

Department of Geology & Geological Engineering Fall Advisory Board Meeting

Saturday, September 24, 2022

In Person Attendees: AB Members:

Steve O'Rourke, David Hammond, Tim Barker, Scott Cooper,
Mark Anderson, Jeanne Goodman, Barb Nielsen, Jay Nopola

Faculty:

Laurie Anderson, Ed Duke, Arden Davis, Larry Stetler, Liangping Li, Gokce Ustunisik, Kevin Ward, Kurt Katzenstein, Roger Nielsen, Darrin Pagnac, Nathaniel Fox, Sarah Keenan

Administration & Foundation:

Jim Rankin, Lance Roberts, Paul Krueger

Virtual Attendees: AB Members:

Sherwin Artus, Clint Boyd, John Chandler, Joy Lester

Faculty:

Nuri Uzunlar, Chris Pellowski

AB Chair Steve O'Rourke opened the General Session of the meeting at 8:30 AM with welcome and initial remarks. He then introduced incoming AB member Mark Anderson and gave a brief description of his background.

Provost Lance Roberts made a short presentation before departing for scheduled commitments. Lance described aspects of fall enrollment, which is up by 3 percent. Graduate student enrollment this term is 330. A serious issue is student housing; to that end the University is participating in a housing study with Elevate Rapid City. Responding to a question by Mark Anderson, Lance summarized some findings from senior exit surveys. Education cost was the Number 1 factor in their decisions on which higher education institution to attend. Out-of-state students now represent 55% of enrollments. Lance noted the SD Legislature does not propose any tuition increases at the present time. He also commented on the difficulties graduate students in particular face in obtaining acceptable housing in the Rapid City area. This especially impacts international students who receive no housing assistance and often have families with them.

Other matters discussed in the context of Lance's presentation were the possibility of establishing Professor of Practice faculty positions and formal processes for new faculty development. Both will require formulation of specific policies and procedures. Gokce Ustunisik commented on NSF grants focused on promotions and equity.

Minutes from the September 24, 2022 meeting were approved on motion by Barb Nielsen and second by Tim Barker; there was no discussion and all in favor.

Paul Krueger followed Lance with updates on Foundation activities. During FY22 \$20.8 million in fundraising was accomplished, which the highest ever for the University. The new \$100 million campaign which officially began in 2020 with the “quiet stage” has generated \$38 million in commitments so far. The need for encouraging donor retention, especially the smaller group of major contributors, is critical to success, as is expansion of the alumni donor pool.

Paul provided an update on funding for the new Nucor Mineral Industries building. The original projected cost was \$34 million. With the high inflation rates now in the national economy, cost increased to \$38.8 million and now is estimated to be \$41 million. The non-state required funding remains at \$12 million, of which \$9.5 million has now been raised from industry and private donors. Groundbreaking is to take place next week, Friday, September 30th. The old MI building will not be repurposed due to age and infrastructure limitations and will be torn down after the new building is completed in 2024.

Paul also described the new fund-raising initiative for Surbeck Center improvements, which has a goal of \$6.0 million, with possible increase to \$7 million. Lastly, he commented on the \$4 million gift from the family of alumnus Karen Swindler, with the attendant naming of the Karen M. Swindler Department of Chemical and Biological Engineering.

Paul addressed a question from Mark Anderson concerning endowed chairs, and Laurie Anderson followed up with comments on endowed professorships. Another question concerned relocation of the Paul Gries Memorial; it may be moved to the area of the PRL building.

Steve then turned the meeting over to Laurie for her update on the GGE Department, Geology Museum and Black Hills Natural Science Field Station (Laurie’s presentation is attached as part of the minutes).

Museum attendance continued to rebound from pandemic falloffs with nearly 30 thousand recorded during FY22. A new Memorandum of Understanding has been executed with the Bureau of Reclamation regarding fossil discoveries. The Museum is conducting a search for an Assistant Director.

Laurie reported that GEOE undergrad enrollment continued its downward trend for Fall2022 while GEOL showed a slight uptick. Degree completions for 2021-22 AY had similar trends. Graduate enrollments are down sharply except for Paleo MS students. Placement of BS, MS, and PHD graduates is recovering to pre-pandemic levels, with 100% in all categories except MS during 2020-21. Laurie concluded her update by describing the status of GGE and Museum goals for FY23.

Nuri Uzunlar gave a summary of Field Station activities for 2022. A total of 18 field courses were conducted plus 2 online courses, with a total 252 students participating. This generated 1125 credit hours. Nuri commented that Covid pandemic travel and other restrictions are continuing to impact field camp registrations and operations, but things are gradually improving from the 2020 lows. For 2022 the BHNSFS had revenue of \$1.11 million.

Responding to a question, Sarah Keenan described how she is working with Monument Health for off-hours utilization of the hospital's scanning instrumentation to analyze a number of fossils and other materials. Mark Anderson inquired about additional petroleum related educational offerings. It is highly doubtful a petroleum engineering degree would ever be established at Mines due to market conditions and costs for setup.

A meeting break began at 9:25 with reconvening at 9:40.

Steve O'Rourke provided a comprehensive status report on the Nemo Field Station initiative. The Lien have indicated that the documents transferring the site tracts to the Foundation will be signed by the end of September. Moving forward with the project involves working out substantial issues including:

- Access road to the site.
- Water supply—a well on the property may be required.
- Sewage disposal.
- Addressing Foundation and Pete Lien & Sons remaining liability concerns.
- Conducting a Phase 1 Environmental Liability Assessment.

Logically fundraising for the new field station structures will have to wait until the Mineral Industries building on campus is finished. Thus, the reality that station development is likely to be slow. An interim location on campus may be a possibility. On the other hand, funding via Congress's American Recovery Plan is a potential possibility that should be investigated.

Laurie next gave a summary of the Geology Self Study which was submitted July 1st as part of the initial accreditation evaluation of the undergraduate program by ANSAC of ABET. Kurt Katzenstein followed with the similar one developed for reaccreditation of the Geological Engineering BS program by the EAC. Laurie requested that all AB members provide her with their current preferred email addresses to update the department directory. Sending in such later via email is OK. Laurie noted the GGE faculty will be hosting a workshop on careers and graduate school opportunities for GEOE and GOEL students Sep. 28th. She then initiated a discussion of student career advising as a potential area for AB members could get involved with and provide valuable assistance to students. This interchange continued to the second meeting break at 10:25 AM.

