

ANTH 4DN3, Special Topics in Biological Anthropology: Diet and Nutrition in Biocultural and Bioarchaeological Perspective

Seminar time and location: Wednesdays 2:30-5:20, Rm: TBD

Instructor: Dr. Luseadra McKerracher

Email: mckerrl@mcmaster.ca

Office Hours, CNH 418: Fridays 10:30 to 12:30, or by appt.

Key goals of course:

1. To learn about how human diet and nutrition shapes and is shaped by our biology and culture, both in bioarchaeological (past/prehistoric) contexts and in contemporary ones, using a biocultural lens
2. To develop a firm grounding in biocultural theory, and its strengths and limitations as an explanatory framework
3. To develop skills in evaluating methods, interpretation of data

Approach:

This course is organized thematically around different food types rather than chronologically. Prehistoric, ethnohistoric and contemporary ethnographic and ethnoprimate cases will be used to investigate each theme or topic.

Format:

This is primarily a *seminar course*, structured around *oral presentations and student-raised questions* which will stimulate/facilitate critique and discussion of assigned readings. This seminar-based approach means that there will be no formal lectures, and *students will be expected to keep up with the readings class by class and to contribute their thoughts and questions on them each class*. Details on how seminar participation will be evaluated are offered below and will also be discussed in depth during our first meeting.

Criteria for evaluation:

The following criteria for evaluation govern both written and oral performance for all students. A passing grade (D to C) requires that you demonstrate that you understand the concepts introduced in the readings and in class, and that you can discuss them clearly, with examples. To get marks of B or higher, you will have to cover all the main points and demonstrate a rich understanding of the issues involved in applying a concept. To get excellent marks (A- or higher), in addition to the elements required for B-quality marks, you would have to carefully develop your own ideas on the concepts under discussion.

Assessments:

1. **Seminar participation and preparedness: 10%.** Based on general participation. I will take attendance, but full attendance does not guarantee full marks. When giving general participation and preparedness grades, I will consider the *frequency of your participation*, your *degree of preparation*, and your *ability to address questions*:
2. **Seminar questions: 5%.** Students expected to *prepare 2-3 questions about the assigned reading material*, and to *post these questions on Avenue to Learn by midnight the day before seminar*. Students will also likely be asked to sometimes read their questions aloud during seminar, to stimulate discussion and to encourage participation. ***All students who consistently post questions that clearly relate to the readings on time will receive full marks.***
3. **1-2 page article review: 10%.** Students should read and review one of the four articles listed below. The completed review should be between one and two pages in length. It should include a summary of the article's main argument and the evidence used to support it, information on the context in which the article was published and/or on the discussion it provoked, and a critique concerning its application of theory, quality of evidence, validity of interpretation, and compelling-ness of argumentation. I will be evaluating you on the "four cees" of article review: *content* (accuracy of summary), *context* (understanding of article's background and impact), *critique* (ability to assess strengths and limitations of article's methods, theory, data, interpretation), and *communication* (ability to articulate content, context, and critique).

Cordaine, L et al. (2005) Origins and evolution of the Western diet: Health implications for the 21st Century. *Am J Clin Nat*, 81: 341-354.

Henry, AG (2011) Microfossils in calculus demonstrate consumption of plants and cooked foods in Neanderthal diets (Shanidar III, Iraq; Spy I and II, Belgium). *PNAS*, 108: 486-491.

Meyer-Rochow, VB (2009) Food taboos: Their origins and purpose. *J Ethnobiol Ethnomed*, 5: 18-28.

Nielsen, DE and El-Sohemy, A (2014) Disclosure of genetic information and change in dietary intake: A randomized controlled trial. *PLoS ONE*, <https://doi.org/10.1371/journal.pone.0112665>.

4. **Seminar facilitation/oral presentations: 20%.** Beginning in February (topic/date sign-up to be completed during the first two seminars in January), students will work in singles, pairs, or small groups (depending on class size and students' preferences) to introduce the week's materials and to

launch the weekly discussion/seminar. Specifically, the student(s) in charge of a given week will prepare a short (~10-20 mins) presentation (may use PowerPoint or may simply “chalk talk”), providing a brief synopsis of the required readings, offering a little additional context (we will go over what this means in class), and highlighting at least three important questions related to the material for discussion (can select from other students’ postings on Avenue, or can identify own top questions). I will evaluate your preparedness, familiarity with material, willingness to engage, and your ability to collaborate/share work (if working in a pair or small group). You will NOT be evaluated on your comfort with public speaking or presentation style, although I will provide feedback on those things, if desired.

