

**Colorado School of Mines  
Faculty Senate Minutes  
November 28 2:00-4:00 p.m.  
Hill Hall**

**ATTENDEES:**

Reed Maxwell (President), Linda Battalora (PE), Tzahi Cath (CEE), Paula Farca (HASS), Vaughan Griffiths (CEE), Jon Leydens (HASS), Paul Martin (AMS), Mark Seger (CH), Marcelo Simoes (EE), Chuck Stone (PH), Neal Sullivan (ME),

**Representatives:** Lisa Nickum (Library), Bo Sinkler (USG), Heather Lammers (GSG)

**APOLOGIES:** Sumit Agarwal (CBE), Jeff King (MME), Terri Hogue (BOT)

**GUESTS:**

Tom Boyd (Interim Provost), Lara Medley (Registrar), Aurea Tolnay (AA), Kathleen Hancock (HASS), Angel Abbud-Madrid (ME), Greg Jackson (ME), Chris Bellona (CEE), Carol Smith (Library), Meaghan Guyader (GSG)

1. Approvals

1.1. Approve all undergraduate and graduate students graduating in the Fall. Spreadsheets of names were posted on Canvas. All Senate documents will be posted on the Senate Canvas site going forward.

1.1.1. **Motion to approve the graduation list for undergraduate for the Fall: Seger, second; Leydens. Approved. Unanimous.**

1.1.2. **Motion to approve the graduation list for graduate students for Fall: Seger, second; Sullivan. Approved. Unanimous.**

1.2. Approval of minutes from the last three Senate meetings: October 10, October 24 and November 14.

1.2.1. **Motion to approve the minutes from the last three meetings (October 10, October 24 and November 14): Griffiths, second; Seger. Approved. One abstention.**

2. New graduate degree approvals. Two new degrees have been approved by the Graduate Council, and all material for the degrees are up on the Senate Canvas site. Below is a brief synopsis of the presentations:

## 2.1. NREP (Natural Resources and Energy Policy) — Kathleen Hancock

NREP is a change to an existing program, versus a new program. It previously was known as MIPER (Master of International Political Economy Resources). It has been revised to attract more students, address changes in faculty and become more multidisciplinary. Learning outcomes: social responsibility, laws, policy and anti-corruption. Throughout all of the courses there is a focus on writing, critical analysis and oral presentation. Goal to become even more multidisciplinary.

### **Major changes in the program**

- Change from international to domestic and international.
- Change from international political economy to natural resources, energy and policy.
- Change from HASS core classes to HASS, PE, Mining, EB, Math and Geology.
- Change from HASS electives to electives across campus.
- Wide range of potential jobs to links to employers.
- Change from 36 to 30 credit hours.

### **Targets**

- Students
- Engineers and social scientists
- Mines seniors; other recent Colorado graduates
- Mid-career engineers

### **Jobs**

- Energy and financial analytics companies
- Policy, government affairs, community outreach, etc. at energy, natural resource and engineering companies
- Government
- Non-profits

### **Ongoing Program Development**

- Campus programs, talking to programs across campus to see where classes will overlap and gaining interest.
- Employer meetings are in progress (Newmont, Colorado Energy Office, CH2M, Anadarko, etc.)
- Creating a Board of Advisors

- Build internships and scholarships
- Mines Foundation and industry support
- Active advertising and recruitment
- On-line courses

**Related Programs**—About 60 programs around the world, although most of these are not designed for Engineers.

**NREP Distinctions:**

Renewable and nonrenewable energy sources, mining, links to industry (NREL), you can finish in a year, social sciences for engineers, student integration across campus (multi-disciplinary).

**Classes and credit hours:**

Core courses: 18 hours

Electives: 12 hours (minimum 6 hours in HASS, maximum 6 credit hours 400 level)

5 new courses

3 Course changes

There is a certificate on the books in MIPER's name, and would like to change to NREP. There are also two minors that need the names updated, and Hancock will go through GC to get changed.

Took off the thesis option. The campus is leaning towards a professional degree targeted for your job versus a PhD. Students could add one or two independent studies to allow them to create a strong research document. There has not been a lot of interest previously in the thesis option, only about 5 out of 86 people.

Conservatively anticipating 5 students in 2018. Anticipating 20 students at the 5-year mark. Want to remain a residential program, so will not have more than 4 courses online, and probably would only be electives.

**Motion to approve the NREP program by Sullivan, second; Seger. Approved. Unanimous.**

Hancock will present to the BOT at the December 8<sup>th</sup> meeting for approval.

2.2. Space Resources— Angel Abbud-Madrid

Resources allow us to explore every corner of our planet, allow us to live in ever more extreme environments and they have become the engine of our technological society. Resources are also the reason Mines was founded in 1874. Resources are still the main objective of all our academic and research programs. Resources in space have not been fully utilized. NASA is expanding its work into space resources. This is happening globally, in Russia, China, India and European countries. It is not just the government agencies. Aerospace companies are also working on this, and Colorado has the 2<sup>nd</sup> largest aerospace economy in the nation. Lots of companies that have entered this field of space resources, anywhere from exploration, extraction, utilization and processing of space resources.

