SLEEP!

Class Times: Tu 3:10-5:30pm in Olin 303 | Office Hours: M 4-5pm/F 11:30am-12:30pm/by appointment

Instructor

Dr. Justin Hulbert office: Preston 108 phone: x4390

e-mail: jhulbert@bard.edu (preferred contact)

Course Materials



brightspace

bardcollege.brightspace.com

Prerequisites

This course is open to moderated students with at least one of the following: Cognitive Psychology (PSY 234), Learning & Memory (PSY 243), Neuroscience (PSY 231), Introduction to Neurobiology (BIO 162), or have the instructor's permission.

Assessment

• Perusall Annotations: 25%*

• Sleep Camp Report: 10%

• Article Review: 15%

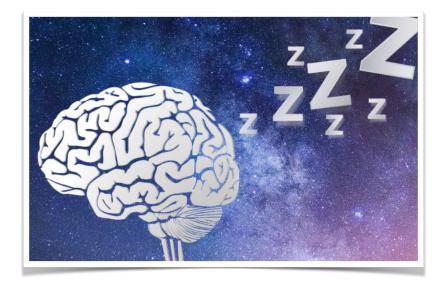
• Article Presentation: 15%

• Replication Attempt: 25%

• Final Reflection: 10%

• Extra Credit

*I'll drop your lowest 2 scores



Course Overview

People can expect spend roughly one-third of their lives asleep, but all too many spend the rest of their lives chronically underslept. What are the pressures that drive us to sleep? What are the benefits of sleep and the risks of not sleeping enough? In this upper-level seminar, we will attempt to answer such questions by reviewing the empirical literature and designing studies to better understand how we can get the most out of sleep

Joint Responsibilities

Achieving the broad aims of this course requires commitments from instructor and students alike. Below you will find an outline of some of those responsibilities.

- Your instructor agrees to...
 - a) Make himself available outside of class during posted office hours (and by appointment, as necessary) to answer questions, provide extra help, and discuss matters related to the course of study.
 - b) Respond in a timely fashion (typically by the end of



Learning Objectives

Coming out of this course, you should have:

- The ability to talk competently about the pressures leading to sleep, the problems that can disrupt it, as well as the psychological ramifications of sleep/deprivation.
- Developed an appreciation for the primary research methods and theories used to measure/influence sleep and related constructs, as well as their limitations.
- The capacity to critically evaluate evidence related to fundament debates regarding sleep & dreams.
- Tracked your own sleep habits, identifying opportunities to engage in healthier practices.
- Implemented, run, and analyzed the results of an attempt to replicate a sleep study.

- the next school day) to email queries. In the event that more time is required to fully address the student query, the instructor will acknowledge receipt of the email and provide the student with an estimated response time.
- c) Facilitate a thoughtful, considerate, and engaging learning environment.
- d) Provide adequate time to complete assignments, minimize changes to the published schedule/ assignments, and immediately notify students about any such changes.
- e) Provide comprehensive and fair assessments of materials presented or assigned. Assignments, with a level of feedback commensurate with the nature and aims of the task, will be returned to students in a timely fashion.
- f) Create and welcome opportunities for students to provide feedback on the course/teaching throughout the semester.

• You are responsible for...

- a) Showing up to class regularly, on time, and prepared. Please bring a printed or digital copy of your annotated readings to class meetings. While there may be selected activities for which your smartphone is appropriate, another device (e.g., tablet or laptop) should be used if you opt not to bring hardcopies of the assigned readings.
- b) Checking your Bard email and Brightspace regularly for important announcements about the course.

 Adapting to the pandemic has made keeping in regular contact more important than ever. By clicking "Announcements" and then "Notifications" on the Brightspace landing page, you can request text and/or email alerts to be sent to you for a variety of course-related happenings.
- Keeping up with the assignments and readings. You should aim to complete the readings well in advance of class meetings, allowing yourself



Best Practices

To make the most of office hours, it is recommended that you:

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- Avoid waiting until the last minute (before a due date) to attend. Seeking help well in advance of deadlines will leave you plenty of time to act on advice discussed.
- Email the instructor in advance or bring with you a concise list of topics/questions you wish to discuss, if possible. Itemizing in this way helps ensure all your questions are addressed and saves you time in the long run. That said, dropping by for a spontaneous, broader chat is also most welcome. Tea and/or coffee will be available (pandemic permitting).

When emailing the instructor, keep in mind that:

 Taking time to draft a concise message with proper spelling/ punctuation is expected and will be met with a similarly considered reply.

Writing/other academic help is available through <u>Bard Learning</u> <u>Commons</u> (lc@bard.edu).

- adequate time to wrestle with the content, coming at it from different perspectives. The readings vary in length and difficulty. As such, it may take multiple readings (and independent research online or in the library) to get a firm grasp on certain material.
- d) Substantively participating in class discussions and activities. It is important that you speak up if there's anything in the readings you don't understand (chances are, others have the same question). Note that a top-notch level of participation does not necessitate responding to every question raised in class or online; active or passive efforts to welcome contributions from everyone in the class are also looked upon favorably.
- Keeping distractions to a minimum in class. Phones should be turned off or set on vibrate (and kept out of sight unless explicitly required for a class activity).
- f) Submitting assignments and annotations on time, digitally via Brightspace and Perusall. To promote equity and acknowledge life's challenging circumstances, I am granting everyone in the class an automatic "S#!t Happens" extension for one assignment (see below section on Extra Credit for more) and dropping your two lowest Perusall scores (see Perusall Annotations section below). Otherwise, any late assignment will immediately be subject to a 10% penalty, with an additional 10% penalty leveled against that assignment's score for every 24 hours it remains late. Note that Perusall annotation assignments are only accepted up to a certain deadline set in the online system; as such, if you miss a deadline (and don't use your token to extend the deadline), you'll risk getting a 0% for that assignment (i.e., there isn't a late penalty that accrues gradually). However, I will drop your two lowest Perusall scores (meaning that you can miss two annotation assignments without it affecting your grade). Note also that all work must be submitted by





- the end of Completion Week for credit, even with a token. Students requiring accommodations (e.g., due to disability) should provide the relevant accommodation letter as soon as possible after the first class meeting.
- g) Upholding academic integrity. Plagiarism (e.g., copying other's words or ideas without proper citation) will not be tolerated. You are expected to work independently on each graded assignment, unless explicitly instructed otherwise. When in doubt as to what constitutes plagiarism within the confines of this course, you are encouraged both to consult the student handbook (http://www.bard.edu/dosa/handbook/index.php?aid=1201&sid=705) and to contact the faculty instructor for further guidance. There is absolutely no penalty for asking for clarification; however, failing to abide by Bard's standards for academic integrity can result in failing the course.

