

Colorado School of Mines – GRADUATE COUNCIL MEETING MINUTES
 January 6, 2021, 4:00 – 5:00 pm, via Zoom

Attendees:

Voting Members: 24 total (13 - majority needed for quorum). Quorum was present

P	Neal Sullivan (Chair)	P	Amy Hitchner (LB)	P	Andy Osborne (NSE)	P	Owen Hildreth (ME)
P	Dave Benson (HSE)	P	Karin Leiderman (AMS)	P	Gabe Walton (UCT)	P	Ebru Bozdog (GP)
P	Juan Lucena (EDS)	P	Jim Ranville (GC)	A	Zhenzhen Yu (MME)	A	Geoff Brennecka (ML & MT)
P	Tulay Flamand (EB)	P	Danica Roth (GE)	A	Dejun Yang (CS)	A	Elizabeth Davis (HASS)
A	David Marr (CBE)	P	Maxwell Silver (GSG)	P	Luis Zerpa (PE)	P	*Reza Hedayat (CEE) proxy for Gabe Walton (UCT)
P	Christine Morrison (CH)	A	Gongguo Tang (EE)	P	Jeremy Zimmerman (PH)		

Other Regular Attendees and Guests

A	Justin Bush (CEE)	P	Carolyn Freedman (OGS)	A	Jane Ko (AA)	A	Jennifer Velloff (Tref)
P	Tim Barbari (OGS)	A	Cassie Glenn (CEE)	P	Paul Myskiw (RO)	A	Denise Winn-Bower (PE)
A	Dorothy Cheng (CS,EE,ME)	A	Jennie Kenney (AA)	A	*Kendra Stansbury (RO) proxy for Paul Myskiw	P	Mara Green (AA)

*Emily Bongiovanni with the Library, Jamal Rostami with Mining, Lori Kester with Enrollment Management

Welcome

Neal Sullivan

Briefings and Information Items

- Office of Graduate Studies

Tim Barbari

Barbari begins by informing Councilors that questions regarding graduate student stipends and health insurance have been addressed in reference to the “Equal Pay for Equal Work” project that the Mines Human Resources department is involved in.

Silver with Graduate Student Government also provided questions for Human Resources regarding stipends, and Barbari will relay the information from the Human Resources department to Graduate Council when it is received.

Barbari also updates Councilors on a project being done with the Budget Office on tuition pricing. The project involves looking into what peers are doing regarding pricing tuition in both online and on-campus programs. Barbari will also be relaying this information to Council in the future.

- Catalog changes **for Council Vote** (from 12/2):
 - Admission to the Graduate School
 - Post-Baccalaureate and Graduate Certificate

A question is asked regarding the list of Graduate Certificate awardees that were not approved by Faculty Senate, and if Senate can be provided the list of Certificate awardees at the same time as Master’s, Bachelor’s, and PhD awardees from the Registrar’s Office.

Barbari responds in that the Provost, Richard Holz, had made mention of this when going to the Board of Trustees for approval of the December graduates and that the language on Graduate Certificate awardees is missing in that document, as well.

MOTION: To approve the proposed catalog changes to the information on Admission to the Graduate School and Post-Baccalaureate and Graduate Certificate as presented by Hildreth; seconded by Zerpa. 1 abstention; Silver. APPROVED.

A clarification question is asked regarding the stipends and who was being surveyed. Barbari responds in that, as part of the Equal Pay for Equal Work project, Human Resources looked over a list of 20-25 institutions that have been identified by the senior leadership for comparison of faculty, staff, and graduate students' salaries.

The surveys, then, went out to those 20-25 institutions.

The survey included questions on the range of stipends, minimum and maximum, inclusion of particular PhD programs or consistency across PhD programs as well as within the context of STEM programs.

- Registrar's Office

Paul Myskiw

Myskiw begins with a few announcements regarding classes and registration.

Classes begin Tuesday (1/12), and the survey to students to opt into remote classes has been extended to Tuesday afternoon (1/7). This has been done due to discussion between students on wanting to change their minds on making the decision to opt in to remote classes or not.

Myskiw reports a handful of students that had opted into remote learning but then registered for a class that meets entirely online or in-person. This extension provides the opportunity for students to adjust their schedule.

A comment is brought up regarding confusion on the starting time of Spring 2021 classes; a student reported seeing on Trailhead that classes begin 1/11, but this is incorrect. This has been noted with the Registrar's Office.

- New Requirement in Open Educational Resources (HB 18-1331)

Emily Bongiovanni

Bongiovanni begins by defining "OER" or Open Educational Resources. More information can be found here: <https://libguides.mines.edu/oer/home>. Bongiovanni is the Scholarly Communications Librarian at Mines, and promotes and develops Open Educational Resources on-campus.

