

UGS BOARD MEETING
Department of Natural Resources
Utah Geological Survey, Utah Core Research Center
240 N. Redwood Road, Salt Lake City
Wednesday, January 15, 2025

The meeting of the UGS Board was called to order at 8:31 a.m.

ATTENDANCE

Board members: Elissa Richards – Chair, Ken Fleck – Vice Chair, David Garbrecht, Neil Burk, Becky Hammond, and Stephanie Barber-Renteria (Trust Lands). Rick Chesnut and Riley Brinkerhoff attended remotely. Tara Shreve, Elaina Pierce, Michelle Ricketts, and Michael Herrman joined us for staff introductions.

UGS Staff: Bill Keach, Darlene Batatian, Cheryl Wing, and Patrick Engberson were in attendance. Russell Fillmore joined to discuss UGS financial update. Christian Hardwick, Eugene Szymanski, and Michael Vanden Berg joined to present on Geothermal Research Update.

ACTION ITEMS

Approval of Minutes from Previous Meeting

Ken Fleck motioned to approve the minutes of the August 7, 2024, UGS Board meeting. Becky Hammond seconded the motion. The Board voted unanimous, and the motion carried.

Formal Approval of Project Proposals

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:

FFSL Drone Work; funding from FFSL; new funding to the UGS \$13,994.72; total project funding \$13,994.72; estimated start date 7/1/2024; estimated end date 6/30/2025.

State Historical Preservation Office Paleo Database; funding from the State Historic Preservation Office; new funding to the UGS \$20,000; total project funding \$20,000; estimated start date 9/1/2024; estimated end date 6/30/2026.

Investigating Catastrophic Die-off of Submerged Aquatic Vegetation in GSL Wetlands, SL County; funding from the Division of Water Quality; new funding to the UGS \$5,300; total project funding \$127,330; estimated start date 8/26/2024; estimated end date 6/30/2025.,

Milford Watershed Water Budget; funding from the Division of Water Rights; new funding to the UGS \$106,188; total project funding \$212,376; estimated start date 9/1/2024; estimated end date 12/30/2026.

Putting Down Roots in Earthquake Country Web Experience update; funding from the Utah Department of Emergency Management; new funding to the UGS \$9,476.76; total project funding \$9,576.76; estimated start date 10/1/2024; estimated end date 6/30/2026.

Western Weber Aquifer Classification; funding from the Weber Morgan Health Department; new funding to the UGS 49,036.35; total project funding \$18,072.69; estimated start date 9/30/2024; estimated end date 9/30/2025.

2025 Data Preservation; funding from the USGS, new funding to the UGS \$659,744.98; total project funding \$1,319,489.97; estimated start date 7/1/2025; estimated end date 6/30/2027.

Wasatch Landslide Hazard Mapping; funding from the USGS, new funding to the UGS \$171,445.78; total project funding \$342,891.56; estimated start date 7/15/2025; estimated end date 7/14/2026.

2025 STATE MAP; funding from the USGS; new funding to the UGS \$798,263.07; total project funding \$1,596,526; estimated start date 7/1/2025; estimated end date 6/30/2027.

Ken Fleck motioned to formally approve the project proposals. Dave Garbrecht seconded the motion. The Board voted unanimously, and the motion carried.

DIRECTOR'S REPORT

Director's Report – January 3035

Contract 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.

Personnel Changes

Retirements:

Jeffrey Quick – Project Geologist

Resignations:

Grant Mauk – Wetland Tech

Jake Alexander – Project Geologist (took on a Supervisory role in FFSL)

New positions:

Becka Downard – Section Supervisor, Wetlands

Diane Menuz – Data Scientist, Wetlands

New hires:

Tara Shreve – Research Consultant III, Hazards

Michelle Ricketts – Bookstore Manager

Elaina Pierce – GeoTech, Hazards

Michael Herrman – Wetland Ecologist, Wetlands

Recent Activities – Looking Forward

Since the Board last met the UGS has been very busy.

Last year we celebrated our 75th Anniversary, including our Summer Picnic held July 11. Thank you to our Board members who were able to join us for this event. We also held our field trip in September.

We faced some budget issues that presented some challenges. We tackled them head working our UGS leadership team. There is more information later in the **Financial Situation** section.

