

Colorado School of Mines – FACULTY SENATE MEETING MINUTES

April 9, 2024, 2:00 – 4:00 pm, in Zoom

Attendees:

Voting Members: 15 total (10 needed for quorum). Quorum was present.

P	Brandon Dugan (Chair)	P	Vaughan Griffiths (CEE)	P	Jamal Rostami (MN)	P	Cortney Holles (HASS)
P	Deb Carney (AMS)	P	Soutir Bandyopadhyay (AMS)	P	Ventzi Karaivanov (ME)		Lawrence Wiencke (PH)
P	Mansur Ermila (PE)		Pat Kohl (PH)	P	Sid Saleh (EDS)	P	Ning Wu (CBE)
P	Mark Eberhart (CH)	P	Shubham Vyas (CH)		Cristian Ciobanu (ME)		

Other Regular Attendees and Guests

P	Dinesh Mehta (Trustee)	P	Rick Holz (AA)		Paul Myskiw (RO)		Colin Terry (Student Life)
	Sam Spiegel (Online)	P	Tim Barbari (OGS)		Lori Kester (EM)	P	Kristeen Serracino (AA)
P	Auckland Sacco (USG)		Deb Jordan (Trefny)	P	Andy Herring (AA)	P	Nicole Becwar (LB)
P	Lauren Guido (GSG)		Jon Johnson (Online)	P	Vibhuti Dave (UGS)		Karla Perez-Velez (CASA)

Special Guest(s): Megan Sanders, Justin Shaffer, Kate Youmans, Kim Luzechyj

Welcome

Brandon Dugan

B. Dugan reminded the Senate of upcoming events including E-Days this week, the Faculty Senate informal meeting on April 16th, and the Budget Forum on May 1st.

Approval of 3/12 and 3/26 Meeting Minutes

Brandon Dugan

MOTION: Approval of 3/12 meeting minutes remains tabled. The motion to approve the 3/26 meeting minutes was moved by M. Eberhart and seconded by M. Ermila. The motion to approve the 3/26 meeting was unanimously approved with zero opposition and zero abstentions.

Academic Affairs

Rick Holz

R. Holz reminded the Senate that lots of events are coming up so keep an eye on the Daily Blast and email notifications. The Beck Venture Center grand opening held last Thursday was a success. The posthumous degree presented during the previous meeting has been unanimously approved by the Board. Derek Morgan has reached out to the family to provide the degree to the family. This Wednesday is the Electrical Engineering ribbon cutting ceremony for the space that was remodeled in Brown Hall. With the E-Day festivities over the weekend, R. Holz reminded the Senate to not assign homework over the weekend or schedule any exams on Monday so that students can enjoy the celebrations.

As of today, 1,200 freshmen and around 85 transfers deposited. This means that Mines is ahead in freshman deposits by about 200 students compared to last year. The goal is to hit 1,550 students. Every

university has extended their deadline to June 1st, but Mines has not since we are near the goal. Typically, FAFSA data is provided to universities by October so that merit awards and needs-based data can get distributed. This year, FAFSA changed, and data was supposed to go out in January. However, it was postponed due to software issues and glitches, and we are just now receiving data for all but 500 students. R. Holz encouraged everyone to congratulate the Financial Aid office staff on getting all merit-based aid out for Mines students in less than two weeks. There was an additional error found in the FAFSA form and an additional signature required which have affected those 500 students, but they should be resolved soon as there is a system in place for these students to deposit by May 1st.

- **Question:** N. Wu asked what is the number of incoming applications?
- **Answer:** R. Holz answered about 12,000 applications so that is up 2,000 compared to last year. Only a couple of hundred more students were accepted this year but yield is running a little bit behind partly due to out-of-state students. There is also a lack of women and students of color possibly due to the FAFSA delays.
- **Question:** V. Griffiths asked how many freshmen were taken on last year?
- **Answer:** R. Holz answered 1,450 freshmen last year and 1,500 the year before that.
- **Question:** M. Ermila asked what is the percentage of international freshmen?
- **Answer:** R. Holz answered there are currently 18 international freshmen, which is about 10 up from last year. There has been discussion on how to increase that number, but it is difficult with visa and immigration issues that have arisen.
- **Question:** M. Eberhart asked how does enrollment compare to 10 years ago?
- **Answer:** R. Holz answered it was more than double what it is now. For the graduate programs, we still have several international graduate students which has remained reasonably consistent. Mines is comprised of only 3-4% international students on campus so that is an area for improvement.

