

26th Annual Celebration of Student Research and Creative Endeavors

> Session Schedule April 19, 2023



Event Information

Doors Open at 8:30am. All presentations occur on the 4th Floor Plemmons Student Union. There is a short break between 12:00-1:00pm Poster Competition Awards are announced at 12:45pm.

Poster Sessions include 2 sessions in the morning and 2 sessions in the afternoon. Morning Session 1 - 9:00am -10:30am. This session also includes the Poster Competition where Undergraduate and Graduate students were selected to participate based on reviews of their abstracts. They will present their poster to a panel of judges and the top 3 in each category will be selected.

Morning Session 2 - 10:40am -12:00pm Afternoon Session 1 - 1:00pm - 2:30pm Afternoon Session 2 - 2:40pm - 4:00pm

Poster boards are 4 feet by 4 feet. Numbers are assigned to posters - please look for your poster number upon arrival. Please arrive at least 10 minutes before your presentation to place your poster on the assigned board.

Oral Sessions include 2 sessions in the morning and 3 sessions in the afternoon.

Oral Session 1 - 10:00am - 11:00am Oral Session 2 - 11:00am - 12:00pm Oral Session 3 - 1:00pm - 2:20pm Oral Session 4 - 2:40pm - 4:00pm Oral Session 5 - 2:40pm - 3:40pm

Oral presentations are 20 minutes in length allowing for at least 5 minutes for questions. Please arrive at least 10 minutes before your scheduled session in order to upload your presentation. Please stay for the entire session.

Annual Poster Competition - 9:00am-10:30am - Parkway Ballroom

Graduate Student Poster Competition Finalists	
Jonathan Farrior, Nutrition Graduate Student Faculty Mentor: Danielle Nunnery, Nutrition and Health Care Management Co-Author(s): Manan Roy PhD; Maggie Sugg PhD Title: USING GIS SERVICE AREA ANALYSES TO IDENTIFY CHARACTERISTICS OF WIC INACCESSIBLE REGIONS	PC 1
Hope E Gamwell Muscarello, Exercise Science Graduate Student Faculty Mentor: Jared Skinner, Public Health and Exercise Science Co-Author(s): Olivia Chapman, Jaden Tuitt Title: ENHANCING LOCOMOTOR LEARNING WITH MOTOR IMAGERY AND TRANSCRANIAL DIRECT CURRENT STIMULATION	PC 2
Leigha Henson, Biology Graduate Student Faculty Mentor: Howard Neufeld, Biology Co-Author(s): N/A Title: PHOTOSYNTHETIC MEASUREMENTS OF SEVERAL COMMON MOSS SPECIES OF THE SOUTHERN APPALACHIAN MOUNTAINS	PC 3
Abigail Hockett, Biology Graduate Student Faculty Mentor: Mary Kinkel, Biology Co-Author(s): Cort Bouldin Title: THE EFFECTS OF ANEUPLOIDY DURING EMBRYONIC DEVELOPMENT	PC 4
Robert Onjiko, Biology Graduate Student Faculty Mentor: Maryam Ahmed, Biology Co-Author(s): N/A Title: EFFECTS OF MODERATE MALNUTRITION DURING PREGNANCY ON NEONATAL IMMUNITY TO MALARIA	PC 5
Erik Rangel Silva, Biology Graduate Student Faculty Mentor: Andrew Bellemer, Biology Co-Author(s): N/A Title: THE ROLE OF RNA BINDING PROTEINS AND CRISPR/CAS9 AS A GENE EDITING TOOL IN DROSOPHILA NOCICEPTION	PC 6
Bryan Taylor, Exercise Science Graduate Student Faculty Mentor: Jared Skinner, Public Health and Exercise Science Co-Author(s): Alan Needle, needlear@appstate.edu Title: COMBINED EFFECTS OF TRANSCRANIAL DIRECT-CURRENT STIMULATION AND STATIC STRETCHING ON HIP RANGE OF MOTION	PC 7

Sarah Ulrich, Geography Graduate Student Faculty Mentor: Margaret Sugg, Geography and Planning Co-Author(s): N/A Title: SPATIAL ANALYSIS OF MATERNAL MENTAL HEALTH CONDITIONS IN NORTH CAROLINA: A RETROSPECTIVE BIRTH COHORT STUDY	PC 8
Cameron Welsh, Physics Graduate Student Faculty Mentor: Zach Russell, Physics and Astronomy Co-Author(s): Dr. Sayan Chandra Title: INEXPENSIVE SURFACE PLASMON RESONANCE SETUP FOR MATERIAL ANALYSIS	PC 9
Sophia Ryan, Geography Graduate Student Faculty Mentor: Margaret Sugg, Geography and Planning Co-Author(s): Jennifer D Runkle, Bhuwan Thapa Title: GREENSPACE AND ADOLESCENT MENTAL HEALTH: INVESTIGATION OF SOCIO-DEMOGRAPHIC EFFECTS MODIFIERS AND RECOMMENDATIONS FOR COMMUNITY-LEVEL MENTAL HEALTH INTERVENTIONS	PC 10
Undergraduate Student Poster Competition Finalists	
Shamsuddin Ahmed, Geology Undergraduate Student Faculty Mentor: Scott Marshall, Geological and Environmental Sciences Co-Author(s): R Shane McGary Title: USING ELECTRICAL RESISTIVITY IMAGING TO DETECT SUBSURFACE VOID SPACES AND GROUNDWATER FLOW LINKED TO CAVE FORMATION IN THE WATER SINKS AREA, HIGHLAND COUNTY, WEST-CENTRAL VIRGINIA, USA	PC 11
Noah Caldwell, Geology Undergraduate Student Faculty Mentor: William Armstrong, Geological and Environmental Sciences Co-Author(s): n/a Title: RATES AND POTENTIAL CONTROLS ON THE RETREAT OF ALASKA'S LAKE-TERMINATING GLACIERS	PC 12

