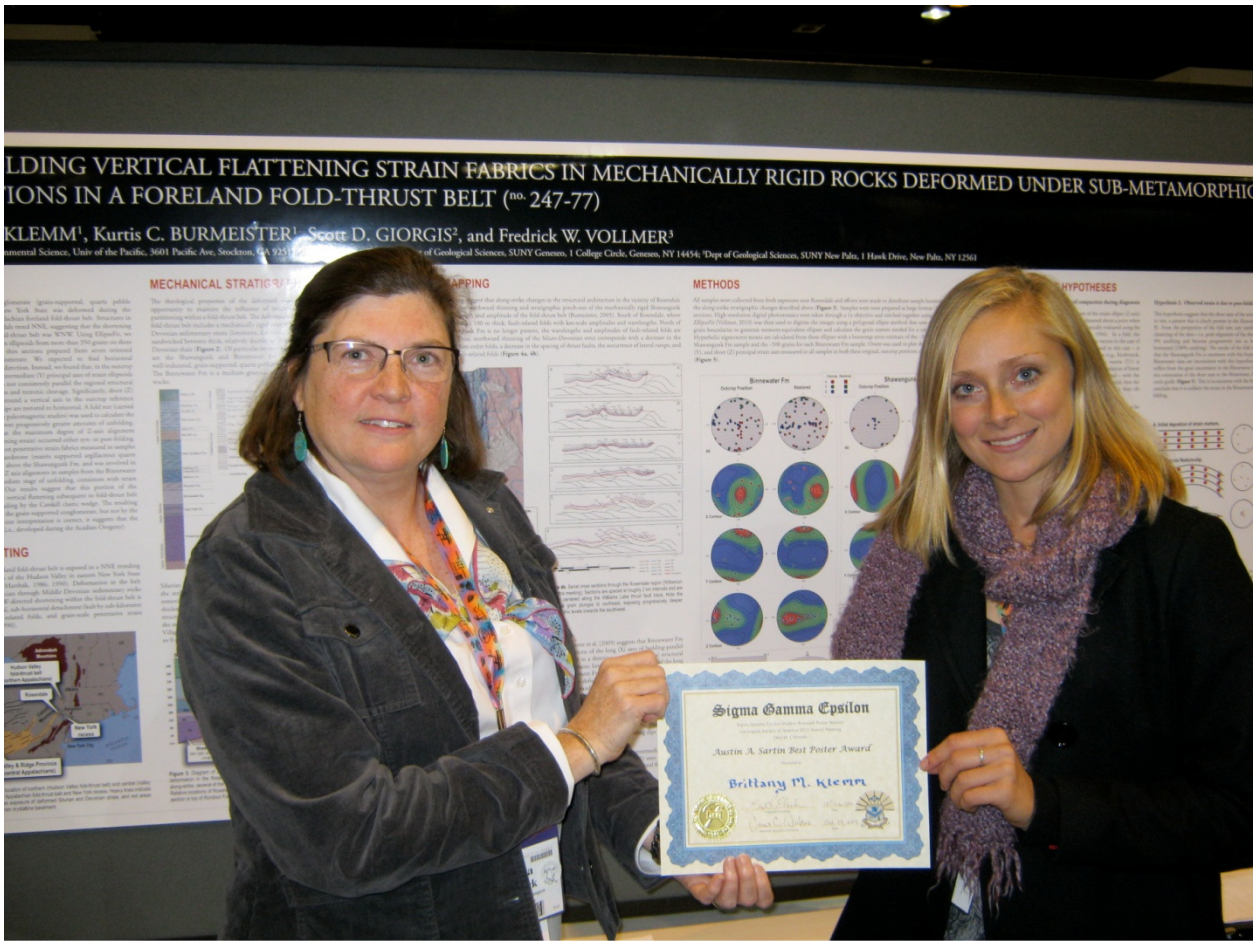
SGE Student Research

Poster Session at the 2013 GSA Meeting

Denver, CO



2013 Austin A. Sartin Best Poster Award

Sigma Gamma Epsilon President Erika Elswick presents Brittany Klemm with the 2013 Austin A. Sartin Best Poster Award. Brittney is a member of Eta Upsilon Chapter at the University of the Pacific in Stockton, CA. Her winning research poster was titled POST-FOLDING VERTICAL FLATTENING STRAIN FABRICS IN MECHANICALLY RIGID ROCKS DEFORMED UNDER SUB-METAMORPHIC CONDITIONS IN A FORELAND FOLD-THRUST BELT. Her co-authors were Kurtis Burmeister, Scott Giorgis and Frederick Vollmer.

2013 National Council Best Poster Award

Sigma Gamma Epsilon President Erika Elswick presents Sebastian Dirringer with the 2013 National Council Best Poster Award. Sebastian is a member of Theta Beta Chapter at the State University of New York in New Paltz, NY. His winning research poster was titled A TEST OF THE ANALYTICAL WELLMAN AND MEAN POLYGON MOMENT ELLIPSE METHODS OF STRAIN ANALYSIS USING A SAMPLE OF DEFORMED ORDOVICIAN GRAPTOLIFEROUS SLATE FROM THE TACONIC OROGEN, NEW YORK . Frederick Vollmer was a co-author on with Dirringer.

The 2013 Sigma Gamma Epsilon Undergraduate Research (Poster Session) took place during the 2013 GSA Conference in Denver, CO. on Tuesday, 29 October 2013: 9:00 a.m. - 6:30 p.m. (Authors were present from 2 to 4 p.m. and 5:00 to 6:30 p.m.).

List of 2013 Abstracts

CHARACTERIZATION OF AN ERUPTIVE SEQUENCE OF CINDER AND SPATTER CONES IN THE ICE SPRINGS VOLCANIC FIELD OF THE BLACK ROCK DESERT, UTAH **HINKS, Benjamin D.**[1], WILCH, Thomas I.[1], POLLOCK, Meagen[2], JUDGE, Shelley A.[2], REDNER, Ellen[1], HALL, Tricia[2], SILVERSTEIN, Adam[3], THORTON, Candice[2], MATESICH, Cameron[2], and BURDEN, Kyle[2], (1) Geological Sciences, Albion College, 611 E Porter St, Albion, MI 49224, bdh12@albion.edu, (2) Department of Geology, College of Wooster, 944 College Mall, Scovel Hall, Wooster, OH 44691, (3) Department of Geology, The College of Wooster, 944 College Mall, Scovel Hall, Wooster, OH 44691

NON-UNIFORM GROUNDWATER AND NUTRIENT INPUT IN THE UPPER KALAMAZOO RIVER, MICHIGAN **SCELINA, Noelle R.**, KELLER, Heidi J., WILCH, Thomas I., and LINCOLN, Timothy N., Geological Sciences, Albion College, 611 E Porter St, Albion, MI 49224, nrs10@albion.edu

