

SCHOLARS WEEK

MIDDLE
TENNESSEE
STATE UNIVERSITY

2018 UNIVERSITY EXPOSITION

FRIDAY, MARCH 23

Complete schedule of events, abstracts, and other information is available at <http://www.mtsu.edu/scholarsweek/>

FACULTY POSTERS

- 100 Using Shared Frailty Modeling to Study Alternative Cell Fates. Rachel Leander, Mathematics; Yeqian Liu, Mathematics
- 101 Graham and Zeke: A Short Documentary Film. Allie Sultan, Media Arts; Cheryl Newsome, Undergraduate student, Media Arts
- 102 Trends in Agricultural Production Efficiency and Their Implications for Food Security in Sub-Saharan African Countries. Bichaka Fayissa, Economics and Finance; Christian Nsiah, Economics & Finance, Baldwin Wallace University
- 103 Genome-wide Identification and Characterization of Long Non-Coding RNAs in Tilapia (*Oreochromis niloticus*). Walaa Shaalan, Visiting scholar, Biology; Ali Ali, Graduate student, Biology; Nassr Allah Abd El-Hameid, Non-MTSU university faculty collaborator, Biology; Sabry El-Serafy, Non-MTSU university faculty collaborator, Biology; Mohamed Salem, Staff, Biology
- 104 The Falling Wooden Idols. Marie Elliott, Faculty, Media Arts; Frank Barnas, Faculty, Broadcast Journalism and Documentary Production, Valdosta State University
- 105 Inferred Reactivation of Basement Structures within the Nashville Dome, Central Tennessee. Mark Abolins, Faculty, Geosciences
- 106 *Milly and Roots* - Animated Series. Rodrigo Gomez, Faculty, Media Arts

UNDERGRADUATE POSTERS

- 300 Classifying Magnetic Resonance Image Modalities with Convolutional Neural Networks. Samuel Remedios, Computer Science; Dzung Pham, Industry collaborator; John Butman, Industry collaborator; Snehashis Roy, Industry collaborator; Joshua Phillips (Faculty sponsor) Computer Science
- 301 Nutrition in the Media. Aubree Davis, Interior Design; Dasia Ballard, Social Work; Sandra Cavender (Faculty sponsor) English
- 302 Potential Health Risks of Dyes Used in Color Run Powders. Teresa Tran, Chemistry; Beng Ooi, Faculty, Chemistry; Beng Ooi (Faculty sponsor) Chemistry
- 303 Does the use of a 'Sonic Net' Disturb the European Starling (*Sturnus vulgaris*) and Deter them from the Murfreesboro Airport? Ifeanyi Onuh, Biology; Sarah Mikhail, Biology; Jarred

- Millard, Biology; Marisa Rust, Biology; Danielle Brown, Faculty, Biology; Danielle Brown (Faculty sponsor) Biology
- 304 Investigating the Immune Response to *Cryptococcus neoformans*. Muhammad Fariz Ali, Biology; Rebecca Seipelt (Faculty sponsor) Biology
- 305 Media Influences on Public Opinion of the Police. Madeline Peters, Criminal Justice Administration; Jade Johnson, Speech Pathology and Audiology; Sandra Cavender (Faculty sponsor) English
- 306 Searching for Macroscale Folds in the Nashville Dome, Central Tennessee. Christiana Rosenberg, Geosciences; Mark Abolins (Faculty sponsor) Geosciences
- 307 Effects of Predation Risk on Habitat Selection by Two Cryptobenthic Blennies (*Helcogrammoides spp.*) in a Central Chilean Coastal Ecosystem. Brooke Fitzwater, Biology; Dennis Mullen (Faculty sponsor) Biology
- 308 Visual Catalog of the Fishes of the Stones River in Middle Tennessee. Brooke Fitzwater, Biology; Dennis Mullen (Faculty sponsor) Biology
- 309 The True Costs of Private Security Officers. Matthew Moore, Criminal Justice Administration; Ben Stickle, Faculty, Criminal Justice Administration; Ben Stickle (Faculty sponsor) Criminal Justice Administration
- 310 Infectivity of Novel Intracellular Bacteria for Eukaryotic Cells. Andrew Swehla, Biology; Mary Farone (Faculty sponsor) Biology
- 311 Orchestrating O'Carolan: Initiating a Folk Composer into a Baroque World. Sarah Wilfong Joblin, Music; Carol Nies (Faculty sponsor) Music
- 312 The Relationship of Intrinsic and Extrinsic Constraints to Undergraduate STEM Instructors' Use of Research-Based Instructional Strategies. Gina Bishara, Biology; Grant Gardner (Faculty sponsor) Biology
- 313 WITHDRAWN
- 314 Assessing Type 2 Diabetes Risk Perception among College Students and Creating Health Education Tools using the Health Belief Model. Kyeesha Wilcox, Global Studies and Human Geography; Bethany Wrye (Faculty sponsor) Health and Human Performance, and Erin Anfinson (Faculty sponsor) Art
- 315 Determinants of Life Expectancy in MENAP and CCA Countries. Victor Sanchez, Political Science; David Carleton (Faculty sponsor) Political Science

