

Colorado School of Mines – FACULTY SENATE MEETING MINUTES
February 8, 2:00 – 4:00 pm, via Zoom

Attendees:

Voting Members: 15 total (8 needed for quorum). Quorum was present

P	Sebnem Duzgun (Chair)	P	Ventzi Karaivanov (ME)	P	Linda Figueroa (CEE/MN)	P	Joseph Horan (HASS)
P	Jeff King (MME)	P	Yvette Kuiper (GE)	A	John McCray (CEE)	P	Cynthia Norrgran (CBE)
P	Bettina Voelker (CH)	P	Lawrence Wiencke (PH)	P	Pat Kohl (PH)	P	Brandon Dugan (GP)
A	Sid Saleh (EB)	P	Deb Carney (AMS)	P	Soutir Bandyopadhyay (AMS)		

Other Regular Attendees and Guests

P	Tracy Gardner (Trustee)	P	Rick Holz (AA)	P	Paul Myskiw (RO)	P	Colin Terry (Student Life)
P	Sam Spiegel (Trefny)	P	Ethan Lewellin (USG)	P	Maxwell Silver (GSG)	P	Mara Green (AA)
P	Vibhuti Dave (UGS)	P	Tim Barbari (OGS)	P	Lori Kester (EM)	P	Patricia Andersen (Library)
P	Karla Perez-Velez (CASA)	P	Deb Jordan (Trefny)	P	Tim Sorensen (PE)		

Special Guest(s): Linda Battalora (PE)

Welcome

Sebnem Duzgun

Academic Affairs

Rick Holz

COVID-19

Mines' COVID-19 numbers have dropped after a month into the semester, eighteen campus residents are currently in quarantine/isolation as of 2/8. Jefferson County met last week; discussed dropping county mask requirements 2/16. Mines will stay in line with Jefferson County; consideration for dropping the mask requirement across Mines and continue mask wearing in classrooms.

Admissions

Enrollment Management reported admissions forty students behind what was recorded for 2021; Mines remained selective and accepted fewer students. 2022 displayed higher yields with accepted students showing higher percentages. Mines informed students and parents on Mines@150 signature experiences and programs. Students see a return of investment coming to Mines with average salaries of over \$73,000 a year; Mines ranked second in the United States for return on investment.

Budget

Holz noted Mines amid developing and defining its budget. Over \$25 million worth of new spending requests had come in and will be trimmed back to remain within the institution's budget; need for additional spending in positions on campus and this has been recognized. The institution's expenses will be kept in line with revenue; will work with individual units to see what is an absolute requirement.

Ombudsperson Office

Faculty requested information on the status of the ombudsperson office at Mines; Holz noted broad agreement on the necessity for the office, concern was raised on how the position was outlined and the executive team may work on editing the proposal. Resources for the office will be considered in the upcoming budget.

FDRs

Some faculty had made requests for extension on FDR submissions, some reported having not received their data yet. Extensions should be discussed with department heads; there are set deadlines for departments to send evaluations to deans and finally to Academic Affairs. Flexibility for those deadlines established between departments and deans. Holz happy to work with deans regarding flexibility.

Library Faculty

Concerns brought to Faculty Senate regarding library faculty's promotion and tenure and potential changes to library faculty status. Holz received memo from University P&T committee on a variety of suggestions regarding mentoring and the P&T process, and had suggested library faculty dossiers may be outliers compared to tenure/tenure-track faculty dossiers. Memo suggested review through the teaching faculty promotion committee; suggestion had been brought to Faculty Senate's executive committee and the Faculty Handbook committee.

Senate requested the ability to view this recommendation from the University P&T committee to provide feedback or assistance. Senate requested past practices for promotion of library faculty and the context behind the recommendation.

Question on how this recommendation was brought forward; Holz had not asked for the recommendation. Holz stated the dossiers may be an outlier due to differences in T/TT research and teaching expectations. Previous member of the committee noted review of library faculty dossiers had not been an issue in the past, dossiers are different. Committee evaluated external letters and scholarship, neither of which are done by the teaching faculty promotion committee.

Question on library faculty eligibility for tenure; library faculty can apply for promotion.

Registrar's Office

Paul Myskiw

No updates from the Registrar's Office.

Approval of Minutes – January 25, 2022

Sebnem Duzgun

MOTION: To approve the Faculty Senate minutes of January 25, 2022 by Kuiper, seconded by King. Motion passed unanimously.