FLUID INCLUSION STUDY OF GOLD-BEARING QUARTZ VEINS IN THE SOUTHERN BLACK HILLS, SOUTH DAKOTA **REYNOLDS, James W.**, LINCOLN, Timothy N., and DOERING, Ruthie, Geological Sciences, Albion College, 611 East Porter St, Albion, MI 49224, jwr11@albion.edu

CONSTRAINING THE EXTENT OF METASOMATISM WITH OXYGEN ISOTOPE GEOCHEMISTRY OF ZIRCONS FROM UHP ORTHOGNEISS, NORTH QAIDAM, CHINA **HUGGINS, David**[1], MENOLD, Carrie[1], and GROVE, Marty[2], (1) Geological Sciences, Albion College, 611 East Porter St, Albion, MI 49224, dbh11@albion.edu, (2) Department of Geological and Environmental Sciences, Stanford University, Stanford, CA 94305

SUBSURFACE 3-D MODELING OF THE CONCHO RIVER WATERSHED, TEXAS **SCHLEMEYER, Brooke A.** and WARD, James W., Physics and Geosciences, Angelo State University, ASU Station #10904, San Angelo, TX 76909, bschlemeyer@angelo.edu

MAPPING AND KINEMATIC INTERPRETATION OF THE FRIES AND GOSSAN-LEAD FAULTS IN NORTHWEST NORTH CAROLINA **QUILLAN, Kevin R.**, Geology, Appalachian State University, Boone, NC 28608, quillankr@appstate.edu, LEVINE, Jamie, Dept of Geology, Appalachian State University, Boone, NC 28608, and MERSCHAT, Arthur J., Eastern Geology and Paleoclimate Science Center, U. S. Geological Survey, MS 926A, Reston, VA 20192

U-PB ZIRCON GEOCHRONOLOGY IN THE LATE DEVONIAN EXSHAW FORMATION: GLOBAL CORRELATION WITH THE HANGENBERG BLACK SHALE AND EXTINCTION EVENT **EKHOFF, Josh**[1], BUNDY, Kathleen[1], SCHMITZ, Mark[1], DAVYDOV, Vladimir[1], and OVER, D. Jeffrey[2], (1) Department of Geosciences, Boise State University, 1910 University Drive, Boise, ID 83725, joshuaekhoff@u.boisestate.edu, (2) Geological Sciences, S.U.N.Y. Geneseo, Geneseo, NY 14454-1401

MICROBIAL DIVERSITY IN GYPSUM MATS UTILIZING MICROSCOPY AND DNA ANALYSIS **ANDESKIE, Anna Sofia**, Binghamton University, 4710 Vestal Parkway E, Vestal, NY 13850, aandesk1@binghamton.edu and CHEUNG, Alice, Binghamton University, Vestal, NY 13850

HYDROGEOLOGY AND GEOCHEMISTRY OF BEDROCK VS. LANDSLIDE-SOURCED SPRINGS IN THE EASTERN SAN GABRIEL MOUNTAINS, CALIFORNIA **SOTO, Paula M.**, LENHERT, Lucas, SMITH, Danielle W., NOURSE, Jonathan A., and OSBORN, Stephen G., Geological Sciences Department, California State Polytechnic University, 3801 W Temple Ave, Pomona, CA 91768, pmsoto@csupomona.edu

WATER QUALITY OF THE THOMPSON'S CREEK WATERSHED, CLAREMONT, CA **GONZALEZ, Jazmin**, Geological Sciences, Cal Poly Pomona, Pomona, CA 91768, jpgonzalez@csupomona.edu and OSBORN, Stephen G., Geological Sciences Department, California State Polytechnic University - Pomona, Pomona, 91768

AN INTEGRATED STUDY OF A HOT SPRINGS MICROBIAL COMMUNITY IN THERMOPOLIS, WY **BUCKINGHAM, Austin R.**, LAW, Ruth M., HOLLEY, Georgianna A., YEOMANS, Nathan S., and SMAGLIK, Suzanne M., Central Wyoming College, 2660 Peck Ave, Riverton, WY 82501, ssmaglik@cwc.edu

GEOBIOCHEMICAL AND GEOPHYSICAL CHARACTERISTICS OF WHITE SULFUR SPRING, THERMOPOLIS, WY **HOLLEY, Georgianna A.**, YEOMANS, Nathan S., LAW, Ruth M., COLEMAN, Cheryl L., BUCKINGHAM, Austin R., and SMAGLIK, Suzanne M., Central Wyoming College, 2660 Peck Ave, Riverton, WY 82501, ssmaglik@cwc.edu

A GEOPHYSICAL STUDY OF AN ANOMALOUSLY FLAT LANDFORM ALONG THE EASTERN FLANK OF THE WIND RIVER MOUNTAINS **COLEMAN, Cheryl L.**, HOLLEY, Georgianna A., LAW, Ruth M., and SMAGLIK, Suzanne M., Central Wyoming College, 2660 Peck Ave, Riverton, WY 82501, ssmaglik@cwc.edu

RECONSTRUCTION OF ERUPTION CONDITIONS BASED ON CRATER RIM STRATIGRAPHY AT MITER CRATER, ICE SPRINGS VOLCANIC FIELD, BLACK ROCK DESERT, UTAH **BURDEN, Kyle**[1], REDNER, Ellen[2], WILCH, Thomas I.[2], JUDGE, Shelley[1], POLLOCK, Meagen[1], HINKS, Benjamin D.[2], HALL, Tricia[1], WILLIAMS, Michael[1], THORNTON, Candice[1], and MATESICH, Cameron[1], (1) Department of Geology, College of Wooster, 944 College Mall, Scovel Hall, Wooster, OH 44691, kburden14@wooster.edu, (2) Geological Sciences, Albion College, 611 E Porter St, Albion, MI 49224

PETROLOGIC AND KINEMATIC ANALYSIS OF DEFORMATION BANDS IN THE LATE CRETACEOUS SIXMILE CANYON FORMATION, CENTRAL UTAH **HALL, Tricia**, Department of Geology, College of Wooster, 944 College Mall, Scovel Hall, Wooster, OH 44691, thall14@wooster.edu and JUDGE, Shelley A., Department of Geology, The College of Wooster, 944 College Mall, Scovel Hall, Wooster, OH 44691

GEOLOGIC MAPPING AT EMI KOUSSI VOLCANO IN THE CENTRAL SAHARA DESERT USING LANDSAT ETM+ DATA **WEBSTER, Eli Charles**, Geology and Environmental Geosciences, College of Charleston, Charleston, SC 29424, ecwebste@g.cofc.edu and NUSBAUM, Robert L., Geology and Environmental Geosciences, College of Charleston, 66 George St, Charleston, SC 29424

