CPSG 200 Science & Global Change Sophomore Colloquium
"Visions of the Future" Team Project

This semester includes a team-based project. The theme is "Visions of the Future": specifically, using information from class, reading, other courses, your own research, your creativity, and so forth, construct a specific potential science-informed vision of what life might be like in fifty years. Last semester's *Four Plausible Futures: 2050 Scenarios* is something of a guide to this, but it is not an exact template of your own project.

Give us a vision of this location you are creating. It need not be utopian nor dystopian (but it is fine if you want to go with either of them). If might be a place you want to live in; it might be a warning of a place you want to keep from happening.

You'll need to support your scenario with some sort of documentation (news articles, research studies, etc., which describe the type of situation or technology you are implementing in your storyline). The goal is to give us a creative but feasible view of a possible state of things to come.

There will be two main final deliverable items:

- **Vision Brief**: a presentation in class to explain the important aspects of your envisioned future, hitting both the required highlights discussed below as well as your unique thoughts and ideas. The briefs will be presented in class.
- **Vision Dossier**: a longer write-up justifying and documenting the science and speculation behind your project. These will be mounted (as a pdf) on your website and linked to your portfolio page. We will also mount these on the main SGC page.

There will be additional graded items along the way to help keep you on track in organizing your thoughts and preparing your brief and dossier.

This project is supposed to both incorporate the scientific information you have been gathering over the past three semesters and also allow you to express your ideas creatively. There is not going to be a boiler-plate template for a PowerPoint for this; you should come up with your own method of presenting your brief. We give you some prompts of the type of topics you should cover, however.

Additionally, the scope of your vision can vary. We encourage you to look at something approximately the scale of a modest city, but this could be a single home, a city or a set of towns, a transportation complex, an industrial complex, a wildlife sanctuary, a farming complex, a whole industry, or more. At the end of this document we'll give you a potential guide of items to think about (in this case, for College Park in 2072), but don't feel bound to this structure.

Let us know about your intended scale in your initial proposal. There are certain required elements you will have to include, but otherwise you will have to have a different style of emphasis and different depth of detail depending on the scale of what you are creating.

The "Visions of the Future" project is your primary project for the semester, and in many ways the capstone of the Colloquium experience.

There are several steps for this project:

- Team Formation & Contract (due Sept. 19): Sign up on ELMS, submit your contract among members for responsibilities and duties
- Topic Proposal (due Oct. 3): A brief description of your thoughts concerning what your vision of the future might be. The faculty will give you feedback about your choices.
- Initial Bibliography (due Oct. 17): A set of at least five (5) references from the technical literature, news, blogs, etc. that you have found that give you information about your topic. You aren't necessarily obliged to use these references nor ONLY these references in your final dossier!! We just want to make sure you are doing due diligence in researching your topic. (You absolutely should include *Drawdown* and its online updates as references if relevant.)
- Draft of your PowerPoint (due Nov. 14): The faculty will give you comments and feedback.
- Presentation (on Nov. 21): Your team will give a brief (5 minutes maximum) PowerPoint presentation.
- Dossier (due Dec. 2): A Word, PDF, or PowerPoint file that includes more details than our in-class presentation. It must include your complete reference list. Regardless of the format you submit on ELMS, a pdf version must be posted on your ePortfolio (and a permanent copy will be posted on SGC's public website).
- Within-Team Peer Evaluations (due Dec. 2): You will evaluate other team members, and be evaluated by them, in terms of your contributions to the project.

The first one is forming your teams:

STEP ONE—Team Formation & Contract: Form a team of **four-five (4-5)** people. We are giving you the option of creating your own teams before September 19.

Choose your teams wisely: everyone is expected to contribute to the team, and for some parts of the project everyone gets the same grade that item. If someone slacks off or screws up, you might all get penalized. Also, there will be peer evaluations of the team by the other team members: if you are a slacker, the teammates you let down will have their say!

Go to the ELMS page for the course, got to "People", and click on the tab "Team Project Groups" topic. You sign up for the team name you want, assuming it is free.

Additionally, go to https://www.geol.umd.edu/sgc/docs/VisionResponsibilities2022.pdf and download a copy. Make sure everyone adds their appropriate information, and when it is complete have one member upload the contract to ELMS.

STEP TWO—Topic Proposal: Please give us a brief (a paragraph or two) description of the particular topic you are thinking about for your vision of the future.

