



Schedule-at-a-Glance

Friday, April 1

10:00 AM – 12:00 PM	Executive Committee Meeting	<i>Alumni Room, Walker Conference Center</i>
12:00 PM – 5:45 PM	Registration	<i>Jones Science Center Entrance</i>
1:00 PM – 3:00 PM	Oral Presentations	<i>Jones Science Center</i>
3:00 PM – 3:30 PM	Networking Social with Vendors	<i>Jones Science Center Lobby</i>
3:30 PM – 5:30 PM	Oral Presentations	<i>Jones Science Center</i>
6:00 PM	Banquet & Keynote Address	<i>Walker Conference Center</i>
8:00 PM	“Star Glow” Dessert Social	<i>HSU Reynolds Science Center</i>

Saturday, April 2

7:30 AM – 8:30 AM	Ouachita River Bird Walk	<i>Walker Conference Center</i>
8:30 AM – 9:00 AM	Registration	<i>Walker Conference Center</i>
9:00 AM – 11:00 AM	Poster Presentation Brunch	<i>Walker Conference Center</i>
11:00 AM – 11:30 AM	Judges Meeting	<i>Walker Lounge</i>
11:30 AM	Business Meeting & Awards	<i>McBeth Recital Hall</i>
12:30 PM	Food Trucks! (not included in meeting fee)	



Schedule of Scientific Sessions

Oral presentations will start at the times indicated. Time is allowed for a 15-minute presentation, followed by 3-4 minutes of questions and answers with a few minutes allowed for the next presenter to set up. Participants may freely move between the presentation rooms as desired.

*Indicates to be judged for undergraduate student awards

** Indicates to be judged for graduate student awards

Biological Sciences Session 1

Room JSC 125 - Friday, April 1

Presider: Hope Murphy

#	Time	Presenters	Title
BIO 1	1:00 PM	Stan Trauth	Distal Urogenital Anatomy in the Male Wood Frog, <i>Lithobates sylvaticus</i> (Anura: Ranidae)
BIO 2	1:20 PM	Alicen Wilcox*	Microglia Polarize in Response to Transactive Response DNA-binding protein-43 (TDP-43) and Recover After Removal of the Stimulus
BIO 3	1:40 PM	Douglass Barron	School Mask Mandates Decrease Covid-19 Transmission in the Schools and Surrounding Communities
BIO 4	2:00 PM	Allison Litmer**	Influence of Temperature on Passage Rate in <i>Sceloporus consobrinus</i> , With Comparison to Congeners
BIO 5	2:20 PM	Stan Trauth	Seasonal Gonadal Histology from a Small Sample of the Frecklebelly Madtom, <i>Noturus munitus</i> (Siluriformes: Ictaluridae), from Mississippi
BIO 6	2:40 PM	Grace Tidwell*	Bird Diversity & Abundance in Relation to Habitat Complexity at Jack Mountain Wildlife Management Area

STEM Ed Curriculum & Instruction/Psychology & Social Science

Health & Biological Sciences Session

Room JSC 234 - Friday, April 1

Presider: Hyland Alfonso

#	Time	Presenters	Title
STEM ED 1	1:00 PM	Christin Pruett	Not Just For Mean Tweets: Twitter Posters to Engage Students and Refine Communication Skills
STEM ED 2	1:20 PM	James Fetterly	Impacting Mathematical Creativity: Problem Posing vs. Divergent Thinking
STEM ED 3	1:40 PM	Ruth Plymale	Yes You Can: Design and Implementation of Freshman Course-Based Research Experiences
PSYCH 1	2:00 PM	Isabella Wood*	A Multivariate Comparison of Stigmatization of Individuals with Schizophrenia, Binge Eating Disorder, and Intellectual Disabilities
HEALTH 1	2:20 PM	Cannon Fisher*	A Systematic Review on Malnutrition Assessments and Interventions for Elderly Persons
BIO 12	2:40 PM	Hyland Alfonso*	Comparing Genetic Diversity Among Populations of Rock Sandpiper (<i>Calidris ptilocnemis</i>)