Assessment Details

- **Perusall Annotations** (25% of course grade)
 - I've heard a shocking rumor: Many college students regularly don't read the assigned materials or give them more than a quick skim! The reason for this is likely manifold. The materials may be too costly, too dry, too plentiful, too heavy to lug around in the form of a physical textbook. As an instructor, I attempt to balance these legitimate criticisms with the imperative to expose students to the necessary background material to spark insight and discussion. To this end, I have decided to adopt Perusall. Throughout the semester, you will be required to read and annotate certain course materials using this collaborative e-reader with sophisticated data analytics.
 - Perusall helps you learn faster by collaboratively annotating the readings and communicating with your classmates. Collaboration gets you help whenever you need it, makes learning more fun, enables you to help others (which research shows is also a great way for you to learn), and helps me make class better by emphasizing information that you need. Perusall also can read the assigned materials aloud and allow you to take notes (just for yourself—though you can easily share them with other students)! Learn more about how you, as a student, can use Perusall here: https://new.perusall.com/perusall-for-students.

- If you have a question or information to share about a passage in the readings, highlight the text and type in a comment as an annotation. You can also respond to a classmate's annotation in threads in real time or upvote questions you find helpful. Simply click the question mark to indicate "I have the same question" or the green checkmark to indicate "this answer helped my understanding." Good annotations contribute to the class by stimulating discussion, explaining your thought processes, helping others, and drawing attention to good points. If a particular classmate's point is relevant, you can explicitly "mention" them and they will be immediately notified, even if not presently signed on. I'd encourage everyone to check in on the Perusall discussion again after doing a first pass on a reading and respond to comments and questions or possibly add new commentary based on newfound understanding. Remember that annotations will be visible to other students, as well as to me (though I will not annotate directly—it is your space).
- Research shows that the following behaviors on Perusall predict higher end-of-semester grades and long term mastery of the subject. Accordingly, I will consider these factors in calculating your Perusall score:
 - Contributing thoughtful questions and comments to the class discussion, spread throughout the entire reading (some examples: https://perusall.com/downloads/scoring-examples.pdf)
 - Aim to contribute a minimum of 4 questions/comments per Perusall assignment for credit—but keep in mind that the quality of the annotations is key (e.g., 100 annotations that do little to add to the conversation would be worth less than 4 that prompt critical engagement)
 - Starting the reading early and sending a good amount of time on reading/ annotating the assigned materials
 - Breaking the reading into chunks (going back to the assignment multiple times)
 - Reading all the way to the end of the assigned reading, including references and any supplements
 - Posing thoughtful questions and comments that elicit responses from classmates
 - Answering questions from others
 - Upvoting others' thoughtful questions and helpful answers
- Based on the overall body of your annotations, you will receive a score for each assignment that generally follows the benchmarks listed in the rubric below. Note that a score of 2 does NOT mean that you earn the equivalent 67% on that assignment (regardless of what Brightspace's grade book says)—so don't get frightened. The scores are holistic. A score of 2 is pretty solid and typically translates to a very high B+ for an assignment. So, keep track of the holistic grades on Perusall, and, if you're getting a mix

of 2s and 3s on your Perusall assignments throughout the semester, then you on track to get something around an A for the Perusall component of your course grade.

Score	Characteristics
3	Your contributions demonstrate <i>exceptionally</i> thoughtful and thorough reading of the assignment; you provided exceedingly helpful answers and/or insightful commentary. It is likely that this high score will be rarely given.
2	Your contributions meet expectations by demonstrating thoughtful and thorough reading of the assignment. You asked good questions, provided helpful answers, and/or otherwise interacted with your fellow students in a helpful way. You should aim for at least this score. Learn from your past scores to improve the quality of your future annotations.
1	Your contributions fell below expectations, demonstrating only superficial reading or limited coverage.
0	You did not make the required contributions by the deadline or they demonstrated reading of only part of the assignment that was merely superficial.

- In some cases, we will use Perusall during our class time together. Other annotated reading assignments will be done outside of our synchronous meetings. Students' reactions to the course readings prior to class will be used to guide the use of our time together in class. Thus, it is important that you complete these annotated reading assignments by the deadline given (Mondays at 4:00pm—i.e., before the associated class meeting time—this will give me time to go through your annotations and prepare our class activities accordingly). Late annotations between the deadline and Tuesday's class will be considered for partial credit; however, annotations made after this point will not receive any credit, as one of the points of making annotations is so that they can inform our class discussions. Of course, you may use your S#!t Happens token for these assignments (see Extra Credit section below). And also remember that I will automatically drop your lowest two Perusall scores (which could be ones for which you didn't have a chance to submit by the deadline). The assigned readings and due dates can be found in the below schedule, as well as on Perusall/Brightspace.
- To get started with Perusall:
 - 1. Log on to <u>Brightspace</u> and navigate to this course.
 - 2. Navigate to the "Course Introduction" module.
 - 3. Click "Perusall, External Learning Tool" at the top of the page to link your accounts.

