

The Fifty-Fourth Middle Tennessee Science and Engineering Fair

Fair Entries

Sponsored by

Austin Peay State University
Clarksville, TN
March 23-25, 2006



Schedule – All Activities at the University Center

- Project Set-up: Thursday, March 23 from 12 noon to 5:30 p.m.
- Students need to be at projects during judging on Thursday, March 23 from 6:30 p.m. to 8:00 p.m.
- "Best of Fair" judging: Friday, March 24
- Fair open to the public: Friday, March 24 from 10:00 a.m. to 8:00 p.m.
- Project tear-down: Saturday, March 25 from 9:00 a.m. to 12 noon

**Award ceremony at Austin Peay State University, University Center
Saturday, April 8, 2006 at 10 a.m.**

<u>No.</u>	<u>Exhibitor</u>	<u>Title of Exhibit</u>	<u>School</u>	<u>Teacher</u>
6th Grade				
601	Alex Andrew Sorbo	Does a Green Roof Keep a Building Cool?	Meigs Magnet School	Jamie Phifer Schimenti
602	Jiahe Gu	What Material Transmits Heat the Best?	Meigs Magnet School	Jamie Phifer Schimenti
603	Vikas Shreyas Kumar	What is the Effect of Surface Area on Bacterial Growth	Meigs Magnet School	Jamie Phifer Schimenti
604	Jaron Shalom Rottman-Yang	Which Building Shape is Most Resistant to Earthquake Damage?	Meigs Magnet School	Jamie Phifer Schimenti
605	Jyotishka Biswas	How Does Temperature Affect the Strength of a Magnet?	Meigs Magnet School	Jamie Phifer Schimenti
606	Jessica Mary Hayes	Fizz N' Freeze	Montgomery Central Middle School	Nancy Taylor
607	Chelsea Elizabeth Loomis	All Dried Out	Montgomery Central Middle School	Nancy Taylor
608	Aaron Blake Brunson	The Strongest Truss	Montgomery Central Middle School	Nancy Taylor
609	William Joseph Whitt	Is It Safe to Drink	E A Cox Middle School	Bryan Phillip Byrne
610	Holly Patricia Tupper	Go With The Flow	E A Cox Middle School	Bryan Phillip Byrne
611	Gavin Brent Nixon	Determining Water Content by Microwave Irradiation	Greenbrier Middle School	Jo E. Laxton
612	Anissa Lynn Plattner	Does Orange Juice Type Affect Its Vitamin C Content	Gateway Christian Schools	Craig E. Plattner
7th Grade				
701	Aaron K. Broder	Frankie the Frankenmouse	Martin Luther King, Jr. Magnet	Kathy Lee
702	Andrea Leigh Christians	Which Sud Will Kill the Crud	Martin Luther King, Jr. Magnet	Kathy Lee
703	Sarah Michelle Deel	Peek-A-Boo	Martin Luther King, Jr. Magnet	Kathy Lee
704	Christian A. DeJarnette	Oh Snap!	Martin Luther King, Jr. Magnet	Kathy Lee
705	Katelyn Teresa Eder	Marvelous Marbling	Martin Luther King, Jr. Magnet	Kathy Lee
706	Simon Warner Engel	It's a Bird! It's a Plane! It's - Never Mind it is Just a Plane	Martin Luther King, Jr. Magnet	Kathy Lee
707	Layth Fadi Ezzeir	Activating Yeast	Martin Luther King, Jr. Magnet	Kathy Lee

