee). *Data Analysis of Extreme Event Impacts on Air Quality with a Changing Global Climate.*

35. Kenneth McKanders (Morehouse College). *Parallel Solution for Near Repeat.*

36. Jordan Talyor (Austin Peay State Univ.), Nyalia Lui (Morehouse College), Julian Pierre (Texas Southern Univ.). *Computing in Bioinformatics - Protein Domain Modeling.*

37. Tony Cheung, Kevin Zhao (Chinese Univ. of Hong Kong). *Parallel Tempering Algorithm in Monte Carlo Simulation.*

38. Nina Qian, Ben Chan (Chinese Univ. of Hong Kong). *Out of Core Cholesky Factorization Algorithm on GPU and the Intel MIC Co-processors.*

**TN-SCORE Posters**


40. Shean Hubbard (Univ. of Tennessee). *Catalytic Conversion of Biomass to Fuel.*

41. Megan Farell (Univ. of Tennessee). *Hydrogenase Protein Production through Ralstonia eutropha-An Investigation to Optimize Hydrogenase Yield by Varying Concentrations Levels of Oxygen and Growth Cycles.*

42. DeAndra Peoples (Tennessee State Univ.). *Poly (3-hexylthiophene) Brushes as Anode Buffer Layers in Organic Photovoltaic Applications.*

43. Richard Groves (Lipscomb Univ.). *Freezing Point of High Concentrations of A1C13 in a Chloraaluminate Ionic Liquid.*


45. Simone Hopes (Tennessee State Univ.). *Protein Purification using IMPACT System.*