

PROCEEDINGS OF THE KECK GEOLOGY CONSORTIUM

Volume 37
2024-2025 Projects

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2024-2025 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, Pomona College, Trinity University, Washington & Lee University, Whitman College

2024-2025 GATEWAY PROJECTS

NATURE VS. NURTURE AT CORAL GARDENS REEF: A RAPID RESPONSE INVESTIGATION OF ENDANGERED ACROPORA SP. CORALS IN BELIZE

Faculty: LISA GREER, Washington & Lee University; KARL WIRTH, Macalester College

Peer Mentor: KYLIE THERRIEN, Washington and Lee University

Students: ALESSANDRA BAZ-AGUILAR, Washington and Lee University; ELI BUNDY, Bowdoin College; VERONICA GARZA, Trinity University; ALICIA GONZALEZ, Washington and Lee University; EVELYN GROOM, University of California, Merced; ADRIENNE KRONE, Beloit College; EGAN RAWN, Oregon State University; ASTRID SCHURR, Washington and Lee University; ARIEL STRUBEL IRAM, Pitzer College; AVA VER PLOEG, Macalester College; CHEYENNE WENTZ, The College of Wooster

INVESTIGATING LINKAGES BETWEEN GEOLOGIC HISTORIES, EOLIAN DUST PRODUCTION, AND CLIMATE CHANGE IN COLORADO

Faculty: SARAH SCHANZ and MICHELLE GEVEDON, Colorado College

Peer Mentor: LUCY ROGERS, Colorado College

Students: LUIS BOHAN, Penn State University; COLE CONVISER, Hamilton College; ELEANOR CRAVER, Franklin & Marshall College; CAROLINA DAVALOS, Southwestern College; NICOLAS RESTIVO, University of Chicago; DASHIELL RUMBLE, Bowdoin College; MINA SHENOY, Bowdoin College; ANGELINA SONNIER, Hamilton College; LINCOLN BANTUGAN, University of California - Santa Barbara; ANN TRUDELL, University of New Orleans

ANTHROPOCENE ENVIRONMENTAL CHANGE IN GLACIER NATIONAL PARK, MONTANA

Faculty: KELLY MACGREGOR, Macalester College

Peer Mentor: LILLIAN HATRICK, Macalester College

Students: DELILAH ACOSTA, Macalester College; PAIGE ARNOLD, Amherst College; NATALIE BRENNAN, Franklin and Marshall College; ANNA LUNDQUIST, The College of Wooster; ABIGAIL MCDONALD, Colorado College

A SYNOPTIC SURVEY OF SPRINGS IN THE DRIFTLESS AREA OF MINNESOTA TO IDENTIFY SPATIAL PATTERNS IN GROUNDWATER QUALITY

Faculty: CHLOÉ FANDEL, Carleton College

Peer Mentor: AUGUSTA GRUHLKE, Carleton College

Students: PILAR ANDRUET, Carleton College; EDWYN CHOI, Amherst College; ZACHARY EMBACHER, St. Norbert College; ALICIA JUNE, William & Mary; MIKELL SCHOONOVER, Minnesota North - Vermilion

2024-2025 ADVANCED PROJECTS

TESTING MODELS OF FAULT PROPAGATION AND DAMAGE ZONE DEVELOPMENT ACROSS THE CENTRAL SEVIER FAULT ZONE, SOUTHERN UTAH

Faculty: BEN SURPLESS, Trinity University

Students: SYDNEY COSTA, West Chester University; DEMI DURHAM, Trinity University; ISABEL GARCIA, Trinity University; ARIEL MONTALVO, Whitman College; LILA RYTER, Beloit College

Conference Presentations – Belize Gateway Project

- Bundy, E., Ver Ploeg, A., Rawn, E., Gonzalez, A., Krone, A., Greer, L., and Wirth, K.R., 2024, 2023 Was a Year Like No Other: Different Stories from In-Situ and Satellite Data at Coral Gardens, Belize: Geological Society of America Abstracts with Programs, vol. 56, No. 5, [doi: 10.1130/abs/2024AM-403715](https://doi.org/10.1130/abs/2024AM-403715)
- Foad, H., Das, R., Greer, L. and Wirth, K.R., 2025, Tracking Coral Loss at a Refugium in Belize: A Multitemporal Satellite Assessment: Geological Society of America Abstracts with Programs. Vol. 57, No. 2, 2025, [doi: 10.1130/Abs/2025se-408369](https://doi.org/10.1130/Abs/2025se-408369)
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- Greer, L., Wirth, K.R., Therrien, K., Wentz, C., Gonzalez, A., Garza, S., Krone, A., Strubel Iram, A., Rawn, E., Baz-Aguilar, A. and Ver Ploeg, A., Bundy, E., Schurr, A., and Groom, E., 2024, Death of a Coral Refugium After the 2023 Marine Heatwave and What Remains of Coral Gardens Belize: AGU Fall Meeting Abstracts, v. 2024, no. 222, pp. [GC13D-0222](https://doi.org/10.1130/abs/2024AM-403947).
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- Schurr, A., Baz-Aguilar, A., Krone, A., Gonzalez, A., Strubel-Iram, A., Garza, S., Rawn, E., Wentz, C., Groom, E., Therrien, K., Wirth, K.R., Greer, L., 2024, Macro and microplastics at Rocky Point and Coral Gardens Belize: Spatial Distribution and Abundance: Geological Society of America Abstracts with Programs, vol. 56, No. 5, [doi: 10.1130/abs/2024AM-403993](https://doi.org/10.1130/abs/2024AM-403993)
- Therrien, K., Hinkle, M.A., Greer, L., Schurr, A., Baz-Aguilar, A., Krone, A., Gonzalez, A., Strubel Iram, A., Garza, S., Wentz, C. and Wirth, K.R., 2025, Characterization and Quantification of Microplastics at Coral Gardens and Rocky Point, Belize: Geological Society of America Abstracts With Programs. Vol. 57, No. 2, 2025, [doi: 10.1130/Abs/2025se-408830](https://doi.org/10.1130/Abs/2025se-408830)
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Conference Presentations – Colorado Gateway Project

