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Sigma Gamma Epsilon Undergraduate Research

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SIGMA GAMMA EPSILON UNDERGRADUATE RESEARCH

Fifty-two abstracts of student-authored research have been accepted for presentation in the Sigma Gamma Epsilon Undergraduate Research poster session at the Geological Society of America annual meeting in Vancouver, British Columbia, Canada. The poster session will be held on Tuesday, 21 October 2014, 9:00 AM to 6:30 PM, in the Vancouver Convention Centre-West Exhibition Hall C. Authors will be present from 9:00 to 11:00 AM, and 5:00 to 6:30 PM.

SEDIMENT CONTAMINANT DISTRIBUTION AND CHEMICAL BEHAVIOR FROM THE TRI-STATE LEAD AND ZINC MINING DISTRICT

NORTH, Breanna, Earth Science Department, University of Arkansas at Little Rock, 2801 S. University Ave, Little Rock, AR 72204, benorth@ualr.edu, **RUHL, Laura**, Earth Science, University of Arkansas at Little Rock, 2801 S. University Ave, 307 Fribourgh Hall, Little Rock, AR 72204-1000, and **POTRA, Adriana**, Geosciences, University of Arkansas, 1 Ozark Hall, Fayetteville, AR 72701

NUTRIENT DYNAMICS IN A STORMWATER MANAGEMENT COMPLEX AT GRAND VALLEY STATE UNIVERSITY, ALLENDALE, MICHIGAN

BRADY, Ashley, Geology, Grand Valley State University, 1 Campus Drive, Padnos 118, Allendale, MI 49401, bradyash@mail.gvsu.edu, **KNEESHAW, Tara**, Geology Department, Grand Valley State University, Allendale, MI 49401, and **WAMPLER, Peter J.**, Geology Department, Grand Valley State University, 1 Campus Drive, Allendale, MI 49401

DYNAMICS OF DESTABILIZATION: PUMICEOUS EVIDENCE OF REHEATED, REMELTED, AND REMOBILIZED CUMULATE FROM THE BASE OF A SUPERVOLCANO MAGMA CHAMBER

FOLEY, Michelle L., Geography & Geology, Western Kentucky University, Bowling Green, KY 42101, michelle.foley229@topper.wku.edu, **MILLER, C.F.**, Department of Earth and Environmental Sciences, Vanderbilt University, Nashville, TN 37235, **WULFF, Andrew H.**, Geography and Geology, Western Kentucky University, 1906 College Heights Blvd. #31066, Bowling Green, KY 42101-1066, **MCDOWELL, Susanne M.**, Earth and Environmental Sciences, Vanderbilt University, Nashville, TN 37235, and **COVEY, Aaron K.**, Dept. of Earth and Environmental Sciences, Vanderbilt University, Nashville, TN 37235

DENDROGEOMORPHIC EVIDENCE OF FREQUENT MASS WASTING FROM REACTION WOOD IN BLACK SPRUCE, NORTHWAY JCT., ALASKAN INTERIOR

HEINRICH, Catherine, Geology, St. Lawrence University, 23 Romoda Dr, Canton, NY 13617, cehein11@stlawu.edu, **STEWART, Alexander K.**, Department of Geology, St. Lawrence University, Canton, NY 13617, and **HUBBARD, Trent D.**, Alaska Division of Geological & Geophysical Surveys, 3354 College Road, Fairbanks, AK 99709

VOLUMINOUS INTERMEDIATE, EFFUSIVE MAGMATISM IN THE BLACK MOUNTAINS, AZ, PRECEDING THE PEACH SPRING SUPERERUPTION, AND EVALUATION OF ITS POTENTIAL RELATIONSHIP TO THE SUPERVOLCANO MAGMA CHAMBER

RICE, Stacey A., Geosciences, Stony Brook University, Stony Brook, NY 11794, stacey.rice@stonybrook.edu, **CLAIBORNE, Lily L.**, Earth and Environmental Sciences, Vanderbilt University, Nashville, TN 37235, **RENTZ, Shannon P.**, Geosciences, Middle Tennessee State University, Murfreesboro, TN 37132, and **CRIBB, J. Warner**, Geosciences, Middle Tennessee State Univ, PO Box 9, Murfreesboro, TN 37132