- 316 Indoor Localization with Fingerprinting using Artificial Neural Networks. Delkhaz Ibrahim, Computer Science; Mubarek Mohammed, Engineering Technology; Lei Miao (Faculty sponsor) Engineering Technology
- 317 Factors that Cause the Leaching of Bisphenol A From Plastic Containers. Emily Jookar, Biology; Beng Guat Ooi, Faculty, Chemistry; Beng Guat Ooi (Faculty sponsor) Chemistry
- 318 A Tale of Two Series: Even and Odd Unsymmetrical Bispyridinium [*closo*-B₁₀H₁₀]²⁻ Derivatives. Anas Hajhusein, Chemistry; Loay Abuzahra, Chemistry; Muhammad Ali, Chemistry; Andrienne Friedli, Faculty, Chemistry; Piotr Kaszynski, Faculty, Chemistry; Andrienne Friedli (Faculty sponsor) Chemistry
- 319 Synthesis of Reverse Amide Analogs of Cyclopropyl Peptidomimetics as BACE Inhibitors. Mahmuda Akter, Chemistry; Norma Dunlap, Faculty, Chemistry; Norma Dunlap (Faculty sponsor) Chemistry
- 320 Analyzing Student Understanding of Isomorphism. Marilyn Kelley, Mathematics; Jennifer Lovett (Faculty sponsor) Mathematics
- 321 Fungal Endophytes in *Vitis aestivalis* 'Norton/Cynthiana' Grapes of Missouri and Tennessee are Likely Distinct. Ross Thomas, Biology; Zachary Lay, Biology; Rebecca Seipelt-Thiemann (Faculty sponsor) Biology
- 322 Factors That Explain the Variance in Corruption: A Cross-National Study. Samuel Musili, Political Science; Stephen Morris (Faculty sponsor) Political Science
- 323 Opposites Attract: Donor-Pi-Acceptor Dyes in the Solid State. Tegan Schafer, Chemistry; Jakub Wojciechowski, Visiting scholar, Technical University of Lodz, Poland, Chemistry; Irina Novozhilova, Staff, Chemistry; Andrienne Friedli (Faculty sponsor) Chemistry
- 324 A Comparative Study of the Impacts of Two Active Learning Methods in High School Biology. Dakota Demarest, Biology; Naili Huszainey, Biology; Grant Gardner (Faculty sponsor) Biology
- 325 WITHDRAWN.
- 326 Is There a Distinction Between Out-Loud and Silent Self-Talk? Derrick Collins, Psychology; Thomas Brinthaupt (Faculty sponsor) Psychology
- 327 RPN-6.2: A Protein Required for Proteasome Assembly, May be Regulated via Alternative Promoter Usage as well as Alternative Splicing in Nematodes During Salt Stress. Robert Owen, Biology; Sara Moore, Biology; Rebecca Seipelt-Thiemann, Faculty, Biology; Rebecca Seipelt-Thiemann (Faculty sponsor) Biology
- 328 Examining the Effects of Manipulating Chaperone-Mediated Autophagy on Stress Induced Nuclear Granules ("SINGS") within the Nucleus of Oocytes of *Caenorhabditis elegans*. Robert Owen, Biology; Lynn Boyd, Faculty, Biology; Lynn Boyd (Faculty sponsor) Biology
- 329 Word Learning in Authentic versus Explicit Contexts. Janie Kullmar, Health and Human Performance; Kathryn Blankenship, Faculty, Health and Human Performance; Kathryn Blankenship (Faculty sponsor) Health and Human Performance
- 330 Observing the Solar System with Software Defined Radio. John Jackson, Physics and Astronomy; Chuck Higgins (Faculty sponsor) Physics and Astronomy
- 331 Effect of the Lunar Shadow in the Intake of Data from Solar Activity. Beverly Warner, Physics and Astronomy; Charles Higgins (Faculty sponsor) Physics and Astronomy
- 332 Identification of Fungal Endophytes in *Vitis aestivalis* 'Norton/Cynthiana' Grapes of Middle Tennessee. Rachel Bailey, Biology; Nolan Jolley, Agribusiness and Agriscience; John Dubois, Faculty, Biology; Tony Johnston, Faculty, Agribusiness and Agriscience; Rebecca Seipelt-Thiemann (Faculty sponsor) Biology
- 333 Evaluating the Role of Memory in Cell Cycle Progression. John Ford, Computer Science; Jasmin Laurel, Biology; Rachel Leander, Faculty, Mathematics; Christian Devine, Biology; Rachel Leander (Faculty sponsor) Mathematics