- Is it a resilient home? A city plan? An industrial complex? A transportation scheme? A wildlife sanctuary? A farm? A national policy?
- Where in the world would it be located
- What kind of issues are you planning on dealing with?

Remember, this should be grounded in science, but also be creative.

We don't expect you to have all the details now; simply the kind of thing you want to do. It may be that during your research you will come up with something quite different than what you first imagined.

The faculty will give you feedback later this week which we hope will be helpful.

STEP THREE—Research Your Topic and Creating Your Initial Bibliography: Due ***Oct. 17***, a set of at least five (5) references from the technical literature, news, blogs, etc. that you have found that give you information about your topic. You aren't necessarily obliged to use these references nor ONLY these references in your final dossier!! We just want to make sure you are doing due diligence in researching your topic. (You absolutely should include *Drawdown* and its online updates (https://www.drawdown.org) as references if relevant.)

Make sure to use the preferred SGC Bibliographic Style

STEP FOUR—PowerPoint Draft: Consider that your presentation is the equivalent of both a major term paper, and is held up to the same academic standards, as are these. Thus, we expect:

- All items presented to be factual, supported by primary references, and properly attributed
- The text is your own; where you must give a statement in someone else's words, you must distinctly and clearly indicate that is what is going on
- Correct spelling and proper grammar
- Presentation style appropriate for a university course
- Images are done so strictly following the "Fair Use" doctrine (http://lib.guides.umd.edu/content.php?pid=197882&sid=1655342). In general, it is safest to limit images you use to those from scientific technical publications, government agencies, Wikimedia, and Creative Content sources. And, of course, give proper citation for these.

It is important to divide up your responsibilities clearly in the project (for examples, maybe giving each person some subtopic to research and/or present; or some people writing responsibilities, others might mostly work on graphics/illustrations, still other general editors; whatever works for you.)

As you can see, this will take a fair amount of work. ***ABSO-FRIGGIN-LUTELY*** do ***NOT*** put this off until the last minute (i.e., the night or weekend before it is due), because there is no reasonable way you will do a decent job on it in that case, and you will sink together collectively.

It might make sense to do this as a Google Slides presentation document so that you can collaborate remotely on the same file.

While you need to address the questions listed above, feel free to let your creativity shine.

We greatly encourage the use of images, charts, graphics, and animations, keeping in mind at all times University regulations about plagiarism, proper citations, etc. Each and every such item must be properly referenced: at minimum, we expect to see a small caption from the source on the page. (We will provide examples of how to do this on ELMS). We most DEFINITELY expect to see illustrations when you are explaining the various concepts. Please, ***no text-only PowerPoints!*** If any of your team members are artistically oriented, consider creating some images of your own!

You must turn in a ***COMPLETED*** draft on ***Nov. 14*** (as a .ppt or .pptx file uploaded to the "Upload Presentation Draft" assignment on ELMS: if you worked collaboratively on a Google Presentation, download a copy as .pptx and submit this draft). Only one student per team needs to upload the draft. By "draft" we mean "as close to the final version as possible", ***NOT*** "bare bones first draft"!!!! In principle, what you submit could potentially be what you present in class. Drs. Holtz or Merck will quickly let you know if it needs any changes.

STEP FIVE—Giving Your Presentations: The presentations will be on Nov. 21. Each team will have a maximum of 5 minutes to present. All team members are expected to be part of the presentation. Your presentation must include:

- A cover slide, with a title "Visions of the Future", all student names, the class name (CPSG200), and the date
- An overview of your vision:
    - What is its scope?
        - The setting you are envisioning: a city? Interconnected towns? Farming complex? Something else? Let us know what you are looking at.
    - What are the world conditions like at the time (i.e., 50 years in the future) that your vision takes place? For the planet as a whole, what has been the progress towards decarbonization and emission reductions?

