PSY 3960-11:
Undergraduate Seminar on Animal Models of Human Dysfunction

Instructor:
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Class meets: Tuesdays 3:30 pm- 6:00 pm in S204 Elliott

Office Hours: I am often in my office. Feel free to stop by anytime, but if you would like to schedule an appointment, please telephone or email me in advance to make arrangements. I am most easily reached via email.

Seminar Description: Discovery of the causal mechanisms for human dysfunctions often requires application of the experimental method. But this method may not be appropriate or ethical with humans. Then, animals may be called upon as models for a particular disorder. How are models developed and validated? What can we learn? Have models been successes? Failures? What are the ethical and regulatory considerations for such work? Several exemplar efforts at modeling will be reviewed and discussed. Workload average of 40 pages reading per week, discussion items, class contributions to discussions.

Seminar Objectives: Upon completion of this seminar, you should be able to:
(a) lead a discussion on the nature of animal models in psychology
(b) critically discuss some exemplars of animal models as used in psychology
(c) discuss the empirical research base for some animal models

Required Readings: Text is available at the Coffman Bookstore


You may be able to access it through PsycNET online. Amazon.com has copies available.

Models to be discussed will be selected by you from those chapters in this book. See below.

Reading assignment for the first seminar class is Chapter 1 of the book.

While an older book, the cost is very modest and it provides a reasonable foundation for our discussions.
Informative supplementary books should you wish to explore them:


Students with Disabilities: It is University policy to provide, on a flexible and individualized basis, reasonable accommodations to students who have documented disabilities that may affect their ability to participate in course activities or to meet course requirements. Students with a documented disability (e.g., physical, learning, psychiatric, vision, hearing, etc.) who need to arrange reasonable accommodations must contact both the instructor and Disability Services at the beginning of the semester.

Weekly Discussion and Questions on Readings: Each week, all students will complete the assigned readings (1 text chapter and 1 journal article). Each week, students are required to come to class with 3-5 TYPED proposed discussion questions in written form (with your name on it); one copy of this is to be turned in to the instructor at the beginning of class; make a copy for yourself as well. The purpose of this requirement is two-fold: (1) to facilitate comprehension of the reading material, and (2) to facilitate meaningful and critical discussion. Questions may address Empirical Foundations, Application, Analysis, and/or Concordance with the principles of models. Students will be expected (a) to have read the assigned material and (b) to actively participate in weekly discussions. Class will begin with questions specifically about the assigned chapter. Then the Discussion Leaders will make short presentations (15-20 min each). After these presentations, general discussion issues will be addressed.

Discussion Leadership: Teams of students (usually 3) will report to the class and lead the class discussions. These leaders will focusing on a small set of papers that are key to the topic and give some perspective (in addition to the assigned readings). Each class participant can expect to be a leader for 2 (minimum) - 4 (maximum) such discussions during the term. The purpose of this requirement is to assist students to develop their own style of handling a focused discussion of assigned readings and to develop some expertise in a topic. The team will divide up the “leader activities”: (1) provide historical review of the background to the problem at hand, including reference to at least some prior model(s), if any, (2) read and present a close review of some of the primary research papers that are foundational to the chapter topic, and (3) read and review new papers (possibly review papers) since the publication of the book to assess progress with (or failure of) the model in research since 2001 and any applications of it.

Grades: Grades are based upon (a) mastery of material and performance as Discussion Leader (presentation and managing of discussion, (b) individuals’ demonstrated preparation for weekly
classes including the question set, and (c) direct thoughtful commentary and contributions to the weekly discussions reflecting their reading and understanding.

**Expectations:** Students are expected to attend all class meetings and be prepared to discuss the readings. If there is an emergency and you are unable to attend class, please contact me prior to the beginning of class. Absences may need confirmatory documentation (e.g., health center receipt, police report/ticket, air ticket, note, etc.).

- **Note:** A grade of “Incomplete” will only be assigned if arrangements have been made with the instructor prior to the end of the semester AND a contract for completion of the course has been signed by both the instructor and the student. If a contract is not signed or the terms of the contract are not met, the grade earned as of the last day of the semester will be submitted as the final grade and cannot be changed thereafter. (University policy.)

