

**Schedule of Events – Auburn Research: Student Symposium 2019**  
**April 9th**  
**Auburn University Student Center**

---

**Judges Reporting**

Level 2 – 2310

**7:30 a.m.**

Continental Breakfast (Level 2 - beside rooms 2222 and 2223)  
Registration (7:30 am – 3:00 pm - Level 2 at entrance near room 2227;  
3:00 pm – 5:00 pm - outside Level 3 Ballroom)

**8:00 a.m. – 12:00 p.m.**

Oral Paper Sessions  
(Level 2 - rooms 2216, 2218, 2222, 2223, 2225, 2227, 2326)

**9:30 a.m. – 11:00 a.m.**

Poster Session I  
(Level 3 - Ballroom)

**12:00 noon – 1:30 p.m.**

Poster Session II  
Networking Lunch  
(Level 3 - Ballroom)

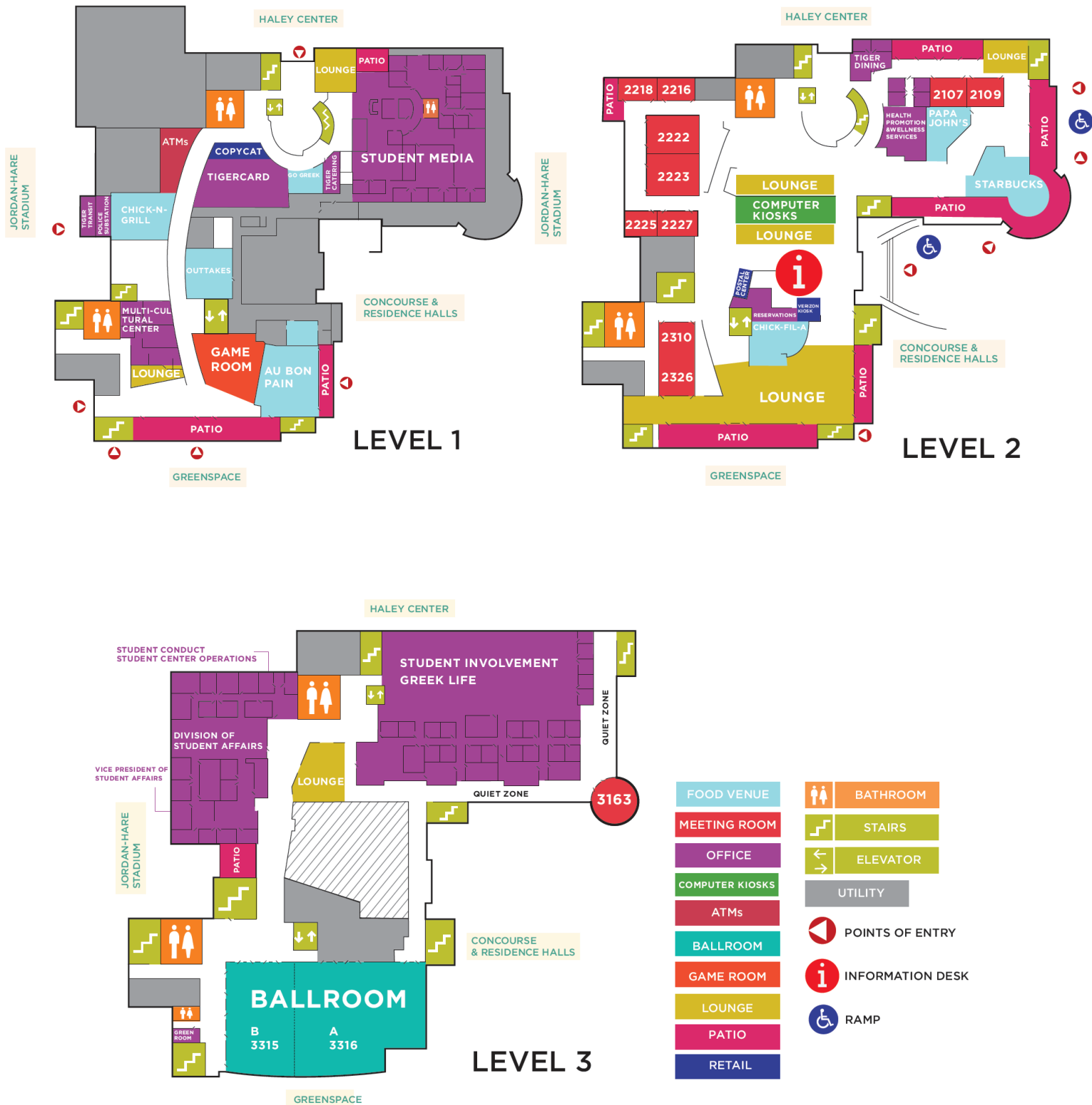
**1:00 p.m. – 4:00 p.m.**

Oral Paper Sessions  
(Level 2 - rooms 2216, 2218, 2222, 2223, 2225, 2227, 2326)

**3:30 p.m. – 5:00 p.m.**

Poster Session III  
(Level 3 - Ballroom)

# Map of Auburn University Student Center



(UG) = undergraduate student presentation

2

(G) = graduate student presentation

## Oral Research Presentations – Morning Session

### Student Center Meeting Rooms

---

8:00 – 8:50 a.m.

---

#### Room 2216 – Education/Hospitality

- **Shi, Yuewei (G)** – A memoryless walk: The forecast of women faculty movement based on the Markov chain model
- **Colquhoun, Shane (G)** – A survey of in-service music teacher preparedness for teaching non-traditional music courses and ensembles in secondary-level schools
- **Diamond, Sarah Elizabeth (G)** – Technology innovative and integration in career and technical education classrooms
- **Bernard, Shaniel (G)** – Personal values and their impact on HospiQuality and customer satisfaction

#### Room 2218 – Biomedical Sciences

- **Fang, Han (G)** – Differential effects of high-fat diet and niacin on nonalcoholic fatty liver disease in C57BL/6J and B6129SF2/J mice: A metabolomic analysis
- **Gross, Amanda (G)** – Intravenous delivery of AAV gene therapy in GM1 gangliosidosis
- **Maguire, Anne (G)** – Current image analysis techniques to quantify adipocyte area
- **Daniel, Jeff (G)** – Characterization and expression of *ANKEF1A/B* in the developing and adult zebrafish (*Danio rerio*)

#### Room 2222 – Chemical Engineering

- **Minkler, Michael (G)** – Effect of 3-position functional groups on GRIM-synthesized polythiophene reactivity ratios and resulting regiochemistry
- **Dobyns, Breanna (G)** – *In-situ* analysis of the fundamental transport of single- and multi-component systems through polymeric membranes
- **Karimi, Zahra (G)** – Investigating the effect of surface energy of the substrate on attached algal growth
- **Avvari, Rithvija (G)** – Spiroid design optimization in a rotating continuous bioreactor for enhanced oxygen transfer

#### Room 2225 – Nutrition/Drug Discovery

- **Woodie, Lauren (G)** – Memories of rhythms past: Evidence for hippocampal core clock disruptions in a murine model of Western diet-induced obesity
- **Ahmed, Bulbul (G)** – Development of an *in vitro* model of obesity-linked colorectal cancer using PDX 3D tumors and insulin resistant adipocytes
- **Setti, Sharay (G)** – Effect of LEC-specific P301L Tau on synaptic transmission and learning and memory
- **Terry, Kara (G)** – Extension empowers Alabama youth and parents to eat better and move more

#### Room 2227 – Forestry and Wildlife Sciences

- **Chalkowski, Kayleigh (G)** – Spatial epidemiology of *Toxoplasma gondii* infection risk in sentinel feral chickens (*Gallus gallus*) in Kauai, Hawaii
- **McKenzie, Benjamin (G)** – Mosquito surveillance in Alabama highlights regions of arboviral risk
- **Stiles, James (G)** – Efficacy of fire in restoring Chinese privet degraded bottomlands

- **Asafu-Adjaye, Osei (G)** – Bio-oil based wood composite

#### Room 2223 – Architecture, Planning, & Landscape

- **Ferguson, Katherine (UG)** – Rural studio breathing wall mass timber research
- **Hadley, Carter (UG)** – Elements of incremental architecture and their applications in a broader context
- **Cawthorn, Kristan (UG)** – Royal residence: The architecture of the affluence

#### Room 2326 – Drug Discovery

- **Srinivasa, Sriraja (G)** – A CXCR3 antagonist ameliorates the hippocampal hyperexcitability and impaired synaptic transmission induced by viral challenge
- **Ramesh, Sindhu (G)** – Atorvastatin attenuates lysophosphatidic acid (LPA)-induced tau hyperphosphorylation through inhibition of p38 MAPK pathway
- **Lucas, Lauren (G)** – Mutations in ERBB4 may account for clinical resistance of melanomas to inhibitors of the RAS/RAF/MEK/MAPK pathway
- **Chen, Wu (G)** – Disulfiram copper nanoparticles prepared with a stabilized metal ion ligand complex method for treating drug-resistant prostate cancers

---

### 9:00 – 9:50 a.m.

---

#### Room 2216 – Computer Science and Software

- **Alcorn, Michael (G)** – Strike (with) a pose: Neural networks are easily fooled by strange poses of familiar objects
- **Wang, Ye (G)** – A phylogeny-regularized convolutional neural network for microbiome-based prediction
- **Bansal, Naman (G)** – Turning up the heat on interpretability of deep neural networks
- **Cao, Ting (G)** – Reconstruction of big data in parallel storage systems

#### Room 2218 – Forestry and Wildlife Sciences

- **Mensah, John (G)** – Growth Response of Loblolly Pine to *Leptographium terebrantis*
- **Custodio Mendonca, Caren (G)** – Experimental throughfall reduction increases water use efficiency in longleaf pine
- **Ahl, Jessica (G)** – Insect diversity in a loblolly pine stand infected with *Leptographium terebrantis*
- **Oladipupo, Seun (G)** – Toxicity profiles of aromatic and aliphatic essential oil component against strains of German cockroach, *Blattella germanica*