PETROGRAPHY AND GEOCHEMISTRY OF MAFIC-INTERMEDIATE DIKES FROM THE NORTHERN SAWATCH RANGE, COLORADO **BARBERY, Albert**, FACEMYER, Christina, ALLEN, Joseph L., and KUEHN, Stephen C., Physical Sciences, Concord University, 1000 Vermillion St, Athens, WV 24712, barberya21@mycu.concord.edu

AN ASSESSMENT OF THE 1966 FLOOD OF THE ARNO RIVER, FLORENCE, ITALY, FROM NEW MAPPING OF HISTORICAL DATA **HALE, Chandler T.**, WHITE, John Charles, MAYNARD, Whitney Tara, HUFFMAN, F. Tyler, and WATTS, Erin, Department of Geography & Geology, Eastern Kentucky University, 521 Lancaster Ave, Roark 103, Richmond, KY 40475, chandler_hale24@mymail.eku.edu

PRELIMINARY STUDY OF SERPENTINITE SAMPLES FROM THE INGALLS OPHIOLITE COMPLEX, CENTRAL CASCADES, WASHINGTON **MILLIKEN, Scott H.** and MACDONALD, James H. Jr, Marine & Ecological Sciences, Florida Gulf Coast University, 10501 FGCU Blvd South, Ft. Myers, FL 33965, shmilliken1191@eagle.fgcu.edu

INVESTIGATION INTO POTENTIAL NUTRIENT CONTENT FROM WOOD PROCESSING WASTE **DOZIER, Rebecca**, Department of Geology, Guilford College, 5325 Yorktown Rd, Bethesda, MD 20816, dozierrj@guilford.edu and MOORE, Angela M., Deparment of Geology, Guilford College, 5800 W. Friendly Ave, Greensboro, NC 27410

TOC, C/N, $\delta^{13}C$, AND $\delta^{15}N$ OF SHALES FROM THE MISSISSIPPIAN MICHIGAN FORMATION, WESTERN MICHIGAN **LOCKMILLER, Kayla A.** and VIDETICH, Patricia E., Geology Department, Grand Valley State University, 1 Campus Drive, Allendale, MI 49401, lockmilk@mail.gvsu.edu

GEOCHEMICAL STUDY OF OULEOUT CREEK, NY **WINTERS, Catherine G.**, Department of Chemistry, Hartwick College, Oneonta, NY 13820, catherine.g.winters@gmail.com and BALOGH-BRUNSTAD, Zsuzsanna, Department of Geology and Environmental Sciences, Hartwick College, Oneonta, NY 13820

CHEMICAL AND PHYSICAL CHARACTERIZATION OF A KETTLE LAKE IN UPSTATE NEW YORK **O'CONNOR, Keith** and BALOGH-BRUNSTAD, Z., Department of Geology and Environmental Sciences, Hartwick College, One Hartwick Drive, Oneonta, NY 13820, oconnork2@hartwick.edu

ICE MARGINAL DRAINAGE DURING THE FORMATION OF THE BIG STONE MORAINE, WEST CENTRAL MINNESOTA: EVIDENCE FOR DES MOINES LOBE ICE DYNAMICS AND POSSIBLE ICE STREAM CONDITIONS **VELASCO CAMPOS, Claudia J.**, Geology Department, Humboldt State University, Arcata, CA 95521, cjv96@humboldt.edu and COTTER, James F.P., Geology Discipline, University of Minnesota, Morris, 600 East 4th Street, Morris, MN 56267

DETRITAL ZIRCON U/PB PROVENANCE OF THE LOWER CRETACEOUS CLOVERLY FORMATION, BIG HORN AND POWDER RIVER BASINS, WYOMING MALONE, David H.[1], CRADDOCK, John P.[2], and **HOWELL, Brett A.**[1], (1) Department of Geography-Geology, Illinois State University, Campus Box 4400, Normal, IL 61761, bahowel@ilstu.edu, (2) Geology Department, Macalester College, 1600 Grand Avenue, St. Paul, MN 55105

AGE AND PROVENANCE OF EOCENE VOLCANIC ROCKS AT HOMINY PEAK, NORTHERN TETON RANGE, WY **MUSTAIN, Monica**, Illinois State University, Normal, IL 61761, mrmusta@ilstu.edu, MALONE, David, Geography-Geology, Illinois State Univ, Campus Box 4400, Normal, IL 61761-4400, and CRADDOCK, John P., Geology Department, Macalester College, 1600 Grand Avenue, St. Paul, MN 55105

AGE AND PROVENANCE OF PROXIMAL TERTIARY QUARTZITE COBBLE CONGLOMERATES NEAR JACKSON HOLE, WY USING DETRITAL ZIRCON U/PB GEOCHRONOLOGY **RAPPE, Jason D.**, Geography-Geology, Illinois State University, Campus Box 4400, Normal, 61790, jdrappe@ilstu.edu, MALONE, David, Geography-Geology, Illinois State Univ, Campus Box 4400, Normal, IL 61761-4400, and CRADDOCK, John P., Geology Department, Macalester College, 1600 Grand Avenue, St. Paul, MN 55105

AGE AND PROVENANCE OF QUARTZITE CLASTS IN TERTIARY CONGLOMERATES, WESTERN BIG HORN BASIN, WY USING DETRITAL ZIRCON U/PB GEOCHRONOLOGY MALONE, David H.[1], CRADDOCK, John P.[2], and **SCROGGINS, Mary Ann**[1], (1) Department of Geography-Geology, Illinois State University, Campus Box 4400, Normal, IL 61761, mascrog@ilstu.edu, (2) Geology Department, Macalester College, 1600 Grand Avenue, St. Paul, MN 55105

CAN CARBON ISOTOPES CONSTRAIN HIGH-RESOLUTION STRATIGRAPHY OF ORDOVICIAN SHALLOW WATER FACIES IN THE CINCINNATI, OHIO REGION? FREEMAN, Rebecca L., Earth & Environmental Sciences Department, University of Kentucky, Lexington, KY 40506, **FISCHER, Sarah**, Department of Geosciences, Indiana University-Purdue University Fort Wayne, 2102 Coliseum Boulevard, Fort Wayne, IN 46805-1499, sarieface@gmail.com, DATTILO, Benjamin F., Department of Geosciences, Indiana University Purdue University, Fort Wayne, IN 46805, SCHRAMM, Thomas J., Department of Geology and Geophysics, Louisiana State University, E235 Howe-Russell Geoscience Complex, Baton Rouge, LA 70803, BRETT, Carlton E., Department of Geology, University of Cincinnati, Cincinnati, OH 45221-0013, MOSSER, Sasha L., Geology, Indiana University Purdue University Fort Wayne, 2101 E. Coliseum Blvd, Fort Wayne, IN 46805, BLAIR, Michael, Dept. of Geosciences, Indiana University Purdue University Fort Wayne, 2102 Coliseum Blvd, Fort Wayne, IN 46805-1499, and CHAKRABORTY, Suvankar, Department of Earth and Environmental Sciences, University of Kentucky, Lexington, KY 40506

