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BMED 607.01: Neuroepidemiology

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PUB H 595; BMED 607
Neuroepidemiology
3 credit hours
Fall 2006

Instructors:

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Format: Online

For purposes of assignments and class activities, the week starts on Monday, 12:01 a.m. and ends on Sunday at Midnight

Office Hours: Fridays 1-3pm

Drs. Noonan and Molgaard will be available on the phone, via e-mail, and in their offices during office hours. Drs. Noonan and Molgaard will post exceptions as a class announcement on Blackboard.

Prerequisites: Introduction to Epidemiology (PUBH 510) for public health graduate majors. Others by permission of instructor.

COURSE DESCRIPTION

This online course supported by Blackboard will provide public health and biomedical science graduate students an overview of methods for epidemiologic, clinical and behavioral research on neurologic disorders. Simultaneously, fundamental considerations of the history, nature and scope of neuroepidemiology as a field in the past, present and future will be illustrated by seminal case and field studies, the use of natural experiments, and a focus on geographic isolates in international neuroepidemiology.

COURSE OBJECTIVES

At the end of the course the student should be able to:

- 1) Describe what epidemiology is and how it relates to other public health disciplines
- 2) Describe fundamental concepts associated with the study of neurological diseases, including study design, measures of effect, sources of bias, and analysis.
- 3) Describe common approaches for the study of genetic factor associated with neurological diseases.
- 4) Understand past and current approaches for the study of specific neurological diseases/conditions, including
 - A. Alzheimer's disease
 - B. Parkinson's disease
 - C. Amyotrophic lateral sclerosis

- D. Multiple sclerosis
- E. Stroke
- F. Brain and spinal cord injury
- G. Epilepsy
- H. Neurodevelopmental disabilities

PUBLIC HEALTH COMPETENCIES

This course provides students with knowledge, skills, and abilities in the following public health competency areas:

[This section will list the competencies when the UM Public Health Program adopts a specific competency set.]

COURSE FORMAT

This course will be delivered online with support from UOnline. Readings and assignments designed to develop applied skills will form the basis for review and discussion during the weekly class postings on the discussion board. A self-study format (e.g., reading assignments, PowerPoint presentations, and web links) will be used to present key points, however, the emphasis will be on discussion and application of the course material in assignments.

Preparatory Tutorials

Since you are enrolled in an online public health class, you are also automatically enrolled the UM on-line resource class called "*UM Resources for Public Health Students.*" The course contains two non-credit tutorials, one on taking an on-line class and one about on-line library resources. If this class does not appear in your list of "My Courses" in the UOnline Blackboard system, contact the instructor immediately.

Blackboard Tutor. If you have not taken a course supported by Blackboard, completion of the Blackboard Tutor is or taking an equivalent course on-campus is **required** before the end of the first week of class (if you have not already taken the course).

Library Tutor. Completion of the library tutorial or taking an equivalent on-campus course is **required** before the end of the second week of class (if you have not already taken the course). To access the UM's Mansfield Library resources from off-campus, students will be required to enter their SCAUID and password. This is the same ID and password that you use to login to Blackboard and use for your official UM e-mail address. This is the same account used for campus wireless accounts and students' Cue1 email. Creation of a separate library remote access account will no longer be necessary. For students this is the "first initial" + "last initial" + six digit unique number sign-on name, e.g. "jd123456". Students and employees can now look up their SCAUID on **CyberBear**" (<http://weblib.lib.umt.edu/remote.html>) If you need further assistance with library resources, please contact Samantha Hines, the library's distance education coordinator and social sciences librarian at Samantha.Hines@umontana.edu or 406-243-4558.

Additional Library Resources

Some assignments in this class may require library resources. The library is now easily accessible from blackboard via the “Mansfield Library” tab at the top of the course screen.

