

**PSYC23: Developmental Psychobiology**  
**Lecture: Room IC220; Mondays, 3:00–5:00 pm**

**Professor**

Dr. David Haley  
Office hours: Thursdays, 1 to 2 PM  
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**Course Website**

Quercus is the new Learning Management System for University of Toronto

To access Quercus, please visit: <https://q.utoronto.ca>

**Overview**

This course offers an introduction to developmental psychobiology, which is an interdisciplinary field consisting of research from developmental psychology, developmental health, and developmental neuroscience. A significant advance in our knowledge of human development is the demonstration that biology (epigenetics, physiology, and genes) and life experiences (e.g., the regulatory functions of social environment and parent-child attachment) contribute jointly to the long-term programming of stress physiology, brain function, and physical/mental health. The stress system is distinguished by the fact that it is both an adaptive mechanism that helped us survive adversity and is also highly sensitive (plastic) to the contemporary conditions of the environment (developmental context). An individual's stress system thus provides critical windows into our collective evolutionary past and into the individual's personal history. A second scientific advance is the recognition that the necessity and desire for intersubjectivity (ranging from attachment to social affiliation and intimacy) has motivated much of human history and that the biological mechanisms supporting prosocial behavior and intersubjectivity serve in part to inhibit and regulate the stress system.

To appreciate the application of the scientific material, we will discuss applied topics that link to and show the impact of social-political issues on human development (e.g., spanking, cry-it-out, racism in utero, social inequality, family separation, the immigrant and refugee experience, universal basic income, wages for housework, the criminalization of motherhood, the human rights of infants and children, drug addiction, and the biopolitics of child development). Thus, an important learning goal is to relate our scientific knowledge to relevant social-political issues and contexts affecting developmental outcomes. At the heart of this course, then, we ask what kind of society is optimal for developmental psychobiology? By acquiring an integrated perspective via readings, lectures, class discussion, online videos, assignments, and an abstract for a research proposal, students will evaluate how existing and future research might inform and improve policies and practices in society that optimize human development.

**Learning Goals**

- To learn about the development of dyadic regulation
- To learn about the biology of adversity and prosocial behavior
- To learn about the role of stress in psychological functioning (e.g., memory, mental health, sleep, etc.)
- To generate/test novel hypotheses
- To relate scientific knowledge to relevant social-political issues and contexts

## Evaluation

Study questions and participation	(1% per week x 10)	10%
Mini Research Proposal	(draft = 5% and final = 5%)	10%
Exams	(midterm = 35%; final = 45%)	80%
<b>Total</b>		<b>100%</b>

## Weekly Topics

Week 1	Introduction
Week 2	Attachment
Week 3	Self-Regulation
Week 4	Maternal Sensitivity, Maternal Biology, and Maternal Politics
Week 5	Prosocial Biology
Week 6	Stress Biology
Week 7	The Biology of Social Inequality
Week 8	The Biology of Early Adversity
Week 9	Child Abuse and Disorganized Attachment
Week 10	Traumatic Memories
Week 11	Sleep Problems

## Weekly Materials

**September 10, 2018**

**Week 1: Introduction**

**September 17, 2018**

**Week 2: Attachment and Love**

1. Introduction and chapter 1
2. Lewis, T. Amini, F. and Lannon, R. (2000). A Fiercer Sea, pages 66-99 in *A General Theory of Love*. Random House. USA.
3. Bruce Perry's 61-min talk Born for Love: Why Empathy is Endangered at the Roots of Empathy (October 23, 2016): <https://www.youtube.com/watch?v=5gU1wXbs5mc>

**September 24, 2018**

**Week 3: Self-Regulation and Relational Health**

1. Chapter 2
2. Sroufe, L. A., Duggal, S., Weinfield, N., & Carlson, E. (2000). Relationships, Development, and Psychopathology. Pages 75-91, in *Handbook of Developmental Psychopathology*, Second Edition, edited by A. J. Sameroff, M. Lewis, & S. M. Miller. Kluwer Academic/Plenum Publishers, New York, 2000.
3. Ed Tronick's 36-minute talk Multilevel Psychobiological Meaning Making and Empathy given at the Roots of Empathy: <https://www.youtube.com/watch?v=mGqgGM1AkPw>