- 4. Because the accounts are now linked, use the Perusall links provided in Brightspace whenever you want to use Perusall for this course (e.g., to complete an assignment), rather than trying to sign in to Perusall's website directly. In addition to the main link to Perusall in the "Course Introduction" module of Brightspace, each of the individual Perusall reading assignments will have an "External Learning Tool" link on Brightspace that you can use to take you directly to the reading. These links can be found under the Brightspace module for the week the reading is due.
- Again, I will drop your your two lowest Perusall assignment scores. This way, if you
 happen to miss one (or two) assignments or were still trying to grasp what makes for
 high-quality annotations, your Perusall grade won't suffer.
- The "Help" feature in Perusall can be quite...well, helpful in answering your questions. You can also find a Perusall FAQ here or submit a support request here: https://support.perusall.com/hc/en-us/categories/360002173133-Students
- Sleep camp report (10% of final course grade) will summarize your three-week experience tracking your sleep and dreams while following (as best as possible under the circumstances) the "Sleep Camp" protocol outlined in Dement's (1999) book, "The Promise of Sleep." Week 1 affords you the chance to audit your current sleeping habits. Week 2 is designed to help you pay off the bulk of your sleep debt, while Week 3 is an opportunity to see how having prioritized sleep affects your life. During this period of time, you will be asked to log your sleep and dreams. Templates for this purpose have been provided on Brightspace, though you are welcome to amend them/create your own. It often makes sense to print these documents out and, especially for the dream journal, have them close to your bed with a writing implement so that you can write down what you remember as soon as you wake up (feel

implement so that you can write down what free to omit any sensitive information you

assignment). The assignment will be won't be due until Completion flexibility in identifying the designated for Sleep Camp. enough time to write up your

surprises at the busy end of the

introduced in the first week of class and
Week. As such, you will have some
three (continuous) weeks
Just make sure you leave
report (plan for this to avoid

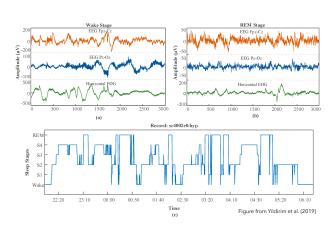
semester). This report should

do not wish to submit as part of your

include an analysis of your sleep habits over the three weeks, if/how they changed, and what consequences this experience has had. Your analysis should include both subjective and objective evaluations. For instance, you should indicate whether/why you feel as though Sleep Camp was beneficial to your sleep quality, general wellbeing, and daily cognitive functioning. What worked? What didn't? You should support your subjective impressions with descriptive statistics in written or graphical form (e.g., changes in average sleep duration, average time to sleep, etc. over the weeks). However, no inferential statistics are necessary (i.e., you don't have to

run statistical tests that generate ρ -values). If you deviated from the general protocol suggested by Dement (or decided to add your own elements, perhaps based on the National Sleep Foundation's tips), be sure to describe those deviations and their associated implications. Given that you will be participating in Sleep Camp during the semester (rather than over a vacation period), it's not expected that you will be able to follow all of the guidance offered. So feel free to be selective in your implementation of the suggestions, as need be based on your academic and extracurricular activities. Finally, your report should include at least one thoughtful suggestion to improve this exercise in the future. Your full report needn't be long (aim for approximately 3-4 double-spaced pages, not counting the title page or your sleep/dream diary entries, which should be included as an appendix-feel free to digitize those entries any way you see fit, e.g., by taking pictures, scanning them, or typing them up). You are welcome to attempt to analyze your dreams for this report (resources have been made available in Brightspace's "Course Introduction" module; however, this is not necessary. Feel free to use the Brightspace discussion forums to share your experiences and tips with fellow students throughout the semester. If you do not feel comfortable with any element of this assignment, please let your instructor know by the second week of the semester so that an alternate assignment can be arranged.

offers you an opportunity to demonstrate your ability to interpret and evaluate empirical research in the field on the topic of sleep. For this short paper assignment, you will assume the role of a journal reviewer (pretend that the article has not yet been published and you are providing a summary and evaluation of the work to the journal's editor). To do so, identify an article (through a literature



search or from the reference list of a paper assigned for the class) and submit it (the full .pdf, demonstrating you have access to the full article, not just an abstract) to the instructor via email for approval before beginning to write). It is important that the article you choose for this assignment is: 1) an empirical, peer-reviewed, published article concerning sleep in a psychological, psychiatric, or neuroscientific journal; 2) not already assigned for this course; 3) not yet claimed by any other student in the class (first come, first served...don't wait). After reading (and re-reading, as necessary) the article, summarize it in your own words; do not simply copy the published abstract! Your summary should include brief descriptions of the study's rationale and method, the main results, and conclusions. Following your summary (~1-2 double-spaced pages), you should critically evaluate the merits and limitations of the article. While you

may consider limitations explicitly raised by the authors in the published article, you must identify at least TWO of your own, unique critiques/concerns and discuss ways in which the study could be improved. You are welcome to cite outside sources, though this is not required. The whole assignment should take roughly 5-6 double-spaced pages. Your name should be on the paper, as well as the APA-style citation of the article you are reviewing; however, no separate title page is necessary. Resources to support your role as a reviewer, including APA style tips, have been made available in the "Course Introduction" section of our Brightspace site.