R. Holz addressed the discussion in the Undergraduate Council about the waitlist for every course. He clarified that a committee was formed to look at the registration process as a whole and make recommendations, one of which was to add waitlists to courses. It was decided to implement waitlists to gather data on course demand/student need. This will assist in evaluating courses that have 1-2 students on their waitlist in getting those students in and looking at room capacity. For courses that have full waitlists, additional sections can be opened, additional faculty added, or it can be offered additional semesters. These are typically HASS courses with a full waitlist.

- **Question:** V. Karaivanov added that there was a comment in UGC asking about students that put themselves on multiple waiting lists. In this scenario, would accurate data be captured?
- **Answer:** R. Holz answered that was a topic of conversation amongst the committee. The Registrar can filter those students out and capture the data we are looking for.
- **Question:** M. Barankin commented impacted waitlists for HASS classes belies the issue of H&SS courses being increasingly taken at Red Rocks (or externally). This echoes the issues brought up by the EDS course deactivations. What is the response to this?
- **Answer:** R. Holz answered that there is no policy that says students cannot take classes outside of Mines and transfer them back in. Evaluation of course content and criteria are done to ensure those courses are deemed acceptable if they are transferred back in. We cannot stop students from taking courses (such as HASS electives) elsewhere. The waitlists will help determine if there are enough seats in our CAS courses and which HASS classes are the most popular (and which are not) so that faculty can be reallocated, sections can be added, and additional resources utilized. This is separate from the EDS deactivations which are entirely up to the faculty of a department.
- **Comment:** M. Barankin commented that although we cannot stop students from going to Red Rocks, we can keep more tuition dollar if more H&SS credits were offered as Mines used to several years ago before course deactivations.



Registrar's Office

No update.

Paul Myskiw

Undergraduate Council Updates

Ventzi Karaivanov

The last UGC meeting was on March 27th. During the meeting, 4 course changes, one new course proposal (CS Software Tech Startups that was discussed during the previous Senate meeting), 6 course deactivations, and 16 course changes (change semester offered) were voted on and approved. Last time, a policy surrounding returning students was introduced. Since then, it has been determined that the language already found in the catalog matched the proposed policy, so the proposal was dropped. UGC was slated to discuss de-listing the semester offered in the catalog during the last meeting but ran out of time to vote on this item therefore there is currently no recommendation to the Senate. V. Karaivanov and S.

Bandyopadhyay agreed that this also should be discussed and voted on in Graduate Council as well.

- **Question:** S. Vyas asked for clarification on the semester offered in the catalog. During the last Senate meeting, it was brought up that graduate students use the semester offered listed. Could we ask the departments to update their course listings and when they are offered and leave it as is?
- **Answer:** V. Karaivanov answered that the concern is that many of the semester offered listings are inaccurate. By de-listing it, issues with students planning courses can be avoided and the catalog can remain as accurate as possible.
- **Comment:** B. Dugan added that there could also be complications in updating the semester offered listing as sabbaticals and leave of absences are approved after the catalog is published.
- **Comment:** M. Barankin added that there is an option to add "semester varies" in the catalog.

Graduate Council Updates

Soutir Bandyopadhyay

There are two remaining meetings in Graduate Council. During the previous GC meeting, the new tuition model was presented by T. Barbari and there was discussion on the handbook policy changes. S. Bandyopadhyay asked for feedback regarding two program proposals (HES and Innovation Engineering) that were just submitted for GC to review at the next meeting. The program deadline to add to the Fall '24 catalog was back in March. Is it possible to accelerate the approval process when there are only two meetings remaining?