POROSITY ANALYSIS OF DEFORMATION BANDS IN SANDSTONES AND CONGLOMERATES FROM HILLSDALE CANYON, SOUTHERN UTAH

SKANKEY, Robert, Physical Science, Southern Utah University, 364 North 4250 West, Cedar City, UT 84720, robertcskankey@gmail.com and **MACLEAN, John S.**, Geology, Southern Utah University, SC 309, 351 West University Boulevard, Cedar City, UT 84720

SPATIAL AND TEMPORAL DISTRIBUTION OF POLYCYCLIC AROMATIC HYDROCARBONS (PAHS) WITHIN SEDIMENT AND FISH TISSUE OF THE LOWER CHESAPEAKE BAY BASIN, USA

COLEMAN, Katherine L.¹, **ODHIAMBO, Ben K.**¹, **SHARPLESS, Charles M.**², **COXON, Taylor M.**¹, **WIELAND, Werner**³, and **BUNCH, Aaron J.**⁴, (1) Earth and Environmental Sciences, University of Mary Washington, 1301 College Avenue, Fredericksburg, VA 22401, kcolema2@mail.umw.edu, (2) Department of Chemistry, University of Mary Washington, 1301 College Ave, Jepson Science Center, Fredericksburg, VA 22401, (3) Department of Biological Sciences, University of Mary Washington, 1301 College Avenue, Fredericksburg, VA 22401, (4) Virginia Department of Game and Inland Fisheries, 3801 John Tyler Memorial Highway, Charles City, VA 23030

A NOVEL METHOD FOR DETECTING PHARMACEUTICALS IN SURFACE WATERS, CENTRAL ARKANSAS, USA

JOHNSON, Morgan E.¹, **MCMILLAN, Margaret E.**¹, **WOODLING, Kellie**², and **GAMBOA DA COSTA, Goncalo**², (1) Department of Earth Sciences, University of Arkansas at Little Rock, 2801 S. University Avenue, Little Rock, AR 72204, mejohnson1@ualr.edu, (2) Division of Biochemical Toxicology, National Center for Toxicological Research, 3900 NCTR Road, Jefferson, AR 72079

INVESTIGATION OF A PRE-SUPERERUPTION IGNIMBRITE: PETROLOGY OF THE MIOCENE COOK CANYON TUFF, BLACK MOUNTAINS, ARIZONA

PRATT, Ricky Daniel¹, CLAIBORNE, Lily L.², MILLER, Calvin F.², FERGUSON, Charles A.³, CRIBB, J. Warner⁴, and SZRAMEK, Lindsay A.¹, (1) Geosciences, Austin Peay State University, Clarksville, TN 37042, rpratt3@my.apsu.edu, (2) Earth and Environmental Sciences, Vanderbilt University, Nashville, TN 37235, (3) Arizona Geological Survey, 416 West Congress, Suite 100, Tucson, AZ 85719, (4) Geosciences, Middle Tennessee State Univ, Murfreesboro, TN 37132

TROPICAL SHALLOW-MARINE CARBONATE- SILICICLASTIC DEPOSITIONAL ENVIRONMENT OF THE LITTLE LAUGHLANDS BAY, JAMAICA

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REMOTE SENSING CHARACTERIZATION OF A MAJOR PRE-SUPERERUPTION EFFUSIVE UNIT IN THE BLACK MOUNTAINS OF NORTHWEST ARIZONA

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ANALYSIS OF PHOSPHATE IN RIPARIAN SEDIMENT PORE-WATERS: DOES PHOSPHATE SEQUESTERED IN THE STREAM BED CONTRIBUTE TO THE PHOSPHATE LOAD OF THE KALAMAZOO RIVER?

