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AHHS 389.01: Recent Advances in Clinical Medicine

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AHHS 389 Syllabus
Spring Semester 2014
Recent Advances in Clinical Medicine: Neurological Health

Class meets every Thursday at 12:10 p.m. in Skaggs Building 169
Course Coordinator: Kim Madson, PharmD, SB 318, 243-6635, pharmacy.ce@umontana.edu

January 30	Methamphetamine as a Neuroprotective Agent to Treat Traumatic Brain Injury Dave Poulsen, PhD Research Professor, Biomedical & Pharmaceutical Sciences University of Montana	March 27	Neurological Complications of HIV Infection Gary Meyers, PharmD Northwest AIDS Education and Training Center Billings, Montana
February 6	Seizures after Traumatic Brain Injury Tom Swanson, MD Montana Neurology Missoula, Montana	April 3	<i>Spring Break - no class</i>
February 13	Nutrition and the Brain: Evidence and Potential Mechanisms Sarah Miller, PharmD, BCNSP Professor, Pharmacy Practice University of Montana	April 10	From Benchside to Bedside: Understanding and Treating Parkinson's Disease Fernando Cardoza, PhD Associate Professor, Biomedical & Pharmaceutical Sciences University of Montana
February 20	Glial Brain Tumors Richard Bridges, PhD Professor and Chair, Biomedical & Pharmaceutical Sciences University of Montana	April 17	Traumatic Brain Injury Medicine: A Brief Overview with an Emphasis on Pharmacological Management Bill Rosen, MD Physical medicine & rehabilitation specialist Missoula, Montana
February 27	Multiple Sclerosis: Barriers to Medication Adherence Doug Allington, PharmD, BCPS Associate Professor, Pharmacy Practice University of Montana	April 24	Medication Challenges for Brain Injury Patients Lois McElravy Brain Injury Thriver Missoula, MT
March 6	Alzheimer's Disease and You John Schaefer, DO Montana Neurological Specialists Missoula, Montana	May 1	Oxidative Stress and its Role in Underlying Ischemic-Reperfusion-Induced Delayed Neuronal Death Darrell Jackson, PhD Associate Professor, Biomedical & Pharmaceutical Sciences University of Montana
March 13	Natural Products and Ayurvedic Therapies for Neurological Disorders Diana Lurie, PhD Professor, Biomedical & Pharmaceutical Sciences University of Montana	May 8	The Basic Neurological Exam: Why We Do What We Do? Ben Grass, MD Medical Resident; Family Medicine Residency of Western Montana Ned Vasquez, MD Director; Family Medicine Residency of Western Montana
March 20	Menstrual Migraines: Potential Causes and Modalities Donna Beall, PharmD, BCPS Professor, Pharmacy Practice University of Montana		

Academic participants: There will be fourteen class meetings of AHHS 389 during the Spring Semester, 2014. To receive academic credit for the course, you must attend 12 of the 14 classes. **To verify your attendance, you must sign in on the roster that will be circulated at each class meeting.** If you fail to attend twelve complete sessions, you will receive a 'NP' in the course. If you find that you must miss more than one session with valid reason, please see the Course Coordinator ASAP. Attendance will be logged in Moodle weekly. Please pay close attention to your attendance record and report any discrepancies to the instructor. 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://life.umn.edu/vpsa/student_conduct.php.

Knowledge Assessment: Self-tests will be distributed at the conclusion of the program. Each pre/post learning assessment is for participant use only and will not be graded.

Evaluations: Speaker evaluations will be distributed along with knowledge assessments as described above. Student feedback on the quality and effectiveness of selected speakers, topics, teaching methodologies, and the overall course is invaluable to the ongoing success of this academic and continuing professional education program. Completed **speaker evaluations** should be returned to the Course Coordinator **at the end of each class**. **Course evaluations** will be distributed and collected **at the end of the final lecture on May 8th**.

Goal: This lecture series for students, pharmacists, and health professionals will update participants on recent advances in neurological health.

Learning Objectives: At the conclusion of each of the individual lectures, the participant will be able to:

1/30/14 – Methamphetamine as a Neuroprotective Agent to Treat Traumatic Brain Injury

- Explain the general consequences of brain injury.
- Explain preclinical approaches to the development of new drugs to treat Traumatic Brain Injury (TBI).
- Define important mechanisms of action for effective neuroprotective agents.

