



PHY1033C/HIS3931/IDH 3931 : Discovering Physics: The Universe and Humanity's Place in It Fall 2016

Prof. Peter Hirschfeld, Physics



Course Description:

A course on the development of ideas about the universe from ancient Greece and Egypt to European renaissance and modern physics perspectives. The course will emphasize the evolution of the modern scientific method via a series of simple laboratory experiments, and contrast the actual process of discovery with the more common rational, linear narrative of scientific development. Simple qualitative ideas about gravity, optics, space and time will be explained at an introductory level as needed to complement the historical discussion.

New interdisciplinary course concept

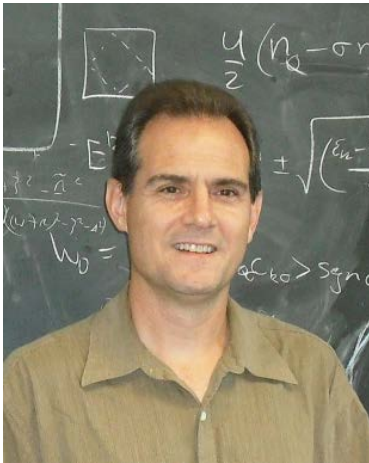
Inspired and funded by:



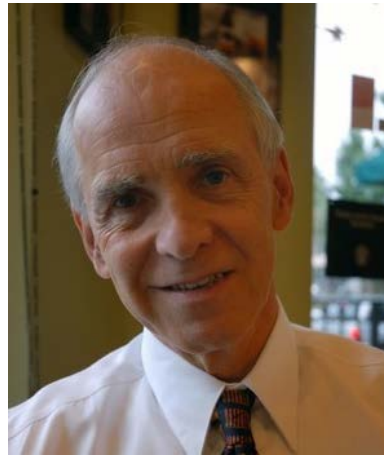
Thanks to: Sophia Acord and Bonnie Efros!

This course is an *experiment*

Your friendly neighborhood tag-team:

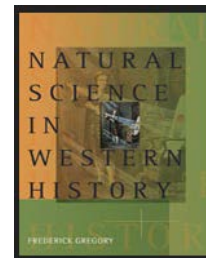


Peter Hirschfeld
Prof of Physics
research: superconductivity



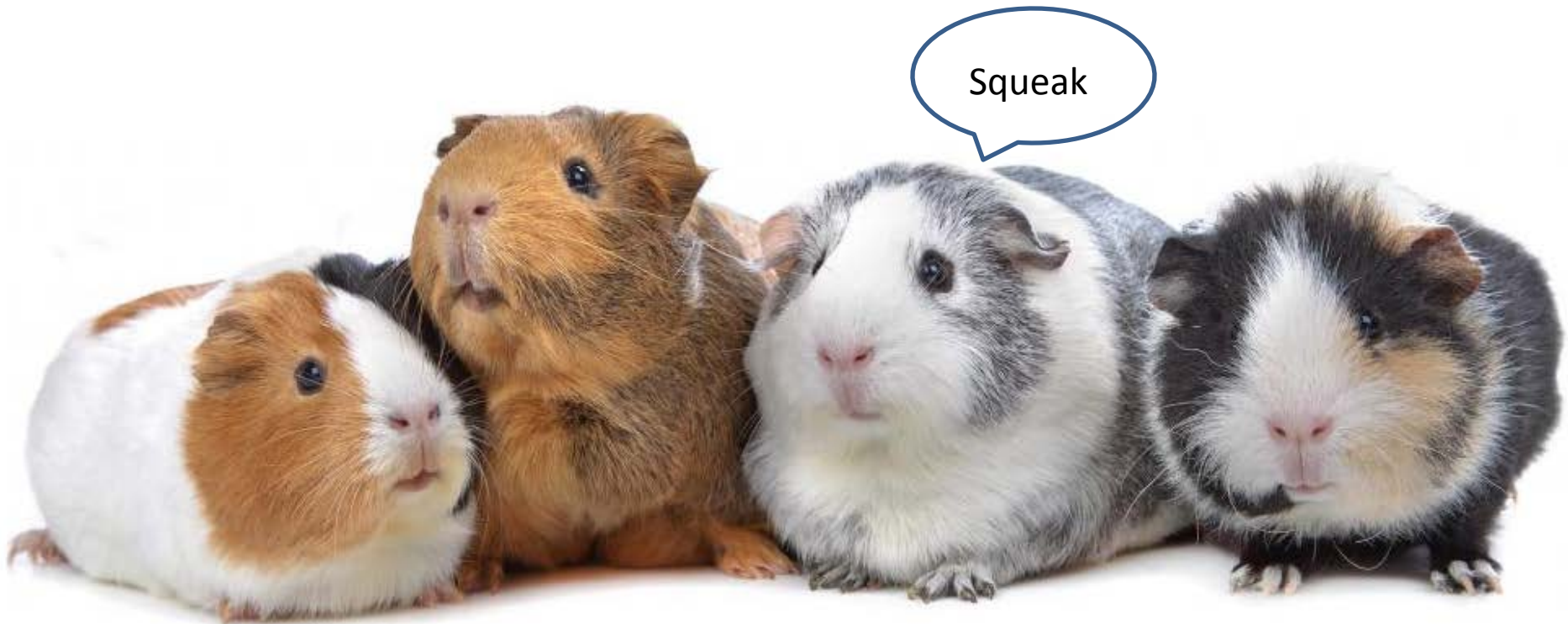
Fred Gregory,
Prof of History
(guest lecturer)

research:



Todd Kozlowski
Ariel Berrean

This course is an *experiment*
which means *you* are being experimented upon!



