

## **SOCI 588: Biosociology/Biodemography**

**Winter 2016**

**Mondays 8:35 p.m. – 10:25 p.m.**

**Leacock 917**

Prof. Aniruddha (Bobby) Das

E-mail: Please see communication policy below

Office Hours: **Thursday 10-noon**

Office Address: Room 730 Leacock Building

### **Communication policy**

Please use MyCourses for all e-mail communications, keeping the original subject line intact [[Winter 2016 - 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.

### **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** 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 17th**. 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. This grade will be based on diligence and enthusiasm – not performance or “getting it right.”

### **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 1.
- A tentative bibliography (20 references) is due February 22.
- Final papers are due April 11.

### **4) Paper presentations: 10%**

The last two sessions of the semester will be devoted to **informal** presentations of term papers (10 minutes per student). As with session-moderations, grades will be based on diligence and enthusiasm – not performance.

## **Evaluation**

Participation	(30%)	
• Discussions	10%	
• Reactions	10%	
• Moderation	10%	
Final paper	60%	Due April 11
Paper presentation	10%	April 4, 11

**Policy on late submissions**

Late submissions of the grant proposal 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.

## *“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 7**

#### **Course overview, expectations**

### **WEEK 2: January 11**

#### **General sensitizing concepts**

1. Hofstede, G., McCrae, R.R. [Personality and Culture Revisited: Linking Traits and Dimensions of Culture](#) (2004) *Cross-Cultural Research*, 38 (1), pp. 52-88.
2. W. Thomas Boyce, Marla B. Sokolowski, Gene E. Robinson. (2012). [Toward a new biology of social adversity](#). *PNAS 2012 109 (Supplement 2)*, 17143-17148.
3. Clyde Hertzman. (2012). [Putting the concept of biological embedding in historical perspective](#). *PNAS 2012 109 (Supplement 2)*, 17160-17167
4. Jack P. Shonkoff. (2012). [Leveraging the biology of adversity to address the roots of disparities in health and development](#). *PNAS 2012 109 (Supplement 2)*, 17302-17307

### **WEEK 3: January 18**

#### **Sociobiology**

5. Wilson, D.S., Wilson, E.O. [Rethinking the theoretical foundation of sociobiology](#) (2007) *Quarterly Review of Biology*, 82 (4), pp. 327-348.
6. Lumsden, C.J., Wilson, E.O. [The relation between biological and cultural evolution](#) (1985) *Journal of Social and Biological Systems*, 8 (4), pp. 343-359.

### **WEEK 4: January 25**

#### **Evolutionary psychology**

7. Buss, D.M. [Evolutionary psychology: A new paradigm for psychological science](#) (1995) *Psychological Inquiry*, 6 (1), pp. 1-30.
8. Buss, D.M. [Evolutionary personality psychology](#) (1991) *Annual Review of Psychology*, 42 (1), pp. 459-491.

### **WEEK 5: February 1**

#### **Hormones**

9. Wingfield, J. C., Hegner, R. E., Dufty Jr, A. M., & Ball, G. F. (1990). [The “challenge hypothesis”: theoretical implications for patterns of testosterone secretion, mating systems, and breeding strategies](#). *American Naturalist*, 136, 829-846.
10. Archer, J. (2006). [Testosterone and human aggression: An evaluation of the challenge hypothesis](#). *Neuroscience and Biobehavioral Reviews*, 30, 319–345.
11. Van Anders, S. M., Steiger, J., & Goldey, K. L. (2015). [Effects of gendered behavior on testosterone in women and men](#). *Proceedings of the National Academy of Sciences of the United States of America*, 112 (45), 13805-13810.
12. Das, A., & Nairn, S. (2014). Conservative Christianity, partnership, hormones and sex in late life. *Archives of Sexual Behavior*, 43, 1403-1415. ([MyCourses > Content > Das articles > Das & Nairn, 2014](#)).

### **WEEK 6: February 8**

#### **Gene-Environment**

13. Shanahan, M.J., Hofer, S.M. (2005). [Social context in gene-environment interactions: Retrospect and prospect](#). *Journals of Gerontology - Series B Psychological Sciences and Social Sciences* 60 (SPEC. ISS.), pp. 65-76.
14. Schnittker, J. (2008). [Happiness and success: Genes, families, and the psychological effects of socioeconomic position and social support](#). *American Journal of Sociology*, 114 (SUPPL. 1), pp. S233-S259.
15. Shanahan, M.J., Erickson, L.D., Vaisey, S., Smolen, A. [Environmental contingencies and genetic propensities: Social capital, educational continuation, and dopamine receptor gene DRD2](#) (2008) *American Journal of Sociology*, 114 (SUPPL. 1), pp. S260-S286.