Services that the library can provide for you and your students include:

- * Online (digitized) reserve readings
- * Interlibrary Loan and Document Delivery
- * Remote access to online academic research resources
- * Subject guides for online materials
- * Library and information literacy instruction
- * Research assistance via toll-free phone number, chat, and email
- * An online research planner

If you have further library related needs the main library website is available at <http://www.lib.umt.edu> & the distance education library services website is available at http://www.lib.umt.edu/services/distance_education.htm --

Discussion Questions

For this purpose each week (starting in week 5) one or more students will be asked to identify and assign an article on the week’s topic for the class to read in addition to the reading materials assigned by the instructors. These articles will need to be posted as an attachment on the discussion board by ***Thursday at midnight the week prior to your assigned week***. This student will also be responsible for providing a discussion question about their selected reading by midnight ***on Monday of their assigned week*** as well as for leading the week’s discussion on the reading assignments. The instructors will assign students to specific weeks during the first week of class.

Weekly postings to the discussion board

All students are required to post a response to each discussion question posted every week by Friday, midnight Mountain Standard Time of the assigned week. This format necessitates completion of readings as well as participation in the discussion board every week during the week. Class participation constitutes 50% of the grade, and both discussion questions and responses will be graded on a 1-3 pt scale. A score of 1 represents an inadequate response. A score of 2 represents an adequate response, and a score of 3 represents an excellent response.

Semester Paper

A semester paper will constitute 30% of the grade. Students must have their paper topic submitted for approval by the instructors by Friday, March 16th. The paper will need to be a literature review of a current Epidemiology issue, and it must include a summary of the issue that includes suggestions for future research. The semester paper is due May 11th (the Friday before finals week).

Exams

One midterm will be administered through the Blackboard system. The exam will be “open book” and will cover the discussion and reading assignments in the course. The exam will be a 2 hour timed exam made up of both multiple choice and essay questions. The exam will be given during week 9. Further test details will be provided as the semester progresses.

COURSE ASSESSMENT

1. Class participation (discussion board), article selection, and discussion leadership for assigned week - 50%
2. Midterm exam - 20%
3. Semester paper - 30%

This course will use the traditional letter grade option without the use of pluses or minuses. Therefore, final grades will consist of the following: A, B, C, D, F. Grades will be calculated based on the standard formula (90-100% = A; 80-89% = B; 70-79% = C; 60-69% = D; 59% and below = F).

BLACKBOARD COURSE PROCEDURES AND EXPECTATIONS

Blackboard will be used in this class and online activities will be required throughout the semester.

Change your password

You must change the password you use to access Blackboard every 180 days. To avoid being locked out of blackboard, change your password the first and last week of class. It is much easier to change your password than re-activate it after it has expired. Change your password using this link: <http://grizmail.umt.edu/password.htm>

Password Management (from <http://www.umt.edu/it/scauid/passwordmgmt.htm> accessed 1-13-07)

Online SCAUID password management is available to all University faculty, staff, and students through the GrizMail web page or by logging into the UM portal. Features include:

- Changing the SCAUID Password (must change at least every 180 days)
- Establishing Online Password Credentials (security question/answer)
- Resetting the SCAUID Password (if a password is forgotten or expired)

Changing the SCAUID Password

Users may change their passwords online at grizmail.umt.edu or portal.umt.edu. This should be done every 180 days as passwords will expire for security purposes. As an additional security measure, users should create complex passwords including a combination of alpha, numeric and symbolic characters (minimum of six characters).

Establishing Online Password Credentials

Changing the SCAUID password online **does not** require verification of the user's identity.

However, resetting (see next step) the SCAUID password **does**. This process is accomplished by the use of a security question. Users must select and answer a security question through

grizmail.umt.edu or portal.umt.edu. The on-line password reset feature is available after this action has been completed. Otherwise password resets are initiated at IT Central in Social Science 120. Users will be asked to provide a valid University ID card for identification purposes. The process may take up to four business hours. Please note that after three attempts to login, SCAUID accounts becomes disabled for 15 minutes.

Resetting the SCAUID Password

When users forget their passwords or their passwords have expired, they will no longer be able to login to SCAUID-accessible services until the passwords are reset. If they have established online password credentials, the online password reset feature is available to them. Users may reset their passwords at grizmail.umt.edu or portal.umt.edu.