- **Attention:** Uniform Credit Ratio: The University policy statement on class hour-credit ratio is as follows: one conventional credit is defined as equivalent to three hours of learning per week, averaged over an appropriate time interval, necessary for an average student taking that course to achieve an average grade in the course (approved April, 1993). *Therefore, students can expect to spend at least 1-1.5 hours of preparation for each regular class; discussion leaders can expect to spend triple that for the classes that they lead.*

- **Conduct Code:** The University of Minnesota Statement of Standards of Student Conduct governs all work in this course. Consistent with University of Minnesota policy, scholastic dishonesty will be punished. Scholastic dishonesty includes: submission of false records of academic achievement; cheating on assignments or examinations; plagiarizing, altering, forging, or misusing a University academic record; taking, acquiring, or using test materials without faculty permission; acting alone or in cooperation with another to falsify records or to obtain dishonestly grades, honors, awards, or professional endorsement. (University policy.)

**Discussion Topics for selection at first class meeting:** Think about 4 topics for which you might like to volunteer for as a leader. (Everyone cannot do the same topic and you must do at least two. Because each class will take up only one chapter/model, there are more topics in the book than we can cover in the available class sessions. Indeed, we shall only cover about a dozen.) Below, I offer to you, the class, a selection of chapter topics that I think could give a broad perspective. However, it is your seminar, and you may choose—because of some special interest that you have—different topics than those I have selected. If you choose different ones, the must come from the text; I list after my suggestions all the chapters in the text from which you might choose an alternative to some specific one of those I suggested. Alternative are acceptable if other students agree to be co-leaders.

**Topics are to be selected from among chapters in the book. I will suggest a set of selections, but if there is another chapter that excites you more, we can consider adopting it.**

Think about your interests and your schedule and decide your preferred topic and/or dates to be a leader. Recall, you will be asked to volunteer in the first class meeting to lead 2-4 topics.

All students are to read the assigned chapter for each topic and the starred article in the
attached reading list.

The numbers correspond to the term week (not the topic)
The additional readings are possibilities for the discussion leaders to review or use in preparation of their presentations. The lists here are by no means exhaustive of the topics nor meant to restrict the students, and students should feel free—indeed are encouraged—to explore further and to be creative in what they include in their presentations. (In the past some students have also found very useful and informative clips on the www.)
2011 Overmier's proposed topics:

<table>
<thead>
<tr>
<th>Class</th>
<th>Date</th>
<th>Topic</th>
<th>Readings to be Done Before This Week’s Class Meeting</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sept 6</td>
<td>Why animals, regulation of use of animals, and the ideal structure of animal models (JBO) [Students are expected to read chapter 1]</td>
<td>Ch 1. Miller (1985)</td>
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<td>4</td>
<td>Sept 27</td>
<td>X excused ICSU</td>
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<tr>
<td>5</td>
<td>Oct 4</td>
<td>Stress, failure and learned helplessness</td>
<td>Ch 5. Maier (1984)</td>
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<td>8</td>
<td>Oct 25</td>
<td>X excused BISO</td>
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<tr>
<td>12</td>
<td>Nov 22</td>
<td>Cognition and categorization</td>
<td>Ch 17. Kawai</td>
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<tr>
<td>13</td>
<td>Nov 29</td>
<td>Aging memory</td>
<td>Ch 19. Gold (1976)</td>
</tr>
<tr>
<td>14</td>
<td>Dec 6</td>
<td>Clinical Implications of animal pain research</td>
<td>Ch 15.</td>
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</table>

Finals week:
All students are to read the assigned chapter for each topic and the starred article. The numbers correspond to the term week (not the topic) The additional readings are possibilities for the discussion leaders to review or use in preparation of their presentations. The lists here are by no means exhaustive of the topics, and students should feel free—indeed are encouraged—to explore further and to be creative in what they include in their presentations. (In the past some students have also found very useful and informative clips on the www.)

1. Why animals, regulation, and models.

*The value of behavioral research with animals.*
By Miller, NE (1985)

On the nature of animal models of human behavioral dysfunction.

Pavlov’s contributions to behavior therapy: The obvious and the not so obvious.
By Wolpe, Joseph; Plaud, Joseph J.
American Psychologist. 52(9), Sep 1997, 966-972.

Experimental neuroses as learned behavior.
By Wolpe, J.
2. Anxiety disorders.