**October 1, 2018**

**Week 4: Maternal Sensitivity, Maternal Biology, The Politics of Motherhood**

1. Chapter 3
2. Feldman, R. (2017). The neurobiology of human attachment. *Trends in Cognitive Sciences*, February 2017, Vol. 21.
3. Ruth Feldman's 23-minute research talk at Simms/Mann Institute: <https://www.youtube.com/watch?v=ZaXo2XQVogl>

**October 8, 2018**  
**Reading Week**

1. Rilling, J. K. & Young, L. J. (2014). The biology of mammalian parenting and its effect on offspring social development. *Science*, 345, 771-776.
2. Suomi (2011). Steve Suomi's 28-minute research talk at the National Academy of Sciences Arthur M. Sackler Colloquium, *Biological Embedding of Early Social Adversity*:  
[https://www.youtube.com/watch?v=b\\_-kDZKNG4k](https://www.youtube.com/watch?v=b_-kDZKNG4k)

**October 15, 2018**  
**Midterm**

**THE MIDTERM EXAM WILL TAKE PLACE DURING CLASS**  
**AND WILL BE BASED ON COURSE MATERIAL FROM WEEKS 1-4 AND READING WEEK**

**October 22, 2018**  
**Week 5: Prosocial Biology, Empathy, and Aggression**

1. Chapter 4
2. Carter, S & Porges, S. (2014) Biochemistry of Love.
3. *Survival of the Kindest*. Dacher Keltner's 53-min talk given at the Mind Science Foundation (2015): <https://www.youtube.com/watch?v=R8SVyHS3jZU>

**October 29, 2018**  
**Week 6: Stress Biology**

1. Chapter 5
2. Gunnar, M. R. (2017). Social Buffering of Stress in Development: A Career Perspective. *Perspectives on Psychological Science* 2017, Vol. 12(3) 355-373.
3. *Stress, Portrait of a Killer* (2008). A 56-minute documentary on stress. *National Geographic*:  
[https://www.youtube.com/watch?time\\_continue=22&v=eYGoZuTv5rs/](https://www.youtube.com/watch?time_continue=22&v=eYGoZuTv5rs/)

**November 5, 2018**  
**Week 7: The Biology of Social Inequality**

1. Chapter 6
2. Pakulak, E., Stevens, C., and Neville, H. (2018). Neuro-, Cardio-, and Immunoplasticity: Effects of Early Adversity. *Annu. Rev. Psychol.* 2018. 69:131-56.
3. Hamblin, J. (2015). The paradox of effort: A medical case against too much self-control. *The Atlantic*, July, 2015. <https://www.theatlantic.com/health/archive/2015/07/the-health-cost-of-upward-mobility/398486/>

**November 12, 2018**  
**Week 18: The Biology of Early Adversity**

1. Chapter 7
2. *Childhood Adversity* (2017). A 54-minute episode on the effects of early adversity on brain development from PBS's The Brain Series with a panel of scientists hosted by Eric Kandel:  
<https://charlirose.com/collections/3/clip/29983>

**November 19, 2018**  
**Week 9: Child Abuse and Unresolved Attachment**

1. Chapter 8

2. Konner, M. (2010). Stress Resilience in the Changing Family. Pages 537-563, in *The Evolution of Childhood: Relationships, Emotion, and Mind*, The Belknap Press of Harvard University Press, Cambridge, Massachusetts, 2010.
3. Infant Disorganized Attachment: The Key Questions. A 35-minute symposium chaired by Robbie Duschinsky with a panelist of attachment researchers and clinicians:  
<https://www.youtube.com/watch?v=UY7hhVvKGoo>

**November 26, 2018**

**Week 10: Traumatic Memories**

1. Chapter 9
2. Van der Kolk (1994). The Body Keeps the Score: Memory and the Evolving Psychology of Posttraumatic Stress. *Harvard Rev Psychiatry*. Jan/Feb, 1994.

**December 3**

**Week 11: Sleep Problems & Mental Health**

1. Chapter 10
2. Sadeh, A. (1996). Stress, Trauma, and Sleep in Children. *Child and Adolescent Psychiatric Clinics of North America*, 685-700.
3. Insel, T. R. JAMA May 7, 2014 Volume 311, Number 17, 1227-1228.
4. Hari, J. (2018). Is everything you think you know about depression wrong? *Guardian*, 2018.

**Course Materials**

Course materials will consist of short chapters, research articles, and online videos. The materials are available on our course web site. The short chapters are texts that I am currently developing and as such I will be preparing them for you each week. In addition, these chapters contain study questions. The weekly course materials will be released a week before each lecture—giving you time to review them before you come to class. The course materials are intended to provide important background and supplemental information for the course lectures.