Reconvening at 10:38, Laurie continued her presentation on the ANSAC Geology campus visit by the ANSAC Evaluation Team until President Rankin arrived to address the Board. President Rankin welcomed the AB members to campus and thanked them for their continuing interest and support of the University. He then summarized current developments and issues impacting SD Mines and several initiatives underway:

- Echoing Lance Roberts, he described the lack of adequate housing problem facing students both on campus and in the Rapid City community.
- Employer attendance for the upcoming Fall Career Fair looks very good, with return of some historically active recruiting companies for permanent, intern and coop students as the pandemic recedes.
- Research grants and awards to the University over the past year total \$20 million, and faculty members obtained 14 patents.
- The extensive remodel of the Devereaux Library is very near completion and the opening ceremony is scheduled. The new design will greatly increase the number of campus venues for student study and collaboration with a more open physical environment.
- Student athletic programs have had another successful year competitively.
- The University is in process of completing acquisition of the building formerly housing the Ascent Innovation Center on campus, as the Center is moving to the recently completed David Lust Accelerator Building at East Main and East Blvd. It will provide Mines with research space it needs for several new multimillion-dollar research projects.
- Acquisition of the Lien property outside Nemo looks like it is on track to be accomplished in the near future. He is excited about what this will provide over time to enhance field camps and the Black Hills Natural Science Field station activities.
- Mines continues to work very actively with Elevate Rapid City and development of the "Innovation Corridor" concept which focuses on redevelopment of land between campus and downtown.

Laurie resumed her discussion of the ABET review until adjournment for lunch at 11:50 AM. The meeting was reconvened at 12:30 PM.

Jay Nopola reported on activities of the Messaging Committee since the Fall meeting, covering results of the recent survey focused on Geology. Jay said a key observation is need for improvement of the Department website. Laurie and Steve noted that the entire University website is being redone over the next 12-18 months. Ensuing

discussion centered on possibility of reworking the GGE pages in parts, and she has been doing some editing. A faculty level “messaging” committee has been created to provide input. The BHNSFS website in particular needs remodeling to a more contemporary appearance. Several aspects of best website content to include were discussed, as well as faculty/student resources that can be engaged. Website space limitations have to be considered. Some present content, for example ADA compliance descriptions, can likely be pared down and/or left for the University pages. Members observed that the University site has to be both inward and outward facing. The need for continuation of the Messaging Committee was discussed, with consensus that it should do so at least until the Spring 2023 meeting.

The formal Business Meeting was opened by Steve O’Rourke.

Old Business: None

New Business: Two items were brought up for discussion:

- Student career advising as it pertains to their ability to develop communication skills in the modern industry, governmental and academic work environments. This is critical to success and address of societal, environmental issues, etc. and the current situation is greatly changed from decades past due to social media and communication mediums and devices. There was a general discussion about today’s communication problems in general.
- Interaction between GGE students and AB members has the potential to have significant value to student experience and career expectations. An important topic for interchange would be describing the hard and soft skills which employers are looking for in early-career professionals. The ensuing discussion centered on establishing opportunities and venues for such personal interchange, such as which events would provide the most convenience/ effectiveness for both students and members. It was agreed that taking the Friday before future AB meetings to trial student-member interaction would be a good thing to try, with those members participating who have time and would be willing to come to campus early.

The General Session was adjourned at 1:50 PM and the Executive Session called to order by Steve O’Rourke at 1:55 PM.

The meeting was adjourned by Steve at 2:05 PM.

Respectfully submitted,

David R. Hammond
GGE Advisory Board Secretary



**SOUTH
DAKOTA
MINES**

GGE ADVISORY BOARD MEETING

September 24, 2022



GGE: UPDATES

Four (4) Youth Camps Summer 2022:
Pagnac, Katzenstein, Ward, Waldien, Keenan



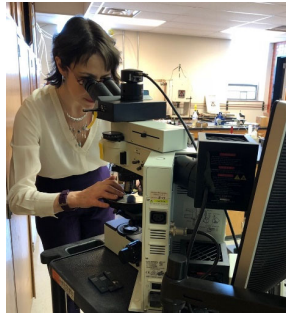
Fall Field Trip NW Nebraska
Thanks Barb Nielsen!



Victoria Karnes
Instructor, GIS



Gokce Ustunisik
Assoc Prof in Fall 2022



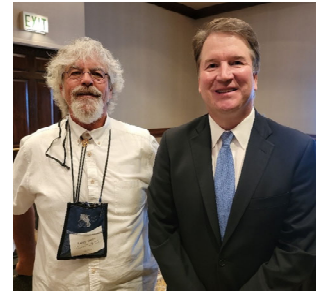
Tim Masterlark Earns Top
Student Evaluation Scores for
Physical Geology
Excellent Instructor: 5.0/5 ★★★★★
Excellent Course: 5.0/5 ★★★★★



National Speleological Society
Field Trip
Larry Stetler, Sarah Keenan



Invited Speaker
2022 Eight Circuit Judicial
Conference
Larry Stetler



Faculty Search
GEOE

CURIOUS SMART TENACIOUS



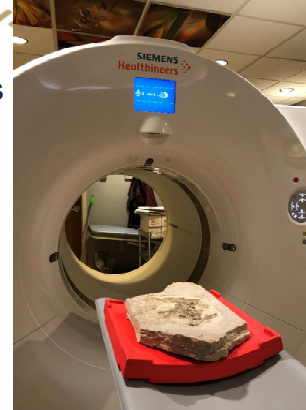
MUSEUM: UPDATES

FY22 Stats

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- Exhibit Hall Tours: 1,115 participants
- Off-site Outreach: 2,710 participants
- PRL Tours 155 participants
- Revenue: \$99,407
- Volunteer Hours: 1,209
- Student Research Projects: 15 (UG and Grad)
- Visits by External Researchers: 17
- Identifications: 305
- New MOA: Bureau of Reclamation

Assistant Director
Search

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Holotypes



ADMIRE MINERALS, FOSSILS AND MORE WITH A FREE VISIT TO THE
MUSEUM OF GEOLOGY

Emily Berry

September 06, 2022

The Museum of Geology, located on the campus of the South Dakota School of Mines and Technology, has been an active part of the Rapid City community for nearly a century! The Museum was founded in 1888 along with the university, but did not open to the public until 1922. In its first year of public access [the Museum of Geology](#) attracted 4,000 visitors. Since then the Museum has remained free and open to the public and now attracts nearly 30,000 visitors a year. Community members and tourists can visit the Museum to learn about local paleontology and geology from well-versed South Dakota Mines students (see below). Current hours are always up to date on the Museum's [website](#).