<u>No.</u>	<u>Exhibitor</u>	<u>Title of Exhibit</u>	<u>School</u>	<u>Teacher</u>
708	Patrick William Gallagher	Resistance is Futile	Martin Luther King, Jr. Magnet	Kathy Lee
709	Laura Katherine Goad	Salty Rainbows	Martin Luther King, Jr. Magnet	Kathy Lee
710	Rhiannon Christine Hansing	Forest Frenzy	Martin Luther King, Jr. Magnet	Kathy Lee
711	Jacqueline Audrey Husin	Skimpy Shrimp	Martin Luther King, Jr. Magnet	Kathy Lee
712	Tabitha Sue Johnson	Sound Out!	Martin Luther King, Jr. Magnet	Kathy Lee
713	Kosuke Christoff Kagawa	De-icing String vs Ice	Martin Luther King, Jr. Magnet	Kathy Lee
714	Hye In Kim	Block It	Martin Luther King, Jr. Magnet	Kathy Lee
715	Deborah Andelia Koch	Ships Ahoy!	Martin Luther King, Jr. Magnet	Kathy Lee
716	Kurt Walter Kroeger	Does It Have to be Organized?	Martin Luther King, Jr. Magnet	Kathy Lee
717	Harper A. Law	Split It	Martin Luther King, Jr. Magnet	Kathy Lee
718	Marley Williams Lentz	Flying with a Scooter	Martin Luther King, Jr. Magnet	Kathy Lee
719	Angela H. Moore	Drops of the Sun	Martin Luther King, Jr. Magnet	Kathy Lee
720	Jennifer Rachel Oakes	Hold the Glide?	Martin Luther King, Jr. Magnet	Kathy Lee
721	Kayla Miyoko Saito	Mystery Water	Martin Luther King, Jr. Magnet	Kathy Lee
722	Brandon Jahmal Tansil	Inner Strength	Martin Luther King, Jr. Magnet	Kathy Lee
723	Lendsey Breanna Thicklin	Living Underwater	Martin Luther King, Jr. Magnet	Kathy Lee
724	Sydney Erin Whitlock	I Got Blue Skies!	Martin Luther King, Jr. Magnet	Kathy Lee
725	Dustin Raye Nall	When Push Comes to Shove	Montgomery Central Middle School	Gary L. Gossett
726	Billy Dean Randolph	Rub-a-Dub Dub	Houston County Middle School	Cindy Clark
727	Parker Nathaniel Francis	How High Can Your Rocket Fly	Houston County Middle School	Cindy Clark

<u>No.</u>	<u>Exhibitor</u>	<u>Title of Exhibit</u>	<u>School</u>	<u>Teacher</u>
8th Grade				
801	John Charles Gilpin	Sound Abatement	Martin Luther King, Jr. Magnet	Ashley R. Renner
802	Adrianna Elizabeth Eder	Stretching Rubber Bands	Martin Luther King, Jr. Magnet	Ashley R. Renner
803	Elizabeth Ann Arrington	Cabbage Indicator	Martin Luther King, Jr. Magnet	Dawn Anita Hofwolt
804	Kyle Gray Chandler	The Strongest Beam	Martin Luther King, Jr. Magnet	Dawn Anita Hofwolt
805	Tian Xiang Chen	Garlic Growth	Martin Luther King, Jr. Magnet	Dawn Anita Hofwolt
806	Katie Joanne Darby	Solar Power: The Sunny Chef	Martin Luther King, Jr. Magnet	Dawn Anita Hofwolt
807	Alexandra Virginia Essery	Acid Rain, Go Away	Martin Luther King, Jr. Magnet	Dawn Anita Hofwolt
808	Jason Michael Fox	Red Light Green Light	Martin Luther King, Jr. Magnet	Dawn Anita Hofwolt
809	Nathan M. Freehling	Droplets	Martin Luther King, Jr. Magnet	Ashley R. Renner
810	Dillan John Freeman	Building A Hydro Electric Generator	Martin Luther King, Jr. Magnet	Ashley R. Renner
811	Lindsey Sinclair Garner	The Extraction of Onion DNA	Martin Luther King, Jr. Magnet	Dawn Anita Hofwolt
812	Justin J. Harrer	Strength of Magnets	Martin Luther King, Jr. Magnet	Dawn Anita Hofwolt
813	Rebecca Leanne Hofmeister	Laser Refraction	Martin Luther King, Jr. Magnet	Ashley R. Renner
814	Emily Ann Hornsby	Noise Annoys	Martin Luther King, Jr. Magnet	Dawn Anita Hofwolt
815	Sarah Elizabeth Kafader	Fermenting Fruit Juices!	Martin Luther King, Jr. Magnet	Dawn Anita Hofwolt
816	Collen Leng	Enlighten Plants	Martin Luther King, Jr. Magnet	Dawn Anita Hofwolt
817	Melissa Halperin Manley	Measurement of the Moon's Orbital Ellipticity by Photography	Martin Luther King, Jr. Magnet	Dawn Anita Hofwolt
818	Valini Kashana Ramcharan	Flying High	Martin Luther King, Jr. Magnet	Dawn Anita Hofwolt
819	Saad Chaudry Rehman	Staying Warm With Insulation	Martin Luther King, Jr. Magnet	Dawn Anita Hofwolt