The Governor launched Operation Gigawatt in October. DNR and the UGS will play a major role in this ambitious project to double Utah's electricity supply in the next 10 years. The UGS proposed (thanks to Energy and Minerals) a \$5 million project to significantly improve our understanding of geothermal resources in the state. The Governor is recommending funding of \$4.3 million for the UGS.

The legislative session begins on January 21st. We proposed 5 building blocks to the Governor's office. Of the 5, only one, Geothermal Energy Research Initiative, was included in the Governors FY26 Budget Recommendations.

Energy and Minerals –

The UGS E&M group helped secure funding for two new DOE CarbonSAFE Phase 2 projects. One project is centered SW of Price, Utah looking at sequestering CO₂ in the Navajo Sandstone. The second project will attempt to collect two 3D seismic surveys in the Escalante desert of SW Utah, with the storage target also being the Navajo Sandstone. Energy and Geoscience Institute (UofU) is the PI of both projects and UGS will lead the geologic tasks.

DOE just announced that our CORE-CM Phase 2 project was recommended for award. The U. of Utah is also the PI of this project with UGS as a partner.

Our Geothermal Research Building Block was ranked very favorably by DNR and was also included in the Governor's budget at \$4.3 million. Now we will work hard to make sure this budget item makes it through the legislative process.

Geologic Hazards –

Ben Erickson and others responded this fall to support Marysvale City's work to reduce flooding and debris flow hazards due to the July 2024 Silver King Fire by providing UAV-based collection of aerial orthoimagery and lidar elevation data. Adam McKean published the Interim

Geologic Map of Salt Lake City North, which provides a significant update to the geology and fault mapping in northern Salt Lake City and southern Davis County. Adam Hiscock, Emily Kleber, and Greg McDonald and others recently published the fault mapping of the East and West Cache fault zone.

Our geologic hazard mapping group is working on completing geologic hazard mapping for Salt Lake valley with other active mapping projects in the Utah County, Moab area, Cedar City, and Bryce Canyon National Park. Our fault mapping group is actively mapping Quaternary active faults in Skull Valley, the Sevier fault, and other faults in central Utah. Our landslide mapping group is mapping twelve 7.5-minute quadrangles in the Wasatch Front and Wasatch Back region with a grant proposal in progress to map another eleven 7.5-minute quadrangles in the next fiscal year through the USGS Cooperative Landslide Hazard Mapping and Assessment Program. Unfortunately, our USGS National Geological and Geophysical Data Preservation Grant funding proposal was not considered for funding. We are hosting the Utah Quaternary Fault Parameters Working Group Meeting and Basin and Range Province Earthquake Working Group meetings in February.

Groundwater & Wetlands–

Groundwater

The groundwater section has had a remarkable year, culminating with two significant recognitions - Diane Menuz as UGS Employee of the Year and Kate Baustian as DNR Newcomer of the Year. The Program published 8 reports - a record number since its beginnings in 1994 - and, along with the Data management program, launched the Utah Groundwater Data Hub (version 2 to be released at the end of this month). One of the founding members of the Program, Janae Wallace, is going to Utah Works mode and wrapping up two major projects - Castle Valley Water Budget and Western Weber County Aquifer Classification - that will be the capstones to her outstanding career as she moves toward retirement in mid-2025. With plenty of notice and help from Janae and strong funding over the past few years, we have been able to do proper succession planning and feel the transition should be smooth. We plan to fill Janae's position as a TL Geologist project assistant role as the budget allows. This, along with replacing Miles McCoy-Sulentic internally (Elisabeth Stimmel) and J. Lucy Jordan and Rebecca Molinari working very limited hours, has tapered the number of people in the Program to what we expect to be a long-term sustainable number.

Wetlands

Several personnel changes have been made in the last quarter. Grant Mauk (wetland technician) left the UGS for New Mexico in August. Diane Menuz transferred from Wetland Section Manager to Data Scientist in the Groundwater and Wetlands Section. Becka Downard (wetland ecologist) was promoted to Wetlands Section manager, taking over the administrative duties Diane had. Michael Herrman was hired January 6 as a Project Specialist 1 working on mapping projects. We also interviewed candidates for a Wetland Coordinator to take over Diane's project

work and hope to make an offer soon. With both Michael and the new coordinator in place, we will be able to start work on two major Wetland Program Development Grants (WPDG) that have been delayed since summer.

