PROCEEDINGS OF THE KECK GEOLOGY CONSORTIUM

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2021-2022 Projects

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2021-2022 Projects

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Amherst College, Beloit College, Carleton College, Colgate University, The College of Wooster, The Colorado College, Franklin & Marshall College, Macalester College, Oberlin College, Pomona College, Trinity University, Union College, Washington & Lee University, Wesleyan University, Whitman College

2021-2022 GATEWAY PROJECTS

USING THE GEOCHEMISTRY OF SEDIMENTS (AND METASEDIMENTS) AS WINDOWS INTO THE EVOLUTION OF ANCIENT AND MODERN MOUNTAIN RANGES
Faculty: ZEB PAGE and REBECCA A. VANDERLEEST, Oberlin College
Students: SOFIA T. BARTH, Union College; EMILY I. BENGSTON, Oberlin College; AMELIA S. G. BRONFMAN, Oberlin College; SARAH E. BROWN, Scripps College; ELISE BOUCHER, Pitzer College; MATTEA HORNE, Peer Mentor, Pomona College; JOSIPHINE LISSET, Oberlin College; CONNER MINKOWITZ, Franklin & Marshall College; BEN ROCHE, Colorado College

BIOGEOCHEMICAL CONTROLS ON NATURAL AND ANTHROPOGENIC GROUNDWATER CONTAMINANTS IN CALIFORNIA'S CENTRAL VALLEY
Faculty: ARIC MINE, California State University-Fresno, and BRADY ZIEGLER, Trinity University
Students: AMALIA CULPEPPER-WEHR, Williams College; JOHN GOODMAN, Union College; MIA GOUDY, California State University-Fresno; JACKSON KOHN, Colorado College; MARK NICKELS, Trinity University LAUREN O'ROURKE, Whitman College; TIA PETERSON, Colorado College; RICHARD STEINER-OTOO, Montclair State University

CARBON SEQUESTRATION BY ENHANCED SILICATE WEATHERING IN AGRICULTURAL SOILS
Faculty: DANIEL P. MAXBAUER, Carleton College
Students: JAHMAINE RENZO YAMBING, Peer Mentor, Carleton College; FIONA ANTSEY, Amherst College; DEMETRIUS BLACKMON-JIMENEZ, Carleton College; SARAH LEIBOVITZ, Amherst College; SOPHIE NAYLOR, Colgate University

GEOCHEMICAL PROPERTIES OF SEEPAGE-FILTRATION AND FRACTURE SPRINGS IN WISCONSIN
Faculty: SUSAN SWANSON, Beloit College
Students: OCEAN CLEVETTE, Peer Mentor, Beloit College; ISABELLA ERGH, College of Wooster; MARGARET MORGAN, Macalester College; WILLOW TEIPEL, Beloit College; PHILLIP TELGEN, Whitman College

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RISING WATERS, SHRINKING HABITATS: THE INFLUENCE OF FLUCTUATING WATER LEVELS ON THE GEOLOGY AND ECOLOGY OF A GREAT LAKES ARCHIPELAGO
Faculty: KIM C. DIVER, Wesleyan University
Students: ARIEL ALEXANDER, Carleton College; RYANN BUSILLO, Wesleyan University; ADALIA RODRIGUEZ, Bryn Mawr College; VERONICA SEIXAS, Hamilton College; JENNA OTAOLA, Peer Mentor, Wesleyan University

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2021-2022 ADVANCED PROJECTS

ASSESSING GROUND AND SURFACE WATER QUALITY AT REDOX INTERFACES ACROSS THE SHENANDOAH VALLEY, VIRGINIA
Faculty: MARGARET A. G. HINKLE and EVA LYON, Washington & Lee University
Students: ANI CROY, Washington and Lee University; HALEY CULBERTSON, Washington and Lee University; CHRIS GOLDMANN, Trinity University; MIA GROFF, Whitman College; MADDIE HOLICKY, Beloit College; KATIE LARKIN, Washington and Lee University; MARTINA PULIDO, Beloit College; KALLAN WILDE, St. Norbert College; NOAH WILLIS, Whitman College

Short Contributions and Conference Presentations – Oberlin Gateway Project

USING THE GEOCHEMISTRY OF SEDIMENTS (AND METASEDIMENTS) AS WINDOWS INTO THE EVOLUTION OF ANCIENT AND MODERN MOUNTAIN RANGES
ZEB PAGE and REBECCA A. VANDERLEEST, Oberlin College