Dy'Quan Kearney, Biology Undergraduate Student Faculty Mentor: Andrew Bellemer, Biology Co-Author(s): N/A Title: IDENTIFYING THE ROLE OF INSULIN SIGNALING IN THERMAL NOCICEPTION	PC 14
Christopher Lucero, Geography Undergraduate Student Faculty Mentor: Maggie Sugg, Geography and Planning Co-Author(s): Sophie Ryan Title: DISPARITIES IN AFRICAN AMERICAN MENTAL HEALTH DURING THE COVID PANDEMIC: A SPATIAL CLUSTERING ANALYSIS OF NORTH CAROLINA, 2016-2021	PC 15
Joshua McNeill, Physics Undergraduate Student Faculty Mentor: Christopher Thaxton, Physics and Astronomy Co-Author(s): Tomas Romero, Nick Mencis, Travis Taylor, Brynn Welch Title: DEVELOPMENT OF A REGIONAL SEAFLOOR OBJECT SCOUR AND BURIAL MODEL IN SUPPORT OF U.S. NAVAL OPERATIONS	PC 16
Alex Moore, Biology Undergraduate Student Faculty Mentor: Baker Perry, Geography and Planning Co-Author(s): Tom Matthews, Sandro Arias, Maxwell Rado Title: RECORD SOLAR IRRADIANCE OBSERVED IN THE TROPICAL ANDES OF PERU	PC 17
Parker Reid, Economics Undergraduate Student Faculty Mentor: David Dickinson, Economics Co-Author(s): N/A Title: HOW ONLINE GAMBLING IMPACTS PROBABILITY JUDGEMENTS IN A BAYESIAN TASK ENVIRONMENT	PC 18
Elliot Sheehan, History/Social Sciences Education Undergraduate Student Faculty Mentor: Michael Behrent, History Co-Author(s): n/a Title: URBAN RENEWAL AND THE INTERSTATE: LOSING CHARLESTON'S TRIANGLE DISTRICT, 1956-1977	PC 19
Henry Taylor, Biology Undergraduate Student Faculty Mentor: Brooke Christian, Chemistry and Fermentation Sciences Co-Author(s): N/A Title: STABILIZATION OF MONOCLONAL ANTIBODIES USING CYTOSOLIC HEAT SOLUBLE PROTEIN D	PC 20

Morning Session Poster Presentations 9:00-10:30am Parkway Ballroom

Olivia Chapman, Exercise Science Undergraduate Student Faculty Mentor: Jared Skinner, Public Health and Exercise Science Co-Author(s): Lizzie Gamwell Title: IMPORTANCE OF THE DYNAMIC WARMUP FOR THE EQUESTRIAN ATHLETE Poster 21

Noah Kaufmann, Exercise Science Graduate Student Faculty Mentor: Andrew Shanely, Public Health and Exercise Science Co-Author(s): Dara E. Kodack, K. Bryan Taylor, Emily C. Bauer, Favian Morales, Camryn Olsen, N. Travis Triplett, Jeffery M. McBride Title: EXAMINING THE RELATIONSHIP BETWEEN MEASURES OF SKELETAL MUSCLE STRENGTH AND POWER AND SKELETAL MUSCLE SIZE AND DENSITY Poster 22

Javier Morales Dozal, Exercise Science Graduate Student Faculty Mentor: Marco Meucci, Public Health and Exercise Science Co-Author(s): Scott R. Collier, Robert J. Kowalsky Title: DIFFERENCES IN BLOOD PRESSURE AND PULSE WAVE ANALYSIS BETWEEN SEATED AND SUPINE IN YOUNG ADULTS Poster 23

Maya Ristanovic, Exercise Science Graduate Student Faculty Mentor: Kym Fasczewski, Public Health and Exercise Science Co-Author(s): N/A Title: EFFECT ON PHYSICAL ACTIVITY BEHAVIOR IN INDIVIDUALS PARTICIPATING IN A VIRTUAL 5K PROGRAM TO BENEFIT A SELF-SELECTED CAUSE Poster 24

Andrey Sankó, Exercise Science Graduate Student Faculty Mentor: Kym Fasczewski, Public Health and Exercise Science Co-Author(s): Sarah Powel Title: INCLUSION OF SOCIAL JUSTICE IN KINESIOLOGY / EXERCISE SCIENCE CURRICULUM Poster 25

Amber Dozier, Nutrition Graduate Student Faculty Mentor: Alisha Farris, Nutrition and Health Care Management Co-Author(s): Melissa Gutschal, Adam Hege Title: ASSESSING THE UTILIZATION OF AN ON-CAMPUS SATELLITE PANTRY Poster 26 Sidneigh O'Leary, Nutrition Graduate Student Faculty Mentor: Alisha Farris, Nutrition and Health Care Management Co-Author(s): Danielle Nunnery PhD RDN and Laurel Wentz PhD RD Title: THE BENEFITS OF AN INTRO TO NUTRITION AND HEALTH COURSE ON COLLEGE STUDENTS IN RURAL WESTERN NC Poster 27

Victoria Whidden, Physics Undergraduate Student Faculty Mentor: Brooke Hester, Physics and Astronomy Co-Author(s): N/A Title: POWER SPECTRA OF OPTICALLY TRAPPED GOLD NANOSHELLS Poster 28

Tyler Crank, Building Sciences Undergraduate Student Faculty Mentor: Bhuwan Thapa, Geography and Planning Co-Author(s): Nick Schrum Josh Platt Title: STRATEGIES FOR IMPROVING WALKABILITY ON CAMPUS: CASE OF APPALACHIAN STATE UNIVERSITY Poster 29

Ella Thompson, Chemistry Undergraduate Student Faculty Mentor: Megen Culpepper, Chemistry and Fermentation Sciences Co-Author(s): N/A Title: INVESTIGATING SUBUNIT INTERACTIONS BETWEEN AN ENZYME INVOLVED IN SULFUR CYCLING Poster 30

Wayne Blanchette, Biology Undergraduate Student Faculty Mentor: Mary Kinkel, Biology Co-Author(s): MD Kinkel Title: MAPPING GASTRIC MOTILITY GENE EXPRESSION ACROSS ZEBRAFISH DEVELOPMENTAL STAGES Poster 31

Ally Lawing, Biology Undergraduate Student Faculty Mentor: Rachel Bleich, Biology Co-Author(s): Dr. Janelle Arthur, Freedom Johnson, Dom Diprospero Title: WRINKLING PHENOTYPES OF CO-CULTURAL INTERACTIONS BETWEEN ADHERENT-INVASIVE ESCHERICHIA COLI AND ENTEROCOCCUS FAECALIS SUGGEST AN EFFECT OF BIOFILM FORMATION Poster 32 Morning Session Poster Presentations 10:40am-12:00pm Parkway Ballroom