**Lecture Slides**

I will generally post the slides by 7:00 the evening before a scheduled lecture (Sunday evening). They will be uploaded as PDF files formatted as either 2 slides or as 6 slides per page.

**Exams**

The term and final exams will consist of true/false questions (30%), multiple-choice questions (40%), and figure-labeling questions (30%). The exams will be based on lecture (70%) and on the course materials (30%) assigned to you each week that include texts (10%), book chapters or research articles (10%), and online videos (10%).

**Study Questions**

Study and discussion questions will be assigned to you each week in Top Hat in order to help you prepare for the exams and for each week's course lecture. The study questions will not be graded on correctness but rather you will receive credit for your participation.

## **Class Discussion**

To facilitate class discussion, please sign into Top Hat at the start of class. We will regularly raise and answer questions using Top Hat in the course lecture.

## **Keep in mind**

You are expected to review the assigned weekly course materials and answer the assigned study questions—prior to attending class lecture and tutorials.

## **Course Website**

I will make the syllabus and all course materials, and announcements available on the course website (log in to Quercus: <https://q.utoronto.ca> ). Please check this website regularly for announcements and messages.

## **Missed Term Work Due to Medical Illness or Emergency:**

All students citing a documented reason for missed term work (this includes assignments and midterm exams) must bring their documentation to the Undergraduate Course Coordinator, Ainsley Lawson, **within three (3) business days** of the term test / assignment due date. All documentation must be accompanied by the departmental [Request for Missed Term Work form](http://uoft.me/PSY-MTW) (<http://uoft.me/PSY-MTW>).

In the case of missed term work due to illness, only an **original copy** of the [official UTSC Verification of Illness Form](http://uoft.me/PSY-MED) (<http://uoft.me/PSY-MED>) will be accepted. Forms are to be completed in full, clearly indicating the start date, anticipated end date, and severity of illness. The physician's registration number and business stamp are required.

In the case of other emergency, a record of visit to a hospital emergency room or copy of a death certificate may be considered.

**Forms should be dropped off in SW427C between 9:00 am and 4:00 pm, Monday through Friday.** Upon receipt of the documentation, you will receive an email response from the Course Instructor / Course Coordinator within three business days. The Course Instructor reserves the right to decide what accommodations (if any) will be made for the missed work.

Note that this policy applies only to missed term work (assignments and midterms). Missed final exams are dealt with by the Registrar's Office (<http://www.uts.utoronto.ca/registrar/missing-examination>).

**Failure to adhere to any aspect of this policy may result in a denial of your request for accommodation.**

## **Late Assignments in my course**

*Weekly Applied Science Assignments.* One of the main purposes of the Applied Science Assignment is to help students keep up with their weekly readings. For this reason, the TAs

will NOT accept any late weekly assignments. Please note that technical problems, last-minute errors with the online submission process (allow yourself plenty of time!), and any unfortunate lapses in memory will NOT be entertained as excuses for lateness. One related caveat to this lateness and grading policy is that your total weekly applied science assignment grade will be averaged from your nine best scores out of ten weekly assignment scores. If you encounter illness or emergency, the policies outlined above under **Missed Term Work Due to Medical Illness or Emergency** will apply.

*Mini Research Proposals.* For the research proposals, late assignments will be accepted; however, late assignments will receive a **10% penalty deduction per day (e.g., 2 days late, 20% penalty deducted)**. Please keep in mind that weekends and holidays count as late days. For example, if the assignment were to be due on a Friday but you submitted it late on Sunday, you would receive a 20% penalty deduction. So the clock is ticking the moment you are late and continues until your assignment has been submitted. This late-submission policy applies to both the draft and final mini research proposal. Late mini research proposals are to be submitted on Blackboard. An exception to receiving late penalty points is if you are ill; in that case, your total penalty points will be reduced by 10%. For example, let's say you submit your assignment three days late, but you were ill and obtained a doctor's note; in this case, you'll be penalized 20% rather than 30%). It's important to submit your late assignment as soon as possible on Blackboard. To apply for the 10% reduction in penalty points due to an illness, please submit documentation as described above under **Missed Term Work Due to Medical Illness or Emergency**.

*Missed Term Exam:* Since the final exam is cumulative, if you miss the term exam, the final will be reweighted automatically from 45% to 80%.