#### Room 2222 – Chemical Engineering

- **Kim, Jihyuk (UG)** – Poly(3-methoxythiophene) a novel polyalkoxythiophene synthesized using Grignard Metathesis polymerization
- **Rodriguez, Marisa (UG)** – Analyzing the effects of surface energy on algae with specialized attachment mechanisms
- **Bush, Michaela (UG)** – Developing MATLAB code for analysis of engineered cardiac tissue
- **Bradley, Gabrielle (UG)** – Investigating LAP-initiated photocrosslinking for the formation of engineered cardiac tissue

#### Room 2225 – Fisheries/ Aquaculture

- **Galkanda Arachchige, Harsha (G)** – Efficacy of alternative salt mixture to grow Pacific White Shrimps (*Litopenaeus vannamei*)
- **Guo, Jingping (G)** – Use of plant-based protein concentrates as replacement for fishmeal in practical diets for the Pacific white shrimp (*Litopenaeus vannamei*) reared under high stocking density and low salinity conditions
- **Dutton, Haley (G)** – A new lineage of turtle blood fluke (Digenea: Schistosomatoidea) from the six-tubercled Amazon River turtle (Podocnemididae) in South America (Peru, Amazon River Basin)

#### Room 2227– Mechanical Engineering

- **Dastranjy Nezhadfar, Pooriya (G)** – Fatigue behavior of additively manufactured 17-4 PH stainless steel
- **Lee, Seungjong (G)** – Influence of part location and direction on surface roughness and the resulting crack initiation behavior in additive manufacturing
- **Shrestha, Rakish (G)** – Investigation into property-performance relationships for laser-powder bed fusion additive manufacturing
- **Soltani-Tehrani, Arash(G)** – Additive manufactured lattice structures: A viable solution for bone implants

#### Room 2223 – Pharmacy

- **Al Rihani, Sweilem (G)** – mTOR inhibition protects the blood-brain barrier in two mouse models of Alzheimer's disease
- **Alghenaim, Fada (G)** – Investigate the effect of aging on oxidative stress and mitochondrial functions in male *Capra aegagrus hircus* reproductive system
- **Majrashi, Mohammed (G)** – *Centella asiatica* extract exhibit anti-oxidative stress effect in neuronal cells and improves synaptic plasticity
- **Poudel, Nabin (G)** – Methodological variations among health state valuation studies using eq-5d-5l: A systematic review

#### Room 2326 – Biology/Biochemistry

- **Eastwold, Martin (UG)** – Investigating the role of insulin resistant adipocytes in the proliferation of cancer cells
- **Grundhoefer, John (UG)** – Synthesis and characterization of transition metal complexes for antimicrobial application
- **Rangari, Shivani (UG)** – Acyclovir gel for enhanced transdermal drug delivery
- **Westerfield, Matthew (UG)** – An *in vitro* assay of novel antimicrobial compounds and chloramphenicol derivatives

---

#### 10:00 – 10:50 a.m.

---

#### Room 2216 – Biological Sciences

- **Lubor, Samuel (UG)** – Starvation reduces mitochondrial function in the monarch butterfly
- **Schwartz, Jack (UG)** – Neurotropic effect of  $\beta$ -hydroxybutyric acid
- **Taylor, Hannah (UG)** – Recombination rate plasticity in *Drosophila pseudoobscura*

#### Room 2218 – Kinesiology

- **Bacelar, Mariane (G)** – Does lower energy expenditure increase reward-related cortical/brain activity and reward pursuit?
- **Brittain, Abby (UG)** – Psychological states, injury, and functional movement within collegiate students: A relationship analysis
- **Maheu, Arlene (UG)** – The effects of ‘Green Exercise’ on cognitive functioning in healthy young adults
- **Phan, Johann (UG)** – The relationship between athlete anthropometrics and hitting performance

#### Room 2222 – Computer Science and Software

- **Peng, Xiaopu (G)** – Towards large-scale energy-efficient data centers
- **Zhang, Chaowei (G)** – A real-time fake news detection system
- **Mao, Jianzhou (G)** – A power-aware management strategy using DVFS and virtual machines live migration
- **Bhattacharya, Sutanu (G)** – Does contact information powered by deep learning boost protein threading?

#### Room 2225 – Health Outcomes

- **Hastings, Tessa (G)** – Immunization registry implementation in community pharmacy: A qualitative study using the Consolidated Framework for Implementation Research (CFIR)
- **Hohmann, Natalie (G)** – Patient preferences for features of community-based fall prevention programs: a systematic literature review and qualitative meta-synthesis
- **Allison, Lauren (UG)** – Vocal dose for rhythm-based indoor cycling instructors: with and without amplification

#### Room 2227 – Crop, Soil, and Environmental

- **Schillerberg, Tayler (G)** – Evaluating impacts from large-scale climate circulations on crop failure risks in the United States using a Bayesian approach
- **Medina, Hanoi (G)** – Harnessing big data for in-season maize yield forecasting: A machine learning based framework
- **Lesinger, Kyle (G)** – How will climate change influence storage conditions for major agricultural commodities in the United States?

#### Room 2223 – Biosystems/Chemical Engineering

- **Wang, Qichen (G)** – Improved the growth of microalgae in pretreated anaerobic digestate by activated sludge
- **Peng, Haixin (G)** – Effects of *Azospirillum brasilense* on microalgae UTEX 2714 and biofuel production
- **Hamade, Fatima (G)** – Dispersion microstructure effects on the electrochemical properties of graphene/manganese oxide cryogels
- **Madhuri Nori, Uma (G)** – Synthesis of unique surface functionalized cellulose nanocrystals and their applications in cancer cell detection

#### Room 2326 – Civil Engineering

- **Steinwinder, Jeffrey (G)** – Pore network modeling study of effect of mineral reaction propagation on porosity-permeability evolution
- **Ajede, Akeem (G)** – A review of acceptance schedule of payment for asphalt pavements in Alabama

- **Nakhaei, Mostafa (G)** – A novel approach for determining the low performance grade of asphalt binders
- **Viticoski, Roger (G)** – A bioremediation approach for perfluoroalkyl substances (PFAS)

---

**11:00 a.m. – 11:50 p.m.**

---

**Room 2216 – Polymer and Fiber Engineering**

- **Joshi, Prutha (G)** – Synthesis and characterization of photopolymerizable hydrogels based on poly (ethylene glycol) for biomedical applications
- **Wang, Yuyang (G)** – Preparation of printable electroactive soft robotics actuators
- **Bansode, Archana (G)** – Physico-chemical characterization of lignins from different sources for synthesis of lignin based epoxy resin
- **Alizadeh, Nima (G)** – Novel acrylic-polyurethane based graft-interpenetrating polymer networks for transparent application

**Room 2218 – CAD/C Interior Design – Creative Scholarship**

- **Kirskey, Britney (G)** – Evidence-based design patient room typicals across hospital specialties
- **Murphy, Justin (G)** – Design of a model for the experimental testing of the effects of sound waves on plant growth in an alternative agricultural system
- **Leslie, Kendall (UG)** – Healthcare proposal

**Room 2222 – Health Outcomes**

- **Hohmann, Lindsey (G)** – Empowering community pharmacists to prevent opioid overdose deaths: a qualitative study exploring pharmacists' needs, attitudes, barriers, and implementation strategies regarding pharmacy-based naloxone services
- **Marberry, Katie (G)** – Role of mountaintop removal mining in the opioid crisis
- **Yanes, Julio (G)** – Pressure-based pain tolerance and cannabis: A neuropsychological assessment of pain processing in recreational cannabis users
- **Huo, Nan (G)** – Trends and factors associated with asthma among U.S. prostate cancer patients in 2007-2014

**Room 2225 – Plant Pathology**

- **Liyanapathirana, Prabha (G)** – Role of type VI secretion system in latent infection of plant pathogens
- **Pokhrel, Ambika (G)** – Transcriptomic analysis to identify candidate genes conferring gossypol tolerance in *Fusarium oxysporum* f. sp. *vasinfectum*
- **Bhandari, Rishi (G)** – Copper bactericides; spray or not to spray!
- **Carroll, Elijah (UG)** – Mortality and behavioral effects of common turfgrass insecticides against Fall armyworm (*Spodoptera frugiperda*)

**Room 2227 – Chemistry/Biochemistry**

- **Ariyaratna, Isuru (G)** – Aufbau rules for solvated electron precursors: The case of  $\text{Li}(\text{NH}_3)_4$  and  $\text{Na}(\text{NH}_3)_4$
- **Combs (Bredar), Alexandria (G)** – Evidence and influence of copper vacancies in p-Type  $\text{CuGaO}_2$  mesoporous films

- **Alturki, Mansour (G)** – Design and synthesis of selective DNA minor groove alkylators against cancer
- **Buckhannon, Laquandra (UG)** – Cloning, expression and purification of human mitochondrial molecular chaperone Tid1

#### **Room 2223 – Mechanical/ Software Engineering**

- **Tucker, Alexander (UG)** – Modulus and damping as a function of temperature tested through natural frequency of a cantilever beam
- **Jenkins, Katelyn (UG)** – The biomechanical effect of body-borne loads on airborne soldiers
- **McGehee, Andrew (UG)** – PolyFold: Augmenting human intuition with machine learning to solve protein folding

#### **Room 2326 – Poultry Science**

- **Rueda, Martha (G)** – Effect of conditioning temperature on productive and processing performance, and nutrient digestibility of broilers
- **Carrisoza, Miranda (G)** – Prevalence of parasitic microorganisms in backyard chicken flocks in Alabama
- **Boyal, Ranjit (G)** – Influence of broiler chicken stunning method on carcass blood loss
- **Lawley, Ella (UG)** – Peroxyacetic acid applied following broiler chicken feather removal minimizes pathogen levels during processing

## **Poster Session I**

Student Center Ballrooms

9:30 a.m. – 11:00 a.m.

