Schedule of Events - This is Research: Student Symposium 2018
March 26th
Auburn University Student Center

8:00 a.m.
Continental Breakfast (Level 2 - beside rooms 2222 and 2223)
Registration (8:00 am – 3:00 pm - Level 2 at entrance near room 2227;
3:00 pm – 5:00 pm - outside Level 3 Ballroom)
Judges Reporting - Level 2 – 2310

8:00 a.m. – 12:00 p.m.
Oral Paper Sessions
(Level 2 - rooms 2216, 2218, 2222, 2223, 2225, 2227, 2326)

11:30 a.m. – 1:00 p.m.
Morning Poster Session
Networking Lunch
(Level 3 - Ballroom)

1:00 p.m. – 3:00 p.m.
Oral Paper Sessions
(Level 2 - rooms 2216, 2218, 2222, 2223, 2225, 2227, 2326)

3:30 p.m. – 5:00 p.m.
Afternoon Poster Session
(Level 3 - Ballroom)
Oral Research Presentations – Morning Session
Student Center Meeting Rooms

8:00 – 8:45 a.m.

Room 2216 – Education/Policy
- Shi, Yuewei (G) – Education and employment of female graduate student in U.S.: A historical data perspective
- Burgess, Korie (UG) – Voices to be heard: A qualitative analysis of teacher success and longevity in the agriscience classroom
- Crayton, Mac-Jane (G) – Theoretical framework of oil spills in the Niger Delta region of Nigeria
- Huang, Felix (G) – A spatial model to determine the social impact that the built environment has on resident community health in Opelika, AL

Room 2218 – Biomed
- Sajib, Abdul Mohn (G) – Tumor activity of candidate promoters in canine tumors
- Fang, Han (G) – Differential effects of niacin on high-fat diet-induced adipose tissue inflammation and non-alcoholic fatty liver disease in C57BL6/J and B6129SF2/J mice
- Omeler, Sophonie (G) – The necessity for telegenetic counselling: Reaching the medically underserved through a cancer genetic research study
- Diffie, Elise (G) – Ultrasound elastography as a measure of whole-body therapy for Sandhoff disease

Room 2222 – Chemical Engineering
- Minkler, Michael (G) – Effect of statistical polythiophene copolymer microstructure on physical and optoelectronic properties
- Tian, Yuan (G) – Novel microfluidic system for encapsulation of equine endothelial colony forming cells for local cell delivery
- Herring, Wriley (UG) – Investigating algae-substrate interactions using polylactic acid and cellulose nanocrystal composites
- Mondal, Animesh (G) – CZTS electrode for phptoassisted charging and discharging of polysulfide bromide redox flow battery

Room 2225 – Nutrition
- Terry, Kara (G) – Extension empowers Alabama youth and parents to eat better and move more
- Woodie, Lauren (G) – Time-restricted feeding as a method for improving metabolic health in a mouse model of diet-induced obesity
- Ahmed, Bulbul (G) – Obesity stimulates tumor growth in a novel paired in vitro and in vivo model using patient-derived colorectal cancer xenografts
- Parker, Holly (UG) – Diet diversity in Andasibe, Madagascar

(UG) = undergraduate student presentation  
(G) = graduate student presentation
Room 2227 – Animal/Wildlife Sciences
- Dickinson, Sarah (G) – Transcriptome profiles in peripheral white blood cells at the time of artificial insemination discriminate beef heifers with different fertility potential
- Gunter, Phillip (G) – Evaluation of nitrogen delivery methods for stocker cattle grazing annual ryegrass: 2-year summary
- Gohlke, Madison (UG) – Characterization of mitochondrial variation between oocytes harvested from lean and obese pigs
- Parsons, Elizabeth (G) – Determining habitat suitability for the conservation of a native ecosystem engineer

Room 2223 – Biological Sciences
- Tiatragul, Sarin (G) – Where urban dwelling lizards choose to nest may help their babies beat the city heat
- Afroj, Sayma (G) – Cloning, expression and purification of bacteriocin from soil metagenome
- Pruett, Jenna (G) – The influence of maternal nesting behavior and nest microhabitat on embryo development and offspring fitness across early-life stages
- Ratterman, Cara (UG) – Automating gobble count surveys for eastern wild turkey

Room 2326 – Drug Discovery
- Dickenson, Julia (UG) – Receptor binding profile of piperazine designer drugs: 2- trifluoromethyl benzyl phenylpiperazine (2-TFMBzPP), 3- trifluoromethyl benzyl phenylpiperazine (3-TFMBzPP), 4- trifluoromethyl benzyl phenylpiperazine (4-TFMBzPP), and benzyl phenylpiperazine (BzPP)
- Huskey, Anna (G) – BRCA1 and BRCA2 analyses in canines with suspected hereditary mammary tumors
- Chandler, Madison (G) – Investigating how TP53 p.Pro47Ser contributes towards African American hereditary breast cancer
- Ramesh, Sindhu (G) – Pioglitazone suppresses high glucose-induced Αβ production in a hippocampal cell model

9:00 – 9:45 a.m.

Room 2216 – Humanities
- Buford, Barry (G) – The flawed candidacy of George McClellan
- Moreno, Irene Zurita (G) – Tense, aspect, and mood in the Spanish of Southern Arizona
- Marberry, Katie (G) – Serving survivors of institutional abuse

Room 2218 – Forestry and Wildlife Sciences
- Mensah, John (G) – Susceptibility and tolerance of loblolly pine to Leptographium terebrantis
- Blackstock, Jake (G) – Soil respiration in a longleaf pine forest as influenced by throughfall reduction
- Ahl, Jessica (G) – What is insect diversity like in a mature loblolly pine stand?
- Feng, Xuechun (G) – Characterization of carboxylesterases in pyrethroid resistant house flies, Musca domestica

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Room 2222 – Chemical Engineering
- **Glover, Elliott (UG)** – Minimization of aggregates in silane functionalized cellulose nanocrystal dispersions
- **Hamade, Fatima (G)** – Membrane electrodes for capacitive deionization
- **Hilliard, Matthew (G)** – Understanding the metabolic shift of *Schiffersomyces stipitis* from aerobic growth to oxygen-limited fermentation at genome scale

Room 2225 – Fisheries
- **Guo, Jingping (G)** – Using high-protein brewer’s yeast products to replace fishmeal and soybean meal in practical diets for the Pacific white shrimp *Litopenaeus vannamei*
- **Cai, Wenlong (G)** – A peek inside the black box: Genetic basis for attenuation of a live vaccine against columnaris disease in fish
- **Ruiz, Carlos (G)** – Taxonomic confirmation of infections of *Mycobolus cerebralis* (etiological agent of “whirling disease”) in North Carolina trouts (Salmonidae)
- **Fogelman, Kaelyn (G)** – Stable isotope analysis of the food web ecology of endemic freshwater mussels (Unionidae) in central Texas

Room 2227– Mechanical/Materials Engineering
- **LaBombard, Kiana (UG)** – Manufacturing of nanoparticle reinforced materials through electrospinning
- **Herrera, Sean Vincent Herrera (UG)** – Modelling shape-memory alloy as anatomical tendons for hand exoskeleton motion
- **Tormanen, Andrew (UG)** – Three-dimensional (3D) printing of Ti₃C₂TxMXene for use in energy storage devices

Room 2223 – Drug Discovery
- **Duong, Quoc-Viet (G)** – The investigation of plasma derived growth factors focused on the treatment of the blood brain barrier in 5xFAD mice
- **Darakjian, Lucy (G)** – Physiologically based pharmacokinetic modelling of caffeine in pregnancy
- **Almaghrabi, Mohammed (G)** – Investigate the dopaminergic neurotoxicity profile of designer drugs: 2- trifluoromethyl benzyl phenylpiperazine (2-TFMBzPP), 3- trifluoromethyl benzyl phenylpiperazine (3-TFMBzPP), 4- trifluoromethyl benzyl phenylpiperazine (4-TFMBzPP) and benzyl phenylpiperazine (BzPP)
- **Rihani, Sweilem (G)** – The multi-functional drug Granisetron enhances the integrity of the blood brain barrier and normalizes cognition in a murine Alzheimer's model

Room 2326 – Biology/Biochemistry
- **Hall, Joshua (G)** – Embryological development and global change: How do reptile embryos respond to thermal stress?
- **Bergstresser, Sydney (UG)** – Identifying *RECQL* variants as breast cancer risk factors in European and African Americans
- **Eastwold, Martin (UG)** – Insulin resistant adipocytes increase proliferation of canine melanoma and breast cancer cells
- **Engel, Carly (G)** – Function and properties of the enzyme heterodisulfide reductase

10:00 – 10:45 a.m.

