

UNIVERSITY OF BRITISH COLUMBIA

HUNU 500 - Fall 2014

Research Methods in Human Nutrition

Course Coordinator:

Dr. Gwen Chapman
246-2205 East Mall (Food, Nutrition & Health Building)
Phone: 604-822-6874
Email: gwen.chapman@ubc.ca
Office Hours: by appointment

Seminars: Monday 9-noon; Room FNH 20

Learning Objectives:

Upon completion of HUNU 500, students will be able to:

1. Describe how knowledge in nutrition is generated through the research process.
2. Articulate the principles of ethical research practice, including use of human subjects and animal models.
3. Describe the characteristics, strengths and weaknesses of a variety of research designs used in nutrition research, including experimental, quasi-experimental, epidemiological, descriptive, and qualitative approaches.
4. Identify appropriate methods of inquiry to investigate a variety of researchable questions.
5. Discuss principles associated with sampling, data collection, data management, and data analysis, including methods for establishing reliability and validity and minimizing systematic error.
6. Evaluate and critique published scientific literature in relation to design, measurement instruments, analysis and conclusions.
7. Develop a sound, detailed research proposal.

Academic Honesty

Academic honesty is a core value of scholarship. Cheating and plagiarism (including both presenting the work of others as your own and self-plagiarism), are serious academic offences that are taken very seriously in Land & Food Systems. By registering for courses at UBC, students have initiated a contract with the university that they will abide by the rules of the institution. It is the student's responsibility to inform themselves of the University regulations.

Definitions of Academic Misconduct can be found on the following website:

<http://www.calendar.ubc.ca/vancouver/index.cfm?tree=3,54,111,959#10894>

If you are unsure of whether you are properly citing references, please ask your instructor for clarification before the assignment is submitted. Improper citation will result in academic discipline.

Course Format:

This course is set up to encourage student participation. Most seminars will begin with the presentation of didactic lecture material, followed by class discussion. To be able to participate in the discussion, students will need to come to class having read the required readings for the week. Course information and updates can be accessed through the HUNU 500 **Connect** site (www.elearning.ubc.ca).

Required Readings are available on the course Connect site (see Course Schedule on pages 3-6 for details):

Evaluation:

Completion of TCPS2 CORE tutorial	5
Letter of Intent, due Sept 29	6
Journal Article review assignment, due Oct 20	12
In-class exam, Nov 10	15
Research Proposal presentation, Nov 24	10
Research Proposal, due Dec 10, 4 pm	40
Class Participation	<u>12</u>
Total:	100

- The TCPS2 Course on Research Ethics includes 8 modules that cover areas relating to research ethics and review boards. When all 8 modules have been completed, you can print out a certificate of completion. The 5 marks will be awarded when you provide a copy of this certificate to the course instructor.
- Instructions and marking criteria for Letter of Intent, Journal Article review assignment, Research Proposal presentation and Research Proposal are posted on the course website.
- The in-class exam will be a 1 hour open-book exam where you are provided with a summary of a published research study, including one or more Tables of results. Exam questions will test your understanding of the study design and interpretation of findings. A sample exam is posted on Connect.
- Class participation mark will be based on attendance, evidence that assigned readings are regularly read before class, participation in on-line and in-class discussions and evidence of abilities to think critically and creatively. 6 of the 12 marks will be based on self-evaluation.

Pass or Fail Grades:

- Note that Faculty of Graduate Studies regulations state that no more than six credits of Pass standing (60-67%) may be credited toward a master's program. For all other courses, a minimum of 68% must be obtained. Failed courses cannot be credited toward a graduate program.