CURIOUS SMART TENACIOUS

CELEBRATE NATIONAL FOSSIL DAY AT THE MUSEUM OF GEOLOGY

October 12, 2022

9:00am – 4:30pm

- Chat with paleontologists from:
 - South Dakota Mines
 - National Park Service
 - Bureau of Land Management
- Section Break (Continuous)
- U.S. Forest Service
- The Mammoth Site

-See a special exhibit commemorating the 100th anniversary of Fossil Cycad National Monument

"Lost But Not Forgotten"



FREE ADMISSION!

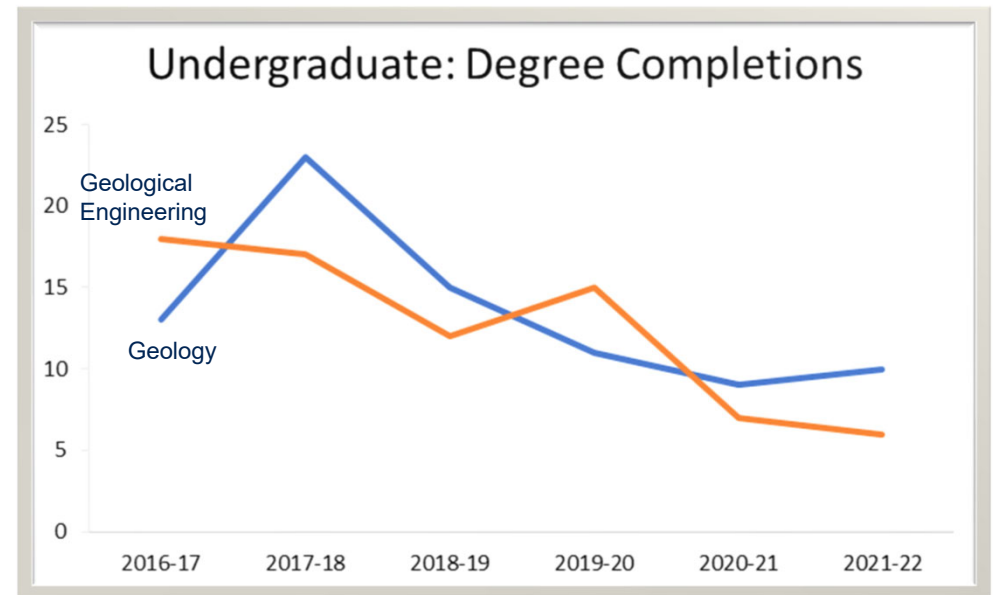
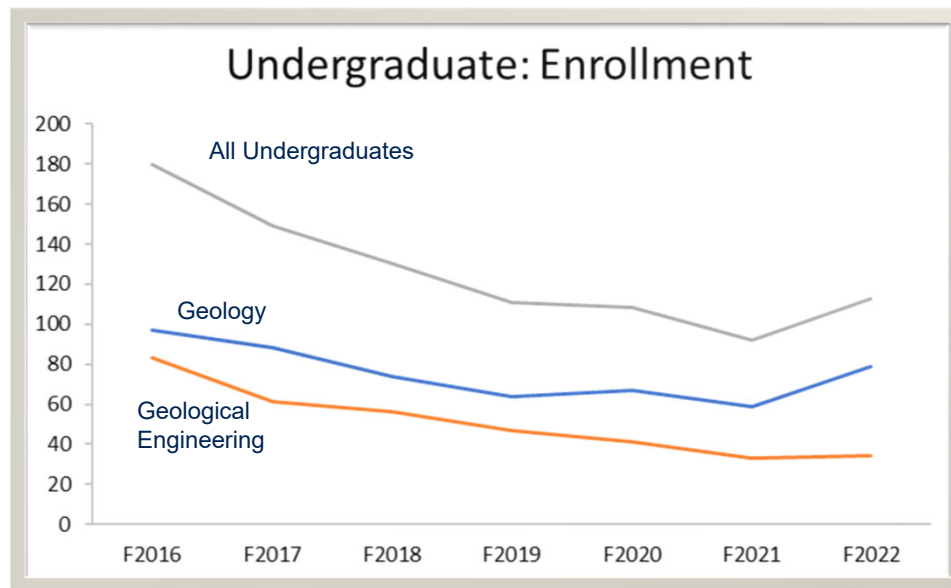
(605) 394-2467