- 334 Narrative Discourse Performance in Older Adults. Natalie Foulks, Health and Human Performance; Kathryn Blankenship (Faculty sponsor) Health and Human Performance
- 335 Dimensional Attention Learning for Working Memory. Bishoy Bektor, Computer Science; Joshua Phillips (Faculty sponsor) Computer Science
- 336 Synthesis and Characterization of Antifungal Peptoids against *Cryptococcus* by Means of Structure Activity Relationship. Madyson Middleton, Chemistry; Kevin Bicker (Faculty sponsor) Chemistry
- 337 Pros & Cons of Clickbait with Social Media. Makayla Stout, English; Kayla Chu, English; Sandra Cavender (Faculty sponsor) English
- 338 Symmetrical Bis-(4-Alkoxyppyridinium) Liquid Crystals Made from Boron Clusters. Muhammad Osama Ali, Chemistry; Andrienne Friedli (Faculty sponsor) Chemistry
- 339 Rigid Body Guidance in Three Dimensions. Matthew Radice, Engineering Technology; Brian Slaboch (Faculty sponsor) Engineering Technology
- 340 Limestone Powder: The Concrete Industry's Answer for the Fly Ash Shortage. Lauren Clodfelter, Concrete Industry Management; Jonathan Huddleston (Faculty sponsor) Concrete Industry Management
- 341 Making Comprehensible Health Information Accessible and Entertaining for Parents with Low Literacy Levels. Maeve Bleistein, Psychology; Matthew Hackett, Psychology; Stuart Bernstein (Faculty sponsor) Psychology
- 342 A Freshman's Journey: An Italian Travel Memoir. Madeleine Kurtz, English; Philip Phillips (Faculty sponsor) Honors College
- 343 Implicit Learning Differences Between Dyslexics and Neurotypicals. Caitlin Ketcham, Psychology; Haylie Stoltz, Psychology; Andrew Towle, Psychology; Stuart Bernstein, Faculty, Psychology; Stuart Bernstein (Faculty sponsor) Psychology
- 344 New Drugs for Bad Bugs: Aurones as Novel Antifungal Agents. Mario Lorenzana-DeWitt, Chemistry; Mary Farone, Faculty, Biology; Scott Handy, Faculty, Chemistry; Zachary Taylor, Graduate student, Chemistry; Arjun Kafle, Graduate student, Chemistry; Mary Farone (Faculty sponsor) Biology
- 345 Exploration of Antifungal Peptide, AEC5, for use as an Antimicrobial Therapeutic Against *Cryptococcus neoformans*. Sabrina Spicer, Chemistry; Kevin Bicker (Faculty sponsor) Chemistry, and Erin McClelland (Faculty sponsor) Biology
- 346 Utilizing a Live Cell Reporter of M1 Macrophage Activation to Study the Effects of Plant-Derived Immunomodulatory Polysaccharides. Devyn Hayes, Biology; J. Logan Bowling, Graduate student, Biology; Rajarshi Gosh, Graduate student, Biology; Anthony Farone, Faculty, Biology; David E. Nelson, Faculty, Biology; David Nelson (Faculty sponsor) Biology
- 347 Fungal Endophytes of *Vitis aestivalis* Variation Cynthiana/Norton Identified from Arkansas Overlap, But Are Distinct from Those Isolated from Tennessee and Missouri Grapes. Joseph Jones, Chemistry; Kayley Stallings, Chemistry and Agribusiness and Agriscience; Rebecca Seipelt-Thiemann (Faculty sponsor) Biology, John Dubois (Faculty sponsor) Biology, and Tony Johnston (Faculty sponsor) Agribusiness and Agriscience
- 348 Investigation into Timing of Cuttings for Maximum Propagation Efficiency of *Vitis aestivalis* 'Norton/Cynthiana' Grapevines. Nolan Jolley, Agribusiness and Agriscience; Tony Johnston (Faculty sponsor) Agribusiness and Agriscience
- 349 Thanatomicrobiome Activity in Drug Overdose Cases. Emily Brackett, Forensic Science; Frank Bailey (Faculty sponsor) Biology
- 350 Characterization of Oils and Oil Mixtures using Terahertz Time-Domain Spectroscopy. Seth Floyd, Physics and Astronomy; Khem