*A contemporary learning theory perspective on the etiology of anxiety disorders: It's not what you thought it was.
Mineka, Susan; Zinbarg, Richard

*Extending animal models of fear conditioning to humans.
By Delgado, M. R.; Olsson, A.; Phelps, E. A.

The relevance of recent developments in classical conditioning to understanding the etiology and maintenance of anxiety disorders.
By Mineka, Susan; Oehlberg, Katherine

Anxiety and panic: From human studies to animal research and back.
By Battaglia, Marco; Ogliari, Anna

Non-human primate models for investigating fear and anxiety.
By Barros, Marilia; Tomaz, Carlos

Selective associations in the observational conditioning of fear in monkeys.
By Cook, M, & Mineka, S.

Observational conditioning of snake fear in unrelated rhesus monkeys.
By Cook, M, Mineka, S, Wolkenstein, B. & Laitsch, K.

Face the beast and fear the face: Animal and social fears as prototypes for evolutionary analyses of emotion.
By Ohman, A.

The malicious serpent: Snakes as a prototypical stimulus for an evolved module of fear.
By Öhman, Arne; Mineka, Susan

Behavioral analogues of anxiety: Animal models.
By Lal, Harbans; Emmett-Oglesby, M. W.
**Panic disorder: A product of classical conditioning.**
By Wolpe, Joseph; Rowan, Vivienne C.
Behaviour Research and Therapy. 26(6), 1988, 441-450.

**Animal models for the study of anti-anxiety agents.**
By Treit, D.
Neuroscience & Biobehavioral Reviews, 1985, 9, 203-222.

**Models and mechanisms of anxiety: Evidence from startle studies.**
By Grillon, Christian
doi: [10.1007/s00213-007-1019-1](http://dx.doi.org/10.1007/s00213-007-1019-1)

**Rapid detection of snakes by Japanese monkeys (Macaca fuscata): An evolutionarily predisposed visual system.**
By Shibasaki, Masahiro; Kawai, Nobuyuki
doi: [10.1037/a0015095](http://dx.doi.org/10.1037/a0015095)
3. Eating disorders.

*Animal models in the investigation of anorexia.*
By Siegfried, Zahava; Berry, Elliot M.; Hao, Shuzhen; Avraham, Yosefa
Physiology & Behavior. 2003 Jun Vol 79(1) 39-45

A new animal model of binge eating: Key synergistic role of past caloric restriction and stress.
Physiology & Behavior. 2002 Sep Vol 77(1) 45-54

Suppression of feeding and body weight by inescapable shock.
Physiology & Behavior, 1989, 45, 975-983.

The bitter truth: Sensitivity to saccharin's bitterness predicts overactivity in highly arousable female dieters.
By Craig, Melynda L.; Hollis, Karen L.; Dess, Nancy K.

Towards a psychology of food and eating: From motivation to module to model to marker, morality, meaning, and metaphor.
By Rozin, Paul

The role of palatable food and hunger as trigger factors in an animal model of stress induced binge eating.
By Hagan, Mary M.; Chandler, Paula C.; Wauford, Pamela K.; Rybak, Rachel J.; Oswald, Kimberly D.
International Journal of Eating Disorders. 2003 Sep Vol 34(2) 183-197

A new animal model of binge eating: Key synergistic role of past caloric restriction and stress.
Physiology & Behavior. 2002 Sep Vol 77(1) 45-54

By Macht, Michael; Krebs, Harald; Weyers, Peter; Janke, Wilhelm

4. Excused
5. Stress, failure, and learned helplessness

*Learned helplessness and animal models of depression.
By Maier, Steven F.

Learned helplessness.
By Overmier, JB, & Lolordo, VM. In W. O’Donohue (Ed.)

Trauma, learned helplessness, its neuroscience and implications for PTSD.
LoLordo, VM, & Overmier, JB.

Uncontrollability and unpredicatability in post-traumatic stress disorder: An animal model.
Foa, EB, Zinbarg, R, Rothbaum, BO.

Stressor controllability and learned helplessness: The roles of the dorsal raphe nucleus, serotonin, and corticotropin-releasing factor.
By Maier, Steven F.; Watkins, Linda R.

Failure to escape traumatic shock.
By Seligman, MEP, & Maier, SF.

Stressor controllability, anxiety, and serotonin.
By Maier, Steven F.; Watkins, Linda R.
Cognitive Therapy and Research. 22(6), Dec 1998, 595-613.