Committee Updates

Board of Trustees Updates

Sebnem Duzgun

Colorado School of Mines has earned R1 Carnegie Classification. Mines' football coach has retired. George Sowers from Space Resources has been appointed to the Human Exploration and Operations committee of NASA Advisory Council. A few Mines online programs have been listed as one of the best programs in the United States; Duzgun thanked Sam Spiegel and Deb Jordan. Deb Jordan appointed as director of the Trefny Center.

Senate Secretary

Joe Horan

No updates from the Senate Secretary.

Budget Committee

Linda Figueroa

The Quarter Two highlights were covered. Enrollment continues to grow; revenue assumptions are lower than expenditure assumptions. There have been several requests for additional funding. Expenses remain low. Tuition pricing to be discussed in the committee's February meeting.

Senate requested breakdown of what has been requested. Requests made for additional T/TT faculty and teaching faculty between 14-24 FTE, salary benefits, academic expenses depending on the model, housing and dining, financial aid increase, inflation, some utilities, and other categories. Categories incremented to \$13-18 million with revenue assumptions at \$11-14 million. Revenue is an incremental increase per year.

Question regarding hiring T/TT faculty and if these are new lines or replacements for retiring faculty; clusters are for new lines for T/TT and teaching faculty across departments, part of Mines@150 expansion of faculty.

There has been a push to build online non-thesis masters and certificate programs to generate revenue to maintain an undergraduate size of 1,325 students and keep static tuition prices. Sixty percent of Mines' revenue generated from undergraduate tuition. Tuition increase of two to three percent generates \$6 million in extra revenue.

Research Council

Yvette Kuiper

Research Council webpage has been developed ([click here](#)).

Small Research Equipment/Instrumentation Investment (REI)

REI was developed in 2021, funds were established through support of Research and Technology Transfer (RTT) and the deans. First round of requests funded for Fall 2021: an ultraviolet light source for photoemission studies (\$14,360) PI Angus Rockett (MME) and Co-PI Xerxes Steirer (PH); high-speed, 3D, Femtosecond Laser Micromachining platform (\$24,034) PI Jeff Squier (PH) and Co-PI Alexis Sitchler (GE). Spring 2022 round of requests have been sent, due 2/28.

Research Council Lecture Series/Research Fusion

The committee completed its first Research Fusion on 11/4 at 2pm in the Boettcher room with five-minute presentations from Dylan Hickson (GP), Mike McGuirk (CH), Feng Chi Hsu (Payne Institute), Ben Gilbert (EB), Eliza Buhner (HASS), Christopher Thiry (LB), Lewis Blake (AMS), and Corby Anderson (MN). The second Research Fusion will take place in April 2022. The first Research Lecture Series was held on 11/30 at 2pm in the Boettcher room held by Mohsen Asle Zaeem, the 2021 Junior Excellence in Research award winner. The second lecture will be held by Robert Braun, the 2021 Senior Excellence in Research Award winner in March 2022.

Excellence in Research Awards

Longest standing committee of Research Council. Research Council evaluates nominations and provides a recommendation; six junior and four senior nominations in review for 2022. Request for external letters have been sent. Decision expected in late February-early March with recommendations sent to Academic Affairs in preparation for the April awards ceremony.

Research Communications

Committee worked on facilitation of campus-wide research communications. Committee provided improvements to Mines unique research facilities page ([click here](#)) and recommended automated

processes for data extraction from an inventory management software to update the online equipment list, include equipment with purchase prices lower than \$50k, further discussion on the webpage's user interface, and recommended an auto-query website. Committee will continue to investigate current practices at Mines and other institutions and provide further recommendations for implementation.

Definition and Roles of non-T/TT Researchers on Campus

Committee began in 2021; definitions and roles unclear, particularly in section 4.2 of the Faculty Handbook ([click here](#)). A drafted document, modeled after the University of Colorado, was presented to Human Resources (HR), the Office of Research Administration (ORA), RTT, and the deans. ORA and RTT had decided to begin a bigger effort with the drafted document included.

Strategic Instrumentation and Space

Committee addresses any issues and begins new initiatives related to instrumentation and space. Committee sent a space use inventory survey, due 2/11, to departments. Committee has recommended the formation of departmental research committees to develop department strategic space utilization plans, due 3/4.

Graduate Stipends

Issue of graduate stipends raised by Tim Barbari in Spring 2021 with stipends varying between ~\$24k and \$30k. Committee goal to provide recommendations to narrow the gap; committee working to create a joint committee between Research Council and Graduate Council.

High-Performance Computing

Committee advises on HPC policy-related issues and was formed in late Spring 2021 to facilitate communication between ITS, ORA, and the HPC community. Committee has developed three possible models and is tasked with identifying the most sustainable pathway forward; implementation plan in progress.

