**SOCI 588: Biosociology/Biodemography**

**Winter 2021**

**Mondays 8:35 – 10:25 a.m.**

**Zoom course site: TBA**

Prof. Aniruddha (Bobby) Das

E-mail: Please see communication policy below

Office Hours: Tuesdays 4:00-5:30 pm

Zoom site for office hours: https://mcgill.zoom.us/j/95430192087

**Communication policy**

Please use MyCourses for all e-mail communications, keeping the original subject line intact [Winter 2021- SOCI-588-001 - Biosociology/Biodemography]: Append your topic after the colon. E-mails sent directly to the McGill general e-mail address will not be answered. I will make every attempt to answer e-mail in a timely fashion within 36 hours of receipt. Please see me during office hours for urgent issues.

**Overview**

A growing body of sociological and epidemiological literature crosses disciplinary boundaries to examine the interaction of social and biological systems, in influencing life-course trajectories. The approach also has deep roots in social theory, counting Max Scheler and Talcott Parsons as progenitors. It is increasingly apparent that physiological states are deeply rooted in social processes and disparities—from race and socioeconomic “stratification,” to deficits in social-network connections in late life, to toxic neighborhood ecologies. Accordingly, this course will explore linkages between social and biological processes, their influence on health and well being over the life course, and on health disparities. Topics include classical sociological approaches to bio-social processes, sociobiology (reductionist, but population-based), and newer biomedical as well as biodemographic studies on gene-environment, epigenetic, and stress-metabolic/allostatic processes.

**Readings**

Assigned readings are hyperlinked in this course outline. If you are on campus, or otherwise connected to the campus VPN, clicking on a link will take you directly to the reading. When off campus, you will be redirected to the library website, where you’d have to log in to access the article in question.

**Course requirements:**

**1) Weekly Readings:**

It goes without saying that all assigned readings must be completed before class. Participation in classroom discussions will be monitored, and will count toward the final grade.

**2) Participation: 30%**

This is a seminar course, and therefore works differently than a lecture. Specifically, class discussions are absolutely crucial. No discussion, no class. Many of the readings are technical—in either a statistical or/and a biomedical sense. These specifics are not crucial to discussions. Rather, the focus needs to be substantive—on actual (demonstrated) or potential (yet to be explored) linkages between the human body and its social ecology. Students’ contributions to class discussion will be evaluated on the basis of:

*2.1) Discussions*: All students are expected to attend class regularly and participate in class discussions. Such participation will count for **10%** of the final course grade.

*2.2) Reactions*: All students are required to prepare two comments and two discussion questions each week. Comments/questions can either focus exclusively on a specific reading, or compare multiple readings and draw parallels. Reactions should be about **150 words long (total)** and **self-posted** on MyCourses (Discussions > REACTIONS > REACTIONS WEEK X) by **6 PM Sunday at the latest**. All students are expected to read everybody else’s Reaction before class. The first Reaction will be due on **Sunday January 25th**. You will be exempted from posting a Reaction on the week that you are scheduled to moderate the class discussion. Reactions will *not* be graded. Simply by posting your Reactions *on time*, you will get **10%** of the final course grade.

*2.3) Moderation:* Each student will have to participate in moderating class discussions **for at least two weekly sessions**. Specifically, each session will have four moderators. Moderation **does not mean lecturing**. Nor does it involve formal presentations of any kind. It simply entails raising issues and questions, and facilitating the discussion. You will be allowed to use people’s Reactions to lead the discussion. Volunteering is encouraged, with randomization as the backup option. Moderation will count for **10%** of the final course grade.

**3) Final paper: 60%**

All students are expected to write one term paper. Ideally, this would be an empirical paper involving analysis of actual data. Since bio-social datasets are still rare, and access requires an extensive REB process, it is expected that most papers will be reviews. These should be structured and written like a review article that one can read in the *Annual Review of Sociology* (Library website > Journals > Find an eJournal > Annual Review of Sociology). Papers should be a minimum of 20 pages long, double-spaced, plus references.

* Topics should be discussed with me in January.
* The deadline for final topics is February 4.
* Final papers are due April 18.

**4) Paper presentations: 10%**

The last two sessions of the semester will be devoted to **informal** presentations of term papers (10-15 minutes per team). These will be held over Zoom.