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Room 2216 – Psychology
- **Harrelson, Megan** (G) – An exploratory factor analysis of the Internet Sex Screening Test (ISST)
- **Yanes, Julio** (G) – Cannabinoid treatments reduce pain: A meta-analysis of pre-post contrasts
- **Lazarowski, Lucia** (G) – Development of executive function and its relation to performance in dogs
- **Smith, Adam** (G) – Predicting subordinate decisions using an integrative model of personality, leader behavior, and leader-member exchange

Room 2218 – Kinesiology
- **Gilmer, Gabrielle** (UG) – The relationship between serum relaxin concentrations and knee kinematics during a single leg squat
- **Edwards, Madison** (UG) – Analysis of cognitive and motor abilities in children with disabilities after a bicycle training program
- **Daou, Marcos** (G) – Those who expect to teach a motor skill cannot perform better under high pressure
- **Bacelar, Mariane & Rhoads, Jence** (G) – Improving acquisition of manual-wheelchair skills: An EEG study using motor learning principles

Room 2222 – Computer Engineering/Finance
- **Narayanan, Mina** (UG) – Adversarial authorship, sentiment analysis, and the AuthorWeb Zoo
- **Zhang, Chaowei** (G) – Fake news detection using event extraction
- **Peng, Xiaopu** (G) – Managing renewable energy in data centers using distributed UPS systems
- **Zhang, Haoran** (G) – Regulatory soft interventions in the Chinese market: Compliance effects and impact on option market efficiency

Room 2225 – Drug Discovery
- **Pinky, Priyanka Das** (G) – Elucidation of mechanism of learning and memory deficits in prenatal cannabinoid exposure
- **Shelley, Haley** (G) – Delivery to the posterior segment of the eye by biodegradable microneedles
- **Bloemer, Jenna** (G) – Doxorubicin-induced memory deficits are associated with altered hippocampal synaptic plasticity and glutamatergic signalling deficits
- **Rahman, Motiur** (G) – Disparities in the appropriateness of medication use: analysis of the REGARDS study

Room 2223 – Biosystems/Industrial Engineering
- **Novriadi, Romi** (G) – Comparative effect of advances soy products or corn protein concentrate with porcine meal on growth, body composition, and distal intestine histology of Florida Pompano Trachinotus carolinus
- **Fernandez, Edna** (G) – Effects of light, temperature, and carbon source on cyanotoxin and off-flavor compound production
- **Buley, Riley** (G) – Combining biological and chemical controls to combat toxic cyanobacterial blooms
- **Kanber, Recep Tayyip** (G) – Assessing input uncertainty and sensitivity of the process-based wetland water quality model WetQual

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• Patil, Vivek (G) – Co-pyrolysis of waste plastics with lignin: A sustainable approach to mitigate plastic pollution
• Goneke, Kelly (UG) – Thermal performance of perforated pen panels for on-farm nutritional test trials
• Smith, Tenchi (G) – Creation of smoke hood donning standard: A pilot study
• Sedighi Maman, Zahra (G) – Predicting concussion using data analytic approaches

Room 2326 – Engineering
• Smith, James (G) – Discrete cosine transform spectral pooling layers for convolutional neural networks
• Mohammad, Armin Vahid (G) – Development of next-generation rechargeable aluminium batteries based on a new family of two-dimensional materials
• Kayali, Emre (G) – Effects of the lateral dimensions on the electrochemical performance of 2D MXenes in supercapacitors
• Orangi, Jafar (G) – MXene 3D printed structure in energy storage application

11:00 a.m. – 12:00 p.m.

Room 2216 – Biosystems
• Arora, Palki (G) – Modeling effectiveness of best management practices to reduce phosphorus losses in Big Creek watershed
• Malhotra, Kritika (G) – Sediment fingerprinting to identify sources of in-stream sediments in an urban watershed
• Jimenez-Bonilla, Pablo (G) – Butanol tolerance improvement on the biofuel-producer bacteria Clostridium saccharoperbutyricum N1-4 by means of the expression of exogeneous efflux pump
• Wang, Qichen (G) – The study of algae growth inhibitors in Anaerobic Digestate effluent

Room 2218 – Art History/Design
• Wade, Jordan (UG) – Evidence of female spirituality in Marguerite’s Hours
• Seidel, Madeleine (UG) – Life’s a witch: the Catholic influence of visual representations of witchcraft in the late middle ages
• Cutler, Kathryn (UG) – Small changes, big impact: Development of a research-based infographic with cost-effective interior design solutions for senior living communities in the state of Alabama
• McCann, Abbi-Storm (G) – Writing assignment assessment in interior design: An action research project

Room 2222 – Nutrition/Health Outcomes
• Qi, Yijing (G) – Glucose responsiveness to epinephrine in diabetic and non-diabetic leptin-treated rats
• Henning, Megan (G) – Rural community gardens’ capacity to increase accessibility and affordability of healthy foods in Alabama
• Page, Jamilah (G) – Quest for healthy schools: Making Alabama schools healthier places to learn
• Nelson, Hallie (UG) – Community food assessment: Montgomery County, Alabama

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Room 2225 – Creative Scholarship

- **Epperson, Allison** (UG) – “Don’t Stop Believin”: Music style’s effect on physiological and psychological functions
- **DuPuis, Jenny Leigh** (G) – Fashion, forward! A practice-led exploration into the confluence of traditional techniques and contemporary technologies in fashion and making
- **Nelson, Anne** (UG) – The core: Muscles of the spine
- **Tanner, Sarah** (UG) – Modern oboe techniques and their musical intent in selections from Kathryn Potter’s “In Adoration of the Earth”

Room 2227 – Chemistry/Biochemistry

- **McWhorter, Kirklin** (UG) – Exploiting active-site tryptophans for off-pathway electron transfer: Preserving the activity of peroxide detoxifying enzymes
- **Wyss, Kevin** (UG) – Quantitative determination of Zn$^{2+}$ using Sciff-based fluorescent chemo-sensors
- **LaGrone, Ryan** (UG) – The relative importance of steric and electronic effects in 1,3-diene photoisomerization
- **Mitra, Nirmal Kumar** (G) – Investigating the scholl reaction for PI- extension of strained benzenoid macrocycles to PAH-containing macrocycles

Room 2223 – Aerospace

- **Siemon, Michael** (G) – A numerical analysis of heterogeneous 4 truck platoon aerodynamic drag reduction
- **Cervantes, Noel** (G) – An evolutionary strategies method to optimize compressor and turbine blades
- **Saab, Catherine** (UG) – Hyperspectral imaging with plenoptic cameras

Room 2326 – Poultry Science

- **Rubio, Andrea** (G) – Feeding whole corn as an alternative to reduce electrical costs and improve growth rate and meat accretion of broilers
- **Lee, Derrell** (UG) – Energy utilization of various oil sources fed to broilers from 10 to 20 days of age
- **Philpot, Stephanie** (G) – Effects of varying digestible amino acid density on growth performance and meat yield of MV × Cobb 700 broiler chickens from 1 to 46 days of age

