Special Topics Course: Art Meets Brain

Fall 2017 (REVISED 8/14/17)

Instructor: Prof. Wendy Suzuki e-mail:wendy@cns.nyu.edu

Guest Speakers: Prof. Lucy L. Brown, Einstein School of Medicine; Craig D'Amico, Actor/acting coach; Musicians, TBD; Prof. Michael Long, NYU Medical Center

Meeting time: Mondays 2-4 p.m. Meyer 815

Suzuki Office Hours: Any time by appointment

Prerequisites: INTRONS (NEURL-UA 100)

Co-requisites: BINS

Course Objectives:

This class explores the intersection between art, creativity and neuroscience. Throughout the semester we will examine how neuroscience has addressed the neurobiology of two major art forms: (1) emotion/acting and (2) Musical performance. This course will involve a combination of highly interactive group learning approaches, live performances and master class-style presentations with selected guest artists together with a detailed reading of the scientific literature. The goal is not only review the scientific literature on the neurobiology of emotion/acting and musical performance, but together, to identify the most fascinating questions yet to be addressed and design the experiments that address them. The over-arching goal of the course is to teach students to think creatively about how to use the tools of neuroscience both in animal model systems as well as in humans to explore the cognitive pursuit that some would argue makes us most human: art. Students will leave this course, knowing more about the current research on the neurobiology of fear and love, how studying acting may provide new insights into even a wider range of emotions and the brain basis of music performance/generation and perception.

Learning Objectives:

1) To become familiar with the neuroscientific literature on the neurobiology of emotion and musical performance in both animal model systems as well as humans.
2) To sharpen the ability to develop novel experiments using principles of experimental design.
3) To master critical and analytical skills required to evaluate scientific literature
4) To sharpen verbal scientific communication skills through oral presentations, interviews of guest lecturers and artists as well as peer to peer discussion in class.

Readings: All reading will be original papers and reviews from the literature and will be posted on Classes.

Class Participation: This class emphases active class participation in the form of comments and questions during the lectures and group learning sessions. Students will be encouraged to actively participate during each class session. Participation includes not only discussion within your groups if group activities are being performed, but contributing to the overall class discussion.

Attendance: Attendance is mandatory. Any class absence must to cleared in advance via e-mail (including absence due to illness). Missing 2 class lectures without prior approval (not counting religious holidays) will result in a 5% drop in your overall class grade.

Grading and Evaluation: Students will be graded on a range of journal paper presentations, interviews of guest speakers, oral presentations and 2 written assignments based on the design of a novel experiment related to the topics discussed in class. Students will also meet individually with Prof. Suzuki outside of class time twice to receive feedback on course performance.

9/18/17: Journal presentation based on prairie vole literature **5 pts**

10/16/17 – 10/27/17 **Non-graded** individual meetings with Prof. Suzuki to provide early feedback on course performance.

10/23/17: Journal presentations based on fear literature 5 pts

10/30/17: Oral Midterm presentations in groups 10 pts

11/3/17: Midterm paper 30 pts

11/15/17-11/24/17 **Non-graded** individual meetings with Prof. Suzuki to provide feedback on Midterm project and discuss final project.

11/20/17: Graded interview of musicians 5 pts

11/27/17: Graded "interview"/science questions of Prof. Long 5 pts

12/11/17: Oral final project presentations 10 pts

12/15/17: Final papers due 30 pts

Total points: 100

Extra Credit Project: There is the possibility of one optional extra credit project which will be either an additional experiment write up similar to the midterm or final projects or an individually proposed extra credit research project related to the course. These individual proposals will be evaluated on a case by case basis by Prof. Suzuki and creativity is strongly encouraged! Maximum = 10 pts

Art Meets Brain 2017

Date	Lecture Topic
9/11/2017	**Lecture 1: General Introduction** Hour 1: General Introduction of course topics Hour 2: Intro to Animal models of affiliative behavior HW: Reading for discussion and presentation for Lecture 2
9/18/2017	**Lecture 2: Animal and Human Studies of Love** Hour 1: Paper presentation and graded discussion of animal model papers **(5 pts)** Hour 2: Presentations cont. and Intro to Human studies of deep romantic love HW: Reading for Guest lecture by Prof. Lucy Brown
9/25/2017	**Lecture 3: The Neurobiology of Love II: Humans** Hour 1: Lecture by Prof. Lucy Brown Hour 2: Discussion and development of experimental ideas HW: Reading for EEG lecture + Meet with Prof. Suzuki to discuss experiments
10/2/2017	**Lecture 4: EEG to study human interconnection** Hour 1: EEG lecture and Demo by Drs. Davidesco and Dikker Hour 2: Discussion of experimental design HW: Meet with Prof. Suzuki to discuss midterm experiment
10/9/2017	**Fall Recess- no class**
10/16/2017	**Lecture 5: Acting and the Brain** Hour 1: Acting Demo by Mr. Craig D'Amico Hour 2: Interviewing Mr. D'Amico and other actors about generating emotion HW: Reading for the Neurobiology of Fear + Prof. Suzuki individ. meetings

10/23/2017 Lecture 6: The Neurobiology of Fear

Hour 1: Lecture about the Neurobiology of Fear Animals and People

Hour 2: Graded Paper presentations by groups in class **(5 pts)**

HW: Prepare for midterm presentations + Prof. Suzuki meeting individ. Meetings

10/30/2017 Midterm presentations

Hour 1 and 2: Midterm Presentations for feedback **(10 pts)**

HW: Written Midterms **Due Friday 11/3/17 by 5 p.m. (30 pts)**

11/6/2017 Lecture 7: The Neurobiology of Music

Hour 1: Lecture

Hour 2: Prep for interviewing musicians about plasticity and learning

HW: Prep for Lecture 9

11/13/2017 Society for Neuroscience No Class

11/15/17 to 11/24/17 **Non-graded** individual meetings with Prof. Suzuki to provide feedback on Midterm project and to discuss final project.

11/20/2017 Lecture 8: The Neurobiology of Music II

Hour 1: Musical Performance

Hour 2: Interview of musicians **(5 pts)** and discussion

HW: Reading for 11/27/17 lecture

11/27/2017 Lecture 9: The Neurobiology of Bird Song

Hour 1: Lecture by Prof. Michael Long

Hour 2: Prepared and graded questions for Michael Long about his work **(5 pts)**

Extra Credit Due **Friday Dec 1, 2017 by 5:00 p.m. (10 pts)**

12/4/2017 Lecture 10: Putting it all together

Hour 1: Review of major themes

Hour 2: Discuss and refinement of Final project/paper topics

12/11/2017 Oral Presentation of Final Paper/Projects

Hour 1 &2: Final Presentation for feedback **(10 pts)**

Hour 2: Final Presentation for feedback second 1/2 of class

Final paper **Due Friday Dec 15, 2017 by 5:00 p.m. (30 pts)**