These are meant to be unstructured presentations of the essence of your project. They should be purely oral. Please do not use Powerpoint or any other software packages. Important components include: (a) the substance of your overall topic, and its relevance (to science and/or to policy); (b) the portion of the literature on the topic your paper covers, and why; (c) what is known on that topic; (d) what is not known; (e) the implications of the current gaps in knowledge; and (f) how this field could best be pushed forward. Not all of the six will be relevant to your specific topic—use your discretion on what you can and should convey in the time you have.

**Evaluation**

Participation (30%)

* Discussions 10%
* Reactions 10%
* Moderation 10%

Final paper 60% Due April 18

Paper presentation 10% April 12, 15

**Policy on late submissions**

Late submissions of the final paper will incur a penalty of 20% of the assignment’s grade. Each additional 24-hour delay (including over the week-end) will incur an extra 20%. Please e-mail any late submissions through MyCourses to the professor as soon as possible.

**Remote teaching format**

## This is a discussion based seminar. Participation is an essential component. All sessions will be held ‘in person’ over Zoom. Attendance is not optional. Sessions will not be recorded, so as to facilitate participation. Students are not required to have their video on during Zoom sessions.

## “Students’ rights and responsibilities”

### Attendance and participation in class discussions.

You are responsible for all announcements made in class and on MyCourses, as well as for all course materials given out in class. You should also check for new announcements or material on MyCourses at least weekly.

### Policy Concerning the Rights of Students with Disabilities

If you have a disability please contact the instructor to arrange a time to discuss your situation. It would be helpful if you contact the Office for Students with Disabilities at 398-6009 before you do this.

### Remise des travaux en français

Conformément à la Charte des droits de l’étudiant de l’Université McGill, chaque étudiant a le droit de soumettre en français ou en anglais tout travail écrit devant être noté (sauf dans le cas des cours dont l’un des objets est la maîtrise d’une langue).

Les étudiants de ce cours peuvent rédiger tous leurs travaux (incluant les examens) en français, mais doivent pour ce faire obtenir la **permission** **préalable** de la professeure. **Aucune permission rétroactive ne sera accordée.**

### Policy for the Accommodation of Religious Holy Days

1. Students will not be penalized if they cannot write examinations or be otherwise evaluated on their religious holy days where such activities conflict with their religious observances.

2. Students who because of religious commitment cannot meet academic obligations, other than final examinations, on certain holy days are **responsible for informing their instructor, with two weeks’ notice of each conflict**.

3. When the requested accommodation concerns a **final examination, students are responsible for advising their faculty office as soon as possible and not later than the deadline for reporting conflicts.** Additional documentation confirming their religious affiliation may be requested.

### Statement on academic integrity at McGill

“McGill University values academic integrity.  Therefore all students must understand the meaning and consequences of cheating, plagiarism and other academic offences under the Code of Student Conduct and Disciplinary Procedures (see [www.mcgill.ca/integrity](http://www.mcgill.ca/integrity) for more information).”

“L'université McGill attache une haute importance à l’honnêteté académique. Il incombe par conséquent à tous les étudiants de comprendre ce que l'on entend par tricherie, plagiat et autres infractions académiques, ainsi que les conséquences que peuvent avoir de telles actions, selon le Code de conduite de l'étudiant et des procédures disciplinaires (pour de plus amples renseignements, veuillez consulter le site [www.mcgill.ca/integrity](http://www.mcgill.ca/integrity)).”

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## "In the event of extraordinary circumstances beyond the University’s control, the content and/or evaluation scheme in this course is subject to change."

**SCHEDULE**

**WEEK 1: January 11**

**Course overview, expectations**

**WEEK 2: January 18**

**General sensitizing concepts**

1. W. Thomas Boyce, Marla B. Sokolowski, Gene E. Robinson. (2012). [Toward a new biology of social adversity](http://proxy.library.mcgill.ca/login?url=http://dx.doi.org/10.1073/pnas.1121264109). *PNAS 2012 109 (Supplement 2)*, 17143-17148.
2. Clyde Hertzman. (2012). [Putting the concept of biological embedding in historical perspective](http://proxy.library.mcgill.ca/login?url=http://dx.doi.org/10.1073/pnas.1202203109). *PNAS 2012 109 (Supplement 2)*, 17160-17167
3. Jack P. Shonkoff. (2012). [Leveraging the biology of adversity to address the roots of disparities in health and development](http://proxy.library.mcgill.ca/login?url=http://dx.doi.org/10.1073/pnas.1121259109). *PNAS 2012 109 (Supplement 2)*, 17302-17307

**WEEK 3: January 25**

**Sociobiology**

1. Wilson, D.S., Wilson, E.O. [Rethinking the theoretical foundation of sociobiology](http://proxy.library.mcgill.ca/login?url=http://www.jstor.org/stable/10.1086/522809) (2007) *Quarterly Review of Biology, 82 (4)*, pp. 327-348.
2. Lumsden, C.J., Wilson, E.O. [The relation between biological and cultural evolution](http://proxy.library.mcgill.ca/login?url=http://dx.doi.org/10.1016/0140-1750(85)90042-9) (1985) *Journal of Social and Biological Systems,* 8 (4), pp. 343-359.