Announcements

Class announcements will be posted by the instructor. Blackboard system administrators will sometimes post announcements about the Blackboard system.

Communication

Communication will take place using e-mail, discussion boards and the virtual classroom. E-mail should be used for “private” communication with the instructor or other students. Any questions regarding grades or communication about more personal issues should be handled via email.

Important: Please put “PUBH EPI” in the subject line for e-mail communication with the instructor. This helps the instructor in organizing and responding to e-mail communications.

Discussion boards are appropriate for questions or discussions that would normally occur in the classroom. Remember that the discussion board is public and your classmates can read what you post there!

Course Materials

Assignments, reading notes, and a variety of readings will be posted on Blackboard.

Submitting Assignments Electronically

All assignments and papers will be submitted electronically through the Assignments option within Blackboard.

Important:

- Assignments are due at midnight, Mountain Time.
- Save your completed assignments as a Word document with the file name YourLastName_AssignmentNumber (e.g. Smith_assignment1.doc). If turning in a section of your semester paper you should use the file name YourLastName_SectionNumber (e.g., Smith_Section1).
- Make sure that your name, the date, and the assignment number are also included at the top of your completed assignment.
- Submit your assignment through the Assignments area on Blackboard. Assignments submitted by email will not be graded.

If you need assistance with viewing or submitting your assignments, please call the Help Desk at 406-243-4357 or refer to the UOnline student resources at <http://umonline.umt.edu/studentsupport/default.htm>.

Logging In

You are expected to log in every MWF to read current announcements that have been posted. You may do this at any time of day. The Instructors will generally answer e-mails, respond to discussions, etc. during traditional work hours (M-F 9:00 a.m. - 5 p.m.).

REQUIRED TEXTS

Nelson LM, Tanner CM, Van Den Eeden SK, McGuire VM (Eds). Neuroepidemiology: From Principles to Practice. Oxford University Press: New York, 2004. ISBN# 0-19-513379-X

Sacks, O. The Island of the Color Blind and Cycad Island. Vintage Books: New York, 1998. ISBN 0-375-70073-0

REQUIRED ADDITIONAL READINGS

Additional readings or web assignments will be posted as necessary.

ADDITIONAL NOTES

In accordance with University of Montana's mission to provide equal educational opportunities for all students, necessary accommodations for students with disabilities will be made whenever possible. If you require accommodations, please provide written information regarding your disability from the Disability Services as soon as possible so that accommodations can be made. This syllabus is subject to change by the instructor. Any changes will be announced in the announcement section of Blackboard.

Plagiarism Warning

All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University. All students need to be familiar with the Student Conduct Code. The Code is available for review online at <http://www.umt.edu/SA/VPSA/index.cfm/page/1321>.

Plagiarism is the representing of another's work as one's own. It is a particularly intolerable offense in the academic community and is strictly forbidden. Students who plagiarize may fail the course and may be remanded to Academic Court for possible suspension or expulsion. (See UM Student Conduct Code).

Students must always be very careful to acknowledge any kind of borrowing that is included in their work. This means not only borrowed wording but also ideas. Acknowledgment of whatever is not one's own original work is the proper and honest use of sources. Failure to acknowledge whatever is not one's own original work is plagiarism. (Source: <http://www2.umt.edu/catalog/acpolpro.htm>)