**Morning Poster Session**
Student Center Ballrooms
11:30 a.m. – 1:00 p.m.

**Aerospace Engineering (Section A)**
1. **Walker, Josh** (G) – Measuring equivalence ratio oscillations in a lean-premixed swirl combustor
2. **Stubbs, Daniel** (G) – An experimental and numerical study of the environmental and combustion characteristics of wildland fuels
3. **Boyle, Sadie** (G) – Development of a hybrid motor to test combustion instabilities

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4. **Ghossein, Anthony** (UG) – Computational fluid dynamics simulation of dam-break scenarios using an unstructured multi-phase approach
5. **Long, Ryan** (UG) – Investigation of self-folding origami structures
6. **Wietstruck, Mike** (UG) – A novel gust generator design to study the aerodynamic response of birds to turbulent conditions
7. **Miller, Noah** (UG) – Harnessing solar energy for self-folding origami
8. **LeGrand, Craig** (UG) – Development of Interpenetrating Polymer Network (IPN) materials for road repair

**Pharmacy/ Drug Discovery (Section B)**
1. **Almoslem, Mohammed** (G) – Tranexamic acid as an anti-fibrinolytic agent in an in vitro canine model of hyperfibrinolysis
2. **Setti, Sharay** (G) – Investigating the role of the lateral entorhinal cortex in Alzheimer’s disease
3. **Hoffman, Grace** (G) – Cell culture techniques in the preparation of brain endothelial cells as a blood-brain barrier model
4. **FNU Ibtisam** (G) – Chemometrics in the quality assessment of botanical products: A case study in sandalwood oil
5. **Lynd, Tyler** (UG) – PPARγ agonist attenuates β-Amyloid by modulating amyloidogenic pathway in an in vitro model
6. **Lopez, Elizabeth** (UG) – Evaluation of açai and maca extracts for CYP3A4 enzyme induction
7. **Fujihashi, Ayaka** (UG) – Assessing the neurotoxic effects of prenatal alcohol and nicotine exposure in hippocampus and cortex of rodents
8. **Jones, Ellery** (UG) – Pioglitazone through PPARγ dependent mechanism suppresses Aβ overproduction induced by high glucose in HT-22 cells
9. **Skarupa, Elena** (UG) – Preclinical strategies to evaluate treatment strategies in triple negative breast cancer
10. **Fang, Hua (Amanda)** (UG) – Effects of SIRT3 on posttranslational modification in the mitochondria of diabetic hearts
11. **Wire, Natalie** (UG) – American skullcap exhibits anti-inflammatory effects by acting through arachidonic acid pathway
12. **Schoeberl, Madison** (UG) – Tracking *Staphylococcus aureus* infections *in vivo*
13. **Parker, John** (UG) – Therapeutic perspectives on chia seed and its oil
14. **Martens, Brannan** (UG) – Viral challenge impairs learning and memory in a fear-conditioning paradigm
15. **Knowlton, Stella** (UG) – SIRT3 activator Honokiol improves pathologies in vitro and in vivo models of Alzheimer’s disease
16. **Mullins, Claire** (UG) – Comparing the lipid, renal, liver & hematological parameters as cognitive markers in cognitive deficient (streptozotocin and chemotherapeutics treated) rodent models

**Nutrition (Section C)**
1. **Zadrozinski, Mekala** (UG) – An exploratory study of the role of design in explaining consumer satisfaction and future behavioural intention with youth hostel accommodation services
2. **Li, Rongzi** (G) – Resveratrol and/or exercise training on Amyloid β and neurotrophic factors in Alzheimer’s disease mouse model

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3. **Mukigi, Dorcas** (G) – Prevalence of food insecurity among residents of 14 high obesity counties in Alabama
4. **Tumwebaze, Joel** (G) – Evaluating the effectiveness of community gardening in reducing food insecurity and improving health in Chacraseca, Nicaragua

**Forestry and Wildlife (Section D)**
1. **Anderson, Cullen** (UG) – Estimating fosa (*Cryptoprocta ferox*) population structures in the rainforests of Madagascar
2. **Stahl, Katherine** (UG) – Evaluating contemporary conservation biology texts for bias in biodiversity representation
3. **Rice, Kirsten** (UG) – Use of *Dirofilaria immitis* infected and uninfected blood to determine mosquito feeding preference
4. **Ashby, Victoria** (UG) – Rediscovery of *Aedes aegypti* in Southern Alabama and the Subsequent Risk of Zika
5. **Hornus, Marina** (G) – Oriented strand board from softwood: A biorefinery approach
6. **Yao, Yuanzhi** (G) – The representation of stream water temperature in the dynamic land ecosystem model (DLEM) and its applications to Chesapeake and Delaware Bay Watersheds
7. **Iglesias, Maria Celeste** (G) – Lignin containing cellulose nanofibrils (L-CN) as an additive in drilling fluids
8. **Gomez Maldonado, Diego** (G) – Cellulose-based material for removal of microcystin from contaminated water sources
9. **Pandey, Ashutosh** (G) – Engaging water observations in evaluating climate models
10. **Sanchez, Simon** (G) – Development of silk fibroin-cellulose nanocrystal composite for enzyme immobilization: An innovative approach for malaria virus detection
11. **Asafu-Adjaye, Osei** (G) – Characterization of pyrolysis and hydrothermal liquefaction bio-oils from loblolly pine biomass as a biopolyol

**Environmental Design (Section E)**
1. **Warr, Brent** (UG) – Village wild and hangar pods
2. **Dunavant, Erika** (UG) – Pollinator pathways
3. **Tindal, Matthew** (UG) – Decriminalizing addiction
4. **Gibson, Makala** (UG) – It’s clean up time: Brownfield regeneration
5. **Ramsey, Donqika** (UG) – Addressing the issues of public housing

**Chemical Engineering (Section F)**
1. **Harris, Patrick** (UG) – Nanoparticle surface characteristics influence *in vitro* cytotoxicity and *in vivo* circulation time
2. **Hall, David** (UG) – Effect of size and surface charge of polymeric composite nanoparticles on cell cytotoxicity and uptake
3. **Vroom, Alexis** (UG) – Determining an individual’s comprehensive antibody-bound epitope repertoire
4. **El-Kattan, Kareem** (UG) – Superparamagnetic iron oxide nanoparticles for prostate cancer detection
5. **Bradley, Gabrielle** (UG) – Lithium acylphosphinate as a photoinitator for use in tissue engineering
6. **Lawrence, Kaitlyn** (UG) – New structural and electronic insights on supported \((\text{VO}_x\text{O}_{3n}/(\text{M}_2\text{O}_3\text{O})_n)_{\text{bulk}}\) catalysts for the oxidative dehydrogenation (ODH) of light hydrocarbons

7. **Rashti, Ali** (G) – Electrophoretic co-deposition of graphene/metal oxide platelets for composite electrode fabrication

8. **Sarwar, Shatila** (G) – Microwave initiated nanomanufacturing towards energy applications

9. **Ellis, Morgan** (G) – Examining the role of tissue geometry on functionality in 3D engineered cardiac tissues

10. **Finklea, Ferdous** (G) – Production of cardiac tissue spheroids from hydrogel encapsulated hiPSCs using a novel microfluidic system

11. **Hassani, Iman** (G) – Personalized in vitro 3D colorectal cancer model using patient-derived xenografts

12. **Aloba, Sulihat** (G) – Optimization of a plasma etcher for cellulose nanocrystal cantilever beam array designed for biosensing applications

13. **Habbit, Nicole** (G) – Engineered tumor-on-a-chip model for *in vitro* recapitulation of the native prostate tumor microenvironment

14. **Dobyns, Breanna** (G) – Complex Solute Transport through the Polymeric Anion Exchange Membrane, Nafion

**Civil Engineering (Section G)**

1. **Chen, Chen** (G) – Selecting a laboratory mixture aging protocol for asphalt pavement top-down cracking experiments

2. **Knights, Michelle** (G) – Database of slope failures along Alabama highways

3. **Basu, Devdeep** (G) – Liquefaction study of a soil site considering spatial variability of soil