- Poudel, Graduate student, Computational Science; William Robertson, Faculty, Physics and Astronomy; William Robertson (Faculty sponsor) Physics and Astronomy
- 351 Equine Temperament Examination Through Novel Object Exposure: Suitability for Equine-Assisted Activities and Therapies. Madeline McDonald, Agribusiness and Agriscience; Holly Spooner (Faculty sponsor) Agribusiness and Agriscience
- 352 Project ATOM: The Audio and Touch Operations Manager for Molecular Modeling Software. James Scott, Chemistry; Preston Macdougall (Faculty sponsor) Chemistry
- 353 Assessment of Anti-Herpes Activity by *Cichorium Intybus*. Csilla Klara Szepe, Biology; Stephen Wright (Faculty sponsor) Biology
- 354 Using Linguistic Inquiry and Word Count to Examine Relationships between Personality and Writing Style. Cindi Brown, Psychology; Ying Jin, Faculty, Psychology; Thomas Brinthaupt, Faculty, Psychology; Thomas Brinthaupt (Faculty sponsor) Psychology
- 355 Why Are Some Countries Happier Than Others? Miura Rempis, Political Science; David Carleton (Faculty sponsor) Political Science
- 356 Inducing Somatic Embryogenesis in Grape (*Vitis aestivalis* 'Norton/Cynthiana') Callus. Hannah Hall, Biology; Aimee Wilson, Biology; Shannon Smith, Graduate student, Biology; John Dubois, Faculty, Biology; John Dubois (Faculty sponsor) Biology
- 357 Correlation of Bentonite Beds Throughout the Carters Limestone in Williamson County, TN. Charlotte Byrd, Geosciences; Clay Harris (Faculty sponsor) Geosciences
- 358 The Effects of Seed Cleaner Air Velocity and Float Tests of Varying Durations on Hemp (*Cannabis sativa* L.) Seed Separation. Zachary Stevens, Agribusiness and Agriscience; Clint Palmer, Biology, Graduate student, Agribusiness and Agriscience; Song Cui, Faculty, Agribusiness and Agriscience, Faculty; Nate Phillips, Faculty, Agribusiness and Agriscience; Nate Phillips (Faculty sponsor) Agribusiness and Agriscience
- 359 Fabrication of a Novel Manufacturing Mechanism. Sloan Campbell, Engineering Technology; Brian Slaboch (Faculty sponsor) Engineering Technology
- 360 Analyzing Single-Molecule Magnets with Density Functional Theory. Myranda Uselton, Chemistry; Jing Kong (Faculty sponsor) Chemistry
- 361 Assessing Freshwater Cyanobacterial Bloom Dynamics and Toxin Production in a Lentic Ecosystem. Jordan Jatko, Biology; Frank Bailey, Faculty, Biology; Frank Bailey (Faculty sponsor) Biology
- 362 Examining SNF3's Role in the Virulence of *Cryptococcus neoformans*. Prianca Griggs, Biology; Erin McClelland (Faculty sponsor) Biology
- 363 Intracellular *Cryptococcus neoformans* Infection Up-regulates the M2 Polarization Marker c-Myc in Host Macrophages. Kirsten Cunningham, Biology; Linda Sircy, Graduate student, Biology; Rebecca Seipelt-Thiemann, Faculty, Biology; Erin McClelland, Faculty, Biology; David E. Nelson, Faculty, Biology; David Nelson (Faculty sponsor) Biology
- 364 Mercury in Riparian Spiders and the Potential Risk to Appalachian Mountain Birds. Andrew Todd, Biology; Gale Beaubien, Graduate student, Biology; Connor Olson, Graduate student, Biology; Ryan Otter, Faculty, Biology; Ryan Otter (Faculty sponsor) Biology
- 365 The Therapeutic Potential of Azaaurones for the Pathogenic Yeast *Cryptococcus neoformans*. Miranda Lane, Biology; Erin McClelland, Faculty, Biology; Erin McClelland (Faculty sponsor) Biology
- 366 How Host Gender Affects the Polysaccharide Capsule of *Cryptococcus neoformans*. Pel Doski, Biology; Erin McClelland (Faculty sponsor) Biology
- 367 Foreign Language in Selected Literature. Natalie Jones, English; Patricia Gaitely (Faculty sponsor) English