Course Content

Date	Topics/Concepts to be addressed	Readings
Sept 8	<p><i>Introduction to Research:</i></p> <ul style="list-style-type: none"> • What is science? What is research? Why do we conduct research? <p><i>The Research Process:</i></p> <ul style="list-style-type: none"> • Developing research questions & hypotheses • Searching, reviewing and critically evaluating the literature • Overview of types of research designs and data collection methods 	<p>On-line Module: <i>Research Designs, Sections 1-3</i></p> <p>Boushey C, Harris J, Bruemmer B, Archer S, Van Horn L. Publishing nutrition research: A review of study design, statistical analysis, and other key elements of manuscript preparation, Part 1. J Am Diet Assoc. 2006;106:89-96.</p>
Sept 10 (Wed)	<p><i>UBC Library Database searching (10:30 – noon)</i> (Katherine Miller)</p>	
Sept 15	<p><i>Developing Research Proposals:</i></p> <ul style="list-style-type: none"> • Writing research proposal • Funding sources • Ethical research practice with human subjects and animal models • UBC ethical review process 	<p>TCPS2 tutorial: http://www.pre.ethics.gc.ca/eng/education/tutorial-didacticiel/</p> <p>Mosby I. Administering colonial science: Nutrition research and human biomedical experimentation in Aboriginal communities and residential schools, 1942-1952. <i>Histoire sociale/Social history</i>. 46(91):145-172, 2013.</p> <p>Neumark-Sztainer D. How to write proposals and obtain funding. In Monsen ER & Van Horn L (Eds). <i>Research: Successful Approaches</i>. 3rd Ed. Chicago: American Dietetic Association. 2008:39-49.</p>

Sept 22	<p><i>Concepts of Measurement:</i></p> <ul style="list-style-type: none"> • Reliability, validity, measurement error • Collecting dietary data 	<p>On-line Module: <i>Measurement</i></p> <p>Gleason PM, Harris JE, Sheean PM, Boushey CJ, Bruemmer B. Publishing nutrition research: Validity, reliability, and diagnostic test assessment in nutrition-related research. <i>J Am Diet Assoc.</i> 2010;110: 409-419.</p> <p>Johnson RK, Yon BA, Hankin JH. Dietary assessment and validation. In Monsen ER & Van Horn L (Eds). <i>Research: Successful Approaches.</i> 3rd Ed. Chicago: American Dietetic Association. 2008:187-204.</p> <p>Burrows TL, RJ Martin, CE Collins. A Systematic Review of the Validity of Dietary Assessment Methods in Children when Compared with the Method of Doubly Labeled Water. <i>J Am Diet Assoc.</i> 2010;110:1501-1510.</p>
Sept 29	<p><i>Descriptive and Survey Research:</i></p> <ul style="list-style-type: none"> • Characteristics, strengths, limitations • Sampling issues • Measurement instruments • Data collection and analysis <p>Letter of Intent Due</p>	<p>Millen BE, Vernarelli JA. Survey research and questionnaire design. In Monsen ER & Van Horn L (Eds). <i>Research: Successful Approaches.</i> 3rd Ed. Chicago: American Dietetic Association. 2008:167-186.</p> <p>Birnbaum AS, Lytle LA, Murray DM, Story M, Perry CL, Boutelle KN. Survey Development for Assessing Correlates of Young Adolescents' Eating. <i>Am J Health Behav.</i> 2002;26(4):284-295</p> <p>Yuan W, Kakinami L, Gray-Donald K, Czernichow S, Lambert M, Paradis G. Influence of Dairy Product Consumption on Children's Blood Pressure: Results from the QUALITY Cohort. <i>J Acad Nutr Diet.</i> 2013;113(7):936-941.</p>
Oct 6	<p><i>Experimental and Quasi-Experimental Designs</i> (Instructor: Yvonne Lamers):</p> <ul style="list-style-type: none"> • Sampling • Experimental manipulation, control, randomization • Nutrition Research with Biomarkers 	<p>On-line Module: <i>Research Designs, Sections 4-7</i></p> <p>Journal article(s): TBA</p>