Mines launched the first program in the world for space resources this summer.

### **Spaces Resources Program—Proposed Degree Offerings (Fall 2018)**

- Post-baccalaureate Certificates (12 credit hours)
- Master of Science Non-Thesis (30 credit hours)
- PhD (72 credit hours)

### **Partnerships (Internally and Externally)**

- All departments at Mines (interdisciplinary)
- Space agencies
- Companies (projects, speakers, internships, jobs)
- Partnership with other universities

### **Core Classes for all 3 degrees**

- SPRS 501 Space Resources Fundamentals (3 credits)
- SPRS 502 Space Systems Engineering (3 credits)
- SPRS 591 Space Resources Design Project I (2 credits)
- SPRS 592 Space Resources Design Project II (3 credits)
- SPRS 503 Space Resources Graduate Seminar (1 credit)

Launched the program in July, and discovered the program will have to go online in a synchronous or asynchronous model. The first pilot courses were taught online this Fall. The certificate will be fully online, and then eventually the master's program as soon as the courses are available online. The PhD will remain residential.

### **Electives—Five tracks**

- Remote Sensing, Prospecting and Resource Assessment
- Resource Extraction. Material Processing and Refining
- Power and Energy
- Robotics and Communications
- Economics and Policy

The certificate program may open to undergrads as time goes, but the program cannot accept the undergrad demand at this time. This is the first program of its kind in the world. Mines has all the components for this degree already on campus. Already received 120 letters of interest for the program. Expect companies will pay for their employees to come here. The first and only program at the moment, and have been approached by private companies and space agencies to incorporate this program. **Motion to approve the Space Resource program by Sullivan, second; Seger. Approved. Unanimous.**

Abbud-Madrid will present to the BOT at the December 8<sup>th</sup> meeting for approval.

### 3. Undergraduate Council—Mark Seger

3.1. Three bachelor programs have been modified: Electrical Engineering, Geophysics and Applied Math and Statistics. This was to modernize course offerings and the courses involved. All three of these modifications to the bachelor programs were approved unanimously. Modification of course offerings and streamlining the flowchart to maximize flexibility to the students in their programs. All three maintained the same number of credits. Very straightforward and easily approved in Undergraduate Council. Summary reports are on CIM.

**Motion to approve all 3 modifications to the degree Martin, 2<sup>nd</sup> Seger. Unanimous.**

3.2. New Biology programs will be presented for a vote at the next Senate meeting following the Council meeting approvals.

3.3. New minors submitted for approval for CEE and EDS. **Motion to approve each department's Minors and ASI separately by Seger, second; Sullivan. Approved. Unanimous.**

3.3.1. EDS—Two Minors and one ASI approved by UG Council:

- Minor in Engineering in Community Development
- Minor in Leadership in Social Responsibility
- ASI in Humanitarian Engineering

**Motion to approve 2 new minors and the ASI in the EDS program by Seger, second; Simoes. Approved. Unanimous.**

3.3.2. CEE—Two minors and two ASI's approved by UG Council

- Minor in Water Sustainability
- Minor in Structural Engineering
- ASI in Environmental Engineering
- ASI In Civil Engineering

**Motion to approve the two minors and two ASI's in the CEE program by Seger, second; Sullivan. Approved. Unanimous.**

Undergrad council formed an ad-hoc sub-committee to talk with the Registrar about common exam issues, especially the final exam scheduling issues. The Green Center is going offline, and they want to make sure the process is as pain free as possible. Please pass on any input or thoughts to Seger regarding this issue.

4. Graduate Council—Marcelo Simoes

The Biology program will be voted on at the council meeting tomorrow. Tolnay has course changes that are being organized and will come to the Senate in January. A new program will be discussed tomorrow at the Council meeting, and may be brought to the Senate in January.

5. Teaching/Library Faculty Advancement Committee—Chuck Stone et al

The Multiyear Contract Survey results. The survey was uploaded onto the Senate website. Overall, the Campus is in favor of investigating multi-year contracts. How do we move it forward? The multi-year contract could be an option for employees, but not a requirement. Leydens asked what are common practices at peer institutions? Some universities do not have teaching faculty, and other universities are in various stages of multi-year contracts and tenure. Smith said at the following Colorado institutions librarians have both academic faculty status and tenure. CU Boulder, CU Denver, CU Colorado Springs, UNC Greeley, CSU

Pueblo, CSU Ft. Collins. At some of those institutions, librarians have the option to be tenure track or non-tenure track. The responsibilities are different accordingly. Seger asked for clarification of the tenure track for teaching faculty. There would be two tenure tracks. The teaching faculty would have their own specific tenure process, or a multi-year contract option. The committee will summarize the results and draft a memo from Senate. **Motion to generate a memo from Senate regarding survey on teaching faculty by Seger, second; Sullivan. Approved. Unanimous.**

#### 6. Library Committee Survey update—Paula Farca et al

The survey was open for two weeks. Farca is happy with the results, although wishes they had more responses. Overall a positive survey. Most of the responses were either in full agreement or very much in agreement. Full renovation of the library is supported. Whether or not the footprint and the square footage of the library should be expanded is the next question. Cath said there is less office space available for graduate students, and they also end up using space in the library. The library will need even more room with the campus construction. The Mines library is one of the only institutions in the state that has not been renovated. The average cost for a library renovation is 20 to 25 million dollars. The DU library with some off-site storage cost 35 million. Colorado College's library cost 55 million. Smith said Mines could be renovated for approximately 25 to 35 million. The Auraria campus financed their library in phases and it was executed in phases, but it was all planned up front. The money would come from state funding, from Mines and from donors. It is a big project, but Mines can do it. It helps with marketing, recruitment and retention. The committee will create a rough draft of a memo to bring to the Senate for discussion.