Mines Research Incentive Program

Committee formed to provide feedback and recommendations on the MRIP program; committee research being done on other universities. Informal recommendations made in an MRIP meeting attended by part of the committee to simplify the process; committee will discuss further recommendations.

Working Group – Mines Undergraduate Research Advisory Committee (MURAC)

Led by Lakshmi Krishna from the Undergraduate Research Office. Departments are being visited and provided a brief overview of Undergraduate Research, MURAC, and the working group; working with RTT on funding for undergraduate research.

Undergraduate Council

Jeff King

[Approved course changes and new courses from Undergraduate Council can be found at the bottom of these minutes.](#)

Undergraduate Council has three running subcommittees: Common Exam and Exam Scheduling, Tracks and ASIs, and Course Learning Outcomes (CLO). Common Exam subcommittee requested department feedback on common exams and exam scheduling. Tracks subcommittee to recommend standardized

language for tracks in the Catalog. CLO subcommittee discussed collecting and maintaining a university-wide database for CLOs for accreditation and informational purposes.

King recognized program changes require two weeks' notice prior to vote by Faculty Senate.

Program Changes for Vote

1.1

PHYSICS

[CIM 10/20; UGC 1/12]

1 new program: MIN-PH: Minor in Physics

Mines Department of Physics encourages the campus to create a Minor in Physics that can follow two different tracks: A Minor in Engineering Physics (Option One) and Minor in Physics (Option Two). By enabling two options, we go from having a minor that no one could complete (due to non-physics prerequisite courses that delayed a student's immersion into physics-rich courses ... which is where we are now) to a minor program that can effectively feature all our undergraduate courses.

MOTION: To approve the new program in Physics, MIN-PH: Minor in Physics by King, seconded by Duzgun. Motion passed unanimously.

1.2

PETROLEUM ENGINEERING

[CIM 10/20; UGC 1/12]

1 program change: BS-PTE: BS in Petroleum Engineering

Move free elective (3cr) from Fall Junior to Fall Senior. Move HASS200 (3cr) from Spring Sophomore to Fall Junior. Move PEGN282 (1cr) from Spring Junior to Spring Sophomore. Move PEGN382 (1cr) from Fall Senior to Fall Junior. Move PEGN482 (1cr) from Spring Senior to Spring Junior.

The changes will allow students entering the PE department in spring of Sophomore year to begin the Professional Skills series. It will also allow transfer students to the PE Department to begin adding earlier the Professional Skills courses to their schedules. By moving the series earlier in the program, students will complete the series prior to Senior year, when implementation of professional skills such as technical writing, Capstone design teamwork, team writing, oral communication skills such as presentations and interviews, cover letters, resume writing are required.

HASS provided perspective on the changes the BS in Petroleum Engineering flowchart. One of the HASS core classes is impacted. HASS' preference to place HASS200 in the sophomore year for pedagogical reasons; moving the course later impacts competencies that are reinforced in the course and causes many students to put off HASS200. HASS200 is a prerequisite for several HASS core requirements; the department has expended money and energy in the form of expunging all waitlists for these classes, hiring adjunct instructors to supplement current instructors, offering multiple sections of courses in summer, and opening a range of transfer credits. HASS has been in dialogue with PE and understand the reasoning behind the change; recognized the change is unique to PE and do not wish to obstruct the change. HASS suggested this change not be a precedent in other programs.

Battalora provided additional background on the program change. Professional skills had been moved earlier into the flowchart, students will complete the series prior to senior year allowing implementation for professional skills in internships and other opportunities. Professional skills were noted as a top strategic skill at Mines, and PE sought to implement these early in students' academic career. PE program advisory board strongly advised the change alongside employer and professional advice. Instructors of the freshman course will collaborate with instructors of the sophomore and junior professional skills courses to prepare writing skills and deliver presentations.

MOTION: To approve the program change to Petroleum Engineering in BS-PTE: BS in Petroleum Engineering by King, seconded by Horan. 10 for, 3 abstentions. APPROVED.

Program changes presented to Faculty Senate – for vote 2/22/22

1.3 **MECHANICAL ENGINEERING**

[CIM 11/17; UGC 1/26]

1 program change: BS-MECH: BS in Mechanical Engineering

To allow Mechanical Engineering Students to better select the courses/topics of interest they want and also market them when applying for job, ME plan to implement 4-course tracks in 8 different topic areas, that will appear on the students transcripts.

