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)
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

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

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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 β-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 *A. 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 – CADC/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**
- Liyanapathiranage, 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**
- Ariyarathna, Isuru (G) – Aufbau rules for solvated electron precursors: The case of Li(NH$_3$)$_4$ and Na(NH$_3$)$_4$
- Combs (Bredar), Alexandria (G) – Evidence and influence of copper vacancies in p-Type CuGaO$_2$ mesoporous films

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• 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
• Carrisosa, 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, Yaehi (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, Abbishek (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

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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$_2$/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
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. **Habbit, 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/Polymers Engineering (Section D)

1. **Yang, Wen (G)** – Nanoplasmon ruler for visualizing how cells “talk”
2. **Cai, Yuxin (G)** – Magnet patterned superparamagnetic Fe3O4/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$_2$/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 β-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, 10th 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

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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. Ingros, Gabrielle (UG) – Evidence-based design approach to Icelandic Hospital
5. Kelley, Samantha (UG) – Public art project
6. Olver, Callin (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 (Acaria: Tetanychidae) 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 asahinai (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

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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 1st 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

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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 PPARg 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

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(G) = graduate student presentation
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

(UG) = undergraduate student presentation
(G) = graduate student presentation
3. Hassani, Ehsan (G) – Regenerative ternary oxide sorbents for long-term CO₂ 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, Ilojesi (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. Anjikar, 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, Soham (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 β-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

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(G) = graduate student presentation
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 Zn²⁺ complex
4. **Mayhugh, Jacob (UG)** – Investigating the steric contributions in helicate formation for pyrrolic superstructures
5. **Gibson, Noah (UG)** – Gallium (III) catalyzed formation of Cu₂O 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. **Ariyarathna, Isuru (G)** – Story of the super atomic Mg(NH₃)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 CuCrO₂ 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, Alamim (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. **Shresta, 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, Shimma (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. **Reynor, 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, Katalyn (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) 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/β-cyclodextrin polymer design for adsorption of microcystin-LR

(UG) = undergraduate student presentation  
(G) = graduate student presentation
• 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: Schistosomatoida) 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$_3$-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+ 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 γ-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 α-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

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(G) = graduate student presentation
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 (MnO₂) 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 monitoring in small streams

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(G) = graduate student presentation
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. Jamshidesali, 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 Msk 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 hispapol 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

(UG) = undergraduate student presentation  
(G) = graduate student presentation
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\textsubscript{3} 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)**

(UG) = undergraduate student presentation  
(G) = graduate student presentation
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, Kelyn (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. **Bailey, Frankquenetta (G)** - Dyslipidemia in the elderly
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19. **– 27. Undergraduate Posters**