#### **Aerospace Engineering (Section A)**

1. **Kim, Yaehee (G)** – Assessment of resurfacing process on (99942) Apophis during the 2029 Earth flyby
2. **Tiwari, Bipin (G)** – Effect of different inlet velocity profiles on patient-specific CFD simulations of healthy trachea
3. **Kelly, Dustin (G)** – A plenoptic multi-spectral pyrometer for high temperature applications
4. **Davis, Alexander (G)** – Development of a moving window molecular dynamics framework to model shock wave interactions at microstructural features in materials
5. **Swiney, Paul (G)** – Development and validation of metal 3D-printed helium-filled soap bubble system
6. **Gururaj, Abbashek (G)** – Rotating volumetric velocimetry for rotor flows

#### **Biosystems Engineering (Section B)**

1. **Sangha, Laljeet (G)** – Development of an ENSO based approach to rainwater harvesting for irrigation
2. **Patil, Vivek (G)** – Sustainable fuels with recycling: Co-pyrolysis of plastics and lignin with locally sourced red-clay catalyst



3. **Karki, Ritesh (G)** – Multi-variable sensitivity analysis, calibration, and validation of a field-scale SWAT model: A case study in south central Georgia
4. **Liu, Meizhu (G)** – Effects of toxicity and structural alterations caused by Perfluorinated Alkyl Acids (PFAAs) on the microalgae *Scenedesmus obliquus* UTEX 393

### Chemical Engineering (Section C)

1. **Sarwar, Shatila (G)** – Microwave-initiated manufacturing of MoS<sub>2</sub>/graphene catalyst for enhanced hydrogen evolution reaction
2. **Hassani, Iman (G)** – A novel obesity-mimetic engineered tumor model of colorectal cancer
3. **Chauhan, Varun (G)** – AUBIE: A novel approach for the computational de-novo design of antibody structures and alternative scaffolds
4. **Bhattacharya, Ritankar (G)** – Engineering antibodies and antibody-like scaffolds using AUBIE (Algorithm for Ultra-rapid Binding Interaction Engineering)
5. **Islam, Sumaiya (G)** – Identifying individuals' comprehensive epitope repertoire
6. **Sultana, Nayer (G)** – Controlling particle size of silica nanoparticles by Stöber process for colon cancer targeting application
7. **Aloba, Sulihat (G)** – Cellulose nanocrystal-based MEMS sensors for potential applications
8. **Habbitt, Nicole (G)** – Prostate tumor-on-a-chip model for *in vitro* recapitulation of the native tumor microenvironment and implementation in pre-clinical drug testing
9. **Parkhi, Amod (G)** – Innovative water recycle strategies for reducing water and energy use in pulp and paper industry

### Materials/Polymer Engineering (Section D)

1. **Yang, Wen (G)** – Nanoplasmon ruler for visualizing how cells “talk”
2. **Cai, Yuxin (G)** – Magnet patterned superparamagnetic Fe<sub>3</sub>O<sub>4</sub>/Au core-shell nanoplasmonic sensing array for label-free high throughput cytokine immunoassay
3. **MacLachlan, Alana (G)** – Optimization of a novel phage filter for pathogens testing from large volumes of water
4. **Shelke, Shreyas (G)** – Microcapsule based self-healing for 3D printed polymer composites
5. **Du, Haishun (G)** – Water-resistant, transparent, conductive cellulose nanopaper with tunable ultraviolet blocking ability for flexible electronics
6. **Zhang, Miaomiao (G)** – CeO<sub>2</sub>/PPy nanocomposites with high performance as electrode materials for supercapacitor

### Drug Discovery/Pharmaceutics (Section E)

1. **Darakjian, Lucy (G)** – Utilization of FEPPA as a marker for microglial activation
2. **Alrbyawi, Hamad (G)** – Rapidly dissolving polymeric microneedles for intraocular delivery of Cyclosporine A
3. **Hamby, Allis (G)** – Molecular mechanisms involved in the chemotherapy-induced cognitive impairment: designing effective neuroprotective strategies
4. **Hoffman, Grace (G)** – Extra virgin olive oil as a medical food enhances donepezil effect against Alzheimer's disease
5. **Zhang, Yilue (G)** – LC-MS-based chemical characterization of constituents of methanol açai extract and metabolites obtained from an *in vitro* intestinal first-pass metabolism study

6. **Almalki, Ahmad (G)** – GC-MS Analysis of Regioisomeric Substituted N-Benzyl-4-Bromo-2,5-Dimethoxyphenylamines – Derivatives of the NBOMe series of Drugs of Abuse
7. **Ibtisam, Ibtisam (G)** – Targeting DNA-damage inducible homolog 2 (Ddi2) for the treatment of cancer
8. **Alturki, Mansour (G)** – Facile approach to polycyclic 3-unsubstituted tetrahydroisoquinolonic acids
9. **Pinky, Priyanka (G)** – Elucidation of the neurotoxic effects of developmental cannabinoid exposure in adolescent rodent offspring

### **Forestry and Wildlife (Section F)**

1. **Assogba, Noel (G)** – Conservation reserve program and timber price in the U.S. south
2. **Ahl, Jessica (G)** – Using hyperspectral interferometry to identify fungal spores on bark beetles of concern – can it be done?
3. **Cardozo, Alejandro (G)** – The effect of surface treatment to enhance bonding properties
4. **Gomez- Maldonado, Diego (G)** – Oriented  $\beta$ -cyclodextrin/Chitosan polymer adsorption on nanocellulose surfaces and its use on capture of microcystin-LR
5. **Iglesias, Maria Celeste (G)** – Investigation of the interactions between cellulose nanofibrils (CNF) and wood adhesive (pMDI) for its application in wood composites
6. **Singh, Arshdeep (G)** – Regression and correlation analysis for runoff ratio and runoff deviation ratio

### **Kinesiology (Section G)**

1. **Rhoads, Jence (G)** – Distinguishing the effects of verbalizing a motor skill on performance and retention in novices and skilled populations
2. **Dolinger, Sarah (UG)** – Significant physical and mental health burdens in rural, low-income, 10<sup>th</sup> grade students
3. **Hoesley, Adam (UG)** – Relationship of glove arm elbow flexion with pitch velocity in youth baseball pitchers

### **Communication Disorders (Section H)**

1. **Melton, Robert (G)** – Effects of orchestra training on plasticity in the auditory system
2. **Baker, Gena (G)** – Development of a musical chord stimulus to assess cortical neural functioning
3. **McManus, Lisa (G)** – The effect of repeated measurements and varying conditions on the reliability of the English version of the acceptable noise level test
4. **Dunn, Lauren (UG)** – Pulmonary function of the competitive swimmer: Implications for treatment of PVFM
5. **Epperson, Hannah (UG)** – Neuromuscular development in neonates & post-natal infants: Implications for nmes therapy for dysphagia
6. **Edwards, Ryleigh (UG)** – Forced vital capacity in swimmers
7. **Sandlin, Kylie (UG)** – Pulmonary function variations in women wearing sports bra, regular bra, and no bra
8. **Harris, Mackenzie (UG)** – Vocal function in college women during sorority recruitment
9. **Hamby, Hailey & Barnett, Laurin (UG)** – Speaking fundamental frequency differences with familiar versus unfamiliar listeners
10. **McElroy, Sallie (UG)** – Systematic review of the effects of blast trauma on auditory and cognitive abilities

### Biological Sciences (Section I)

1. **Cline, Sabrina (UG)** – Understanding pan's labyrinth: tracking the subcellular localization of viral long non-coding RNA using *in situ* fluorescence microscopy techniques
2. **Lazenby, Madeline (UG)** – The effects of incubation temperatures on beak coloration in zebra finches
3. **Mish, Amanda (UG)** – Testing the functional role of carotenoid accumulation on protection from UV stress in the marine copepod, *Tigriopus californicus*

### Design (Section J)

1. **Sapienza, Natalie (UG)** – Public healthcare in Johannesburg, South Africa
2. **Bone, Alex (UG)** – St. Elisabethen Hospital healthcare design
3. **Peterson, Mary (UG)** – Public art project abstract
4. **Ingrós, Gabrielle (UG)** – Evidence-based design approach to Icelandic Hospital
5. **Kelley, Samantha (UG)** – Public art project
6. **Olver, Cailin (UG)** – The Rahima Moosa mother and child extension design
7. **Temples, Camille (UG)** – Improving mental health in Hobson Bay, New Zealand through healing villages
8. **Walker, Caroline (UG)** – Auburn public arts
9. **Chakraborty, Swagata (G)** – The role of western acculturation and consumer ethnocentrism in predicting apparel consumption behavior amongst Indian consumers

### Architecture/Environmental Design (Section K)

1. **Stark, Kyra (UG)** – Designing for climate at a fundamental level
2. **Glenn, Kaitlyn (UG)** – Saving our heritage: World heritage sites threatened by rising sea levels
3. **Summersell, Cole (UG)** – Linked social and environmental consequences of exurban development
4. **Boehle, Benjamin (UG)** – Improving sustainable awareness and living
5. **Blankemeyer, Elyse (UG)** – The gender wage gap in the United States: Impacts and solutions
6. **Finnegan, Ellis (UG)** – Aarhus midttrafik: I am black velvet
7. **Qi, Qiang (G)** – Methods for collecting design inspirations: A research about how designers gain inspirations
8. **Ramos, Alejandro (G)** – Landscape architecture theory and practice: Three case studies