- 368 Novel Tripodal Ligands with Phosphorus/Nitrogen Mixed Donors and Their Base Metal Complexes. David Tyer, Chemistry; Keshav Paudel, Graduate student, Chemistry; Keying Ding (Faculty sponsor) Chemistry
- 369 Toward Microscopic Equations of State for Core-Collapse Supernovae from Chiral Effective Field Theory. Bassam Aboona, Physics and Astronomy; Jeremy Holt (Faculty sponsor) Physics and Astronomy
- 370 The Variety of Censorship. Ella Colbert, Sociology and Anthropology; Sean Dixon, Music; Sandra Cavender (Faculty sponsor) English
- 371 Identity Theft. Leah Patton, Psychology; Sandhya Singh, Accounting; Tanner Brown, English; Sandra Cavender (Faculty sponsor) English
- 372 Effectiveness of zinc-based footbath solution over industry standard copper-based solutions for the prevention and treatment of digital dermatitis in dairy cattle. Christina Davis, Agribusiness and Agriscience; Jessica Carter, Faculty, Agribusiness and Agriscience; Song Cui, Faculty, Agribusiness and Agriscience; Jessica Carter (Faculty sponsor) Agribusiness and Agriscience
- 373 Aerodynamic and Acoustic Analysis of a Barn Owl Biomimetic Airfoil. Salman Rahmani, Aerospace; Nate Callender (Faculty sponsor) Aerospace
- 374 Contributions of Early MTSNS Faculty in Establishing the Tennessee Academy of Science. Hunter D. Hudson, Chemistry; Martin V. Stewart, Faculty, Chemistry; Martin V. Stewart (Faculty sponsor) Chemistry
- 375 Acoustic Bandgap Structures Based on One-Dimensional Maximal-Length-Sequence Waveguide Filters. Stephanie Lough, Physics and Astronomy; William Robertson (Faculty sponsor) Physics and Astronomy
- 376 Mercury Concentrations in Terrestrial and Aquatic Primary Consumers in Tennessee's Appalachian Mountains. Jaylen Sims, Chemistry; Gale Beaubien, Graduate student, Biology; Connor Olson, Graduate student, Biology; Andrew Todd, Biology; Ryan Otter, Faculty, Biology; Ryan Otter (Faculty sponsor) Biology
- 377 Efficacy of HPL1A Cell Culture as a Host for Influenza A Viruses. Ashley Gambrell, Biology; Stephen Wright (Faculty sponsor) Biology
- 378 Domestic Abuse in the Media. Ashleigh Yancy, Art and Design; Janice Penny, Sociology and Anthropology; Sandra Cavender (Faculty sponsor) English
- 379 Numerical Study of Phase Transitions in Quantum Materials. Kristin Barton, Physics and Astronomy; Hanna Terletska (Faculty sponsor) Physics and Astronomy
- 380 Molecular Identification of Anti-Viral Metabolite Produced by *Mangifera persiciformis*. Clinton Holladay, Biology; Stephen Wright (Faculty sponsor) Biology
- 381 Callus Initiation in *Cannabis Sativa* via Plant Tissue Culture Methods. Xoe Thacker, Biology; Kayla Thomas, Biology; Shannon Smith, Graduate student, Biology; John DuBois, Faculty, Biology; John DuBois (Faculty sponsor) Biology
- 382 The Dibenzalacetone Roller Coaster: An X-ray and Computational Study of Conformational Isomers. Andrew Tanyous, Chemistry; Jakub Wojciechowski, Visiting scholar, Technical University of Lodz, Poland, Chemistry; Andrienne Friedli (Faculty sponsor) Chemistry
- 383 Suitability of Chicken, Broccoli, and Rice Casserole as a Menu Item for Public School Nutrition Programs. Amanda Mason, Human Sciences; Joshua McCrary, Human Sciences; Lisa Sheehan-Smith (Faculty sponsor) Human Sciences
- 384 Differentiation of Ignitable Liquids by Using Direct Analysis in Real Time Mass Spectrometer (DART-MS). Isabella Barnett, Chemistry; Mengliang Zhang (Faculty sponsor) Chemistry
- 385 Star Blaster: An Effort in Collaborative Game Development. Cory Nelson, Computer Science; Adam McInturff (Faculty sponsor) English