4. **Steinwinder, Jeffrey** (G) – Evaluation of role of pore and pore-throat distributions in controlling permeability in heterogeneous mineral dissolution and precipitation scenarios

5. **Iloejesi, Chidera** (G) – Critical knowledge gaps for subsurface compressed energy system (CES) in porous formation

6. **Anjikar, Ishan** (G) – 3-D flow simulation in porous media using OpenFOAM for Kemper County, Mississippi

7. **Calhoun, Jessica** (G) – The effects of socio-hydrology on the rebuilding of Biloxi, Mississippi

**Health Outcomes (Section H)**

1. **Cheng, Ning** (G) – Physicians’ perceived awareness of patients’ medications: A cross-sectional survey

2. **Hohmann, Lindsey** (G) – Impact of a multicomponent immunization intervention on pneumococcal and herpes zoster vaccinations: A randomized controlled trial of community pharmacies in 2 states

3. **Hastings, Tessa** (G) – Implementation of educational and referral programs in community pharmacies to assist Medicare beneficiaries with limited income

4. **Huo, Nan** (G) – Trends and factors associated with respiratory allergy conditions among U.S. prostate cancer patients in 2007-2016

5. **Fahim, Shahariar Mohammed** (G) – Variations in screening mammography utilization by age and geographic region among female Medicare beneficiaries and beneficiaries with breast cancer in 2002-2012

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6. **Li, Chao (G)** – Trends and patterns of potentially avoidable hospitalizations and emergency department visits among Medicare beneficiaries in 2002-2012

7. **Jeminiwa, Ruth (G)** – Physicians’ health technology-related needs in a low-resource setting: A pilot study

**Nursing (Section I)**

1. **Winter, Michelle (G)** – Depression screening in primary care
2. **Esposito, Brittany (G)** – (WITHDRAWN) Massage and music therapy to improve cancer pain in the newly diagnosed patient
3. **Sherrer, Natalie (G)** – Videos to improve self-care in heart failure patients
4. **McLeod, Hope (G)** – A nurse-led intervention to improve cancer-related pain management

**Kinesiology (Section J)**

1. **Brinkerhoff, Sarah (G)** – Understanding locomotor adaptation in persons with essential tremor
2. **Feiss, Robyn (G)** – A systematic review of the use and effectiveness of concussion education programs in youth sport
3. **Barfield, Jeff (G)** – Pitcher’s Nightmare swing trainer’s effect on baseball swing kinematics
4. **Salguero, Pablo (G)** – Strength and cognition correlates to locomotor adaptation in old adults on a split-belt treadmill
5. **Fawcett, Randy (UG)** – Kinetic prediction from kinematic data during running trials on different surfaces

**Chemistry & Biochemistry (Section K)**

1. **Donnan, Patrick (G)** – Computational studies of the pH regulation mechanism of dinoflagellate luciferase
2. **Niklas, Julie (G)** – A new ligand for actinides: Coordination chemistry and entry into redox-active uranium complexes
3. **Hutchinson, Tessa (G)** – Design and synthesis of a carboxylate-containing ligand that increases the T1-weighted relaxivity response of a manganese complex to hydrogen peroxide
4. **Ariyarathna, Isuru (G)** – A theoretical exploration of the chemical bonding of \( \text{Be(CX)}_3 \) \( [X = \text{O, S, Se, Te, Po}], \text{Be(NH}_3)_3, \text{and Be(PH}_3)_3 \)
5. **Hiti, Ethan (G)** – Using salpenazine type imidazoles in chemosensing for detection of \( [\text{UO}_2]^{2+} \) and other metal ions
6. **Black, Clayton (G)** – Propargylic C-H oxidation using a Cu(II) 2-quinoxalinol salen catalyst and tert-butyl hydroperoxide

**Psychology (Section L)**

1. **Harrelson, Megan (2) (G)** – Childhood poly-victimization and risky sexual behavior in college-aged women
2. **Ritterbush, Elizabeth (G)** – Predicting cooperative behavior in the workplace: The mediating role of affective commitment
3. **Hatley, Benjamin (G)** – An evaluation of a time-in light procedure on problem behavior and on-task behavior
4. **Hurst, Danielle (G)** – Sex differences in differential eyeblink classical conditioning

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5. **Boomhower, Steven** (G) – A developmental comparison of the effects of chronic cannabinoid exposure on impulsive choice in mice
6. **Lazarowski, Lucia** (G) – Social cognition in working dogs
7. **Shifrin, Nicole** (G) – MTurk as a viable source for organizational and occupational health research
8. **Rotch, Michael** (I) (G) – Mindfulness and decision making: A meta-analysis

Electrical and Computer Engineering (Section M)
1. **Dong, Zerui** (G) – Dynamic model of a ternary pumped storage hydropower plant
2. **Zhang, Xiangyu** (G) – Online quality learning based dynamic task allocation for quality-driven crowdsensing
3. **Wang, Wendong** (G) – Exploiting power supply ramp rate for calibrating cell strength in SRAM PUFs

Biosystems Engineering (Section N)
1. **Wang, Pixiang** (G) – Acetone-butanol-ethanol (ABE) production from lignocellulosic biomass through acetic acid pretreatment
2. **Bankston, Elizabeth** (G) – Using anaerobic digesters to treat poultry litter waste & grow microalgae
3. **Karki, Ritesh** (G) – Effect of current and projected agricultural irrigation water withdrawals on Upper Floridan Aquifer in the Lower Apalachicola-Chattahoochee-Flint River Basin, USA
4. **Jain, Nikhil** (G) – Comparison of product yield and fuel properties obtained from hydrothermal liquefaction of filamentous and microalgae

Mechanical Engineering (Section O)
1. **Thomas, Tony** (G) – Health monitoring of damage on automotive underhood electronics subjected to temperature and vibration
2. **Wright, Taylor** (G) – Comparing multiple definitions of knee valgus angle
3. **Soltani Tehrani, Arash** (G) – Effects of powder degradation on additively manufactured Ti-6Al-4V parts
4. **Isaac, John** (G) – Quasi-static and dynamic fracture behaviors of additively printed ABS studied using DIC: Role of build architecture and loading rate
5. **Masoomi, Mohammad** (G) – Thermal simulation of large Ti-6Al-4V parts during laser-powder bed fusion
6. **Paudel, Basil** (G) – A rapid thermal modeling approach for additive manufacturing

Industrial & Systems Engineering (Section P)
1. **Toragay, Oguz** (G) – Near-optimal control of complex authentication systems
2. **Bennett, Njeri** (UG) – The engineer in me
3. **Qureshi, Rehman** (UG) – Revisiting linear programming to solve Markov decision processes with long-run average reward functions

Biological Sciences (Section Q)
1. **Carson, Kendra** (G) – Purification of an exceptionally resilient and long-lived orange fluorescent protein from the Gulf anemone *Calliactis tricolor*
2. **Wilson, Sarah** (G) – Adaptations to seed size by scatterhoarders
3. **Sardinha, Rhea** (G) – The effect of high heat stress on the rate of wound healing

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4. **Kazi, Safa** (UG) - IFN-induced transmembrane protein 6 expression in adipose tissue

5. **Jackson, Caroline** (UG) - Aging scrotum in goat is attributed to augmented oxidative stress and reduced mitochondrial functions

6. **Mitchell, Dorothy** (UG) - The fine structure of the tentacular apparatus of *Mnemiopsis leidyi*

7. **Bonner, Drew** (UG) - Mapping enhancer regions for genes associated with neurodegenerative diseases

**Veterinary Medicine (Section R)**

1. **Mowry, Francesca** (G) - Hypothalamic and brainstem inflammation via Angiotensin II-mediated TLR4 upregulation and microglial activation in neurogenic hypertension

2. **Fuller, Joseph** (G) - Long-term co-culture of equine synovial membrane and articular cartilage explants as an *in vitro* model of osteoarthritis

3. **Giblot Ducray, Henri** (G) - Prevention of heat stress adverse effects by beneficial modulation of the gut microbiota

4. **Gray, Kathleen** (G) - Lactocrine-deficient gilts exhibit altered patterns of endometrial development on postnatal day 14

**Human Development & Family Studies (Section S)**

1. **Quichocho, Davina** (G) - Interparental conflict as a predictor of siblings’ anxiety symptomology: A multi-informant study of military families

2. **Corbit-Hall, Darcy** (G) - Online disclosures of suicidality: The role of communicated risk severity and characteristics of network members in eliciting support

3. **Riley, Lucy** (G) - Key personality traits and alcohol use disorder among first and second year college students: Detangling antecedent vs. consequence

4. **McConnell, Leanna** (G) - Prospective associations between peer stress and voluntary coping responses: The moderating role of involuntary responses to peer stress

5. **Norton, Jessica** (G) - Do adolescent’s perceptions of their parents and attitudes about bullying influence bullying prevention?