### Plant Pathology/Entomology/Horticulture (Section L)

1. **Mertoglu, Gamze (G)** – Evaluation of biorational insecticides against two-spotted spider mite (Acari: Tetranychidae) on tomato
2. **Wang, Yifan (G)** – Impact of environmental factors, temperature and humidity, on the population dynamics of *Aedes* mosquito in Alabama
3. **Peterson, Madison (G)** – Instar determination of *Blattella asabina* (Blattodea: Ectobiidae) using digital measurements of the pronotum and number of cercus annuli
4. **Ajayi, Olufemi (G)** – Comparative water relations and desiccation tolerance of invasive pest ants in the southeastern United States to native ant species
5. **Sharma, Gagan Deep (G)** – Suppression of cytoplasmic incompatibility
6. **Gattoni, Kaitlin (G)** – A systemic response stimulated by *Bacillus* sp. can manage *Meloidogyne incognita* population density in *Gossypium hirsutum*

7. **Ge, Qing** (G) – Study of *cutC* gene involved in copper resistance in plant pathogen *Xylella fastidiosa*
8. **Gomez Arias, Laura Melissa** (G) – Modulation of twitching movement in *Xylella fastidiosa* mediated by the PD0913 gene under different calcium concentrations

### Geoscience (Section M)

1. **Garcia, Raeann** (G) – Petrography, geochronology, and geochemistry of the epithermal DeLamar Au-Ag deposit in the Silver City District, Idaho
2. **Fisher, Alicia & Orndorff, Tristan** (G) – Field-scale bioremediation of arsenic-contaminated groundwater with sulfate-reducing bacteria and arsenian pyrite at an industrial site in Florida
3. **Bhattacharya, Rahul** (G) – Understanding Holocene deformation within the Bellingham basin in the northwestern Cascadia (WA)
4. **Mustaque, Md Sharif** (G) – Permo-Carboniferous evolution of Eastern Gondwanaland: Constraints from petrofacies and detrital geochronology
5. **Owen, Evan** (UG)- Geochemical exploration for molybdenum and other metals within the Farmville metagranite, Lee County, AL
6. **Parsons, Kyle** (UG) – Single crystal  $^{40}\text{Ar}/^{39}\text{Ar}$  ages and metamorphic p-t-t history of crystalline rocks within the Ross orogen, central Transantarctic Mountains

### Social Science/Education (Section N)

1. **Walker, Tegan** (G) – Experiential learning aids in the adoption of water elevation level measuring technology
2. **Esco, Taylor** (G) – Heart of the wiregrass: Dothan, AL
3. **Bhalerao, Rajas Narendra** (G) – Rejuvenate: Re-development of Opelika's 1<sup>st</sup> Avenue
4. **Copeland, Joshua** (G) – Planning for natural disasters: A geospatial analysis on the effects of Hurricane Ivan on Alabama and Florida
5. **Stephens, Morgan** (G) – An ecological perspective on the factors that promote school connectedness: A literature review
6. **Kim, Yoonah** (G) – Do study abroad programs change food neophobia among students?

### Spanish (Section O)

1. **Mackowski, Taylor** (UG) – L2 Spanish learners' auditory perception of gender and number and its role in relative clause attachment resolution
2. **Thompson, Megan** (UG) – Cultural influence on personality strengths among global leaders
3. **Day, Katelyn** (UG) – *Ay, cómo me duele . . .* The effects of language barriers in accessing quality health care for Latina women in rural areas
4. **Cuartero Marco, Marina** (G) – Explicit and implicit instruction of discourse markers to Spanish heritage speakers

### Crop/Soil (Section P)

1. **Singh, Rajveer** (G) – Application time and rate impact of poultry litter and urea on corn grain yield in Alabama
2. **Tadych, Danielle** (G) – Performing uncertainty analysis on crop yield parameters in SWAT at regional scale
3. **Dey, Poulomi** (G) – Characterization of phosphorus (P) in poultry litter and determination of P extraction efficiency of extractants

4. **Asadi, Parisa** (G) – Improving estimation of leaf wetness duration using machine learning with climate reanalysis data
5. **Bhatta, Anjan** (G) – Phosphorus characterization of Alabama soils under different management practices for environmental risk assessment

### **Poultry Science/Animal Science (Section Q)**

1. **Spencer, Lindsay** (G) – Evaluation of differential scanning calorimetry to assess starch gelatinization of multi-component feed processed with different conditioning temperatures and Hygieniser retention times
2. **Alfaro, Gaston** (G) – Fetal programming effect of rumen-protected methionine on Angus-Simental heifer offspring's performance and PPAR $\gamma$  gene expression
3. **Avila, Luis** (G) – Effect of dietary supplementation of layer hens with a hydroxy-analogue of selenomethionine on performance and egg quality
4. **Flees, Joshua** (G)- Effect of different basal culture media and sera combinations on primary broiler chicken muscle satellite cell proliferation and heterogeneity

### **Veterinary Medicine (Section R)**

1. **Weatherall, Kathleen** (G) – Sub-bandage pressure and deflection testing with two bandage splint constructs in an *ex vivo* mid-metacarpal equine fracture model
2. **Abbott, Kodye** (G) – Elevated triglyceride levels are associated with cognitive impairment in animal models of hyperglycemia and chemotherapy treatment
3. **Bamidele, Jeminiwa** (G) – Soy isoflavones regulate testicular androgen secretion at all stages of development in the male rat
4. **Yang, Li- Kun** (G)- Functions of the DRYxxI motif and intracellular loop 2 of human melanocortin-4 receptor
5. **Flaat, Taylor** (G) – Identification of canine mast cell progenitors in blood
6. **Khan, Saba** (G)- Anticancer effects of cannabinoid in human prostate cancer cell line

### **Nursing (Section S)**

1. **Bowman, Mollie** (G) – Increasing knowledge in patients with hypertension
2. **Beck, Olivia** (G) – Complementary aromatherapy supporting patients with anxiety
3. **Chislom, Ashley** (G) – Improving self-management behaviors of patients diagnosed with chronic kidney disease
4. **Carroll, Carrie** (G)- Diabetes risk screening in overweight/obese adults at risk for Type 2 diabetes
5. **Gravel, Timothy** (G)- Improving antiretroviral therapy adherence in HIV+ men with mobile phone technology
6. **Ellis, Elizabeth** (G)- Improving the quality of life for patients with chronic kidney disease (CKD) through renal rehabilitation education
7. **Norris, Emily** (G) –
8. **Hill, Hannah** (G) – Improving knowledge of and attitudes towards safe-sleep practices
9. **Griffin, Kerri** (G) – Preventing tobacco and nicotine delivery device use among adolescents
10. **Starling, Amy** (G)- Mitigating wounds after war: A telephone follow-up program for patients with traumatic brain injuries
11. **Bridgman, Jessica** (G)- Utilizing text messages to prevent congestive heart failure exacerbation

12. **Ledbetter, Monty** (G)- Heart rate reduction for coronary computed tomography angiography (CTA): Efficacy, safety, and quality
13. **McCollough, Dylan** (G) – Nutrition education for dietary phosphorous intake in patients receiving hemodialysis
14. **Cook, Julianna** (G) – Decreasing pediatric stressors with vaccinations
15. **Sims, Whitney** (G)- Hypertension management using a home telemonitoring program
16. **George, Rachel** (G)- Intensive weight loss program
17. **Mitchell, Christie** (G)- Lifestyle management in heart failure
18. **Tulshi, Nicholas** (G)- Use of alternative pain medications and physical therapy for adults with chronic non-cancer pain to control pain
19. **Danley, Lisa** (G)- Improving adherence of diet, fluid, and medication in patients with end-stage renal disease with a peer mentoring program

## Poster Session II

12:00 – 1:30 p.m.

Student Center Ballroom

### Aerospace Engineering (Section A)

1. **Arata, Peyton** (G) – The effects of changing frontal conditions on aircraft performance and flight planning
2. **Miller, Noah** (UG) – Harnessing solar energy for self-folding origami
3. **Wietstruk, Mike** (UG) – Aerodynamic response of a red-tailed hawk to a vertical gust
4. **LeGrand, Craige** (UG) – Development of interpenetrating polymer network (IPN) materials for road repair
5. **Potter, Shelby** (UG) – Effects of severe weather phenomena on commercial aviation accidents and incidents
6. **Burnham, Kelly** (UG) – The non-isentropic solution to the Taylor-Culick Profile for cylindrical and slab rocket motors

### Biosystems Engineering (Section B)

1. **Howell, Rachel** (UG) – Development of a small-scale flume reactor for benthic filamentous algae colonization studies
2. **Land, Hudson** (UG) – Protein yield from filamentous algae culture from aquaculture wastewater as a function of nutrient condition
3. **Holmes, Bryan** (UG) – Modeling of photosynthetic aeration for energy efficient wastewater treatment

### Chemical Engineering (Section C)

1. **Etebari Alamdari, Navid** (G) – Processing, characterization, and valorization of soy hull
2. **Feyzbar K Nejad, Farshad** (G) – Effect of morphology on the selective CO adsorption process using CuCl on a copper substrate

3. **Hassani, Ehsan (G)** – Regenerative ternary oxide sorbents for long-term CO<sub>2</sub> capture at high temperature
4. **Thakur, Raj (G)** – Dry reforming using modified metal carbides
5. **Moncada, Jorge (G)** - Insights on the redox properties of two- and three-dimensional supported vanadia oxide catalysts using Raman-spectrokinetics
6. **Parit, Mahesh (G)** - Novel approach in developing cellulose nanofiber and polypyrrole based conducting composites with improved conductivity and mechanical strength
7. **More, Ajinka (G)** – Oxidative degradation of lignin to value added products
8. **El-Kattan, Kareem (UG)** – Discovering a specific targeting protein to be used for the detection of matrix Metalloproteinase-2 activity in tumor models
9. **Hu, Mengyang (Claudia) (UG)** – Using post polymerization click-chemistry approaches to incorporate magnetic properties within polymer structures towards MRI contrast agents
10. **Sparks, Tucker (UG)** – Poly(3-hexylthiophene-*co*-3-(2'-ethylhexyl)thiophene) statistical copolymers and their optoelectronic and solid-state properties
11. **Huang, Tina (UG)** – Improving polymer-modified asphalt by changing the characteristic of SBS using click chemistry
12. **Redden, Jacob (UG)** – Shape complementarity calculations based on protein backbone positions and amino acid identities