OER are free resources to support learning and to support Faculty curriculum. A simple example is free textbooks, but the OER development goes beyond textbooks such as providing learning modules, exams, homework problem sets, and more. There is an Open Educational Resources Steering Committee on campus.

Bongiovanni states that, across Colorado, there has been a large push to develop OER further. Bongiovanni is also the chair for OER on the state council for the Colorado Department of Higher Education (CHDE).

As an effort to promote OER without requiring or imposing the methods, CDHE has passed a bill that entrusts all institutions of the state that are publicly funded will need to inform their students of which courses are using Open Educational Resources or Zero Textbook Costs in head of registration.

Bongiovanni will be working alongside the Registrar's Office in order to develop the logistics of communicating this to students as well as collecting the information from faculty. This presentation is a heads-up for faculty to spread the information prior to its implementation in the Fall 2021 semester.

Bongiovanni informs Councilors that a course has been developed for faculty to learn about OER and how it can be utilized in their courses. As of now, Bongiovanni is the sole resource for OER at the School of Mines.

A question is asked on how many courses could simultaneously adopt OER materials, and if faculty interest can overwhelm the OER process. Bongiovanni responds that there is already an influx of faculty interest.

Bongiovanni responds that, after receiving the grant from CDHE, she has been able to manage around ten projects a year. This is including the work done in copyright and dissemination concerns—but there is a growing number of resources that are being or have been developed for faculty. These resources are openly licensed and are free for faculty to modify or enrich to fit the needs of the specific instruction.

For 100-level or introductory courses, Bongiovanni states that there are a various number of resources already available.

By adopting an already existing resource and adapting it or creating a source, faculty can begin their transition into providing OER for students. Bongiovanni would help in determining the license and copyright statuses to see what faculty can do with that specific resource.

The creation of OER resources is popular at Mines due to the specificity of courses.

Bongiovanni expects additional funding for the year 2021 and expects to provide the bulk of the budget to incentivize faculty to adopt and adapt or create.

Graduate Council is encouraged to advocate and have conversations with their respective departments. To further translate the memo that was presented to Council, there is no infringement on academic freedom as this requirement is only in place for existing courses with established OER or Zero Textbook Cost courses.

Courses that currently have OER will release information to students prior to class registration in Fall 2021. There has been feedback on the timeline; this date is to make sure the process is beginning in universities throughout the state.

- Graduate Student Government

Maxwell Silver

Silver begins by informing Councilors that the GSG survey of stipends and quality of life has been completed with little over 500 responses. Silver has begun parsing through the 302 responses that came from PhD students at Mines.

A with the survey attached was sent to everyone at Mines that has a graduate student email address.

Silver highlights two data points from the survey: overall ratings were better than expected with over fifty percent of students having rated their quality of life a 7 out of 10 with their likelihood of

recommending the School of Mines for graduate school as a 7 out of 10.

Curriculum Items – Request for Council Vote (from 12/16/20)

2.1 **HUMANITIES, ARTS, and SOCIAL SCIENCES** Elizabeth Davis

[status: CIM 11/30]

1 program change: CERT-NERP: CERT – Natural Resources and Energy Policy
Changes to program requirements such as reducing 12 credit-hours to 9, requirement of 4 of 5 required courses has been changed to 2, as well as requirement of an additional elective approved by the NREP Director.

MOTION: To approve the one program change to the Certificate in Natural Resources and Energy Policy as presented by Brennecka; seconded by Zimmerman. 1 abstention; Silver. APPROVED.

2.2 **HUMANITIES, ARTS, and SOCIAL SCIENCES** Elizabeth Davis

[status: CIM 11/30]

1 program change: MS-NREP: Natural Resources and Energy Policy
Changes made to the course requirements: addition and removal of courses. Minor changes were made to reflect the small influx and outflow of courses.

MOTION: To approve the one program change to the Master's in Natural Resources and Energy Policy as presented by Brennecka; seconded by Hildreth. 1 abstention; Silver. APPROVED.

2.3 **HUMANITIES, ARTS, and SOCIAL SCIENCES** Elizabeth Davis

[status: CIM 11/30; Provost approved: 11/30]

1 new course: HASS568: Environmental Justice
This course is being piloted in Spring 2021 as an independent study with two MS students in the Natural Resources and Energy Policy Program and as a McBride honors course.

This course will provide students with a forum to study current and emerging environmental justice issues and make Mines more attractive to qualified students from all backgrounds. Other first choice STEM universities have long offered environmental justice courses. This course will enable Mines graduates to become innovators and agents of positive and transformative change in the world.