SO YOU MEASURED CHEMICAL PARAMETERS IN A WELL FIELD AND SO WHAT? **BUDD, Sarah K.**, Geosciences, Indiana Purdue University Fort Wayne (IPFW), 2101 E. Coliseum Blvd, Fort Wayne, IN 46805-1499, buddsk01@students.ipfw.edu, LAFAUCIA, Tammy, Department of Geosciences, Indiana Purdue University Fort Wayne (IPFW), 2101 E. Coliseum Blvd, Fort Wayne, IN 46805-1499, and ISIORHO, S.A., Geosciences Dept, Indiana University - Purdue University Fort Wayne (IPFW), 2101 E. Coliseum Blvd, Fort Wayne, IN 46805-1499

AFFIRMATION OF ANTARCTIC-LAURENTIAN RODINIAN JUXTAPOSITION DURING THE MESOPROTEROZOIC **HODGSON, Justin**[1], LICHT, Kathy[1], and SWOPE, R. Jeffrey[2], (1) Department of Earth Sciences, Indiana University-Purdue University Indianapolis, 723 West Michigan Street, SL 118, Indianapolis, IN 46202, jwhodgso@iupui.edu, (2) Department of Geology, Indiana University - Purdue University Indianapolis, 723 West Michigan Street, SL118, Indianapolis, IN 46202-5132

PLANKTIC FORAMINIFERA BIOSTRATIGRAPHY OF CORE MD02-2560, KANE SPUR, GULF OF MEXICO **SCHMITT, Erin**, Geology and Environmental Science, James Madison University, Harrisonburg, VA 22807, schmitee@dukes.jmu.edu and ST. JOHN, Kristen E., Geology and Environmental Science, James Madison University, MSC 6903, Harrisonburg, VA 28608

MINERALOGY AND GEOCHEMISTRY OF AN ANTHROPOCENE (~350 YR) SEDIMENT CORE FROM LAKE BARINGO, KENYA **SPETKA, Stephanie**[1], PICKERING, Rebecca A.[2], TAYLOR, Lucy C.[2], KIAGE, Lawrence[3], LIU, Kam-biu[4], and DEOCAMPO, Daniel[5], (1) Morton K. Blaustein Department of Earth and Planetary Sciences, Johns Hopkins University, 3400 North Charles Street, Baltimore, MD 21218, sspetka1@jhu.edu, (2) Geosciences, Georgia State University, 24 Peachtree Center Avenue Northeast, Atlanta, GA 30303, (3) Geosciences, Georgia State University, P.O. Box 4105, Atlanta, GA 30302, (4) Department of Oceanography and Coastal Sciences, Louisiana State University, Baton Rouge, LA 70803, (5) Geosciences, Georgia State University, PO Box 4105, Atlanta, GA 30302

TRANSPORT OF DETRITAL SEDIMENTS IN LOW-GRADIENT STREAM SECTIONS IN THE TETON MOUNTAIN RANGE AND THE GUADALUPE AND SACRAMENTO MOUNTAINS **ZAWACKI, Emily E.**[1], RITCHIE, Amber J.[2], HOFFMAN, Lauren L.[2], and TRANEL, Lisa M.[2], (1) Department of Geology, Lawrence University, 711 E. Boldt Way, Appleton, WI 54911, emily.e.zawacki@lawrence.edu, (2) Department of Geography-Geology, Illinois State University, 100 N. University Street, Normal, IL 61761

OPTIMIZATION OF ENGINEERED INJECTION AND EXTRACTION FOR IN SITU REMEDIATION OF SORBING GROUNDWATER CONTAMINANTS **BRODT, John P.**, Department of Civil and Environmental Engineering, Louisiana State University, 1371 Stephens Ave, Baton Rouge, LA 70808, jbrodt2@tigers.lsu.edu and NEUPAUER, Roseanna M., Civil, Environmental, and Architectural Engineering, University of Colorado, 1111 Engineering Dr, ECOT 441, UCB 428, Boulder, CO 80309

MINERALOGICAL AND GEOCHEMICAL EVOLUTION OF TROPICAL SOILS IN A COASTAL TERRACE SEQUENCE RYAN, Peter C., **PINCUS, Lauren**, and FALCONES, Kristoffer, Geology Department, Middlebury College, 276 Bicentennial Way, Middlebury, VT 05753, lpincus@middlebury.edu

A RECONNAISSANCE OF TRACE ELEMENT SIGNATURES FROM WEST TEXAS GYPSUM DEPOSITS **BICKHARD, Kari L.**, WILLEBY, Shelby, and PRICE, Jonathan D., Department of Chemistry, Geosciences, & Physics, Midwestern State University, 3410 Taft Blvd, Wichita Falls, TX 76308, kari.bickhard.0219@students.mwsu.edu

EXAMINING MICROBIAL DIVERSITY IN THE EOCENE FANCY FARM LIGNITE THROUGH A TIERED MENTORING PROGRAM FOR UNDERGRADUATES AND GRADUATE STUDENTS **DUTTON, Kurstie R.**[1], JOHNSTON, Michelle[2], and O'KEEFE, Jennifer M.K.[1], (1) Earth & Space Sciences, Morehead State University, 404-A Lappin Hall, Morehead, KY 40351, krdutton@moreheadstate.edu, (2) Department of Earth and Environmental Sciences, University of Kentucky, 218 Briarwood Place, Frankfort, KY 40601

GROUNDWATER/SURFACE-WATER INTERACTION IN A LOSING REACH OF THE EL RITO WATERSHED **STEWART-MADDOX, Noah S.**[1], WARD, Vanessa[2], COKER, Keith[3], TYSOR, Elizabeth H.[3], and SCHLOSSNAGLE, Trevor H.[3], (1) Earth and Environmental Science, New Mexico School of Mining and Technology, 801 S Leroy Pl 2906, Tulsa, NM 87801, nstewart@nmt.edu, (2) Earth and Environmental Science, New Mexico School of Mining and Technology, 801 S Leroy Pl, Santa Fe, NM 87507, (3) Earth and Environmental Science, New Mexico School of Mining and Technology, 801 S Leroy Pl, Socorro, NM 87801