www.facebook.com/MuseumofGeosDSM

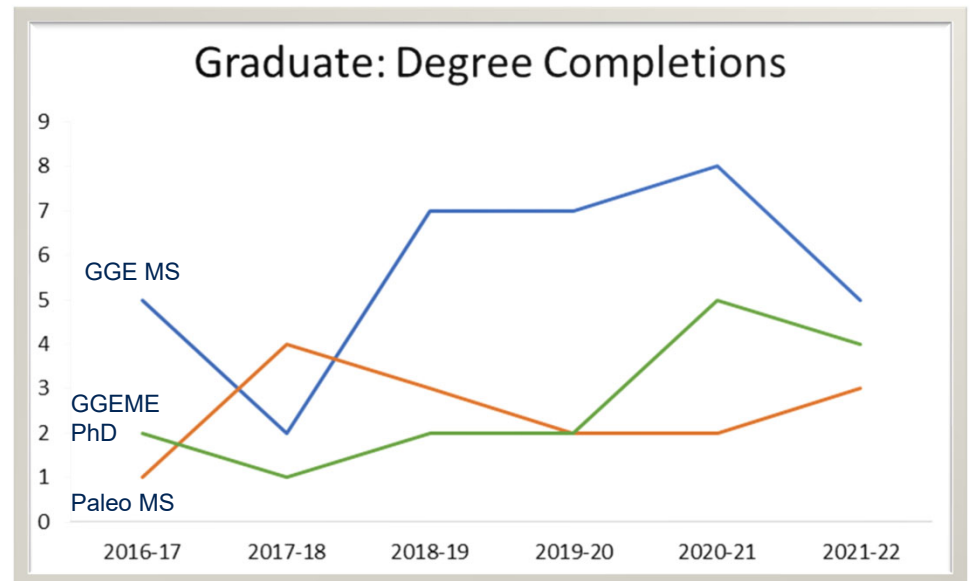
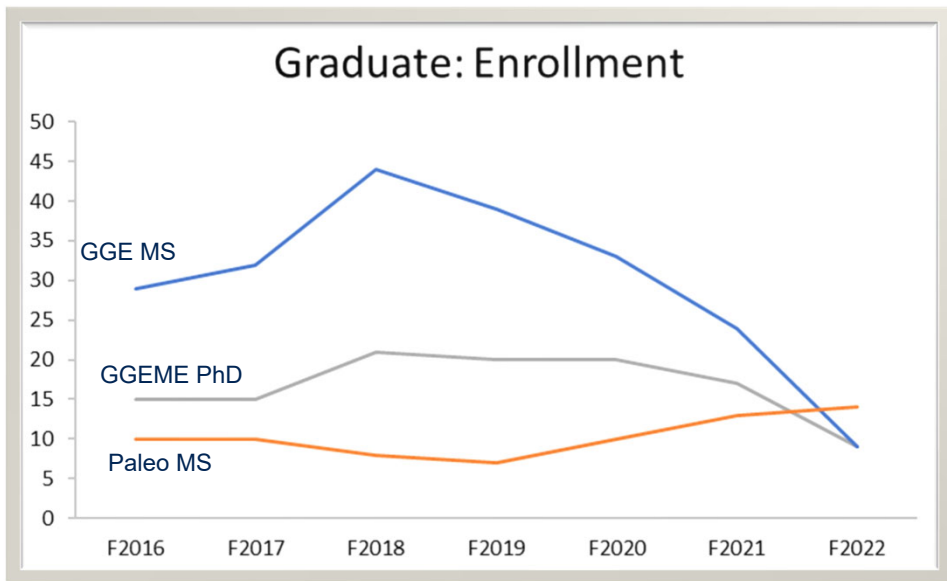


Museum Tours

UNDERGRADUATE ENROLLMENTS



GRADUATE ENROLLMENTS





PLACEMENT

Year	GEOE BS	GEOL BS	MS GGE	MS PALE	PhD GGE
2020-21	100%	100%	60%	100%	100%
2019-20	90%	86%	83%	100%	50%
2018-19	100%	80%	100%	100%	100%
2017-18	100%	86%	100%	67%	100%
2016-17	100%	93%	100%	100%	100%
5-Yr Ave	98.5%	88.1%	88%	92.9%	90%

- Fall Career Fair:
 - GEOE: 39 companies
 - GEOL: 24 companies
 - (Halliburton is back on campus)

CURIOUS SMART TENACIOUS

Spring 2022 Commencement
 Erica Cung (MS GEOL); Fleford
 Redolozza (PhD GEOE), Dr
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 GEOL)



Michael Tetteh
 (MS GEOE)
 South Dakota Mines
 Fall Career Fair

Morgan Nystuen
 (BS GEOL)
 Summer Internship
 Badlands National Park



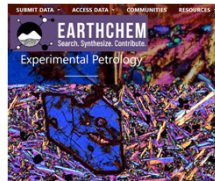
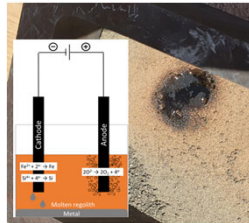


RESEARCH FUNDING

FY22

- New Awards as PI
 - Sarah Keenan
 - Timothy Masterlark
 - Darrin Pagnac
 - Gokce Ustunisik
- New Awards as co-PI
 - Nate Fox
 - Roger Nielsen
 - Laurie Anderson

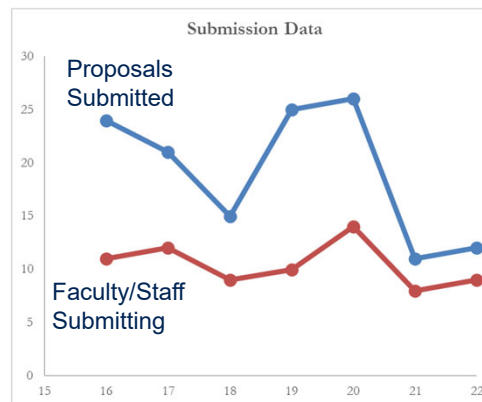
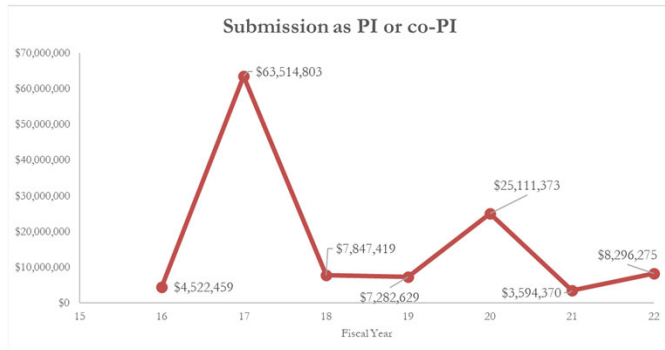
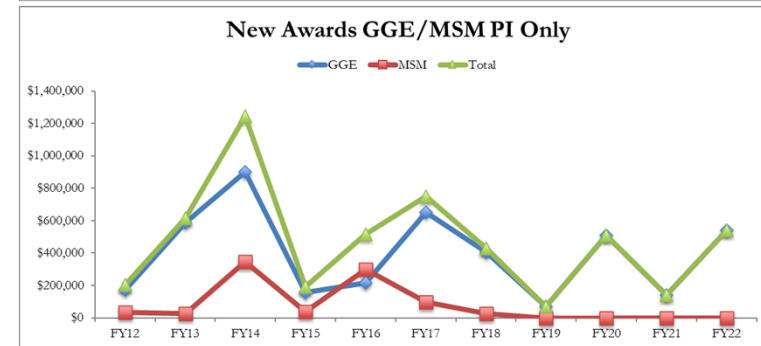
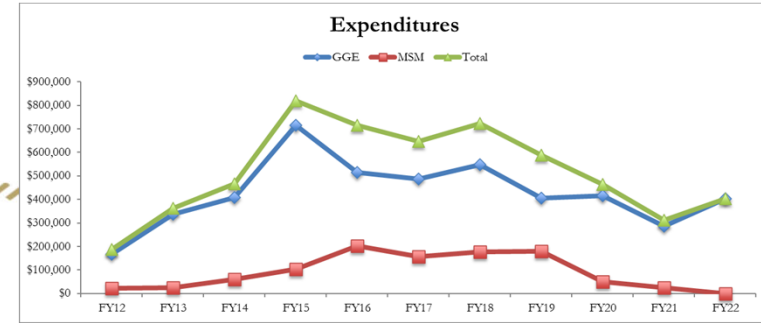
Ustunisik, Nielsen Lunar Molten Regolith Electrolysis