6. **Saini, Ekjyot** (G) - Neighborhood safety and sleep: Longitudinal influences on adolescent physical health and adjustment

**Architecture/Building Science/Industrial Design (Section T)**

1. **Page, Sarah** (UG) - Creating a center on the edge

2. **Boyer, Kara** (UG) - Creating a tiny home building code to positively effect long-term sustainability

3. **Washington, Jania** (UG) - Coherent adaptive housing: Mobile, AL

4. **Turkington, Isaac** (UG) - Explorations in mass timber through the development of interlocking cross laminated timber (iCLT)

**Crop & Soil (Section U)**

1. **Moye, Hayden** (G) - Birdsfoot trefoil (*Lotus corniculatus*) cover for Alabama cropping systems: Fungal diseases, susceptibility to nematodes, and efficacy of herbicides

2. **Hull, Noah** (G) - Cover crop effects on the effectiveness of urease inhibitors

3. **Kaplan, Gulsah** (G) - Investigating the interaction of moderately resistant breeding lines and the nematicide Velum Total to Reniform Nematode (*Rotylenchulus reniformis*)

(UG) = undergraduate student presentation  
(G) = graduate student presentation
4. **Basak, Suma** (G) – Detection of target site resistance to acetyl-coenzyme A carboxylase inhibiting herbicide in the large crabgrass (*Digitaria sanguinalis*)

**Plant Pathology/ Entomology/ Horticulture (Section V)**

1. **Chen, Zhou** (G) – Repellent reception in mosquitoes and bed bugs
2. **Kargar, Mahnaz** (G) – Effect of maturity on physicochemical quality of genomically diverse banana (*Musa* spp.) cultivars from Southeastern United States
3. **Hassan, Mohammad** (G) – Effect of pectin amendments on PGPR-mediated growth promotion of soybean
4. **Nunes Rondon, Marina** (G) – Diversity of *Corynespora Cassiicola* isolates from cotton and soybean based on cassicolin-encoding genes
5. **Pokhrel, Ambika** (G) – Transcriptomic analysis for differentially expressed genes in response to the phytoalexin gossypol in *Fusarium oxysporum* f. Sp. *vasinfectum*

**Food Science/ Animal Science/ Poultry Science (Section W)**

1. **Kimble, Katelyn** (G) – Distinct functional signatures between genes expressed in porcine oocytes and in cumulus cells
2. **Willmon, Evelyn** (G) – Microbial quality of aquaculture water used for produce irrigation
3. **Porterfield, Aaron** (G) – An overview of Auburn University efforts to combat *Flavobacterium columnare* in aquaculture farms
4. **Gosh, Kamal** (G) – Evaluating the impact of management factors that cause growth variation in channel-blue hybrid catfish production

**Physics/ Geoscience (Section X)**

1. **Salisbury, Michael** (G) – Analysis of the D’Olive Creek Watershed: Identifying the local drivers that have led to stream degradation
2. **Bush, Austin** (G) – Urban mapping in Auburn, AL using sUAS
3. **Wilson, Theodore** (G) – Pyrite biomineralization and arsenic sequestration at a Florida industrial site: imaging and geochemical analysis
4. **Eldridge, Caleb** (G) – Identifying active tectonics in the New Madrid Seismic Zone using LiDAR and geophysical data

**Social Science/ Education (Section Y)**

1. **Nelson, Steven** (G) – Environmental justice analysis of Atlanta, GA
2. **Bales, Shannon** (G) – Motivating afterschool programs to implement STEM
3. **Micher, Alexandra** (UG) – Digging our own history: AUM tenant house archaeology

**Oral Research Presentations – Afternoon Session**

Student Center Meeting Rooms

1:00 – 1:45 p.m.

(UG) = undergraduate student presentation  (G) = graduate student presentation
Room 2216 – Crop/Soil/Environment/Agricultural Education
- **Schillerberg, Tayler** (G) – Linking large-scale climate variability with anomalies of summer and winter crop yields in the rainfed United States
- **Browne, Frances** (G) – Quantitative analysis of sprayer cleaning efficacy following 2,4-D and dicamba applications
- **Duan, Yanan** (G) – Sub-seasonal hydrologic forecasts based on WRF-hydro model and Sub-X climate forecast in the ACT Basin
- **Heidenreich, Abigail** (G) – Bridging the gap: The intersection of technology and teaching pedagogy in secondary agriscience classrooms

Room 2218 – Mechanical Engineering
- **Pegues, Jonathan** (G) – Part size effects on the fatigue strength of additively manufactured Ti-Al-4V parts
- **Nezhadfar, Pooriya Dastranjy** (G) – The effect of heat treatment on the microstructure and fatigue behavior of additively manufactured 17-4 PH stainless steel
- **Shrestha, Rakish** (G) – Effects of build orientation and surface roughness on the fatigue behavior of additive manufactured stainless steel 316L
- **Torries, Brian** (G) – Fatigue behavior of Ti-6Al-4V fabricated via laser-based powder bed fusion: The effects of build orientation, surface roughness, and hot isostatic pressing

Room 2222 – Poultry Science/Aquaculture
- **Liao, Chao** (G) – Determination of microbiome in *Escherichia coli* O157:H7 contaminated commercial salads using 16S rDNA genomic sequencing
- **Cloft, Sara** (G) – Improving performance of broilers receiving coccidiosis vaccination through increasing dietary amino acid density and the duration of the starter diet
- **Gosh, Kamal** (G) – Analyzing the economic impact of channel-blue hybrid catfish growth variability on production

Room 2225 – Humanities/Hospitality
- **Butgereit, Mary** (UG) – A code for the unpublished: creation of a TEI XML style guide and learning module for the 18th-century manuscript fiction database
- **Todd, Haley** (UG) – Case study: Access to Global Online Research in Agriculture (AGORA)
- **Bernard, Shaniel** (G) – What effect does wine closure type have on perceptions of wine’s appearance, bouquet, taste, and overall quality? An empirical investigation
- **Lee, Debora** (G) – The impact of hotel restaurant’s relational benefits on customer emotion, satisfaction, and voluntary performance

Room 2227 – Forestry and Wildlife Sciences
- **Duwadi, Shrijana** (G) – The response of soil microbial biomass to inoculation due to plant pathogenic fungus, *Leptographium terbrantis* in loblolly pine stand
- **Diamond, Alisa** (UG) – The prevalence of *Toxoplasma gondii* in resident and migratory songbirds in the Southeastern United States
- **Patterson, Autumn** (UG) – Study of mammal diversity in Auburn, Alabama
- **Ramirez, Michael** (G) – Longleaf pine water relations under extended drought stress

(UG) = undergraduate student presentation  
(G) = graduate student presentation
Room 2223 – Kinesiology

- McGinnis, Kaitlin (G) – Impact of protein or carbohydrate supplementation on musculoskeletal injury rates, severity and training days missed in initial entry training
- McAdam, Jeremy (G) – Evaluation of training volume, dietary intake, and energy balance in Army IET
- Moody, Justin (G) – A systematic review of acute sports-related concussion assessments
- Favoretto, Loriane (G) – The design and efficacy of video models for adapted tennis instruction in adults with disabilities

Room 2326 – Humanities

- Baird, Lindsey (UG) – The people’s response to government support for children and youth during the Great Depression
- Boyle, Christopher (UG) – The Frontier Apocalypse – How Indian slave raiding created and destroyed empires in the Colonial Southeast
- Bailey, Blair (UG) – Isolated in a canyon
- Segrest, Bo (UG) – Preaching culture: how Methodist missions changed slave culture in Antigua

2:00 – 2:45 p.m.

