

**A. BEHAVIOR/EDUCATION – Room 72**

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| 8:00 – 8:15 a.m.   | 1. | “Possible Variance in Scores on the Missouri Assessment Program (MAP) Communication Arts Test Based on English Dialect Spoken” by <b>Daniel Alexander Duncan</b> , St. Charles West High School, St. Charles, MO, Heather Horstmann, Sponsoring Teacher |
| 8:25 – 8:40 a.m.   | 2. | “Lights Out!: A Study of the Effects of Late Night Computer Use on Melatonin Levels in Teen” by <b>Cheyenne N. Gardner</b> , Tuscumbia High School, Tuscumbia, MO, Constance Wyrick, Sponsoring Teacher   |
| 8:50 – 9:05 a.m.   | 3. | “DNA Information Supplied to Prospective Jurors Before a Trial May Help Them Make an Informed Verdict” by <b>Samantha Moffatt</b> , Rockwood Summit High School, St. Louis, MO, Cheryl Apperson, Sponsoring Teacher                                     |
| 9:15 – 9:30 a.m.   | 4. | “The Effects of Teacher Attire on Student Learning” by <b>Hope Rochell Moorhead</b> , Camdenton High School, Camdenton, MO, Chris Reeves, Sponsoring Teacher  |
| 9:40 – 9:55 a.m.   | 5. | “Face Recollection: Developing a Novel Training Program to Increase Recollection Rates in Eyewitness Identification” by <b>Lori Schlatter</b> , Camdenton High School, Camdenton, MO, Chris Reeves, Sponsoring Teacher                                  |
| 10:05 – 10:20 a.m. | 6. | “Lunch Time: A Study of Eating Behaviors in Elementary Students” by <b>Paige Taylor Wood</b> , Tuscumbia High School, Tuscumbia, MO, Constance Wyrick, Sponsoring Teacher   |

**B. CHEMISTRY/BIOCHEMISTRY – Auditorium (Room 101)**

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| 8:00 – 8:15 a.m. | 1. | “Extracting Iron from OTC Iron Supplement Drugs” by <b>Julia Marie Greaves</b> , Ursuline Academy, St. Louis, MO, Marie Sherman, Sponsoring Teacher                                       |
| 8:25 – 8:40 a.m. | 2. | “Shimmer as Forensic Evidence” by <b>Sarah Griggs</b> and <b>Joshua Hahn</b> , Ritenour High School, St. Louis, MO, Heather Bonner, Sponsoring Teacher                                    |
| 8:50 – 9:05 a.m. | 3. | “Investigating the Interactions of Recombination Proteins RecF, RecO, and RecR in DNA Repair” by <b>Tom Maxim</b> , Clayton High School, St. Louis, MO, Sarah Falkoff, Sponsoring Teacher |
| 9:15 – 9:30 a.m. | 4. | “Investigation of Wheat Gluten Films” by <b>Kelsey L. Richard</b> , Ursuline Academy, St. Louis, MO, Marie Sherman, Sponsoring Teacher  |

- 9:40 – 9:55 a.m. 5. “A Comparison of the Caloric Values of Snack Foods and Their Nutritional Labels Utilizing the Atwater System” by **Eryn Blake Swain**, Pleasant Hope High School, Pleasant Hope, MO, Jim Flora, Sponsoring Teacher
- 10:05 – 10:20 a.m. 6. “A Comparison of Caffeine Content between Energy Drinks and Their Nutritional Labels Utilizing an HPLC” by **Kaila Swain**, Pleasant Hope High School, Pleasant Hope, MO, Jim Flora, Sponsoring Teacher

**C. ENVIRONMENTAL SCIENCE – Room 126**

- 8:00 – 8:15 a.m. 1. “The Effects of Gravel Mining on Macroinvertebrate Diversity and Conservatism” by **Courtney C. Cocks**, Camdenton High School, Camdenton, MO, Chris Reeves, Sponsoring Teacher
- 8:25 – 8:40 a.m. 2. “Identifying the Role of Glyphosate-Containing Herbicides on Honeybee Mortality Rates and Colony Collapse Disorder” by **Kayla Elizabeth Foulk**, Camdenton High School, Camdenton, MO, Chris Reeves, Sponsoring Teacher
- 8:50 – 9:05 a.m. 3. “Comparison of the Effectiveness of Formalin, Hydrogen Peroxide, and Ultra Violet Water Purification for the Control of Surface Pathogens on Flathead Minnow Eggs” by **Jay B. Gulshen**, Camdenton High School, Camdenton, MO, Chris Reeves, Sponsoring Teacher
- 9:15 – 9:30 a.m. 4. “Health Impacts of Burning Agricultural Crop Stubble” by **Alex Heeb**, Home School, Chaffee, MO, Dan Heeb, Sponsoring Teacher
- 9:40 – 9:55 a.m. 5. “Correlation of Stratigraphic Variation of Late Ordovician Marine  $\delta^{13}\text{C}$  in Missouri” by **Radhika Jain**, John Burroughs School, Robert Ripperdan, Sponsoring Teacher
- 10:05 – 10:20 a.m. 6. “Effect of Heavy Metals on Growth of Psuedomonas in LB and Minimal Media” by **Katie Rochester**, Maplewood-Richmond Heights High School, St. Louis, MO, Kathleen Dwyer, Sponsoring Teacher