<u>No.</u>	<u>Exhibitor</u>	<u>Title of Exhibit</u>	<u>School</u>	<u>Teacher</u>
820	Vidiya Sathananthan	Don't Clog My Pores	Martin Luther King, Jr. Magnet	Dawn Anita Hofwolt
821	Cody Richard Simons	What Good is Wet Wood?	Martin Luther King, Jr. Magnet	Dawn Anita Hofwolt
822	Neal Wang	Chemical Growth	Martin Luther King, Jr. Magnet	Dawn Anita Hofwolt
823	Yichuan Wang	To Pull or To Push	Martin Luther King, Jr. Magnet	Dawn Anita Hofwolt
824	Sarah Marie Williams	The Big Wave and The Barrier	Martin Luther King, Jr. Magnet	Ashley R. Renner
825	Jordan Daniel Willis	How Does Alum Solution Strength Effect Alum Crystal Growth?	Martin Luther King, Jr. Magnet	Dawn Anita Hofwolt
826	Meg Elizabeth Wilson	Rainbow Plants	Martin Luther King, Jr. Magnet	Dawn Anita Hofwolt
827	Robert William Yang	How Fast Can It Go?	Martin Luther King, Jr. Magnet	Dawn Anita Hofwolt
828	Stefan A. Zavalin	Musical Algae	Martin Luther King, Jr. Magnet	Dawn Anita Hofwolt
829	Lexy Lynn Batey	Reaction Rates	Montgomery Central Middle School	Jaime N. Wilson
830	Travis Matthew Gibson	Keeping Warm	Montgomery Central Middle School	Jaime N. Wilson
831	Nicolas Joshua Blackwell	Life of a Disc	Kenwood Middle School	Jennifer Bierman

Biochemistry

2001	Lawrence Davis Lanier	The Alleles of the ERBB-2 Gene Among Human Populations	Hume Fogg Academic High School	Brenda Royal
2002	Julie Marie Maccarone	Cell War: The Fight for Homeostatis	Rossvie High School	Jennifer Sharp
2003	Brent Alexander Gass	The Kinetics of Carbon Dioxide Production from Sucrose Decomposition Catalyzed by Various Saccharomyces Cerevisiae Subspecies	Greenbrier High School	Ronnie Nixon
2004	Anna Zhu	How Does PDZ Domain Affect Trafficking of Dopamine Transporter to the Synapse in Neuron Cells?	Martin Luther King, Jr. Magnet High	Kathy Lee
2005	Saravanan Raju	Regulation of Gene Expression Mediated by microRNAs and 3'UTR of mRNA	Martin Luther King, Jr. Magnet High	Kathy Lee