*Missed Final Exams:* Professors and TAs are not authorized to negotiate changes to the final exam schedule. Please consult the university calendar for more information.

### **Tutorials (Help Sessions)**

To offer students a chance to meet in smaller groups in a less formal setting with a TA, tutorials will be offered outside of the class meeting time. These tutorials will be scheduled during the semester to help answer questions about the weekly Study Questions and about the rough and final drafts of the Mini Research Proposals. For these tutorials, TAs will provide a brief overview of the research assignment and share their insights into what they look for when marking the assignment. They will answer specific questions you may have about the assignments. They will also review the study questions with you. Whether you ask a question and contribute to the discussion or would like to hear some of the questions your peers raise, these tutorials should be helpful for those wishing to improve their work.

### **Getting Help with Course Materials**

If you are struggling with the course material, you should come to my office hours, send an e-mail to your TA, meet with your TA during tutorial sessions, or set up a special time to meet and discuss the matter. The worst things you can do if you are struggling are to fail to ask for help, stop coming to class, or give up trying. Major questions relating to course content can be addressed in far greater depth in person.

## How to Prepare

As stated earlier, you are responsible for reading and reviewing all of the assigned course materials. Some but not all of the material in the lectures is also in the assigned readings or videos; also, there is material in the readings or videos that is not covered in lectures. Although the organization of the lectures is independent of the readings, nevertheless, the reading assignments and videos are obviously relevant to the material presented in the lecture. It is strongly recommended that you review the assigned course material for a class meeting *before* the class meeting. The study questions are intentionally designed to help you achieve this important goal—which will allow you to learn more during lecture.

PowerPoint slides for the lectures will be posted in advance of the lecture. The slides contain all the important material from the lecture for which you are responsible, and they are made available for your convenience and to enhance your learning of the material. If you try to learn the material only by reading the PowerPoint slides and do not come to (or watch) lecture, you will miss explanations, illustrations, and elaborations that enhance understanding and retention of the course material. Similarly, if you come to (or watch) lecture without having done the reading, you'll be less able to follow the lecture.

A good way to consolidate your knowledge and understanding of the material is to 1) attend and or watch all classes and take notes; 2) print out the PowerPoint slides of the lecture after class and compare your notes with them, so that you can see if you are catching all the important information in your note-taking; and 3) look in the assigned readings for material corresponding to the lecture—keeping in mind that not all material covered in lecture is in the articles (and vice versa).

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## AccessAbility

Students with diverse learning styles and needs are welcome in this course. In particular, if you have a disability/health consideration that may require accommodations, please feel free to approach me and/or the AccessAbility Services Office as soon as possible. I will work with you and AccessAbility Services to ensure you can achieve your learning goals in this course. Enquiries are confidential. The UTSC AccessAbility Services staff (located in S302) are available by appointment to assess specific needs, provide referrals, and arrange appropriate accommodations. They can be reached at (416) 287-7560 or [ability@utsc.utoronto.ca](mailto:ability@utsc.utoronto.ca).

## Academic Integrity

Academic integrity is essential to the pursuit of learning and scholarship in a university and to ensuring that a degree from the University of Toronto is a strong signal of each student's individual academic achievement. As a result, the University treats cases of cheating and plagiarism very seriously. The University of Toronto's Code of Behaviour on Academic Matters

(<http://www.governingcouncil.utoronto.ca/policies/behaveac.htm>) outlines the behaviours that constitute academic dishonesty and the processes for addressing academic offenses.

Potential offenses include, but are not limited to:

*In papers and assignments:*

- Using someone else's ideas or words without appropriate acknowledgement
- Submitting your own work in more than one course without the permission of the instructor
- Making up sources or facts
- Obtaining or providing unauthorized assistance on any assignment

*On tests and exams:*

- Using or possessing unauthorized aids
- Looking at someone else's answers during an exam or test
- Misrepresenting your identity

*In academic work:*

- Falsifying institutional documents or grades
- Falsifying or altering any documentation required by the University, including (but not limited to) doctors' notes

All suspected cases of academic dishonesty will be investigated following procedures outlined in the Code of Behaviour on Academic Matters. If you have questions or concerns about what constitutes appropriate academic behaviour or appropriate research and citation methods, you are expected to seek out additional information on academic integrity from your instructor or from other institutional resources (see

[http://www.utoronto.ca/academicintegrity/resourcesfor\\_students.html](http://www.utoronto.ca/academicintegrity/resourcesfor_students.html)).