HARVEY, Kayleigh M., HAVENS, Kaitlyn Pospiech, and LINCOLN, Timothy N., Department of Geological Sciences, Albion College, 611 E Porter St, Albion, MI 49224, kmh12@albion.edu

REPORT OF AN ONGOING INVESTIGATION INTO THE DEVELOPMENT OF DISSOLUTION VOIDS IN PETROCALCIC MATERIALS AT MORMON MESA, NEVADA

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PRIMING FOR SUPERERUPTION: THE HOT PRE-PEACH SPRING TUFF LAVA FLOWS AND PEACH SPRING TUFF MAFIC ENCLAVES, BLACK MOUNTAINS, ARIZONA

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REMOTELY-SENSED DISTRIBUTION OF THE MIOCENE-AGED PEACH SPRING TUFF SUPERERUPTION DEPOSIT IN THE SOUTHERN BLACK MOUNTAINS OF NW AZ

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THERMOCHRONOLOGY OF THE MCCLURE MOUNTAIN SYENITE: CHARACTERIZATION OF NEW HE THERMOCHRONOMETERS AND CONSTRAINTS ON THE COOLING HISTORY OF THE WET MOUNTAINS, COLORADO

WEISBERG, Wesley R.¹, METCALF, James R.², and FLOWERS, Rebecca M.², (1) Geography, Geology, and Planning Department, Missouri State University, 901 S. National Ave, Springfield, MO 65897, wes4891@live.missouristate.edu, (2) Department of Geological Sciences, University of Colorado, Campus Box 399, 2200 Colorado Ave, Boulder, CO 80309

FRACTURE ORIENTATION AND STRUCTURAL ANALYSIS OF THE CHAUMONT LIMESTONE

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IMPLICATIONS OF ERUPTIVE, EROSIVE, AND DEPOSITIONAL PROCESSES PRIOR TO A SUPER ERUPTION IN THE SOUTHERN BLACK MOUNTAINS

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TECTONIC SIGNIFICANCE OF MYLONITES IN THE LITTLE BUCKSKIN MOUNTAINS, WEST-CENTRAL ARIZONA: INSIGHTS FROM QUARTZ MICROSTRUCTURAL DATA

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USING SCANNING ELECTRON MICROSCOPY TO CATALOG MINERALS FROM THE TRANS-PECOS MAGMATIC PROVINCE

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FACIES STACKING PATTERN WITHIN THE ORDOVICIAN RED RIVER FORMATION, WILLISTON BASIN: A CASE STUDY FROM EASTERN NORTH DAKOTA

HUSINEC, Antun and **BARNS, Joseph P.**, Geology Department, St. Lawrence University, 23 Romoda Drive, Canton, NY 13617, jpbarn11@stlawu.edu

COMPARISON OF TWO SUSPENDED SEDIMENT ANALYSIS METHODS

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WATER CHEMISTRY OF A HEMLOCK FOREST IN THE ROBERT V. RIDDELL STATE PARK, NY

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UNDERSTANDING PRE-SUPERERUPTION MAGMATIC PROCESSES: MULTIPLE VARIETIES OF ENCLAVES IN PRE-PEACH SPRING TUFF TRACHYTE LAVAS

RENTZ, Shannon P.¹, **RICE, Stacey A.**², **CRIBB, J. Warner**¹, **CLAIBORNE, Lily L.**³, and **MILLER, Calvin F.**³, (1) Geosciences, Middle Tennessee State University, Murfreesboro, TN 37132, shannoneporter@hotmail.com, (2) Geosciences, Stony Brook University, 38 Lenox Street, Lindenhurst, NY 11757, (3) Earth and Environmental Sciences, Vanderbilt University, Nashville, TN 37235

PARTICLE IMAGE/TRACKING VELOCIMETRY AS AN EFFECTIVE, LOW-COST SOLUTION FOR THE STUDY OF SMALL-SCALE HYDRODYNAMIC PROCESSES IN GEOLOGY

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Geophysics, Texas A&M University, College Station, TX 77843, and OLSEN, Kyle Anthony, Geology and Geophysics, Texas A&M University, College Station, TX 77840

