

UGS BOARD MEETING
Department of Natural Resources
Utah Geological Survey, Utah Core Research Center
240 N. Redwood Road, Salt Lake City
Wednesday, January 17, 2024

The meeting of the UGS Board was called to order at 8:30 a.m.

ATTENDANCE

Board members: Elissa Richards – Chair, and Riley Brinkerhoff. Ken Fleck – Vice Chair, Becky Hammond, and Samuel Quigley attended remotely. Rick Chesnut and David Garbrecht were not in attendance.

UGS Staff: Bill Keach, Mike Hylland, Russell Fillmore, Cheryl Wing, Hollie Brown, Winnie Pan, Patrick Engberson, and Ben Dlin were in attendance. Michael Vanden Berg attended remotely. Clinton Lunn and Rachel Willmore joined for staff introductions. Mark Milligan, Jim Davis, Mackenzie Cope, Torri Duncan, Jackson Smith, and Stephanie Carney joined for recognition of winning the DNR Community Outreach Award. Matthew Morriss joined to make his presentation.

ACTION ITEMS

Approval of Minutes from Previous Meeting

Elissa Richards motioned to approve the minutes of the August 9, 2023, UGS Board meeting. Sam Quigley seconded the motion. The Board voted unanimous, and the motion carried.

Formal Approval of Project Proposals

Enclosed in the materials is the Contract Proposal spreadsheet from 2019 forward. This is a good indicator of how the survey is doing with outside funding awards, both federal funds and dedicated credits, and what's on the horizon. Although contract proposals for external funding are provisionally approved by the Board by email, they require formal approval at the next Board meeting. The proposals are:

Water Well Cuttings Logging; funding from the Division of Water Rights; new funding to the UGS \$3,000; total project funding \$6,000; estimated start date 7/1/2023; estimated end date 6/30/2024.

Soil Water Balance Model for Water Budget and Irrigation Optimization; funding from U.S. Bureau of Reclamation; new funding to the UGS \$135,633; total project funding \$271,266; estimated start date 10/1/2024; estimated end date 9/30/2026.

Resources to support wetland protections in Utah; funding from the Environmental Protection Agency; new funding to the UGS \$249,954; total project funding \$333,272; estimated start date 1/1/2024; estimated end date 12/31/2026.

Wetland mapping to assess trends and restoration in the Duchesne Basin; funding from the Environmental Protection Agency; new funding to the UGS \$249,988; total project funding \$333,317; estimated start date 1/1/2024; estimated end date 9/30/2026.

Updating Utah's wetland assessment methods to meet management, restoration, and community needs; funding from the Environmental Protection Agency; new funding to the UGS \$249,407; total project funding \$332,543; estimated start date 1/1/2024; estimated end date 12/31/2026.

Proposal to deploy and test a mini-eddy covariance system in the Upper Colorado River Basin; funding from the Upper Colorado River Commission; new funding to the UGS \$67,973.22 (\$98,139.72 with passthrough); total project funding \$157,577.94; estimated start date 1/1/2024; estimated end date 6/30/2028.

Utah Flux Network - Proposal to Build and Maintain the Green River Station; funding from the Upper Colorado River Commission; new funding to the UGS \$166,3131.96 (\$278,237.67 with passthrough); total project funding \$410,891.64; estimated start date 12/15/2023; estimated end date 6/30/2028.

Utah STATEMAP 2025; funding from the U.S. Geological Survey; new funding to the UGS \$799,810 (\$20,000 pass-thru); total project funding \$1,599,620; estimated start date 7/1/2024; estimated end date 6/30/2026.

Sam Quigley motioned to formally approve the project proposals. Ken Fleck seconded the motion. The Board voted, and the motion carried.

Utah Professional Geologist Licensure: Requirements and UGS Support

The Board discussed the draft revised policy that was included in the packet of meeting materials emailed to the Board members. Per current policy, the UGS has generally been paying only license renewal fees. The proposed new policy would allow for reimbursement of half of the exam fees as well as reimbursement of the initial license registration fee (for employees who are required to hold professional licensure), along with continued reimbursement of renewal fees.

Ken Fleck motioned to accept the new policy but to change the wording to reimburse the full amount rather than just half of the exam fees. Riley seconded the motion. The Board voted unanimous, and the motion carried. Board also feels this should be a UGS policy rather than a Board policy. The Board also recommended that the new reimbursement policy be made retroactive to cover the October 2023 license exam period.

DIRECTOR'S REPORT

Proposed Dates for UGS Board meetings

Meeting, Thursday, April 11

Meeting, Wednesday, August 7

Field trip, either a two-day trip (Thursday, Sept. 19 - Friday, Sept. 20) or three-day trip (Wednesday, Sept. 18 – Friday, Sept. 20)
Meeting, Wednesday, January 15, 2025

Personnel Changes

Retirements:

Jodi Thacker – Finance Manager II, retired November 16th after 30 years of service (10 years with UGS).