Bradley, Ustunisik, Duke Barometry of High P/T Rocks using NIR Spectroscopy of White Mica.



Sullivan and Keenan Experimental dissolution fossil bone with variable pH

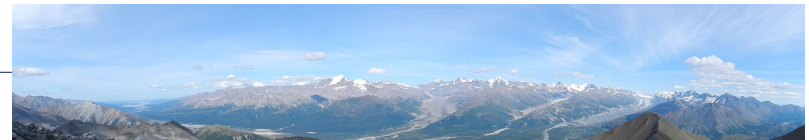


New Funding FY23

Pagnac, Keenan, Fox :Curation Richmond Hills Quarry (Pliocene karst fill) Lawrence CO

Ustunisik, Nielsen: Next Generation Interoperable Data Infrastructure for Geoscience Sample Data

Trevor Waldien: Has northern Cordilleran escape tectonics fluctuated with time and why?





GGE: GOALS FY23

Academic & Co-Curricular Excellence

- Initiative 1: Implement results of graduate program assessment **In Progress**
- Initiative 2: Achieve accreditation renewal for GEOE and initial accreditation for GEOL through ABET commissions **In Progress**

Research & Innovation

- Initiative 1: Achieve and maintain RA support at a level that funds TA needs through the new budget model **In Progress**
- Initiative 2: Expand geochemistry, geomechanics, and geo-modeling capabilities through start-up, grants, and partnerships (Mining Hub; Data Science) **In Progress**

Outreach & Engagement

- Initiative 1: Increase from 2 to 4 Youth Camps led by GGE faculty (2 already waitlisted) **Achieved**
- Initiative 2: Completion of donor estate gift agreement to fund Badlands research **Achieved**

Campus Culture

- Initiative 1: Support (faculty time and departmental funds) Fall and Spring field trips for all **Spring snow out; Fall burn up**
- Initiative 2: Revisit graduate application review process to ensure and promote fair and equitable admissions decisions **In Progress**

C U R I O U S S M A R T T E N A C I O U S





MSM: GOALS FOR FY23

Academic & Co-Curricular Excellence

- Initiative 1: Make labs in PRL more accessible to students (HEFF proposal submitted) **Completed**
- Initiative 2: Field trips in classes: exhibit design, paleoenvironments, field methods **Achieved**

Research & Innovation

- Initiative 1: Submit collections grant for mineral collections **In Progress**
- Initiative 2: Achieve collections grant for vertebrate paleontology **Achieved**

Outreach & Engagement

- Initiative 1: Exhibits and educational outreach strategic planning and implementation **On hold**

Campus Culture

- Initiative 1: Security cameras for exhibit hall **Nope**
- Initiative 2: Make Museum library more accessible **In progress**

CURIOUS SMART TENACIOUS



Black Hills Natural Sciences Field Station



Credit Hours Generated

2018	2019	2020	2021	2022
1278	1151	551	1206	1125

2022 in numbers

Online courses: 2

In the field courses: 18

Winter 2022: 52

Summer 2022 : 186

Online total students: 14

Total for 2022: 252

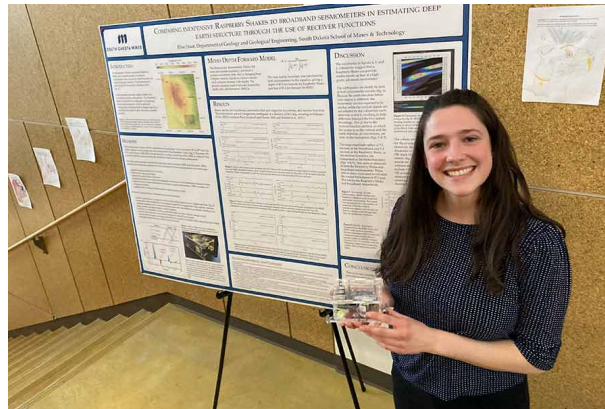
Revenue: \$1.13M



CURIOUS SMART TENACIOUS



THANK YOU!