COURSE SCHEDULE

Week	Topic(s)	Assigned Readings & Discussions
Week 1 1/22-1/28	Neuroepidemiology: Fundamental Considerations and Shifting Paradigms. Special Topics: Kuru and Bovine Spongiform Encephalopathy	<p>(1) Molgaard, C. Preface and An Introduction to Neuroepidemiology. (1993). In: Neuroepidemiology: theory and method, (ed. C. Molgaard), pp. xxi and 1-20. Academic Press, San Diego.</p> <p>(2) Text: Chapter 1 of Nelson et. al</p> <p>(3) Washington Post Article on Nobel Prize winner D. Carleton Gadjusek: J. Gillis and J. Spinner, A Life of Rare Purpose and Passion. Washington Post, Friday April 26, 1996.</p> <p>(4) Molgaard, C. and Golbeck, A. (1992). Mad Cows and Englishman: bovine spongiform encephalopathy (BSE). Neuroepidemiology, 9, 285-286.</p> <p>(5) C. Molgaard, A. Golbeck, and L. Frazier. Neurologic Diseases. (2001). In: Teaching Epidemiology: a guide for teachers in epidemiology, public health and clinical medicine, (eds. J. Olsen, R. Saracci, and D. Trichopoulos), pp. 229-236. Oxford, Oxford University Press.</p>
Week 2 1/29-2/4	Study Design, Measures of Effect, and Sources of Bias; Special Topic: ALS-PDC on Guam	<p>(1) Text: Chapter 2 of Nelson et. al</p> <p>(2) Reed DM and Brody JA. Amyotrophic lateral sclerosis and Parkinsonism-dementia on Guam, 1945-1972. Am J Epidemiol 1975;101:287-301.</p> <p>(3) Sacks, O. (1998). The Island of the Colorblind and Cycad Island. Vintage Books, New York.</p> <p>(4) Discussion of an epidemiologic migration study in the Pacific. The California Chamorro Cohort Project (CCCP). Discussion will be lead by Dr. Molgaard.</p>
Week 3 2/5-2/11	Measurement and Analysis; Special Topics: Multiple sclerosis in the Faroe Islands (descriptive study)	<p>(1) Text: Chapter 3 of Nelson et. al</p> <p>(2) Kurtzke JF and Heltberg A. Multiple sclerosis in the Faroe Islands: an epitome. J Clin Epidemiol 2001;54:1-22.</p>

	and Amyotrophic lateral sclerosis (analytical study)	<p>(3) Weisskopf MG, O'Reilly EJ, McCullough ML, Calle EE, Thun MJ, Cudkowicz M, Ascherio A. Prospective study of military service and mortality from ALS. <i>Neurology</i> 2005;64:32-37.</p> <p>(4) Kurtzke J and Hyllested K. Validity of the Epidemics of Multiple Sclerosis in the Faeroe Islands. <i>Neuroepidemiology</i> 1988; 7:190-227.</p>
Week 4 2/12-2/18	Genetic Epidemiology for Neurologic Disease; Special Topics: Multiple sclerosis in Shetland Islands and ALS-PDC in Guam	<p>(1) Text: Chapter 4 of Nelson et. al</p> <p>(2) Roberts DF, Roberts MJ, Poskanzer DC. Genetic analysis of multiple sclerosis in Shetland. <i>J Epidemiol Community Health.</i> 1983 Dec;37(4):281-5.</p> <p>(3) Chen X, Xia Y, Gresham LS, Molgaard CA, Thomas RG, Galasko D, Wiederholt WC, Saitoh T. ApoE and CYP2D6 polymorphism with and without parkinsonism-dementia complex in the people of Chamorro, Guam. <i>Neurology.</i> 1996 Sep;47(3):779-84.</p>
Week 5 2/19-2/25	Alzheimer's Disease and Vascular Dementia	<p>(1) Text: Chapter 5 of Nelson et. al</p> <p>(2) Snowdon DA, Kemper SJ, Mortimer JA, Greiner LH, Wekstein DR, Markesbery WR. Linguistic ability in early life and cognitive function and Alzheimer's disease in late life. Findings from the Nun Study. <i>JAMA.</i> 1996 Feb 21;275(7):528-32.</p> <p>(3) <i>To be selected by student.</i></p>
Week 6 2/26-3/4	Parkinson's Disease and other Movement Disorders	<p>(1) Text: Chapter 6 of Nelson et. al</p> <p>(2) Langston JW, Ballard P, Tetrud JW, Irwin I. Chronic Parkinsonism in humans due to a product of meperidine-analog synthesis. <i>Science</i> 1983;219:979-78.</p> <p>(3) <i>To be selected by student.</i></p>
Week 7 3/5-3/11	Amyotrophic Lateral Sclerosis	<p>(1) Text: Chapter 7 of Nelson et. al</p> <p>(2) McGuire V, Longstreth WT, Nelson LM, Koepsell TD, Checkoway H, Morgan MS, van Belle G. Occupational exposures and amyotrophic lateral sclerosis: a population-based case-control study. <i>Am J Epidemiol</i> 1997;145:1076-88.</p>