UNDERSTANDING THE ROLE OF STRIKE-SLIP FAULTING AS OCEANS CLOSE, NORTH CENTRAL TURKEY

PETTIT, Bridget S., Geological Sciences, The University of Texas at Austin, 7 Las Flores, Aliso Viejo, CA 92656, bridgetpettit@utexas.edu, **CATLOS, Elizabeth J.**, Geological Sciences, University of Texas at Austin, Jackson School of Geosciences, Austin, TX 78712, and **ELLIOTT, Brent**, The Bureau of Economic Geology, The University of Texas at Austin, University Station Box X, Austin, TX 78713

FOSSIL CORAL FROM THE MISSISSIPPIAN REDWALL LIMESTONE IN THE BEAVER DAM MOUNTAINS, WASHINGTON COUNTY, UTAH

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NEW U-PB ZIRCON AGES FROM PLUTONS OF THE MT. WADDINGTON REGION, SOUTHERN COAST MOUNTAINS BATHOLITH, BRITISH COLUMBIA

CHISOM, Charles¹, **CECIL, M. Robinson²**, **RUSMORE, Margaret E.¹**, and **WOODSWORTH, Glenn J.³**, (1) Geology, Occidental College, Los Angeles, CA 90041, chisom@oxy.edu, (2) Department of Geological Sciences, California State University Northridge, 18111 Nordhoff St, Northridge, CA 91130-8266, (3) Geol Survey of Canada, 101-605 Robson St, Vancouver, BC V6B 5J3

DESCRIPTION OF A GARNET-BEARING GRANOFELS FOUND AT WEST CHICAGO CREEK, COLORADO

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PATHWAYS OF NITRATE INTO THE KALAMAZOO RIVER: A PHYSICAL, CHEMICAL AND MICROBIOLOGICAL STUDY

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CARBONATE $\delta^{13}\text{C}$ AND PRELIMINARY CONODONT $\delta^{18}\text{O}$ FROM THE UPPER STONES RIVER FORMATION AND LOWER NASHVILLE FORMATION (LATE ORDOVICIAN) NEAR GADSDEN, AL

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Kenneth G., Department of Geological Sciences, University of Missouri-Columbia, Columbia, MO 65211, and HERRMANN, Achim D., Geology & Geophysics, Louisiana State University, Baton Rouge, LA 70803

A TEXTURAL AND GEOCHEMICAL ANALYSIS OF GOAT ROCK DOME XENOLITHS

BERTOLETT, Elisabeth M., Geosciences, Denison University, Granville, OH 43023, bertol_e1@denison.edu, **DEERING, Chad D.**, Geological and Mining Engineering and Sciences, Michigan Technological University, Houghton, MI 49931-1295, **PRIOR, David J.**, Geology, University of Otago, Dunedin, 9054, New Zealand, and **GRAVLEY, Darren M.**, Geological Sciences, University of Canterbury, Christchurch, 8140, New Zealand

SYNEXTENSIONAL SEDIMENTATION IN THE HANGING WALL OF THE BUCKSKIN DETACHMENT FAULT, WEST-CENTRAL ARIZONA: EVIDENCE FOR ACCELERATED EXTENSION RATES IN THE MIDDLE MIOCENE?

HATFIELD, Marques E.¹, **SINGLETON, John**², **BIRD, Emily**², and **PRIOR, Michael G.**³, (1) George Mason University, 10483 Malone Court, Fairfax, VA 22032, marques.hatfield@gmail.com, (2) Atmospheric, Oceanic, and Earth Sciences, George Mason University, 4400 University Drive, Mail Stop 5F2, Fairfax, VA 22030, (3) Jackson School of Geosciences, University of Texas at Austin, Jackson School of Geosciences 1 University Station C9000, Austin, TX 78712-0254

A COMPARISON OF TWO COMMON CONTINUOUS FLOW IRMS APPROACHES ON THE ISOPRIME MULTIFLOW AND THE ISOPRIME PYROCUBE FOR $\delta^{13}C$ USING LATE ORDOVICIAN CARBONATES FROM SWEDEN