Learned helplessness sensitizes hippocampal norepinephrine to mild stress.
By Petty, F. et al.

General learned irrelevance: Pavlovian analog to learned helplessness.
By Linden, DR, Savage, LM, & Overmier, JB.

Animal models of depression: Parallels and correlates to severe depression in humans.
By Jesberger, J.A., & Richardson, J.S

A behavioral animal model of posttraumatic stress disorder featuring repeated exposure to situational reminders.
By Pynoos, R.S. et al
Biological Psychiatry, 1996, 39(2), 129-134.

Review of Drink: A cultural history of alcohol.
By Smith, Douglas C.
doi: 10.1080/15332560903408854

*Prenatal alcohol exposure: Comparability of effects in humans and animal models.
By Driscoll, Cynthia D.; Streissguth, Ann P.; Riley, Edward P.
Neurotoxicology & Teratology. 1990 May-Jun Vol 12(3) 231-237

Teratogenic actions of ethanol in the mouse: A minireview.
By Becker, Howard C.; Diaz-Granados, Jaime L.; Randall, Carrie L.

What research with animals is telling us about alcohol-related neurodevelopmental disorder.
by Hannigan, John H.

Effects of Prenatal Alcohol Exposure on Child Development
By Jacobson, JL., and Jacobson, SW

A 21-year longitudinal analysis of the effects of prenatal alcohol exposure on young adult drinking.
by Baer, John S.; Sampson, Paul D.; Barr, Helen M.; Connor, Paul D.; Streissguth, Ann P. Archives of General Psychiatry. 2003 Apr Vol 60(4) 377-385

Alcohol and pregnancy: Highlights from three decades of research.
By Randall, Carrie L.
Journal of Studies on Alcohol. 2001 Sep Vol 62(5) 554-561

Sensitivity to ethanol and other hedonic stimuli in an animal model of adolescence: Implications for prevention science?
By Spear, Linda Patia; Varrinskaya, Elena I.

Long-lasting reduction in hippocampal neurogenesis by alcohol consumption in adolescent nonhuman primates.
By Taffe, Michael A.; Kotzebue, Roxanne W.; Crean, Rebecca D.; Crawford, Elena F.; Edwards, Scott; Mandyam, Chitra D.

Prenatal alcohol exposure: Fetal programming and later life vulnerability to stress, depression and anxiety disorders.
Maternal alcohol consumption during pregnancy and infant social, mental, and motor development.
By Williams Brown, Carole; Carmichael Olson, Heather; Croninger, Robert G.
doi: 10.1177/10538151110366654

Mechanisms involved in the neurotoxic, cognitive, and neurobehavioral effects of alcohol consumption during adolescence.
By Guerri, Consuelo; Pascual, María
doi: 10.1016/j.alcohol.2009.10.003

Fetal origins of mental health: Evidence and mechanisms.
By Schlotz, Wolff; Phillips, David I.W.
doi: 10.1016/j.bbi.2009.02.001
7. Drugs of abuse.

*Benzodiazepine self-administration in humans and laboratory animals: Implications for problems of long-term use and abuse.
By Griffiths, Roland R.; Weerts, Elise M.
Psychopharmacology. 1997 Nov Vol 134(1) 1-37

Animal models of periadolescent substance abuse.
By Smith, Robert F.
Neurotoxicology & Teratology. 2003 May-Jun Vol 25(3) 291-301

The role of brain emotional systems in addictions: A neuro-evolutionary perspective and new 'self-report' animal model.
By Panksepp, Jaak; Knutson, Brian; Burgdorf, Jeff
Addiction. 2002 Apr Vol 97(4) 459-469

Early environmental stress and biological vulnerability to drug abuse.
By Gordon, Harold W.
Psychoneuroendocrinology. 2002 Jan-Feb Vol 27(1-2) 115-126

Oral drug reinforcement studies with laboratory animals: Applications and implications for understanding drug-reinforced behavior.
By Macenski, Mitchell J.; Meisch, Richard A.
Current Directions in Psychological Science. 3(1), Feb 1994, 22-27.