- Prior to turning in your final paper, you'll be asked to submit a rough draft for feedback. While it is not expected that your rough draft be a finished, polished entity, in order to make the exercise productive, your draft should contain at least 3 continuous pages of writing. The remaining information may be presented in sketch/outline form, if you would prefer. The rough draft represents your opportunity to get feedback that is likely to improve your final grade, though the rough draft itself will not receive a grade. If you fail to turn in a rough draft, however, the final grade will suffer.
- Article Presentation (15% of course grade) affords you an excellent opportunity to practice effectively summarizing and critiquing published experimental work. To this end, you and 2-3 other students will together prepare a 15-minute PowerPoint/Keynote/Google Slides presentation about an article you are assigned to read. This overview should include a brief summary of the relevant background and aims of the research, a concise description of the methods, the main findings, and the important conclusions. You should plan on explaining at least one main figure/table thoroughly. Importantly, you must also provide your own critical evaluation of the research. As this is a lot to pack into a short time, it is imperative that you refine and rehearse your talk prior to the class presentation. We will go over tips for short presentations in class (additional materials are provided in the "Course Introduction" module on Brightspace). After your formal presentation, you are expected to take questions from your audience for a few minutes. Audience members could (and should) ask you anything from questions of clarification to deep conceptual ones. Each group should upload their presentations to Brightspace (in PowerPoint, Keynote, or .pdf form-convert to one of these formats if you created your presentation using GoogleSlides) on the day you are scheduled to present. Just one group member needs to submit the slides (but make sure one of you does).
- Replication Attempt (25% of final course grade) will offer a chance for you and your peers to implement and run your own small-scale sleep study, with the benefit of having a roadmap (methodology and stimuli) provided in advance. Over the course of the semester, you will encounter a number of intriguing research findings, including some that have not always replicated. As replicability has become a more prominent issue in the field (and the sciences at large), this assignment allows you to get better acquainted with the Open Science movement. To this end, you and 3-4 other students will work together to recreate the methodology of a designated experiment, recruit a small (tiny, really) number of participants (at least 5 in each

condition), and run them through the behavioral components of the experiment. The experiment will also involve retention periods, which take place outside of the laboratory (i.e., participants will be able to go about their normal daytime activities and/or enjoy a night of sleep in their dorm rooms/regular domiciles, as determined by their assigned condition).

- Importantly, this is a class project and *not* meant to produce generalizable research
 according to the rules governing the Institutional Review Board (IRB, https://www.bard.edu/irb). Still, you will be required to follow standard ethical guidelines and
 craft a consent form that highlights this fact for participants.
- Many elements of this assignment will be completed in groups—both during dedicated
 class time and outside of class. These group elements include the experiment's
 implementation, recruitment, data collection, and analysis. Your group will also be asked
 to provide a 15-minute presentation of your method, results, discussion (including
 conclusions, limitations, and future directions) toward the end of the semester.
 - However, each individual member of the group will also need to write up their own Replication Report, which follows a standard APA-style empirical article. While the writing must be you own, you are encouraged to engage in peer review. In addition to the required abstract and introduction that reviews the existing literature and motivates your replication attempt, you need to describe the materials, along with other important details relating to the method of its implementation. This section should also include a description of your participants and recruitment methods, along with your procedures. Your results section should contain descriptive statistics-presented both in text and in graphical form. Given the extremely small expected sample size, putting any real weight on inferential statistics would not be especially meaningful; however, you are more than welcome to attempt running them and presenting the results alongside the required descriptive statistics and description of any observed trends (with appropriate caveats regarding their reliability). This and other limitations should be made explicit and their implications considered in the discussion section, which should also summarize your aims, method, and conclusions, linking the findings back to the existing literature. Your write-up should be accompanied by a reference section, which, like the rest of the paper, should follow APA style. Only cite articles you've read in their entirety. Otherwise, use a construction like: "Newton tried comparing apples to oranges (as cited in Hulbert, 2018)." The final report is expected to be around 7 double-spaced pages (excluding your title page, references, and appendices). Please use a legible 10- or 12-point font with reasonable margins. Tips for scientific writing and APA style have been made available on Brightspace.
- At the end of the semester, you will be asked to complete a confidential evaluation of your group members' (and your own) work on the project. These evaluations will be considered together with your work product in arriving at your project grade. I take

- these evaluations seriously; you should, as well. They should reflect honest, impartial assessments of effort and contributions (written, of course, with the respect you and your classmates deserve).
- Final Reflection (10% of final grade) will provide a thoughtful account of what you (personally) learned in this course. Your reflection should be organized, go beyond simply parroting back course material verbatim, and include how some of the big lessons from this course could be applied to your education, personal life, and/or career going forward. While your submission should be a polished product, having been fine-turned through careful editing, you are welcome to adopt a format that reflects your own preferred style. You could, of course, format this as a standard written term paper, but you could instead produce a video, animation, comic book, podcast, website, or interpretive dance... OK, maybe not an interpretive dance. But you do have pretty wide latitude here. If you're unsure as to whether your plan is appropriate, check with me. To give you a general guideline, your submission should be roughly equivalent to a 3-to-4-page (double-spaced, 11-or 12-point font) paper with reasonable margins. No matter the format, take it seriously and commit the necessary time to producing it. It is OK to submit a link to your reflection (if, e.g., you posted a video to Youtube or created a website); however, you should not continue to edit the material after the deadline (at least until I've had a chance to grade it).

Extra Credit

Not giving a s#!t about the class is a recipe for falling behind. But <u>not</u> using your "S#!T Happens" token this semester will be met with 5 extra percentage points added to your Replication Attempt score (i.e., if you received a 80% on this assignment, you'd be able to raise that to 85% with this extra credit opportunity). Look, I get it. Life sometimes gets in the way of deadlines. Pets do sometimes eat homework. Emergencies happen (pandemic related or otherwise). And, as much as we try to avoid it, we occasionally might plain forget a deadline. In an effort to be flexible and fair to all students, I am offering everyone one "S#!T Happens" token. Think of it like a "get-out-of-a-deadline" free card. Just email me saying that you would like to use your S#!T Happens token on a particular class assignment, and I will grant what together we determine to be a reasonable extension, no questions asked. You don't have to explain why you are using the token. Just tell me that you are using it so that we can set an extension (without any late penalty). Still, all work must be submitted prior to the end of Completion Week in order for it to count (i.e., you can't use your token to extend a deadline past the end of the semester). While it is completely reasonable to use your token during the semester and there should be absolutely no shame in doing so, if you happen to be lucky enough not to need to use it, I will grant extra credit points. Of course, if you realize that something may prevent you from completing your contribution to a pending group assignment, please give your group members (and your instructor) as much advanced warning as possible so that everyone can adjust accordingly.

