

# ECFS 190-OOP: FRESHMAN SEMINAR

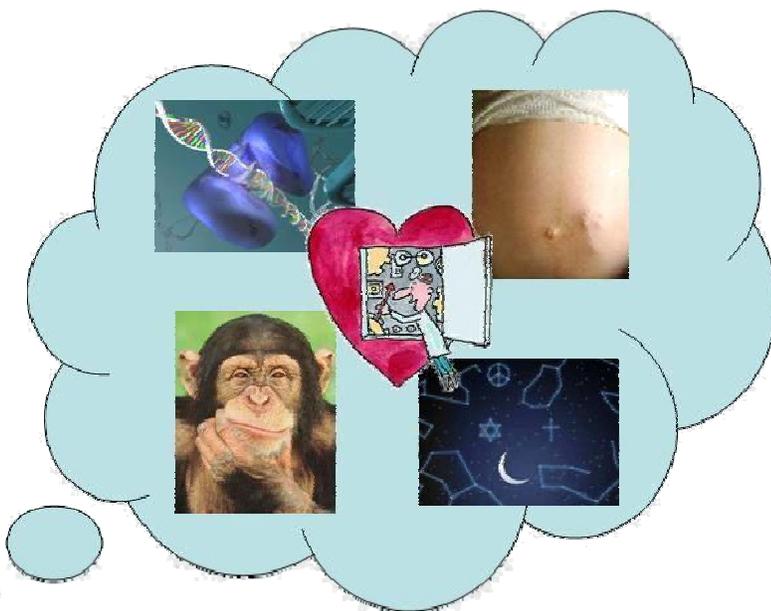
## *Translating Life: Bridging the Languages of Science and Human Spirit*

Tuesdays and Thursdays,  
1:00 – 2:15 PM  
401 Emerson Hall

### **Course Description and Objectives:**

Scientific findings have dramatic impact on every aspect of our life, sometimes conflicting with cultural and religious beliefs. This course will teach students how researchers of various fields ask questions and seek answers about the world around them. Scholars from Emory and Georgia Tech will use their own research discoveries and findings as examples on how to do successful research in any field. Students enrolled in this class will observe primate behaviors in a semi-naturalistic environment, decode ancient Jewish and Muslim legends, learn what fetal kicking tells us about personality, manipulate single DNA molecules using state-of-the-art instrumentations and learn about

mending broken hearts using stem cells. These research topics will be the starting point for open discussion about science and human spirit. Students moreover will participate in various out-of-the-classroom activities, including movie screenings, trips to various laboratories around campus and to the Yerkes National Primate Center. This course is designed to translate the unknown into an understandable language, where Science and the Human Spirit work as a whole.



### **Instructors:**

Office hours are by appointment only. Appointments can be scheduled in advance via email. Replies to requests will generally be answered within 24 – 48 hours Monday through Friday.

David Simpson [dlsimps@emory.edu](mailto:dlsimps@emory.edu)  
Jenn Wilhelm [jennifer.wilhelm@emory.edu](mailto:jennifer.wilhelm@emory.edu)  
María Rosa-rodríguez [mrosaro@learnlink.emory.edu](mailto:mrosaro@learnlink.emory.edu)  
Jennifer Fugate [jbinzak@emory.edu](mailto:jbinzak@emory.edu)  
Carlo Manzo [cmanzo@physics.emory.edu](mailto:cmanzo@physics.emory.edu)

Biomedical Engineering  
Neuroscience & Physiology  
Spanish & Portuguese  
Psychology  
Physics

### **Supervising:**

David Lynn [dlynn2@learnlink.emory.edu](mailto:dlynn2@learnlink.emory.edu)

Chemistry, Biology

404-727-9348

### **Learnlink Conference:**

Throughout the semester, we will be using Learnlink (<http://www.learnlink.emory.edu>) extensively for discussions, assignments, and course administration. You are automatically registered for this Learnlink Conference, and it will appear on your Learnlink Desktop as “*Translating Life- ORDER 2007.*” It is your responsibility to check it regularly.