#### 7. Survey Committee—Mark Seger

The committee has only met once. The Perception of Leadership Survey results from May 2017 have been shared with the President, Provost, Deans and Department Heads, but not with the faculty. What information can be shared with the faculty? How can the information be disseminated to the faculty and maintain privacy? The survey committee will come up with some recommendations, and investigate what is legal to disseminate the information. Is it possible to sanitize the information? The faculty sponsored the survey, but has

not been able to see any of the results. Should the survey results be sanitized before archiving? The committee will investigate and come back to Senate with some recommendations.

The next ongoing survey is the Faculty Climate Survey in the Spring 2018. The following spring there will be the Perception of Leadership Survey, as they are alternating years for the two surveys. The committee will review the Faculty Climate Survey to prepare for the Spring and follow up with the Senate.

#### 8. EPA 'War on Science' discussion—Marcelo Simoes

Simoes wanted share concerns with the Senate regarding the Trump administration and the conflict with the EPA. The EPA used to be an asset to the U.S. Simoes is concerned that the regulated has become the regulator. Simoes has notes and concerns and would like to bring them to the Senate's attention. Leydens asked what are the main issues you see? Simoes said the rollback for everything to protect the environment. How much are we responsible as faculty to show our students we care? What do we do on campus for climate change related to research? Simoes will create an ad hoc sub-committee to create a document that is discussed and possibly endorsed by Senate. Cath will join the sub-committee.

#### 9. Additional Discussion—Reed Maxwell

The Presidents executive council meeting brought up the Senate committees. Are the committees following the Roberts Rules of Order? The best option is the AAUP, they have guidelines for the Roberts Rules of Order and also a quick refresher on the rules.

The December 12 meeting. Maxwell is out of town during the next Senate meeting, and half of the executive board will be absent. The meeting is also scheduled during finals this year. Do we want to cancel the meeting or is there a volunteer to run the meeting? February 9<sup>th</sup> is the first BOT meeting next year, are there items that need to be approved before the January meeting? **Motion to cancel by Seger, second; Griffiths. Approved. Unanimous.**

The Senate would like to engage with the faculty at large. Possibly Senate office hours or coffee? Maxwell had two ideas to think about: Senate coffee drop in or



additional informal events in addition to the lecture series. Please think about this and we can discuss at the next meeting.

**Meeting adjourned 4:00**

**Next meeting January 9, 201**

*Per vote at the Faculty Senate meeting on 1/9/17, the minutes were approved with the addition of the following email addendum that lists all the Undergraduate programs approved by Faculty Senate on 11/28/17.*

**From:** Aurea Tolnay  
**To:** ["Berkery Gail"](#); [Mark Seger](#); [Marcelo Simoes](#)  
**Cc:** [Reed Maxwell](#); [Linda Battalora](#); [Tzahi Cath](#); [Paul Martin](#)  
**Subject:** RE: Senate minutes from 11/28/17 meeting for your approval-updated from Paul's edits  
**Date:** Friday, December 08, 2017 11:32:00 AM

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Gail and senators,

In the past there has been instances where there is a lack of documentation to support approvals in Faculty Senate for specific proposals from Undergraduate Council and Graduate Council. Could we revise the minutes to include the full names of each proposal?

Gail, your bullets in items 3.3.1 and 3.3.2 are great! I think it would be good to follow that format and include bullets for the three degrees in item 3.1. I also noticed that the MINASI for Electrical Engineering is not being referenced in the minutes, we should add this as well since I believe it was also presented to senate. The 11 Undergraduate Council proposals that were up for vote on 11/28 are posted to Canvas and are listed below:

- Applied Math and Statistics
  - BS-AMS: BS in Applied Mathematics and Statistics
- Geophysics
  - BS-GPE: BS in Geophysical Engineering
- Electrical Engineering
  - BS-EE: BS in Electrical Engineering
  - MINASI-EE: Minor/ASI in Electrical Engineering
- Engineering, Design and Society
  - MIN-ECD: Minor in Engineering for Community Development
  - MIN-LSR: Minor in Leadership in Social Responsibility
  - ASI-HUME : ASI in Humanitarian Engineering
- Civil & Environmental Engineering
  - Minor in Water Sustainability
  - Minor in Structural Engineering
  - Area of Special Interest in Environmental Engineering
  - Area of Special Interest in Civil Engineering

Thank you for all your hard work Gail, I appreciate it!

**Aurea Tolnay**

Academic Affairs Administrative Specialist

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