#### Civil Engineering (Section D)

1. **Wang, Danyang (G)** – Short-chain perfluoroalkyl substances (SC-PFAS) analysis in environmental samples
2. **Chidera, Iloejesi (G)**- Numerical simulation of compressed energy storage in porous aquifer
3. **Cooper, Grant (G)** – Creep and shrinkage behavior of concrete in I-59/20 segmental bridge
4. **Scales, Matthew (G)** – Strength assessment of soil cement base
5. **Burrow, Elliott (G)** – Evaluation of nondestructive testing methods to assess concrete deterioration
6. **Anjekar, Ishan (G)** – Use of OpenFOAM for 3D reactive transport modelling at pore scale

#### Electrical and Computer Engineering (Section E)

1. **Zhou, Huanyi (G)** – CT-like image reconstruction with self-invented MiSpinner device in biomedical field
2. **Kauten, Christian (G)** – Understanding the use of deep learning-based perception augmentation systems for autonomous vehicles
3. **Zhao, Yuxi (G)** – Truthful quality-aware data crowd-sensing for machine learning
4. **Roy, Socham (G)** – Improved random pattern delay fault coverage using inversion test points
5. **Batcho, Erin (UG)** – Diffusion tensor imaging of Huntington's disease in sheep at 3T MRI
6. **Krause, Keith (UG)** – Investigation of the performance and energy consumption of superconducting adiabatic computing circuits
7. **Narayanan, Mina (UG)** – Authorship verification and adversarial authorship

#### Mechanical Engineering (Section F)

1. **Ergle, Matthew (UG)** – Vibratory system identification of 3D printed cantilever
2. **Teitge, David (UG)** – Design and construction of a phase change flight experiment for the international space station using micro-structured surfaces
3. **Perry, Isabel (UG)** – Piano technology
4. **Fox, Matthew (UG)** – Effects of powder recycling on powder characteristics for inconel 718

### Drug Discovery/Pharmaceutics (Section G)

1. **Jasper, Shanese (G)** – Optimizing a 3D culture system to study the roles of epithelial breast cancer cells and tumor microenvironment in mediating drug uptake from enzyme-responsive liposomes
2. **Alnaim, Ahmed (G)** – Effect of tumor-microenvironment on liposome nanoparticles uptake and biodistribution in prostate cancer
3. **Annaji, Manjusha (G)** – Preparation and evaluation of topical gel containing acyclovir and lidocaine for the treatment of herpes simplex virus infections
4. **Poudel, Ishwor (G)** – Enhancement of aqueous solubility of hispolon by complexation with sulfobutyl ether  $\beta$ -cyclodextrin
5. **Poudel, Ishwor and Annaji, M. (G)** – 3D printed 316L metal implants coated with dexamethasone for sustained drug delivery
6. **Davis, Joshua (G)** – Optimization of a 3D tumor spheroid model for the evaluation of schedule dependent mechanistic differences of chemotherapeutics for the treatment of aggressive castration resistant prostate cancer
7. **Sandoval-Powers, Megan (G)** – LC-MS-based analysis of antimicrobial compounds produced by *Streptomyces coelicolor* harboring metagenome-derived biosynthetic gene clusters

### Pharmacy/ Pharmacology (Section H)

1. **Wesolowski, Alec (G)** – Tracking biofilm formation of *S. aureus* at different hydrodynamic flow conditions in microfluidic chambers
2. **Al Saqr, Ahmed (G)** – Design of hispolon and doxorubicin nanoparticles for melanoma treatment
3. **Almaghrabi, Mohammed (G)** – Design, synthesis and pharmacologic activity of novel psychoactive substituted piperazines
4. **Priest, Anne Katherine (G)** – Novel interdisciplinary ‘speed-dating’ and augmentation of traditional diabetes self-management education to improve diabetes care
5. **Rajendran, Soorya (UG)** – Assessing the pharmacodynamics and pharmacokinetic effects of designer drugs using computational design
6. **Weber, Rachel (UG)** – Comparison of body fat percentage and body mass index as predictors of pre-diabetes
7. **Hall, Ivy (UG)** – Understanding how to best track *staphylococcus aureus* (*S. aureus*) infections in a murine model by use of fluorescence or photo-acoustic imaging

### Health Outcomes (Section I)

1. **Jeminiwa, Ruth (G)** – Exploring the relationship between adherence and number of prescribed medications with patients’ preference for incentives
2. **Crosby, Cassidi (G)** – The impact of pharmacist-delivered medication therapy management (MTM) on outcomes for patients with diabetes: a systematic review
3. **Davis, Brandy (G)** – What is the effectiveness of including pharmacists in collaborative care programs for mental health treatment? A systematic review
4. **Wallace, Adrienne (G)** – Adverse events reporting with naloxone product use from the FDA Adverse Event Reporting System (FAERS) in 2008-2018

### Forestry and Wildlife (Section J)

1. **He, Junhao (G)** – Depth-averaged soil moisture dynamics modeling and assessment



2. **Bickley, Samuel (G)** – Variable long-term effect of coarse-woody debris dam restoration on water quality and ecosystem function in southeastern Coastal Plain streams
3. **Park, Doyeon (G)** – Can cell phones detect mosquitoes infected with canine heartworm?
4. **Haas, Henrique (G)** – Determining the nexus between upland and riverine processes in a forested ecosystem
5. **Cash, James (G)** – Mapping an invasive species using a free and simple remote sensing technique
6. **Castaneda, Nicole (G)** – Ecology of human West Nile prevalence in Atlanta, Georgia
7. **Shortnacy, James (UG)** – Estimating illegal take of white-tailed deer over bait in east Alabama
8. **Durboraw, Tara (UG)** – Use of game cameras to survey small mammals in Auburn, Alabama
9. **Merchlinsky, Alex (UG)** – Effects of experimental warming on *Solenopsis invicta* and southeastern arthropod communities
10. **Heptinstall, Tucker (UG)** – Snake news! Road-based survey effectiveness in Everglades National Park
11. **Morgan, Abigail (UG)** – Intestinal parasites found in black-and-white ruffed lemurs (*Varecia variegata variegata*) in Ranomafana National Park, Madagascar
12. **Brownlee, Joi (UG)** – Gross domestic product as a predictor of zoonotic pathogen prevalence in cats

#### Chemistry and Biochemistry (Section K)

1. **Brown, Thomas (UG)** – Computational studies of the air oxidation mechanism of dinoflagellate luciferin
2. **De Bovi Pontes, Carolina (UG)** – Cloning, expression and purification of human mitochondrial molecular chaperone Tid1
3. **Wyss, Kevin (UG)** – An example of enhanced emission of a pyridine containing Schiff base  $Zn^{2+}$  complex
4. **Mayhugh, Jacob (UG)** – Investigating the steric contributions in helicate formation for pyrrolic superstructures
5. **Gibson, Noah (UG)** – Gallium (III) catalyzed formation of  $Cu_2O$  nanocrystals as a potential pathway for controlled growth and morphology via a hot injection synthesis
6. **Hunter, Katherine (UG)** – Characterization of tetradentate Schiff-base ligands and their uranyl complexes
7. **Channell, Kirsta (UG)** – Computational investigation of inhibition of Methyl-coenzyme M Reductase
8. **Laprocina, Karly (UG)** – Identifying a novel population in the adrenal gland cortex
9. **Ariyaratna, Isuru (G)** – Story of the super atomic  $Mg(NH_3)_{x=4,5,6}$
10. **Richburg, Chase (G)** – Understanding the unique multi-electron redox cycle of nickel dithiocarbamates and characterization of a nickel (III) intermediate
11. **Chown, Amanda (G)** – Physical and electrochemical properties of copper deficient  $CuCrO_2$  for application in Li-ion batteries
12. **Mazumder, Md Motiur (G)** – Synthesis, characterization and electro chemical analysis of Ni-dithio complexes for redox flow battery

#### Psychology (Section L)

1. **Etherton, Sarah (UG)** – Neurofunctional specialization of the human hippocampus
2. **Parsons, Lauren (UG)** – Jobs at face value? Mental accounting of job-organization characteristics
3. **Adcock, Michelle (UG)** – When risks are worth taking: The surprising relationship between maximizing and risk taking

4. **Laughlin, Barbara (UG)** – Word emotionality: Changing perception and performance
5. **Allen, Randi (UG)** – Work-family conflicts role in resource depletion of cognitive, emotional, and physical resources
6. **Johnson, Shelley (UG)** – Speaking of Auburn: Exploring dialect discrimination on and off Auburn University's campus

#### **Nutrition (Section M)**

1. **Page, Jamilah (G)** – Using intermediary relationships to support school wellness promotion
2. **Koenigs, Taylor (UG)** – Reduced AMY1 gene copy number is associated with increased BMI in children
3. **Parra, Emily (UG)** – The relationship between sleep behavior with obesity, television exposure and dinner time in children
4. **Raney, Savannah (UG)** – Development and validation of the Dietary Habits and Colon Cancer Beliefs Survey (DHCCBS): An instrument assessing health beliefs related to red meat and green leafy vegetable consumption
5. **Kuhlers, Peyton (UG)** – Validation of an *in vitro* non-alcoholic steatohepatitis Cas9 model

#### **Biological Sciences (Section N)**

1. **Courtenay, Milica (UG)** – Testing whether sex-specific senescence in the lizard, *Anolis sagrei*, translates to the cellular level
2. **Myles, Amanda (UG)** – Elucidating the role of periplasmic nitrate reductase (Nap) in *Pseudomonas aeruginosa* physiology
3. **Cronin, Jamie (UG)** – Effects of lifetime exposure of dietary methylmercury in zebra finch pancreatic function

