
CPSG101 Science & Global Change
First Year Colloquium II:
Welcome to the Anthropocene: Causes and Impacts of the
Climate Crisis

Spring 2023

Instructors

	<u>Dr. Thomas R. Holtz, Jr.</u>	<u>Dr. John W. Merck, Jr.</u>
Office:	Centreville 1216	Geology 1119
Office Hours:	M 11 am-noon or by appt	Th 2-4 pm or by appointment
Email:	ELMS (preferred) or tholtz@umd.edu	ELMS or jmerck@umd.edu
Phone:	301-405-4084	301-405-4379

Undergraduate Teaching Assistants

	<u>Malaika Nyawara</u>	<u>Christian Sun</u>
Email:	ELMS or myawara@umd.edu	ELMS or csun1235@terpmail.umd.edu
Office Hours:	xxx	Fri 10-11 am on Zoom; see ELMS for link
	<u>Shelton Zhou</u>	
Email:	ELMS or sz2001@terpmail.umd.edu	
Office Hours:	xxxx	

Classroom

CCC 1205 Tu 3:30-4:50 pm

Course Organization

One Colloquium meeting per week, one Excursion (required), attendance at the Scholars Academic Showcase (4-5:30 pm, ESJ, Friday May 5) required

Texts

Earle, Steven. 2021. *A Brief History of the Earth's Climate: Everyone's Guide to the Science of Climate Change*. New Society Publishers. ISBN-13 978-0-86571-959-0
McGuire, Bill. 2022. *Hothouse Earth: An Inhabitant's Guide*. Icon Books. ISBN-13 978-1-78578-9920-5

Additional online required readings are indicated on the schedule, and available via ELMS. Reading assignments must be done by the class time listed.

Course Grades

Grade Scale

The numbers given represent the thresholds that must be passed in order to reach that grade (for example, A+ is 97.000... and any number greater). There is no rounding for letter grades; the thresholds must be passed. F is any grade below D-. Thresholds: 97, A+; 93, A; 90, A-; 87, B+; 83, B; 80, B-; 77, C+; 73, C; 70, C-; 67, D+; 63, D; 60, D-; < 60, F.

The Final Grade is the algebraic sum based on the numerical grades.

The One-on-One Scholars Status Interview is given either full points (for completion of the assigned project) or none (for non-completion or disruptive activity). Each general quiz is graded on an 8-point scale; the final quiz is on a 20-point scale.

Grade Components

ITEM	PERCENTAGE
General Quizzes	10%
Final Quiz	5%
Participation	10%
Discussion Questions	13%
Homework	15%
One-on-One Scholars Status Interview	5%
“Impacts of Global Change” Team Video	20%
Academic Showcase Report	5%
Excursion Report	5%
Freshman Time Capsule Essay	5%
Portfolio Maintenance	2%

General Quizzes (10% total): Five quizzes are given throughout the semester. The lowest quiz grade is automatically dropped: this includes quizzes missed for unexcused absences. Quizzes will be delivered on ELMS.

Final Quiz (5%): A longer quiz, also delivered on ELMS. This will cover all the material of the semester, and even draw on concepts earlier in the SGC program.

Discussion Participation (10%): As this is a Scholars Colloquium, all students are expected to attend every Colloquium meeting and be an active participant when appropriate. In some classes, there may be directed interactive activities or discussions. Some meetings will involve small groups. A default grade of 5 will be given for every meeting a student attends. They may be awarded up to 2 more points as extra credit for particularly helpful or effective participation in the meeting. Students who are present for a discussion section but are non-participants or are disruptive may be docked up to 2 and 4 points (respectively) at the instructor’s discretion.

While the expectation is that students attend **EVERY** Colloquium meeting, it is recognized that occasionally conditions (accident, illness, etc.) arise that prevent such. To recognize that, every student is allowed **two** (2) absences from these meetings without penalty, so long as they inform the instructors and TAs by email (beforehand if at all possible), or certainly by the end of that same day that they will be/were absent and the reason for that absence. Should you not inform instructors and TAs in a timely fashion, the students will receive a 0 for the grade for the discussion/participation for that day. Additionally, if there are more than two absences the student will receive a 0 for the grade each additional class time missed. (If

there is a medical condition or other extraordinary circumstance that does require missing *more than 2 class meetings*—or missing the date of an individual in-class presentation of some form—the student must provide documentation from the appropriate sort of official (health professional; court official; etc.) explaining the absence.)