EUKER, Brandon C.¹, **LAW, Stacey E.**¹, **MEIERDIERCKS, Kathleen Anne**¹, **BAEDKE, Steve J.**², **LESLIE, Stephen A.**³, and **HERRMANN, Achim D.**⁴, (1) Department of Geology and Environmental Science, James Madison University, Harrisonburg, VA 22807, eukerbc@dukes.jmu.edu, (2) Department of Geology and Environmental Science, James Madison University, MSC 6903, Harrisonburg, VA 22807, (3) Geology and Environmental Sciences, James Madison University, MSC 6903, Harrisonburg, VA 22807, (4) Geology & Geophysics, Louisiana State University, Baton Rouge, LA 70803

SEASONAL CHLORIDE BEHAVIOR IN THE GREAT MIAMI RIVER, OHIO

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A SCHEME FOR EVALUATING THE IMPACT OF DEVELOPMENT ON THE GEOMORPHIC AND ECOLOGIC PROCESSES OF LAKE MICHIGAN'S COASTAL DUNES

PLOWMAN, Jacquelyn K.¹, **DEVRIES-ZIMMERMAN, Suzanne J.**¹, **DAVIS, Charles F. III**², and **HANSEN, Edward C.**¹, (1) Geological and Environmental Sciences Department, Hope College, 35 E. 12th Street, Holland, MI 49423, jackie.plowman@hope.edu, (2) Davis Associates Architects & Consultants, Inc, 53 West Jackson Boulevard, Chicago, IL 60604

THE HARPETH RIVER FAULT ZONE, CENTRAL TENNESSEE

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REVEALING THE HIDDEN PAST OF LEGACY SEDIMENTS FROM MIDDLE CREEK LAKE, SELINGROVE, PA

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PHYSIOLOGICAL AND ISOTOPIC RESPONSES OF THE CORAL STYLOPHORA PISTILLATA TO FUTURE COASTAL OCEAN CONDITIONS

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SOIL LEAD DISTRIBUTION AT A TWO SITES: IMPLICATIONS FOR LEAD SOIL OUTREACH IN THE PROMISE NEIGHBORHOOD, SPRINGFIELD, OH

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MIOCENE STRUCTURAL EVOLUTION OF THE BUCKSKIN DETACHMENT FAULT ZONE, WEST-CENTRAL ARIZONA: INSIGHTS FROM GEOLOGIC MAPPING IN THE SOUTHERN LINCOLN RANCH BASIN

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MINERALOGY OF THE LUNA VISTA SILL, BREWSTER COUNTRY, TEXAS

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POTENTIAL INFLUENCE OF CLIMATE ON FLOOD RECURRENCE IN THE WINOOSKI RIVER WATERSHED, VERMONT

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INFLUENCE OF PRECIPITATION PATTERNS ON SURFACE WATER AND GROUNDWATER IN THE SANDY CREEK WATERSHED, NEW YORK

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EVIDENCE FROM JOINT SETS AND SHEAR ZONES IN EASTERN NEW YORK FOR TWO OROGENIC EVENTS AND THE WESTWARD DISPLACEMENT OF THE CATSKILL MOUNTAINS ALONG A DECOLLEMENT

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DEVELOPMENT OF A RAPID FIELD-PORTABLE SOIL PHOSPHORUS ANALYSIS METHOD AND APPLICATION TO ARCHAEOLOGICAL SITES

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EVALUATION OF FLOOD RECURRENCE IN THE CHEMUNG RIVER WATERSHED, NEW YORK

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PROVENANCE OF LATE JURASSIC TO LATE CRETACEOUS SANDSTONES IN SOUTHWEST OREGON

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CO₂ FLUX FROM A SINGLE MAPPED SOIL UNIT UNDER DIFFERENT MANAGEMENT PRACTICES

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VARIATIONS IN GROUNDWATER AND SURFACE WATER CHEMISTRY IN THE SANDY CREEK (NY) WATERSHED: NATURAL OR ANTHROPOGENIC IMPACTS

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DISSOLUTION OF TREMOLITE BY ARTIFICIAL LYSOSOMAL FLUIDS

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INVESTIGATION OF SUBFOSSIL TREES AT IRELY LAKE, OLYMPIC NATIONAL PARK, WASHINGTON, USA

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