The validity of the reinstatement model of craving and relapse to drug use.
By Katz, Jonathan L.; Higgins, Stephen T.
Psychopharmacology. 2003 Jul Vol 168(1-2) 21-30

8. Excussed

*Acquisition of drug self-administration: Environmental and pharmacological interventions.
By Campbell, Una C.; Carroll, Marilyn E.
Experimental & Clinical Psychopharmacology. 2000 Aug Vol 8(3) 312-325

Reduction of drug self-administration by an alternative non-drug reinforcer in rhesus monkeys: Magnitude and temporal effects.
By Campbell, Una C.; Carroll, Marilyn E.
Psychopharmacology. 2000 Jan Vol 147(4) 418-425

Reduction of heroin intake in baboons by an economic constraint.
By Elsmore, TF, Fletcher, GV, Conrad, DG, & Sodetz, FJ

Behavioral economics of drug self administration and drug abuse policy.
By Hursh, SR

Behavioral therapies for substance abuse.
By Childress, AR, et al.

Aversion therapy for alcoholism: Chemical, electrical, or verbal imagery.
By Elkins, RL
10. Korsakoff syndrome and memory systems.

*Differential outcomes attenuate memory impairments on matching-to-position following pyrithiamine-induced deficiency in rats.
By Savage, Lisa M.; Langlais, Philip J.
Psychobiology. 1995 Jun Vol 23(2) 153-160

The effects of delay interval, intertrial interval, amnestic drugs, and differential outcomes on matching-to-position in rats.
By Savage, Lisa M.; Parsons, John
Psychobiology. 1997 Dec Vol 25(4) 303-312

Human amnesia and animal models of amnesia: Performance of amnesic patients on tests designed for the monkey.
By Squire, Larry R.; Zola-Morgan, Stuart; Chen, Karen S.
Behavioral Neuroscience. 1988 Apr Vol 102(2) 210-221

Comparisons between forms of amnesia: Some deficits are unique to Korsakoff’s syndrome.
By Squire, LR

Improving face recognition in alcohol dementia.
By Hochhalter, Angela K.; Sweeney, Whitney A.; Bakke, Bruce L.; Holub, Richard J.; Overmier, J. Bruce
Clinic Gerontologist. 2000 Vol 22(2) 3-18

Alcohol-related amnesia and dementia: Animal models have revealed the contributions of different etiological factors on neuropathology, neurochemical dysfunction and cognitive impairment.
By Vetreno, Ryan P.; Hall, Joseph M.; Savage, Lisa M.
Neurobiology of Learning and Memory, Jan 21, 2011, No Pagination Specified.
doi: 10.1016/j.nlm.2011.01.003

Reward expectation alters learning and memory: The impact of the amygdala on appetitive-driven behaviors.
By Savage, Lisa M.; Ramos, Raddy L.

Animal Models of Memory: Disorders Give Insight into How Psychological and Neural Systems Interact
By Savage, Lisa M.
Psychological Science Agenda; Jul, 2004; 18(7) [American Psychological Association (APA), Science Directorate]
11. **Hormones.**

*Ovarian hormone replacement to aged ovariectomized female rats benefits acquisition of the Morris water maze.*
By Markham, J. A.; Pych, J. C.; Juraska, J. M.
Hormones & Behavior. 2002 Nov Vol 42(3) 284-293

**Behavioral differences between male and female rats: Effects of gonadal hormones on learning and memory.**
By Van Haaren, Frans; Van Hest, Annemieke; Heinsbroek, Rob P.

**The contribution of adrenal and reproductive hormones to the opposing effects of stress on trace conditioning males versus females.**
By Wood, Gwendolyn E.; Beylin, Anna V.; Shors, Tracey J.
Behavioral Neuroscience. 115(1), Feb 2001, 175-187

**Implicit memory varies across the menstrual cycle: Estrogen effects in young women.**
By Maki, Pauline M.; Rich, Jill B.; Rosenbaum, R. Shayna
Neuropsychologia. 2002 Vol 40(5) 518-529

**Enhanced verbal memory in nondemented elderly women receiving hormone-replacement therapy.**
By Maki, Pauline M.; Zonderman, Alan B.; Resnick, Susan M.
American Journal of Psychiatry. 2001 Feb Vol 158(2) 227-233

**Effects of post-trial hormone injections on memory processes.**
By Gold, PE
Hormones & Behavior, 1976, 7, 509-517

**Hormones, brain, and behavior: Putative biological contributions to cognitive sex differences.**
By Fitch, Roslyn Holly; Bimonte, Heather A.