**WEEK 4: February 1**

**Evolutionary psychology**

1. Buss, D.M. [Evolutionary psychology: A new paradigm for psychological science](http://proxy.library.mcgill.ca/login?url=http://dx.doi.org/10.1207/s15327965pli0601_1) (1995) *Psychological Inquiry, 6 (1),* pp. 1-30.
2. Buss, D.M. [Evolutionary personality psychology](http://proxy.library.mcgill.ca/login?url=http://dx.doi.org/10.1146/annurev.ps.42.020191.002331) (1991) *Annual Review of Psychology, 42 (1)*, pp. 459-491.

**WEEK 5: February 8**

**Hormones**

1. Archer, J. (2006). [Testosterone and human aggression: An evaluation of the challenge hypothesis](http://proxy.library.mcgill.ca/login?url=http://dx.doi.org/10.1016/j.neubiorev.2004.12.007). *Neuroscience and Biobehavioral Reviews, 30,* 319–345.
2. Van Anders, S. M., Steiger, J., & Goldey, K. L. (2015). [Effects of gendered behavior on testosterone in women and men](http://www.pnas.org.proxy3.library.mcgill.ca/content/112/45/13805). *Proceedings of the National Academy of Sciences of the United States of America, 112 (45)*, 13805-13810.
3. Das, Aniruddha. (2017). [Network connections and salivary testosterone among older U.S. women: Social modulation or hormonal causation?](https://academic-oup-com.proxy3.library.mcgill.ca/psychsocgerontology/advance-article/doi/10.1093/geronb/gbx111/4085838?searchresult=1) *Journals of Gerontology: Social Sciences. (Note: this webpage may take a while to load. Patience.)*

**WEEK 6: February 15**

**Social genomics and rGE**

1. Conley, D. (2016). [Socio-genomic research using genome-wide molecular data](https://www-annualreviews-org.proxy3.library.mcgill.ca/doi/10.1146/annurev-soc-081715-074316). *Annual Review of Sociology, 42,* 275-299.
2. Butcher, L. M., & Plomin, R. (2008). [The nature of nurture: A genomewide association scan for family chaos.](https://link-springer-com.proxy3.library.mcgill.ca/article/10.1007/s10519-008-9198-z) *Behavior Genetics, 38,* 361-371.
3. Kong, A., Thorleifsson, G., Frigge, M. L., Vilhjalmsson, B. J., Young, A. I., Thorgeirsson, T. E., et al. (2018). [The nature of nurture: Effects of parental genotypes](http://science.sciencemag.org.proxy3.library.mcgill.ca/content/359/6374/424). *Science, 359,* 424-428.

**WEEK 7: February 22**

**Epigenetics** *(Beware: jargon ahead.)*

1. Pal, S., & Tyler, J. K. (2016). [Epigenetics and aging](https://www-ncbi-nlm-nih-gov.proxy3.library.mcgill.ca/pmc/articles/PMC4966880/). *Science Advances, 2,* art. no. e1600584. *(Note: this webpage may take a while to load. Patience.)*
2. Feinberg, A. P. (2018).[The key role of epigenetics in human disease prevention and mitigation.](https://www-nejm-org.proxy3.library.mcgill.ca/doi/full/10.1056/NEJMra1402513) *New England Journal of Medicine, 378,* 1323-1334.

*Useful primer (optional):*

1. [Biological embedding of experience: A primer on epigenetics](https://www.pnas.org/content/early/2019/10/16/1820838116).

*Fixing epigenetic aging (optional)?*

1. [Reprogramming to recover youthful epigenetic information and restore vision](https://www-nature-com.proxy3.library.mcgill.ca/articles/s41586-020-2975-4).