Jennifer Belk, Biology Undergraduate Student Faculty Mentor: Matt Estep, Biology Co-Author(s): N/A Title: ADDING POPULATIONS TO OUR UNDERSTANDING OF GENETIC DIVERSITY IN LIATRIS HELLERI PORTER (ASTERACEAE) Poster 40

Megan Clements, Biology Graduate Student Faculty Mentor: Matt Estep, Biology Co-Author(s): Matt Estep Title: DEVELOPMENT OF MICROSATELLITE MARKERS USING SEVERAL POPULATIONS OF SANGUINARIA CANADENSIS TO INFORM CONSERVATION EFFORTS. Poster 41

PJ Coleman, Biology Undergraduate Student Faculty Mentor: Jennifer Geib, Biology Co-Author(s): Paul Super, Ally Jacob, Nicole Lowder, Jennifer Geib Title: SYRPHIDAE OF THE SOUTHERN APPALACHIANS: DIVERSITY AND DISTRIBUTION Poster 42

Emily Gillikin, Biology Undergraduate Student Faculty Mentor: Lynn Siefferman, Biology Co-Author(s): Clarice Perry Title: IMPACTS OF HABITAT QUALITY AND PARASITISM ON GROWTH OF NESTLING SONGBIRDS Poster 43

Alan Huff, Biology Undergraduate Student Faculty Mentor: Howard Neufeld, Biology Co-Author(s): N/A Title: INFLUENCES OF LEAF INCLINATION AND ORIENTATION ON WINTER GAS EXCHANGE IN YUCCA FILAMENTOS Poster 44

Ishani Chattopadhayay, Biology Graduate Student Faculty Mentor: Andrew Bellemer, Biology Co-Author(s): Dr. Andrew Bellemer Title: THE ROLE PVR, A GROWTH FACTOR RECEPTOR, PLAYS IN THERMAL NOCICEPTION IN DROSOPHILA Poster 45

Lily Elkin, Biology Undergraduate Student Faculty Mentor: Rachel Bleich, Biology Co-Author(s): Emma Metcalf

Title: THE ROLE OF INHERENT INVASIVE E. COLI ON INFLAMMATORY BOWEL DISEASES Poster 46

Hannah Lilly, Biology Undergraduate Student Faculty Mentor: Dr Howard Neufeld, Biology Co-Author(s): N/A Title: VARIATION AMONG INDIVIDUAL PLANTS OF GOLDEN RAGWORT (PACKERA AUREA) WITH REGARDS TO THE PRESENCE OF ABAXIAL ANTHOCYANINS IN OVERWINTERING BASAL LEAVES Poster 47

Justin Price, Biology Undergraduate Student Faculty Mentor: Rachel Bleich, Biology Co-Author(s): n/a Title: METABOLITES FORMED BETWEEN PROINFLAMMATORY MICROORGANISMS LINKED TO INFLAMMATORY BOWEL DISEASES Poster 48

Cara Cywinski, Environmental Science Undergraduate Student Faculty Mentor: Sarah Carmichael, Geological and Environmental Sciences Co-Author(s): Peter Königshof Phuong Ta Hoa Title: GEOCHEMISTRY OF ULTRAPURE CARBONATES ACROSS THE FRASNIAN/FAMENNIAN BOUNDARY INTERVAL IN SOUTHEAST ASIA (XOM NHA FORMATION, CENTRAL VIETNAM) Poster 49

Jacqui Foronda, Environmental Science Undergraduate Student Faculty Mentor: Sarah Carmichael, Geological and Environmental Sciences Co-Author(s): Cara Cywinski, Peter Königshof, Ariuntogos Munkhjargal, Sersmaa Gonchigdorj, Dalaijamts Gantumur, Johnny Waters, Will Waters, Catherine Crônier, and Magnus Kallner Title: MAPPING THE MIDDLE TO LATE DEVONIAN IN THE SHINEJINST REGION OF THE SOUTHERN GOBI DESERT, MONGOLI Poster 50

Anna-Maria Riley, Biology Graduate Student Faculty Mentor: Sarah Carmichael, Geological and Environmental Sciences Co-Author(s): Dr. Suzanna Bräuer Title: HUMAN IMPACT IN APPALACHIAN CAVE SYSTEMS: HOW THE PRESENCE OF PEOPLE INFLUENCES THE NATIVE MICROBIAL CAVE SPECIES Poster 51

Carter Smith, Environmental Science Undergraduate Student Faculty Mentor: Cole Edwards, Geological and Environmental Sciences Co-Author(s): N/A Title: INVESTIGATING THE LATE DEVONIAN FRASNIAN-FAMENNIAN MASS EXTINCTION THROUGH PAIRED CARBON AND SULFUR STABLE ISOTOPES Poster 52

Alyssa Wurtz, Geology Undergraduate Student Faculty Mentor: Andrew Heckert, Geological and Environmental Sciences Co-Author(s): N/A Title: A NEW MICROVERTEBRATE ASSEMBLAGE FROM THE UPPER CRETACEOUS (CAMPANIAN-MASSTRICHTIAN) WILLIAMS FORK FORMATION, NORTHWESTERN COLORADO, USA Poster 53

Michael Dickerson, Geology Undergraduate Student Faculty Mentor: Jamie Levine, Geological and Environmental Sciences Co-Author(s): Gabriele Casale Title: INVESTIGATING CLASTIC SEDIMENTS DEPOSITED DURING RIFTING: EBSD AND MINERALOGICAL ANALYSIS OF THE LATE PROTEROZOIC GRANDFATHER MOUNTAIN METACONGLOMERATE OF WESTERN NORTH CAROLINA Poster 54

Vanya Dill, Geology Undergraduate Student Faculty Mentor: Brian Zimmer, Geological and Environmental Sciences Co-Author(s): Scott Marshall, and Cynthia Liutkus-Pierce Title: DETECTING EROSION AT THE ENGARE SERO FOOTPRINT SITE, TANZANIA Poster 55

Emma Ferm, Environmental Science Undergraduate Student Faculty Mentor: Sarah Evans, Geological and Environmental Sciences Co-Author(s): Sarah E. Godsey, Key Hatch, Rachel Harris, Brandon Yokeley Title: TEMPERATURE OF RAINFALL IN ARCTIC REGIONS UNDERLAIN BY CONTINUOUS PERMAFROST Poster 56