New positions:

Zach Anderson – Supervisor, Mapping

New hires:

Clinton Lunn – Web Content Editor II, Data Management

Russ Fillmore – Finance Manager II

Ben Dlin – Contract/Grant Analyst II

Recent Activities – Looking Forward

Energy and Minerals –

The UGS, in collaboration with OED, released the new Utah Energy Resources web experience in November 2023. This online resource provides an in-depth exploration of Utah’s diverse and abundant energy portfolio, offering detailed descriptions, maps, statistics, photographs and more for each unique energy resource within the state. The platform is designed for continuous updates, ensuring access to the latest data and trends, with links to additional information. This new webpage can be found here: <https://energy.utah.gov/utah-energy-resources/>

The DOE-funded CarbonSAFE Phase 2 Uinta Basin project has officially started as of October 1, 2023. The project is being led by the Energy & Geoscience Institute at the University of Utah, with UGS acting as Geology Team lead. The project focuses on a detailed assessment of CO₂ storage potential on the Utah Trust Lands Bonanza Block in east-central Uintah County. Plans call for the drilling of an 11,000-foot stratigraphic well to collect the needed geologic information to fully assess storage potential in Lower Cretaceous sands (Frontier, Dakota, Buckhorn), as well as the Entrada Sandstone.

E&M has released two new reports on lithium resources in Utah. The first is an update to the lithium brine analytical database, which is an archive of all lithium analyses related to subsurface brines (UGS OFR-758). The second is a new assessment of total available lithium resources in Great Salt Lake (UGS OFR-759).

Geologic Hazards –

The Geologic Hazards Program was recently awarded two grants from the Federal Emergency Management Agency (FEMA), via the Utah Division of Emergency Management (UDEM), to 1) support ground deformation mapping using InSAR analysis, and 2) support additional geologic hazard mapping along the Wasatch Front. Both projects are scheduled to last for three years. The new InSAR Specialist position announcement has closed, and the candidate selection process has begun. Once the position is filled and the new hire is onboard, they will begin processing InSAR data, starting in southwestern Utah and working north to determine actively subsiding areas.

The National Aeronautics and Space Administration (NASA) recently awarded a grant for digital scanning and preservation of legacy, analog synthetic aperture radar (SAR) data. This data represents the first civilian SAR satellite, spaceborne via the Space Transportation System (Space Shuttle), and airborne platform SAR data. Most of this data has not been widely used and once this project is complete, the NASA/Alaska Satellite Facility will archive and distribute the data online.

Groundwater & Wetlands–

The groundwater section focused on wrapping up projects and their reports, particularly the Emery-Johns Valley-Bryce Canyon City water budget project for the Division of Water Rights, and Great Salt Lake Shorelands Preserve hydrology, water budget, vegetation change, and vegetation map for the Division of Forestry, Fire and State Lands and The Nature Conservancy. Our Pahvant Valley and Matheson Wetlands Preserve hydrogeology and water budget projects are in their report writing phases, with first drafts expected around late January/early February. We have installed the first wells of the GSL groundwater monitoring network as part of our collaborative study of groundwater flow to GSL with the University of Utah and the USGS and hope to complete the installations by the end of January. The Great Salt Lake Basin Integrated Plan has moved into its second phase which includes implementing research projects. During the next month or so we will be sorting out how we fit into several of the associated projects.

The wetlands group had the challenge of applying for three EPA Wetland Program Development grants. We hope to hear about these grants during the next month or so. This grant program has been the main lifeblood of the wetlands section, so these are critical grants, although we are also trying to diversify the wetland group funding and scope, and the GSL BIP may be one route to doing this. A few major projects are winding down, very successfully. Mapping of wetlands along the Provo River in Summit County has been completed. Mapping of wetlands in Utah Valley is in the final stages of review. A guide to Central Basin (i.e., Great Basin) wetland plants is nearly ready for UGS review. Diane has been providing scientific advice in the development of legislation to require consideration of riparian zones in local land-use planning. If this bill is passed the UGS will gain another wetland scientist and compile maps that towns and counties can use to see the extent of their riparian habitat.