        - You can use one of the four futures from the *Four Plausible Futures: 2050 Scenarios* from last semester as a model.
        - Or, if you are REALLY enthusiastic, you can choose one of the five Shared Socioeconomic Pathways (SSPs) used by the IPCC in their Sixth Assessment as your model. This website (https://www.carbonbrief.org/explainer-how-shared-socioeconomic-pathways-explore-future-climate-change/) gives a good overview of the five pathways. Choose one that you want to use and which is compatible with the vision you are creating. You'll want to extract the following data from the integrative graphics, using "2070" as the approximation for "fifty years from now":
            - Find the "Global Population" and "Global GDP" charts (about ¼ the way down the page). Roll over the line of your SSP and write down estimated values of each for 2070.
            - Also, find the interactive graphics about halfway down that page labeled "CO_2 emissions for SSP baselines" and "Global mean temperature". These graphs ae a little more complicated, as multiple options (using different Integrated Assessment Models (IAM)) were run for each SSP. However, a particular combination of SSP and IAM was chosen as the marker scenario for each SSP, and these are the ones in bolder lines. Find the CO_2 emissions and global mean temperature for the year 2070 for your SSP.
            - You should read up a little more about SSPs here:
                - https://climatescenarios.org/primer/socioeconomic-development
                - https://en.wikipedia.org/wiki/Shared_Socioeconomic_Pathways
    - Where in the world your vision is set?
        - You can use a real existing location from the world as a model, or you can come up with one (if the latter, you need to give us a sense of the location, its geography, its climate, etc.)
        - Consider how (for instance) the resilient infrastructure might be different for Morocco vs. the (new) Gulf Coast of Florida vs. Denver. Knowing where in the world you are has important relevance to your choices.
    - How (specifically) is your envisioned future resilient? That is, how is it constructed to reduce the effects of global climate change and to withstand changes? As appropriate, address:
        - Energy use: how is the energy being obtained at the level of your project? This must be realistic, and faithful the scope of the general world scenario you are using. It will likely be not just a single energy source, so give us a spread of what is being used.
        - Transportation use: how is transportation within your setting accomplished? How about from your setting to elsewhere?

- Infrastructure: what changes, if any, do you see for this spot when compared to today? New materials? New ways of city planning?
- Food and farming: what changes, if any, is there to what the people are eating and how it is made in your scenario?

We really want you to be creative with this. So consider the format of your presentation: maybe it is a sales brochure, a prospectus, a business report, a documentary, an news item, a critical exposé, etc.

STEP FIVE—Dossier: A Word, PDF, or PowerPoint file that includes more details than our in-class presentation. It must include your complete reference list (using the SGC Bibliographic Style). Regardless of the format you submit on ELMS, a pdf version must be posted on your ePortfolio (and a permanent copy will be posted on SGC's public website). If there were details of the science behind your vision that you had to skim over in your presentation, you can flesh them out here.

STEP SIX—Within-Team Peer Evaluation: This online "quiz" will be completed individually from each member; it is your personal assessment of the contributions of the other members of the team. Please complete this by December 2.

Thoughts on a Possible Approach:

Let's say your choice is a vision of College Park, MD in 2072. Many things might change between now and then:

- Population & demographics. Maybe we'll have new immigrant populations (or people resettling in this region due to flooding of Chesapeake region)
- Sea level and related changes. Probably not too much difference here locally under most of the SSP scenarios on the 50-year time scale (but add another hundred and that's different…)
- Economics. As the name suggests, College Park has always been centered on the University since 1856 and will almost certainly remain so. But the other businesses in town might change. And maybe you think that virtual education will replace the in-person University, and something else will exist in the center of College Park.
- Land use. Will we see increased higher-density apartments due to increasing populations? Reforestation/afforestation projects to replace some of the light industrial parks and businesses? Urban farming and large-scale gardening?
- Transportation. Will there be an emphasis on mass transit, walkable towns, bicycles, and the like? (City planners are already focusing on this for the 10-year scale changes of College Park, by the way.)
- Infrastructure. The University is already making all of the new buildings LEED Gold or better, so expect that to continue. But what about living buildings? And what about our energy systems? The University uses a coal co-

generation plant for both electricity and steam heat on campus: this is definitely going to be phased out as we go carbon zero. So, will we have a lot more solar on campus? How about wind? What about some of the other possibilities discussed in *Drawdown*?

- If you are really daring, what changes to our local political and social institutions? (That is well outside the main focus of the project, but if you are inclined to think about such things, feel free to include them.)

Importantly, don't let the whole thing intimidate you. Your ***PRIMARY*** focus should be on the main issues relevant to the program and the semester: envisioning a world where our technology and society have a reduced impact on the environment and where the structures (physical, political, economic, social, etc.) are resilient (i.e., able to withstand changes in condition). We are not expecting a massive prospectus on a future project; simply a good effort, based on science and clearly and creatively presented, to show that you can combine the topics of this class and your own insights to create a possible vision of the future.