Rachel Harris, Environmental Science Undergraduate Student Faculty Mentor: Sarah Evans, Geological and Environmental Sciences Co-Author(s): Dr. Scott T. Marshall, Dr. Sarah E. Godsey, Emma Ferm, Key Hatch, Brandon Yokeley Title: USING GEOPHYSICS TO CONSTRAIN SUBSURFACE MASSIVE ICE FORMATIONS ALONG PERMAFROST HILLSLOPES ON THE NORTH SLOPE OF ALASKA, USA Poster 57

Luke Rose, Geology Undergraduate Student Faculty Mentor: Andrew Heckert, Geological and Environmental Sciences Co-Author(s): N/A Title: SEDIMENTOLOGY, STRATIGRAPHY, AND TAPHONOMY OF THE UPPER TRIASSIC (REVUELTIAN:NORIAN) HOMESTEAD SITE IN EAST-CENTRAL NEW MEXICO, U.S.A. Poster 58

Skye-Anne Tschoepe, Environmental Science Undergraduate Student Faculty Mentor: William Anderson, Geological and Environmental Sciences Co-Author(s): N/A Title: MANAGING STORMWATER RUNOFF IN THE HIGH COUNTRY: AN ASSESSMENT OF SALT TRANSPORT THROUGH A CONSTRUCTED WETLAND IN BOONE, NORTH CAROLINA Poster 59

Jonah Bird, Geography Graduate Student Faculty Mentor: Bhuwan Thapa, Geography and Planning Co-Author(s): Stephen Poupart Title: ARE APPALACHIAN TOWNS & CITIES PREPARED FOR CLIMATE CHANGE? CLIMATE INITIATIVES IN TOWNS & CITIES OF APPALACHIA REGION Poster 60

Vennice Rondinelli-Albarran, Sustainable Development Undergraduate Student Faculty Mentor: Bhuwan Thapa, Geography and Planning Co-Author(s): Winifred Rhea-Unruh Taylor Apel Title: NATURE-BASED SOLUTIONS FOR CLIMATE RISK MANAGEMENT IN BOONE, NC Poster 61

Withdrawn Poster 62

Grace Waugh, Sustainable Technology Undergraduate Student Faculty Mentor: Jeremy Ferrell, Sustainable Technology and the Built Environment Co-Author(s): N/A Title: WASTE TO RICHES: HEATED VERMICOMPOSTING BIN FROM A REPURPOSED SOLAR THERMAL COLLECTOR Poster 63

Duncan Burns, Sustainable Technology Undergraduate Student Faculty Mentor: Sohad Abu-Elzait, Sustainable Technology and the Built Environment Co-Author(s): Robert Conolly Title: SMALL WIND AND PHOTOVOLTAIC MICROGRID PERFORMANCE TESTING Poster 64 Brandon Ellis, Exercise Science Graduate Student Faculty Mentor: Dr. Jared Skinner, Public Health and Exercise Science Co-Author(s): Dr. Travis Triplett, Dr. Ashely Marshall, Bryson Campbell, Hunter Anderson Title: THE EFFECTS OF COLD WATER IMMERSION ON PREFRONTAL CORTEX OXYGENATION, SALIVARY CORTISOL LEVELS, AND EXECUTIVE FUNCTIONING Poster 65

Breanna Gibson, Exercise Science Undergraduate Student Faculty Mentor: Jared Skinner, Public Health and Exercise Science Co-Author(s): N/A Title: ASSESSING HABITUAL AND EXERCISE ACTIVITY OF PERSONS WITH PARKINSON'S DISEASE FOR THE PREVENTION OF FALLS Poster 66

Natalie Thulien, Exercise Science Undergraduate Student Faculty Mentor: Jared Skinner, Public Health and Exercise Science Co-Author(s): Ansley Patton Title: EFFECTS OF AGING ON GAIT, HAND GRIP STRENGTH AND CORRELATING PHYSICAL ACTIVITY LEVELS FOR OLDER ADULTS IN THE HIGH COUNTRY Poster 67

Ben Estorge, Nutrition Graduate Student Faculty Mentor: Manan Roy, Nutrition and Health Care Management Co-Author(s): Alisha Farris and Danielle Nunnery Title: EVALUATION OF NUTRITION POLICIES AND PROGRAMS IN INDIA: A LITERATURE REVIEW Poster 68

Megan Hall, Nursing Graduate Student Faculty Mentor: Rebecca Turpin, Nursing Co-Author(s): N/A Title: IS IT TOO LATE FOR US? IMPROVING INTERPROFESSIONAL COMMUNICATION POST LICENSURE Poster 69

Rachel Stern, Psychology Undergraduate Student Faculty Mentor: Doris Bazzini, Psychology Co-Author(s): N/A Title: A STUDY ON IMAGINED EVENTS IN ROMANTIC RELATIONSHIPS Poster 70

Will Swofford, Chemistry Undergraduate Student Faculty Mentor: Alexander Schwab, Chemistry and Fermentation Sciences Co-Author(s): N/A Title: EQUILIBRIA AND MECHANICAL PROPERTIES IN COPPER(II) CROSSLINKED BIPYRIDINE TERMINATED POLY(DIMETHYL)SILOXANE Poster 71

Carson Shivers, Chemistry Undergraduate Student Faculty Mentor: Nicholas Shaw, Chemistry and Fermentation Sciences Co-Author(s): Freedom Johnson Title: SYNTHESIS OF 4-AMINO-3-HYDROXYPYRROLE-2-CARBOXYLIC ACIDS FOR NUCLEOTIDE SEQUENCE RECOGNITION Poster 72

Carter Rodgers, Chemistry Undergraduate Student Faculty Mentor: Christian Wallen, Chemistry and Fermentation Sciences Co-Author(s): N/A Title: COORDINATION OF SMALL PROTIC LIGANDS TO METAL COMPLEXES WITH SECOND-SPHERE HYDROGEN BONDING Poster 73

Withdrawn Poster 74

Rachel Lowell, Art and Visual Culture Undergraduate Student Faculty Mentor: Erin Peters, Art Co-Author(s): N/A Title: THE PREVALENCE OF DEITIES IN CHILDBIRTH AND FERTILITY ART AND ARTIFACTS FROM ANCIENT EGYPT Poster 75 Oral Session Morning 10:00am - 11:00am Room 415 Plemmons Student Union