Computer Science/Math & Statistics/Physics & Engineering Session

Room JSC 325 - Friday, April 1

Presider: Kyla Williams

#	Time	Presenters	Title
CSCI 1	1:00 PM	Rami Alroobi	Multi-Agent Reinforcement Learning Game Playing
MATH 1	1:20 PM	Ryan Holley**	Validation and Verification of Turbulent Mixing due to Richtmyer-Meshkov Instability of an Air/SF ₆ Interface Using Front Tracking method.
PHYS/ENG 1	1:40 PM	Gage Miller*	Creating Collimated and Focused Diode Laser Beams
PHYS/ENG 2	2:00 PM	Dan Kiula**	Solid-State Dewetting Surface and its Application to DNA Detection
PHYS/ENG 3	2:20 PM	Thomas Marshall*	Validation of 3D Printed Stabilization of Paraffin Fuel Grains of Hybrid Rockets
PHYS/ENG 4	2:40 PM	Noah Fitzpatrick*	Acoustic Characterization of 3D Printed Porous Materials

Chemistry & Chemical Engineering Session 1

Room JSC 334 - Friday, April 1

Presider: Josh Spiva

#	Time	Presenters	Title
CHEM 1	1:00 PM	Emily Pickering*	Virtual Ligand Screening and Docking to Identify Possible Antagonists to Be Used as Antidepressants That Target the Kappa Opioid Receptor
CHEM 2	1:20 PM	Jessica Garrett*	System Xc- Inhibitors Provide Effective Neuroprotection in Vitro
CHEM 3	1:40 PM	Taylor Canada*	Extracting Volatile Organic Compounds from Arkansas Honey
CHEM 4	2:00 PM	Aubree Seibert*	The Photodynamic Therapy Potential of a Novel Water-Soluble Gallium Porphyrin
CHEM 5	2:20 PM	Andrew Tarlton*	Alternative to Wound Dressings: Developing a Biodegradable Collagen Analog
CHEM 6	2:40 PM	Chiraz Soumia Amrine	Precursor-Directed Biosynthesis of New Verticillin Analogues

3:00-3:30 PM

JSC Lobby

Networking Social/Break



Biological Sciences Session 2
Room JSC 125 - Friday, April 1
Presider: Hope Murphy

#	Time	Presenters	Title
BIO 7	3:30 PM	Bre Bishop	Cultured Microglia Exhibit Time-Dependent Recovery After Ethanol Exposure
BIO 8	3:50 PM	Morgan Pelley*	The Influence of Temperature and Body Size on Food Consumption in Prairie Lizards (<i>Sceloporus consobrinus</i>)
BIO 9	4:10 PM	Stan Trauth	Seasonal Testicular Histology and Acystic Lobular Spermatogenesis in the Western Lesser Siren, <i>Siren intermedia nettingi</i> (Caudata: Sirenidae)
BIO 10	4:30 PM	Jeffrey Shaver	Effect of Soil Microbiome Succession on the Prevalence of Antibiotic Resistance in Massard Prairie
BIO 11	4:50 PM	Emily Brown*	A First Description of Body Temperature Acclimation in Wolf Spiders from Arkansas Reveals a Difference in Acclimation Time to Warm or Cold Temperatures

Wildlife Sciences & Ecology Session
Room JSC 234 - Friday, April 1
Presider: Aidan Doss

#	Time	Presenters	Title
WILD/ECO 1	3:30 PM	Renn Tumilson	Yellow-rumped Warblers (<i>Setophaga coronata</i>) Sipping Sap from Sapsucker Wells
WILD/ECO 2	3:50 PM	Jimmie Harper*	A Study of Dental Pathology in River Otters (<i>Lontra canadensis</i>) in Arkansas.
WILD/ECO 3	4:10 PM	Kyra Joiner*	Smooth Softshell Turtle (<i>Apalone mutica</i>) Burrowing Site Selection in Response to Water Depth and Temperature.
WILD/ECO 4	4:30 PM	Ishita Kanitkar	Is Artificial Color Needed to Attract Hummingbirds to Feeders?
WILD/ECO 5	4:50 PM	Renn Tumilson	Distribution and Breeding of the Black-Bellied Whistling-Duck (<i>Dendrocygna autumnalis</i>) in Arkansas, With a Brief Chronology of Distribution and Breeding in Southeastern United States.