Discussion Questions (13% total): Every week we will ask you to answer a question related either to the previous week’s material or the readings due the forthcoming week. These will be due by the start of Colloquium (3:30 pm). The details of the questions will be provided the week before they are due.

Homework (15%): There are three individual homework assignments this semester. The first (due on **Feb 14**) is on reconstructing paleoclimates from proxy data; the second (due **Feb. 28**) is calculating your individual carbon footprint; and the third (due **March 14**) is creating an infographic of your carbon footprint results and posting them on your portfolio. Details about the assignments are provided later this semester.

One-on-one Scholars Status Interview (5%): How are you doing at University of Maryland? How are you progressing towards your Scholars citation? To help make sure things are going well, and that you are progressing to completion of your SGC citation, we require all students to have a one-on-one interview with Dr. Holtz, Dr. Merck, or the TAs during the middle part of the semester. There will be an online sign-up sheet to register for a particular time slot later in the semester. These interviews are brief (~15 minutes). More details to come.

“Impacts of Global Change” Team Project Video (20%): Your primary research in this semester’s Colloquium is the development of videos to be posted on the SGC YouTube video channel about the impacts of global change. In teams of 4 students, you will research and report on how contemporary and near future global change has impacted and will impact the physical, living, and human spheres. The final deliverable product a recorded video mounted on the SGC YouTube channel and also embedded onto your portfolio. This project has several different subcomponents:

- a) **Team Formation/Sign-up of Topic** (1%): Due **Feb. 21**.
- b) **Team Contract** (1%): Also due **Feb. 21**, a contract among all team members stating the agreed-upon responsibilities of each person.
- c) **Annotated Bibliography** (1%): In order to fully research the background of your topic, your team will construct an annotated bibliography of at least **eight (8)** different references, at least **five (5)** of which must be from the recent (published since 2018) peer-reviewed literature. (We especially encourage you to use the appropriate chapter of the 6th Assessment Report of the IPCC (<https://www.ipcc.ch/report/sixth-assessment-report-working-group-ii/>) or other IPCC Special Report as appropriate as a source.) This is due on ELMS on **March 10**.
- d) **Recorded Presentation: Faculty Evaluation** (10%): A draft of your PowerPoint must be uploaded on ELMS on **March 31** for comments and evaluation by the faculty. The final video version must be recorded on Zoom and shared with the faculty by **Apr. 7**. We will upload these onto YouTube and provide you with the link so that you can embed a copy on each members’ portfolio page.
- e) **Recorded Presentations: Student Evaluations** (5%): Each student will screen all the videos but will be responsible for evaluating 3 different videos. These evaluations must be completed and uploaded by **Apr. 21**. The averaged score of these will be entered as the Student Evaluation for the video grade.
- f) **Participation in Student Evaluations** (1%): The fact of your own participation as an evaluator is part of your grade; failure to turn in evaluations of the videos you were supposed to view will result in a 0 for this part of the grade.
- g) **Within-Team Peer Evaluation** (1%): You will evaluate other team members, and be evaluated by them, in terms of your contributions to the project. Due on ELMS on **Apr. 14**.

Academic Showcase Report (10%): Later this semester your sophomore colleagues will be presenting the results of their individual research, service-learning, or internship work during the Scholars Academic Showcase. The Academic Showcase will take place on the afternoon of **May 6**; make sure to attend. You are required to attend the Showcase, and interview at least **five (5)** of the presenters, at least **three (3)** of whom must be SGC students and at least **one (1)** must be from another program. Your report on these short interviews will be part of the grade for this semester but will also give you an idea of some of the experiential learning opportunities afforded by Scholars. (**NOTE WELL**: Next Spring **YOU** will be presenting at the Academic Showcase, so observe carefully!! Don't just talk to five sophomores and leave as soon as you can; instead, use this time to survey a large number of these projects so that you get an idea of the possibilities.) The report is due **May 9**.