#### **Geosciences (Section O)**

1. **Roland, Jarret (G)** – Irrigation and water use reporting in the Tennessee River valley region of Alabama
2. **Zhou, Ying (G)** – A change detection analysis of LULC changes in the Three Gorges Dam area
3. **Molla, Alamin (G)** – Urban Sustainability: A look in stormwater management at Auburn University Campus, AL.
4. **Nur, S M Shihab (G)** – Urban growth comparison of two culturally homogenous cities of South Asia: Dhaka and Kolkata
5. **Shrestha, Megha (G)** – Urban vulnerabilities of Kathmandu Valley: A case study of urban flooding in the most populated city of Nepal
6. **Eldridge, Caleb (G)** – Linking observed seismicity to crustal structure in the new Madrid seismic zone using LiDAR, gravity, and magnetic modeling

#### **Fisheries (Section P)**

1. **Salem, Shimmer (G)** – Supplementation of crystalline aminoacids at different levels to reduced protein diets in Channel Catfish *Ictalurus Punctatus*

#### **Poultry/Animal Sciences (Section Q)**

1. **Alfaro, Gaston (G)** - Gene-regulation control of muscle fatigue during beef cattle transportation with rumen-protected methionine supplementation
2. **El-Nagar, Sahar (G)** – Impact of nano-chromium chloride on animal performance, carcass characteristics, and histopathology of rabbits exposed to chronic heat stress

3. **Keel, Jake (UG)** – Effect of dietary protein source and litter condition on immune response and mitotic cell activity in the duodenum of broiler chickens at 21 days of age

#### **Veterinary Medicine (Section R)**

1. **Reyner, Claudia (G)** – Effect of tumor necrosis factor alpha on equine colony forming cell function in culture
2. **Reid, Olivia (UG)** – Overexpression of the notch intracellular domain results in abnormal adrenal development
3. **Heath, Margaret (UG)** – Immunolocalization of gonadotropin-releasing hormone in pituitary gonadotrope cells
4. **Wilson, Dylan (UG)** – The role of PEA15 in cell migration and proliferation

#### **Nursing (Section S)**

1. **Agee, Lauren (G)** – Type 1 diabetes and the closed loop system
2. **Savelle, Michael (G)** – Implementing technology to encourage lifestyle change among patients with hypertension
3. **Moss, Rachel (G)** – Improving maternal infant bond and breastfeeding adherence with skin-to-skin contact
4. **Byrd, Jenna (G)** – Improving diabetes management with technology
5. **McIntyre, Patrick (G)** – The DASH diet for management of hypertension
6. **Bryan, Rachel (G)**- Implementing an exercise program for the management of chemotherapy-related fatigue
7. **Smith, Shelby (G)**- Implementing an exercise treatment program into ADHD treatment
8. **Forehand, Marilyn (G)**- Optimizing patient expectations related to cardiac surgery
9. **Wade, Tiffany (G)**- Structured telephone support and heart failure readmission rates
10. **Rolling, Brandi (G)**- Implementation of STEADI to prevent falls in community-dwelling adults aged sixty-five years and older
11. **Hill, Nancy (G)**- Improved management of atrial fibrillation in the prevention of stroke
12. **Pitts, Amanda (G)**- Improving gestation diabetes management with technology-based intervention
13. **Hurst, Erin (G)**- Improving medication adherence in older adults with low health literacy
14. **Westberry, Ashley (G)**- Improving the management of chronic non-cancer pain through continuing education
15. **Mitchell, Sheila (G)**- Improving HbA1c using interactive technology
16. **White, Shaina (G)**- Physical restraints and delirium in the ICU
17. **Blackmon, Harold (G)**- Telemonitoring of patients with heart failure in rural areas using a smartphone app
18. **Broughton, Mohneke (G)**- Improving patient compliance among pregnant adolescents with a community-based educational plan
19. **Glass, Stacy (G)**- Action plans to improve health-related quality of life for patients with COPD
20. **Owings, Brittany (G)**- Distress and quality of life screenings of cancer patients attending support groups
21. – 28. **Undergraduate Posters**

## Oral Research Presentations – Afternoon Session

### Student Center Meeting Rooms

---

1:00 – 1:50 p.m.

---

#### Room 2216 – Crop, Soil, and Environmental Science/Agricultural Education

- **Basak, Suma (G)**- Identification of southern crabgrass (*Digitaria ciliaris*) biotypes resistant to postemergence-applied pinoxaden herbicide
- **Browne, Frances (G)**- Comparison of soybean injury and yield response to low-dose dicamba particle drift and vapor
- **Price, Katilyn (G)**- Cover crop response to residual herbicides in peanut-cotton rotation
- **Tsalickis, Alexandra (G)**- Potential use of guano core records in reconstructing historic precipitation patterns for northern Alabama

#### Room 2218 – Mechanical/Materials Engineering

- **Vahid Mohammadi, Armin (G)**- Highly stable 2D metal carbide electrode architectures for ultrafast supercapacitors
- **Muhammad, Muztahid (G)**- Fatigue crack growth prediction of 316L SS and Inconel 718 alloys fabricated using a laser powder bed fusion process
- **Gairola, Saurabh (G)**- Continuous state of charge and power fade (SOH<sub>P</sub>) estimation using a variable state Adaptive Extended Kalman Filter for lithium ion cells
- **Hinkle, John (G)**- Renewable nanosized carbon fiber production

#### Room 2222 – Poultry Science/Aquaculture

- **Buley, Riley (G)**- Integrated methods combat cyanobacterial blooms and off-flavors in the aquaculture and drinking water industries
- **Ksepka, Steven (G)**- Cryptic species of *Myxobolus* (Myxozoa: Myxobolidae): an intercellular cnidarian that parasitizes the central nervous system of native brook trout (*Salvelinus fontinalis*) in western North Carolina
- **Ovi, Fozol Korim (G)**- Effects of whole corn inclusion in pelleted feed on broiler performance and carcass characteristics
- **Thompson, Serena (UG)**- Evaluation of summer annual forage mixtures for nutritive quality and sugarcane aphid infestations in Alabama

#### Room 2225 – Humanities/History/Anthropology

- **Zinner, Max (G)**- Out and proud: Gay and lesbian organizing at Alabama state universities
- **Seemann, Lillian (UG)**- If these vessels could talk: The importance of archaeological collections management
- **Martin, Katie (UG)**- The impact of document design on alcohol-harm awareness

#### Room 2227 – Forestry and Wildlife Sciences/Horticulture

- **Duwadi, Shrijana (G)**- Fate of soil microbial communities in a loblolly pine stand inoculated with *Leptographium terebrantis*
- **Gomez- Maldonado, Diego (G)**- Nanocellulose/  $\beta$ -cyclodextrin polymer design for adsorption of microcystin-LR

- **Iglesias, Maria Celeste (G)**- Effect of biomass chemical composition on the rheological behaviour of cellulose nanofibrils (CNF) suspensions obtained from different natural sources
- **Kargar, Mahnaz (G)**- Physicochemical and nutritional properties of selected banana (*Musa* spp.) cultivars in the Southeastern U.S.

#### Room 2223 – Environmental/Agricultural Science

- **Ayers, Meredith (G)**- Geospatial mapping and analysis of the global distribution of poly- and perfluoroalkyl substances (PFAS)
- **Moore, Meredith (G)**- Drought management plans in major cities in Alabama and the Southeastern U.S.
- **El-Nagar, Sahar (G)**- Impact of irrigation and nitrogen fertilization on yield and quality of ‘Tifton-85’ Bermuda grass in the Gulf Coast region

#### Room 2326 – Social Science

- **Majokweni, Pilela (G)**- Gender and rural vitality: Empowerment through women community groups
- **Schaefer, Megan (G)**- Healing the hearts of bereaved caregivers: Impact of legacy artwork on grief in caregivers whose children died of cancer
- **Grove, Julia (G)**- Hands up, don’t shoot: Decision factors underlying the use of deadly force
- **Boutwell, Crystal (G)**- People or profit? Right-to-farm laws and their implications for rural people

---

**2:00 – 2:50 p.m.**

---

#### Room 2216 – Fisheries

- **Warren, Micah (G)**- Discovery of a new lineage of fish blood fluke (Platyhelminthes: Digenea: Schistosomatoidea) infecting coquina clams (*Donax variabilis*) and lesser electric rays (*Narcine bancroftii*) in the Gulf of Mexico
- **Fogelman, Kaelyn (G)**- Evaluating the feeding ecology of endemic freshwater mussels (Unionidae) in Central Texas using stable isotope and fatty acid analysis
- **Ruiz, Carlos (G)**- Exotic, invasive parasitic copepods (*Salmincola* spp.) infecting wild and farmed trouts (Salmonidae) in the southeastern United States

#### Room 2218 – Health Outcomes

- **Li, Chao (G)**- Risk factors of fluoropyrimidine-induced cardiotoxicity among cancer survivors: a systematic review
- **Fahim, Shahariar (G)**- Impact of antidiabetic medication use on breast cancer diagnostic characteristics
- **Mishuk, Ahmed Ullah (G)**- National trends in proton pump inhibitors (PPIS) use and patient factors associated with PPIS use in the U.S.: 2002-2015
- **Lambert, Stephanie (G)**- Understanding student’s mental illness and their problem-solving behaviors in the digital age

#### Room 2222 – Chemical Engineering

- **Shinde, Vinita (G)**- Microcapsule-based self-healing for 3D printing
- **Sannidhi, Abhinav (G)**- Multi-parameter paramagnetic particle characterization by particle tracking velocimetry and optical absorbance

- **Kim, Jung Min (G)**- Solute sorption and transport behavior of methanol and acetate in Selemion® AMV-N
- **Anderson, Luke (UG)**- Varying polymer matrix composition of engineered prostate tumor tissues to mimic the full range of tumor stiffnesses found *in vivo*