MODERN MIXED CARBONATE-SILICICLASTIC DEPOSITIONAL ENVIRONMENT OF THE SALEM BAY, JAMAICA **GOLDBERG, Michelle**, Canton, NY 13617, megold11@stlawu.edu and HUSINEC, Antun, Geology Department, St. Lawrence University, 23 Romoda Drive, Canton, NY 13617

THE EFFECT OF SAND CONTENT ON SEDIMENT TRANSPORT, DEPOSITION, AND BAR MORPHOLOGY **KEMPER, John Trusal**, 501 Rocksville Rd, Holland, PA 18966, jtrusalkemper@gmail.com

LEARNING GIS THROUGH FACULTY-GUIDED RESEARCH PROJECTS **BLAKER, Shari**[1], GRAY, Jackea[1], BALDAUF, Paul[1], HOUSEHOLDER, Eric[2], and BURKHART, Patrick[3], (1) Division of Math, Science, and Technology, Nova Southeastern University, 3301 College Avenue, Fort Lauderdale, FL 33314, sb1135@nova.edu, (2) Water Quality Division, South Florida Water Management Division, 3 301 Gun Club Road, West Palm Beach, FL 33406, (3) Geography, Geology, and Environment, Slippery Rock University, 335 ATS, Slippery Rock, PA 16057

ANALYSIS OF BASAL TILL DEPOSITS BIG STONE MORAINE, STEVENS COUNTY, MINNESOTA AND ROBERTS COUNTY, SOUTH DAKOTA **CASEY, Tiyana R.**, Department of Geology, Portland State University, 1721 SW Broadway, Portland, OR 97201, tcasey@pdx.edu and COTTER, James F.P., Geology Discipline, University of Minnesota, Morris, 600 East 4th Street, Morris, MN 56267

PHYSICAL VOLCANOLOGY OF DISSECTED PARASITIC CONES OF THE MIOCENE AKAROA VOLCANIC COMPLEX, BANKS PENINSULA, NEW ZEALAND
BURGI, Paula[1], COWLYN, James[2], HAMPTON, Samuel J.[2], and GRAVLEY, Darren M.[2], (1) Department of Geosciences, Smith College, Clark Science Center, 44 College Lane, Northampton, MA 01063, pburgi@smith.edu, (2) Geological Sciences, University of Canterbury, Private Bag 4800, Christchurch, 8140, New Zealand

MARTIAN PLATE MOTIONS IN THE VICINITY OF VALLES MARINERIS AND THARSIS RISE
KIDMAN, Genevieve, Physical Science, Southern Utah University, 269 South Dewey, Apt. 4, Cedar City, UT 84720, genevievekidman@yahoo.com, SKANKEY, Robert, Physical Science, Southern Utah University, 354 West 600 South, Apt. A, Cedar City, UT 84720, and MACLEAN, John S., Geology, Southern Utah University, SC 309, 351 West University Boulevard, Cedar City, UT 84720

INTERPRETING SEDIMENTARY FACIES AND FACIES ASSOCIATIONS FROM A 1500-FT LONG, BEHIND OUTCROP CORE THROUGH UPPER CRETACEOUS STRATA IN SE UTAH
FRANCISCO, Spencer, Physical Science, Southern Utah University, 468 S 75 W, Apt. 29, Cedar City, UT 84720, spencerm24@yahoo.com, MACLEAN, John S., Geology, Southern Utah University, SC 309, 351 West University Boulevard, Cedar City, UT 84720, and HOFMANN, Michael H., Department of Geosciences, The University of Montana, Missoula, MT 59812

GEOLOGIC MAPPING OF FRACTURE DENSITY AND MINERALIZATION IN THE SAN FRANCISCO RANGE, SOUTHWESTERN UTAH **GARDNER, Chadrick**, Geology, Southern Utah University, 7 S. Cove Dr, Cedar City, UT 84720, kindbus@yahoo.com, MACLEAN, John S., Geology, Southern Utah University, SC 309, 351 West University Boulevard, Cedar City, UT 84720, and CHIPMAN, Jefferson, Physical Science, Southern Utah University, 673 West 400 North, Apt 2, Cedar City, UT 84721

HYDROTHERMAL MINERALIZATION OF THE JURASSIC NAVAJO SANDSTONE IN THE FOOTWALL OF THE BLUE MOUNTAIN THRUST FAULT, SOUTHWESTERN UTAH **DAYTON, Christine E.**, Geology, Southern Utah University, SC 309, 351 West University Boulevard, Cedar City, UT 84720, christinedayton@gmail.com and MACLEAN, John S., Geology, Southern Utah University, SC 309, 351 West University Boulevard, Cedar City, UT 84720

DEGLACIATION HISTORY OF THE FOX FEN, ADIRONDACKS, NY
KEENHOLD, Bryn W.[1], STEWART, Alexander K.[1], and RODBELL, Donald T.[2], (1) Department of Geology, St. Lawrence University, Canton, NY 13617, bwkeen10@stlawu.edu, (2) Geology, Union College, Schenectady, NY 12308-3107

MICROFACIES, MINERALOGY, AND STABLE-ISOTOPE RECORD OF THE EAST BEACH LAGOON SEDIMENT, SAN SALVADOR ISLAND, BAHAMAS
LOREE, Peter E., Geology, St. Lawrence University, 23 Romoda Dr, Canton, NY 13617, pelore10@stlawu.edu, MURPHY, John T. Jr, Geology, Binghamton University, State University of New York, PO Box 6000, Binghamton, NY 13902-6000, and HUSINEC, Antun, Geology Department, St. Lawrence University, 23 Romoda Drive, Canton, NY 13617

A TEST OF THE ANALYTICAL WELLMAN AND MEAN POLYGON MOMENT ELLIPSE METHODS OF STRAIN ANALYSIS USING A SAMPLE OF DEFORMED ORDOVICIAN GRAPTOLIFEROUS SLATE FROM THE TACONIC OROGEN, NEW YORK
DIRRINGER, Sebastian, Geology Department, SUNY New Paltz, 1 Hawk Drive, New Paltz, NY 12561, sdirring@kent.edu and VOLLMER, Frederick W., Geology Department, SUNY New Paltz, New Paltz, NY 12561

TECTONIC SIGNIFICANCE AND AGE RELATIONSHIPS OF JOINT SETS IN THE EASTERN CATSKILL MOUNTAINS, NORTH-SOUTH LAKE AREA, NEW YORK
CRADDOCK, Tristan, Geology Department, SUNY New Paltz, 1 Hawk Drive, New Paltz, NY 12561, craddo53@hawkmail.newpaltz.edu and VOLLMER, Frederick W., Geology Department, SUNY New Paltz, New Paltz, NY 12561