Physics & Engineering/Math & Statistics/Chemistry & Chemical Engineering

Health Sciences Session

Room JSC 325 - Friday, April 1

Presider: Aiiryel McCoy

#	Time	Presenters	Title
PHYS/ENG 5	3:30 PM	Mohamed Adawi**	Surface Characterization of Particulate Dust Subjected to Dew-Induced Cementation
MATH 2	3:50 PM	Yeil Kwon	Bayes, Empirical Bayes, and Nonparametric Empirical Bayes: Variance Estimation for Multiple populations
CHEM 12	4:10 PM	Qinglong Jiang	Hybrid Halide Perovskites Materials and Nano Materials for Solar Cells, Light Emitting and Other Electric-Optical Devices
CHEM 13	4:30 PM	Charles Mebi	Mimicking Metalloenzyme
HEALTH 2	4:50 PM	Gwyneth Hadasa*	The Effects of COVID-19 on Childhood Obesity: A Quasi-Systematic Review

Chemistry & Chemical Engineering Session 2

Room JSC 334 - Friday, April 1

Presider: Josh Spiva

#	Time	Presenters	Title
CHEM 7	3:30 PM	Cori Clower*	Comparative Analysis of Drug Inclusion Techniques in Nanofiber Mats
CHEM 8	3:50 PM	Sarah Snodgrass*	Arc Induction Assay as a Convenient Method of Monitoring Excitotoxic Levels of Glutamate
CHEM 9	4:10 PM	Kayla Whittington*	Developing Novel Water-Soluble Porphyrins for Potential Use as Photosensitizers in Photodynamic Therapy
CHEM 10	4:30 PM	Taylor Coulson*	Statistical Analysis of Proton NMR of Honey
CHEM 11	4:50 PM	Reagan Neal*	Exploration Into Modern Wound Healing: Synthesis of a Biomimetic Polymer

6:00-7:30 PM

Walker Conference

Banquet & Keynote Address

8:00-10:00 PM

HSU Reynolds Science Center

“Star Glow” Dessert Social



Poster Presentation List

Presenters may set up their posters in the Walker Conference Center starting at 8:30 AM. A finger food brunch buffet will be available for attendees starting at 9 AM.

*Indicates to be judged for undergraduate student awards

** Indicates to be judged for graduate student awards

Saturday, April 2 9:00-11:00 AM Walker Conference Center

#	Presenters	Title
BIO 13	Emily Andrews	Ensemble Perception of Semantic Information from Perceptually Defined Sets
BIO 14	Mindy Farris	Steroid Signaling Mediates Longevity Responses to Dietary Restriction and Nutrient Availability in <i>C. elegans</i>
BIO 15	Victoria Perez*	Antimicrobial Properties of Hops Alternative Worts
BIO 16	Kamryn Humphrey*	The MAP kinase effectors, TAOK1, TAOK2, and TAOK3, are Differentially Expressed During Early Embryogenesis in <i>Xenopus laevis</i> and May Play Critical Roles in Gastrulation.
BIO 17	Ragupathy Kannan	Antibacterial Properties of Horsehair Fungus (<i>Marasmius</i>) in Tropical Bird Nests
BIO 18	Ty Say*	A Survey of Native Ticks and their Pathogens in Arkansas
BIO 19	Brandie Tate	Determining Species Delimitation of Sisyrrinchium (<i>Iridaceae</i>) in Arkansas Using Genomic and Phylogenetic Approaches
BIO 20	Mark Hairston*	Ticks and Tick-Borne Pathogens in Feral Hogs in Southeast Arkansas
BIO 21	Tyneshia L. Kilgore*	Energy Content of Seeds of Switchgrass (<i>Panicum virgatum</i>) from the Diet of Mourning Doves (<i>Zenaida macroura</i>) from Southeastern New Mexico
BIO 22	Melanie Joan*	Assessing the Effects of Retinoic Acid on the Development of <i>Daphnia magna</i> .
BIO 23	Carly G. Orr*	From Function to Families: The Process of Annotating a Bacteriophage Genome
BIO 24	Elijah Christenson	Actinobacteriophage Isolated in Fall 2021 from Farm Soil Samples
BIO 26	Grace Tidwell*	Bird Diversity & Abundance in Relation to Habitat Complexity at Jack Mountain Wildlife Management Area
BIO 27	Reese Chesshir*	The Effects of Light Wavelength and Gravity on <i>Physarum polycephalum</i> Growth
BIO 28	Seth Curl*	Crosstalk Between Vitamin D Receptor Signaling and Glucocorticoids in Musculoskeletal Induced Atrophy
BIO 29	Taylor Barnhart*	The Effects of Light Intensity and Cell Structure on the Cultivation of <i>Arthrospira platensis</i>
BIO 30	Thomas Harrington*	The Effects of Gibberellic Acid and Light on <i>Brassica rapa</i> Growth and Development
BIO 31	Whit Lawrence	Investigating Kombucha: The Effects of Honey and Green Tea on Microbes