Excursion Report (5%): Each student is responsible for attending and reporting on **one (1)** of several options of co-curricular events. These reports are due as file uploads on ELMS online. The question sheet relevant to specific field trips will be provided in advanced; there are service project forms, as well as an even more generic report form: all will be made available on ELMS. A list of opportunities are provided on ELMS; some may be added as the semester progresses.

NOTE: You may not use the same specific Excursion this semester which you used last semester.

Freshman Time Capsule Reflection Essay (5%): You are now completing your first academic year, and one way or another you have learned much. In some ways, your life here may have gone according to plan and in other ways, it will have been full of surprises. Due on the last day of colloquium, your assignment is in the form of an essay letting next year's incoming students know what to expect.

Portfolio Maintenance (2%): Be certain that your Academic Portfolio is updated (i.e., your current class status, major, age, contact information, etc.); that all links are operational; that all text is properly spelled; that all images and code are used legally; all pages use the same css; etc.

Late Items: Graded items must be uploaded/posted by the date listed. If there are important extenuating circumstances, discuss this with the faculty & TA as early as possible so that we can make allowances, if we deem it appropriate.

IMPORTANTLY: Any item not turned in by the end of final exam period will be graded as "0", unless special arrangements are made in advance of this date between the student and both faculty. "I forgot to turn it in" or "I was busy with other courses" do not represent "special arrangements"; you must be responsible for your own grade and graded items.

Course Overview

Course Themes

- Climate change is the byproduct of the interaction of a number of factors, both natural and anthropogenic
- Global climate change and related phenomena impact human society and the natural environment in many different ways

Learning Outcomes

- Identify the major factors which contribute to global climate systems and predict in general how perturbations in these factors result in changes in climate.
- Understand how proxies of past conditions are used to reconstruct paleoclimates and be able to interpret plots of these changing conditions over time.
- Recognize how climatic factors control the distribution and abundance of organisms (including crops and pathogens) and how changing global conditions result in redistribution and loss of important elements of the biosphere.

EXPECTATIONS & POLICIES

Expectations & Attendance

Attendance in the Colloquium meetings is required. The Scholars Colloquia require you to do more than simply master the information; you must be able to intelligently communicate and discuss the ideas and concepts of the course with your instructor and fellow students.

You should bring the following to every single colloquium meeting:

- A writing implement
- A notebook (hardcopy or computer)
- A willingness to participate constructively, both in small groups and in the class as a whole
- A readiness and ability to discuss the readings and/or recorded lectures for that week

During class time:

- **PLEASE** be courteous to your fellow students and your faculty, and do not engage in side conversations. Even what you might think are hushed whispers in the back row can be heard all the way up front and are disruptive to the attention of your classmates who are interested in getting a good grade in the class.
- All electronic modes of communication must be turned “off” or be in silent mode & stowed away, except when being used for class activities.
- No personal listening devices will be allowed.
- No reading of material not germane to the class activity during class time will be allowed.
- No working on materials for other classes, reading newspapers, doing crosswords or other games, etc., will be allowed.
- This semester we will have a number of small-group in-class projects. We expect everyone to help move tables and chairs when necessary for a particular project, and to help restore the tables and chairs to the “neutral” position when we are done. Many hands make light work!
- Finally, please do not leave any debris behind: pick up all food/beverage containers, papers, newspapers, etc. near your seat and on your desk when you leave and dispose of them properly

Given the nature of the course and program, participation in colloquium meetings is **MANDATORY**. It is up to you to make certain that your presence has been recorded for every class.

Mask Policy: The University's policy is that masks will no longer be required while indoors in most situations, including classrooms. However, the University also reminds us that masks are a significant defense against the spread of COVID-19 and other respiratory viruses (including the cold and flu). Therefore, they recommend wearing a KN95 mask while indoors for added protection. So please feel free

to mask up if you feel safer, and we **STRONGLY** encourage masking if the cold or flu is spreading on campus.

Recording Your Presence: In general, your presence will be recorded based on your picking up of your name stand. It is *your* responsibility to make certain that you have signed the quiz, project report, or picked up your name stand.

Students observed leaving the colloquium before 4:50 or before it is formally dismissed will be counted absent; please consult with the TAs and the faculty if you need to leave in advance of 4:50 for excused reasons.