MOTION: To approve the one new course in Humanities, Arts, and Social Sciences HASS 568: Environmental Justice as presented by Brennecka; seconded by Zerpa. 1 abstention; Silver. APPROVED.

2.4 **HUMANITIES, ARTS, and SOCIAL SCIENCES** Elizabeth Davis

[status: CIM 12/2]

1 course change: HASS535: International Development
This course has become a catchall class for area development classes since they are no longer offered once a year. In combining the last development class, African Development, this course will require an online option. Change made to effective date, Fall 2021.

MOTION: To approve the one course change to HASS 535: International Development as presented by Brennecka; seconded by Hildreth. 1 abstention; Silver. APPROVED.

Continuing Curriculum Items – Continued Discussion (for vote 01/20/21)

2.1 CHEMISTRY

James Ranville

[status: CIM 12/2; Provost approved: 12/3]

1 new program: Certificate in Analytical Geochemistry
(course ID still needed)

The addition to the existing Geochemistry Program of a Professional Master's and a Certificate in Analytical Geochemistry supports the Subsurface Frontiers Initiatives by training professionals with skills needed in groundwater resources, mineral exploration and recovery, environmental protection, and basic earth science research. Global challenges to address climate change, more efficient energy production, and discovery and utilization of critical materials all can be more fully addressed by a workforce trained in state-of-the-art methods of analysis.

Ranville presents additional information to the Council due to the cancelled meeting of 12/16.

Currently, the Geochemistry program has a thesis-based Master's and PhD and a Professional Master's in Environmental Geochemistry.

Ranville states that the future requires the need for skills in modern instrumentation data analysis that is important and worthy of a certificate. The certificate would be twelve credits in which there is a six-credit core that would be truly analytically based and elective courses that could be additional analytical content or provide diversity to the program.

2.2 CHEMISTRY

James Ranville

[status: CIM 12/2; Provost approved: 12/3]

1 new course: CHGC508: Analytical Geochemistry

This course supports the Certificate and Professional Master degree in Analytical Geochemistry and will contribute to "professionally oriented postgraduate education". These new programs will attract working professionals who are interested in building their curriculum with graduate education to achieve excellence in their jobs and be able to meet the challenges of a changing earth resources industry. Specifically, this course provides a unique program, centered on hands on training, that is not offered at any other US institution.

Because much of the class involves hands on learning, the class will be taught in hybrid mode (in-class and remote lectures, in class laboratories, and field trips).

The course was given a new number without piloting as a 599 course so that the Analytical Geochemistry certificate could be marketed. This is the only new course being introduced, as 508 is a compilation of existing courses. There will be no need for additional faculty as the program will be making use of existing faculty and, primarily, existing courses.

New Curriculum Items

3.1 HYDROLOGIC SCIENCE and ENGINEERING

David Benson

[status: CIM 12/9]

1 program change: MSPHD-HY: MS & PhD – Hydrologic Sci & Eng

This update expands the number of courses that students can take under the Hydrology, Policy, and Management (HPM) track. The course list is being expanded for two reasons: (1) in response to combined-degree students who want to complete their HSE degree and the HPM track in two semesters and need more course options; (2) to keep pace with the growing number of social science-based courses being developed on campus that are relevant to water professionals.

Benson presents the changes proposed to the Master's and PhD program in Hydrologic Science and Engineering. Alexis Sitchler introduced new verbiage to the catalog that codifies three areas of specialization introduced in hydrology.

The first area of specialization being introduced to the Catalog is Hydrogen Physics, the second is Hydro Bio Geochemistry, and the third is Hydrology Policy and Management.

Benson informs Councilors that this was floated unofficially two years ago for hydro geophysics and after negotiation with the geophysics department, a reduction of required courses in the hydrology core was requested so that geophysics could add required courses for hydro geophysics.

Originally, the program offered between three of the four required courses. The program changes proposed suggests addition of ten different courses that students can mix and match. This increases flexibility for the student.

A student in hydro geophysics will be graduating, and had asked the department if this program will appear on his transcript. The department contacted the Registrar's Office and were informed that this has not been officially codified; this change is in the works and is the current goal of the department.

3.2 **ECONOMICS and BUSINESS**

Tulay Flamand

[status: CIM 12/4]

1 course change: EBG578: Business Operations and Venture Planning

Name and description change to better reflect course content. Name changed from "Operations and Information Systems", course offered changed from Fall to Spring, effective date changed to Fall 2021.

Flamand states that there has not been any significant change to the course itself, and changes proposed were done to better reflect the course content.

A question is asked regarding what point a courses' content or title changes so much that a new course number be required.