SURVEY OF ADIRONDACK METAMORPHIC TEMPERATURES USING QUANTITATIVE EDS MAPPING
BOUCHER, E., HORNE, M., LEON, A., LISSIT, J., MINKOWITZ, C., ROCHE, B., and PAGE, F.Z.
Presented at 2021 Fall Meeting, AGU, 13-17 Dec. [V45D-0173]

SEDIMENT PROVENANCE OF THE MAGALLANES-AUSTRAL BASIN 51 S USING KERNEL DENSITY ESTIMATES FROM DETRITAL ZIRCON U-PB AGES AND SANDSTONE COMPOSITION TO ANALYZE TECTONICS AND EROSION ACTIVITY
BROWN, S., BARTH, S., BENGSTON, E., BRONFMAN, A., VANDERLEEST, R., and FOSDICK, J.
Presented at 2021 Fall Meeting, AGU, 13-17 Dec. [EP55A-1096]

Short Contributions and Conference Presentations – California Gateway Project

BIOGEOCHEMICAL CONTROLS ON NATURAL AND ANTHROPOGENIC GROUNDWATER CONTAMINANTS IN CALIFORNIA'S CENTRAL VALLEY
ARIC MINE, California State University-Fresno, and BRADY ZIEGLER, Trinity University

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Presented at 2021 Fall Meeting, AGU, 13-17 Dec. [H45F-1231]

GEOSPATIAL AND STATISTICAL ANALYSES OF GROUNDWATER CONTAMINANTS IN THE SAN JOAQUIN RIVER VALLEY DURING DROUGHT AND NON-DROUGHT PERIODS
NICKELS, M., GOUDY, M., GOODMAN, J., KOHN, J., O'ROURKE, L., PETERSON, T., STEINER-OTOO, R., CULPEPPER-WEHR, A., ZIEGLER, B., and MINE, A.
Presented at 2021 Fall Meeting, AGU, 13-17 Dec. [H15V-1294]

MICROBIAL COMMUNITY RESPONSE TO CHANGING GROUNDWATER CHEMISTRY IN THE SAN JOAQUIN VALLEY
PETERSON, T., KRON, E., O'ROURKE, L., GOODMAN, J., CULPEPPER-WEHR, A., STEINER-OTOO, R., KOHN, J., GOUDY, M., NICKELS, M., MINE, A., and ZIEGLER, B.
Presented at 2021 Fall Meeting, AGU, 13-17 Dec. [H55O-0902]

Short Contributions and Conference Presentations – Carleton Gateway Project

CARBON SEQUESTRATION BY ENHANCED SILICATE WEATHERING IN AGRICULTURAL SOILS
DANIEL P. MAXBAUER, Carleton College

FIELD TRIALS TESTING CARBON SEQUESTRATION AND AGRICULTURAL CO-BENEFITS OF ENHANCED SILICATE WEATHERING WITH BASALTIC SOIL AMENDMENTS IN A CORN-SOYBEAN AGRICULTURAL FIELD IN NORTHFIELD, MINNESOTA
MILLIKEN, E., YAMBING, J.R., LEIBOVITZ, S., NAYLOR, S., ANSTEY, F., BLACKMON-JIMENEZ, D., and MAXBAUER, D.
Presented at 2021 Fall Meeting, AGU, 13-17 Dec. [B35L-1558]

GREENHOUSE CONSTRAINTS ON THE INORGANIC CARBON SEQUESTRATION POTENTIAL OF ENHANCED SILICATE WEATHERING IN AGRICULTURE
YAMBING, J.R., MILLIKEN, E., ANSTEY, F., BLACKMON-JIMENEZ, D., NAYLOR, S., LEIBOVITZ, S., and MAXBAUER, D.
Presented at 2021 Fall Meeting, AGU, 13-17 Dec. [B35L-1560]

Short Contributions and Conference Presentations – Wisconsin Gateway Project

GEOCHEMICAL PROPERTIES OF SEEPAGE-FILTRATION AND FRACTURE SPRINGS IN WISCONSIN
SUSAN SWANSON, Beloit College

GEOCHEMICAL PROPERTIES OF SEEPAGE-FILTRATION AND FRACTURE SPRINGS IN WISCONSIN
ERGH, I., MORGAN, M., TEIPEL, W., TELGEN, P., CLEVETTE, O., and SWANSON, S.
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Short Contributions and Conference Presentations – Great Lakes Gateway Project