- 386 The Emerging Danish Nationalist Identity in Niels Gade's Opera *EIverskud*. Giuliana Chavez Rojas, Music; Joseph Morgan (Faculty sponsor) Music
- 387 Elements and Principles of Design Interactive Museum. Alejandra Pantin Hernandez, Art and Design; Janis Brickey (Faculty sponsor) Human Sciences
- 388 Phosphorous Aggregate: A Sustainable Light Source with the Adoption of Glow in the Dark Aggregate. Benjamin Patrick, Concrete Industry Management; Heather Brown (Faculty sponsor) Concrete Industry Management

GRADUATE POSTERS

- 500 Genome-Wide Identification of Antisense lncRNAs and their Expression and Genetic Polymorphism Associated with Susceptibility to *Flavobacterium psychrophilum* in Rainbow Trout. Ali Ali, Biology; Rafet Al-Tobasei, Postdoctoral fellow, Computational Science; Mohamed Salem, Faculty, Biology; Mohamed Salem (Faculty sponsor) Biology
- 501 Small RNAs Involvement in *Flavobacterium psychrophilum*-Rainbow Trout Host Pathogen Interactions. Pratima Chapagain, Molecular Biosciences; Ali Ali, Molecular Biosciences; Yniv Palti, Government agency collaborator, USDA; Gregory Weins, Government agency collaborator, NCCWA; Mohamed Salem (Faculty sponsor) Molecular Biosciences
- 502 Development of a 50K Transcribed Gene SNP chip Identifies Major QTL Affecting Growth and Muscle Yield In Rainbow Trout Through GWAS Analysis. Ali Ali, Biology; Rafet Al Tobasei, Postdoctoral fellow, Computational Science; Mohamed Salem, Faculty, Biology; Mohamed Salem (Faculty sponsor) Biology
- 503 Holographic Reduced Representations for Dimensional Attention Learning. Huizhi Wang, Computer Science; Joshua Phillips (Faculty sponsor) Computer Science
- 504 Energy Aware, Time and Throughput Optimization for Workflow Scheduling in Cloud Environments using Genetic Algorithm. Chandu Naga Vardhan Budati, Computer Science; Yi Gu (Faculty sponsor) Computer Science
- 505 Predicting Stigmatizing Attitudes Against Mental Illness Based on Mental Health Literacy. Angela Bowman, Health and Human Performance; Tara Prairie, Health and Human Performance; Norman Weatherby, Faculty, Health and Human Performance; Andrew Owusu, Faculty, Health and Human Performance; Jwa Kim, Faculty, Literacy Studies; Norman Weatherby (Faculty sponsor) Health and Human Performance
- 506 The Roles of Perceived Candidate Honesty and Effectiveness in Voter Choices during the 2016 U.S. Presidential Election. Kimberli Conro, Media and Communication; Ken Blake, Faculty, Journalism, Office of Communication Research; Jason Reineke, Faculty, Journalism, Media Studies; Ken Blake (Faculty sponsor) Journalism, Office of Communication Research
- 507 Solar Boat Team: An Alternative to Gas. Christopher Winfrey, Engineering Technology; Saeed Foroudestan (Faculty sponsor) Professional Science
- 508 Production of a Dual-Genre EP. Schiller Poland, Recording Industry; Daniel Pfeifer (Faculty sponsor) Recording Industry
- 509 Development of a Protein-Based Assay for Discovering Potential Immune Complex (IC) Inhibitors. Matthew Fuller, Molecular Biosciences; Anthony Farone, Faculty, Biology; Elliot Altman (Faculty sponsor) Biology
- 510 Effect of Light Photoperiod on Lipids of the Harmful Marine Dinoflagellate, *Karenia brevis*. Shelby Lowrie, Biology; Hanna Houle, Visiting scholar, Biology; Christian Devine, Undergraduate student, Biology; Jeff Leblond (Faculty sponsor) Biology
- 511 Synthesis and Biological Screening of Peracetylated β -D-glucopyranosyl Aurones and Aurone Glucosides. Arjun Kafle, Molecular Biosciences; Scott Handy, Faculty, Chemistry; Scott Handy (Faculty sponsor) Chemistry
- 512 Incremental Learning for Supervised Dimension Reduction. Ning Zhang, Computational Science; Qiang Wu, Faculty, Mathematics; Qiang Wu (Faculty sponsor) Mathematics
- 513 Fourier Spectral Exponential Time Differencing Methods for Multidimensional Space-Fractional Reaction-Diffusion Equations. Saham Alzahrani, Computational Science; Abdul Khaliq, Faculty, Mathematics; Abdul Khaliq (Faculty sponsor) Mathematics
- 514 "He Deserves a Face": Rewriting the Narrative of Ascent in African American Fiction for Young Adults. Kimberly Feher, English; Laura Dubek (Faculty sponsor) English
- 515 Degradation of Selected Hazardous Organic Compounds by Chlorine Dioxide and Ozone. Md Abdul Hoque, Chemistry; Ngee Chong, Faculty, Chemistry; Ngee Chong (Faculty sponsor) Chemistry
- 516 Mercury Dynamics in Headwater Streams of Tennessee's Appalachian Mountains. Connor Olson, Biology; Gale Beaubien, Biology; Jaylen Sims, Undergraduate student, Chemistry; Andrew Todd, Undergraduate student, Biology; Ryan Otter, Faculty, Biology; Ryan Otter (Faculty sponsor) Biology
- 517 Emission Profile of Biodiesel Blends with Various Oxygenated Additives. Saidi Abdulramoni, Chemistry; Ngee Chong, Faculty, Chemistry; Beng Ooi, Faculty, Chemistry; Ngee Chong (Faculty sponsor) Chemistry
- 518 Huffman Encoded T9 Based Electromyographic Text Input System. Daniel Lewis, Computer Science; Suk Seo (Faculty sponsor) Computer Science
- 519 Race and (Mis)Representation: *The Cosby Show* and the "Perfect" Black American Family. Michael Curtis, Communication Studies and Organizational Communication; Laura Dubek (Faculty sponsor) English
- 520 A Continuous Label-Free Cell Separation Device Combining Microfluidics and Dielectrophoresis. Courtney Riley, Professional Science; Charles Perry (Faculty sponsor) Engineering Technology; Tae Hyun Kim (Faculty sponsor), Electrical engineering, University of Michigan
- 521 Predicting the Receipt of a Physician's Recommendation for a Lifestyle Change. Sarah Murfree, Health and Human Performance; Garvita Thareja, Health and Human Performance; Norman Weatherby (Faculty sponsor) Health and Human Performance
- 522 The Pathogenic Yeast, *Cryptococcus neoformans*, Promotes M2 Polarization of Host Macrophages by Down-regulating p53 Signaling. Linda Sircy, Biology; Kirsten Cunningham, Undergraduate student, Biology; Rebecca Seipelt-Thiemann, Faculty, Biology; Erin McClelland, Faculty, Biology; David E. Nelson, Faculty, Biology; David Nelson (Faculty sponsor) Biology
- 523 An Evaluation of GPU Implementations of SSSP and APSP Algorithms. Charles Johnson, Computer Science; Suk Seo (Faculty sponsor) Computer Science
- 524 From Cure-alls to Calcium Tablets: a Comparative Semiotic Analysis of Advertisements for 19th-20th Century Patent Medicines and Contemporary Dietary Supplements. Karin Albrecht, Media and Communication; Jane Marcellus (Faculty sponsor) Journalism
- 525 "Ships At a Distance": Spike Lee's Intersectional Treatment of Female Sexuality. Elizabeth Carpenter, English; Laura Dubek (Faculty sponsor) English
- 526 The Evolution of Jazz Recording Techniques. Tevin Turner, Recording Industry; Michael Hanson (Faculty sponsor) Recording Industry
- 527 Genetic Variation of *Cryptococcus neoformans* Dependent upon Host Environment. John Shahan, MSPS-Biotechnology; Erin McClelland (Faculty sponsor) Biology