- **Comment:** B. Dugan commented that there are couple of messages going out regarding the two program proposals so he will reach out to see if adding these programs this late is even feasible.

Research Council Updates

Mark Eberhart

During the last Research Council meeting, a subgroup met to approve the REI proposals. The subgroup agreed to fund six REI proposals which are currently being approved via electronic vote by the Research Council. The Research Fusion held on April 1st was an interesting event although it could have had a better turnout (40 RSVP'd but only about half showed up). The Research Council will work on ways to improve the event in their final report.

- **Question:** B. Dugan asked how much the six proposals come up to?
- **Answer:** M. Eberhart answered that the six proposals come to roughly \$100,000.
- **Comment:** J. Rostami commented that it has happened before with an RSVP event that people forgot. Maybe we can look into an RSVP platform that syncs with the Outlook Calendar.

Undergraduate Studies

Core Curriculum Assessment Update

Vibhuti Dave and Megan Sanders



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As an overview, work on the core curriculum started in summer 2023 with three big goals: approach the core curriculum as a cohesive entity instead of siloed courses, increase opportunities for cross-course dialogue, and develop an assessment plan for the core curriculum. As a result, a group of core curriculum instructors came together for a Core Assessment Intensive (CAI) in which objectives were established. These objectives included a shared understanding and interpretation of competencies given the long list of 26 competencies, development of a curriculum map across courses, development of an assessment plan by competency, and reflection and building awareness to leverage strengths. Key takeaways from the CAI were that there was a need for shared understanding especially ones around the high-level competencies (defining challenges and opportunities and creating meaning and impact). Also, none of the technical courses felt like they were being represented within the 26 competencies and there was a challenge of assessing high-level competencies in foundational courses. There was also conversation around common things that were practiced across multiple classes which included group work, reflection, pre-calc skills, writing, student-success skills, and problem solving.

Informal gatherings were conducted in fall 2023 to provide opportunities for cross-course dialogue and collaboration as well as provide the space and time for faculty to continue working on assessment. In spring 2024, feedback from faculty was synthesized into a curriculum map of which competencies were being practiced versus assessed. The curriculum map showed that high-level competencies were practiced and assessed in Cornerstone and HASS100, lower-level technical courses were not well positioned to assess high-level competencies, course level learning outcomes of technical courses did not quite align with the core competencies, all competencies were assessed at least in one course, and 24 of the 26 competencies were assessed at least twice.

The leadership team recommended working on the competencies to enhance alignment between the course-level learning outcomes and the core competencies as well as strengthen alignment between the core competencies and the skills highlighted by professional national organizations. A gap that was identified was engaging and educating students on the purpose of the core, so another recommendation was to be more mindful about that. Lastly, there is a need to come up with a tool that accurately reflects the level of student learning so that there is room for all the disciplinary differences, but it measures a common competency that is expected out of the core curriculum as a whole. The plan is to work on this over the next academic year.

- **Question:** M. Eberhart asked when were the competencies identified? Why were the technical courses not re-defined around those competencies?
- **Answer:** V. Dave answered that the competencies started before COVID. They were worked on for about a year and then stalled during COVID. It got picked up again in 2021 and was approved by the Senate in spring 2021. When we started talking about the curriculum, the focus was that there was not an increase in the number of credit hours and find a good combination, therefore, the competencies got sidelined. As we had come back to the competencies, we found there is a disconnect that is not working for us.
- **Answer:** R. Holz answered that ideally the core would be built around the competencies and that was the intention at the start, but it was more important to establish a core that would help maintain a better accreditation or other things needed. Not all competencies were met in the way that we initially intended so we are now going back to see what alterations can be made to bring them together cohesively.
- **Comment:** S. Vyas suggested conducting a survey in every department's field session asking the students if they think they have learned any of the core competencies. This might be a good resource to give back to the department for them to revisit and develop the competencies within



their courses.