#### Room 2225 – Physics/Mathematics

- **Heath, Jonathan (G)**- First principles study of magnetoresistance in CrI<sub>3</sub>-graphene tunneling junctions
- **Das, Somak (G)**- Stochastic gradient descent method for the control of stochastic partial differential equations
- **Korchevska, Evgeniia (UG)**- On frequency synchronization in the Kuramoto networks

#### Room 2227 – Electrical/Industrial Systems Engineering

- **Azam, Nurul (G)**- A novel and universal laser-based approach for synthesis of atomically thin 2D quantum materials
- **Fadamiro, Ayokunle (G)**- Investigating multi-valued LUT architectures for improved FPGA performance
- **Mohabbati Kalejahi, Nasrin (G)**- Effective hazardous materials closed-loop supply chain network design with cost minimization and risk equity
- **Sun, Yang (G)**- Test point insertion using artificial neural networks

#### Room 2223 – Biomedical Sciences

- **Sisk, Morgan (UG)**- Planetary protection for the Europa lander mission
- **Lynd, Tyler (UG)**- Honokiol ameliorates MPP<sup>+</sup> induced neurotoxicity in an *in vitro* Parkinson's model
- **Burgess, Bethany (UG)**- Neuroprotective effects of mushrooms
- **Florus, Kacie (UG)**- The effects of phosphoprotein enriched in astrocytes-15 (PEA15) on cerebral endothelial and neuronal cell density in domestic cats

#### Room 2326 – Civil Engineering/Architecture

- **Kiernan, Michael (G)**- Modeling the cyclic softening of a mildly sensitive clay
- **Calhoun, Jessica (G)**- Stream rehabilitation and sedimentation modeling
- **Jackson, Dan (G)**- Investigation of a slope failure using seismic full waveform inversion
- **Turner, Kelly (UG)**- Modeling the influence of ground surface roughness and building attributes on the physical vulnerability of low-rise buildings to hurricane winds

---

**3:00 – 3:50 p.m.**

---

#### Room 2216 – Biomedical Science/Pathobiology

- **Omeler, Sophonie (G)**- Using a research-based gene screening panel to investigate a large African-American family
- **Kitchens, Steven (G)**- Movement of *Salmonella* in a veterinary teaching hospital
- **Hargis, Christina (G)**- High performance liquid chromatography-UV detection and validation of primaquine phosphate in penguin plasma

- **Mohin Sajib, Abdul (G)**- Precise genetic modification of canine adenovirus 2 (CAV-2) genome by CRISPER/ Cas9

#### Room 2218 – Computer Science and Software

- **Al Tekreeti, Taha (G)**- Energy-efficient consolidation of virtual machines in clouds
- **Bhattacharya, Tathagata (G)**- MOOSE: Models of I/O-intensive applications on virtual machines
- **Heckwolf, Thomas (G)**- Edge computing: moving cloud computing to IoT devices
- **Mukhopadhyay, Ujan (G)**- Use of blockchain in data provenance and version control

#### Room 2222 – Entomology

- **Bird, Gwendolyn (G)**- When do herbivorous insects compete? A phylogenetic meta-analysis
- **Chen, Zhou (G)**- Reception of human odorants inhibited by plant-derived chemicals in the yellow fever mosquito, *Aedes aegypti*
- **Bruckner, Selina (G)**- Joint forces: How do parasitic mites and neonicotinoid insecticides simultaneously affect honey bee food glands?
- **Merfa, Marcus (G)**- Advances in culturing the plant pathogen *Candidatus Liberibacter asiaticus* by culture medium optimization

#### Room 2225 – Geosciences

- **De Marchi, Leticia (G)**- Hydrocode simulations of formation of Wetumpka impact crater, Alabama
- **Emran, Al (G)**- Near and thermal infrared (NIR-TIR) spectral investigations of Siloe Patera, Mars
- **Kline, Anabelle (G)**- Ore mineralogy, geochemistry, and genesis of the Hog Mountain orogenic gold deposit, southwestern Appalachians, USA
- **Dutta, Debaleena (G)**- The socioeconomic viability of wastewater recycling and reuse in India: Household study

#### Room 2227 – Pharmacy

- **Mousa, Youssef (G)**- Amylin and pramlintide increase AD pathology in TgSwDI mouse model by modulating  $\gamma$ -secretase activity and APP processing in lipid rafts
- **Alqurashi, Thamer (G)**- Evidence of CXCR7 negative signalling to the ERK1/2 pathway in human coronary artery smooth muscle cells
- **Abdallah, Ihab (G)**- Combined etodolac and  $\alpha$ -tocopherol as a novel therapeutic approach for Alzheimer disease treatment

#### Room 2223 – Architecture

- **McPherson, Louisa (UG)**- Urban city structures in the pre-modern era
- **Osborne, Hailey (UG)**- Death by design: A premodern architectural dictionary
- **Shannon, Ian (UG)**- Urban hygge: Public space, urban design, and their impacts on mental health
- **Sardinha, Amie (UG)**- The study and comparative analysis of pre-modern vernacular architecture

#### Room 2326 – Forestry and Wildlife Sciences

- **Fay, Arielle (UG)**- Impacts of wild pigs on acorn availability as a food source for native wildlife
- **Anderson, Cullen (UG)**- Spatial effects of rural Mennonite communities on jaguars
- **Stahl, Katherine (UG)**- Evaluating contemporary conservation biology texts for bias in biodiversity representation

## Poster Session III

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

---

### Aerospace Engineering (Section A)

1. **Siwakoti, Midhan (G)**- Computational modeling of electrically actuated shape memory polymers
2. **Khan, Omer (G)**- Investigation of jet issuing from a cyclone vortex combustion chamber
3. **Shah, Syed Hassan Raza (G)**- Design of Darrieus type vertical axis water turbine for shallow water channels
4. **Silwal, Lokesh (G)**- Study of multi-rotor helicopter flowfield in close proximity of ground
5. **Ramesh Kumar, Tharikaa (G)**- Compressible bi-global instability analysis of cylindrical solid rocket motors
6. **George, Caroline (UG)**- Development of a functional ex-vivo porcine heart system to test and improve heart valve repairing techniques
7. **Compher, Tyler (UG)**- Lumped parameter modelling of cerebrovascular and cardiovascular blood flow
8. **Reyna, Aura (UG)**- Shape memory polymer programming techniques
9. **Elmore Danielle (UG)**- Transparent heart valves for improved hemodynamic testing

### Chemical Engineering (Section B)

1. **Naro, Joseph (UG)**- Synthesis and characterization of hydrogels for medical application
2. **Suresh, Joshita (UG)**- Evaluating the effects of varying prostate cancer to fibroblast cell ratios within bioengineered tumor tissues
3. **Adams, William (UG)**- New insights on the redox properties of two- and three-dimensional supported vanadium oxide catalysts: A Raman-Spectrokinetics Study
4. **Parsons, Lindsey (UG)**- Phase behavior of Manganese Dioxide ( $\text{MnO}_2$ ) nanowires in different solvents
5. **Harris, Bryanna (UG)**- Analyzing the effects of tissue geometry on engineered cardiac tissue functionality
6. **Hicks, Emma (UG)**- Assessing contractility of engineered cardiac tissue with optical flow software
7. **Hou, Xinyu (UG)**- Curing kinetics for copolymer using DSC
8. **Adams, Stephen (UG)**- Preparation and characterization of lignin-based epoxy resins
9. **Kirkpatrick, Evan (UG)**- Graphical user interface for protein engineering software
10. **Kore, Tarun (UG)**- Computational fluid dynamics study of expiratory flow in the human trachea
11. **Mobley, Alisa (UG)**- Synthesis and characterization of block-copolymers towards smart gating membranes

### Civil Engineering (Section C)

1. **Qin, Fanqi (G)**- Impact of image resolution on quantification of mineral properties and simulated mineral reactions and reaction rates
2. **Quinn, Anna (G)**- Longitudinal braking forces on bridges
3. **Prior, Elizabeth (UG)**- Investigating UAV near infrared imagery for turbidity nonitoring in small streams



4. **Brunhoeber, Olivia (UG)**- Role of mineralogy in controlling shale fracture formation
5. **Bensinger, Jacob (UG)**- Modelling of pore networks built from analysing micro-CT images of the Paluxy formation for a better understanding of its porosity and permeability evolutions

#### Electrical and Computer Engineering (Section D)

1. **Khan, Salaar (G)**- Liver fat quantification with magnetic resonance spectroscopy at 3T
2. **Mahmod, Jubayer (G)**- Remote authentication of low-cost devices using unclonable IDs
3. **Ahmadi, Zabihollah (G)**- Self-limiting laser crystallization and direct writing of 2D materials
4. **Ornee, Tasmeen Zaman (G)**- Sampling of remote estimation through queues: Age of information and beyond
5. **Mahmud, Sultan Zaman (G)**- Combined measurement of perfusion and T2 star in calf muscle at 7 Tesla MRI with dynamic exercise using projection based image reconstruction method
6. **Chowdhury, Prattay (G)**- Estimating operational age of an integrated circuit
7. **Wang, Wendong (G)**- Detecting recycled SoCs by exploiting aging induced biases in memory cells
8. **Zhang, Yuqiao (G)**- End-to-end traceability of ICs in component supply chain for fighting against recycling
9. **Elafandi, Salah (G)**- A novel laser-based approach for synthesis of two-dimensional quantum dots

#### Materials/Polymer Engineering (Section E)

1. **Wood, Liam (UG)**- Creating an antifungal paint using halloysite nanotubes
2. **Vescio, Anna (UG)**- The drug release rates topical delivery systems mixed with drug loaded halloysite nanotubes
3. **Steeve, Helen (UG)**- Optimizing stereolithography 3D printing for use with biodegradable resins