**D. GENERAL BIOLOGY – Room 299**

- 8:00 – 8:15 a.m. 1. “Longitudinal Growth of the Long Bones of LG/J and SM/J Mice Strains” by **Victoria Brooks**, McCluer North High School, Florissant, MO, Amy Hancock, Sponsoring Teacher
- 8:25 – 8:40 a.m. 2. “Testing Tall Fescue Grass for Nonstructural Carbohydrates” by **Courtney Henderson**, Rockwood Summit High School, Fenton, MO, Cheryl Apperson, Sponsoring Teacher

- 8:50 – 9:05 a.m. 3. “A Pilot Study on the Effects of Cesium on MCF-7 Breast Cancer Cell Line Proliferation and Migration, *in vitro*” by **Molly Mathews**, West Platte High School, Weston, MO, Janel Coulson, Sponsoring Teacher
- 9:15 – 9:30 a.m. 4. “The Affect of Various Environmental Changes on the Behavior of Sharks in a Captive Setting” by **Benjamin T’omas Quiggins**, St. Charles West High School, St. Charles, MO, Heather Horstmann, Sponsoring Teacher
- 9:40 – 9:55 a.m. 5. “Transforming *Ipomea batatas* via Direct Inoculation with *Agrobacterium rhizogenes*, a Continuation: by **Randall S. Ray II**, Wentzville Holt High School, Wentzville, MO, Jennifer Berendzen, Sponsoring Teacher
- 10:05 – 10:20 a.m. 6. “Hydrogen Gas Production from Immobilized *Chlamydomonas reinhardtii*” by **John Wyatt Walls**, South Pemiscot High School, Steele, MO, John David Walls, Sponsoring Teacher

**E. MICROBIOLOGY AND MEDICINE – Room 78**

- 8:00 – 8:15 a.m. 1. “Energy Production Through Use of Halobacteria” by **Brett Pierce**, Mid-Buchanan High School, Faucett, MO, Tereasa Freeman and Lindsay Ussary, Sponsoring Teachers
- 8:25 – 8:40 a.m. 2. “Genome Organization of *Glycine max* MicroRNAs and Their Targets” by **Andrew D. Williams**, Parkway South High School, Manchester, MO, Michael Herrmann, Sponsoring Teacher
- 8:50 – 9:05 a.m. 3. “Cloning and Expression of a Putative Non-Specific Phospholipase C in *Arabidopsis* (PLC523)” by **Bridget Waller**, Cor Jesu Academy, St. Louis, MO, Marie Sherman, Sponsoring Teacher
- 9:15 – 9:30 a.m. 4. “Superbug Busters: Using Monolaurin, Coconut Oil and Breast Milk to Reverse Antibiotic Resistance in Bacteria” by **Jordanne Wright**, Seneca High School, Seneca, MO, Shannon Sample, Sponsoring Teacher
- 9:45 – 9:55 a.m. 5. “An Analysis of the Effects of the Classification of Sweeteners on the Blood Glucose Level in Milligrams per Deciliter” by **Carly Stowe**, West Platte R-II High School, Janel Coulson, Sponsoring Teacher
- 10:05 – 10:20 a.m. 6. “The Effect of Elevated Temperature on Quorum Sensing and Biofilm Formation in *Pseudomonas aeruginosa*” by **Sonia Rao**, Camdenton High School, Camdenton, MO, Christopher Reeves, Sponsoring Teacher

**F. PHYSICS, ENGINEERING, MATH, AND COMPUTER SCIENCE – Room 222**

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| 8:00 – 8:15 a.m.   | 1. | “Application of Networking Protocols to Swarm Robotics” by <b>Stewart Boling</b> , Jefferson City High School, Jefferson City, MO, Roger Bergman and Tim Adkerson, Sponsoring Teachers                       |
| 8:25 – 8:40 a.m.   | 2. | “The Detection of Earthbound Coronal Mass Ejections Using Sudden Ionospheric Disturbance (SID) Data” by <b>Cameron Kay Nunn</b> , Seneca High School, Seneca, MO, Shannon Sample, Sponsoring Teacher         |
| 8:50 – 9:05 a.m.   | 3. | “Greener Gas: Investigation of Hydrogen Fuel Supplementation” by <b>Ethan S. Musick</b> , Tuscumbia High School, Tuscumbia, MO, Constance Wyrick, Sponsoring Teacher   |
| 9:15 – 9:30 a.m.   | 4. | “Magneto-hydrodynamic Propulsion: Health Related Uses” by <b>Barron Roberts</b> and <b>Austin Hindery</b> , Central High School, St. Joseph, MO Jay Meyers, Sponsoring Teacher                               |
| 9:40 – 9:55 a.m.   | 5. | “Buses and a Comparison of Aerodynamic Designs” by <b>Cooper A. Roberts</b> , Mid-Buchanan R-V High School, Faucett, MO, Lindsay Ussary and Tereasa Freeman, Sponsoring Teachers                             |
| 10:05 – 10:20 a.m. | 6. | “Influence of Varying Salt Concentrations on Extraction of Oil from Limestone” by <b>Caitlyn M. Schottel</b> , Mid-Buchanan High School, Faucett, MO, Tereasa Freeman and Lindsay Ussary, Sponsoring Teacher |