- Over the course of the semester, there will be a number of psychology-sponsored colloquium talks (see http://psychology.bard.edu, the monthly Psychology Newsletter, and postings around campus for dates and locations). Attending these talks is a great way to hear from interesting people in the field of psychology (and mingle over some snacks afterwards, health restrictions permitting). It is also a way of earning up to 4 extra percentage points to be added to your Final Reflection score. To receive credit, attend a talk and submit one original question you would have for the speaker (it can't be a question someone else in the audience asked) to Brightspace within 48 hours of the talk. No credit will be given for questions received after this point. (see the "Extra Credit: Attend Psych Colloquium & Submit Question" assignment in the "Course Introduction" module of our Brightspace site).

 Attendance at a talk and corresponding question submission will earn you a total of 2 extra percentage points added to your final exam score for each talk up to the maximum (since the exams are equally weighted, you can think of these points as going toward any exam grade). You may not receive extra credit in two different courses for attending the same talk.
- "The Quest for Sleep" is a documentary that follows individuals experiencing difficulties with sleep. It is free to stream anytime at https://www.thequestforsleep.com/where-to-watch/. After watching the full film, you are invited to write a short review of the film, including a thoughtful analysis of its scientific accuracy and effectiveness in conveying the message in cinematic form to the general audience. What are some areas for improvement? Feel free to screen the movie in groups and discuss it after. However, your 2-3 page (double-spaced) movie review must be written on your own and submitted if you would like to earn up to 3 percentage points of extra credit toward your Article Review score. See schedule below for the deadline to upload it to Brightspace.

Additional Resources

There are treasure troves of information about psychology sprinkled around the interwebs—much of it can be accessed for free. If you find yourself struggling to understand a concept (or are looking for additional resources), I'd encourage you to search around, carefully evaluate the quality of the sources, and share useful finds with the rest of the class (email it or, even better, post it to a discussion forum on Brightspace). Below are some resources I have identified:

- APA formatting and general reference:
 - Purdue Online Writing Lab (OWL): https://owl.purdue.edu/owl/research_and_citation/apa_style/apa_formatting_and_style_guide/general_format.html
 - I posted some additional reference materials inside the "APA Style/Scientific Paper Writing Tips" submodule inside of the "Course Introduction" of Brightspace.
 - Middlebury Library: https://middlebury.libguides.com/citation/apa7
 - ECU Library: https://libguides.ecu.edu/c.php?g=982594&p=7463742
 - Video Tutorials: https://apastyle.apa.org/instructional-aids/tutorials-webinars

- APA Dictionary of Psychology: https://dictionary.apa.org
- Searchable article databases (and tutorials):
 - Library: https://libguides.bard.edu/psychology
 - APA Database Tutorials: https://www.apa.org/pubs/databases/training/tutorials
 - Google Scholar: https://scholar.google.com
- Optional (recommended) textbook:
 - Baddeley, Eysenck & Anderson's Memory (3rd Edition)
 - Even if you don't get a hold of a copy, the publishers offer some really useful, free online resources. They include:
 - Practice questions, web links/videos, and biographies: https://routledgetextbooks.com/textbooks/9781138326095/student.php
 - Simulations of memory experiments: https://routledgetextbooks.com/textbooks/9781138326095/simulation-experiments.php
 - Glossary of memory terms: https://routledgetextbooks.com/textbooks/
 9781138326095/glossary.php
- Free textbooks & related resources:
 - Research Methods:
 - Crump et al.: https://crumplab.github.io/ResearchMethods/index.html
 - Cuttler et al.: https://open.umn.edu/opentextbooks/textbooks/75
 - Saylor: https://legacy.saylor.org/psych202a/Intro/
 - University of Minnesota: https://open.lib.umn.edu/psychologyresearchmethods/
 - Bhattacherjee: https://scholarcommons.usf.edu/oa_textbooks/3/
 - Statistics:
 - De Anza: https://openstax.org/details/introductory-statistics
 - Saylor: https://open.bccampus.ca/browse-our-collection/find-open-textbooks/?
 uuid=929d4a8d-30b2-4ced-8b50-c39447dc0b74
 - Brown University Statistics Visualizations: https://seeing-theory.brown.edu
 - VassarStats: http://vassarstats.net
 - Effect Size Calculator: https://katherinemwood.shinyapps.io/lakens_effect_sizes/
 - Jamovi Open Stats: https://www.jamovi.org
 - Power analysis guide using G*Power: http://www.mormonsandscience.com/ gpower-guide.html
 - Help choosing an appropriate statistical test:
 - http://www.statsflowchart.co.uk
 - https://stats.idre.ucla.edu/other/mult-pkg/whatstat/
 - https://www.statstutor.ac.uk/resources/uploaded/ tutorsquickguidetostatistics.pdf

- https://www.central7.net/wp-content/uploads/2015/09/ stats_flow_chart_v2014.pdf
- General reference (this could be useful for your other courses, too):
 - Open Textbook Library: https://libguides.humboldt.edu/openedu/psyc
 - NOBA Project: http://noba.to/d95jpvm7
 - Simply Psychology: https://www.simplypsychology.org
 - Project Gutenberg: https://www.gutenberg.org/ebooks/bookshelf/64
 - MERLOT Project: https://www.merlot.org/merlot/Psychology.htm (or to search more widely https://www.merlot.org/merlot/searchMaterials.htm)
 - DevPsy Directory: http://www.devpsy.org/links/open_source_textbooks
 - Neuroscience Online: https://nba.uth.tmc.edu/neuroscience/toc.htm
 - Neuroscience Open Text: http://neuroscience.openetext.utoronto.ca
 - Computational Cog Neuro: https://github.com/CompCogNeuro/ed4

Videos:

