

ENERGY 203A: “Big Ideas & Open Opportunities in Climate-Tech Entrepreneurship”

Fall 2022 Weekly Seminar Series

Any changes to this syllabus made after the first class on September 28, 2022 will be in red.

Lecture Time: Wednesdays 12:30-1:30pm PT
Lecture Location: Shriram 104
Zoom link [here](#) for virtual lectures and remote access to in-person lectures.
Grading Basis: Letter (ABCD/NP) or S/NC; 1 unit

Course Overview: The purpose of this seminar series is to educate students on 8 of the highest greenhouse gas emitting sectors globally, and open technical challenges and business opportunities within these problem spaces which are ripe for new climate-tech company explorations. Students are encouraged to interact with classmates, take inspiration from the weekly lecture topics to incubate high-potential concepts for new companies, and eventually apply to continue developing these concepts in student-led teams through our winter and spring project-based course, ENERGY 203: Stanford Climate Ventures.

ENERGY 203A seminars will be delivered by course instructors and outside industry and academic experts. To bring the top experts in the world on each week’s lecture topic, not all lecturers are available locally in the Bay area and some weeks of lecture will primarily be held over Zoom.

Please visit scv.stanford.edu for additional information about ENERGY 203A and 203.

Course Learning Goals:

1. Develop deep and detailed awareness and understanding of the highest GHG impact opportunities for new climate-tech company creation.
2. Incubate high-potential new company creation concepts for future project-focused Stanford Climate Ventures quarters.

Instructors: David Danielson (david@b-t.energy)
Joel Moxley (jfmoxley@stanford.edu)
Jane Woodward (jwoodward@map-energy.com)
David McColl (dmccoll@stanford.edu)

Teaching Assistants: Meghan Wood (meghanw@stanford.edu)
Please direct any logistical questions to the TAs first, thank you!

Instructor/TA Office Hours: The teaching team is happy to schedule 1:1 office hours with students by appointment. Topics can include class-related logistics/concerns, preparing for the winter/spring ENERGY 203 course, or anything else related to energy/climate opportunities at Stanford.

Lecture Norms

During in-person lectures, laptops are strictly prohibited to remain respectful of speakers (both guest lecturers and your fellow classmates). Tablets are permitted for note-taking purposes.

For virtual lectures, please mute yourself if you are not speaking. Use the raise hand function or send a message into the Zoom chat if you have questions for the speaker.

Grading Criteria

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| 1. Weekly Assignments: | 40% |
| a. Speaker Questions | (20%) |
| b. Reflections | (20%) |
| 2. Course Engagement: | 30% |
| a. Lecture Attendance | (20%) |
| b. Class/Ecosystem Engagement | (10%) |
| 3. Final Assignment: | 30% |

Students taking the course S/NC will receive a S provided they submit weekly questions and reflections for our guest speakers 6 out of 8 weeks, attend 7 out of 10 weekly lectures, and complete the Final Assignment with at least a 70% score. Students taking the course S/NC do not have additional free passes for missed lectures.

Course Components

Weekly Assignments:

Speaker Questions (20%): Students will be required to submit two high-quality questions for each week's speaker through Canvas by the previous Friday at 5pm PT. (Note: these questions are to be submitted for our speakers weeks 2 through 10. No questions need to be submitted for week 1.)

Reflections (20%): This is a short write-up reflecting on each speaker by the Friday following their lecture. Please discuss three important learnings you gleaned from their presentation. 150 words max.

Course Engagement:

Lecture Attendance (20%): Given there are only 10 class meetings, full participation and attendance at all lectures is expected for students taking ENERGY 203A for a letter grade. Students taking ENERGY 203A for a letter grade are allowed one excused absence throughout the quarter, enforced via one waived weekly reflection throughout the quarter. A second absence will require a brief make-up assignment related to that week's speaker.

Ecosystem/Classmate Engagement (10%): The success of this speaker series depends on the quality of student engagement with our guest speakers as well as your fellow classmates. Students are therefore expected to contribute consistently during the Q&A portion of each week's guest talk.

Recognizing however, that a mix of lecture time constraints and large audience sizes may prevent every student from successfully asking a live question each week, we will also accept and encourage any of the following forms of engagement with the course, at least **once** throughout the quarter. Afterwards, write up and submit on Canvas a short 100 word reflection of your experience:

- Attend a class social at [Dutch Goose](#). The week 1 social will take place on September 28. Get to know the SCV teaching team and your wonderful classmates this quarter
- Make plans outside of lecture time to meet up with one ENERGY 203A classmate or TA. Ideally this is someone who you previously have not interacted with significantly. These plans can be for a Zoom chat, coffee, a Dish hike... the sky is the limit! Take a selfie and include in your submission on Canvas for extra credit.
- If submitting a newco proposal for the Final Assignment: trade Final Assignments with an ENERGY 203A classmate for peer review. In addition to making comments on your classmate's work (i.e. comments in the margins or writing up your feedback in a separate document), please meet up 1:1 in-person or over Zoom to go over your feedback for each other.

Final Assignment (30%): due **Monday December 12, 2022 at 11:59pm PT** (start of finals week)

Official prompt: This is a synthesis paper of this seminar series (500 words max). No specific prompt -- write a thoughtful yet concise analysis of this course, organized around a central idea of your choice. This should not be a thorough summary of the past 10 weeks of this course. You may want to focus on the one/two recurrent topic(s) you found most interesting or meaningful during the quarter, and what you hope to take with you moving forward. Please include if and what steps you will take to keep learning about this topic.

