CSM 598A: Graduate Student Skills and Success
Fall 2021

Instructors: Dr. Kamini Singha (ksingha@mines.edu), Geoff Brennecka (gbrennec@mines.edu), Jenny Briggs (jsbriggs@mines.edu), plus additional specialist faculty and staff instructors.
Course Materials: All the necessary materials for the course will be provided on Canvas. This is a paperless class.
Class Period: Tu 5-5:50, 162 Alderson Hall
Credit: 1 unit, pass/fail

Office Hours:
Singha: Tu 9:30-10:30, W 1-2 or by appointment
Brennecka: Tu 10:30-11:30am, F 1-3pm or by appointment
Briggs: M 3-5, Tu 12-2, Th 9-11 or by appointment

Course description: This course is a collaborative learning program focused on the skills that will allow you as a new graduate student to develop to your fullest potential and efficiency at Mines, prepare you for the next steps in your professional or academic journey, and help you build a network of colleagues across campus. The course is designed for new students pursuing any type of graduate degree in all departments and programs at Mines.

Course Objectives: Develop skills for success in independent and collaborative research; understand the expectations for graduate (vs. undergraduate) training; become an integrated member of the Mines community; explore resources and support for academic and professional growth; connect with peers across campus; and develop as a person, a student, and an early-career STEM specialist.

Aretha Franklin meant it: Our classroom is a learning community where actions and words are expected to be mutually respectful (faculty to student, student to student, and student to faculty). Please don't be disruptive during class. This includes turning off cell phones, arriving to class on time, and respecting the contribution and perspective of each participant.

Disability support: Mines is committed to ensuring the full participation of all students in its programs, including students with disabilities. If you are registered with Disability Support Services (DSS) and we have received your letter of accommodations, please contact us so we can discuss your needs in this course. For questions or other inquiries regarding disabilities, visit disabilities.mines.edu for more information.

Diversity and inclusion: In an ideal world, science would be objective. It is possible that there may be both overt and covert biases in the material due to the lens with which it was written, even though the material is primarily of a scientific nature. Integrating a diverse set of experiences is important for a more comprehensive understanding of science. Please contact us (in person, electronically, or anonymously by sliding a note under any of our office doors) if you have any suggestions to improve the quality of the course materials. We would like to create a learning environment that supports a diversity of thoughts, perspectives and experiences, and honors your identities (including race, gender, class, sexuality, religion, ability, nationality, experience, etc.) To help accomplish this: 1) If you have a name and/or set of pronouns that differ from those that appear in your official Mines records, please let us know! 2) if you feel like your performance in

the class is being impacted by your experiences outside of class, please don't hesitate to come and talk with us. Also, as a participant in course discussions, you should also strive to honor the diversity of your classmates.

Academic integrity: You have a responsibility for establishing, maintaining, and fostering an understanding and appreciation for academic integrity. In broad terms, this implies protecting the environment of mutual trust within which scholarly exchange occurs, supporting our ability to fairly and effectively evaluate your academic achievements, and giving credence to the university's educational mission, its scholarly objectives, and the substance of the degrees it awards. The protection of academic integrity requires there to be clear and consistent standards, as well as sanctions when individuals violate those standards. Mines desires an environment free of any and all forms of academic misconduct and expects students to always act with integrity. Academic misconduct is the intentional act of fraud, in which an individual seeks to claim credit for the work and efforts of another without authorization, or uses unauthorized materials or fabricated information in any academic exercise. If you are found to have engaged in such misconduct then sanctions such as change of a grade, loss of institutional privileges, or academic suspension or dismissal, may be imposed. The complete policy is here: http://bulletin.mines.edu/policiesandprocedures/.

Credit: To achieve a passing grade in this course; participants are expected to attend all sessions unless excused prior to class; prepare fully; participate actively in small-group or individual exercises; contribute to class discussions and online assignments; and demonstrate the principles of respect, diversity and inclusion, and academic integrity outlined above. Feedback is essential for improvement, and assignments and activities throughout the course will prompt critical feedback from instructors and peers. Each week you will be asked to reflect on the material covered, and how it relates to you as a graduate student. This work will be compiled, with any other weekly deliverables, into a final "self guide to success at Mines" that you'll submit at the end of the semester (but is really for you!), and that we'll reflect on as a group in the final week. In general, the pass/fail assessment will focus on effort and engagement.

Notes and other posted materials: The syllabus is subject to change, and you are responsible for keeping up with changes to the syllabus as they are announced in class.