NOTE: We expect students to adhere to proper academic decorum during colloquia. This means focusing your attention on presentations, refraining from conversations or activities that are not relevant (e.g., reading newspapers, doing homework for other classes, etc.), and showing proper respect for student, faculty, and guest presenters. *We reserve the right to count you absent from colloquium if you fail to uphold this standard!*

Excused Absences: If you have a legitimate reason for being absent, such as a family emergency, unavoidable academic conflict, or other excuse according to the University's guidelines, we will usually excuse your absence. However, you must notify us in a timely fashion. Requests for the excusing of an absence **will not be considered** after two workdays from the absence: please contact us by email! Please use the Excused Absence Report form from <https://www.geol.umd.edu/sgc/docs/absence.pdf>

If the absence was for a colloquium for which there was no graded activity other than participation (i.e., no quiz, etc.) **AND** for which this was your first or second absence from colloquium this semester, you may simply complete the Excused Absence form and turn it in. If instead there were a graded activity, **AND/OR** this was not your first or second absence from colloquium this semester, you will need to provide some form of documentation from an independent source supporting your absence. These include, but are not limited to:

- A doctor's note, official notice of court activity, etc.: please attach a copy to your Excused Absence form

Barring the above, a signed statement by an independent party (for example, your RA if you were ill and the RA is willing to verify that they observed this: feel free to use the back of the Excused Absence form for this)

NOTE WELL: Failure to provide the Excused Absence Form will result in the absence being unexcused, and you will face the appropriate penalties.

NOTE: the next colloquium meeting is **too late** for requests for excuses.

Grades and Excused Absences: Even if you miss a class from an excused absence, you are still held responsible for material during that class, including graded assignments such as small group projects. See the faculty about arrangements for a make-up. If the small group project is such that it cannot be done alone, it will not be factored into your grade **if** you have an excused absence that you informed the faculty about within two workdays from the absence.

Unexcused Absences: All other absences are considered unexcused absence. You may have **two** unexcused absences that do not directly affect your grade (except for missed small group projects: see below). Each subsequent unexcused absence lowers your **final course grade** by 10 percentage points.

If you miss a small group project because of an **unexcused** absence, you will **not** be allowed to make it up.

Missing Field Trips: If you are signed up for a field trip but are unable to make it, please email Drs. Holtz & Merck as soon as possible (before the trip, if at all possible). If it is a field trip is one that SGC has to pay for (i.e., the program pays for tickets or transportation) and you miss it without informing us in advance, this will count as an unexcused absence.

Of course, the Colloquium doesn't stop existing outside 3:30-4:50 pm once a week. Every student should be expected to be spending a few hours every week on Colloquium-related materials outside of the classroom. This involves doing the readings, working on homework, watching required videos, filling out surveys, doing excursions, and so forth. You should not expect to be working on this—and indeed, any—course **ONLY** in the meeting classtime!!

General Policies

The University has provided a page on Academic policies at <http://www.ugst.umd.edu/courserelatedpolicies.html>. Each student is responsible for reviewing this page with regards to issues of Academic Integrity; the Code of Student Conduct; Sexual Misconduct; Discrimination; Accessibility; Attendance, Absences, or Missed Assignments; Student Rights Regarding Undergraduate Courses; Official UMD Communication; Mid-Term Grades; Complaints About Course Final Grades; Copyright and Intellectual Property; Final Exams and Course Evaluations; and Campus Resources.

Laptop/Smartphone/Tablet Use

You will need to upload documents to ELMS and to your terpconnect.umd.edu webspace, take online quizzes, and occasionally watch online lectures this semester, so please make certain that you have access to appropriate hardware, software, and Internet connections. If you are concerned about your ability to connect remotely for this course, please consult the following information about solutions provided by the Division of Information Technology

During the Colloquium, please refrain from email, social media, online shopping, streaming videos, and other such communication outside the scope of the colloquium. In other words, please restrict your computer use to the activities of the class.

Communication

Communication in this course will primarily be by means of the ELMS Announcement and Inbox email systems. In the event of unusual inclement weather or other unexpected emergencies, the University may close. Please consult the University main webpage (<http://www.umd.edu>) or call 301-405-7669 (SNOW) to confirm such cancellations. Drs Holtz & Merck will contact students via ELMS in order to inform them what changes to the schedule will occur due to the disruption.