### **Attendance Policy:**

This is a discussion-based course and your active participation is essential to its success. Attendance at class meetings is required, and every absence affects your class participation grade. In the event of your absence, it is your responsibility to contact the instructor and make up any missed material. **Every unexcused absence will lower the final grade by 5%.**

**Excused absences** (e.g., physical illness, death of a close family member, religious holiday observance or personal/family emergency) will not affect your final grade. However, you may be asked to supply appropriate documentation. Travel is NOT an excused absence. Please plan holiday and/or other travel accordingly.

**Arriving more than five (5) minutes late to class will count as an unexcused absence.**

### **Classroom Management:**

Cell phones, pagers, and disruptive conversation are not permitted during class and laboratory sessions, as they are disrespectful to those who are actively engaged in the learning process. Please turn off all cell phones and pagers before class begins.

All students are expected to abide by the Emory Honor Code. Unfamiliarity with the Honor Code is not an excuse. Students may collaborate on the design and implementation of research studies, as well as on the evaluation of research articles. Reports and examinations, however, must be written independently and demonstrate some independent thinking. The appearance of collaboration on written laboratory reports and/or examinations will result in a report to the Honor Council.

### **Required Text:**

There are no required texts for this course. However, each instructor will provide you with reading. Readings will be passed out in class or available on ReservesDirect through the Woodruff Library.

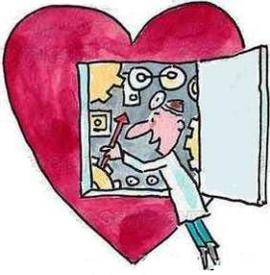
### **Accommodations:**

Students who require accommodations for physical and/or learning challenges should present appropriate documentation before the end of the second week of class. Students must also make an individual appointment to discuss the accommodations.

### **Course Format**

The course is divided into five, three-week modules, taught by instructors from five different disciplines. During each module you will learn about the particular research of each Emory instructor, and how each instructor uses scientific methods to ask questions and find answers within their specific discipline. While each topic of research will be different, you will notice that all of us from across the natural, social sciences, and humanities share many similarities in making scientific discoveries. For example, we have all started with a research question that interests us, and then we have designed a research project that will help us answer that question and gain a better of understanding of how the world works. In addition to sharing our research with you through our individual modules, the course is designed so that you can also develop a research project of your own based on your individual interests.

## Individual Research Description



David Simpson  
Sept 4 – Sept 18

### ***“Mending a Broken Heart”***

Have you ever had a broken heart? Now you may have experienced the pain associated with heartbreak, but chances are you've never had heart failure or have personally experienced a heart attack. “Broken” hearts, however, are the leading cause of death in the United States. Currently approaches are being undertaken which utilize tissue engineering and stem cell technology. A foundation has been set and it's up to us to uncover the possibilities and limitations for such an approach. Are you ready? Then its time to mend a broken heart!

### ***“Wiring the Brain: How Brain Creates Mind”***

Philosophers, scientists, theologians, and laypeople have wondered for centuries how the conscious mind comes to be. How does what we call mind emerge from the organic matter that we call the brain. In this module we will investigate how differences in the development of our brain can alter our perception of the world. Also we will discuss the inherent conflict of studying the mind using the very instrument being investigated.



Jenn Wilhelm  
Sept 20 – Oct 4



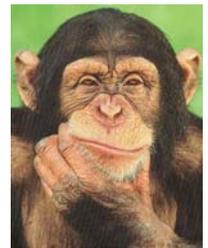
María Rosa-Rodríguez  
Oct 16 – Oct 30

### ***“Terror of Tolerance: Muslims, Jews and Christians of Imperial Spain”***

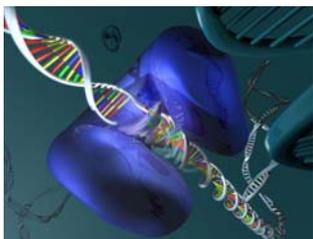
Imperial Spain was the “melting pot” of the 16<sup>th</sup> Century world. Muslims, Jews and Christians shared the same space, producing many extravagant phenomena in literature and architecture. This research focuses on decoding these phenomena. Students will explore Muslim legends and Jewish short stories that were written in a very “weird” way using the Spanish language with Arabic and Hebrew characters. They will see how the buildings of Andalusia portray a mix of three different religions and cultures, unveiling a Spain full of diversity and transit, of rivalry and exchange, that might inform the understanding of today's controversies and the continuous terror of real tolerance.