ANALYSIS OF THE IMPORTANCE OF WEATHER AND CLIMATE TO DISCHARGE IN SMALL WATERSHEDS
ENGELS, Kimberly T., FRANCIS, Skylar J., ALLOCCO, Margaret H., and NOLL, Mark R., Department of the Earth Sciences, SUNY College at Brockport, 350 New Campus Dr, Brockport, NY 14420, kenge2@u.brockport.edu

KNOB BROOK, ADIRONDACK STATE PARK, NY: A STUDY IN THE INTERACTION OF A SLAG PILE AND ITS ENVIRONMENT BASED ON SEDIMENT LOAD, WATER CHEMISTRY, AND SOIL PH
O'SHAUGHNESSY, Kelly and FARTHING, Dori J., Department of Geological Sciences, SUNY Geneseo, 1 College Circle, Geneseo, NY 14454, kao15@geneseo.edu

PYRITIZATION OF A *STIGMARIA* FROM THE BOSS POINT FORMATION (PENNSYLVANIAN), NOVA SCOTIA
WAGNER, Erin E.[1], RYGEL, Michael C.[1], HEBERT, Brian L.[2], and O'BRIEN, Neal R.[1], (1) Department of Geology, State University of New York, College at Potsdam, 44 Pierrepont Ave, Potsdam, NY 13676, wagneree193@potsdam.edu, (2) 775 Downing Cove Road, Joggins, NS B0L1A0, Canada

PRODUCTION OF A PHYSICAL MODEL OF THE CENTRALIA COAL FIRE
NEUBAUER, Rebecca, Earth and Environmental Sciences, Susquehanna University, 514 University Ave, Selinsgrove, PA 17870, elick@susqu.edu and ELICK, Jennifer M., Earth and Environmental Sciences, Susquehanna University, 514 University Avenue, Fisher Science, Rm 27, Selinsgrove, PA 17870

THE FORMATION OF GLACIALLY STRIATED PAVEMENTS IN WITMARSUM, BRAZIL
SUMPTION, Grace L., Geology and Geological Engineering, South Dakota School of Mines and Technology, Rapid City, SD 57701, grace.sumption@mines.sdsmt.edu, ROCHA-CAMPOS, A.C., Instituto des Geosciências, Universidade de São Paulo, Sao Paulo, 05450-001, Brazil, and COTTER, James F.P., Geology Discipline, University of Minnesota, Morris, 600 East 4th Street, Morris, MN 56267

DEPOSITIONAL ENVIRONMENT OF CARBONIFEROUS GLACIOGENIC CLAY DEPOSITS, WITMARSUM, PARANA STATE, BRAZIL **JACKSON, Courtney C.**[1], ANDERSON FOLNAGY, Heidi[2], BACCI, D.C.[3], ROCHA-CAMPOS, A.C.[3], and COTTER, James F.P.[4], (1) Geography Department, The Pennsylvania State University, University Park, PA 16802, coj5074@psu.edu, (2) University of Montana Western, Dillon, MT 59725, (3) Instituto des Geosciências, Universidade de São Paulo, Sao Paulo, 05450-001, Brazil, (4) Geology Discipline, University of Minnesota, Morris, 600 East 4th Street, Morris, MN 56267

PURGATOIRE RIVER WATER QUALITY: A TWO-YEAR COLLEGE UNDERGRADUATE RESEARCH PROJECT FROM SOUTHERN COLORADO **BARANDIARAN, Alfonzo J.**, CAHOONE, Nathan, and KRUMM, Debra K., Math-Science, Trinidad State Junior College, 600 Prospect Street, Trinidad, CO 81082, abarandiaran@student.cccs.edu

PROVENANCE STUDY OF THE GOOSE ROCK CONGLOMERATE, CENTRAL OR: CHARACTERIZING THE MARGIN OF THE CRETACEOUS OCHOCO BASIN **HOPSON, Heath**, CANDUSSO, Nicholis, DODSON, Travis, and SURPLESS, Kathleen D., Geosciences, Trinity University, One Trinity Place, San Antonio, TX 78212, hhopson@trinity.edu

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THE MODERN RIO BERMEJO MEGAFAN, CHACO FORELAND BASIN (ARGENTINA) **SMITH, Preston**[1], MCGLUE, Michael[2], ZANI, Hiran[3], CARRAPA, B.[4], and COHEN, Andrew S.[4], (1) Geosciences, University of Arizona, 1040 E. 4th Street, Tucson, AZ 85721, phsmith@email.arizona.edu, (2) Department of Earth and Environmental Sciences, University of Kentucky, Lexington, KY 40506, (3) Imagem - Soluções de Inteligência Geográfica, CEP 12216-440 - São José dos Campos - SP, Brazil, (4) Department of Geosciences, University of Arizona, Tucson, AZ 85721

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A GEOMORPHIC ASSESSMENT OF FLOOD HAZARDS OF THE RISHI VALLEY IN THE TRANSHIMALAYA, LADAKH, NORTHERN INDIA **SCHWALBACH, Cameron E.**, ARKLE, Jeanette C., THOMAS, Rachel, DILLINGHAM, Jacob, and DIETSCH, Craig, Department of Geology, University of Cincinnati, ML 013, Cincinnati, OH 45221-0013, schwalce@mail.uc.edu

CHAOTIC ADVECTION AND CONTAMINANT DEGRADATION DURING ENGINEERED INJECTION AND EXTRACTION IN HETEROGENEOUS POROUS MEDIA **ACCARDO, Mathew**, Department of Civil, Environmental, and Architectural Engineering, University of Colorado Boulder, 1111 Engineering Dr, ECOT 441, UCB 428, Boulder, CO 80309, mathew.accardo@colorado.edu, NEUPAUER, Roseanna M., Civil, Environmental, and Architectural Engineering, University of Colorado, 1111 Engineering Dr, ECOT 441, UCB 428, Boulder, CO 80309, MEISS, James D., Department of Applied Mathematics, University of Colorado Boulder, 1111 Engineering Dr, UCB 526, Boulder, CO 80309, and MAYS, David C., Department of Civil Engineering, University of Colorado Denver, Campus Box 113, PO Box 173364, Denver, CO 80217-3364

PETROGRAPHY AND GEOCHEMISTRY OF THE BAIYANGHE VOLCANIC-HOSTED BE-U DEPOSIT, XINJIANG AUTONOMOUS REGION, NW CHINA **SHABAGA, Brandi**[1], FAYEK, Mostafa[2], WANG, Guo[3], and WEN, Zhanjiu[3], (1) Geological Sciences, University of Manitoba, 240 Wallace Bldg, Winnipeg, MB R3T2N2, Canada, brandishabaga@gmail.com, (2) Geological Sciences, University of Manitoba, 240 Wallace Bldg, 125 Dysart Rd, Winnipeg, MB R3T2N2, Canada, (3) Geological Party No. 216, China National Nuclear Corp. (CNNC), P.O Box 84, BeiJinNan Road, Urumqi, 830011, China