Copyright: ©2023 Thomas R. Holtz, Jr. & John W. Merck, Jr. as to this syllabus, all lectures, and all written material provided in this course. Students are prohibited from copying and selling course materials, from selling lecture notes, and from being paid to take lecture notes without the express written permission of the professor teaching this course. Violations of this prohibition will be treated as violations of the University Honors Code and reported and dealt with accordingly.

Schedule of Colloquia and Events

Date	Topic
Week of Jan. 30	1/31 Colloquium: Welcome Back; Logistics of Class; Mini-Lecture: Welcome to the Anthropocene
Week of Feb. 6	2/7 Colloquium: Paleoclimatology & Proxies; Guest Presentation: The Chesapeake Bay Foundation (David Tana, Maryland Outreach Manager) Reading: Earle Preface, Introduction, Chaps. 1-3
Week of Feb. 13	2/14 Colloquium: Energy, Systems & Resources; Carbon Footprints (intro to assignment); Paleoclimate Proxy GROUP PROJECT ; Team Project overview 2/14 Proxies HW due (must be completed by Colloquium time) Reading: Earle Chaps. 4-5 2/18 Quiz 1 due
Week of Feb. 20	2/21 Colloquium: Climatology 101: Insolation & Atmospheres Reading: Earle Chaps. 6-7 2/21 Team Project Team Formation & Team Contract due 2/26 (Sunday) EXCURSION National Air & Space Museum, Washington, DC
Week of Feb. 27	2/28 Colloquium: Guest Presentation: Strategies for Finding an Internship (Kevin Kenneally, Program Director, Internships, University Career Center); Carbon Footprint GROUP PROJECT 2/28 Carbon Footprint HW due (must be completed by Colloquium time) Reading: Earle Chaps. 8-9 3/3 Quiz 2 due
Week of Mar. 6	3/7 Colloquium: Climatology 201: Oceans, Geography, Seasons Reading: Earle Chaps. 10-11 3/10 Team Project Annotated Bibliography due 3/11 (Saturday) EXCURSION Tree planting with Blue Water Baltimore in Ashco East community, West Baltimore, MD
Week of Mar. 13	3/14 Colloquium: Climate Change: How We Know It Happens & How We Know It's Us 3/14 Carbon Footprint Infographic Upload due Reading: McGuire Forward, Chaps.1-3 3/17 Quiz 3 due
Week of Mar. 20	SPRING BREAK!
Week of Mar. 27	3/28 Colloquium: Storms of our Grandchildren: Climate Change Effects on Weather and Water Reading: McGuire Chaps. 4-6 3/31 Team Project Draft PowerPoint due
Week of Apr. 3	4/4 Colloquium: Guest Presentation: Green Fellowship Winner(s) Reading: McGuire Chaps. 7-8 4/7 Team Project Final Video due
Week of Apr. 10	4/11 Colloquium: The Importance of the Biosphere

	<p>Reading: McGuire Chaps. 9-10</p> <p>4/14 Team Project Within-Team Peer Evaluation due</p>
Week of Apr. 17	<p>4/18 Colloquium: Climate Change, Economics & National Security</p> <p>4/21 Quiz 4, Team Project Student Evaluations due</p> <p>4/22 (Saturday) EXCURSION Horn Point Laboratory, University of Maryland Center for Environmental Studies and Blackwater National Wildlife Refuge, Cambridge, MD</p>
Week of Apr. 24	<p>4/25 Colloquium: What's the Worst That Could Happen? Abrupt Climate Change, the Sixth Extinction, and Other Ongoing Existential Crises</p>
Week of May 1	<p>5/2 Colloquium: "Possible Futures" Group Project</p> <p>Reading: Provided on ELMS</p> <p>5/5 Quiz 5 due</p> <p>5/5 Scholars Academic Showcase, 4-5:30 pm, Edward St. John Building: Please attend!!</p> <p>5/6 (Saturday) Scholars Kickball Tournament</p> <p>5/7 (Sunday) EXCURSION National Zoo, Washington, DC</p>
Week of May 8	<p>5/9 Colloquium: Is There Hope? Planning to Live in a Changing World; Semester Wrap-Up</p> <p>5/9 Academic Showcase Report, Final Quiz, Excursion Report, Freshman Time Capsule Essay due</p>