Rowaida Hamdan, Psychology Undergraduate Student Faculty Mentor: Chris Dickinson, Psychology Co-Author(s): N/A Title: USING EYE TRACKING TO QUANTIFY AESTHETIC JUDGMENTS Presentation time 10:00am

Taylin Spurlock, Geography Graduate Student Faculty Mentor: Maggie Sugg, Geography and Planning Co-Author(s): Dr. Jennifer Runkle, and Dr. Dennis Guigent Title: EXAMINING HURRICANE EXPOSURE ON NEONATAL OUTCOMES IN NORTH CAROLINA: A CASE STUDY OF HURRICANE ISABEL Presentation time 10:20am

Lily Vowels, Geology Undergraduate Student Faculty Mentor: William Armstrong, Geological and Environmental Sciences Co-Author(s): Brianna Rick, Irina Overeem, Dan McGrath Title: QUANTIFYING CHANGES IN PROGLACIAL SUSPENDED SEDIMENT CONCENTRATION USING LARGE SCALE REMOTE SENSING Presentation time 10:40am

Oral Session Morning 11:00am-12:00pm Room 417 Plemmons Student Union

Gracie Portagallo, Engineering Physics Graduate Student Faculty Mentor: Brooke Hester, Physics and Astronomy Co-Author(s): Caroline Donaghy, Lucian Murray, Megen Culpepper Title: MEASUREMENTS OF PROTEIN BINDING VIA FLUORESCENCE ANISOTROPY Presentation time 11:00am

Hunter Hixon, Physics Undergraduate Student Faculty Mentor: Brooke Hester, Physics and Astronomy Co-Author(s): Nate Parillo Title: ENGINEERING A CUSTOM-BUILT OPTICAL TWEEZERS MICROSCOPE INSTRUMENT Presentation time 11:20am

Henry Kolesar, Physics Graduate Student Faculty Mentor: Brooke Hester, Physics and Astronomy Co-Author(s): Brooke Hester Title: LASER TRAPPING RAMAN SPECTROSCOPY Presentation time 11:40am

Afternoon Sessions Poster Presentation 1:00pm - 2:30pm Parkway Ballroom

Gabby Andux, Recreation Management Undergraduate Student Faculty Mentor: Jill Juris, Recreation Management and Physical Education Co-Author(s): Jack Carson, Katherine Uva, and Raven Weaver Title: LEISURE AS COPING DURING COVID-19: A STUDY OF COLLEGE STUDENTS Poster 80

Caeden Carter, Geology Undergraduate Student Faculty Mentor: Andrew Heckert, Geological and Environmental Sciences Co-Author(s): Luke Rose Title: TAPHONOMY, WITH AN EMPHASIS ON PRESERVATION BIAS, OF THE REVUELTIAN (UPPER TRIASSIC: NORIAN) AGED HOMESTEAD SITE VERTEBRATE FOSSIL ASSEMBLAGE FROM THE GARITA CREEK FORMATION OF EAST-CENTRAL NEW MEXICO, USA Poster 81

Renee Dunn, Geology Undergraduate Student Faculty Mentor: Andrew Heckert, Geological and Environmental Sciences Co-Author(s): Alyssa Wurtz Title: HYDROGEN PEROXIDE BREAKDOWN OF FOSSILIFEROUS SEDIMENTS FROM UPPER CRETACEOUS MICROVERTEBRATE SITES IN THE WILLIAMS FORK FORMATION, NORTHWESTERN COLORADO Poster 82

Trishlyn Pannell, My major was not listed Undergraduate Student Faculty Mentor: Bhuwan Thapa, Geological and Environmental Sciences Co-Author(s): N/A Title: UNDERSTANDING THE RELATIONSHIP BETWEEN WINDBREAKS AND WIND-RELATED CROP LOSS Poster 83

James Auwn, Biology Undergraduate Student Faculty Mentor: Andrew Bellemer, Biology Co-Author(s): N/A Title: IDENTIFYING THE ROLE OF EUKARYOTIC TRANSLATION INITIATION FACTOR 3G1 IN NOCICEPTION Poster 84

Benjamin Crawford, Biology Undergraduate Student Faculty Mentor: Annkatrin Rose, Biology Co-Author(s): Annkatrin Rose Title: SEQUENCE IDENTIFICATION AND METABOLIC ANALYSIS OF ENDOPHYTES IN SHINING CLUBMOSS (HUPERZIA LUCIDULA) Poster 85 Matthew Johnson, Biology Undergraduate Student Faculty Mentor: Jennifer Geib, Biology Co-Author(s): Emma Rasco, Mary Frances Burrow Title: VIRAL SPILLOVER FROM HONEYBEE APIARIES IN NATIVE BEE POPULATIONS Poster 86

Withdrawn Poster 87

Bryce Norvell, Biology Graduate Student Faculty Mentor: Suzanna Brauer, Biology Co-Author(s): Sarah Carmichael Title: THE EFFECTS OF SUBSTRATE GEOCHEMISTRY ON THE DISTRIBUTION OF MANGANESE OXIDIZING BACTERIA IN CAVES Poster 88

Sara Palega, Biology Graduate Student Faculty Mentor: Andrew Bellemer, Biology Co-Author(s): Rebeccah Stewart Title: THE ROLE OF THE RNA-BINDING PROTEIN, PUMILIO, IN THE REGULATION OF NOCICEPTION Poster 89

Juanita Valencia Rincon, Biology Undergraduate Student Faculty Mentor: Chequita Brooks, Biology Co-Author(s): Chequita Brooks, Suzanna Brauer, Rachel Bleich Title: MICROBIAL DIVERSITY IN THE APPALACHIAN STATE UNIVERSITY DUCK POND Poster 90

Hailey Ward, Biology Graduate Student Faculty Mentor: Maryam Ahmed, Biology Co-Author(s): Darren Seals Title: MELITTIN IN COMBINATION WITH VESICULAR STOMATITIS VIRUS FOR THE TREATMENT OF TRIPLE NEGATIVE BREAST CANCER Poster 91

Rebecca Foley, Chemistry Undergraduate Student Faculty Mentor: Christian Wallen, Chemistry and Fermentation Sciences Co-Author(s): Morgan Hern, Carter Rodgers Title: EFFECTS OF ALTERED LIGAND STRUCTURE ON THE COORDINATION OF INDUSTRIALLY-RELEVANT PROTIC MOLECULES TO SULFONAMIDATE METAL COMPLEXES WITH SECOND SPHERE HYDROGEN BONDING Poster 92 Morgan Hern, Chemistry Undergraduate Student Faculty Mentor: Christian Wallen, Chemistry and Fermentation Sciences Co-Author(s): Carter Rodgers, Becky Foley Title: COORDINATION OF INDUSTRIALLY-RELEVENT PROTIC MOLECULES TO METAL-SULFONAMIDATE COMPLEXES WITH SECOND-SPHERE HYDROGEN BONDING Poster 93