Arkansas Academy of Science, 105th Meeting, April 2022

BIO 32	David Bowles	Additional Distributional Records for a Rare Caddisfly in the Ozarks, <i>Frenesia missa</i> (Milne) (Trichoptera: Limnephilidae)
BIO 33	Brian Beto*	A Descriptive Analysis of Venom Protein Variation in the Wolf Spider Genus <i>Rabidosa</i> in Arkansas Suggests the Need for Further Exploration of Venoms in Common Spiders
BIO 34	Claire Burton*	Exposure to Iron and Copper in <i>Caenorhabditis elegans</i> Mutants Produces Elevated Levels of Reactive Oxygen Species
BIO 35	Eliana John*	Free Radicals Promote Prolonged Activation of Epidermal Growth Factor Receptor in Murine Microglial Cells
BIO 36	Emily Fronck*	Qualitative Comparisons of Venom from Individuals of the Wolf Spider <i>Rabidosa rabida</i> from Arkansas Suggest the Potential for Protein Variation
BIO 37	Mariel Vargas*	NMES-1 Modulates Microglial Activation in Response to Iron and Amyloid-Beta
BIO 38	Sydney Reynolds*	Levetiracetam Alters the Response of Microglia to Amyloid Beta
CHEM 14	Sarah Vue*	Development of Difunctional Imidazole into Ionic Liquid Monomer
CHEM 15	Alaina Glover	Extraction and Analysis of Medicinal Biomolecules in Witch Hazel
CHEM 16	Keionna Banks*	Nanocomposites for Wearable UV Smart Sensors for Detecting Lupus Photosensitivity
CHEM 17	Lauren Taylor*	Determination of Fatty Acid Concentrations in Algae
CHEM 18	Ganna Lyubartseva	Women in Chemistry: Twenty First Century Trend in Nobel Prize
CHEM 19	Aiiryl McCoy*	Analysis of Basic Materials' Effects on a Polycarbonate Museum Object
CHEM 20	Emma Rouse*	The Development of a New Water-Soluble Zinc Porphyrin, ZnTPP-3AP, and its Potential as Photodynamic Therapy Agent
CHEM 21	Joshua Spiva*	Incorporating a Bioengineered Protein and a Collagen Analog into Modern Wound Dressings
CHEM 22	Keren Fernandez Cruz*	BPA Presence in Daily Use Panty Liners and Its Ability to Disrupt Normal Reproductive Functioning
CHEM 23	Sidney Pigott*	The Potential Advancement of Photodynamic Therapy using a Novel Water-soluble Zinc Porphyrin, ZnTPP-5AP
CHEM 24	Harry Jeffrey*	Biomimetic Poly(Acrylic Acid) Fiber Scaffolds for Biomedical Applications
CHEM 25	Alaina Ivers*	Docking Low-Energy Ligand Conformations to the μ -Opioid Receptor to Verify the Model's Reliability
CHEM 26	Theresa Thomas*	Computational Drug Design to Target the Cannabinoid Type 2 Receptor to Develop Safe and Effective Pain Medication
CHEM 27	Kennedy White*	Development of Cadmium Detecting PADs for the Use of Human Milk
CHEM 28	Lara Kockaya*	Investigating the 3M3SH Absorbance Capacity of β -Cyclodextrins
CHEM 29	Darby Mohon*	Determination of Viability of <i>Thymus vulgaris</i> in Martian Regolith
CHEM 30	Harley Hines*	Chemical and Biological Investigation of <i>Sambucus canadensis</i> Anthocyanins
CHEM 31	Maria Ines Dow*	Chemical and Biological Investigations of <i>Salvia officinalis</i>