Alternative prompt: Create a proposal for how you will explore a concept for a new climate-tech company. Communicate your results through a paper (3 pages max) or presentation deck (10 slides max). Grading will depend equally on 1) the thoughtfulness of your analysis and research on this concept to date and 2) your proposed next steps for how you would continue to explore this newco idea. Group work

will be permitted - contact TAs by the end of week 7 if interested in group work. Please note that students completing this alternative prompt are encouraged to pitch their work in-person during the last class of the quarter (week 10, Dec 7 from 12:30-1:30pm PT, Shriram 104).

Grading Policies:

Deadlines:

- Late Final Assignments will only be accepted until Wednesday December 14, 2022 so the teaching team has sufficient time to submit final grades for the course. 10% will be deducted from the assignment grade for every 24 hours late.
- Late responses will not be accepted for the weekly guest speaker questions or reflections.

Grading rubrics:

- Weekly question submissions will primarily be graded for completion (i.e. did you submit the questions on time). The teaching team reserves the right to decrement scores however, for questions which do not show sufficient engagement with a specific speaker and their lecture topic. For instance, please avoid submitting overly general questions such as, “What does the speaker think is the biggest barrier to mitigating climate change today?”

Additional Energy+Climate Resources at Stanford

Explore Energy: <https://energy.stanford.edu/explore-energy>

Sustainable Finance Initiative: <https://energy.stanford.edu/sustainable-finance-initiative/>

Stanford Energy Club: <https://stanfordenergyclub.com>

TomKat Center for Sustainable Energy: <https://tomkat.stanford.edu/>

[A listing of energy-related courses at Stanford](#)

Contact the TAs if you have any questions about the above resources, or if you have requests for sector-specific recommendations.

Writing Help

The Hume Center for Writing & Speaking (Hume) works with Stanford students taking any course that includes writing assignments. In free one-to-one sessions, trained writing consultants help students brainstorm and get started on assignments; learn strategies for revising, editing, and proofreading; and improve organization, flow, and argumentation. We also have digital media consultants who work with students to develop strategies to improve visual and multimodal communication in media such as research posters and PowerPoint and oral communication tutors to

help students prepare or refine a presentation. For further information or to schedule an online tutoring appointment, visit the Hume website at: <http://hume.stanford.edu>.

Mental Health Resources

Counseling and Psychological Services (CAPS)

Vaden Health Center

650-723-3785 (24/7 immediate mental health crisis assistance)

<https://vaden.stanford.edu/get-help-now/immediate-mental-health-crisis-assistance>

Vaden General Well-Being Coaching

Available for Zoom appointments

<https://vaden.stanford.edu/well-being/coaching>

Diversity and First-Gen Resources

<https://diversityandfirstgen.stanford.edu/resources>

Students with Documented Disabilities

Students with Documented Disabilities: Students who may need an academic accommodation based on the impact of a disability must initiate the request with the Office of Accessible Education (OAE). Professional staff will evaluate the request with required documentation, recommend reasonable accommodations, and prepare an Accommodation Letter for faculty. Unless the student has a temporary disability, Accommodation letters are issued for the entire academic year. Students should contact the OAE as soon as possible since timely notice is needed to coordinate accommodations. The OAE is located at 563 Salvatierra Walk (phone: 723-1066, URL: <https://oae.stanford.edu/>.)

Fall 2022 Seminar Schedule

Week/Date	Lecture (12:30-1:30pm)	Optional Post-Lecture Activity (variable time)
Week 1: Sept 28	“ Climate-Tech Startup Opportunity Landscape Overview ” (In Person) Professor David Danielson	Class Social at the Dutch Goose in Menlo Park (5pm)
Week 2: Oct 5	“ Climate & N20 Emissions ” (In Person) Peter Turner Breakthrough Energy Ventures	Office Hours with Teaching Team Small Group Discussion with Guest Speaker (1:30-2:30pm PT)
Week 3: Oct 12	“ Opportunities in Super High Penetration EVs ” (In Person) Sila Kiliccote Breakthrough Energy Ventures	Office Hours with Teaching Team Small Group Discussion with Guest Speaker (1:30-2:30pm PT)
Week 4: Oct 19	“ Decarbonizing Overwater Shipping ” (In Person) Jason Anderson ClimateWorks Foundation	Office Hours with Teaching Team Small Group Discussion with Guest Speaker (1:30-2:30pm PT)
Week 5: Oct 26	“ Entrepreneurial Opportunities in Extreme Efficiency/Integrative Design ” (In Person) Amory Lovins Rocky Mountain Institute	Office Hours with Teaching Team Small Group Discussion with Guest Speaker (1:30-2:30pm PT) Class Social at the Dutch Goose in Menlo Park (5pm)
Week 6: Nov 2	“ Opportunities in Buildings ” (In Person) Matt Eggers Breakthrough Energy Ventures	Office Hours with Teaching Team Small Group Discussion with Guest Speaker (1:30-2:30pm PT)
Week 7: Nov 9	“ Opportunities / Needs on the Grid ” Tim Heidel VEIR / Breakthrough Energy Ventures	Office Hours with Teaching Team Small Group Discussion with Guest Speaker (1:30-2:30pm PT)
Week 8: Nov 16	“ Amazon Climate Needs ” (In Person) Matt Petersen	Office Hours with Teaching Team

	Amazon Climate Fund	Small Group Discussion with Guest Speaker (1:30-2:30pm PT)
Week 9: Nov 30	“Opportunities in Carbon Dioxide Removal” (In Person) Frauke Kracke Stripe	Office Hours with Teaching Team Small Group Discussion with Guest Speaker (1:30-2:30pm PT)
Week 10: Dec 7	Student Presentations (In Person)	Final Class Celebration at Dutch Goose in Menlo Park (5pm)