SEDIMENTOLOGY AND STRATIGRAPHY OF THE EOCENE COCKFIELD FORMATION AT MEEMAN-SHELBY FOREST STATE PARK, WESTERN TENNESSEE **FERREIRA, Lauren A.**, Department of Earth sciences, University of Memphis, 201 Johnson Hall, Memphis, TN 38152, lfrreira@memphis.edu, LARSEN, Daniel, Department of Earth Sciences, University of Memphis, Johnson Hall, Rm 1, Memphis, TN 38152, and GALLO, Haley G., Department of Earth Sciences, University of Memphis, Johnson Hall, Rm 206, Memphis, TN 38152

ANALYSIS OF KAOLINITE IN THE DEVONIAN AGE FURNAS FORMATION WITMARSUM, PARANA STATE, BRAZIL: A PALEOZOIC ANALOG FOR THE PIPESTONE UNIT **WOOLDRIDGE, Sayge C.**, Geology Discipline, University of Minnesota Morris, 600 East 4th Street, Morris, MN 56267, woold008@morris.umn.edu and COTTER, James F.P., Geology Discipline, University of Minnesota, Morris, 600 East 4th Street, Morris, MN 56267

TERRESTRIAL LASER SCANNING (TLS) AS A TOOL TO DIFFERENTIATE AND CORRELATE UNCONSOLIDATED GLACIALLY DERIVED SEDIMENTS, YELLOW MEDICINE COUNTY, MINNEOSTA **CARNICLE, Melissa M.**, Division of Math and Science, Geology Discipline, University of Minnesota Morris, 600 East 4th Street, Morris, MN 56267, carn0083@morris.umn.edu and COTTER, James F.P., Geology Discipline, University of Minnesota, Morris, 600 East 4th Street, Morris, MN 56267

ANALYSIS OF CARBONIFEROUS GLACIAL FURROWS ON DEVONIAN BEDROCK, PARANA STATE, BRAZIL; EVIDENCE FOR PALEO-TOPOGRAPHIC INFLUENCE ON FLOW **TARBELL, Chelsea**, Geology Discipline, University of Minnesota, Morris, Morris, MN 56267, tarb0016@morris.umn.edu, ROCHA-CAMPOS, A.C., Instituto des Geosciências, Universidade de São Paulo, Sao Paulo, 05450-001, Brazil, and COTTER, James F.P., Geology Discipline, University of Minnesota, Morris, 600 East 4th Street, Morris, MN 56267

ANALYSIS OF ITARARè SUBGROUP CLAYS EXPOSED IN WITMARSUM, PARANA STATE, BRAZIL **SCARESHAWK, Kelsey**[1], ANDERSON FOLNAGY, Heidi[2], BACCI, D.C.[3], ROCHA-CAMPOS, A.C.[3], and COTTER, James F.P.[4], (1) Geology Discipline, University of Minnesota, Morris, Morris, MN 56267, scare004@morris.umn.edu, (2) University of Montana Western, Dillon, MT 59725, (3) Instituto des Geosciências, Universidade de São Paulo, Sao Paulo, 05450-001, Brazil, (4) Geology Discipline, University of Minnesota, Morris, 600 East 4th Street, Morris, MN 56267

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RELATIONSHIP BETWEEN MICROBIAL COMMUNITIES AND METAL MOBILITY IN URBAN WATERSHEDS, EASTERN SAN FRANCISCO BAY AREA, CA **TEAGUE, Kathryn E.**[1], RADEMACHER, Laura K.[1], LANG, JM[2], and FAUL, Kristina L.[3], (1) Department of Earth and Environmental Sciences, University of the Pacific, 3601 Pacific Avenue, Stockton, CA 95211, k_teague1@u.pacific.edu, (2) Genome Center, University of California Davis, 1 Shields Avenue, Davis, CA 95616, (3) Environmental Sciences Program/Department of Chemistry, Mills College, 5000 MacArthur Blvd, Oakland, CA 94613

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A STUDY OF HEAVY MINERALS FROM GRATER OF DIAMONDS STATE PARK, MURFREESBORO, ARKANSAS **GARGAN, Christopher R.** and HOLLABAUGH, Curtis L., Geosciences, University of West Georgia, Carrollton, GA 30118, cgargan1@my.westga.edu

CRYSTAL MORPHOLOGY OF RED BERYL CRYSTALS FOUND IN THE THOMAS RANGE, JUAB COUNTY, UTAH **HILL, Hannah S.** and HOLLABAUGH, Curtis L., Geosciences, University of West Georgia, Carrollton, GA 30118, shill11@my.westga.edu

MINERALOGIC AND TEXTURAL COMPARISON OF TWO SAMPLES OF AMPHIBOLITE FROM CARROLL COUNTY, WESTERN GEORGIA **MASSEY, Rachel** and BERG, Christopher A., Department of Geosciences, University of West Georgia, 1601 Maple Street, Carrollton, GA 30118, rmassey4@my.westga.edu

AN ASSESSSMENT OF SHORELINE CHANGE FOR SMALL ASSOCIATED ISLANDS OF PUERTO RICO AND THE UNITED STATES VIRGIN ISLANDS **RUNYAN, Ryann M.**[1], JACKSON, Chester W. Jr[2], BUSH, David M.[1], PERISON-PARRISH, Elizabeth M.[3], SIEMER, Kyle W.[4], LLERANDI-ROMÁN, Pablo A.[5], and NEAL, William J.[6], (1) Department of Geosciences, University of West Georgia, Carrollton, GA 30118, rrunyan1@my.westga.edu, (2) Department of Geology and Geography, Georgia Southern University, Statesboro, GA 30460, (3) Geosciences, University of West Georgia, Carrollton, GA 30118, (4) Department of Environmental Science, University of Toledo, 2801 W. Bancroft, Toledo, OH 43606, (5) Geology Dept, Grand Valley State University, 118 Padnos Hall of Science, One Campus Drive, Allendale, MI 49401-9403, (6) Department of Geology, Grand Valley State University, Allendale, MI 49401

A COASTAL VULNERABILITY INDEX FOR SMALL ISLANDS OF PUERTO RICO AND THE UNITED STATES VIRGIN ISLANDS **PERISON-PARRISH, Elizabeth M.**[1], JACKSON, Chester W. Jr[2], RUNYAN, Ryann M.[3], BUSH, David M.[3], SIEMER, Kyle W.[4], LLERANDI-ROMÁN, Pablo A.[5], and NEAL, William J.[6], (1) Geosciences, University of West Georgia, Carrollton, GA 30118, eperiso1@my.westga.edu, (2) Department of Geology and Geography, Georgia Southern University, Statesboro, GA 30460, (3) Department of Geosciences, University of West Georgia, Carrollton, GA 30118, (4) Department of Environmental Science, University of Toledo, 2801 W. Bancroft, Toledo, OH 43606, (5) Geology Dept, Grand Valley State University, 118 Padnos Hall of Science, One Campus Drive, Allendale, MI 49401-9403, (6) Department of Geology, Grand Valley State University, Allendale, MI 49401