Withdrawn Poster 94

Heide Emmanuel, Graphic Design Undergraduate Student Faculty Mentor: Bhuwan Thapa, Geography and Planning Co-Author(s): Emily Suit Title: PATHWAYS FOR STRENGTHENING CAMPUS SUSTAINABILITY INITIATIVES AT APPALACHIAN STATE UNIVERSITY Poster 95

Abigail Branco, Psychology Undergraduate Student Faculty Mentor: Shawn Bergman, Psychology Co-Author(s): Aidan Powell, Robert Gruber, Brenna McNamara, Samantha Plourde Title: CAN PSYCHOLOGY STUDENTS SOLVE TOP INDUSTRY ISSUES? Poster 96

Withdrawn Poster 97

Olivia Hydzik, Psychology Undergraduate Student Faculty Mentor: Yalcin Acikgoz, Psychology Co-Author(s): Ena Hodzic, Samuel Whiteheart, Aspen Wood, Mary Covington, Alexis Jones, Ty Graves, Madison Culver Title: REMOTE OR IN PERSON WORK: HOW DO PERSONALITY AND QUALIFICATIONS RELATE TO PERFORMANCE? Poster 98

Layla Koroleva, Applied Data Analytics Graduate Student Faculty Mentor: Jason Xiong, Computer Information Systems Co-Author(s): N/A Title: ANALYSIS OF THE RELATIONSHIP BETWEEN FEMALE EDUCATION AND BUSINESS OWNERSHIP IN NORTH CAROLINA Poster 99

Shawn Roberts, Exercise Science Graduate Student Faculty Mentor: Alan Needle, Public Health and Exercise Science Co-Author(s): Kelsey Holmes, Mabry Watson Title: STARTLE RESPONSE DURING DYNAMIC MOVEMENT AFTER ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION Poster 100

Dara Kodack, Exercise Science Undergraduate Student Faculty Mentor: Andrew Shanely, Public Health and Exercise Science Co-Author(s): Noah C. Kaufmann, K. Bryan Taylor, Emily C. Bauer, Favian Morales, Camryn Olsen, N. Travis Triplett, Jeffery M. McBride Title: EXPLORING THE RELATIONSHIP BETWEEN VISCERAL ADIPOSE TISSUE AND SKELETAL MUSCLE DENSITY Poster 101

Favian Morales, Exercise Science Undergraduate Student Faculty Mentor: Tamaro Hudson Co-Author(s): Collis Brown Title: STABLY TRANSDUCED ANNEXIN 2 AND SPINK1 INDUCED DIFFERENTIAL PROSTATE CANCER GROWTH Poster 102

Alex Worley, Exercise Science Graduate Student Faculty Mentor: Marco Meucci, Public Health and Exercise Science Co-Author(s): Kimberly Fasczewski, Andrew Shanely Title: THE ASSOCIATION BETWEEN THE FUNCTIONAL THRESHOLD POWER AND THE DMAX AND THE GAS EXCHANGE ANAEROBIC THRESHOLD IN TRAINED ENDURANCE CYCLISTS Poster 103

Ansley Patton, Exercise Science Undergraduate Student Faculty Mentor: Jared Skinner, Public Health and Exercise Science Co-Author(s): Natalie Thulien Title: ASSESSMENT AND MANAGEMENT OF PHYSICAL ACTIVITY OF OLDER ADULTS IN THE HIGH COUNTRY Poster 104

Nickolos Monk, Computer Science Undergraduate Student Faculty Mentor: Noah Williams, Mathematical Sciences Co-Author(s): N/A Title: DEFINING TRAJECTORIES FROM RECURSIVE PAIRING BETWEEN ZEROS AND CRITICAL POINTS OF DERIVATIVES OF RANDOM POLYNOMIALS WITH INDEPENDENT ROOTS Poster 105

Bryson Hedrick, Physics Undergraduate Student Faculty Mentor: Brooke Hester, Physics and Astronomy Co-Author(s): N/A Title: AXIAL CALIBRATION OF CUSTOM BUILT AUTOMATED OPTICAL TWEEZERS Poster 106

Anna Koulovatos, Physics Undergraduate Student Faculty Mentor: Brooke Hester, Physics and Astronomy Co-Author(s): N/A Title: POWER SPECTRA OF TRAPPED PARTICLES IN OPTICAL TWEEZERS Poster 107 Oral Session 3 1:00-2:20pm Room 415 Plemmons Student Union Josie Beasley, Biology Undergraduate Student Faculty Mentor: Chequita Brooks, Biology Co-Author(s): Rachel Bleich, Kevin Zwetsloot, Michael Opata Title: INVESTIGATING EXERCISE'S IMPACT ON INTESTINAL INTEGRITY AND IMMUNE ACTIVATION Presentation time 1:00pm

Francois Desautels, Biology Undergraduate Student Faculty Mentor: Andrew Bellemer, Biology Co-Author(s): N/A Title: THERAPEUTIC TREATMENTS FOR EPILEPSY IN DROSOPHILA MELANOGASTER Presentation time 1:20pm

Madeline Wight, Biology Graduate Student Faculty Mentor: Rachel Bleich, Biology Co-Author(s): Aline M. A. de Souza, Chequita Brooks, Crystal A. West Title: IMPACT OF SEVERE FOOD RESTRICTION ON GUT MICROBIOME DIVERSITY AND THE CARDIOVASCULAR SYSTEM Presentation time 1:40pm

Elva Swibold, Biology Undergraduate Student Faculty Mentor: Lynn Siefferman, Biology Co-Author(s): N/A Title: THE EFFECTS OF HIDDEN NEST ECTOPARASITES ON THE DEVELOPMENT OF A SEXUALLY SELECTED TRAIT IN JUVENILE EASTERN BLUEBIRDS Presentation time 2:00 Afternoon Session Poster Presentations 2:40pm - 4:00pm Parkway Ballroom Porter Dalton, Sustainable Technology Graduate Student Faculty Mentor: Jeff Ramsdell, Sustainable Technology and the Built Environment Co-Author(s): N/A Title: HOW DO GENERATIONAL AGE GROUPS COMPARE IN HOW THEY VALUE THE DIFFERENT ENVIRONMENTAL IMPACTS OF NEW VEHICLE PRODUCTION? Poster 116

