

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)

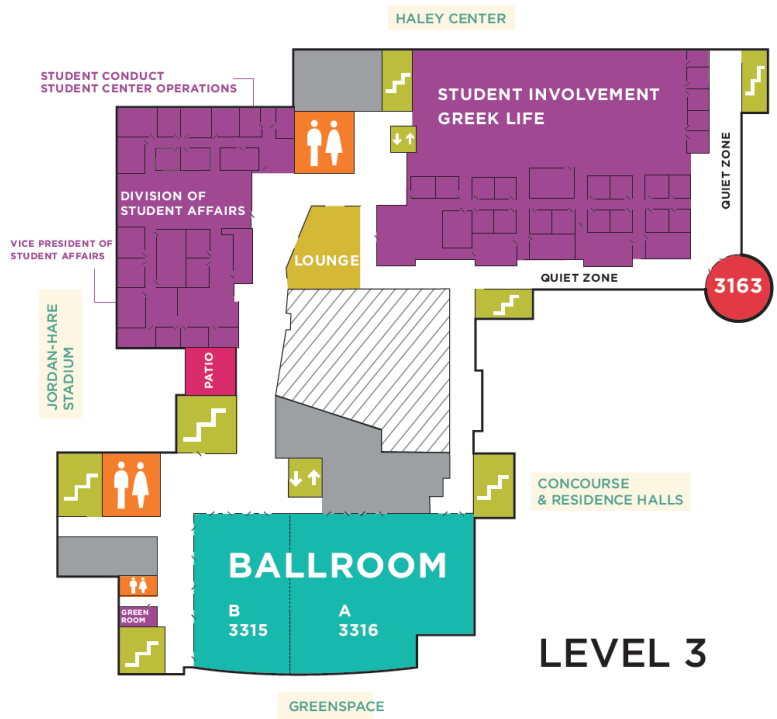
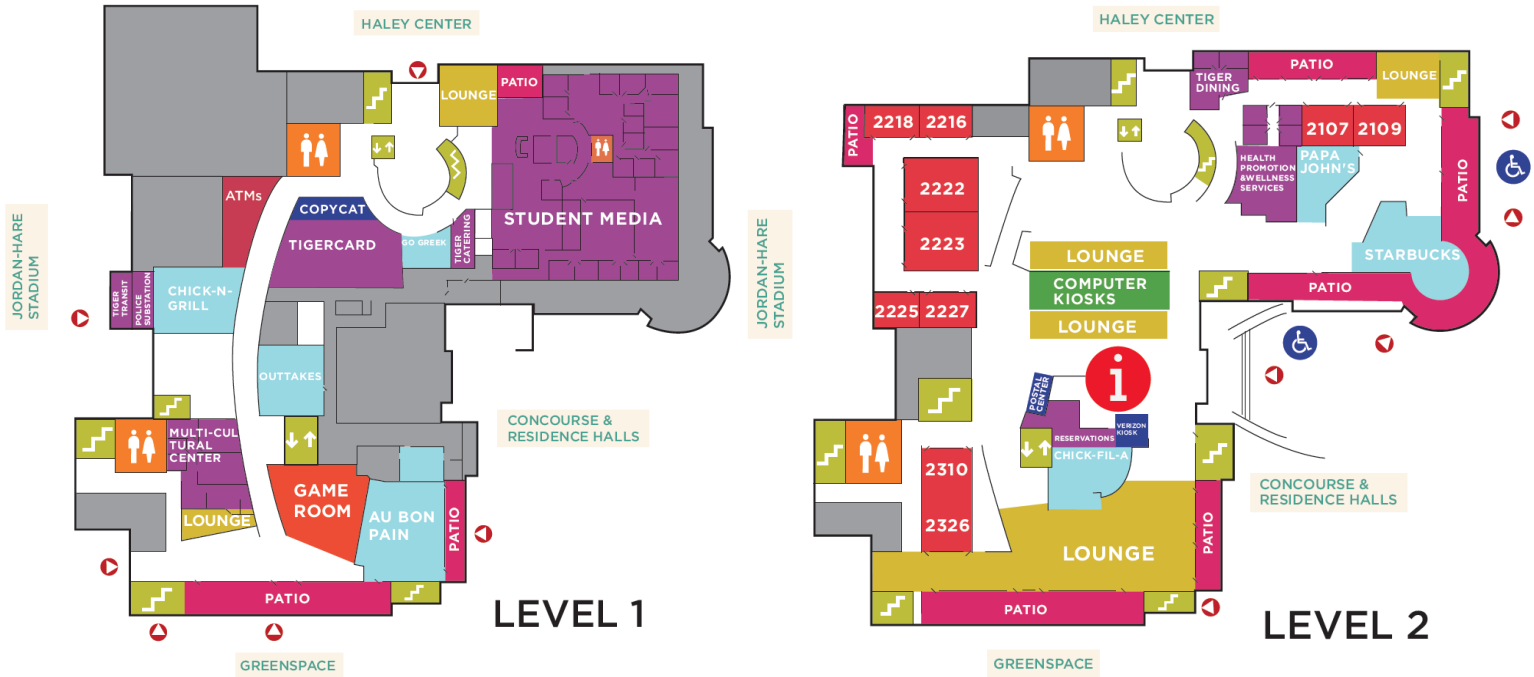
1:00 p.m. – 3:00 p.m.

