

Biological Mechanisms of Stress  
3100:472/572  
Fall, 2006

Course is on Web CT

Note: to access course information you will need Adobe reader and you need to block all pop-ups for each browser, Google, Yahoo etc.

Room: ASC 122  
Time: T, Th 9:15-10:30

Dr. Ely  
Office - ASC 174, #972-7159  
Hours- W: 9-10 or  
by appointment

**Lecture**

Readings (WEB site for course)

**I. Stress Theory**

Aug 29 Introduction & Stress Theory  
Aug.31 Stress Assessment I  
*Stress Assessment Questionnaires*

Sept. 5 Stress Assessment II  
Sept. 7 Coping with Stress

Muris: Coping College  
Giankos: Gender and Coping  
Lundberg: Work/Gender/Stress

**II. Stress and Your Brain**

Sept. 12 Brain Anatomy

Lopez et al. Neural Circuits Med.  
Stress  
Buwalda et al. Stress and brain

Sept. 14 Neurochemistry I

Sept. 19 Neurochemistry II

Sapolsky, Glucocorticoids,...  
Tamashiro et al.: Rodents to Prim  
Vollmayer&Henn, Stress models  
of depression

Sept. 21 Brain Changes and Environmental  
Stimulation  
**Outline Due**

Crepsi&Denver.Dev. Plasticity

Sept. 26 Nutrition – Brain

Lieberman, Nutrition, brain  
function...

**III. Stress and Cellular Mechanism**

Sept. 28 Receptor Biology I

Robertson et al. Corticosterone  
Receptors

Oct. 3 Receptor Biology II

**Oct. 5 Exam 1**

Oct.10 Signal Transduction Paths

Katschinski , On heat and cells  
and proteins

Oct. 12 Stress and Morphology

Nazzaro, BP and Vascular  
Change

#### **IV. Stress and Your Endocrine System**

Oct. 17 HPA Axis,

Tsigos & Chrousos Hypothalamic-  
pituitary-adrenal

Oct. 19 SAM Axis

Aloe et al. Stress and NGF

Oct. 24 Behavioral Mechanisms

Corti et al., Beauty and the Beast-  
ANS

Oct. 27 Occupational Effects

#### **V. Stress and Your Immune System**

Oct.31 Anatomy - Physiology

Black, Stress and Inflammation

Nov. 2 Applications

Nieman , Exercise effects on immunity,

Nov. 7 **Exam 2**

#### **VI. Stress and Your Heart**

Nov.9 CV Responses

Smith & Ruiz , Psychosocial Infl. On the  
Dev. And Course of CHD...

Nov. 14 Blood Pressure Responses

Evseeva, Stress&Myocardium

Nov. 16 Exercise Responses

Qureshi et al , Terrorism and the heart,  
Wamala et al. ,Job stress and the  
occupational...

Nov. 21 Molecular Cardiology  
**PAPERS DUE**

Nov. 23 Happy Thanksgiving!!

#### **VII. Stress and Your Love Life**

Nov. 28 Sex and Stress

Kalantaridou et al., Stress and the  
female reproductive sys

Nov. 30 Physiological Gender Differences

Marquez et al.: Testosterone, stress

### VIII. Society, Stress & Disease

Dec.5 Society, Stress, Disease

W. Dressler, Culture and the risk of disease,

(Presentations)

Dec. 7 Occupational Risk Factors

Evans et al., Hassles on the job ,

(Presentations)

**Final Exam- Tuesday, December 14, 2006 12-2:00pm**

### Grade Determination and Important Dates

	Graduates	Undergrads
<b>Exam 1 (Oct. 5)</b>		
	150	100
<b>Outlines Due (grad students, Sept. 21)</b>		
<b>Exam 2 (Nov.7)</b>	150	100
<b>Critique Paper or Presentation</b>	150	
oral- Dec. 5,7		
paper due- Nov. 21		
<b>Final (Dec. 14, 12-2:00pm)</b>		
	200	200
<b>Total</b>	<u>650</u>	<u>400</u>

### Grade Scale

A = 90-100%

B = 80-89%

C = 70-79%

D = 60-69%

Bonus points- to be announced- breaking news, article questions, powerpoints

Students whose names do not appear on the university official class list by September 14, 2006 will not be permitted to participate (attend class, take exams, or receive credit).

## **Oral Presentation Guidelines**

(10 minute presentation with 5 minute discussion)

1. Select a controversial topic or compare human and animal studies on the same subject.
2. Conduct a literature search- try to find 10-15 articles and narrow them down to 2-4 to present.
3. Turn in a 1 page outline with references- due Sept. **21st**.
4. Powerpoint Format (time to present 2-4 studies in 10 minutes)
  - Introduction - state your name and the topic and why there is a controversy (1-2 minutes).
  - Methods - briefly state the subjects, experimental design, measurements (2-3 minutes).
  - Results - show graphs (transparencies, slides, flip charts or computer slides of data (5 minutes).
  - Conclusion (30 seconds).
5. Answer questions (5 minutes).
6. Hand in title page, reference page and articles.

Graded on organization(25%), clarity(25%), interpretation(10%), use of audio-visuals(20%), timing(10%),and ability to answer questions(10%).

**Things to check that are often overlooked.** Practice your timing- points taken off for under or over time!

- Speak clearly and slowly
- Look at the audience
- Use visual aids effectively
- Use large enough printing to be read at the back of class
- Do not use complex tables or graphs, keep them simple
- State precisely your conclusion

## **Written Critique Paper Guidelines**

## **Outlines Due: Sept.21**

## **Papers Due: Nov 21**

I. Select a topic that involves the cardiovascular system. Start early since finding and sending for the articles can take several weeks.

II. Get original articles, not reviews (2000-2006). Collect 10-15 articles but you will select only two to critique. Select 1 animal and 1 human article to compare on the subject. If you can't find an appropriate article of each see me. You will hand in the two papers you write about.

### III. Format

Title page

Name, course, data

Summary (1 page) - for both studies

Introduce the problem (1-2 pages)

Hypothesis and Objectives

State hypothesis, objectives and subjects use - - human, animal groups  
(1-2 pages)

Results

Describe the main results (2-3 pages)

Critique (3-5 pages)

#### **Critique Points to Cover**

State and answer each of the following questions for each article:

1. Did they state the hypothesis and objectives and were they clear?
2. Did they point out any limitations of the study or do you see any limitations they didn't bring up?
3. What were the major strengths and weaknesses of the article? (**most important question**)
4. What is your overall rating of each article on a scale of 1 (poor), 5 (average), 10 (excellent) compared to the best and worst articles you have read for the course?
5. Describe how the animal study and human study support or contradict each other. Describe similarities or differences.

Conclusion (1/2 to 1 page)

State in a few sentences what you conclude

Bibliography

List all authors, complete title, journal, volume, page #'s, year

### IV. Things to check that are often overlooked

- a. page numbers
- b. hand in original papers
- c. proofread