Micaela Patterson, Environmental Science Undergraduate Student Faculty Mentor: Matthew Ogwu, Sustainable Development Co-Author(s): Pia Senchak Title: PHOSPHORUS MINING AND BIOAVAILABILITY FOR ENVIRONMENTAL SUSTAINABILITY Poster 117

Travis Taylor, Mathematics Graduate Student Faculty Mentor: Chris Thaxton, Physics and Astronomy Co-Author(s): Nick Mencis, Joshua McNeill, Tomas Romero, Brynn Welch Title: MODELING THE EFFECTS OF OBJECT-INDUCED TURBULENCE ENHANCEMENT ON SEAFLOOR OBJECT SCOUR AND BURIAL Poster 118

Kaitlyn Miller, Psychology Undergraduate Student Faculty Mentor: Jack Carson, Management Co-Author(s): Morgan Greene, Mariana Solanilla, Mackenzie Law Title: VALUE ALIGNMENT IN WORKERS AND ORGANIZATIONAL MESSAGING OF ENVIRONMENTALLY SUSTAINABLE INITIATIVES Poster 119

Withdrawn Poster 120

Keyona Anthony, Psychology Undergraduate Student Faculty Mentor: Mary Ballard, Psychology Co-Author(s): Anastacia Schulhoff Title: CYBERBULLYING AS RELATED TO SCHOOL TRANSITIONS DURING THE COVID-19 PANDEMIC Poster 121 Kelly Davis, Psychology Graduate Student Faculty Mentor: Lisa Curtin, Psychology Co-Author(s): Jacqueline Hersh, PhD; John Paul Jameson, PhD Title: INTENT TO RECEIVE A COVID-19 VACCINATION AMONG COLLEGE STUDENTS: THEORY OF PLANNED BEHAVIOR AND SOCIODEMOGRAPHIC PREDICTORS Poster 122

Abryanna Vidot, School Psychology Graduate Student Faculty Mentor: Jamie Yarbrough, Psychology Co-Author(s): Natalie G. Moyer, Laura A. MacLean, Caroline N. Cummings, Hannah M. King, Tierney C. O'Brien, Sara Hehn, Mlynn Wooden, India M. Horn, Title: RACIAL DISPROPORTIONALITY IN TEACHER DISCIPLINE REFERRALS Poster 123

Janaka Volpe, Psychology Undergraduate Student Faculty Mentor: Lisa Emery, Psychology Co-Author(s): Corinne Nocar, James Auwn, Brenna McNamara, Emilie Murdoch, Helen Vonderhaar, Jonathan Taylor, Maia Harbaugh, Myers Busch, Katie Gundry Title: ROBBERS, RENTERS, & RECALL: PERSPECTIVE AND STORY MEMORY Poster 124

Sarah Hehn, School Psychology Graduate Student Faculty Mentor: Jamie Yarbrough, Psychology Co-Author(s): Natalie Moyer, Laura Maclean, Abryanna Vidot, Caroline Cummings, Hannah King, Tierney O'Brien, Sara Hehn, Mlynn Wooden, India Horn Title: DOES MODE OF INSTRUCTION IMPACT ACADEMIC AND SOCIAL SUCCESS? Poster 125

Katelyn Saunders, Psychology Undergraduate Student Faculty Mentor: Reagan Breitenstein, Psychology Co-Author(s): Lisa Curtin, PhD Title: THE IMPACT OF COVID-19 ON DEPRESSION AND ANXIETY WITH SOCIAL SUPPORT AS A PROTECTIVE FACTOR Poster 126

Bryson Campbell, Exercise Science Undergraduate Student Faculty Mentor: Jared Skinner, Public Health and Exercise Science Co-Author(s): Brandon Ellis and Hunter Anderson Title: THE EFFECT OF COLD WATER IMMERSION ON EXECUTIVE FUNCTIONING Poster 127

Jaden Tuitt, Exercise Science Undergraduate Student Faculty Mentor: Jared Skinner, Public Health and Exercise Science Co-Author(s): N/A Title: EFFECT OF MARTIAL ARTS COMPETITION EXPERIENCE ON INJURY CHARACTERISTICS Poster 128

Key Hatch, Environmental Science Undergraduate Student Faculty Mentor: Sarah Evans, Geological and Environmental Sciences Co-Author(s): Sarah Godsey, Emma Ferm, Rachel Harris, Brandon Yokeley, Clara Chew, Benjamin Crosby Title: CONTROL OF VEGETATION MICROCLIMATES ON SHALLOW GROUND TEMPERATURES ABOVE CONTINUOUS PERMAFROST Poster 129

Jeremy Heidenfelder, Geology Undergraduate Student Faculty Mentor: Andrew Heckert, Geological and Environmental Sciences Co-Author(s): N/A Title: THE MORPHOLOGY OF TANYSTROPHEIDS (REPTILIA ARCHASAUROMORPHA) OF THE UPPER TRIASSIC (REVUELTIAN MID-NORIAN) HOMESTEAD SITE IN EAST CENTRAL NEW MEXICO Poster 130

Jordan Ulmer, Environmental Science Undergraduate Student Faculty Mentor: William Armstrong, Geological and Environmental Sciences Co-Author(s): N/A Title: ALASKA'S CHANGING PROGLACIAL RIVER SYSTEMS: TRENDS AND POTENTIAL MECHANISMS Poster 131

Joshua Crouch, Geology Undergraduate Student Faculty Mentor: Andrew Heckert, Geological and Environmental Sciences Co-Author(s): Caeden Carter, Luke Rose Title: PRELIMINARY TAPHONOMY OF A REVUELTIAN (UPPER TRIASSIC: NORIAN) AGE COPROLITE ASSEMBLAGE FROM THE HOMESTEAD SITE OF THE GARITA CREEK FORMATION, EAST-CENTRAL NEW MEXICO, USA Poster 132