Grant deliverables for three WPDG's are nearing completion. A StoryMap for a mapping project completed around Utah Lake should be live by the second week of January. The final report will be complete in March. A StoryMap for an assessment of montane wetlands has started going through the review process and the final report will be completed soon. A draft web application for a data portal displaying wetland data from the last 10 years is complete and the final report of associated monitoring is due Feb 15. While these projects were wrapping up, the wetland team wrapped up field work on projects funded by a newer WPDG, Watershed Restoration Initiative Funds (Vernon Creek BDA's), and the Great Salt Lake Watershed Enhancement Trust (TNC Shorelands Preserve).

Geologic Mapping & Paleontology –

Mapping

The Mapping Group recently submitted the FY25 STATEMAP proposal that contains staff time for a total of 22 UGS personnel across all groups. This proposal includes seven 7.5' geologic maps that include Grantsville, Burmester, Tremonton, Wanship, Mountain Dell, Goulding and Monument Pass (the last two of which are on the Navajo Nation). The proposal also includes a new geologic map of Bryce Canyon NP, and completion of the Wildcat Mt. and Dutch John 30x60's. The second part of the proposal includes completing revisions to the 1:500,000 scale state geologic map and new 1:500,000 scale cross sections to accompany this map. Other projects include GIS GeMS reproductions of a number of published maps that include Arches NP. Lastly, we are again proposing major stratigraphic studies that include studies of the Cedar Mountain Formation (leveraging Jim Kirkland's career of work), and the Uinta Mountain Group (with neoproterozoic stratigrapher Carol Dehler of USU). The mapping group is continuing to focus on workflow improvements that have yielded significant benefits in terms of the pace and timing of publication of all Mapping products. The mapping group is also currently working with the USGS National Geologic Synthesis project to create new nationwide standards for various 3D GIS and other data.

Paleontology

The Paleontology Group has been busy moving both journal level publications and a contract deliverable paleontological assessment of the Island in the Sky District of Canyonlands National Park. This assessment found world class trace fossil trackways and swim tracks in the Early Triassic Torrey Member of the Moenkopi Formation. Several trackways have astonishing detail, including a site named "sistine trample" for its heavenly assemblage of swim tracks.

Geologic Information & Outreach –

Michelle Ricketts, started in August as our new bookstore manager. Michelle is a Utah native and outdoors enthusiast with a background in retail sales and marketing. She has been busy with multiple projects to improve sales and the online and in person shopping experience including: cleaning, reorganizing, and updating the sales floor; researching and ordering new stock (including proprietary puzzles and shirts); clearancing dead stock; resuming the sales of National Park passes and out of state OHV permits; working with the department and other divisions to better promote the store on their websites; analyzing and updating shipping charges; updating and correcting point-of-sale system product descriptions; changing store opening hours; and more. If you have not visited the store lately, please do so.

In September GIO staff led a well received admin professionals field trip (for all staff whose work does not take them into the field) to the Bonneville Salt Flats and the Silver Island Mountains. In October, the GIO team, with much help from Data Management Program and 80 volunteers from UGS and beyond, held another successful Earth Science Week, hosting over 400 students from as far as Dugway. To better reflect her current job duties as the manager of our Editorial Team and pay her commensurately, Jen Miller was reclassified from Technical Writer to Project and Portfolio Manager. For the September issue of Survey Notes, Jim Davis and Mark Milligan wrote informative articles on modern and archaic handprints in the Entrada and I-15 as a geologic timeline, respectively. For the January issue Torri Duncan (now transferred to the hazards program) wrote an article on slot canyons of the San Rafael Swell, and Mark Milligan and Jim Davis collaborated with the Mapping Program on an article about the U.S. Geological Survey STATEMAP grant project to inventory and rank potential geoheritage sites in Utah—<https://geology.utah.gov/map-pub/survey-notes/utah-the-geoheritage-state/>

Data Management

Many of our interactive web map portals have been updated with new data as it becomes available. The new Carbon Capture and Geologic Hazards Portals have seen significant development progress. We have transitioned one-third of our web applications to Google's free Firebase hosting environment and migrated them from ArcGIS Server to the free GeoServer platform. The Groundwater Data Hub has been released and continues to receive data and feature updates. We are also seeking funding with the Energy & Minerals program and FFSL to develop an interactive map/dashboard that showcases Great Salt Lake analytical data.