- Khan Academy: https://www.khanacademy.org/test-prep/mcat/behavior/learning-slug/v/long-term-potentiation-and-synaptic-plasticity
- JoVE Peer-Reviewed Scientific Videos: https://www.jove.com
- Stimuli/stimulus selection for experiments:
 - Tarr Lab: https://sites.google.com/andrew.cmu.edu/tarrlab/
 - Kahana Lab: http://memory.psych.upenn.edu/Word_Pools
 - Latent Semantic Analysis (LSA): http://lsa.colorado.edu
 - MRC Psycholinguistic Database: https://websites.psychology.uwa.edu.au/school/mrcdatabase/uwa_mrc.htm
 - University of South Florida free association norms: http://w3.usf.edu/FreeAssociation/
- Experiment software/code:
 - Inquisit Lab: https://www.millisecond.com/products/lab (the Psychology Program has a license for this so that you may collect in-person data at no cost to you...ask me about it)
 - PsychoPy: https://www.psychopy.org (while this is free, in order to run a web-based experiment, you would need to host it somewhere, which does come at a cost)
 - PsyToolkit: https://www.psytoolkit.org (this is free, including for online data collection)
- Participate in online experiments (or get ideas for what is possible, with suggested resources):
 - Bard: https://bardresearch.sona-systems.com/
 - Social Psychology: https://www.socialpsychology.org/expts.htm
- Survey platforms:
 - Qualtrics: https://bardpsych.qualtrics.com/
 - Google Forms: https://forms.google.com
- Experiment design tools:
 - Balanced Latin square generator: https://cs.uwaterloo.ca/~dmasson/tools/latin_square/

- Randomizer: https://www.randomizer.org
- Open Science:
 - Center for Open Science: https://www.cos.io/services/research
 - Open Science Framework (OSF): https://osf.io
- Use as an entry point for further research (with caution):
 - Wikipedia: https://www.wikipedia.org
 - Youtube: https://www.youtube.com
- Cognitive neuroscience methods:
 - Functional Neuroimaging: https://imaging.mrc-cbu.cam.ac.uk/imaging/Cbulmaging
 - Event-Related Potentials: https://erpinfo.org
- Participate in online experiments (or get ideas for what is possible, with suggested resources):
 - Bard Psychology: https://bardresearch.sona-systems.com
 - Social Psychology: https://www.socialpsychology.org/expts.htm

Diversity and Access

Students at Bard come from a variety of backgrounds and viewpoints. It is very exciting to be able to benefit from these differences, and I anticipate a learning environment in which all approaches and backgrounds are respected and challenged in a way that promotes personal growth. To this end, I expect all members of the class to foster a climate of intellectual curiosity and enthusiasm by: (1) actively engaging in our activities and discussions; (2) being prepared to recognize the impact of bias, privilege, and histories of inequity; and (3) voicing opinions in a way that respects others. As a rule of thumb to encourage more voices to be heard, after you've contributed to a conversation in class, wait for three other people to speak before sharing more. You may notice that I pause between asking a question and accepting responses from the class. This is for a similar purpose.

Bard College is committed to providing equal access to all students. If you anticipate issues related to the format or requirements of this course, please schedule a meeting with me, as I would like us to discuss ways to ensure your full participation in the course. Together, we can plan how best to support your learning and coordinate your accommodations.

Have a learning difference or disability–including mental health, medical, or physical impairment–and are not yet registered? Please complete the Disability Registration Form found on the Student Disability Access Services website at https://www.bard.edu/accessibility/students/ and provide disability documentation to disabilityservices@bard.edu. The Director of Disability Resources and Accessibility, Erin Braselmann, or a member of her staff will confidentially discuss with you the process to establish reasonable accommodations. Please note that accommodations are *not* retroactive and require advance notice to implement (you should allow 2-3 business days for a response after completing the online Disability Registration Form and will then need to arrange a meeting with Disability Access Services to discuss

potential accommodations). If you are already registered and have an existing accommodation plan with Disability and Access Services, you must additionally request that the office forward your accommodation letter to the appropriate faculty members (in this case, me) using the Accommodation Letter Request Form (this must be done each semester, for each faculty member you wish to notify): https://docs.google.com/forms/d/e/1FAlpQLSdN9SJ8CS1sKEgqXXyl8iS-hkQBj1GKSw6B-ED9DTEWdXmbLA/viewform?usp=sf_link.

The Bard College Accessibility Converter (https://www.sensusaccess.com/web3/bard/) can be used to easily convert documents to a more accessible format. While not all assignments will be equally conducive to non-written submission formats, certain accommodations can be made for audio/video submissions as necessary. Simply contact me with a concrete plan for how the novel format still captures the assignment's learning objectives.

Whether course material brings up challenging issues or you are facing another type of challenge, the Bard Counseling Service may be able to help. For more information, see: https://www.bard.edu/counseling/.

COVID-19 Adaptations

Community responsibility will continue to be especially critical to our daily lives. We all have a role to play in helping to keep others as safe as possible. Of course, no choices are risk free, but we can make choices that reduce risk for ourselves and others. Please heed federal, state, local, College, and classroom health and safety policies, realizing that they may change during the semester based on new evidence/circumstances.

Financial Support

The pandemic has further exposed and exacerbated existing inequalities. Bard has put together a collection of resources available for students to reduce the extra costs associated with taking courses at Bard. This listing can be found at https://docs.google.com/document/d/1um-m6vUYEUz7H0KnlisljsprgGUDee0l/edit?usp=sharing&ouid=108170187445887963672&rtpof=true&sd=true. Although this seminar does not require you to purchase any textbooks or other required materials, below I highlight a couple of resources you may want to consider for other classes:

Notably, the Scale Project is a student-led organization committed to increasing equity and access for lower-income students at Bard. They have produced a document entitled, "Being Not-Rich at Bard College" that provides additional tips for navigating some of these challenges. The Scale Project and I both welcome additional suggestions and other feedback. The Scale Project also maintains a Bookstore Rental Program to provide access to selected learning materials. Anyone can use this resource, but the Scale Project asks that you not use the Rental Program unless purchasing course materials represents a true financial burden for you (as Scale's resources are also limited). Currently, you may only request a rental for up to three books that are available at the Bard College Bookstore. Check @thescaleproject on Instagram and emails from the Scale Project for further information on how to make use of this resource.