Anna Bryant, Chemistry Undergraduate Student Faculty Mentor: Megen Culpepper, Chemistry and Fermentation Sciences Co-Author(s): N/A Title: EXPRESSION AND PURIFICATION OF DIMETHYL SULFIDE MONOOXYGENASE FROM ITS NATIVE SOURCE, ARTHROBACTER GLOBIFORMIS Poster 133

Jack McKeon, Chemistry Undergraduate Student Faculty Mentor: Jefferson Bates, Chemistry and Fermentation Sciences Co-Author(s): Sybella Work Title: PREDICTING ARYL CARBENE SINGLET-TRIPLET ENERGY DIFFERENCES BEYOND THE RANDOM PHASE APPROXIMATION Poster 134

Aydan Gibbs, Physics Undergraduate Student Faculty Mentor: Brooke Hester, Physics and Astronomy Co-Author(s): Nate Parillo Claire Brown Title: FEEDBACK CIRCUIT FOR A TEMPERATURE CONTROLLED MICROSCOPE SAMPLE CHAMBER FOR STUDIES OF HUMAN BIOLOGICAL MICROBES IN AN OPTICAL TWEEZER APPARATUS Poster 135

Ryan Whitfield, Psychology Undergraduate Student Faculty Mentor: Mark Venable, Biology Co-Author(s): N/A Title: IDENTIFICATION OF A NATURAL PHOSPHOLIPASE A2 INHIBITOR FOR USE AS A NOVEL ANTIVENOM Poster 136

Eliza Watson, Biology Graduate Student Faculty Mentor: Darren Seals, Biology Co-Author(s): Maryam Ahmed Title: DEVELOPMENT OF A SIMULATED TUMOR MICROENVIRONMENT TO MONITOR MACROPHAGE-CANCER CELL RESPONSES TO VIROTHERAPIES Poster 137

Ava Stoddard, Biology Undergraduate Student Faculty Mentor: Darren Seals, Biology Co-Author(s): Hannah Wolf, Megan Polzin, Maryam Ahmed, Darren F. Seals Title: PODOSOME ACTIVITIES AMONG M1 AND M2 THP-1 MACROPHAGE Poster 138

Lindsey Pleasant, Biology Undergraduate Student Faculty Mentor: Mary Kinkel, Biology Co-Author(s): Deja Cooper Title: INTESTINAL MOTILITY GENE EXPRESSION MAPPING IN ZEBRAFISH Poster 139 Rosemary Ronca, Biology Graduate Student Faculty Mentor: Jon Davenport, Biology Co-Author(s): N/A Title: ESTIMATING HABITAT INDICATORS OF THE SOUTHERN APPALACHIAN ENDEMIC, PLETHODON WELLERI Poster 140

Grace Kropelin, Biology Graduate Student Faculty Mentor: Clare Scott-Chialvo, Biology Co-Author(s): N/A Title: IS DROSOPHILA GUTTIFERA TRANSITIONING TO A SPECIALIST? Poster 141

Morgan Gill, Biology Undergraduate Student Faculty Mentor: Jennifer Geib, Biology Co-Author(s): Brooke Reutinger , Annkatrin Rose, Annika Fockler, Brooke Walters Title: SPATIAL AND PHENOLOGICAL VARIATION OF FLOWERING PLANT SPECIES ALONG THE BLUE RIDGE PARKWAY Poster 142

Noah Estrada, Biology Undergraduate Student Faculty Mentor: Cara Fiore, Biology Co-Author(s): Brooke Stevens, Nile Crump Title: THE IDENTIFICATION AND DISTRIBUTION OF FRESHWATER SPONGES IN WESTERN NORTH CAROLINA Poster 143

Samuel Cooke, Biology Undergraduate Student Faculty Mentor: Rachel Bleich, Biology Co-Author(s): Janelle C. Arthur Title: BIOFILM ANALYSIS OF ADHERENT-INVASIVE E. COLI AND E. FAECALIS CO-CULTURES: AN EXPLORATION OF WATER CHANNELS Poster 144 Oral Session 4 2:40pm - 4:00pm Room 415 Plemmons Student Union Emma Albertino, Clinical Psychology, PsyD and Psychology Graduate Student Faculty Mentor: Denise Martz, Psychology Co-Author(s): Lisa Curtin, Twila Wingrove Title: HIGH PREVALENCE OF IN-PERSON AND TECHNOLOGICAL SEXUAL VIOLENCE AMONG WOMEN WITH EATING DISORDERS Presentation time 2:40pm

Abby Cope, Public Health Undergraduate Student Faculty Mentor: Jennifer Schroeder Tyson, Public Health and Exercise Science Co-Author(s): John Richards Title: AN ANALYSIS OF A MATERNAL, CHILD, AND FAMILY HEALTH MICROLEARNING PROGRAM FOR PUBLIC HEALTH AND NURSING STUDENTS AT APPALACHIAN STATE UNIVERSITY Presentation time 3:00pm

Daniel Collins, Religious Studies Undergraduate Student Faculty Mentor: Cuong Mai, Philosophy and Religion Co-Author(s): N/A Title: DEATH PREPARATION AND THE IDEAL DEATH COMPARED: JUDAISM AND BUDDHISM Presentation time 3:20pm

Lydia Stonerook, Athletic Training Graduate Student Faculty Mentor: Jennifer Howard, Rehabilitation Sciences Title: FROM MILD COUGH TO SEPSIS: A CASE STUDY Presentation time 3:40pm

Oral Session 5 2:40pm - 3:40pm 417 Plemmons Student Union

Morgan Gaglianese-Woody, Biology Graduate Student Faculty Mentor: Matt Estep, Biology Co-Author(s): N/A Title: THE EFFECTS OF A PAST AUGMENTATION ON THE FITNESS OF THE FEDERALLY ENDANGERED SOUTHERN APPALACHIAN ENDEMIC GEUM RADIATUM MICHX Presentation time 2:40pm

Lauren Rusnak, Biology Undergraduate Student Faculty Mentor: Megen Culpepper, Chemistry and Fermentation Sciences Co-Author(s): Sierra Malley Title: CHARACTERIZATION OF PUTATIVE DMS MONOOXYGENASE FROM OCEANOBACILLUS PIEZOTOLERANS Presentation time 3:00pm

Ben Brewer, Biology Graduate Student

Faculty Mentor: Matt Estep, Biology Co-Author(s): N/A Title: ASSESSING THE GENETIC DIVERSITY AND STRUCTURE OF GRAY'S LILY (LILIUM GRAYI) Presentation time 3:20pm

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