Arkansas Academy of Science, 105th Meeting, April 2022

CHEM 32	Vy Nguyen*	The Chemical and Biological Studies of <i>Bixa orellana</i> Organic Extract
WILD 6	Kaleigh Thomas*	Tree Canopy Cover Influences Habitat Use of Breeding Birds at Jack Mountain Wildlife Management Area
WILD 7	Kelsey Bester	Insect Presence and Prevalence of Birds at Jack Mountain Wildlife Management Area
WILD 8	Jorista Garrie	Factors Affecting the Sex Ratio of White-tailed Deer (<i>Odocoileus virginianus</i>) Fetuses in Arkansas
CSCI 2	Magnus Gray**	Visualizing Physical and Mental Health Patterns of US Children and Adolescents using the National Survey of Children's Health
CSCI 3	Sathvik Prasad Palyam	A Web User Interface Image Processing Tool for Classifying Extent of Dementia Across Alzheimer's
PHYS 6	Hinata Yokoyama*	Study of Optical Properties and Structure of a Cu ₂ O Thin Film by Chemical Bath Deposition With Graphene
PHYS 7	Ole Kjørholt*	Autonomous Robot
PHYS 8	Manoj Shah	Ordering-Disordering Analysis of GeSn Films Using Raman Spectroscopy
PHYS 9	Nilesh Chaudhari**	Fluidization Behavior of Solid Waste Materials
PHYS 10	William Frey*	Modernizing Motorcycle Instrumentation and Display
PHYS 11	Bennett Hasley & Jimmy Castro*	Using Emitted Vibrational Frequencies to Determine Watermelon Sweetness
PHYS 12	Ryan Pickelman & Adrian Salazar-Rivera*	Optimizing a Passive-Tracking Solar Panel System
PHYS 13	Abu Sayed Mohammad Akid**	Influence of Reclaimed Fly Ash and Waste Tire Rubber as Supplementary Cementitious Materials on Properties Of Concrete
PHYS 14	Fares Tarhuni**	Using of Rice Husk Ash (RHA) and Hydrated Lime as Stabilizing Agents for Poor Subgrade Soils and Embankments
PHYS 15	Mohammad Najmush Sakib Oyan**	Evaluation of Moisture Resistance and Chemical Properties of Warm Mix Asphalt
PHYS 16	Nafis Sadik	Analysis of Electric Grid Resilience Using Bayesian Network
PHYS 17	Rupesh Mahat**	Seismic Hazard Analysis for Northeast Arkansas (NEA)
HEALTH 3	Genesis Jackson	How Living in Rural SE Arkansas Increases the Risk of Developing Diabetes
HEALTH 4	Keyshawn Harris & Alex Boone	Perceptions of Quality Care by Patients Utilizing an Urban Emergency Department
HEALTH 5	Re'Nyah Vincent	Evaluating How Living in Highly Polluted Areas Result in Ineffective Asthma Control
HEALTH 6	Morgan Schuster*	Characterizing Adeno Associated Virus Based GCaMP Transfection in Organotypically Cultured Pituitary Glands
HEALTH 7	Johnna Berryhill*	Impact of Maternal Factors on Infant Mortality in Arkansas: Evidence from the Claims Database
STEM ED 4	A M Mashrur Jauwad**	How To Enhance System Skills of STEM Students
ASTRON 1	Hypatia Meraviglia*	Determining Ni-56 Yields and Bolometric Lightcurves of Peculiar Type II-P Supernovae
ASTRON 2	Julia Hambuchen	Europium Abundances w/Variied Halo-Star Parameters