CURIOUS SMART TENACIOUS

GGE/MSM: FY23 BUDGET

Geology and Geological Engineering					
Index	Description	Type	Budget	Change from FY22	Comments
4GGE01	GGE General Fund	Personal Services	\$1,134,146	\$46,530	
4GGE02	O/H Dept	O&E	\$ 5,000	--	Cash Available: \$53,545
4GGE18	T&F	Personal Services	\$ 233,807	-\$1,301	
4GGE18	T&F	O&E	\$ 48,044	\$2,238	
4GGE37	Discipline Fee	Personal Services	\$21,305	-\$12,353	
4GGE39	Discipline Fee	Personal Services	\$ 179,411	-\$43,405	
Museum of Geology					
Index	Description	Type	Budget	Change from FY20	
4MSM01	Gen Fund	Personal Services	\$ 163,366	\$8,141	
4MSM03	O/H MSM	O&E	\$ 2,000	--	Available: \$18,924
4MSM06	Store	Personal Services	\$ 6,538	-\$3,486	
4MSM06	Store	O&E	\$ 12,000	--	Cash Available: \$44,620
4MSM08	Fdn Salary	Personal Services	\$ 60,230	\$2,948	
4MSM12	T&F	Personal Services	\$ 8,450	-\$4,506	
4MSM12	T&F	O&E	\$ 38,700	\$11,521	
4MSM15	Curation Services	O&E	\$ 7,000	-\$6,000	Cash Available: \$8,749



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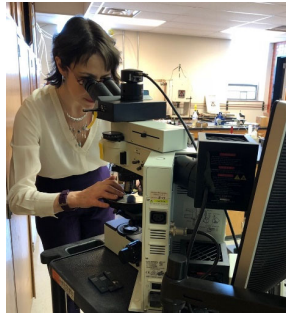
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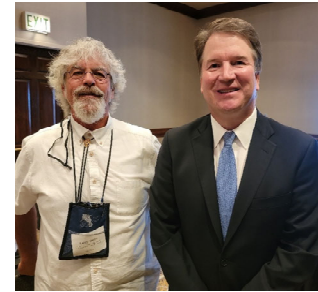
Tim Masterlark Earns Top
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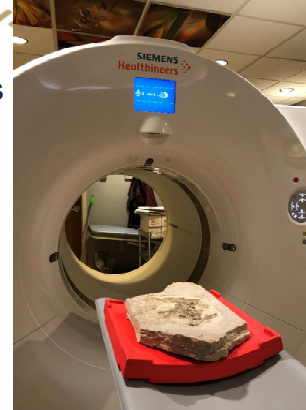
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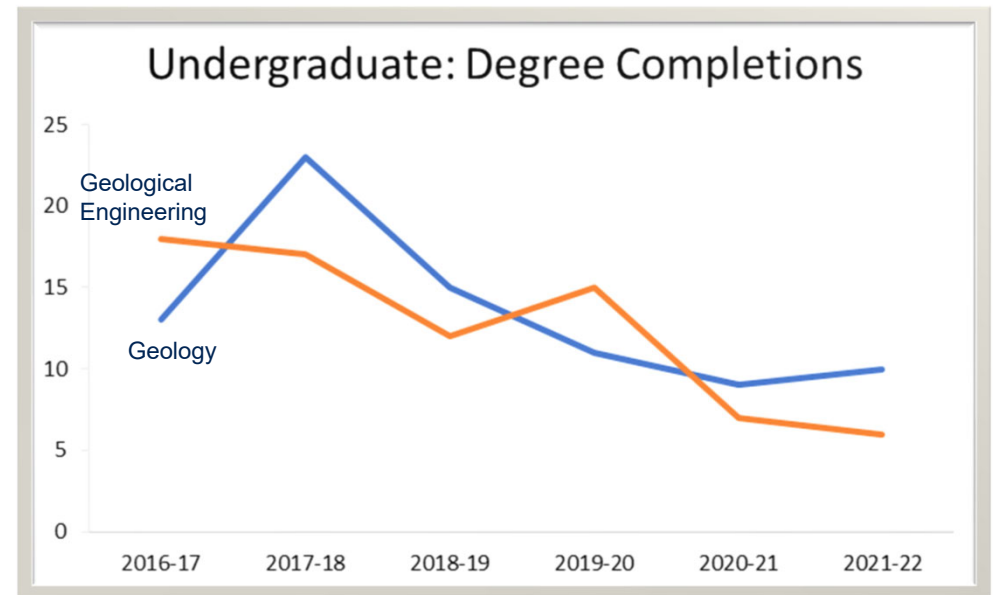
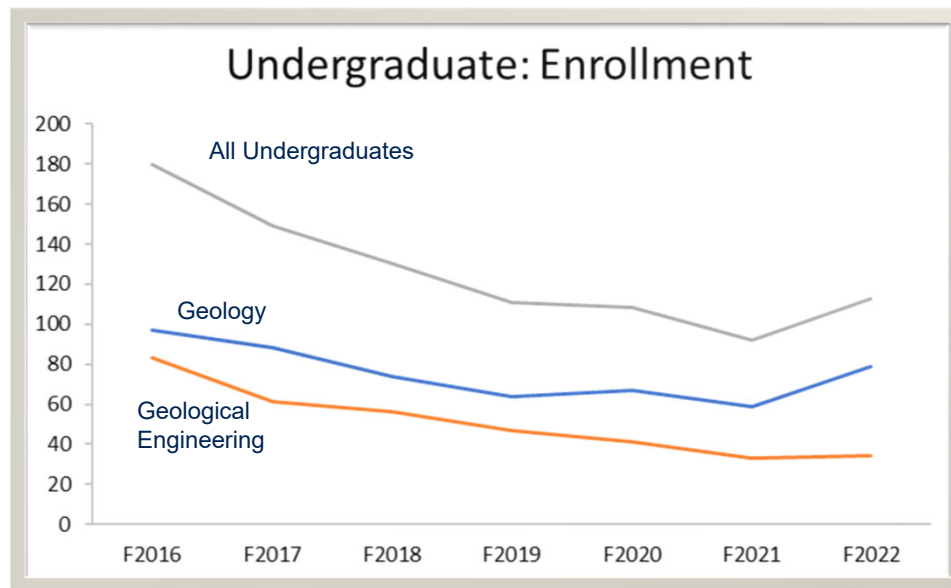
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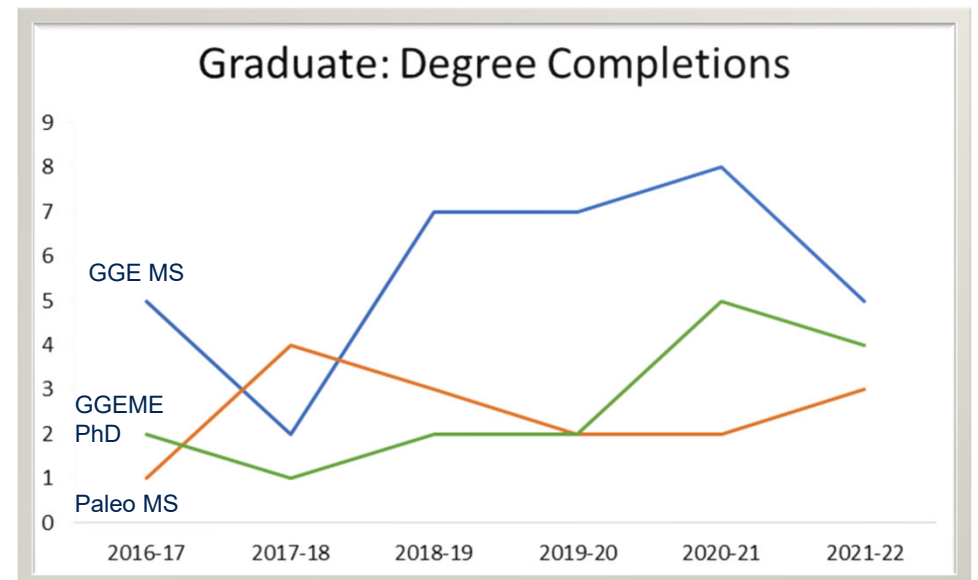
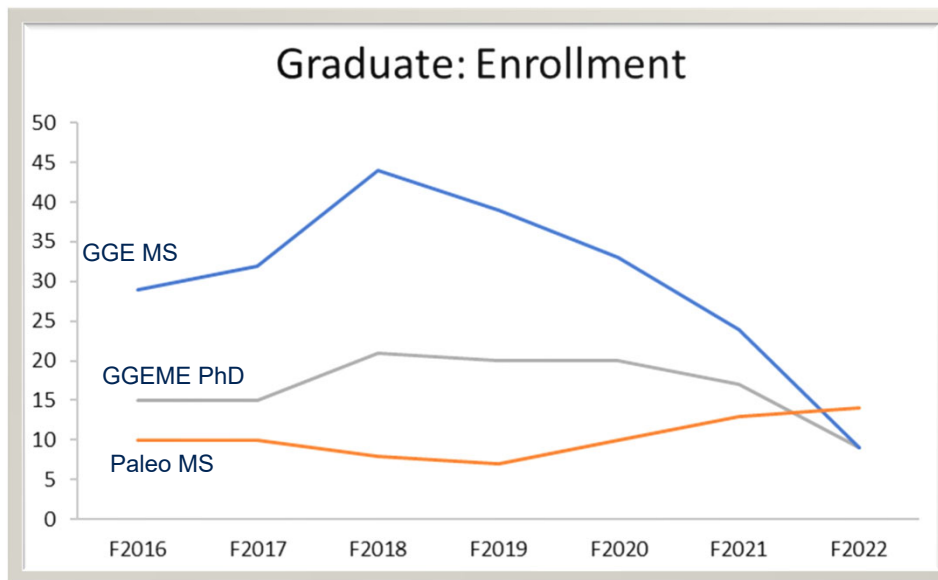