**Hormones (current)**


*Comparative cognition: Toward a general understanding of cognition in behavior.
By Wasserman, Edward A.
Psychological Science. 1993 May Vol 4(3) 156-161

Similarity- and nonsimilarity-based conceptualization in children and pigeons.
By Wasserman, Edward A.; DeVolder, Carol L.
Psychological Record. 1993 Fall Vol 43(4) 779-793

How animals classify friends and foes.
By Schusterman, Ronald J.; Reichmuth, Colleen J.; Kastak, David
Current Directions in Psychological Science. 9(1), Feb 2000, 1-6.

Categorization, concept learning and behavior analysis: An introduction.
By Zentall, Thomas R.; Galizio, Mark; Critchfield, Thomas S.
Journal of the Experimental Analysis of Behavior. 2002 Nov Vol 78(3) 237-248

Emergent relations in the formation of stimulus classes by pigeons.
By Zentall, Thomas R.; Urcuioli, Peter J.
Psychological Record. 1993 Fall Vol 43(4) 795-810

Categorization and formation of equivalence classes in animals: Studies in Japan on the background of contemporary developments.
By Jitusumori, Masako

Color classification by chimpanzees (Pan troglodytes) in a matching-to-sample task.
By Matsuno, Toyomi; Kawai, Nobuyuki; Matsuzawa, Tetsuro
doi: 10.1016/S0166-4328(03)00185-2
13. Aging and memory.

*Neuroendocrine effects on memory in aged rodents and humans.
By Gold, Paul E.; Stone, William S.
Neurobiology of Aging. 1988 Sep-Dec Vol 9(5-6) 709-717

Effects of post-trial hormone injections on memory processes.
By Gold, PE
Hormones & Behavior, 1976, 7, 509-517

Sweet memories.
By Gold, PE

Cognitive effects of insulin in the central nervous system.
By Park, C. R.
Neuroscience & Biobehavioral Reviews. 2001 Vol 25(4) 311-323

Psychobiological responses to stress in ageing.
By Maggi, R.; Tavola, T.; Gala, C.

Glucose and memory in aging

*Glucose enhancement of human memory: A comprehensive research review of the glucose memory facilitation effect.*
Smith, Michael A.; Riby, Leigh M.; Eekelen, J. Anke M. van; Foster, Jonathan K. (2010)
Neuroscience and Biobehavioral Reviews, Sep 29, 2010, No Pagination Specified.

*Effect of age and glucoregulation on cognitive performance.*
Messier, Claude; Tsiakas, Maria; Gagnon, Michèle; Desrochers, Alain

*Glucose effects on long-term memory performance: Duration and domain specificity.*
By Owen, Lauren; Finnegan, Yvonne; Hu, Henglong; Scholey, Andrew B.; Sünram-Lea, Sandra I.

*Effects of caffeine and glucose, alone and combined, on cognitive performance.*
Adan, Ana; Serra-Grabulosa, Josep Maria
Human Psychopharmacology: Clinical and Experimental, Vol 25(4), Jun 2010,
14. Clinical implications of animal pain research

*Chronic pain-related syndrome in rats after ischemic spinal cord lesion: A possible animal model for pain in patients with spinal cord injury.

Shock-induced hyperalgesia: IV. Generality.
By Meagher, Mary W.; Ferguson, Adam R.; Crown, Eric D.; McLemore, Sherilyn; King, Tamara E.; Sieve, Amy N.; Grau, James W.

By Crown, Eric D.; Grau, James W.; Meagher, Mary W.
Behavioral Neuroscience. 118(6), Dec 2004, 1418-1426

When Good Pain Turns Bad.
By Watkins, Linda R.; Maier, Steven F.

What should we be measuring in behavioral studies of chronic pain in animals?
By Mogil, Jeffrey S.; Crager, Sara E.

Long-term analgesic reaction in attacked mice.
By Siegfried, Bert; Frischknecht, Hans-Rudolf; Riggio, Gaetano; Waser, Peter G.
Behavioral Neuroscience. 101(6), Dec 1987, 797-805.
15. Conflicts over animal research.

*Harnessing brain plasticity through behavioral techniques to produce new treatments in neurorehabilitation.
By Taub, Edw.