In addition to the Scale Project's offerings, the Division of Science, Math, and Computing (of which the Psychology Program is a part) has a limited amount of funds to defray the cost of course materials (e.g., textbooks) for students who cannot afford them. Applicable courses include those listed under the Biology, Chemistry, Computer Science, Math, Physics, and Psychology, as well as SCI course designations. Funds are limited, so we ask that students who can access materials through their own means do not make requests through this mechanism. To make use of this resource, fill out this form: https://forms.gle/ttkywtdzGUuWK6YeB6 or contact Megan Karcher (karcher@bard.edu) who will work with you to buy or rent the material you need or loan you a copy of the textbook that the Program has on hand. Please make this request at the very beginning of the semester (directly after the first class) to allow yourself enough time to obtain the resources. Note that this process allows students to request the funding without needing to inform the professor. Indeed, professors will not know which students make such requests. If there are likely to be any delays in obtaining access to the course resources, however, it is important to let your instructor know (either directly or going through Megan Karcher) so that you don't miss out on critical assignments (and corresponding grades).

Land Acknowledgment

In the spirit of truth and equity, it is with gratitude and humility that we acknowledge that we are gathered on the sacred homelands of the Munsee and Muhheaconneok people, who are the original stewards of this land. Today, due to forced removal, the community resides in Northeast Wisconsin and is known as the Stockbridge-Munsee Community. We honor and pay respect to their ancestors past and present, as well as to Future generations and we recognize their continuing presence in their homelands. We understand that our acknowledgement requires those of us who are settlers to recognize our own place in and responsibilities towards addressing inequity, and that this ongoing and challenging work requires that we commit to real engagement with the Munsee and Mohican communities to build an inclusive and equitable space for all.

Course Planning

Prospective memory involves remembering to carry out some intended action in the future. You know, like turning in an assignment, taking an online quiz, or preparing for an exam. There's no reason you can't take steps now to improve your ability to carry out the appropriate actions on time, even before we cover the topic. So please, please take the time to review all the deadlines below. Transfer them to your personal calendar



immediately. Doing so will help you avoid scheduling conflicts (e.g., around Fall and Thanksgiving Breaks and other travel) and allow you to carve out the necessary time to perform your best. Please email me (or meet me for office hours) should you envision a significant disruption to your ability to meet the course requirements/deadlines. I will do my best to work with you (and other resources to which you have access at

Bard) to support you. And, remember, you may also use your "S#!T Happens" token, no questions asked, for one deadline extension (details can be found under "Extra Credit," above).

Tentative Course Schedule

Date (day)	#	Topics for Class Assignments
8/30 (tu)	1	COURSE OVERVIEW: WHY DO WE SLEEP? WHY DON'T WE GET ENOUGH? ▶ Sleepiness assessments (Moorcroft, 2013, pp. 39-44) ▶ Sleep, defined (colloquially) ▶ Getting-to-know-you survey: https://forms.gle/agTptpXq9CHSb68h9 ▶ Introductions (two truths & a lie) ▶ Video – "Russell Foster: Why Do We Sleep?" (first 8m35s) ▶ Course overview, introduction to Perusall ▶ In-class reading: Gross (2019) - Perusall practice (not graded) ▶ Video – "Matthew Walker: Sleep Is Your Superpower" (19m19s) ▶ Assignment explained: Sleep Camp (Dement & resources on Brightspace, BS) ▶ Why do people struggle to sleep? Strategies? Proven effective? ➡ Homework (to be completed by 4pm next Monday—the day before class): - Perusall annotation of Radiolab Podcast: Sleep (~60min) - Read Harley (2021) Chapter 12 (posted to BS, no annotations necessary)
9/6 (tu)	2	SLEEP: BASIC DEFINITIONS, METHODS, & ARCHITECTURE ◆Before class (yesterday by 4pm): Have annotated Radiolab podcast; have read Harley (2021) Chapter 12 (BS, no annotations necessary) ▶ Redefining sleep—a jigsaw classroom activity: McNamara (2019, pp. 3-39; 208-227) on BS ▶ Matthew Walker's claims revisited - https://statmodeling.stat.columbia.edu/2019/11/18/is-matthew-walkers-why-we-sleep-riddled-with-scientific-and-factual-errors/ ▶ Communicating and consuming science ▶ Virtual visit to a sleep lab in-class reading: Moorcroft (2013, pp. 1-26) on BS ➡ Homework (to be completed by 4pm next Monday—the day before class): - Perusall annotation of Nedergaard & Goldman (2020) - Perusall annotation of Tingley (2022)
9/13 (tu)	3	 WHEN SLEEP IS OUT OF WHACK ◆Before class (yesterday by 4pm): Have annotated Nedergaard & Goldman (2020) and Tingley (2022) ▶ How to search for relevant scientific backing (and read empirical articles) ▶ Group scavenger hunt & mini-presentations about: The nature of a chosen sleep disorder (see http://sleephealth.org/sleep-health/sleep-disorders-classifications/ for a starting point) A direct-to-consumer treatment advertised for that sleep disorder Empirical findings related to that disorder (and/or its treatment) ➡Homework (to be completed by 4pm next Monday—the day before class): Perusall annotation of Goldstein-Piekarski et al. (2015) Perusall annotation of Porcheret et al. (2015) Email jhulbert@bard.edu the full .pdf of an empirical article about sleep that you would like to use for your Article Review