Museum Tours

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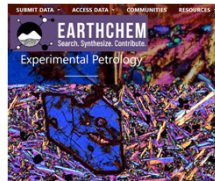
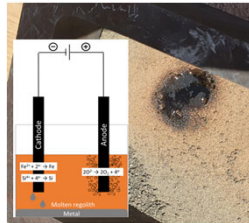


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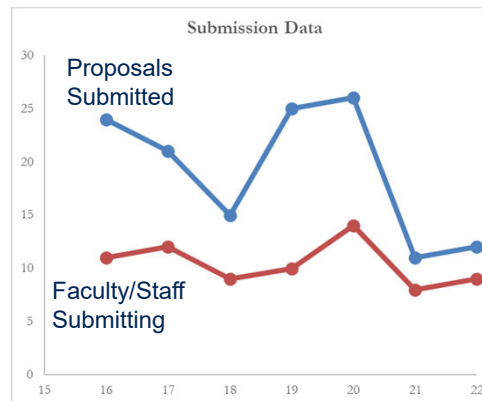
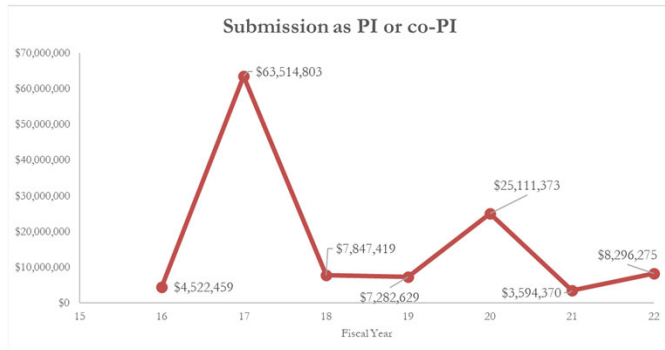
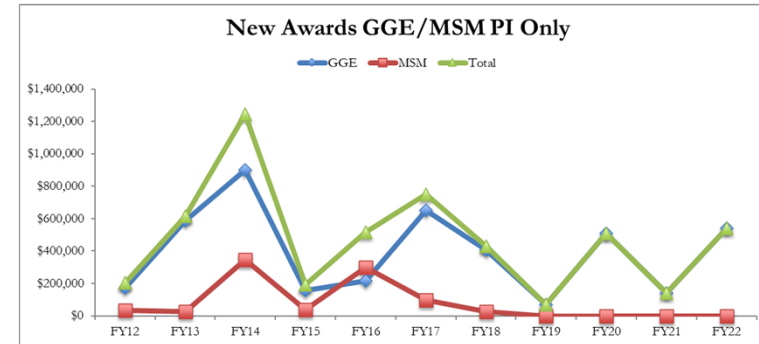
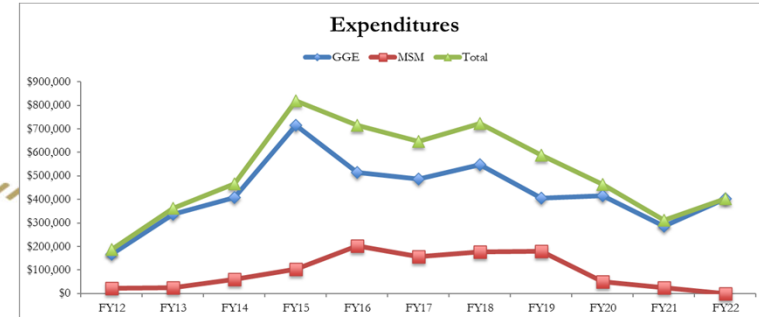
Ustunisik, Nielsen Lunar Molten Regolith Electrolysis



Bradley, Ustunisik, Duke Barometry of High P/T Rocks using NIR Spectroscopy of White Mica.