The original number of the course was EBG598, and as since re-number to EBG578.

3.3 **APPLIED MATHEMATICS and STATISTICS**

Karin Leiderman

[status: CIM 12/11; Provost approved: 12/11]

1 new course: MATH570: Mathematical Modeling of Spatial Processes in Biology

AMS has run this course twice as a special topics course (MATH 498/598) and would like to offer it more regularly.

Leiderman states that the course has been taught two times as a special topic with a range of 13 to 20 students each time. The students reported enjoying the class and AMS is looking to provide the course as an elective every other year.

There is a 400-level class that will be running through the Undergraduate Council, as well.

The graduate students are provided with more challenging homework assignments; final projects are done individually in the case of the graduate students and groups for undergraduate students.

3.4 **OPERATIONS RESEARCH with ENGINEERING**

Alexandra Newman

[status: CIM 12/13; Provost approved: 12/14]

1 new course: ORWE581: Optimization Models in Manufacturing

Helps with the OR MS-NT program and provides an elective within the Advanced Manufacturing Certificate and MS Program. the course delivery is on-line.

Newman was not present to provide the Council with details on the new course in Operations Research with Engineering.

Flamand provides some context for the Councilors. This course will be offering an opportunity for students to view mathematical models that would make optimal decisions in the manufacturing processes.

Graduate Council Subcommittees

Neal Sullivan

The Graduate Council Subcommittees are asked to present their findings and decisions from their previous breakout sessions.

- *Advisor / Advisee Procedures and Expectations* – Can document be sent to Graduate Program Coordinators for each department and program? Note that document is non-binding.

Sullivan states that the subcommittee has created a document that codifies the procedures and expectations. The goal is to push this document up to Faculty Senate for review and request for approval. The document can then be sent to the graduate program coordinators across the campus.

The document created is non-binding and can be used as a resource.

This document would be sent forward with the note that, should the user disagree with content in the document, this can be modified to fit the party using the document. The point of the document being a tool that can be fine-tuned to the user.

It is then requested that Council members read over the document between this meeting (1/6) and the next Graduate Council meeting (1/20) to decide the course of action in moving forward with the document's presentation to Senate. This document would not be a Catalog change, and would most likely not need official Senate approval.

- *Stipends for Graduate Students* – Should Grad Council recommend new stipend to Faculty Senate?

Silver begins with his analysis of the graduate student survey. This initial analysis was on the PhD students that provided answers.

6% of PhD students do not receive any financial support. A question is asked regarding which departments these PhD students are in, but this was not asked for in the Graduate Student survey.

Silver states that the range of stipends is significant. 7% of PhD students said they did not receive anything. The range of stipends tops out at \$4,000 a month after taxes; however, most of the grouping is right around \$2,000 a month. A majority of PhD students are living with someone, only 14% identified themselves as living alone or having to pay rent on their own.

Regarding health insurance, 17% of dependents of graduate students go without health insurance and only one PhD student reported receiving health insurance from their dependence on the employee program.

42 out of 304 graduate students have dependents.

Silver points out that the average is comfortable for many students, but when an emergency event occurs the situation can become dire quite quickly.

Discussion continues on the efficacy of increasing the minimum in competition with other STEM fields, and Mines capability to do so.

- *Interdisciplinary Graduate Programs* – GC membership for leaders of new programs considered. Should GC make recommendation to Faculty Senate to change bylaws to include new membership?

Tabled for next council meeting.

Adjourn

Neal Sullivan

Meeting adjourned at 5:20 pm.

Next Meeting: January 20, 4:00 – 5:00 pm, via Zoom.

Consent Agenda

The following proposals will not be discussed unless specifically requested by Council. With no objections, approval is implied and items will be processed accordingly.

- **Approval of Minutes** – December 2, 2020 Neal Sullivan
 - 4.1 **GEOPHYSICS** Michelle Szobody
[status: CIM 12/16]
1 course change: GPGN561: Seismic Data Processing I
Update to course description after several years with topics covered in the course. Edits outline proper counting of credits and contact hours; 3 lecture hours and one 3-hour lab.
 - 4.2 **GEOPHYSICS** Michelle Szobody
[status: CIM 12/16]
1 course change: GPGN555: Earthquake Seismology
Removal of GPGN320 as prerequisite, the GPGN320 course was deleted in 2017.
 - 4.3 **CIVIL and ENVIRONMENTAL ENGINEERING** Reza Hedayat
[status: CIM 1/4]
1 course change: CEEN551: Environmental Organic Chemistry
Prerequisites had been removed 10 years ago but changes were not reflected in the catalog. Resubmission made to request omission of removed prerequisites.