Room 2216 – Fisheries/Disease Ecology

- Warren, Micah (G) – Host-switching and cophyly among blood parasites of early branching gnathostomes
- Aceves, Alison (G) – The core microbiome: Implications for conservation efforts and propagation of freshwater mussels
- Burgos, Francisca (G) – Dysbiosis caused by antibiotic use leads to an increase susceptibility to bacterial infection in Zebrafish (Danio rerio)
- McKenzie, Benjamin (G) –

Room 2218 – Psychology/Human Development and Family Studies

- Edgemon, Anna Kate (G) – Increasing eye contact in children and adolescents with autism and related disabilities
- Gillis, Brian (G) – The association between sleep and adjustment in adolescence: Physical activity as a moderator of risk
- Burke, Benjamin (G) – Language style matching and older adult’s marital satisfaction
- Kingston, Kira (UG) – African American influence on the historic Toomer’s Drugs

Room 2222 – Chemical Engineering

- Saha, Partha (G) – Surface tailored cellulose nanocrystal films for cancer detection
- Karimi, Zahra (G) – Development of selective algal cultivation substrates by tuning the surface energy
- Noor, Matthew (G) – Comparing the rheo-optics of aqueous sulfonated cellulose nanocrystal and model cholesteric dispersions
- Roberts, Nathan (G) – A methanotroph-microalgae coculture platform for efficient biological CH4 and CO2 co-utilization

Room 2225 – Physics/Mathematics

(UG) = undergraduate student presentation
(G) = graduate student presentation
• Cosgrove, Emily (UG) – Effects of interaction-mediated dispersal on the persistence of a population
• Yang, Zechun (G) – On the independence numbers of some hypergraphs related to Van der Waerden’s theorem
• Harrison, Geoffrey (UG) – A Direct Algorithm for Velocity-map Imaging Systems (DAVIS)
• Jayawardhena, Isanka Udayan (G) – Physics of silicon carbide electronic devices

Room 2227 – Polymer Engineering
• Joshi, Prutha (G) – Synthesis of UV curable PEGDA macromere based hydrogels with polysaccharides
• Alizadeh, Nima (G) – Graft-interpenetrating polymer networks comprising polyurethane and acrylic copolymer
• Barde, Mehul (G) – Synthesis of olefins and subsequent polymers from low-value aqueous phase of bio-oil
• Bansode, Archana (G) – Use of electrospinning and wetspinning processing methods for the formation of carbon fibers from alkaline Lignin

Room 223 – Biomedical/Health Outcomes
• Gross, Amanda (G) – Intravenous delivery of AAV gene therapy in GM1 gangliosidosis
• Maguire, Anne (G) – Image analysis of sub-gross stains for a feline neurodegenerative disease
• Jones, Rebecca (G) – Phage-GnRH constructs for population control of feral animals: evaluation in cats
• Mishuk, Ahmed Ullah (G) – Effects of U.S. federal and state generic drug policies on drug use, spending, and patient outcomes: A systematic review

Room 2326 – Civil Engineering/Architecture
• Kiernan, Michael (G) – Constitutive model comparison involving strain-softening clay in numerical simulations of the Fourth Avenue landslide
• Eldayih, Yasemin (G) – Preliminary research on air pocket entrapments caused by shear-flow instabilities in rapid-filling pipes
• Izzo, Michael (UG) – Bioinspired and sustainable improvement of the crack resistance of clayey soils
• Maggi, Lisa (UG) – Experiential urbanism: an unaverage approach to understanding cities

Afternoon Poster Session
3:30 – 5:00 p.m.
Student Center Ballroom

Aerospace Engineering (Section A)
1. Ramesh Kumar, Tharikaa (G) – Biglobal instability investigation of cylindrical solid rocket motors
2. Hu, Jiayue (G) – Computational fluid dynamic modelling of a wedge airfoil in supersonic flow
3. Eagan, Griffin (UG) – Analysis of the Effects of Transition Modeling in CFD
4. **Barkley, Zachary** (UG) – Computational Fluid Dynamic Modelling of a Wedge Airfoil in Supersonic Flow

5. **Elliott, Peyton** (UG) – The effects of fluid type and structural design on PLA degradation


7. **Compher, Tyler** (UG) - Lumped parameter modelling of hemodynamics in the cardiovascular system

8. **Osinloye, Adedoyin** (UG) - Effect of 3D Printing Parameters on Material Behaviour

**Pharmacology (Section B)**

1. **Jasper, Shanese** (G) – Exploring the use of enzyme-responsive liposomes in the treatment of triple-negative breast cancer

2. **Majrashi, Mohammed** (G) – Evaluation of differential cytotoxic effects of Tri-Fluoro-Methyl-Phenyl-Piperazine derivatives

3. **Wang, Chuan** (G) – Role of CXCR7 in control of myeloid cell proliferation in vitro and in vivo

4. **Desai, Darshini** (G) – Evaluating the dopaminergic neurotoxicity of chemotherapeutics

5. **Al Mouslem, Abdulaziz** (G) – Tracking biofilm formation of *S. aureus* under flow condition in microfluidic chambers

6. **Heslin, Ryan** (G) – The role of CXCR3 in the CNS following peripheral viral infection

7. **Lucas, Lauren** (G) – Characterization of ErbB4 partial agonists: Putative targeted melanoma therapeutics

8. **Govindarajulu, Manoj** (G) –

9. **Wozniak, Dominique** (UG) – Detection of Staphylococcal Virulence Factors by Western Blotting

10. **Llivina, Graham** (UG) – Cardiovascular-Protective Effects of Proanthocyanidins

11. **Heiner, Jacob** (UG) – American Skullcap exhibits neuroprotection against hydrogen peroxide-induced neurotoxicity in hippocampal cells

**Nutrition (Section C)**

1. **Zhang, Yuxian** (G) – High fat diet with sugar induces deposition of amyloid beta and hyperphosphorylated tau in mice skeletal muscle

2. **Chester, Brittannie** (G) – Improving patient outcomes through type 2 diabetes self-management education taught by registered dietitians in a family practice clinic in North Alabama

3. **Polinsky, Brooke** (UG) – High fat diet with impairing autophagy and induces deposition of oligomeric/fibrillar species of Amyloid-β in Mice Brain

4. **Parra, Emily** (UG) – Racial disparities in bedtime, dinnertime and television viewing among elementary school children

**Forestry and Wildlife (Section D)**

1. **Castaneda, Nicole** (G) – Ecology of human West Nile prevalence in Atlanta, Georgia

2. **Cash, James** (G) – Developing a fire-based control method for restoring hardwood forests invaded by Chinese privet

3. **Chalkowski, Kayleigh** (G) – Parasite ecology of invasive species

4. **Gomez Maldonado, Diego** (2) (G) – Vitamin B complex encapsulated on bacterial nanocellulose: A model study on adsorption and controlled delivery system

5. **Williford, Marcus** (UG) – The processing and characterization of cellulose nanofibers from industrial wood residues
6. **Roberts, Janet** (UG) – Designing a curriculum for Malagasy school children in Northern and Southern regions of Madagascar that educate them about the health effects from mosquito borne diseases