Constraint-induced movement therapy: A new approach to treatment in physical rehabilitation.
By Taub, Edward; Crago, Jean E.; Uswatte, Gitendra
Rehabilitation Psychology. 1998 Sum Vol 43(2) 152-170

Constraint-induced therapy approach to restoring function after neurological injury.
By Morris, David M.; Taub, Edward
Topics in Stroke Rehabilitation. 2001 Fal Vol 8(3) 16-30

and the different perspectives:

*Animal rights extremists threaten medical research.
By Murray, J.E.

Bell, Magendie, and the proposals to restrict the use of animals in neurobehavioral research.
By Gallistel, C.R.

Perverting medical history in the service of “animal rights”
By Morrison, A.R.
Perspectives in Biology and Medicine, 2002, 45 (4), 606-619.

How radical animal activists try to mislead humane people.
By Coile, D.C., & Miller, N.E.

Animal rights activism and animal welfare concerns in the academic setting: Levels of activism and the perceived importance of research with animals.
By Compton, David M.; Dietrich, Kerri L.; Smith, Jeff S.

Animal rights theory and utilitarianism: Relative normative guidance.
By Francione, G.L.
http://www.animallaw.info/articles/arugsfrancione1997.html

Physicians and the animal-rights movement.
By Pardes, Herbert; West, Anne; Pincus, Harold A.
Animal rights activists' representations of animals and animal rights: An exploratory study.
By Pivetti, Monica

Laboratory animals need only humane treatment: Animal "rights" may debase human rights.
By Lansdell, Herbert

Human rights and animal welfare.
By Feeney, Dennis M.
American Psychologist. 42(6), Jun 1987, 593-599.

By Rudacille, D.
Farrar, Straus, & Giroux, 389pp.

Love at Goon Park: Harry Harlow and the Science of Affection
by Deborah Blum (Paperback - Jul 5, 2011) (hardback earlier

By Rudacille, D.
Farrar, Straus, & Giroux, 389pp.

The Monkey Wars.
By Deborah Blum
1995 (1996?)
More….

Chapters in the text; ones not listed in the table above could be alternative topics for the seminar discussions should you choose.

2. Understanding, treating, and preventing anxiety, phobias, and anxiety disorders.
   By Zinbarg, Richard E.; Mineka, Susan

   Abstract

3. Eating, emotion, and the organization of behavior.
   By Dess, Nancy K.

   Abstract

   By Miczek, Klaus A.

   Abstract

5. Learned helplessness and depression.
   By LoLordo, Vincent M.

   Abstract

6. Consequences of early exposure to alcohol: How animal studies reveal later patterns of use and abuse in humans.
   By Spear, Norman E.; Molina, Juan Carlos

   Abstract

7. Behavioral pharmacology of commonly abused drugs: Concordance between laboratory studies conducted with animals and humans.
   By Rush, Craig R.; Ator, Nancy A.; Simpson, Cathy A.; Bickel, Warren K.

   Abstract
8. Can marijuana use lead to marijuana dependence?
By Budney, Alan J.; Wiley, Jenny

9. Nicotine self-administration in animals and humans.
By Corrigall, William A.

10. Nondrug incentives to treat drug abuse: Laboratory and clinical developments.
By Carroll, Marilyn E.; Bickel, Warren K.; Higgins, Stephen T.

By Grabowski, John

12. When sleep is not good for you.
By Morrison, Adrian R.

By McCarty, Richard

By Grau, James W.; Joynes, Robin L.

15. Clinical implications of animal pain research.
By Meagher, Mary W.
16. **Birds, brains, and visual behavior: The comparative psychology of perception.**
   By Cook, Robert G.; Holtzinger, Jennifer

17. **Pick the flowers and mind your As and 2s! Categorization by pigeons and infants.**
   By Wasserman, Edward A.; Rovee-Collier, Carolyn

18. **Using animal models to address the memory deficits of Wernicke-Korsakoff syndrome.**
   By Hochhalter, Angela K.; Sweeney, Whitney A.; Savage, Lisa M.; Bakke, Bruce L.; Overmier, J. Bruce

19. **Drug enhancement of memory in aged rodents and humans.**
   By Gold, Paul E.

20. **Effects of estrogen on cognition: Implications for menopause.**
   By Korol, Donna L.; Manning, Carol A.

21. **Insights about learning in Alzheimer’s disease from the animal model.**
   By Woodruff-Pak, Diana S.