Geologic Mapping & Paleontology –

Mapping

The Geologic Mapping group submitted its annual STATEMAP proposal this past week. The proposal includes nine 7.5' quads: five quads along the Wasatch Front, one quad in southwestern Utah, and three quads in southeastern Utah. Of note the mapping group will be proposing a 7.5' quad entirely on the Navajo Nation. This builds on outreach that the mapping group has been doing with the tribes of Utah. We have been regularly attending Utah Tribal Leaders Council meetings and developing contacts with the Tribes so we can better serve the needs of this constituency. Other proposed work includes a stratigraphic study of Early Cretaceous rocks in southeastern Utah and a revision of the 1:500k state geologic map cross sections. The mapping group is also working extensively on workflow changes that will involve an explicitly defined review timeline for our maps. The goal of these changes is to speed up the map publication and completion process.

Paleontology

Last fall the Paleontology Group spent three weeks filming for a BBC documentary on dinosaurs. This film focuses on Cretaceous dinosaurs and their sites of discovery across Utah. The filming included interviews with Jim Kirkland and Don DeBlieux discussing dinosaur finds in the field as well as a slew of animations of “dinosaur time.” Jim also spent time with collaborators from the Smithsonian and elsewhere to collect palynology (fossil pollen) samples from Early Cretaceous rocks near Blanding. The goal of this work is to better constrain the first global occurrences of angiosperm (flowering plants) in well-dated stratigraphic sections.

Geologic Information & Outreach –

Earth Science Week was another big success. AGI is highlighting UGS as one of three organizations that go above and beyond for Earth Science Week. This year we won the DNR Community Outreach Award! A few highlights include:

570 students this year, 15,000 students since 2001.

New this year, a 220-foot timeline walk through Earth’s history.

Jackson Elementary, our DNR-sponsored Title I school, participated this year for the first time. Jackson is a dual immersion school, and we recruited volunteers to present in Spanish. We also provided an Arabic translator for new students who were not yet proficient in English or Spanish.

GIO coordinated with the Utah STEM Action Center to create a rock, mineral, and fossil kit that is now being circulated across the state as part of their curriculum kit offerings.

In 2023, the bookstore received 21 five-star and 2 four-star reviews, nothing lower! They have 222 total reviews with a 4.7-star average.

“I went to the bookstore after having zero luck in finding detailed maps of a certain area/geologic feature. I had tried online groups, RM, REI, NatGeo and others but nothing aided in my search. I knew I would find what I was looking for in terms of physical maps

but was surprised at the help I received in my quest upon entering the bookstore. The gentleman walked me through every question I had showing great enthusiasm! He even pulled up some online resources and gave me some tips/tricks. I don't have the words to express my gratitude for his time and service but will say Thank You for a job well done!"

Online bookstore customers can now order USGS 7.5' topo maps for everywhere in the contiguous U.S., for any date produced by USGS.

Editorial created another outstanding Calendar of Utah Geology

The editorial team designed Geologic Map of Utah totes, tee shirts, and puzzles for staff and sale in the bookstore. The totes are sold out, the tee shirts are nearly sold out (only a few small sizes remain), and the puzzles, which were not available until a week before Christmas, continue to sell.

Torri in the bookstore has been assisting the Groundwater & Wetlands program with fieldwork, without neglecting her managerial duties.

Jackson is working with the STEM Community Alliance Program (STEMCAP). "STEMCAP brings local scientists, artists, and community members into Youth-In-Custody facilities to provide interdisciplinary, interactive STEM programming to incarcerated and/or in-treatment youth along the Wasatch Front." His presentation will be used for future outreach to other organizations and schools.

In September GIO joined the Utah Mining Association at their STEM Fest booth, where we showed multitudes of students Utah minerals and products produced from them.

Mark Milligan helped Jeremiah Bernau complete a non-technical Bonneville Salt Flats booklet (PI) and web-based story map. Both should be available later this month.

Our editorial team continues to create material for DNR and other divisions.

In early November, GIO led a successful field trip for our administrative professionals and other staff who do not get to work in the field. Stops included: Horseshoe Springs in Skull Valley, Simpson Springs on the Pony Express Road, the Wonderstone collecting area near Vernon, and Paul Bunyan's Woodpile (columnar basalt).

Data Management –

The Data Management Program continues to be busy on many projects. A few highlights from the past few months include:

- Release of the Utah's Energy Resources web experience, a new website that provides a single site with a wide variety of energy-related resources across the state. This project was a collaboration with the Office of Energy Development. All the web design work was done by UGS staff.
- Putting Down Roots in Earthquake Country – converting this from a brochure to a web experience.

- Creating a new website for the AASG meeting that the UGS will be hosting in June.
- A new version of the geologic map portal.

Cedar City office – Please see the separate report from Tyler and Lance

Funding and Budget –

Financially, the UGS is in fair shape. Federal and other outside funding is strong. The UGS’ challenge to pursuing additional outside funding is limited by its ability to fund internal staff to satisfy “match” requirements.