- 5. Paper proposal and annotated bibliography: 5%.** Students, in consultation with me, will develop an idea (question, thesis, or hypothesis) for their research papers. This idea should be summarized in a ~half page synopsis. After identifying idea, students will read ~8-10 articles/ book chapters related to that idea, which will form the bases of an annotated bibliography. The expectation is that you will provide full bibliographic details for each of your 8-10 sources, as well as a very brief (3-4 sentences) summary of the source’s main points, and a few notes (2-3 sentences) on how the source relates (or doesn’t) to your paper idea. *All completed proposals and annotated bibliographies submitted on time will receive full marks.* I will also provide comments on these assignments that will help you prepare to write your end-of-term research paper.
- 6. Poster presentation: 15%.** Students will have the opportunity to present the main argument(s)/ findings of their research papers as a projected poster image plus 3 min oral synopsis during the final seminar of the semester. Evaluations will focus on familiarity with topic, theory/argument, data/methods, interpretations, implications/impact, and visual appeal. These will need to be submitted as pdfs via Avenue by midnight the night before the seminar, so that I can integrate all submissions into a single presentation.
- 7. Final paper, 15-20 pages including references: 30%.** Students will develop an argument in relation to one of this course’s themes and, based on in-depth secondary source research, present and evaluate evidence relating to that theme. Papers should include a discussion section in which the student evaluates the strengths and weakness of her own argument, situates his position in a larger literature, and thinks though how their argument might relate to a problem or question in the ‘real world’.

Course Notes:

Academic dishonesty consists of misrepresentation by deception or by other fraudulent means and can result in serious consequences, e.g., the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads:

“Grade of F assigned for academic dishonesty”), and/or suspension or expulsion from the university.

It is your responsibility to understand what constitutes academic dishonesty. For information on the various kinds of academic dishonesty please refer to the Academic Integrity Policy, specifically Appendix 3, located at http://www.mcmaster.ca/senate/academic/ac_integrity.htm

The following illustrates only two forms of academic dishonesty:

1. 1) Plagiarism, e.g., the submission of work that is not one’s own for which other credit has been obtained. This includes the improper citation of others’ work (Please see Guidelines for Citation and Referencing found on Avenue)
2. 2) Improper collaboration in group work.

All difficult circumstances that require an extension for assessments (above 29%) or not involving short-term illness (more than 5 days) should be reported to your Faculty office. The penalty for late assignments is 5% per day including weekend days.

Assignments submitted by FAX or e-mail will not be graded.

McMaster Student Absence Form (MSAF) policy

In the event of an absence for medical or other reasons, students should review and follow the Academic Regulation in the Undergraduate Calendar “Requests for Relief for Missed Academic Term Work”. Please note these regulations have changed beginning Spring/Summer 2015.

If you have any questions about the MSAF, please contact your Associate Dean’s office.

http://academiccalendars.romcmaster.ca/content.php?catoid=11&navoid=1698#Requests_for_Relief_for_Missed_Academic_Term_Work

Academic Skills Counselling and Services for Students with Disabilities

Available through the *Student Accessibility Services* (SAS)

Tel: 905-525-9140 x28652

Email: sas@mcmaster.ca

Website: <http://sas.mcmaster.ca>

The instructor and university reserve the right to modify elements of the course during the term. The university may change the dates and deadlines for any or all courses in extreme circumstances. If either type of modification becomes necessary, reasonable notice and communication with the students will be given with explanation and the opportunity to comment on changes. It is the responsibility of the student to check their McMaster email and course websites weekly during the term and to note any changes.

USE OF COMPUTERS: Computer use in the classroom is intended to facilitate learning in that particular lecture or tutorial. At the discretion of the instructor, students using a computer for any other purpose may be required to turn the computer off for the remainder of the lecture or tutorial.

Faculty of social sciences e-mail communication policy

Effective September 1, 2010, it is the policy of the Faculty of Social Sciences that all e-mail communication sent from students to instructors (including TAs), and from students to staff, must originate from the student's own McMaster University e-mail account. This policy protects confidentiality and confirms the identity of the student. It is the student's responsibility to ensure that communication is sent to the university from a McMaster account. If an instructor becomes aware that a communication has come from an alternate address, the instructor may not reply at his or her discretion.