Oct 15 (WED)	<p><i>Studying Diet/Gene Interactions Nutrition Research with Animal Models</i> (Instructor: Angela Devlin)</p>	<p>Nussbaum RL, McInnes RR, Willard HF, Thompson MW. Thompson and Thompson Genetics in Medicine (Chapters 2 and 3). Philadelphia: Saunders/Elsevier, 2007.</p> <p>Journal article(s): TBA</p>
Oct 20	<p><i>Experimental Designs & Quantitative Analysis</i> (Instructor: Tim Green):</p> <ul style="list-style-type: none"> • Descriptive statistics • Statistical inference • Type I and Type II error; • t-test; ANOVA, correlation • Power analysis <p>Journal article review due</p>	<p>On-line Module: <i>Quantitative Analysis</i></p> <p>Boushey C, Harris J, Bruemmer B, Archer S. Publishing nutrition research: A review of sampling, sample size, statistical analysis, and other key elements of manuscript preparation, Part 2. J Am Diet Assoc. 2008;108:679-688.</p> <p>Harris J, Boushey C, Bruemmer B, Archer S. Publishing nutrition research: A review of nonparametric methods, Part 3. J Am Diet Assoc. 2008;108:1488-1496.</p> <p>Journal article(s): TBA</p>
Oct 27	<p><i>Epidemiological Research Designs</i> (Instructor: Tim Green):</p> <ul style="list-style-type: none"> • Case control and cohort designs (characteristics, strengths, limitations, interpretation; measures of association) • Using nutritional biomarkers 	<p>Bruemmer B, Harris J, Gleason P, Boushey C, Sheean P, Van Horn L. Publishing nutrition research: A review of epidemiological methods. J Am Diet Assoc. 2009;109:1728-1737.</p> <p>Sheean P, Bruemmer B, Gleason P, Harris J, Boushey C, Van Horn L. Publishing nutrition research: A review of multivariate techniques—Part 1. J Am Diet Assoc. 2011;111:103-110.</p> <p>Journal article(s): TBA</p>
Nov 3	<p><i>Qualitative Research I:</i></p> <ul style="list-style-type: none"> • Interpretive research paradigms • Characteristics of qualitative research • Designing and conducting qualitative studies • Assessing the quality of qualitative studies 	<p>Harris J, Gleason P, Sheean P, Boushey C, Beto J, Bruemmer B. An introduction to qualitative research for food and nutrition professionals. J Am Diet Assoc. 2009;109:80-90.</p> <p>Sullivan GM, Sargeant J. Qualities of Qualitative Research: Part I. J Grad Med Educ. 2011; 3(4):449-452.</p> <p>Sargeant J. Qualitative Research: Part II. J Grad Med Educ. 2012; 4(1):1-3.</p> <p>Olsen MF, Tesfaye M, Kaestel P, Friis H, Holm L. Use, perceptions, and acceptability of a ready-to-eat supplementary food among adult HIV patients initiating retroviral treatment: a qualitative study in Ethiopia. Patient Preference and Adherence. 2013; 7:481-488.</p>

Nov 10	In-Class Exam (9-10:30) <i>Qualitative Research II:</i> <ul style="list-style-type: none"> Analyzing qualitative data 	<p>McPhail D, Chapman GE, Beagan BL. "Too much of that stuff can't be good": Canadian teens, morality, and fast food consumption. <i>Soc Sci Med.</i> 2011;73:301-307.</p> <p>Fram MS, Frongillo EA, Jones SJ, Williams RC, Burke MP, DeLoach KP, Blake CE. Children Are Aware of Food Insecurity and Take Responsibility for Managing Food Resources. <i>J Nutr.</i> 2011;141:1114–1119.</p>
Nov 17	<i>Weighing the Research Evidence</i> <i>Communicating Research Findings:</i> Poster presentations, oral presentations, writing for publication	<p>On-line Module: <i>Dissemination</i></p> <p>Harris JE. Research publications: The perspectives of the writer, reviewer, and reader. In Monsen ER & Van Horn L (Eds). <i>Research:Successful Approaches.</i> 3rd Ed. Chicago: American Dietetic Association. 2008:429-438.</p> <p>World Cancer Research Fund / American Institute for Cancer Research. Summary, and Chapter 3: Judging the evidence. In <i>Food, Nutrition, Physical Activity, and the Prevention of Cancer: a Global Perspective.</i> Washington DC: AICR, 2007</p>
Nov 24	<i>Proposal Presentations</i> Class Participation Self-Evaluation Due	
Dec 8	Research Proposals due 4:00 pm	