- **Comment:** L. Guido suggested that the survey could be added as part of the course review in every undergraduate class.
- **Question:** R. Holz asked if another core committee should be formed to work on bringing together the core competencies with the updated core so that it is a better match?
- **Answer:** V. Dave answered yes. However, she requested that her, Megan, and Justin first try to review the competencies and possibly simplify them because they have already done the research on professional organizations and know the course-level learning outcomes. Then, they can bring a additional group together to tweak and rework those.
- **Question:** M. Eberhart asked what is the strategy to address the challenge of engaging and educating students?
- **Answer:** V. Dave answered that they are still working on how to approach this but would like to get students involved in the conversation, so they know why they are taking the core classes that they are.

New Course Proposal “Pathways to Engineering
Solutions to Big Problems”

Justin Shaffer

The majors on campus are a bit imbalanced with 50% of students in Mechanical Engineering and Computer Science whereas all Earth departments only make up around 5% combined. This brought up the idea that maybe students have not explored Mines as much as they could. The point of the new course proposal is to provide students with an opportunity early on to see what other career options are available and explore different academic pathways through the context of engineering innovations. During the course, dynamic, enthusiastic, and inspiring speakers (including alumni, industry leaders, and Mines faculty) will be invited to give TED-style talks about how their own academic and career paths led them to work on various engineering innovations in hopes of highlighting Mines’ priorities and current global issues while also helping students explore majors and pathways. Learning outcomes of the course will be that students are able to explore innovative engineering and STEM projects and how they connect with their career interests, identify majors, minors, and other academic opportunities at Mine, and make connections and form professional networks. Some possible themes for speakers include carbon sequestration, feeding the world, global energy futures, improving world infrastructure, clean water, aerospace, space exploration, rare Earth minerals and mining, improving health and well-being, and AI and society. J. Shaffer requested that if anyone has input, additional theme ideas, speaker suggestions, please reach out via email.

All first-year students will be required to enroll in this course. The course will meet in two sections in Bunker Auditorium on Wednesday at 12:00 pm and 4:00 pm. There will also be an online option for students who cannot register for those times. There will be six course meetings with each having one guest speaker. Since Bunker holds 1,400, everyone is encouraged to attend the talks (not just students). A team of faculty, Student Life, students, and alumni will be convened to help plan the course and select speakers. J. Shaffer will be the instructor of the course and host the invited talks. For fall 2024, student attendance at the talks will be counted as part of their CSM101 grade, thus the course will be zero credits. iClickers will be utilized to capture attendance and engage students. The course will be piloted this fall and be evaluated to determine its impact. If successful, the course may be converted to a standalone one-credit course.

- **Question:** D. Carney asked if feedback has been received from current students? How would you keep students engaged? How long would it take to exit Bunker since it would be up to 1,000 people



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leaving at once? How would students make connections and network with such a large volume in the class?