7. **McGirt, Shakara** (UG) – The morphology of two unknown ectoparasites found on black-and-white ruffed lemurs (*Varecia variegata*) and grey mouse lemurs (*Microcebus murinus*) in Madagascar

8. **Kelly, Hannah** (UG) – Evaluating Toxoplasmosis gondii: in Invasive Wild Pigs (*Sus scrofa*)

9. **Wang, Zhuonan** (G) – Phosphorus limitation on $\mathrm{CO}_2$ fertilization effect in the terrestrial ecosystems

10. **Assogba, Noel** (G) – Factors influencing degradation in protected areas conservation: A case study of the W Biosphere reserve in West Africa

11. **Custodio Mendonca, Caren** (G) – Leaf physiological responses to 40% throughfall reduction in a longleaf pine plantation

12. **Pan, Naqing** (G) – Increasing global vegetation browning hidden in overall vegetation greening: 2 insights from time-varying trends

**Environmental Design (Section E)**

1. **Garcia, Max** (UG) – The Impact of Street Design on Pedestrians’ Perceptions and Commuting Patterns

2. **Porter, Allison** (UG) – The Public Realm

3. **Shannon, Ian** (UG) – Neuro-urban design: an analysis the negative effects on mental health that cities have and people-centered urban design strategies that combat these

4. **Hooper, Kimberly** (UG) – Happiness Happens Here

5. **Kuntz, Rachel** (UG) – Lethal Effects of Stormwater Runoff on *Daphnia pulex*

6. **Defler, Kenzley** (UG) – Fighting cancer with community: using community based research to examine carcinogenic exposures in Cleburne County, Alabama.

**Consumer and Design (Section F)**

1. **Sultana, Nigar** (G) – Utilitarian and hedonic values of virtual fitting rooms and consumers’ motivations, attitudes, and intentions

2. **Chakraborty, Swagata** (G) – Neotifacts: An exploratory study of the cultural infusion in symbolic artifacts and its impact on fashion jewellery

3. **Ross, Kassandra** (G) – Perceived self-congruence in influencer marketing: Attitudinal perceptions and moderating influences of value propositioning and product use context in Instagram influencer posts

4. **Shealey, Alaundra** (G) – Ingénue: Melding traditional and revamped techniques

**Chemical Engineering (Section G)**

1. **Avery, Katrina** (UG) – Synthesis of Unsaturated Monomers from Carbonyl Compounds in Pyrolytic Bio-oil

2. **Kim, Jihyuk** (UG) – Synthesis and properties of PTEMA

3. **Adams, William** (UG) – Establishing a new spectrokinetic approach to study the redox properties of solid catalysts

4. **Schartung, David** (UG) – Avoiding Phase Separation of Asphaltenes in Crude Oil Operations Using Alternating Current (AC) Electric Fields

(UG) = undergraduate student presentation  
(G) = graduate student presentation
5. Stephens, Natalie (UG) – Synthesis and characterization of Mo/HZSM-5 Catalysts for Natural Gas Upgrading
6. Harris, Bryana (UG) – Examining the Effects of Tissue Geometry on Cardiomyocyte Maturation in 3D Developing Human Engineered Cardiac Tissues.
8. Davis, Montoia (UG) – Assessment of Drug Diffusion of Sulfathiazole and Metronidazole from Polyurethane Films
9. Kim, Jung Min (G) – Fundamental understanding of pervaporation membranes for organic-organic mixtures
10. Shinde, Vinita (G) – Self-healing polymer filaments for additive manufacturing
11. Thakur, Raj (G) – Alcohol assisted methane dehydroaromatisation over different Mo2C-containing zeolite catalysts
12. Moncada, Jorge (G) – An Operando Raman study on the oxidation of V2C MXene material: First insights on the production of hydrogen from water at low temperature

Civil Engineering (Section H)
1. Qin, Fanqi (G) – Reactive transport modeling of CO2 mineralization and the potential changes of rock properties in the Lower Tuscaloosa formation at the Kem per pilot CO2 injection site
2. Arakkal, Dinu (G) – Effects of the CO2 on the mechanical behavior of synthetic carbonate rocks
3. Bensinger, Jacob (UG) – Assessment of macroscopic porosity-permeability relationships for pore network models undergoing uniform and non-uniform pore-scale dissolution and precipitation alterations
4. Hudson, Jared (UG) – Effect of Initial Stiffness and Slip Force of Friction Force Damper on Response of Steel Structure to Wind and Seismic Loads
5. Mullett, Casey (UG) – Evaluation of 137Cs+ diffusion in prospective radioactive waste storage formations
6. Waid, Charles (UG) – Stream restoration impact on stream stability and water quality at Moores Creek in Lanett, Alabama
7. Xue, Chennan (G) – A probabilistic model to predict intermittent sight distance obstruction at unsignalized intersections on high-speed rural divided highways
8. Atiquzzaman, Md (G) – Analyzing the characteristics of distracted driving behavior in crash/near-crash situations using SHRP 2 Naturalistic Driving Study (NDS) data

Health Outcomes (Section I)
1. Hohmann, Natalie (G) – Patient preferences for financial versus social incentives for medication adherence in chronic conditions
2. Peel, Emily (G) – Patient satisfaction with pharmacist-delivered disease state management in a heart failure clinic
3. Aref, Heba (G) – Effects of online video and text educational material on knowledge, perceptions, and intention of Men B vaccination among college students
4. Keeton, Amber (G) – Evaluation of potentially inappropriate medications in older adults admitted to the Medical Intensive Care Unit
5. Upton, Addison (G) – Affordability of medications prescribed at a free primary care clinic

(UG) = undergraduate student presentation  
(G) = graduate student presentation
6. Jacobs, Joi (G) – Transmitted antiretroviral drug resistance evaluation in treatment-naïve HIV-infected patients in central Alabama

Nursing (Section J)
1. Cox, Courtney (G) – Improving cardiovascular disease medication adherence through text-messaging
2. Hill, Amanda (G) – Asthma education in school systems
3. Short, Pamela (G) – Implementation of nutritional screening tools in the care of geriatric patients admitted to the Acute Care Unit
4. Grounds, Leslie (G) – Dietary counseling for gastrointestinal disorders

Kinesiology (Section K)
1. Mann, Elise (UG) – Neuropeptide Y and Dipeptidyl Peptidase IV in Pre- and Post-Menopausal Women.
2. McDaniel, Jackson (UG) – Influence of Varying Environmental Temperatures on Individuals with Persistent Cold Hands
3. Rowe, Christina (UG) – Impact of nature-based stimuli on directed attention performance
4. Brittain, Abby (UG) – Swing mechanics of the offside forehand in professional female polo athletes

Chemistry/Biochemistry (Section L)
2. Brown, Thomas (UG) – Computational studies of the air oxidation mechanism of dinoflagellate luciferin

Psychology (Section M)
1. Rotch, Michael (2) (G) – The effects of work and nonwork boundary fit on role satisfaction and subjective well-being
2. Hartman, Paige (G) – The longitudinal dynamics between work-family conflict, enrichment, and balance
3. Lorys, Anna (G) – Personality and work-life balance: The influence of affect
4. Hickey, Hayden (G) – Gender typicality in personnel selection: The mediating role of attractiveness
5. Bolaram, Anudeep (G) – Conditioned responding and contingency awareness in differential delay eyblink classical conditioning
6. Parrott, Melanie (UG) – Thinking fast and slow about food
7. Conboy, Natalie (UG) – The interactive effect of cognitive fusion and experiential avoidance on generalized anxiety and social anxiety disorders
8. Wrolson, Madeline (UG) – Body Esteem, Presence of Anxiety and Depression, and Ethnicity in a Rural Population
9. Williams, Reid (UG) – Adolescent’s willingness to change

Electrical and Computer Engineering (Section N)
1. Cyr, Benjamin (G) – Low-cost and secure firmware obfuscation method to prevent cloning
2. Ziqi Zhou (G) – Modeling and test generation for combinational hardware Trojans