<u>No.</u>	<u>Exhibitor</u>	<u>Title of Exhibit</u>	<u>School</u>	<u>Teacher</u>
Botany				
3001	Matt David McNeil	Effects of Acid Rain on Plants	Rossvie High School	Jennifer Sharp
3002	Evan Courtney Moore	The Production and Storage of Glucose in Pea Plants	Rossvie High School	Jennifer Sharp
3003	Lindie Nyoka Wood	Rate of Zinnia Growth Using H ₂ O, NaCl, and C ₁₂ H ₂₂ O ₁₁	Montgomery Central High School	Teresa Celusta
3004	Bryce Paul Neblett	Different pH Levels and How They Affect Plants	Montgomery Central High School	Teresa Celusta
3005	Daeyun Choe	Musical Effects on Plants	Northwest High School	Katie Saxon
3006	Laticia Marnita Ferguson	Lettuce Seeds Used as a Bioassay Medium for Testing . . .	Northwest High School	Michael McKinney
3007	Mark Dean Foss	Organic vs Inorganic: What's the Big Deal?	Northwest High School	Michael McKinney
Chemistry				
4001	Kayla Mechelle Bearden	The Effect of pH Levels on Corrosion of Iron and Copper	Montgomery Central High School	Teresa Celusta
4002	Brian Wayne Curtis	What Is Ballistic Imaging and How Does it Work?	Rossvie High School	Jennifer Sharp
4003	Johnathan C. Brodie	Bath of Ashes	Rossvie High School	Jennifer Sharp
4004	Caitlin Cutler	How Much Vitamin C Does Your Body Get?	Rossvie High School	Jennifer Sharp
4005	Casey William Donnellan	Does Capillary Action Occur in Water Based Solutions?	Rossvie High School	Jennifer Sharp
4006	Brian T. Gavin	Chitin vs. Charcoal	Rossvie High School	Jennifer Sharp
4007	Matt Richard Stoddard	The Truth About Thermite	Rossvie High School	Jennifer Sharp
4008	Christian Michael Wallen	Silver Tarnish Reversal	Bellevue Home School Enrichment	Lynn M. Wallen
4009	Michael Joseph Updike	The Effectiveness of Various Oxides and Carbonates as Heterogeneous Catalysts for the Decomposition of Hydrogen Peroxide	Greenbrier High School	Ronnie Nixon
4010	Holly Paige Batey	Factors Affecting Alka-Seltzer's Rates of Reaction	Montgomery Central High School	Teresa Celusta
4011	Megan Joann Wall	Dye Retention of Fabrics	Montgomery Central High School	Teresa Celusta
4012	Kennon Wren Hodges	The Extraction of Purified Water from Mixed Substances	Northwest High School	Katie Saxon

<u>No.</u>	<u>Exhibitor</u>	<u>Title of Exhibit</u>	<u>School</u>	<u>Teacher</u>
4013	Steven Douglas VanNevel	Acids Corroding Metals	Northwest High School	Michael McKinney

Earth and Space Sciences

6001	Christopher Roger Key	A Study of the Soil Nitrate Concentrations in Two Robertson County, Tennessee Caves	Greenbrier High School	Ronnie Nixon
6002	Allison Marie Miller	The Relationship Between Angle and Temperature	Montgomery Central High School	Teresa Celusta
6003	Melanie Simone Hawkins	Spectral Difference in Various Planetary Nebulae	McEwen High School	Constance Brown
6004	Nathan Brandon Parrish	Meteor Counting	McEwen High School	Constance Brown

Engineering

7001	Lucas Hudson Hofmeister	Development of a Planar Perfused Tumor Bioreactor	Martin Luther King, Jr. Magnet High	Kara Krinks
7002	Vanessa Ansberry	Is a Solar Powered Home Within the Budget of the Average Person?	Rossview High School	Jennifer Sharp
7003	Chris James King	Charging the Unchargeable	Creekwood High School	Terrill Johnson
7004	Samantha Ann Johnson	Alternative Fuel Efficiency	Northwest High School	Katie Saxon
7005	Jacob Michael Luco	A Simple Emergency Communications Network	McEwen High School	Constance Brown
7006	Stephen Joseph Luco	Low Cost Household Robot	McEwen High School	Constance Brown

Environmental Sciences

8001	John Egar Moser	Effects of Acid Rain on Terrestrial Ecosystems	Rossview High School	Jennifer Sharp
8002	Elissa F. Jennings	A Comparison of the Water Quality in Three Watersheds, Smyrna TN	The Webb School	William Rice
8003	Michelle LeeAnn Carpenter	Comparison of City and Well Water	Montgomery Central High School	Teresa Celusta
8004	Kimberly Susan Groom	The Effects of pH Level on Grass Growth	Montgomery Central High School	Teresa Celusta
8005	Courtney Autumn Stumpf	Electricity in Soil	Northwest High School	Katie Saxon
8006	Jaime Marie Taylor	Effects of Pollutants on Bean Plants	Northwest High School	Michael McKinney
8007	Cara Faye Stewart	Unhealthy Purses	McEwen High School	Constance Brown

