

Junction 2013 Seminar Classes, Week 3

Monday 7/22

What can we learn from a bunch of old men at a diner?

5-233

Amy



Some people get paid to study cells with a microscope. Some people get paid to study physics with a particle accelerator. Some people get paid to study human behavior with a notebook and a tape recorder. Say what? In this class, we'll read a brief section from "Slim's Table," in which a sociologist explores issues of race, gender, and community by describing men who frequent a diner. First we'll read, then we'll discuss, and perhaps then we'll think about this method of information-gathering and conclusion-making as it compares to the other sciences.

Writing Wikipedia

1-115

Elizabeth



Anyone can edit Wikipedia - including you! In this seminar we will talk about Wikipedia's open-source knowledge-sharing philosophy and the challenges of maintaining such an open project. We'll talk about how to use Wikipedia most effectively and put our discussion to use by making our own contributions to Wikipedia.

Emperor of All Maladies: Cancer From Molecules Up

1-150

Katherine



Cancer is a deeply complex disease. No two cancers are exactly alike, and the disease has effects from the molecular and cellular to patient level. In this seminar, we'll try to get a sense of what cancer "looks" like, from the series of genetic changes that cause tumors to grow, to the physiological alterations that they experience, to the effects on entire organs and systems.

Complex Numbers and Geometry

1-135

Lucy



Bored by the complex numbers you learned about in class? Come learn how to think about them geometrically! We'll explore surprising ways to think about both geometry and complex numbers. We'll also uncover connections to stereographic projections and inversive geometry, which will make you see space and geometry in an entirely new light.

Intro to Improv

5-217

Lydia



Have you always wanted to channel your inner actor? Come learn about the fundamentals of improvisation through fun exercises. Laughs guaranteed. No acting experience necessary, just expect to have fun.

Engineering Polymers

1-132

Rachel



Explore the wonderful world of polymers. Why are straws so bendy? What happens when you light a water bottle on fire? How can you alter plastic polymers to have the properties that you want them to have? Come learn about how polymers work and even get the chance to make your own silly polymer!

**Funny Females for Social Change?
The Mary Tyler Moore Show**

5-233

Amy



The Mary Tyler Moore Show is considered to be one of the funniest and most successful sitcoms of the 1970s it's like 30 Rock, The Office, and Parks and Recreation all rolled into one. In this class, we'll watch an episode and discuss whether The Mary Tyler Moore Show critiques how females are treated at work or whether it affirms that a woman's "real" role is to be a wife and home provider. This question is made more complicated by the show's use of humor- are we laughing at the show or with the show?

Molecular Messengers

1-134

Elizabeth



Your body manages all sorts of complicated processes without a hitch. How do your cells know when to do what? This seminar is all about how molecules carry messages between cells. We'll start with basics and cover a few cell signaling pathways in detail.

**Ohai World! Introduction to
Programming**

1-150

Katherine



I can haz programming? In this class, we'll be introduced to Scratch, a fun and friendly programming language that'll teach you the essentials. We'll cover programming basics like for loops, if statements, and do-while loops, with liberal helpings of lolcats. Absolutely no experience required – you'll be bored if you've already learned a language, or are familiar with programming concepts.

The Higgs Boson

1-135

Lucy



The Higgs boson gives mass to all elementary particles, and you wouldn't exist without it. Its discovery eluded researchers for decades until it was finally found last summer at the Large Hadron Collider. What is the Higgs, and why was it so difficult to find? This seminar is a gentle introduction into this topic on the cutting edge of science. We'll start with the Standard Model of particle physics, along with some historical context, and then we'll discuss why this discovery is so important for our understanding of the world.

A Rough Guide to the Brain

5-217

Lydia



Even though scientists have gathered a staggering amount of information about the brain, there are still vast, uncharted territories to be mapped in the field of neuroscience. One way scientists have come to understand the brain, however, is by studying what goes on when something goes wrong with it. Step into the shoes of a neuroscientist and come learn about the three-pound enigma inside your skull. ****Note****: Students taking the Introduction to Neuroscience core class will likely find this seminar redundant and are encouraged to pick a different one.

Professional Communications

14-0637

Rachel



Whether it is an e-mail to a teacher or a potential employer or a college interviewer, knowing how to communicate properly and professionally is an important skill that all students should have. Learn how to communicate with professionals and become a professional yourself. (Meet in Lobdell after dinner and we'll walk over to 14-0637.)

Why Are You Going to College?

5-233

Amy



“You dropped one hundred and fifty grand on an education you coulda got for a dollar fifty in late charges at the public library.” – Will in Good Will Hunting.

In this class, we’ll read a speech to newly minted college students that is a response to this question – why should you go to college anyway? Is there even a relationship between major and career? What am I really learning? After we read this speech, we’ll reflect on our own thoughts about our futures.

Weird Animal Behaviors

1-134

Elizabeth



Darwin’s theory of natural selection turned the world on its head. Why do plants absorb light in the visible light spectrum? Why do female birds choose brighter, showier males as mates? Why do some species have hermaphroditic life cycles? What do plants have to do with a seminar on animals? We’ll explore all of these questions and more in our study of why animals work the way we do.

Take It Apart: Sea Creatures

1-132

Chelsea,
Shulin



Dissections are a fun (and messy) way to figure out how things work! Come slice into preserved crayfish and sea urchins with Chelsea and Shulin from Junction 2012, who are back for one night this year to take apart specimens with you. A crayfish has a grand total of NINETEEN pairs of appendages - can you find them all? NOTE: Spots in this class will be determined by lottery at Tuesday dinner.

Machine Learning in Particle Physics

1-135

Lucy



The Large Hadron Collider produces 25 petabytes of raw data per year. How does that enormous amount of data get analyzed? We’ll first cover the basics of machine learning, which is a field of artificial intelligence in which computers “learn” to classify events based on sophisticated algorithms. Then we’ll see how machine learning techniques allow us to reconstruct what happens in the detector and make important discoveries. You’ll even get to try analyzing real data!

Introduction to Philosophy

5-217

Rachel



Knowing how to ask questions and make valid arguments are important parts of being human. Philosophy is the study of fundamental problems through critical assessment: by learning how to ask questions and argue efficiently. Learn briefly about the different types of arguments you can use to answer questions you may have, and develop a better understanding of how to ask the right questions.

Knitters' Circle

5-233

Amy



Don't let the grandmas have all the fun. Come learn the two basic knitting stitches and see all the things you can learn how to make! This seminar may move outside after meeting in 5-233.

Unpowered Flight

1-134

Elizabeth



Come get your hands glue-y in this practical introduction to unpowered aircraft. We'll be building balsa gliders and talking about fundamentals of aerodynamics. If you took Defying Gravity earlier, this is a chance to apply what you learned! Defying Gravity is not a prerequisite.

Junction Choir

4-156, 4-160

Lucy



We'll learn to sing a beautiful piece of choral music, and if you'd like to, we'll perform for the other Junction students at dinner next week! For those of you who have never tried singing, this is a low-pressure environment for you to try singing with your classmates. (Choral experience is not required, but some music experience is recommended. The performing component is optional.)

Spinning Poi

1-132

Rachel



Poi involves whirling tethered balls in a variety of patterns. It can be lots of fun and there are many different tricks that you can learn. Come learn the basics or show and teach others your skills with some tennis ball poi! This seminar may move outside after meeting in 1-132.

Capture-the-flag

Outdoors



Suitable shoes required (no sandals or flip-flops). Meet **HERE**, in the Lobdell dining room, after dinner and we will head outside together.