#### Mechanical Engineering (Section F)

1. **Jamshideasli, Dourna (G)**- Thermal conductivity evaluation of medium/high-temperature phase change materials for thermal energy storage by molecular dynamics
2. **Torries, Brian (G)**- Build orientation considerations in additive manufacturing fatigue life modeling
3. **Sterling, Amanda (G)**- 3D Printing quadruped orthotics: Stepping towards a brighter future
4. **Kennedy, Scott (G)**- High frequency shape memory alloy actuators
5. **Price, Morgan (G)**- The effects of footwear and orthotics on biomechanics
6. **Gomes, Chris (G)**- Experimental investigation of geometrically modified wicked heat pipes
7. **Kambhampati, Akhil Teja (G)**- Effects of cold plate mini-channel design on the effective thermal management of the non-uniform heat generation from an electric vehicle lithium-ion battery
8. **Larson, Jacob (G)**- Maximum lyapunov exponent analysis of a repetitive vertical jump task in female athletes
9. **Paudel, Basil (G)**- A rapid thermal modeling approach for additive manufacturing

#### Drug Discovery/Pharmaceutics (Section G)

1. **Fujihashi, Ayaka (UG)**- Comparison of region-specific neurotoxicity of prenatal alcohol and nicotine exposure
2. **Patrick, Madison (UG)**- Correlation of *Mtsk* inhibitory activity with chemical constituents identified by LC-MS
3. **Skarupa, Elena (UG)**- Identification of key genes influencing aggressiveness and metronomic treatment for prostate and breast cancer

4. **MacLeod, Spencer (UG)**- Therapeutic effects of mushrooms
5. **Rael, Cristina (UG)**- Novel molecules for the disruption of ErbB4 signaling: Candidate melanoma therapeutics
6. **Carlton, Mary Claire (UG)**- Investigating the neuroprotective effects of dexamethasone against MPTP-induced neurotoxicity

#### Pharmacy/Pharmacology (Section H)

1. **Akintola, Olasubomi (G)**- Non-competitive inhibition of proteasome by kinase inhibitors
2. **Chakravarti, Sayak (G)**- Comprehensive analysis of *in vitro* and *in vivo* association of somatic mutations in PSMB5 gene with proteasome inhibitor resistance in Multiple myeloma
3. **Smith, Warren (G)**- Intranasal pramlintide administration for the dissection of metabolic and cognitive outcomes of amylin-based therapies in a transgenic mouse model of Alzheimer's disease
4. **Bahauddin, Ammar (G)**- Deep tissue imaging of B16 melanoma in mice by multispectral optoacoustic tomography (MSOT)
5. **Harshan, Aishah (G)**- Therapeutic effect of non-toxic designer drugs
6. **Al Saqr, Ahmed (G)**- Cytotoxicity of hispolon in melanoma (B16BL6) cell lines

#### Forestry and Wildlife Sciences (Section I)

1. **Duan, Yanan (G)**- Investigating effect of soil moisture initialization on runoff predictability in national water model
2. **Stewart, Briana (G)**- Automated techniques for interpreting game camera images from surveys for Eastern wild turkeys
3. **Margadant, Lee (G)**- The effects of bait stations on female eastern wild turkey home range
4. **Colbaugh, Jessica (G)**- Solutions to bird window collisions: A meta-analysis
5. **McMichael, Philip (UG)**- On the valorization of local softwood biomass: production and characterization of nanofibrillated cellulose

#### Plant Pathology/Entomology/Horticulture (Section J)

1. **Naranjo, Eber (G)**- In vitro antimicrobial activity and mode of action of Zinckicide™ against *Liberibacter crescens*, a surrogate of *Candidatus Liberibacter asiaticus*
2. **Seo, Seungyeon (G)**- Comparative genomic analysis of *Fusarium* wilt isolates associated with virulence on cotton
3. **Kargar, Mahnaz (G)**- Effect of chitosan coating on tomato fruit softening
4. **Krofft, Claire (G)**- Analysis of on-site irrigation management data in five Alabama container nurseries
5. **Byrd, William (UG)**- Effect of mixed infestations on plant-mediated host location in the parasitoid *Microplitis croceipes*

#### Fisheries (Section K)

1. **Salem, Shimma (G)**- The effect of crystalline amino acids supplementation in the reduced intact protein diets on muscle growth and intestinal morphology of Channel Catfish *Ictalurus Punctatus*
2. **Fantini, Leticia (G)**- In-pond raceway production of stocker and foodsize hybrid catfish
3. **Myers, Jaelen (G)**- Impact of sperm to egg ratio on hatching success for hybrid channel catfish (*Ictalurus punctatus*) × blue catfish (*I. furcatus*) embryos

4. **Johnston, LeeAnn (UG)**- Exploring the removal of excess nutrients and heavy metals from polluted water bodies through the use of macrophytes and microorganisms

#### **Biological Sciences (Section L)**

1. **Akwa, Daniel (UG)**- Recruitment of copper in yeast Mitochondrial carrier family proteins
2. **Donohoe, Natalie (UG)**- Don't blow out the candles – preventing transmission of bacteria to birthday cakes
3. **Smith, Elizabeth (UG)**- Obesity may lead to increased survivin levels in tumors

#### **Physics/Mathematics (Section M)**

1. **Wang, Lu (G)**- Comprehensive characterization of high K dielectrics for ultra wide band gap applications
2. **Pfeifle, Adam (G)**- A high-throughput approach to the characterization of interlayer coupling in 2D heterostructures
3. **Bowers, William (UG)**- Survey and defect analysis of thin film SrTiO<sub>3</sub> h-MBE growth
4. **Unzicker, Brady (UG)**- A database to continuously record and monitor laboratory conditions in ASAPLab

#### **Kinesiology (Section N)**

1. **Blackstock, Sarah (UG)**- Determining kinetic chain efficiency among female handball athletes
2. **Corona, Katie (UG)**- Hip, knee, and ankle contribution are affected during sloped walking in individuals with ACLR
3. **Wilson, Carley (UG)**- Changes in sleep efficiency in children and adolescents with Autism Spectrum Disorder during an adapted tennis program

#### **Chemistry and Biochemistry (Section O)**

1. **Donnan, Patrick (G)**- Computational studies of a novel organometallic intermediate in radical SAM enzymes
2. **Rajakaruna, Pradeepa (G)**- The reaction between methanesulfinate and triiodide in aqueous media
3. **Yang, Yixuan (G)**- Aqueous reactions of MESNA with iodine and iodate in acidic medium
4. **Liu, Zening (G)**- Janus liposomes: Preparation and functionalization
5. **Khan, Noor Md Shahriar (G)**- Theoretical study of a complete catalytic cycle for methane to methanol transformation facilitated by metal methoxides

#### **Psychology (Section P)**

1. **Vaughn, Jacob (UG)**- Work-family conflicts role in resource depletion of cognitive, emotional, and physical resources
2. **Mitchell, Taylor (UG)**- Comparing group differences in cognitive errors in juvenile delinquent populations
3. **Gunning, Anna (UG)**- The effect of child body image on perceptions of life
4. **Conboy, Natalie (UG)**- The interactive effect of anxiety sensitivity and cognitive fusion on anxiety symptoms
5. **Hurston, Sarah (UG)**- Group treatment outcomes in trauma exposed youth
6. **Coe, Taylor (UG)**- The role of awareness in eyeblink classical conditioning to distinct and similar tones

#### **Social Science/Education (Section Q)**

1. **Putz, Abigail (UG)**- Self-efficacy of mainstream pre-service and in-service teachers for English Language Learners
2. **Marcus, Stevan (UG)**- Water contamination and infant health in west Alabama
3. **Williams, Carolina (UG)**- The expected surprise
4. **Standfield, Timothy (UG)**- Prison higher education: Impacts on father/child interaction and the effects on child school performance

#### **Human Development and Family Studies (Section R)**

1. **Cage, Benjamin (UG)**- Examination of sibling relationships in college-aged adults
2. **Calhoun, Alyssa (UG)**- Prospective associations between peer victimization, academic performance, and academic efficacy
3. **Warren, Kalyn (UG)**- Sex trafficking survivors' perspectives on relational resources
4. **Littleton, Casey (UG)**- Usefulness of a research-based parenting newsletter: A comparison of child-rearing information sources
5. **Lett, Caroline (UG)**- Barriers sex trafficking survivors face while exiting the commercial sex industry

#### **Creative Scholarship (Section S)**

1. **Shorts, Noel (UG)**- Cultural appropriation vs appreciation in illustration
2. **Brunner, Pate (UG)**- A musical and historical analysis of jazz trombone performance and its technical adaptation in the bebop era and beyond

#### **Nursing (Section T)**

1. **McCrary, Joshua (G)**- Simulated learning in new graduate registered nurses
2. **Jackson, Kayla (G)**- Staff perceptions of animal assisted therapy in children with intellectual disabilities
3. **Minor, Jessica (G)**- Diabetic noncompliance: The effect of culturally-appropriate education on diabetic outcomes
4. **Dailey, April (G)**- Improving education of patients with heart failure using mobile devices
5. **Darnell, Amy (G)**- Mental health first aid: Promoting integrated care through nursing education
6. **Osbourne, Kendall (G)**- Antihypertensive medication adherence and blood pressure control
7. **Rowe, Danielle (G)**- Improving standardized hand-off report in the medical intensive care unit
8. **Harrell, Whitney (G)**- Lending a hand to caregivers in need
9. **Thompson, Maranda (G)**- Group-based education for diabetes mellitus type 2
10. **Dutton, Asia (G)**- Premature infant post-discharge: Preparing caregivers for the transition
11. **Bailey, Frankquenetta (G)**- Dyslipidemia in the elderly
12. **Fortner, Molly (G)**- Exploring the use of digital asthma action plans on adolescent asthma management
13. **Harsha, Mallory (G)**- Exploring adherence to medications using weekly telehealth calls to patients with congestive heart failure
14. **Choi, DaSom (G)**- Pain management for osteoarthritis patients
15. – 27. **Undergraduate Posters**