Schedule:

Week	Date	Topic	Guest Instructors
1	Aug 24	**Welcome to Campus, the Transition to Graduate School, and Articulating Goals** · Transitioning to the expectations of graduate school. How do your past undergrad, professional, and/or prior MS experiences apply/translate? How is grad school different than ugrad? How will multiple roles (e.g., RA, TA, intern, student) be defined and balanced? What do you hope to accomplish at Mines?	Geoff Brennecka, Jenny Briggs, and Kamini Singha
2	Aug 31	**TA'ing Effectively and Proactively** · Theories of teaching and learning · Assessment best practices · Asking the right questions rather than just providing the right answers · Attending to student psychological and emotional factors	Kristine Callan

		· Proactively collaborating with faculty	
3	Sept 7	**Project Design for Research and Practice** · Getting started. What goes into a project? · Exercise - Collaborative project execution · Dealing with ambiguity, uncertainty, and constraints · Drafting and revising proposals or plans · Working efficiently to achieve productivity · Using software to track progress (Slack, Trello, Mindmaps)	Sid Saleh and Jenny Briggs
4	Sept 14	**Scientific Communication 1: Persuading your audience / justifying project support** · Applying for and justifying funding, including fellowships / scholarships, industry projects, angel investors, etc. · Elements of effective, compelling proposals and pitches · Recognizing expectations and tailoring scope, tone, style, and content (e.g., academic vs. industry)	Erika Jerme, Allyce Horan, and Geoff Brennecka
5	Sept 21	**Finding, Evaluating, and Organizing Resources for Your Literature Review** · Defining literature reviews and the lit review process · Refreshed on finding and evaluating scholarly and authoritative resources · Using citation management software to organize sources	Emily Bongiovanni and Jenny Briggs
6	Sept 28	**Intercultural Aspects of Collaborative Research** · Handling cultural differences in perspectives and behavior · Cultural competence as it relates to issues of bias and microaggressions · Supporting your classmates: allyship · Campus resources	Andrea Salazar-Morgan
7	Oct 5	**Avoiding Roadblocks and Professional Development** · What is a conflict? · Conducting difficult conversations · Build a network of supporters · Where to get help when you need it? · Opportunities for professional growth	Roel Snieder
8	Oct 12	**Responsible Conduct of Science** · Conducting responsible research · IRB approval, when is this needed, how to get it? · Meeting NSF or other mandated requirements · Research misconduct vs. questionable research practices (QRPs)	Qin Zhu and Scot Allen
9	Oct 19	*Fall Break—enjoy!*	
10	Oct 26	**Building Thriving Relationships with your Mentors, Mentees, and Peers** · Working with your advisor and other mentors: establish expectations and goals, communicate, identify other mentors · Mentoring other students: establish expectations, identify goals, provide resources, check in regularly, give feedback	Christine Morrison

		· Working with your peers: why is this important? How to build peer relationships and set boundaries · Working with your mentors, peers, and mentees: create self-awareness, practice handling conflict and difficult conversations	
11	Nov 2	**Scientific Communication 2: Oral Presentations** · The "and →but →therefore" storyline · Examples of effective and ineffective presentations · Campus opportunities: GRADS, 3MT, departmental seminar series: attend!	Roel Snieder and Kamini Singha
12	Nov 9	**The Sustainable Student** · Setting goals on different timescales · Learning when, and how, to say "no" · Being interdependent · Practicing self-care	Roel Snieder
13	Nov 16	**Scientific Communication 3: Writing and publishing for different audiences** · Tips for writing, tailoring for specific audiences and outlets (course assignments, academic journals, agency or technical reports, theses, industry publications, etc.) · Capturing and communicating data; interpretation of results relative to original hypotheses/objectives · Drawing and supporting conclusions appropriately, discussion and relevance to audience	Mike Mooney and Jenny Briggs
14	Nov 23	**Future Employer Expectations: The Commercial Sector, Government Service, and Academia** · Teamwork: the dynamic between individuals in a team setting with respect to diversity of skills and diversity of personalities. · Communication: the differences in communication style between various stakeholders – your teammates, your leadership, and the general public · Project management and execution: tools for effective organization, execution, and communication while leading a complex project	Craig Brice
15	Nov 30	**Innovating: Translating your Research for Broader Impact** · Identifying problems worth solving: Use your research to address practical problems in industry, government, and society. · Pretotyping: Test potential applications of your research with minimal time, effort and resources. · Validating solutions: Make sense of feedback you receive from potential beneficiaries of your applied research. · Dealing with constraints: using an entrepreneurial mindset for creative problem solving (even if you don't want to start your own venture). · Demonstrating value: sharing your research potential in a compelling way to 1) grantors/program managers in marketability/commercialization sections of funding	Sid Saleh and Werner Kuhr

		applications (e.g., NSF, STTRs, SBIRs), or 2) angel investors to raise seed/early-stage funding.	
16	Dec 7	**Identifying and Preparing for Your Next Steps** · Discussion of first week assignments: sharing resource lists and extracurricular activities/campus events · Revisiting: Building professional/academic relationships and networks, requesting support from your mentors · Moving forward: Marketing yourself effectively: websites and social media; how to find and apply for jobs, internships, or further degree programs; preparing yourself and your resume/CV for each interview	Jenny Briggs, Kamini Singha, and Geoff Brennecka