



Dr. Rebecca Merkley

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Virtual Office Hours: by appointment

DEVELOPMENTAL COGNITIVE NEUROSCIENCE

CGSC4900A – Fall 2021

Class Information

Time: Thursdays
2:35pm-5:25pm
NI 4040

Course website:

brightspace.carleton.ca

Course Prerequisites: Fourth year standing or permission of the Department



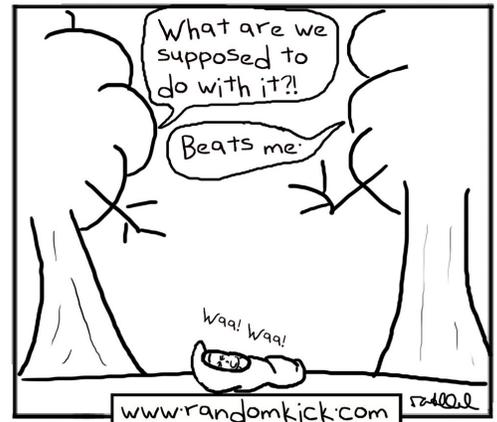
“It’s not that children are little scientists — it’s that scientists are big children. Scientists actually are the few people who as adults get to have this protected time when they can just explore, play, figure out what the world is like.”

— **Alison Gopnik**

Course Description

In this course, we will explore the ways in which genes and experience interactively contribute to brain and cognitive development and shape who we are. Current controversies in developmental science, such as the impact of screen time on development, will be discussed. Topics include adolescent brain development, the malleability of intelligence over development, and infantile amnesia.

NATURE VS NURTURE



We may have to pivot online depending on changing public health guidance. A list of technical requirements for online learning is available here:

<https://carleton.ca/its/help-centre/learning-in-an-online-environment/>

Readings

The readings for this course include scientific articles, blog posts, and articles in the popular press. These will all be available via the course website.

Learning Outcomes

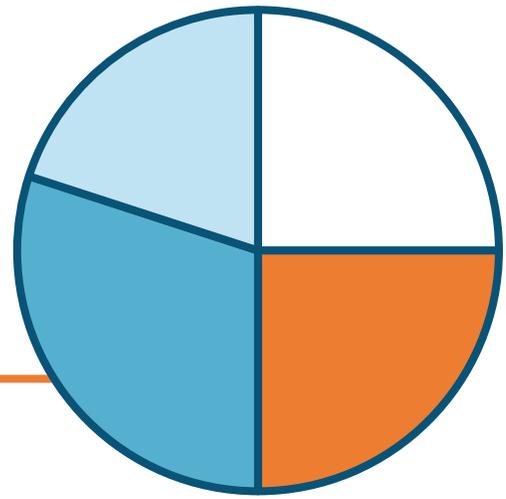
- Understand theories and methods in developmental cognitive neuroscience
- Compare and contrast evidence reported in scholarly research papers
- Develop critical thinking & consider implications of research



Evaluation

Your grades will be based on participation, presentations, and writing assignments. There are no exams.

Detailed descriptions of all assignments are on Brightspace.



■ Discussion Lead

■ Midterm Project

■ Final Paper

■ Participation

Discussion Lead (25%)

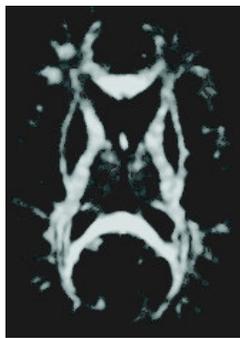
Once during the term you will be required to give a **15-minute** presentation and lead the subsequent discussion. You should review the literature assigned AND other relevant literature that you have found through literature searches. The aim of the presentations is to highlight different perspectives on the discussion questions. You can present live or pre-recorded.

Midterm Project: Ask A Developmental Scientist (25%)

For this assignment, you will be required to conduct a brief interview with a developmental scientist. The aim is to communicate their research to a general audience. You could present it as a blog post or a podcast. Due October 14

Final Paper (30%)

Your final paper (~1500 words) should extend your thinking about one of the discussion topics by critically reviewing evidence from multiple sources. You can choose a topic from the syllabus or create your own. You are strongly encouraged to discuss the topic of your final paper with the instructor. Due December 9



Participation (20%)

You are encouraged to attend the weekly meetings and participate in class discussions. Some presentations and lectures may be offered asynchronously. You are expected to direct and reflect on your own learning. Each week you are asked to post a discussion question about the readings in a forum on Brightspace and complete a brief quiz about the readings.

Course Expectations & Policies

This is tentatively an “in-person” course, which means that you are expected to attend weekly. Your mental and physical health are the top priority. You should come to class prepared, having done the readings. We may adjust the class format in keeping with public health guidance and our comfort levels. Some lectures will be pre-recorded to maximize class time for discussion.

Civility and Privacy: The University is a place of open discussion and free inquiry. It is expected that you will be respectful and considerate of your classmates and our learning environment will be free from discrimination and harassment

Late Assignments: You may use a ‘no questions asked’ 3-day grace period for one assignment (except for Discussion Lead) and turn it in without penalty. If you need other extensions or accommodations, please contact the instructor at least a week ahead of the deadline.