- 528 Personalized Web Search Based on User Interaction with Browser. Vishwajith Shivanandaih Matad, Computational Science; Suk Jai Seo (Faculty sponsor) Computer Science
- 529 An Examination of the Relationship Between Diabetes and Risk Factors Including Diet, Physical Activity and Body Weight Among US Adults. Willie Rajvong, Health and Human Performance; Tandra Gause, Health and Human Performance; Andrew Owusu, Faculty, Health and Human Performance; Angela Bowman, Health and Human Performance; Chandra Story, Faculty, Health and Human Performance; Bethany Wrye, Faculty, Health and Human Performance; Andrew Owusu (Faculty sponsor) Health and Human Performance
- 530 Expression of a Novel Protein(HVA1) that Affects the Virulence of *Cryptococcus neoformans*. Aarthi Subramani, Molecular Biosciences; Erin McClelland (Faculty sponsor) Molecular Biosciences
- 531 The Impact of the Affordable Care Act on Breast Cancer Mortality among African-American Women. Glory Okwori, Health and Human Performance; Norman L. Weatherby, Faculty, Health and Human Performance; Andrew Owusu, Faculty, Health and Human Performance; Norman L. Weatherby (Faculty sponsor) Health and Human Performance
- 532 Supporting Biology Lab Instructors to Engage Students in Disciplinary Talk through Professional Development and Curriculum Materials. Zhigang Jia, Mathematics and Science Education; Angela Google, Mathematics and Science Education; Tina Carter, Biology; Anna Grinath, Faculty, Biology; Anna Grinath (Faculty sponsor) Biology
- 533 Searching for New Game Mechanics Missing from Contemporary Games Aiding Computer Science Education. Jesse Humphries, Computer Science; Suk Seo (Faculty sponsor) Computer Science
- 534 Innovation and Unemployment: Paths of Causality. Bronwyn Graves, Economics and Finance; Anthon Eff (Faculty sponsor) Economics and Finance
- 535 Cinema's Native Son: The Literary Impact of Oscar Micheaux's Novels and Films. Jess Bennett, English; Shane Levan, English; Laura Dubek (Faculty sponsor) English
- 536 The Impact of the Solar Tree with Nanowire Technology. Tasneem AlSalem, Engineering Technology; Charles Perry (Faculty sponsor) Engineering Technology
- 537 The Effect of Different Fish Predators on Riparian Spider Mercury Concentrations. Gale Beaubien, Biology; Connor Olson, Biology; Ryan Otter, Faculty, Biology; Ryan Otter (Faculty sponsor) Biology
- 538 The Ergonomic Impact on Women Working in Construction. Brianna Smith, Engineering Technology; Charles Perry (Faculty sponsor) Engineering Technology
- 539 The Relationship Between Age of Initiation of Alcohol/Tobacco/Marijuana Use and Prescription Drug Abuse Among High School Students in the US. Tandra Gause, Health and Human Performance; Willie Rajvong, Health and Human Performance; Andrew Owusu, Faculty, Health and Human Performance; Chandra Story, Faculty, Health and Human Performance; Bethany Wrye, Faculty, Health and Human Performance; Andrew Owusu (Faculty sponsor) Health and Human Performance
- 540 Broad band Maximum Length Sequence (MLS) Multilayer Dielectric Reflector. Khem Poudel, Computational Science; William Robertson, Faculty, Physics and Astronomy; William Robertson (Faculty sponsor) Physics and Astronomy
- 541 Analysis of Clinical and Passaged Strains of *Cryptococcus neoformans* Reveals Alternative Splicing in Virulence Genes. Mitch Merryman, Biology; Rebecca Seipelt-Thiemann (Faculty sponsor) Biology
- 542 Development of an Expert System as a Diagnostic Tool for Diseases. Mohammed Mercy, Computer Science; Dr. Suk Jai Seo (Faculty sponsor) Computer Science
- 543 Wild-Simulated Production Guide for Ginseng Farmers in Tennessee. Shannon Smith, Molecular Biosciences; John DuBois, Faculty, Biology; Nathan Phillips, Faculty, Agribusiness and Agriscience; John DuBois (Faculty sponsor) Biology
- 544 Voting Versus Average. Honglan Xu, Mathematics; Qiang Wu (Faculty sponsor) Mathematics
- 545 Describing Physical Activity Breaks During the School Day: A Preliminary Analysis. Monica Hill, Elementary and Special Education; Kathleen Burriss, Faculty, Elementary and Special Education; Larry Burriss, Faculty, Journalism; Donald Snead, Faculty, Educational Leadership; Kathleen Burriss (Faculty sponsor) Elementary and Special Education
- 546 Misconceptions of Mutations and Pedigree Analysis Reveal Lack of Depth in and Reliance on Misplaced Intuition on Understanding. Zachary Grimes, Mathematics and Science Education; Rebecca Seipelt-Thiemann (Faculty sponsor) Biology
- 547 Detecting Domain-Fronted Traffic using Neural Networks. Steven Sheffey, Computer Science; Suk Seo (Faculty sponsor) Computer Science
- 548 Electrochemical Detection of Acetaminophen with Silicon Nanowires. Raja R. Pandey, Chemistry; Hussain S. Alshahrani, Chemistry; Elissa Williams, Non-MTSU university faculty collaborator ; Sergiy Krylyuk, Non-MTSU university faculty collaborator, ; Albert V. Davydov, Non-MTSU university faculty collaborator; Charles C. Chusuei, Faculty, Chemistry; Charles Chusuei (Faculty sponsor) Chemistry
- 549 The Subversive Masculinity of *Hey Arnold*, *Avatar: The Last Airbender* and *The Loud House*. Kristen Sales, Communication Studies and Organizational Communication; Jane Marcellus (Faculty sponsor) Journalism
- 550 Applied Ambisonics: Capturing Three-Dimensional Sound in a Live Setting. Adrienne Howard, Recording Industry; John Merchant (Faculty sponsor) Recording Industry
- 551 A Pilot Study: A Survey of Beginning Band Directors with Regard to Instrument Selection. Ke Ding, Music; Jamila McWhirter (Faculty sponsor) Music
- 552 Workflow Scheduling and Optimization for Big Data Sciences in Distributed Network Environments. Huda Alrammah, Computational Science; Yi Gu (Faculty sponsor) Computer Science
- 553 An Adaptive Metropolis-Hastings Algorithm with Rejection-Based Gaussian Proposal Scaling for Fast Convergence in Multimodal Parameter Spaces. Graham West, Computational Science; John Wallin (Faculty sponsor) Computational Science
- 554 Build Reliable Robotic Systems Through Model Checking. Yuxin Zhang, Computer Science; Suk Seo (Faculty sponsor) Computer Science
- 555 Differences in the Male and Female Immune Response to *Cryptococcus neoformans* Infections. Tiffany Guess, Biology; Erin McClelland, Faculty, Biology; Erin McClelland (Faculty sponsor) Biology
- 556 Narrative of the Life of Alexander Hamilton, an American Immigrant: Hamilton as an Immigrant's Narrative of Ascent. Micah Hallman, English; Laura Dubek (Faculty sponsor) English
- 557 The Visual Album: Exploring the Creative Process from the Artist Perspective. Brian Seay, Recording Industry; Matt Foglia (Faculty sponsor) Recording Industry
- 558 A Survey of Two Task-Scheduling Algorithms for Optimizing Efficiency on Cloud Computing Systems. Fred Nelson, Computer Science; Yi Gu (Faculty sponsor) Computer Science
- 559 Teaching String Intonation: Literature and Practice. Mahsa Marjorie Way-Kiani, Music; Jamila McWhirter (Faculty sponsor) Music