TRACKING GROWTH EVOLUTION IN CONTEMPORANEOUS HYDROTHERMAL QUARTZ: HIGH RESOLUTION FTIR CHARACTERIZATION OF CRYSTALS SAMPLED AT WINDGäLLENHüTTE, SWITZERLAND **WIPPERFURTH, Scott A.**, LINDBLAD, Todd A., JOHNSON, Aleisha C., and IHINGER, Phillip D., Department of Geology, University of Wisconsin-Eau Claire, 105 Garfield Ave, Eau Claire, WI 54701, wippersa@uwec.edu

THE CHARLES DARWIN RESEARCH STATION, GALÁPAGOS: RECOMMENDATIONS FOR IMPROVING FINANCIAL STABILITY THROUGH PUBLIC OUTREACH **SMITH, Joel H.**, Departments of Geology and Biology, University of Wisconsin-Eau Claire, Phillips Science Hall 157, Eau Claire, WI 54702, smithjh@uwec.edu, FREUND, Deborah A., Department of Biology, University of Wisconsin-Eau Claire, Phillips Science Hall 342, Eau Claire, WI 54702, and CLARK, Scott K., Department of Geology, University of Wisconsin-Eau Claire, 154 Phillips Hall, Eau Claire, WI 54702

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THE ROLE OF PROXIMITY IN HOW INDIVIDUALS DESCRIBE NATURAL DISASTERS: ANALYSIS OF THE 2004 INDIAN OCEAN TSUNAMI **HER, Xai**, BUELOW, Ellen K., and CLARK, Scott K., Department of Geology, University of Wisconsin-Eau Claire, 154 Phillips Hall, Eau Claire, WI 54702, herx@uwec.edu

CHEMICAL FINGERPRINT OF HYDROTHERMAL QUARTZ CRYSTALS SAMPLED ALONG A TRAVERSE ACROSS THE SWISS ALPS **JOHNSON, Aleisha C.**, LINDBLAD, Todd A., WIPPERFURTH, Scott A., and IHINGER, Phillip D., Department of Geology, University of Wisconsin-Eau Claire, 105 Garfield Ave, Eau Claire, WI 54701, johnalei@uwec.edu

ASSESSING SEDIMENT AND ORGANIC CARBON ACCUMULATION IN SEMINOE RESERVOIR, WYOMING **LOGAN, Leslie**[1], MARTIN, Evan[1], and MCELROY, Brandon[2], (1) Geology & Geophysics, University of Wyoming, Dept 3006, 1000 E University Ave, Laramie, WY 82071, llogan@uwyo.edu, (2) Department of Geology and Geophysics, University of Wyoming, Laramie, WY 82071

INVESTIGATION OF CHONDRULES AND METAL IN ALLENDE (CV3) AND JELICA (LL6) USING X-RAY COMPUTED TOMOGRAPHY **ARMENDAREZ, Hannah R.**, Earth and Environmental Sciences, Vanderbilt University, 5726 Stevenson Center, 7th Floor, Nashville, TN 37240, hannah.r.armendarez@vanderbilt.edu and BAGLEY, Brian, Earth Sciences, University of Minnesota, Minneapolis, MN 55455

CLAY MINERALOGY OF THE MH-2 CORE, SNAKE RIVER PLAIN, IDAHO
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ARE WINTERTIME DE-ICING SALTS HARMING OUR ENVIRONMENT?: THE RESPONSE OF SOIL, *QUERCUS RUBRA*, AND *PINUS STROBUS* TO NACL ROCK SALT TREATMENT FLINN, Natalie N. and **RODRIGUES, Lisa J.**, Geography & the Environment, Villanova University, 800 Lancaster Avenue, Villanova, PA 19085, lisa.rodrigues@villanova.edu

MANAGEMENT OF PRODUCED WATER FROM OIL AND GAS WELLS IN CALIFORNIA: PAST TRENDS AND FUTURE SUGGESTIONS **TYRRELL, J.P.**, Department of Geology, Washington & Lee University, 204 West Washington Street, Lexington, VA 24450, tyrrellj14@mail.wlu.edu, SAMUELS, R.M., Department of Geology, Washington and Lee University, 204 W West Washington Street, Lexington, VA 24450, and LOW, P.C., Department of Geology, Washington and Lee University, Science Addition, Lexington, VA 24450

ANALYSIS OF CARBONIFEROUS DIAMICTS OF THE ITARARÈ SUBGROUP IN WITMARSUM, PARANA STATE, BRAZIL **PENDERGRASS, Emily**[1], ANDERSON FOLNAGY, Heidi[2], BACCI, D.C.[3], ROCHA-CAMPOS, A.C.[3], and COTTER, James F.P.[4], (1) Geosciences and Natural Resources Department, Western Carolina University, Cullowhee, NC 28723, empendergrass2@gmail.com, (2) University of Montana Western, Dillon, MT 59725, (3) Instituto des Geosciências, Universidade de São Paulo, Sao Paulo, 05450-001, Brazil, (4) Geology Discipline, University of Minnesota, Morris, 600 East 4th Street, Morris, MN 56267

ANALYSIS OF SOIL ORGANIC MATTER OVER MULTIPLE GROWING SEASONS AT AN ORGANIC FARM IN SOUTHEASTERN MINNESOTA
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SPRING CHLORIDE BEHAVIOR IN BUCK CREEK AND THE GREAT MIAMI RIVER, OH
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ASSESSING HYDROLOGIC AND BIOGEOCHEMICAL FUNCTIONS OF AN ACCIDENTAL URBAN WETLAND **CRISP, Alexis A.**, Geology, Wittenberg, P.O. Box 720, Springfield, OH 45501, crispa@exchange.wittenberg.edu and RITTER, John B., Geology, Wittenberg University, P.O. Box 720, Springfield, OH 45501

DIEL CALCIUM AND MAGNESIUM BEHAVIOR IN A SMALL AGRICULTURAL STREAM, BEAVER CREEK, SPRINGFIELD, OHIO **WILSON, Elizabeth L.**, Department of Geology, Wittenberg University, Springfield, OH 45501, s14.ewilson@wittenberg.edu, COUTS, Kimberly E., Department of Geology, Wittenberg, Springfield, OH 45501, and FORTNER, Sarah K., Department of Geology, Wittenberg University, Springfield, 45501