**Suggested reading:**

16. Pescosolido, B.A., Perry, B.L., Long, J.S., Martin, J.K., Nurnberger Jr., J.I., Hesseibrock, V. (2008). [Under the influence of genetics: How transdisciplinarity leads us to rethink social pathways to illness](#). *American Journal of Sociology* 114 (SUPPL. 1), pp. S171-S201.

**WEEK 7: February 15**

**Epigenetics**

17. Matthew Suderman, et al. (2012). [Conserved epigenetic sensitivity to early life experience in the rat and human hippocampus](#). *PNAS* 2012 (Supplement 2), 17266-17272
18. Zhang, T.-Y., Meaney, M.J. (2010). [Epigenetics and the environmental regulation of the genome and its function](#). *Annual Review of Psychology*, 61, pp. 439-466.

**WEEK 8: February 22**

**Allostatic load**

19. Sterling, P., & Eyer, J. (1981). [Biological basis of stress-related mortality](#). *Social Science and Medicine - Part E Medical Psychology*, 15, 3-42.
20. Bruce S. McEwen. (2012). [Brain on stress: How the social environment gets under the skin](#). *PNAS* 2012 109 (Supplement 2), 17180-17185
21. McEwen, B.S., Seeman, T. (1999). [Protective and damaging effects of mediators of stress. Elaborating and testing the concepts of allostasis and allostatic load](#). *Annals of the New York Academy of Sciences* 896, pp. 30-47.

**Suggested reading:**

22. McEwen, B. S. (1998). [Protective and damaging effects of stress mediators](#). *The New England Journal of Medicine*, 338, 171-179

**WEEK 9: March 7**

**Weathering**

23. 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](#). *American Journal of Public Health*, 96, 826-833.
24. 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](#). *Human Nature* 21 (1), pp. 19-38.

25. Das, A. (2013). How does race get “under the skin”? Inflammation, weathering, and metabolic problems in late life. *Social Science & Medicine*, 77, 75-83. ([MyCourses](#) > [Content](#) > [Das articles](#) > [Das 2013](#)).

#### **WEEK 10: March 14**

##### **Stress, inflammation, morbidity-1**

26. McDade, T.W. [The ecologies of human immune function](#) (2005) *Annual Review of Anthropology*, 34, pp. 495-521.
27. Thomas W. McDade. (2012). [Early environments and the ecology of inflammation](#). *PNAS 2012 109 (Supplement 2)*, 17281-17288.
28. Danese, A., Caspi, A., Williams, B., Ambler, A., Sugden, K., Mika, J., Werts, H., Freeman, J., Pariante, C.M., Moffitt, T.E., & Arseneault, L. (2011). [Biological embedding of stress through inflammation processes in childhood](#). *Molecular Psychiatry*, 16 (3), pp. 244-246.
29. Danese, A., Moffitt, T.E., Harrington, H., Milne, B.J., Polanczyk, G., Pariante, C.M., Poulton, R., Caspi, A. (2009). [Adverse childhood experiences and adult risk factors for age-related disease: Depression, inflammation, and clustering of metabolic risk markers](#). *Archives of Pediatrics and Adolescent Medicine*, 163 (12), pp. 1135-1143.

#### **WEEK 11: March 21**

##### **Stress, inflammation, morbidity-2**

30. Kiecolt-Glaser, J. K., Gouin, J. -P., & Hantsoo, L. (2010). [Close relationships, inflammation, and health](#). *Neuroscience and Biobehavioral Reviews*, 35, 33-38.
31. McDade, T. W., Hawkey, L. C., and Cacioppo, J. T. (2006). [Psychosocial and behavioral predictors of inflammation in middle-aged and older adults: The Chicago health, aging, and social relations study](#). *Psychosomatic Medicine*, 68, 376-381.
32. Owen, N., Poulton, T., Hay, F. C., Mohamed-Ali, V., & Steptoe, A. (2003). [Socioeconomic status, C-reactive protein, immune factors, and responses to acute mental stress: Special issue on psychological risk factors and immune system involvement in cardiovascular disease](#). *Brain, Behavior, and Immunity*, 17, 286-295.

#### **APRIL 4: Presentations 1**

#### **APRIL 11: Presentations 2**