### ***“Surviving in a society: Perspectives from non-human primates”***

Have you ever wondered why humans are “social beings” when interacting with others is unpredictable and sometimes dangerous? How has living in a social world influenced our cognitive abilities? Step into the world of some of our living ancestors to find out. Learn how non-human primates come to recognize and understand group members as intentional agents, communicate about the environment and their emotions, learn from one another, and display unique behavioral traditions. Find out ultimately how these abilities have changed the definition of what is human.



Jennifer Fugate  
Nov 1 – Nov 15



Carlo Manzo  
Nov 20 – Dec 6

### ***“Twist and shout: handling DNA with tweezers”***

Have you ever twisted a phone cord, forming those braided structures that shorten and make the phone cord stiffer? Have you ever imagined that proteins and enzymes do the same on the DNA to regulate its functions? In this module we will take a close look to the mechanics of the DNA helix: we will see how a single (yes, one at the time!) DNA fragment can be manipulated, twisted, stretched or looped just using a pair of magnets as tweezers and we will learn what it teaches us about the life of the cell.

## Class Schedule

\*subject to change\*

<i>Date</i>	<i>Instructor(s)</i>	<i>Topic</i>	<i>Notes/Assignments</i>
Thurs Aug 30	All	Course Introduction	
Tues Sept 4	David		
Thurs Sept 6	David		
Tues Sept 11	David		
Thurs Sept 13	David		
Tues Sept 18	David		
Thurs Sept 20	Jenn		
Tues Sept 25	Jenn		
Thurs Sept 27	Jenn		
Tues Oct 2	Jenn		
Thurs Oct 4	Jenn		
Tues Oct 9	No class	Fall Break	
Thurs Oct 11	All	Proposal work day/ Creative project	
Tues Oct 16	Maria		Library Orientation**TBA
Thurs Oct 18	Maria		
Tues Oct 23	Maria		
Thurs Oct 25	Maria		
Tues Oct 30	Maria		
Thurs Nov 1	Jennifer		1 <sup>st</sup> draft of proposal
Tues Nov 6	Jennifer		
Thurs Nov 8	Jennifer		
Tues Nov 13	Jennifer		
Thurs Nov 15	Jennifer		2 <sup>nd</sup> draft of proposal
Tues Nov 20	Carlo		
Thurs Nov 22	No class	Thanksgiving	
Tues Nov 27	Carlo		
Thurs Nov 29	Carlo		Final draft
Tues Dec 4	Carlo		
Thurs Dec 6	Carlo		
Tues Dec 11	ALL	Course Conclusions	
Final Exam Period – Oral Presentations of Proposals			

### Important Deadlines:

- 1<sup>st</sup> Draft of Proposal = Thursday November 1, 2007 \*\*\*DURING CLASS TIME\*\*
- 2<sup>nd</sup> Draft of Proposal = Thursday November 15, 2007 \*\*\*DURING CLASS TIME\*\*
- Final Draft Proposal= Thursday November 29, 2007 \*\*DURING CLASS TIME\*\*

# GRADING

Grading for the course is based on earning a maximum of 1000 points, broken down as follows:

<b>Modules 1-5</b>	600 points	Each module will be worth 120 points, and grades will be assigned by the instructor of that module.
<b>Class Participation</b>	***	Participation grades will be based on attendance, participation in class activities and discussions, and timely completion of assignments given throughout the semester. Each instructor will grade you separately in the participation.
<b>Research Proposal</b>	250 points	Every student will be required to write a research proposal with step by step guidance of the instructors
<b>Creative Project</b>	150 points	Students will be required to work in groups and create a product that informs the public about an aspect of the class subject. These projects will be presented to the class during the exam period.
<b>TOTAL</b>	<b>1000 points</b>	

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A	=	≥93%	C	=	73-76%
A-	=	90-92%	C-	=	70-72%
B+	=	87-89%	D+	=	67-69%
B	=	83-86%	D	=	60-66%
B-	=	80-82%	F	=	<60%
C+	=	77-79%			