2/6/14 – Seizures After Traumatic Brain Injury

- TBA

2/13/14 – Nutrition and the Brain: Evidence and Potential Mechanisms

- Summarize evidence as to whether or not antioxidants, B vitamins, omega 3 fatty acids, ginkgo, and medical foods can slow progressive of cognitive impairment.
- Classify common so-called "brain foods" as to how they might be beneficial to cognitive function.

2/20/14 – Glial Brain Tumors

- TBA

2/27/14 – Multiple Sclerosis: Barriers to Medication Adherence

- Differentiate between definitions of compliance and adherence.
- If given a case, analyze which medication adherence barriers are present.
- If given a case, formulate a strategy to eliminate or mitigate common physician or patient-based medication adherence barriers.

3/6/14 – Alzheimer's Disease and You

- Identify current pharmacologic treatments for Alzheimer Disease and describe how they work.
- Recognize the risk factors for Alzheimer Disease.
- Describe which proteins are thought to play a role in the development of Alzheimer Disease.
- Name the genes known to play a role in Alzheimer Disease.

3/13/14 – Natural Products and Ayurvedic Therapies for Neurological Disorders

- Explain the definition of CAM (Complementary and Alternative Medicine).
- Identify several herbs and natural products that have been used traditionally in Ayurvedic medicine to treat neurological diseases.
- Describe the scientific literature that either validates or invalidates these natural products.
- Define the role that neuroinflammation plays in neurological disease and how CAM therapies impact the CNS inflammatory response.
- Describe the various Ayurvedic body therapies that are used to treat neurological dysfunction.

3/20/14 – Menstrual Migraines: Potential Causes and Modalities

- Differentiate between the characteristics of a common migraine and menstrual migraine.
- Describe the non-pharmacologic and pharmacologic treatment modalities used to manage menstrual migraines.

3/27/14 – Neurological Complications of HIV Infection

- Identify common neurological manifestations of HIV infection.
- Describe specific symptoms or clinical markers of neurological decline in HIV+ patients.
- State the specific cells affected by HIV infection.
- Distinguish the difference between direct and indirect nervous systems effects of HIV infection.
- Define specific treatment options for opportunistic infections that involve the brain.

4/10/14 – From Benchside to Bedside: Understanding and Treating Parkinson's Disease (PD)

- Describe the clinical, neurochemical, and histological manifestations of PD.
- List risk factor associated with the development of PD.
- List major therapeutic approaches.
- List major deficiencies in the treatment of PD.
- Name therapeutic approaches currently in development to treat PD.

4/17/14 – Traumatic Brain Injury Medicine: A Brief Overview with an Emphasis on Pharmacological Management

- Identify the basic nomenclature used in Brain Injury Medicine.
- Recognize the pathophysiology of the injury, especially mild traumatic brain injury.
- Describe the common potential consequences of a brain injury.
- Identify pharmacological agents used to improve outcomes in brain injury survivors.

4/24/14 – Medication Challenges for Brain Injury Patients

- State three common medication challenges for persons living with a brain injury.
- Identify two or three warning-signs or subtle clues that suggest a possible medication challenge/miscommunication exists for brain injury patients.
- Describe two recommendations you can make to a person living with a brain injury if you recognize warning signs or subtle clues suggesting a medication challenge/miscommunication.

5/1/14 – Oxidative Stress and its Role in Underlying Ischemic-Reperfusion-Induced Delayed Neuronal Death

- Distinguish between the different types of stroke pathologies.
- Describe how glutamatergic receptors, such as the AMPA receptor, contribute to delayed neuronal death.
- Describe how subjecting neuronal cells to ischemic-reperfusion can lead to oxidative stress.
- Describe how activation of oxidative stress signaling cascade can lead to synaptic plasticity and subsequent delayed neuronal death.

5/8/14 – The Basic Neurological Exam: Why We Do What We Do?

- Differentiate the basic difference between upper and lower motor neuron lesions.
- Describe the basic physiology behind reflexes and their moderation.
- Describe the fundamentals of a basic assessment of the cranial nerves.
- Identify the components of a basic assessment of peripheral strength, sensation, and reflexes.
- Describe the components of the basic mini mental status exam or the Montreal Cognitive Assessment.
- Be able to make a basic assessment of lesion location based on exam.

Disclosure of Potential Conflicts of Interest: Skaggs School of Pharmacy at The University of Montana did not receive payment or services from a third party for any aspect of this activity and has no relationships (financial or other) with entities or activities that could be perceived to influence, or that give the appearance of potentially influencing any portion of this activity.