Course Schedule

Week	Date	Lecture Topic	Discussion Question	Readings
1	Sept 9	Welcome & Introduction		
2	Sept 16	Theoretical Perspectives	Are we born with core knowledge of how the world works?	Stahl & Feigenson (2015) Schulz (2015)
3	Sept 23	Research Methods	Are there critical periods in human development?	Werker & Hensch (2015) Fox et al. (2010)
4	Sept 30	Brain Development	Is screen time detrimental to child development?	Johnson (2001) Gopnik et al. (2015)
5	Oct 7	Behavioural Genetics	Is IQ a reliable and valid construct?	Sokolowski & Ansari (2019) Belsky et al. (2019)
6	Oct 14	Executive Function Development	Can training executive functions transfer to other cognitive skills?	Doebel (2020) Takacs & Kassai (2019)
7	Oct 21	Language Development	Is there a cognitive advantage to being bilingual?	Bialystok (1999) Cho et al. (2021)
Fall Break				
8	Nov 4	Mathematical Development	Are men better suited to STEM careers than women are?	Kersey et al. (2019) Giedd et al. (2012)
9	Nov 11	Social Emotional Development	Can children overcome early adverse experiences?	Gee (2020) Rooij et al. (2017)
10	Nov 18	Adolescent Development	Should adolescents be tried as adults?	Casey et al. (2017) Somerville (2016)
11	Nov 25	Neurodiversity	Are specific learning disorders really disorders?	Peters & Ansari (2019) Karmiloff-Smith (2008)
12	Dec 2	Memory Development	Is it possible to have memories from early childhood?	Josselyn & Frankland (2012) Mullally & Maguire (2014)
13	Dec 9	Final Papers Due	No Class Meeting	

This schedule is tentative.

Additional Information

In accordance with the Carleton University Undergraduate Calendar (p 34), the letter grades assigned in this course will have the following percentage equivalents:

A+ = 90-100	B+ = 77-79	C+ = 67-69	D+ = 57-59
A = 85-89	B = 73-76	C = 63-66	D = 53-56
A - = 80-84	B - = 70-72	C - = 60-62	D - = 50-52
F = Below 50			

Grades entered by Registrar:

WDN = Withdrawn from the course

DEF = Deferred

Academic Regulations

University rules regarding registration, withdrawal, appealing marks, etc. can be found on the university's website, here: <https://calendar.carleton.ca/undergrad/regulations/academic-regulationsoftheuniversity/>

Copyright policy: Student or professor materials created for this course (including presentations and posted notes, labs, case studies, assignments and exams) remain the intellectual property of the author(s). They are intended for personal use.

Important Information

- Students must always retain a copy of all work that is submitted.
- All final grades are subject to the Dean's approval.
- For us to respond to your emails, we need to see your full name, CU ID, and the email must be written from your valid CARLETON address. Therefore, in order to respond to your inquiries, please send all email from your Carleton CMail account. If you do not have or have yet to activate this account, you may wish to do so by visiting <https://carleton.ca/its/all-services/email/carleton-student-email/>

Academic Accommodations

Write to me with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation (e.g. religious, pregnancy, student activities) is known to exist. For more details, see <https://students.carleton.ca/services/accommodation/>

Accommodations for Students with Disabilities: If you have a documented disability requiring academic accommodations in this course, please contact the Paul Menton Centre for Students with Disabilities (PMC) at 613-520-6608 or pmc@carleton.ca for a formal evaluation or contact your PMC coordinator to send your instructor your Letter of Accommodation at the beginning of the term. You must also contact the PMC no later than two weeks before the first in-class scheduled test or exam requiring accommodation (if applicable). After requesting accommodation from PMC, meet with your instructor as soon as possible to ensure accommodation arrangements are made. carleton.ca/pmc

Plagiarism

Plagiarism is presenting, whether intentionally or not, the ideas, expression of ideas, or work of others as one's own. Plagiarism is a serious offence that cannot be resolved directly by the course's instructor. The Associate Dean of the Faculty conducts a rigorous investigation when an instructor suspects a piece of work has been plagiarized. For more details see: <https://carleton.ca/secretariat/wp-content/uploads/Academic-Integrity-Policy-2021.pdf>

For a list of dates and deadlines, including holidays and exam dates, please visit:

<https://carleton.ca/registrar/registration/dates/academic-dates/>

Additional Information Regarding COVID-19

All members of the Carleton community are required to follow COVID-19 prevention measures and all mandatory public health requirements (e.g. wearing a mask, physical distancing, hand hygiene, respiratory and cough etiquette) and [mandatory self-screening](#) prior to coming to campus daily.

If you feel ill or exhibit COVID-19 symptoms while on campus or in class, please leave campus immediately, self-isolate, and complete the mandatory [symptom reporting tool](#). For purposes of contact tracing, attendance will be recorded in all classes and labs. Participants can check in using posted QR codes through the cuScreen platform where provided. Students who do not have a smartphone will be required to complete a paper process as indicated on the [COVID-19 website](#).

All members of the Carleton community are required to follow guidelines regarding safe movement and seating on campus (e.g. directional arrows, designated entrances and exits, designated seats that maintain physical distancing). In order to avoid congestion, allow all previous occupants to fully vacate a classroom before entering. No food or drinks are permitted in any classrooms or labs.

For the most recent information about Carleton's COVID-19 response and required measures, please see the [University's COVID-19 webpage](#) and review the [Frequently Asked Questions \(FAQs\)](#). Should you have additional questions after reviewing, please contact covidinfo@carleton.ca

Please note that failure to comply with University policies and mandatory public health requirements, and endangering the safety of others are considered misconduct under the [Student Rights and Responsibilities Policy](#). Failure to comply with Carleton's COVID-19 procedures may lead to supplementary action involving Campus Safety and/or Student Affairs.