		<i>(3) To be selected by student.</i>
Week 8 3/12-3/18	Multiple Sclerosis	(1) Text: Chapter 8 of Nelson et. al (2) Kurland L, Molgaard C, Kurland E, Wiederholt W, Kirkpatrick J. Swine flu vaccine and multiple sclerosis. JAMA 1984; 251:2672-2675. (3) To be selected by student.
Week 9 3/19-3/25	Stroke	(1) Text: Chapter 9 (2) Anderson C and Jamrozik K. The epidemiology of stroke-related disability. 1993. In Neuroepidemiology: theory and method, (Ed.C. Molgaard), pp. 90-108. Academic Press, San Diego. (3) <i>To be selected by student.</i>
Spring Vacation 3/26-3/30		No Assignments This Week
Week 10 4/2-4/8	Brain and Spinal Cord Injury	(1) Text: Chapter 10 (2) Kraus JF, Morgenstern H, Fife D, Conroy C, Nourjah P. Blood alcohol tests, prevalence of involvement, and outcomes following brain injury. Am J Public Health. 1989 Mar;79(3):294-9. (3) <i>To be selected by student.</i>
Week 11 4/9-4/15	Disability; Guest Lecturer	<i>(1) To be announced.</i>
Week 12 4/16-4/22	Peripheral Neuropathy	(1) Text: Chapter 11 (2) Guillain-Barre Syndrome Study Group. Guillain-Barre syndrome: an Italian multicentre case-control study. Guillain-Barre Syndrome Study Group. Neurol Sci. 2000 Aug;21(4):229-34. (3) Discussion of Guillian-Barre and the Swine flu vaccine litigation lead by Dr. Molgaard (4) <i>To be selected by student.</i>

<p>Week 13 4/23-4/29</p>	<p>Epilepsy; Guest Lecturers: Dr. Angelia Paschal and Dr. Suzanne Hawley of the University of Kansas School of Medicine will present the Kansas-Columbia Epilepsy Project</p>	<p>(1) Text: Chapter 12</p> <p>(2) Paschal A, Ablah E, Wetta-Hall R, Molgaard C, Liow K. Stigma and safe havens; a medical sociological perspective on African-American female epilepsy patients. <i>Epilepsy and Behavior</i> 2005; 7:106-115.</p> <p>(3) Paschal A, Hawley S, Sly J, Molgaard C, Liow K, Sadler T. Epilepsy and community-based participatory research: some issues of social capital and awareness. In <i>New Research on Epilepsy and Behavior</i>, (F. Columbus, ed.) In Press. Hauppauge, NY; Nova Science Publishers</p> <p>(4) Paschal A, Liow K, Hawley S, Molgaard C, Sadler T. Overcoming stigma through education and awareness: using a community participatory approach with epilepsy patients. Poster presentation. American Epilepsy Society's Annual Conference. December 3, 2006. San Diego, CA</p>
<p>Week 14 4/30-5/6</p>	<p>Neurodevelopmental Disabilities</p>	<p>(1) Text: Chapter 15</p> <p>(2) Needleman HL, Gunnoe C, Leviton A, Reed R, Peresie H, Maher C, Barrett P. Deficits in psychological and classroom performance of children with elevated dentine lead levels. <i>NEJM</i> 1979;300:689-95.</p> <p>(3) <i>To be selected by student.</i></p>
<p>Week 15 5/7-5/11</p>	<p>Community Response to Environmental Disasters with Neurologic Endpoints</p>	<p>(1) Dr. Molgaard will lead a discussion of the Minimata Bay, Japan mercury poisoning disaster.</p> <p>(2) One or more papers will be provided by the instructors TBD.</p> <p>(3) <i>To be selected by student.</i></p>