We need your feedback!

Website, syllabus, and course info

<http://www.phys.ufl.edu/~pjh/teaching/phy1033/1033C2015index.html>

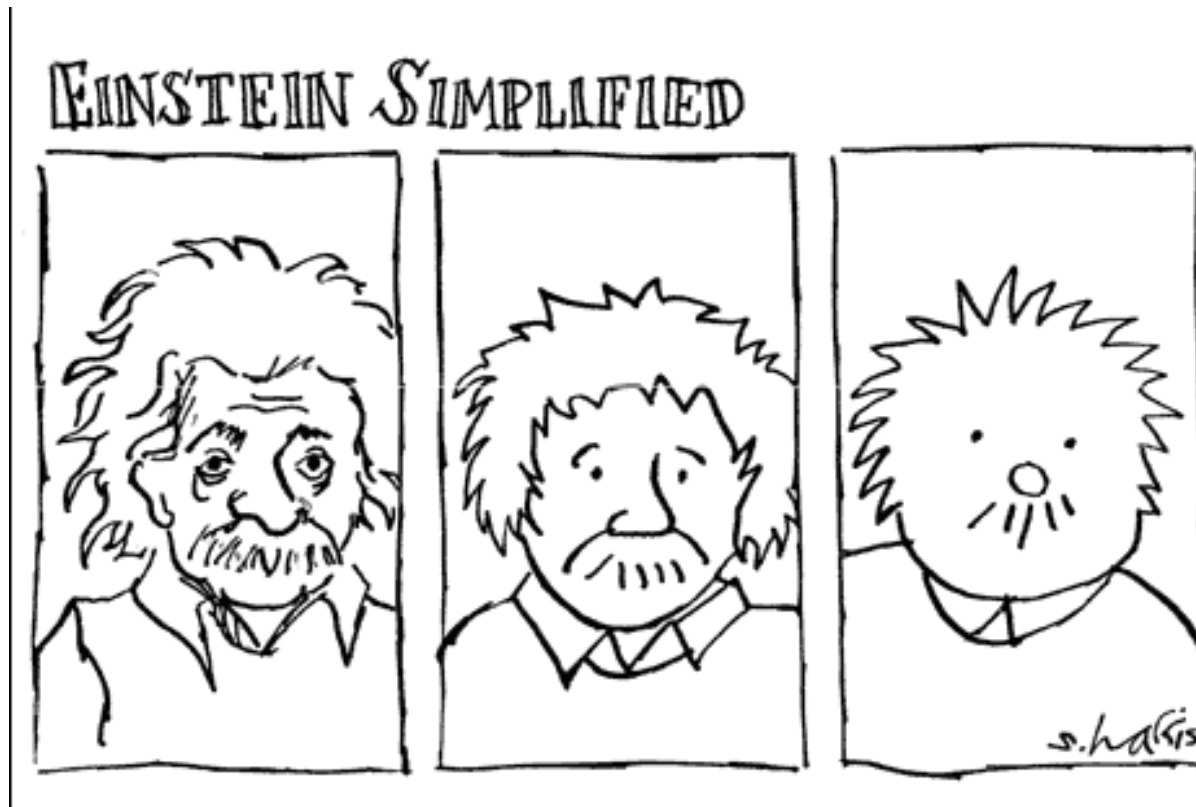
Or go to www.phys.ufl.edu → Academics → Current courses → PHY1033C

Can one understand the physics of the universe without (almost) any equations?

“It can scarcely be denied that the supreme goal of all theory is to make the irreducible basic elements as simple and as few as possible without having to surrender the adequate representation of a single datum of experience.” -- A Einstein, Herbert Spencer lecture, Oxford 1933

Sometimes paraphrased as

“Everything Should Be Made as Simple as Possible, But Not Simpler”



Before we start

Who are you?



Universe from “modern” perspective

Powers of 10 video

<http://micro.magnet.fsu.edu/primer/java/scienceopticsu/powersof10/index.html>

Solar system simulator

<http://janus.astro.umd.edu/SolarSystems/>

Wilkinson Microwave Anisotropy Probe

http://map.gsfc.nasa.gov/media/121238/ilc_9yr_moll4096BW.png

Pluto flyby

<http://www.nasa.gov/feature/new-horizons-spacecraft-displays-pluto-s-big-heart-0>

How to balance modern science
with history?
I need to wear many hats!



Just for fun:

Cyrus Teed, physician and electrical researcher, 1839-1908

Founder of the Koreshian society, **Naples, FL**

believed:

- the earth was the *inner* surface of a hollow sphere, and the heavens were located inside it.
- humans were held on the surface by centrifugal force
- all light and heat in the universe was generated by a giant electromagnetic battery.



Teed globe