Email Forwarding in MUGSI:

<http://www.mcmaster.ca/uts/support/email/emailforward.html>

*Forwarding will take effect 24-hours after students complete the process at the above link

(Approved at the Faculty of Social Sciences meeting on Tues. May 25, 2010)

AODA

If you require this information in an alternate/accessible format, please contact Marcia Furtado at 905-525-9140 extension 24423 or email furtam1@mcmaster.ca

Seminar date	Theme	Theme, unpacked	Required readings	Assignment(s) due
Jan. 10	Using the “Eat-well plate”	What should our diet of anthropological method and theory look like for this course? How much bioarchaeology vs. how much human evolution vs. how much cultural and medical anthropology do we want on our plates?	None in advance, but we will go through most of the following in class, and these should be read in full before the next class: Dufour (2006) Armelagos (2014)	None
Jan. 17	Fruit and veg 1	Who eats fruits and vegetables now? Who ate fruits and vegetables in the past, and how do we know about this? What are the nutritional properties of fruits and vegetables, and the physiological consequences of eating them at different life stages?	Benzie (2003) *Pages 9-14 of Leach, (1982) *Armelagos et al. (2012) Rice-Evans & Miller (1995)	Sign up for seminar facilitation/oral presentation topic.
Jan. 24	Fruit and veg 2	What is the cultural significance of eating fruits and vegetables in different environments and at different life stages? How do we learn what is good for us, what is poisonous, and everything in between? When is a plant a food, when is it a	*Pages 273-276 of Gerber et al. (1999) *Halberstein (2005) 15:	

		spice/seasoning, and when is it a medicine?	*Page 31 of Fessler (2002) Hladik (1993)	
Jan. 31	Nuts and honey	Who depends on nuts? When did people/hominins start eating nuts? When and how did nut allergies appear? Honey is delicious, but is it nutritious? Nuts, honey, and status.	*Goren-Inbar et al. (2001) *Crittenden (2011) *Boesch et al. (1994) Lee (1973) Regnell (2012)	Racialized maternal medicine conference.
Feb. 7	Meat	Who <i>has</i> to eat meat? Which of our ancestors and predecessors ate a lot of meat (fresh or not) and what might that have meant for our physiological evolution? Who <i>gets</i> to eat meat (i.e. the politics of meat and foodsharing)? How does poor access to meat affect growth, development, and health now and in prehistory? How did meat production impact archaeological environments, and how does industrial meat production impact contemporary environments?	*Pages 44-60 of Speth, (2017) *Hawkes et al. (2001) *Rudy (2012) Lee (1968)	Article review due.

Feb. 14	Fish and shellfish	<p>When and why did humans/hominins begin eating fish and shellfish, and how do we know about this?</p> <p>In what contexts do fish and shellfish play important roles in cultural identity?</p> <p>How do people learn about collecting littoral and marine resources?</p> <p>What are the nutritional properties of fish, and how do they impact our development and health?</p>	<p>*Skip section on molecular structure, p S41-42, but otherwise read: Crawford et al. (2010)</p> <p>*Lepofsky & Caldwell (2013)</p> <p>Bird & Bliege-Bird, R (2002)</p> <p>Richards & Hedges (1999)</p>	Paper proposal and annotated bibliography due
Feb. 21 – BREAK!!!	BREAK!!!	BREAK!!!	BREAK!!!	BREAK!!!
Feb. 28	Insects	<p>Who eats insects now?</p> <p>Who do we think ate insects in prehistory and how can we investigate this?</p> <p>Who is going to eat insects in the future?</p>	<p>*Meyer-Rochow & Changkija (1997)</p> <p>*Akhtar & Isman (2018)</p> <p>van Huis (2018)</p>	
March 7	Grains and legumes	<p>When and where did humans begin eating and later cultivating grains, pulses, and legumes?</p> <p>What implications did grain cultivation</p>	<p>Henry et al. (2014)</p> <p>Fuller et al. (2014)</p>	

		have for demography? When, where, and why did grain cultivation spread?		
March 14	Grains 2	How does eating cereal grains impact our health? What do we know about fermentation of grains, past and present?	Katz & Voigt (1986) Larsen (2014)	
March 21	Dairy	Who can digest dairy? What does ability to digest dairy past infancy mean for demography? What does dairy provide in terms of micronutrients?	*Gerbault et al. (2013) *Holden & Mace (2009) *Brickley et al. (2014)	
March 28	Post-food foods and beverages		*Himmelgreen et al. (2014)	
April 4	Eating well		No readings this week.	Poster presentations. Posters should be submitted in advance as pdfs via avenue by 11:59 pm, April 3.
April 11				Final paper due

Bibliographic details for required and recommended readings (in order by syllabus reading date)

*Dufour, DL (2006) Biocultural approaches in human biology. *Am J Hum Biol*, 18: 1-9.

*Armelagos, GJ (2014) Brain evolution, the determinants of food choice, and the omnivore's dilemma. *Critical Reviews in Food Science and Nutrition*, 54: 1330-1341.

*Benzie, IFF (2003) Evolution of dietary antioxidants. *Comparative Biochemistry and Physiology Part A*, 136: 113-126.

*Pages 9-14 of Leach, HM (1982) On the origins of kitchen gardening in the Ancient Near East. *Garden History*, 10: 1-16.

*Armelagos, G et al. (2012) Analysis of nutritional disease in prehistory: The search for scurvy in antiquity and today. *J of Palaeopathology*, 5: 9-17.