RISING WATERS, SHRINKING HABITATS: THE INFLUENCE OF FLUCTUATING WATER LEVELS ON THE GEOLOGY AND ECOLOGY OF A GREAT LAKES ARCHIPELAGO
KIM DIVER, Wesleyan University

THE INFLUENCE OF FLUCTUATING WATER LEVELS ON THE ECOLOGY AND MORPHOLOGY OF A GREAT LAKES ARCHIPELAGO
DIVER, K.; OTAOLA, J.; ALEXANDER, A.; BUSILLO, R.; RODRIGUEZ, A.; and SEIXAS V.
Virtual paper presentation, 2022 Annual Meeting of the Association of American Geographers, New York, NY, United States.

ISLAND SHAPE, SOIL DEPTH, AND PLANT BIOGEOGRAPHY IN A GREAT LAKE ARCHIPELAGO
ALEXANDER, A.; and DIVER, K.
Virtual poster presentation, 2022 Annual Meeting of the Association of American Geographers, New York, NY, United States.

CHANGES IN ISLAND AREA AND WATER LEVELS BETWEEN 2001 AND 2020 IN THE MASSASAUGA PROVINCIAL PARK, LAKE MICHIGAN-HURON, ONTARIO
SEIXAS, V.; and DIVER, K.
Virtual poster presentation, 2022 Annual Meeting of the Association of American Geographers, New York, NY, United States.

Short Contributions – Virginia Advanced Project

ASSESSING GROUND AND SURFACE WATER QUALITY AT REDOX INTERFACES ACROSS THE SHENANDOAH VALLEY, VIRGINIA
MARGARET A. G. HINKLE and EVA LYON, Washington & Lee University

ANALYZING THE RELATIONSHIPS BETWEEN AQUEOUS MANGANESE AND GEOLOGICAL FACTORS IN GROUNDWATER IN THE SHENANDOAH VALLEY
MARINA CROY, Washington and Lee University
Research Advisor: Margaret A. G. Hinkle

ASSESSING THE IMPACT OF SOIL ON MANGANESE CONTAMINATION IN SPRINGS AND GROUNDWATER IN THE SHENANDOAH VALLEY, VIRGINIA
HALEY CULBERTSON, Washington & Lee University
Research Advisor: Margaret A. G. Hinkle

ASSESSING MANGANESE CONCENTRATIONS IN GROUNDWATER ACROSS THE SHENANDOAH VALLEY, VA
CHRISTOPHER GOLDMANN, Trinity University
Research Advisor: Brady Ziegler

ASSESSING THE GRAIN SIZE OF LEGACY SEDIMENTS AND POTENTIAL FOR HEAVY METAL CONTAMINATION IN ROCKBRIDGE COUNTY, VA
MIA GROFF, Whitman College
Research Advisor: Kirsten Nicolaysen

ASSESSING LAND USE CHANGES USING THE LEGACY SEDIMENTS IN THE SHENANDOAH VALLEY OF VIRGINIA
MADELINE HOLICKY, Beloit College
Research Advisor: James Rougvie

MEASURING CHANGES IN CHANNEL MORPHOLOGY AND VOLUME OF MOBILIZED SEDIMENT FOLLOWING THE REMOVAL OF A LOWHEAD DAM IN ROCKBRIDGE COUNTY, VA
KATIE LARKIN, Washington and Lee University
Research Advisor: Eva Lyon

THE GEOCHEMISTRY OF RELICT MILL POND WATERS AND STRATIFIED RESERVOIRS IN THE SHENANDOAH VALLEY, VA
MARTINA PULIDO, Beloit College
Research Advisor: James Rougvie

ANALYSIS OF LAND USE IN ROCKBRIDGE COUNTY, VA, FROM PRECOLONIAL TIMES TO CURRENT DAY AND CONSEQUENCES FOR RIPARIAN ECOSYSTEMS
KALLAN R. WILDE, Saint Norbert College
Research Advisor: Nelson Ham

ANALYSIS OF SOIL GEOCHEMISTRY TO BETTER UNDERSTAND GEOGENIC MANGANESE CONTAMINATION IN THE SHENANDOAH VALLEY
NOAH WILLIS, Whitman College
Research Advisor: Nick Bader