Date (day)	#	Topics for Class Assignments
9/20 (tu)	4	SLEEP DEPRIVATION ◆Before class (yesterday by 4pm): Have annotated Goldstein-Piekarski et al. (2015) and Porcheret et al. (2015); have emailed jhulbert@bard.edu the full .pdf of an empirical article about sleep that you would like to use for your Article Review ◆ Article Review assignment discussed ➡ Homework (to be completed by 4pm next Monday—the day before class): - Perusall annotation of Ben Simon & Walker (2018) - Perusall annotation of Freeman et al. (2017)
9/27 (tu)	5	SLEEP & MENTAL HEALTH ◆Before class (yesterday by 4pm): Have annotated Ben Simon & Walker (2018) and Freeman et al. (2017) ▶ Sleep Camp check-in ➡ Homework (to be completed by 4pm next Monday—the day before class): - Perusall annotation of Jenkins & Dallenbach (1924) - Perusall annotation of Ekstrand (1967) - Perusall annotation of Wilson & McNaughton (1994) ➡ Homework (to be submitted to BS by 11:59pm next Friday, 10/7): - Rough draft of Article Review
10/4 (tu)	6	SLEEP & MEMORY: THEN & NOW ◆Before class (yesterday by 4pm): Have annotated Jenkins & Dallenbach (1924), Ekstrand (1967), and Wilson & McNaughton (1994) ◆ Course feedback survey (online, anonymous) conducted in class ◆ Tips for short research presentations ➡ Homework (to be submitted to BS by 11:59pm this Friday, 10/7): ◆ Rough draft of Article Review ➡ Homework (to be completed by 4pm the Monday after Fall Break, 10/17): - Perusall annotation of Walker et al. (2003) - Perusall annotation of Hardwicke, Taqi, & Shanks (2016) - Also read on Perusall (no annotations necessary—they're both very short): - Walker & Stickgold (2016) - Hardwicke & Shanks (2016)
10/11 (tu)		NO CLASS - FALL BREAK

Date (day)	#	Topics for Class Assignments
10/18 (tu)	7	SLEEP & MEMORY RECONSOLIDATION? ◆Before class (yesterday by 4pm): Have annotated Walker et al. (2003) and Hardwicke et al. (2016); have read both Walker & Stickgold (2016) and Hardwicke & Shanks (2016) ▶ Course feedback survey results discussed ▶ Assign presentation groups (1-4) ➡ Homework (to be completed by next class): - Group 1: Prepare presentation of Ellenbogen et al. (2006) - Group 2: Prepare presentation of Ellenbogen et al. (2009) - Group 3: Prepare presentation of Pöhlchen et al. (2020) - Group 4: Prepare presentation of Abel et al. (submitted) ➡ Homework (to be submitted to BS by 11:59pm next Friday, 10/28): - Final draft of Article Review
10/25 (tu)	8	PRESENTATIONS: DOES SLEEP AFFORD PROTECTION FROM INTERFERENCE? ◆By class time: Have read and worked with your group to prepare a short presentation on your assigned article from last week ◆Group presentations ◆Replication Attempt assignment discussed ➡Homework (to be submitted to BS by 11:59pm today): ◆Presentation slides (one upload per group) ➡Homework (to be submitted to BS by 11:59pm this Friday, 10/28): ◆Final draft of Article Review
11/1 (tu)	9	IMPLEMENTING A REPLICATION ATTEMPT ▶ Group work (Replication Attempt) ➡ Homework (to be completed by 4pm next Monday): - Perusall annotation of Antony & Paller (2017) - Perusall annotation of Rudoy et al. (2009)
11/8 (tu)	10	TARGETED MEMORY REACTIVATION ◆Before class (yesterday by 4pm): Have annotated Antony & Paller (2017) and Rudoy et al. (2009) ◆Sleep Camp check-in ◆Overview (and practice) of the peer review process ◆Group work (Replication Attempt) ➡Homework (to be completed by 4pm next Monday): - Perusall annotation of Hu et al. (2015) - Perusall annotation of Humiston & Wamsley (2019)

Date (day)	#	Topics for Class Assignments
11/15 (tu)	11	BIASED SLEEP? ◆Before class (yesterday by 4pm): Have annotated Hu et al. (2015) and Humiston & Wamsley (2019) • Group work (Replication Attempt) ➡ Homework (to be completed by 4pm next Monday): - Perusall annotation of Harrington et al. (2021) - Perusall annotation of Dehnavi et al. (2019)
11/22 (tu)	12	SLEEP & SUPPRESSION ◆Before class (yesterday by 4pm): Have annotated Harrington et al. (2021) and Dehnavi et al. (2019) ◆Group work (Replication Attempt) ➡Homework (to be completed by 4pm next Monday): - Perusall annotation of Vox's Unexplainable Podcast: Why We Dream (~22min) - Read Harley (2021) Chapter 13 (posted to BS, no annotations necessary)
11/29 (tu)	13	 ◆Before class (yesterday by 4pm): Have annotated Vox's Unexplainable podcast; have read Harley (2021) Chapters 13 (BS, no annotations necessary) ▶ In-class readings (on BS): Moorcroft (2013, pp. 199-225; 272-287) McNamara (2019, pp. 194-207) Additional (optional) materials can be found on BS under the "Course Introduction/Dream Reference" module ▶ Debate: Why do we dream? ▶ Group work (Replication Attempt) ➡ Homework (to be completed by the start of class next Tuesday): Finalize data collection and analysis for your Replication Attempt Prepare a 15-minute group presentation of Replication Attempt (method, results, and discussion)
12/6 (tu)	14	FINAL PRESENTATIONS ◆ Group presentations ◆ A confidential evaluation of your group members' (and your own) work on the Replication Attempt assignment will be conducted at the end of class ➡ Homework (to be submitted to BS by 11:59pm today): ◆ Presentation slides (one upload per group) ➡ Homework (to be submitted to BS by 11:59pm Thursday of next week, 12/15): - Sleep Camp Report - Replication Report - Final Reflection - Movie Review (extra credit)

Date (day)	#	Topics for Class Assignments
12/13 (tu)		NO CLASS - COMPLETION WEEK ➡ Homework (to be submitted to BS by 11:59pm Thursday, 12/15): ◆Sleep Camp Report ◆Replication Report ◆Final Reflection ◆Movie Review (extra credit)

Schedule is subject to change to improve pacing and/or accommodate unforeseen events (e.g., severe weather). However, for planning purposes, every effort will be made to maintain scheduled due dates.