Sullivan and Keenan Experimental dissolution fossil bone with variable pH

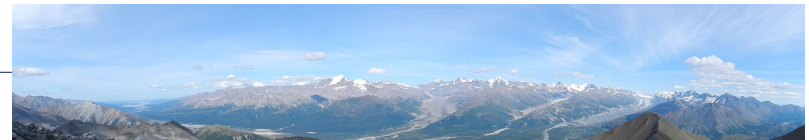


New Funding FY23

Pagnac, Keenan, Fox :Curation Richmond Hills Quarry (Pliocene karst fill) Lawrence CO

Ustunisik, Nielsen: Next Generation Interoperable Data Infrastructure for Geoscience Sample Data

Trevor Waldien: Has northern Cordilleran escape tectonics fluctuated with time and why?





GGE: GOALS FY23

Academic & Co-Curricular Excellence

- Initiative 1: Implement results of graduate program assessment **In Progress**
- Initiative 2: Achieve accreditation renewal for GEOE and initial accreditation for GEOL through ABET commissions **In Progress**

Research & Innovation

- Initiative 1: Achieve and maintain RA support at a level that funds TA needs through the new budget model **In Progress**
- Initiative 2: Expand geochemistry, geomechanics, and geo-modeling capabilities through start-up, grants, and partnerships (Mining Hub; Data Science) **In Progress**

Outreach & Engagement

- Initiative 1: Increase from 2 to 4 Youth Camps led by GGE faculty (2 already waitlisted) **Achieved**
- Initiative 2: Completion of donor estate gift agreement to fund Badlands research **Achieved**

Campus Culture

- Initiative 1: Support (faculty time and departmental funds) Fall and Spring field trips for all **Spring snow out; Fall burn up**
- Initiative 2: Revisit graduate application review process to ensure and promote fair and equitable admissions decisions **In Progress**

C U R I O U S S M A R T T E N A C I O U S





MSM: GOALS FOR FY23

Academic & Co-Curricular Excellence

- Initiative 1: Make labs in PRL more accessible to students (HEFF proposal submitted) **Completed**
- Initiative 2: Field trips in classes: exhibit design, paleoenvironments, field methods **Achieved**

Research & Innovation

- Initiative 1: Submit collections grant for mineral collections **In Progress**
- Initiative 2: Achieve collections grant for vertebrate paleontology **Achieved**

Outreach & Engagement

- Initiative 1: Exhibits and educational outreach strategic planning and implementation **On hold**

Campus Culture

- Initiative 1: Security cameras for exhibit hall **Nope**
- Initiative 2: Make Museum library more accessible **In progress**

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Black Hills Natural Sciences Field Station



Credit Hours Generated

2018	2019	2020	2021	2022
1278	1151	551	1206	1125

2022 in numbers

Online courses: 2

In the field courses: 18

Winter 2022: 52

Summer 2022 : 186

Online total students: 14

Total for 2022: 252

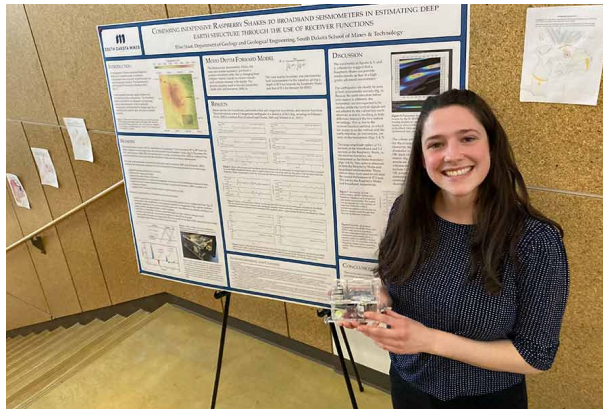
Revenue: \$1.13M



CURIOUS SMART TENACIOUS



THANK YOU!



CURIOUS SMART TENACIOUS

GGE/MSM: FY23 BUDGET

Geology and Geological Engineering					
Index	Description	Type	Budget	Change from FY22	Comments
4GGE01	GGE General Fund	Personal Services	\$1,134,146	\$46,530	
4GGE02	O/H Dept	O&E	\$ 5,000	--	Cash Available: \$53,545
4GGE18	T&F	Personal Services	\$ 233,807	-\$1,301	
4GGE18	T&F	O&E	\$ 48,044	\$2,238	
4GGE37	Discipline Fee	Personal Services	\$21,305	-\$12,353	
4GGE39	Discipline Fee	Personal Services	\$ 179,411	-\$43,405	
Museum of Geology					
Index	Description	Type	Budget	Change from FY20	
4MSM01	Gen Fund	Personal Services	\$ 163,366	\$8,141	
4MSM03	O/H MSM	O&E	\$ 2,000	--	Available: \$18,924
4MSM06	Store	Personal Services	\$ 6,538	-\$3,486	
4MSM06	Store	O&E	\$ 12,000	--	Cash Available: \$44,620
4MSM08	Fdn Salary	Personal Services	\$ 60,230	\$2,948	
4MSM12	T&F	Personal Services	\$ 8,450	-\$4,506	
4MSM12	T&F	O&E	\$ 38,700	\$11,521	
4MSM15	Curation Services	O&E	\$ 7,000	-\$6,000	Cash Available: \$8,749