Mineral Lease revenues to the UGS for FY24 are on track to be near our FY24 forecast of about \$1,600,000, which is less than our FY24 appropriation of \$2,286,600. Mineral Lease revenues continue to demonstrate the volatility of this funding source.

From FY23 we carried into FY24 \$1,212,073 of non-lapse funds. We are working at this time to determine if the carry-over will be sufficient to cover the shortfall in Mineral Lease revenues.

In 2021 Senate Bill 133 established a restricted account with funds coming from severance taxes on production from oil, gas and mining operations. At the beginning of FY24 we had about \$260,000 in the account. If we determine we may be short of funding before the end of FY24, we may be able to tap into this fund.

For FY25, the Governor’s proposed budget includes targeted raises for a few UGS positions. We are very supportive of this initiative.

The UGS submitted five building blocks to the Governor’s Office of Planning and Budget for FY24 and FY25. None of them were included in the Governor’s proposed budget. The Governor is expecting FY25 to be a lean year.

Financial Update –

Updated financial documents will most likely not be available until after the January UGS Board meeting.

With the new finance manager in place, the finance team is working to bring us current in our understanding of the financial situation. We are currently meeting all of our obligations.

Winnie Pan, Financial Analyst II, did an excellent job of covering the Financial Manager duties while we were working to find a new one.

Ben Dlin, contract analyst, has been a great addition to the UGS finance team. He has been diligent in tracking our billing and revenues for each of our many grants. The program managers now receive monthly updates (as opposed to quarterly). He interacts regularly with the many and varied sponsoring organizations.

Legislative Update –

For the 2024 General Legislative Session, we are working on a number of items.

- 1) A bill that will require state and local agencies that gather geological data to submit it to the UGS. Statutory change is needed for this to be a requirement. We had proposed a building block (\$79,500) to cover the expenses. Without the building block we still support the statutory change.
- 2) Earthquake Early Warning – This was another building block that was not included in the Governor’s proposed budget. However, a state representative asked us to provide him with the numbers so they could submit as an RFA (Request for Appropriation) to fund this effort. The RFA is about \$5 million in one-time funding and \$1 million in ongoing funding.
- 3) Critical minerals research – A state representative asked that we provide the numbers to fund the UGS to do more work on understanding location and quantity of critical minerals in Utah. This will also be presented as an RFA, \$400,000 of non-lapsing one-time funding. The project is expected to take about three years to complete.
- 4) HB243, Riparian Amendments, Bennion. This bill requires municipalities to include riparian areas in their general plans. To help implement these requirements, it provides funding for one full-time temporary (TL) position to be split between UGS and the Division of Forestry, Fire and State Lands.
- 5) HB47, Utah Seismic Safety Commission Amendments, Peterson. UGS supports this bill, which extends the sunset date for the USSC five years.
- 6) In follow-up to conversations with Senator Hinkins and Representative Eliason, the Utah Museum of Natural History, in coordination with UGS, wrote a white paper explaining what funding it would take to complete preparation of the Utahraptor Megablock, which is stored at the UGS Core Center. The paper calls for \$2 million in funding over a five-year period to facilitate phased preparation, curation, and display of fossil material within the block, train the next generation of Utah paleontologists, and provide new Utah-specific content for K-12 programming.
- 7) UGS is working on language for proposed legislation that would reduce uncertainty in Mineral Lease revenues to the UGS. Several options are being considered. The most likely at this time is direct Mineral Lease revenues to the UGS to be deposited into the UGS Oil, Gas, and Mining Restricted Account.

STAFF PRESENTATIONS

Matthew Morriss presented on Rock Glacier Mapping and Analysis.

Mark Milligan gave a summary of the 2023 Earth Science Week activities, which included showing a video created by Patrick Engberson in the UGS Editorial Section.

OTHER BUSINESS

UGS Strategic Plan

Mike Hylland updated the Board on progress toward the new UGS Strategic Plan. Sam Quigley suggested including a section on employee health and safety somewhere in the plan. Elissa Richardson suggested developing a strategy for tracking progress toward goals and objectives and periodic updating of the plan. The Board requested that the UGS send a copy of the current draft of the strategic plan to them for review and comment.

2024 AASG Meeting Sponsorship Discussion

Bill Keach requested Board assistance with contacting industry partners regarding sponsorship of the upcoming AASG meeting. At the Board's request, Mike Hylland agreed to provide the AASG sponsorship form and a sponsorship-request letter template once those documents are finalized.

UGS Board Field Trip

Field trip destinations and topics were discussed. Suggestions included the Uinta Basin/Green River, U.S Magnesium (lithium), eastern Utah, American Gilsonite tour, and Matheson Wetlands.

Board adjourned 11:41 am.