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)

Map of Auburn University Student Center



- | | |
|-----------------|------------------|
| FOOD VENUE | BATHROOM |
| MEETING ROOM | STAIRS |
| OFFICE | ELEVATOR |
| COMPUTER KIOSKS | UTILITY |
| ATMs | POINTS OF ENTRY |
| BALLROOM | INFORMATION DESK |
| GAME ROOM | RAMP |
| LOUNGE | |
| PATIO | |
| RETAIL | |

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 photoassisted 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

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 gobbler 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) – *BRC A1* and *BRC A2* 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 A β production in a hippocampal cell model

9:00 – 9:45 a.m.

Room 2216 – Humanities

- **Zinner, Max** (G) – Equal justice under law: The history and consequences of Gay Lesbian Bisexual Alliance v. Sessions, 1992-1997
- **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*

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 *Scheffersomyces 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 *Myxobolus 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 $Ti_3C_2T_x$ MXene 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.

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 2227 – Fisheries/Aquaculture/Natural Resources

- **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

Room 2223 – Biosystems/Industrial Engineering

- **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 saccharoperbutylacetonicum* N1-4 by means of the expression of exogenous 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

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 Zn²⁺ 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

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. **Wietstruk, 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, Craige** (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) – PPAR γ 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 PPAR γ dependent mechanism suppresses A β 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

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-CNF) as an additive in drilling fluids
8. **Gomez Maldonado, Diego (1)** (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 photoinitiator for use in tissue engineering

6. **Lawrence, Kaitlyn** (UG) – New structural and electronic insights on supported $(VO_x)_m/(M_1O_y)_n/(M_2O_z)_{bulk}$ 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. **Ilojesi, Chidera** (G) – Critical knowledge gaps for subsurface compressed energy system (CES) in porous formation
6. **Anjekar, 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

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. **Ariyaratna, Isuru** (G) – A theoretical exploration of the chemical bonding of $\text{Be}(\text{CX})_3$ [X = O, S, Se, Te, Po], $\text{Be}(\text{NH}_3)_3$, and $\text{Be}(\text{PH}_3)_3$
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

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 (1) (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

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. **Corbitt-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 nematocide Velum Total to Reniform Nematode (*Rotylenchulus reniformis*)

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 cassiicolin-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.

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 terebrantis* 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

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 copyly 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

17

(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 2223 – 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, Tharika** (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
6. **Lenzie, Andrew** (UG) – The biofluid mechanics of expiratory central airway collapse in patients with chronic obstructive pulmonary disease.
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-whited 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 CO₂ 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, Naiqing** (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

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.
7. **Rodriguez, Marisa** (UG) – Understanding and Controlling the Growth of Algae Species on Nanocomposites.
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 dehydroaromatization 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

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)

1. **Sahrman, Patrick (UG)** – Electron-hole hopping as catalytic self-preservation: How catalase-peroxidase from *M. tuberculosis* avoids the perils of peroxide decomposition.
2. **Brown, Thomas (UG)** – Computational studies of the air oxidation mechanism of dinoflagellate luciferin
3. **Yates, William (UG)** – Ligand Design: Effects of electronics on Schiff base ligands and derivatives
4. **Grundhoefer, JP (UG)** – Synthesis and Characterization of Transition Metal Complexes for Antimicrobial Application

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 eyeblink 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

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. **Preisser, Matthew** (UG) – Anaerobic digestion of poultry litter for biogas production
3. **Chaump, 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. **Jamshideasli, 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
7. **Brannon, William** (UG) – Rapid Prototyping of Electronics Cooling Nozzle Arrays

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
4. **Frey, Kayla** (UG) – Variations in bone quality with reproductive performance in house mice.
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)

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. **Nautiyal, 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 wet-spun 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 Enteseal 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