- **Answer:** J. Shaffer mentioned that the students who he has spoken to are excited about the course. It is the hope that the speakers will be energetic and dynamic enough that students are going to want to be there, maintain focus, and pay attention. Speakers will be asked to not take up the entire 50 minutes but stay true to the TED-style at around 18-25 minutes with plenty of time for questions and time for students to get settled in and leave. The connections and networking would be more for the one-credit course. In that case, there will be assignments where students will form professional networks on LinkedIn, interviewing business professionals and older students who are in their major or internship. There will be a network building component, but not in this first iteration as a pilot.
- **Comment:** R. Holz added that in CSM101, there is a module where students are taught how to use the Career Center and the software that the Career Center must do searches for interests and how that connect to certain careers. I think these TED talks will lead into that beautifully and hopefully get students using that software more heavily.
- **Comment:** A. Sacco added that her experience, many fellow students came in as Mechanical Engineering majors but after the Majors panel in CSM101, a lot of them changed their majors.
- **Comment:** J. Shaffer added that this course would not replace the Majors panel and the CSM101 team will make sure this aspect of the course complements the panel and builds upon it. He has also been working with Student Life to make sure there is other materials about major exploration, a career choice website, or even a guided tool to help students pick the right major/academic program.
- **Comment:** R. Holz added that if this goes well as part of CSM101, then maybe it could stay as part of CSM101.
- **Comment:** S. Vyas shared that the TED talks in these courses should not just encourage students which majors to pick but rather show how interdisciplinary solving big world problems is going to be. For example, neurodegenerative diseases issues can be addressed by Biology, Biochemistry, Mechanical Engineering, clinicians, etc. Additionally, the idea of getting students to explore other options can go back to the department-level organization. For example, the Chemistry department hosts “An Evening with Chemistry” where students tour 5-7 labs and faculty participate by showing the instrumentation they use, what kind of problems they are working on, and answer questions.
- **Comment:** J. Shaffer added that part of the instruction to the speakers will be to highlight the pathways and the people they work with that are in those multidisciplinary fields to get to where they are.
- **Comment:** M. Eberhart suggested that when talking with students, he encourages students to think about what they want to do 10 years out and make them form a story for themselves.
- **Comment:** J. Shaffer added that the storytelling might be a good first assignment for the course.
- **Comment:** J. Rostami added that sometimes the issue with major selection does not necessarily lie with the students, but rather the parents. How could you engage parents?
- **Answer:** J. Shaffer answered that parents could attend the talks to be able to experience the exploration as well. If the extra materials and tools mentioned are developed, that might also be a resource to easily share with families to let me know about other possibilities.

Graduate Studies

Graduate Tuition Update

Tim Barbari



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The new proposed tuition model was presented to the Graduate Council last week and received various questions. Since the survey was sent out, there have been a few tweaks. T. Barbari suggested returning to the Research Council as well to also provide an update. The new tuition model would lower the sticker price to make Mines more competitive. In the revenue generating program like the non-thesis masters, the model would make full-time and part-time credits the same cost. It would also lower the cost of a PhD student to a grant, especially when the grant is submitted, and in the long term, reduce the tuition burden on grants and contracts. As an update, this is working its way through the Finance Committee of the Board for a final vote. At this point, the details surrounding the kind of policy that is needed to implement the tuition model is being worked on with the least amount of inequities and financial implications. T. Barbari asked for input on the best way to roll out what this would like in practice and maybe put it online for people to review.

- **Comment:** L. Guido added that any rolling out of tuition and/or policy changes needs transparent and detailed communication. Since being presented last week in Grad Council, GSG has been dealing with panicked questions that they do not know how to address so putting actual numbers available would be very helpful. The biggest concern brought forth from the graduate student side is it seems like this is based on students only taking three 3-credit hours courses per semester. Most are taking 11-14 credits (excluding research credits) per semester except for their final semester.
- **Comment:** T. Barbari mentioned that along with the tuition restructuring is also getting rid of reduced registration. It was shown through looking at a few cohorts of PhDs that most student register for 15 credits, but it is padded with research credits that they do not really need so that they can get to the 72 total credits to qualify for reduced registration. By getting rid of reduced registration, students would be driven toward 9-10 credits.

Board of Trustees Meeting Summary

Dinesh Mehta

During the previous BOT meeting, there was an updated on the budget and financing on Sophomore housing. Several AA items were discussed including BOT approved promotion and tenure, approved sabbatical requests, approved emeritus, and the BOT Award (which will be announced at commencement). There was also discussion on expenses which are rising at a higher rate than revenue. The cost of benefits will be increasing 12.5%. The Faculty Oversight Committee on Sports and Athletics provided a report. B. Dugan attended to provide a report from Faculty Senate. There was also a follow-up from the Career Center concerning differentials in salary based on gender. After an analysis, there was no evidence found that supported this concern. Lastly, the BOT took a tour of Labriola.

Upcoming Items

- Beck Venture Center Ribbon Cutting [April 4 3:00-4:30]
- GenAI survey results (TBD)
- By-laws revisions (April)

3:40-3:45 pm **Adjourn**

Brandon Dugan

Next meeting: April 23, 2024, in the Guggenheim Boardroom. Please send agenda items faculty_senate@mines.edu 1 week prior.



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