Mackenzie Cope has been promoted to manage all frontend web applications. She now supervises Lance Weaver, Clinton Lunn, and Rachel Willmore. This change allows Marshall Robinson to focus on managing all web backend (data pipelines) projects and continue supervising Mackenzie, Nate Payne, Jay Hill, and Abby Mangum.

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

Funding and Budget –

During the first half of FY25 the UGS went from having a forecast of a small surplus to a shortfall. The UGS is forecasting a shortfall of about \$273,000 (as of December 1st, 2024) for FY25. There are several factors that contribute to the shortfall:

- 1) Mineral Lease royalties are forecast to be about \$1,600,000, which is significantly less than the \$2,391,700 appropriated by the legislature.
- 2) Pay for Performance – Funds to cover these costs are appropriated from our various funding sources including General Funds, Mineral Lease Royalties, UGS Restricted account (Severance taxes), Federal grants, Transfer and Dedicated credits (funding from other agencies). New funding from General Funds covers only about 40% of the full cost.
- 3) Matching funds are not keeping pace with the growth in outside funding. However, to satisfy work demands in new grants we have had to expand staff to a level that may not be sustainable.

What we are doing about the situation

We have made a FY25 supplemental Building Block request for up to \$700,000 from our restricted account. This will provide the buffer needed to cover any shortfall. When we created the restricted account (Fund 1137 on the accounting documents) it was for times like this, to cover unexpected shortfalls.

We have instituted cost savings in several areas: Not filling open positions, limiting out-of-state travels and reducing capital expenditures where possible. Programs have been instructed that all future proposals be written in a way to not grow the amount of match we currently carry. We are also making a concerted effort to more fully bill our federal grants and other Transfer revenues.

We are working with the legislature to change the % of severance taxes deposited each year into the UGS Restricted account. Senate Bill 133 (2021) created a first-ever restricted account for the UGS. Funding to the account comes from Severance taxes on oil, gas, and mining. Three other agencies also receive dedicated funding in this bill. For the UGS, the original amounts are:

2.5% of the first \$50,000,000 of the average (three-year) aggregated annual revenue,
1% of the next \$50,000,000 and
.5% of the amount that exceeds \$100,000,000.

We are requesting the following changes:

5% of the first \$50,000,000 of the average (three-year) aggregated annual revenue,
1.5% of the next \$50,000,000, and
.5% of the amount that exceeds \$100,000,000

Fiscal Year 2025

Fiscal Year 2025 is halfway through, and program budgets are facing scrutiny. UGS mineral lease funding, initially allocated at \$2.3 million, is projected to reach \$1.6 million. To address

this shortfall, a \$700,000 request was submitted from the UGS oil, gas, and mining restricted account and included in the Governor's budget for the upcoming legislative session.

A significant portion of UGS funding relies on external sources. The Division manages approximately 70 externally funded projects. Due to projected shortfalls in this "variable" funding, restrictive spending measures have been implemented. These include close expenditure monitoring, strict adherence to grant timelines through accurate staff time tracking and utilizing position vacancy savings.

The current forecast predicts a year-end balance of \$1,140,000. This includes \$587,000 earmarked for specific projects. The remaining estimated \$553,000 will be general fund non-lapsing funds available for Fiscal Year 2026.

Fiscal Year 2026

The Governor's proposed budget for Fiscal Year 2026 includes a \$4.3 million building block for Operation Gigawatt, an initiative focused on identifying and quantifying Utah's geothermal resources.

A critical funding concern for Fiscal Year 2026 is the absence of continued funding for the Data Preservation Program, funded through the USGS. This funding gap will add to existing funding challenges.

The UGS is actively pursuing other avenues to improve the funding outlook for Fiscal Year 2026.

PRESENTATIONS

Christian Hardwick, Eugene Szymanski, and Michael Vanden Berg gave the Board a presentation on Geothermal Energy Research

BOARD DISCUSSION ITEMS

- Board Terms (terms expiring April 1 are Rick Chesnut, Riley Brinkerhoff, Dave Garbrecht, and Becky Hammond)
- Proposed Dates for UGS Board meetings
 - Meeting, Wednesday, April 16, 2025
 - Meeting, Wednesday, August 20, 2025
 - Field trip, Sept. 18 - Sept. 19, 2025
 - Meeting, Wednesday, January 14, 2026
- Set a date to hold a special meeting with the board to discuss the designation of the St. George Dinosaur Discovery site at Johnson Farms as a Paleontological landmark.

Board adjourned 11:02 am.