<u>No.</u>	<u>Exhibitor</u>	<u>Title of Exhibit</u>	<u>School</u>	<u>Teacher</u>
Mathematics and Computer Science				
9001	Michael Allen Yarbrough	The Digitization of Sound	Blackman High School	Jennifer Miller
9002	Dustin D'Wayne Robinson	Fractal Analysis	Montgomery Central High School	Teresa Celusta
Microbiology				
11001	Jennifer Kristen Lee	Growing E. coli in Formula 409 Antibacterial All Purpose Kitchen Cleaner	Northwest High School	Katie Saxon
11002	Christine Marie Stoll	The Effects of Household Cleaners on Bacterial Growth	Northwest High School	Katie Saxon
11003	Leilani Irene Young	Growth of Bacteria in a Fast Food Restaurant	Northwest High School	Michael McKinney
11004	Brittany Marie Hook	The Effect of UV Radiation on E. Coli Growth	Northwest High School	Michael McKinney
11005	Angelika Therese Nipper	The Effect of Common Antibacterials on E. coli Bacteria	Northwest High School	Michael McKinney
11006	Kayla Nicole Gill	Bacteria Growth	Montgomery Central High School	Teresa Celusta
11007	Hannah Catherine Baggett	Conditions Affecting Bacterial Growth	Montgomery Central High School	Teresa Celusta
11008	Jonathan Michael Stoll	Substances and Their Effects on Bacteria Growth	Rossvie High School	Jennifer Sharp
11009	Josh Cayle Strother	The Effects of Ultrasound and Magnetic Fields on the Growth of E. coli K-12	Greenbrier High School	Ronnie Nixon
Physics				
12001	Emily Nicole Lohan	The Relationship Between Surface Reflectance and the Coefficient of Kinetic Friction	Greenbrier High School	Ronnie Nixon
12002	Laura Gale Morgan	Determining the Percentage of Reflectivity in Colors	Montgomery Central High School	Teresa Celusta
12003	Amber Nichol Kerns	Turn That Down!	Montgomery Central High School	Teresa Celusta
12004	Levi Caleb Black	Abundance of Light in Sonoluminescence	Northwest High School	Katie Saxon
12005	Garrett B. Jensen	Electromagnets of Different Metals	Northwest High School	Katie Saxon
12006	Sascha Eve Toro	Silica Aerogels	Northwest High School	Katie Saxon
12007	Andrew Robert Crumrine	Burning Fabrics	Northwest High School	Katie Saxon

<u>No.</u>	<u>Exhibitor</u>	<u>Title of Exhibit</u>	<u>School</u>	<u>Teacher</u>
12008	Chris J. Frederickson	The Measurement of Sound Through Different Materials	Northwest High School	Katie Saxon
12009	Vanessa Lynn Huntley	Poling of Electrical Dipoles and Charge in Dimensions	Northwest High School	Michael McKinney

Zoology

13001	Alicia Anai Stiles	Lipitor Effects on Mus mucus	Rossview High School	Jennifer Sharp
13002	Chenxia Monica Guan	Variations in the Cerebral Cortex in Two Inbred Mouse Strains	Martin Luther King, Jr. Magnet High	Kathy Lee

Team Projects

14001	Laura Susan Tucker Mary Katherine Bradley	Light Pollution	McEwen High School	Constance Brown
14002	Dustin Robert Proctor Joshua David Stephenson- Baker	Visual Basic Game with Flash MX	McEwen High School	Constance Brown
14003	Paige Elaine Lankford Paige A. Kindred	Does Water Purity Affect Plant Growth?	E A Cox Middle School	Bryan Byrne
14004	Ieshia Teresa Kelly Ann-Kathryne Lowe Mills	The Beanstalks	Martin Luther King, Jr. Magnet	Dawn Anita Hofwolt
14005	Richard Brundage Maria Florez	The Falling of Archimedes	Rossview High School	Jennifer Sharp