(UG) = undergraduate student presentation
(G) = graduate student presentation
3. Devore, Elizabeth (G) – Analysis of harmonic impedance calculations
4. Stowe, Carmen (UG) – Python-based Implementation of Deep Convolutional Neural Field
5. Russell, Ian (UG) – How different materials affect the frequency of a musical string due to temperature change
6. Roberts, Jeremy (UG) – Using software development and instructional design principles to implement interactive online experiences that achieve engaged hybrid learning

Biosystems Engineering (Section O)
1. Rubisch, Mary (G) – Tidal-flow wetlands with feedback control for management of nitrogen in aquaculture wastewater
2. Preißser, Matthew (UG) – Anaerobic digestion of poultry litter for biogas production
3. Chauñp, Kristin (UG) – Effects of leaching on anaerobic digestion of poultry litter

Mechanical Engineering (Section P)
1. Dondeti, Sivareddy (G) – A hybrid experimental-numerical study of crack initiation and growth in transparent bilayers using digital gradient sensing and cohesive zone modelling
2. Sterling, Amanda (G) – Repairing valuable parts using additive manufacturing
3. Jamshidesal, Dourna (G) – Thermal study of potassium nitrate for thermal energy storage by molecular dynamic simulations
4. Henry, Michael & Reid, Kayla (G) – Submerged liquid jet arrays for power electronics using spent fluid management
5. Rodich, Reed (UG) – Magnetic Resonance Imaging Analysis of Anterior Cruciate Ligaments with Magnetization Transfer Contrast
6. Gibbes, Ford (UG) – Design and development of a low temperature tube calorimeter for ammonia refrigerant

Biological Sciences (Section Q)
1. Odom, Sara (UG) – Microbiome analysis using a quantitative polymicrobial PCR method
2. Kash, Mary (UG) – Mitohormesis- A Look into the Effects of Irradiation and Oxidative Damage on the Respiratory Function of Hepatocyte Cell Cultures
3. Yates, Shawn (UG) – Sequence Variation of Insulin-like Growth Factor One in the Brown Anole
5. Wang, Philip (UG) – Carotenoids protect against oxidative damage in the marine copepod Tigriopus californicus
6. Byers, Alexandra (UG) – The Effects of Hormone Signalling on Drosophila Behaviour and Physiology
7. Hale, Emma (UG) – Quantifying the prevalence of the West Nile Virus, Rift Valley Fever Virus, and Dengue Fever Virus across Mouse Lemurs Populations from Madagascar.

Veterinary Medicine (Section R)
1. Dismukes, Jonathan (UG) – Expression of the INK4AB/ARF tumor suppressor transcription factor MSK1 in canine breast cancer
2. Stahr, Natalie (UG) – Screening for canine cancers through the identification of upregulation and downregulation of micro-RNAs

Human Development/Family Studies/Audiology (Section S)

(UG) = undergraduate student presentation  
(G) = graduate student presentation
1. **Punna, Bharat** (UG) – Risky decision making in adolescence: Effects of peers
2. **Atwater, Madison** (UG) – Changes in child expectations, and preschool priorities: a fifteen-year synopsis
3. **Homandberg, Lydia** (UG) – Perceived discrimination as a mediator for race differences in epinephrine and norepinephrine
4. **Martz, Connor** (G) – Direct and indirect discrimination: The role of vicarious racism on disease outcomes among African American women with systemic lupus erythematosus
5. **Moss, Hannah** (G) – Pupillometry as a tool to assess listening stress associated with learning a second language
6. **Habibi, Shabnam & Baker, Gena** (G) - The efficacy of engineering- controlled barriers on noise levels of machining processes in industry

**Architecture/Building Science/Industrial Design (Section T)**
1. **Bobo, Katherine** (G) – The economic impact on construction and design companies through the Works Progress Administration on Alabama Polytechnic Institute’s campus
2. **Moye, Hayden** (G) – Birdsfoot trefoil (*Lotus corniculatus*) cover for Alabama cropping systems: Fungal diseases, susceptibility to nematodes, and efficacy of herbicides
3. **Duncan, Kathryn** (UG) – Decreasing residential food waste in America via a stylish, efficient, effortless product system
4. **Seaman, Rex** (UG) – Soma: Personal Fogponic Mushroom Grow Unit

**Polymer/Fiber/Materials Engineering (Section U)**
1. **Sun, Yuzhe** (G) – Facile fabrication of polydopamine nanotube for chemo-photothermal therapy
2. **Nauniyal, Amit** (G) – High performance conducting polymer coating for corrosion protection
3. **Breaux, Steven** (UG) – The effect of different UV-cured hydrogel structures on viscoelastic behavior
4. **Hinkle, John** (UG) – Manufacturing of carbon fiber from electrospun and wetspun lignin fiber

**Crop/Soil (Section V)**
1. **Medina, Hanoi** (G) – Forecasting corn yields using remote sensing data and subseasonal weather forecasts
2. **Yu, Yan** (G) – Application of DNA marker assisted for root-knot nematode resistance in peanut breeding
3. **Bangert, Cristopher** (UG) – Does soybean irrigation scheduling need to be cultivar specific?

**Plant Pathology/Entomology/Horticulture (Section W)**
1. **Gattoni, Kaitlin** (G) – Systemic induced resistance to *Meloidogyne incognita* caused by *Bacillus* spp.
2. **Ge, Qing** (G) – Copper influence on *Xylella fastidiosa* virulence in planta
3. **Seo, Seungyeon** (G) – Comparative genomic analysis of *Fusarium oxysporum* f. sp. *vasinfectum* isolates and their small secreted proteins
4. **Bhandari, Rishi** (G) – Investigate bacterial leaf spot pathogen population dynamics on tomato and pepper in Alabama

**Food Science/Animal Science/Poultry Science/Fisheries (Section X)**
1. **Gorman, Sara Anne** (UG) – The potential role of inflammation in oocyte health and developmental potential
2. **Toohey, Mary** (UG) – Stability of Rebaudioside A in Citrate Buffer as Affected by Iron and UV Light Exposure

3. **Powell, Judson** (UG) – The effects on broiler chicken feeding behavior and nutrient intake while using different particle sizes and controlling proportions of fines

**Physics/Geoscience (Section Y)**

1. **Eckes, Samantha** (G) – Exploring applications of GPR methodology and uses in determining floodplain function of restored streams in the Gulf Coastal Plain, Alabama

2. **Sutton, Collin** (G) – Assessing socio-environmental factors for childhood Leukemia Cluster in Cleburne County, Alabama

3. **Bahder, Joseph** (UG) – TRYAD system analysis and control methods and design

4. **Bowers, William** (UG) – Probing Surface Defects and Electronic Reconstruction on Nb-Doped SrTiO₃ Substrates

**Social Science/Education (Section Z)**

1. **McLaughlin, Kyle** (UG) – Assessing Interobserver Replicability in the Scoring of Enthesal Marking through 3D Technology

2. **Carson, Jack** (G) – Attributing cause to others’ workplace relationships: The case for external relational attributions

3. **Walker, Tegan** (G) – Adoption and diffusion of solar dryers for post-harvest management in Panamanian rural farming villages

**Humanities (Section AA)**

1. **Beam, Morgan and Seemann, Lillian Catherine** (UG) – Timothy H. O’Sullivan: from war to the west

2. **Verhine, Jacob** (UG) – The Pedagogical Applications of Absolute Spectral Tone Color: An Analysis of Current Research and Avenues for Future Study

3. **Allsbrook, Kelley** (UG) – “Beauty on duty!”: Messages produced by the wartime cosmetics industry and the United States Government

4. **Arthur, Davis** (UG) – The Effect of Music Genre on Exercise Performance

5. **Camp, Peyton** (UG) – Task-Based Learning: a Pedagogical Approach to Second Language Acquisition

(UG) = undergraduate student presentation  
(G) = graduate student presentation