The new tracks will each consist of one (1) ME Advanced Engineering Science elective and three (3) approved ME Electives. In summary, the tracks are;

- Aerospace
- Automation & Controls
- Automotive
- Biomechanics
- Energy
- Manufacturing
- Materials
- Nuclear Energy

A second change, giving Mechanical Engineering students more choice (after "request" from our Industrial Advisory Board), is to remove EENG Feedback Control from the required course list and replace it with a ME elective. (EEGN will remain a ME elective)

Graduate Council

Tina Voelker

2.1 **Catalog Change** – 400- and 500-level course language and course numbering
Approved by GC 1/19

The language in the current Catalog and transcript do not match. Catalog lists 600-level courses as Doctoral where several PhD programs use 500-599 courses. Catalog change proposed consolidating 500-699 course numbers as "Graduate Level". Asterisks have been added to Senior* and Graduate Level** course numbers.

*“*Some graduate programs may allow graduate students to enroll in 400-499 level courses as part of their program.”*

*“**Undergraduates may take 500-level courses and may apply these courses toward the undergraduate degree and GPA. Undergraduates in combined undergraduate/graduate*

programs will have a transcript notation on the graduate transcript notating the double-counted courses."

MOTION: To approve the Catalog change to 400- and 500-level course language and course numbering by Voelker, seconded by Duzgun. Motion passed unanimously.

Program changes for Vote

2.2 **CHEMICAL & BIOLOGICAL ENGINEERING**

[CIM 11/19; GC 1/19]

1 program change: MSPHD-CBE: MS & PhD – Chemical and Biological Engineering
In the current catalog, both Ph.D. and master students are required to register every semester for CBEN605 Colloquium; however, it is not currently specified how many colloquium credits can be counted towards each degree. Here, we are applying a three-credit maximum for counting towards the degree requirements.

2.3 **GEOLOGY & GEOLOGICAL ENGINEERING**

[CIM 11/18; GC 1/19]

1 program change: MPMEMSPHD-GE: MP, ME, MS & PhD – Geology & Geological Engineering

Updating GEGN Ph.D. catalog language - the current language is unnecessarily vague about the number of course credits required as part of the program. I suggest we change "At least 24 of the hours must be research credit hours" to "At least 24 of the hours must be research credit hours, and at least 24 of the hours must be earned through completion of coursework".

The GEOL PhD language will be discussed at a faculty meeting later.

2.4 **HUMANITIES, ARTS, AND SOCIAL SCIENCES**

[CIM 11/29; GC 1/19]

1 program change: MS-NREP: Natural Resources & Energy Policy
Addition of thesis option to the existing MS program.

2.5 **GEOCHEMISTRY**

[CIM 2/1; GC 2/2 (Consent Agenda)]

1 program change: CRTG-GE: Certificate in Analytical Geochemistry
Revisions made to correct typos and minor text errors; clarifying language to the combined program statement.

2.6 **APPLIED MATHEMATICS & STATISTICS**

[CIM 2/1; GC 2/2 (Consent Agenda)]

1 program change: MS-DSCI-NT: Non-Thesis Masters in Data Science
Revision to improve clarity of the combined program description.

MOTION: To approve the program changes listed in items 2.2 through 2.6 in an omnibus Senate vote by Voelker, seconded by Kuiper. Motion passed unanimously.

Adjourn

Sebnem Duzgun

Meeting adjourned: 3:09 pm.

Next meeting: February 22, 2:00-4:00 pm via Zoom. Please send all agenda items to mgreen1@mines.edu at least 1 week prior.

Executive Session began: 3:10 pm

Executive Session adjourned: 4:01 pm.

Undergraduate Council Approved New Course

ORWE481: Optimization Models in Manufacturing

CSCI200: Foundational Programming Concepts and Design

MNGN251: Metallurgical and Materials Thermodynamics

MNGN334: Chemical Processing of Materials

MNGN426: Hydro- and Electro-Metallurgy

MNGN430: Physical Chemistry of Iron and Steelmaking

MNGN432: Pyrometallurgy

MNGN461: Transport Phenomena and Reactor Design for Metallurgical and Materials Engineers

MNGN462: Solid Waste Minimization and Recycling

Undergraduate Council Approved Course Changes

MEGN330: Introduction to Biomechanical Engineering – Addition of MEGN212 as prerequisite

MEGN413: Aerospace Structures – Permanent number as part of the ME Aerospace Minor, ME technical elective

GEGN403: Mineral Exploration Design – Change EDNS251 prerequisite to EDNS264

Undergraduate Approved Deactivated Courses

HASS492: Energy and Security Policy