*Moving beyond “ooh” (optional):*

1. [Can We Really Inherit Trauma?](https://www.nytimes.com/2018/12/10/health/mind-epigenetics-genes.html)

**WEEK 8: March 8**

**Allostatic load**

1. Sterling, P., & Eyer, J. (1981). [Biological basis of stress-related mortality](http://proxy.library.mcgill.ca/login?url=http://dx.doi.org/10.1016/0271-5384(81)90061-2). *Social Science and Medicine - Part E Medical Psychology, 15,* 3-42.
2. Bruce S. McEwen. (2012). [Brain on stress: How the social environment gets under the skin](http://proxy.library.mcgill.ca/login?url=http://dx.doi.org/10.1073/pnas.1121254109). *PNAS 2012 109 (Supplement 2)*, 17180-17185
3. McEwen, B.S., Seeman, T. (1999). [Protective and damaging effects of mediators of stress. Elaborating and testing the concepts of allostasis and allostatic load](http://proxy.library.mcgill.ca/login?url=http://dx.doi.org/10.1111/j.1749-6632.1999.tb08103.x). *Annals of the New York Academy of Sciences 896*, pp. 30-47.

**WEEK 9: March 15**

**Weathering**

1. Geronimus, A. T., Hicken, M., Keene, D., & Bound, J. (2006). “[Weathering” and age patterns of allostatic load scores among blacks and whites in the United States](http://proxy.library.mcgill.ca/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=a9h&AN=20727766&site=ehost-live). *American Journal of Public Health, 96,* 826-833.
2. Geronimus, A.T., Hicken, M.T., Pearson, J.A., Seashols, S.J., Brown, K.L., Cruz, T.D. (2010). [Do US black women experience stress-related accelerated biological aging?: A novel theory and first population-based test of black-white differences in telomere length.](http://proxy.library.mcgill.ca/login?url=http://dx.doi.org/10.1007/s12110-010-9078-0) *Human Nature 21 (1)*, pp. 19-38.

*Contradictory evidence?*

1. Brown, L., Needham, B., & Ailshire, J. (2017). [Telomere length among older U.S. adults: Differences by race/ethnicity, gender, and age.](https://journals-sagepub-com.proxy3.library.mcgill.ca/doi/full/10.1177/0898264316661390) *Journal of Aging and Health, 29,* 1350-1366.
2. Needham, B. L., Adler, N., Gregorich, S., Rehkopf, D., Lin, J., Blackburn, E. H., et al. (2013). [Socioeconomic status, health behavior, and leukocyte telomere length in the National Health and Nutrition Examination Survey, 1999-2002.](https://www-sciencedirect-com.proxy3.library.mcgill.ca/science/article/pii/S0277953613001056) *Social Science and Medicine, 85,* 1-8.

**WEEK 10: March 22**

**Stress, inflammation, morbidity**

1. McDade, T.W. [The ecologies of human immune function](http://proxy.library.mcgill.ca/login?url=http://dx.doi.org/10.1146/annurev.anthro.34.081804.120348) (2005) *Annual Review of Anthropology, 34,* pp. 495-521.
2. Thomas W. McDade. (2012). [Early environments and the ecology of inflammation](http://proxy.library.mcgill.ca/login?url=http://dx.doi.org/10.1073/pnas.1202244109). *PNAS 2012 109 (Supplement 2)*, 17281-17288.
3. Kiecolt-Glaser, J. K., Gouin, J. -P., & Hantsoo, L. (2010). [Close relationships, inflammation, and health](http://proxy.library.mcgill.ca/login?url=http://dx.doi.org/10.1016/j.neubiorev.2009.09.003). *Neuroscience and Biobehavioral Reviews, 35,* 33-38.

*And yet:*

1. Smith, K. J., Au, B., Ollis, L., Schmitz, N. (2018). [The association between C-reactive protein, Interleukin-6 and depression among older adults in the community: A systematic review and meta-analysis.](https://www-sciencedirect-com.proxy3.library.mcgill.ca/science/article/pii/S0531556517306563) *Experimental Gerontology, 102,* 109-132.

**WEEK 11: March 29**

**The “loneliness epidemic” and its health consequences: Hype or reality?**

1. Cacioppo, J. T., & Cacioppo, S. (2018). [Loneliness in the modern age: An evolutionary theory of loneliness (ETL)](https://www-sciencedirect-com.proxy3.library.mcgill.ca/science/article/pii/S0065260118300145). *Advances in Experimental Social Psychology, 58,* 127-197.
2. Das, A. (In press). [Loneliness does (not) have cardiometabolic effects: A longitudinal study of older adults in two countries](https://www-sciencedirect-com.proxy3.library.mcgill.ca/science/article/pii/S0277953618306117). *Social Science & Medicine.*

**APRIL 12: Presentations 1**

**APRIL 15: Presentations 2**