- Bantugan, L, Bohan, L, Conviser, C, Schanz, S, Gevedon, M. 2024. Evaluating Dust Production by Glacial and Fluvial Erosion Using Field and Laboratory Experiments of Rock Abrasion,

- Sangre de Cristo Range, Colorado, USA: Geological Society of America Abstracts with Programs, vol. 56, No. 5, [doi: 10.1130/abs/2024AM-404966](https://doi.org/10.1130/abs/2024AM-404966)
- Craver, E, Davalos, C, Restivo, N, Trudell, A, Gevedon, M, Schanz, S. 2024. Sediment Provenance With Implications for Dust Production as Related to Climate Change in The San Luis Valley, Colorado, USA: Geological Society of America Abstracts with Programs, vol. 56, No. 5, [doi: 10.1130/abs/2024AM-404964](https://doi.org/10.1130/abs/2024AM-404964)
- Rumble, D, Shenoy, M, Sonnier, A, Rogers, L, Gevedon, M, Schanz, S. 2024. Dynamics of Dust in the San Luis Valley: Analyzing Storm Tracks, Dust Composition and Source in the Face of Climate Change: Geological Society of America Abstracts with Programs, vol. 56, No. 5, [doi: 10.1130/abs/2024AM-404971](https://doi.org/10.1130/abs/2024AM-404971)
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Conference Presentations – Glacier National Park Gateway Project

- MacGregor, K., Arnold, P., Acosta, D., Brennan, N., Hartrick, L., Lundquist, A., and McDonald, A., 2024, Lacustrine Records of Environmental Change in Eastern Glacier National Park, Montana, USA: Geological Society of America Abstracts with Programs, vol. 56, No. 5, 2024, [doi: 10.1130/abs/2024AM-401311](https://doi.org/10.1130/abs/2024AM-401311)
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Conference Presentations – Minnesota Gateway Project

- Fandel, C., Gruhlke, A., Andruet, P., Choi, E., Embacher, Z., June, A., and Schoonover, M., 2024, A synoptic survey of springs in the Driftless Area of Minnesota to identify the role of springshed land use/land cover in groundwater quality: Geological Society of America Abstracts with Programs, vol. 56, No. 5, 2024, [doi: 10.1130/abs/2024AM-401928](https://doi.org/10.1130/abs/2024AM-401928)
- Fandel, C., Gruhlke, A., Andruet, P., Choi, E., Embacher, Z., June, A., and Schoonover, M., 2024, A synoptic survey of springs in the Driftless Area of Minnesota to identify the role of stratigraphic and topographic position in groundwater quality: Geological Society of America Abstracts with Programs, vol. 56, No. 5, 2024, [doi: 10.1130/abs/2024AM-401921](https://doi.org/10.1130/abs/2024AM-401921)

Short Contributions – Utah Advanced Project

TESTING MODELS OF NORMAL FAULT SYSTEM EVOLUTION, DAMAGE ZONE DEVELOPMENT, AND GEOTHERMAL POTENTIAL

BENJAMIN SURPLESS, Trinity University

CONSTRAINING HIGH-DISPLACEMENT FAULT DAMAGE EVOLUTION WITHIN THE SEVIER FAULT SYSTEM, SOUTHERN UTAH

SYDNEY COSTA, West Chester University

Project Advisor: Benjamin Surpless

A REVISED MODEL FOR THE INITIATION OF CIRCUMFERENTIAL FAULTING ON ALBA MONS, MARS

DEMI DURHAM, Trinity University

Project Advisor: Benjamin Surpless

MODELING THERMAL FLUX FROM HOT ROCK INTO FLUID: IMPLICATIONS FOR GEOTHERMAL ENERGY

ISABEL GARCIA, Trinity University

Project Advisor: Benjamin Surpless

ANALYZING FRACTURE CHARACTERISTICS IN THE LOW DISPLACEMENT ZONE ON THE SPENCER BENCH SEGMENT OF THE SEVIER NORMAL FAULT, SOUTHWEST UTAH

ARIEL MONTALVO, Whitman College

Project Advisor: Gui Aksit

FAULT-TIP DAMAGE ZONE DEVELOPMENT DURING NORMAL FAULT PROPAGATION WITHIN THE SEVIER FAULT ZONE, SOUTHERN UTAH

LILA RYTER, Beloit College

Project Advisor: Jim Rougvie