- 560 Granger Causality Test and Cointegration of Interest Rate, Exchange Rate, and Stock Volatility at Chicago Options Market. Abul Hasnat Salimullah, Economics and Finance; Anthon Eff (Faculty sponsor) Economics and Finance
- 561 Piezoelectric Microphones: Creative Applications of Lo-Fi Transducers. Ana Cristina Ochoa, Recording Industry; Michael Fleming (Faculty sponsor) Recording Industry
- 562 A Survey of Post-Secondary School Music Participation. Dakota Dooley, Music; Jamila McWhirter (Faculty sponsor) Music
- 563 Molecular Basis of pH-dependent HIV gp120 Differences Revealed Using BESt. Scott Morton, Computational Science; Joshua Phillips, Faculty, Computer Science; Joshua Phillips (Faculty sponsor) Computer Science
- 564 A Benchmarking Study of NoSQL and SQL Databases. Nathaniel Boyer, Computer Science; Suk Jai Seo (Faculty sponsor) Computer Science
- 565 Recording Classical Guitar from Start to Finish: The Recording and Dissemination of a Classical Album in Today's Market. Garri George, Recording Industry; John Hill (Faculty sponsor) Recording Industry
- 566 The Role of Testosterone in the Melanization of *Cryptococcus neoformans*. Jamila Tucker, Biology; Erin McClelland (Faculty sponsor) Biology
- 567 How to Design, Produce, and Disseminate an Effective Online Pro Audio Educational Series. Kyle Holland, Recording Industry; Cosette Collier (Faculty sponsor) Recording Industry
- 568 Encoding and Generating Musical Patterns with Markov Chains. Joseph Volmer, Computer Science; Suk Jai Seo (Faculty sponsor) Computer Science
- 569 A Human-Following Robot for Household Fall Detection. Simeon Adebola, Engineering Technology; Lei Miao (Faculty sponsor) Engineering Technology
- 570 Hellcats, Bitches and Succubi: Afro-Futurism and Black Female Selfhood in *Lilith's Brood*. OlaOmi Amoloku, English; Laura Dubek (Faculty sponsor) English
- 571 Linearly Implicit Predictor-corrector Schemes for Space Fractional Reaction Diffusion Equations. Toheeb Biala, Mathematics; Khaliq Abdul, Faculty, Mathematics; Saham Alzharani, Mathematics; Furati Khaled, Non-MTSU university faculty collaborator, Mathematics; Abdul Khaliq (Faculty sponsor) Mathematics
- 572 Modeling Cybersecurity Threats Using GPU Computing. Harold Lay, Mathematics; Abdul Khaliq (Faculty sponsor) Mathematics
- 573 Modification of Multi-Walled Carbon Nanotubes with Cobalt Oxide Nanoparticles for Dopamine Sensing. Mohammad Salauddin Kader, Chemistry; Charles Chusuei, Faculty, Chemistry; Charles Chusuei (Faculty sponsor) Chemistry
- 574 Cobalt Complexes of Tripodal Phosphorus/Nitrogen Mixed Donor Ligands: Applications for Catalytic Dehydrogenative Coupling Reactions. Keshav Paudel, Molecular Biosciences; Bedraj Pandey, Chemistry; Keying Ding (Faculty sponsor) Chemistry
- 575 Multi-Cultural Music Experiences of Collegiate Music Majors. Shan Zheng, Music; Jamila McWhirter (Faculty sponsor) Music
- 576 Surface Chemistry and Spectroscopy Study of α -Synuclein and the NAC Part. Sunday Olaluwoye, Chemistry; Chengshan Wang, Faculty, Chemistry; Chengshan Wang (Faculty sponsor) Chemistry
- 577 WITHDRAWN.
- 578 Laser Applications to Enhance Combat Efficiency. Damian Parker, Engineering Technology; Charles Perry (Faculty sponsor) Engineering Technology
- 579 Prioritizing Test Cases for Regression Testing. Vishwa Patel, Computer Science; Suk Seo (Faculty sponsor) Computer Science
- 580 Temporal Integration of Mitochondrial Stress Signals by the PINK1:Parkin Pathway. Mary Catherine Skolfield, Biology; Wesley Riley, Biology; Logan Bowling, Biology; David Nelson, Faculty, Biology; David Nelson (Faculty sponsor) Biology

March 26-April 12

First-place posters on exhibition in the atrium of the Walker Library.

Scholars Week Organizing Committee

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