Rice-Evans, C & Miller NJ (1995) Anti-oxidants: The case for fruits and vegetables in the diet. *British Food Journal*, 97: 35-40.

*Pages 273-276 of Gerber, LM et al. (1999) The nutrient-toxin dosage continuum. *Quart Rev Biol*, 74: 273-286.

*Halberstein, R (2005) Medicinal plants: Historical and cross-cultural usage patterns. *Annals of Epidemiology*, 15: 686-699.

*Page 31 of Fessler, D (2002) Reproductive immunosuppression and diet. *Current Anth*, 43: 19-61

Hladik, CM (1993) Fruits of the rainforest and taste perception as a result of evolutionary interactions. In Hladik, CM & Hladik A et al., eds. *Tropical Forests, People and Food: Biocultural interactions and applications to development*.

*Goren-Inbar, N et al. (2001) Nuts, nut-cracking, and pitted stones at Gesher Benot, Ya'aqov, Israel. *PNAS*, 99: 255-260.

*Crittenden, AN (2011) The importance of honey consumption in human evolution. *Food and Foodways*, 19: 257-273.

*Boesch et al. (1994) Is nut-cracking in wild chimpanzees a cultural behaviour? *J Human Evolution*, 26: 325-338.

Lee, RB (1973) Mongongo: The ethnography of a major wild food resource.

Regnell, M (2012) Plant subsistence and environment at the Mesolithic site Tågerup, southern Sweden: new insights on the “Nut Age”. *Vegetation History and Archaeobotany*, 21: 1-16.

*Pages 44-60 of Speth, JD (2017) Putrid meat and fish in the Eurasian Middle and Upper Palaeolithic. *Palaeoanthropology*, 2017: 44-72.

*Hawkes, K et al. (2001) Hadza meat sharing. *Evol Hum Behav*, 22: 113-132.

*Rudy, K (2012) Locavores, feminism and the question of meat. *J of American Culture*, 35: 26-36.

Lee, RB (1968) What hunters do for a living, or how to make out on scarce resources. In *Man the Hunter*, eds, Lee, RB & DeVore, I. Chicago: Aldine Publishing Co, pp. 30-48.

*Skip section on molecular structure, p S41-42, but otherwise read: Crawford, MA et al. (2010) Evidence for the unique function of Docosahexaenoic Acid during the evolution of the modern hominid brain. *Lipids*, 34: S39-347.

*Lepofsky, D & Caldwell, M (2013) Indigenous marine resource management on the northwest coast of North America. *Ecological Processes*, 2: 2-12.

Bird, DW & Bliege-Bird, R (2002) Children on the reef. *Human Nature*, 13: 269-297.

Richards, MP, Hedges REM (1999) Stable Isotope Evidence for Similarities in the Types of Marine Foods Used by Late Mesolithic Humans at Sites Along the Atlantic Coast of Europe. *J of Archaeological Science*, 26: 717-722.

*Meyer-Rochow, VB, & Changkija, S (1997) Use of insects as human food in Papua New Guinea, Australia, and Northeast India: Cross-cultural considerations and cautious conclusions. *Ecology of Food and Nutrition*, 36: 159-185.

- *Akhtar, Y & Isman, MB (2018) Insects as an alternative protein source. In *Proteins in Food Processing*, ed, Yada, RY. Woodhead Publishing, pp 263-288.
- van Huis, A (2018) Insects as human food. In *Ethnozoology: Animals in our Lives*, eds, Alves, RRN & Albuquerque, UP. Academic Press, pp. 195-213.
- Henry, A et al. (2014) Plant foods and the dietary ecology of Neanderthals and early modern humans. *J of Human Evolution*, 69: 44-54.
- Fuller, DQ et al. (2014) Convergent evolution and parallelism in plant domestication revealed by an expanding archaeological record. *PNAS*, 111: 6147-6152.
- Katz, SH and Voigt MM (1986) Bread and beer: The early use of cereals in the human diet. *Penn Museum Magazine*, 28: 23-34.
- Larsen, CS (2014) Foraging to farming transition: Impacts, trends and variation. *Encyclopedia of Global Archaeology*, pp. 2818-2824.
- *Gerbault, P et al. (2013) How long have adult humans been consuming milk? *Life*, 65: 983-990.
- *Holden, C and Mace, R (2009) Phylogenetic analysis of evolution of lactose digestion in adults. *Hum Biol*, 81: 597-619.
- *Brickley, M et al. (2014) Biocultural perspectives of vitamin D deficiency in the past. *J of Anthropological Archaeology*, 36: 48-59.
- *Himmelgreen, DA et al. (2014) Using a biocultural approach to examine migration/globalization, diet quality, and energy balance. *Physiology & Behaviour*, 134: 76-85.