

PSY 410/510 Neuroscience and Inequality/Stress

Winter 2012

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Prerequisites: Courses in: experimental methods and statistics (e.g., PSY 302 and 303), basic understanding of neuroanatomy, neurophysiology and function (e.g. PSY 304 or 449) and good critical thinking skills and willingness to engage in classroom discussion.

CRN: 27365 (410); 27366 (510)

Grading option: Optional for all students

Credits: 4

Time: 1700-1820 Tuesday & Thursday

Location: 229 McKenzie (MCK)

Course Materials: Primary research and review papers; available on Blackboard

Overview: This course will examine social inequality and its consequences, as well as research on interventions designed to ameliorate its negative outcomes, all from the perspective of neuroscience. We will begin with definitions of stress and will review the remarkably similar effects of stress in plants, non-human animals and humans. We will read and discuss sets of research articles each week. Topics include the basic data on the physiological, anatomical and epigenetic effects of stress and social inequality, consequences across the lifespan from early childhood to adulthood, the neuroscience of stress and social stress, cognitive outcomes of inequality, and the impact of early and later interventions.

Readings for the course: **Weekly readings will be posted one week prior to in-class discussions. No textbook is assigned for this course. Optional, but highly recommended, supplemental readings:** *The Status Syndrome: How Social Standing Affects Our Health and Longevity*, by Michael Marmot; *The Spirit Level: Why Greater Equality Makes Societies Stronger*, by Kate Pickett and Richard Wilkinson and a very good video on the effects of stress in human and nonhuman animals: *Stress: Portrait of a Killer* on Netflix and PBS

Coursework: Students will be expected to attend all class meetings, prepare for all discussions through readings and participation in Blackboard discussions. Each student will be part of a group in leading a panel discussion and/or debate of one of the sets of readings and in posting discussion questions on Blackboard. All students will also, alone or in a group, participate in an outreach project to provide information about neuroscience and stress/inequality to community members and perhaps to contribute to

ameliorating the effects of inequality (e.g., by assisting nonprofits in writing grants to fund projects designed to reduce inequality).

Course Assignments:

Precis: Each week, a team of students will lead a discussion of the readings. Prior to the discussion, the team will prepare a one-page precis, or summary, of each reading.
Poster or audiovisual/oral presentation on outreach projects

Weekly Topics

Week 1: Inequality, stress and socioeconomic status: definitions and data

Week 2: Parallels of consequences of stress in plants, nonhuman animals and humans

Week 3: Stress and inequality in non-human animals

Week 4: Stress, anxiety, neural outcomes in humans

Week 5: Early life stress

Week 6: Parental nurturance

Week 7: Interventions

Week 8: Gene-environment/intervention interactions

Week 9: Outreach projects presentations

Week 10: Neuroscience of sociality, altruism, 'fairness', perceived injustice