Astronomy 199 CIA

Lecture 6

Sept. 28, 2016

Today's Agenda

- ⋆ Upcoming Talk
- ⋆ Nobel Prize Betting Pool
- ⋆ Academic Integrity

Event Tomorrow

Thursday, Sept. 2, this room, 4:00 to 5:00pm

- Dr. Stephen Licata, NASA/JPL
- "University of Illinois Students: Meet JPL"

Q: What's JPL? Where is it? Why is it awesome?

Q: Questions you might ask?

Nobel Prize Gossip

the 2016 Nobel Prize season begins next week

2016 Nobel Prize in Physics
announced next Tues., Nov. 4

Nobel Prizewinners = Scientific Celebrities
Q: examples?
Q: what does it take to win?
Q: what do you get?
Q: any winners from Illinois?
Q: how do astronomers get a Nobel Prize?

Q: recent astro Nobel Prizes?

Nobel Prize in Physics: Recent Astro/Cosmo Winners

2011: supernovae show us that the Universe is accelerating!

2006: big-bang afterglow (a) shows the Universe was once in thermal equilibrium, and (2) reveals seeds of cosmic structures

2002: the cosmos crackles with neutrinos and X-rays

Q: Lay your bets: Nobel-worthy astronomy?

Ethics

Ethics in Astronomy

Q: what ethical issues arise of your student/professional life?

Q: your responsibilities?

Q: your rights?

Q: what is a conflict of interest? What do you do when faced with one?

Ethics in Astronomy

Themes: Ethical, professional behavior demands

- honesty
- fairness
- respectful behavior to all

You have a **responsibility** to act ethically

You have a **right** to expect others to act ethically to you

Ethics in Astronomy

- Personal conduct
  interactions with other students, faculty, and staff
- With colleagues elsewhere (conferences, labs, observatories)
- In research setting
- In writing papers
- Use of funds
- Each party in an interaction has rights and responsibilities

Ethics in Personal Conduct

"Students enrolling in the University assume an obligation to conduct themselves in a manner compatible with the Universitys function as an educational institution and suitable to members of the academic community."

conduct subject to discipline include:

- threats to health and safety of others
- conduct that violates the Universitys sexual misconduct policy
- academic integrity (i.e., avoiding cheating, plagiarism)

Anti-Harassment

at Illinois and in Astronomy, a safe working environment is the highest priority.

This department will not tolerate sexual harassment, by anyone, towards anyone.

we urge reporting of sexual harassment or suspected harassment via any of these channels:

- the department chair

- any other faculty

- campus site where one can seek information as well as report, including anonymously:
  `www: http://wecare.illinois.edu`

From American Physical Society,
also endorsed by American Astronomical Society:

Each physicist is a citizen of the community of science. Each shares responsibility for the welfare of this community. Science is best advanced when there is mutual trust, based upon honest behavior, throughout the community. Acts of deception, or any other acts that deliberately compromise the advancement of science, are unacceptable. Honesty must be regarded as the cornerstone of ethics in science. Professional integrity in the formulation, conduct, and reporting of physics activities reflects not only on the reputations of individual physicists and their organizations, but also on the image and credibility of the physics profession as perceived by scientific colleagues, government and the public. It is important that the tradition of ethical behavior be carefully maintained and transmitted with enthusiasm to future generations.

iClicker Poll: Case Study

Imagine: Illinois student X is writing a review on supermassive black holes for ASTR401, due tomorrow. He reads his textbook and several review journal articles to learn about the subject. X understands the basics, but is confused by the jargon such as ISCO and MRI instability. Facing the deadline, X cuts and pastes two sentences about the MRI instability from an article he cites in his paper. Because he cites the article earlier in the section, he decides not to put the two sentences in quotations.

adapted from `http://community.tncc.edu/faculty/dollieslager/rcte/plag_casestudies.htmlhttp://commun`

Has X committed an Academic Integrity infraction?

- A yes, without a doubt, believe me
- B I guess so, but it's a little murky
- C I guess not, but it's a little murky
- D no way!

Has X committed an Academic Integrity infraction?

A **yes, without a doubt, believe me**

Why? This is example of
using other people's words without credit!

Direct quotations must always be clearly marked

- in quotation marks, or
- for longer quotes, in a box with smaller margins
- **citation** must always appear and make obvious who wrote the words, and where to find them

Plagiarism

Q: what is plagiarism?

Q: why is plagiarism a very serious infraction at Illinois and in Science?

Q: what if you were confused about the rules?

Q: what are penalties for plagiarism?

Q: what can you do to avoid plagiarism?

`www: arXiv reporting of closely matching papers`

Avoiding Plagiarism

- **always write in your own words**

- **do not directly quote other text**
  except in rare circumstances, and then clearly documented
  if you can't say it in your own words, you don't understand it

- **remove all other text (books, windows)**
  from your field of view when you are writing

- **it doesn't matter that someone else said it better**
  you have to say it in your own words

Collaborative Coursework

Science today is (nearly always) collaborative

`www: LIGO future Nobel-Prize-winning paper`

In Illinois Astronomy classes, most instructors allow and even encourage
group discussion of problem sets

Your classmates are a great resource!

Q: How do you know if this is allowed? What if it isn't?

Q: What obligations do you have for the work you turn in?

Collaborative Homework

It it **your** responsibility to know collaboration policy

- check Syllabus
- ask Instructor

On problem sets:

You are must understand every aspect of every problem

- you should do your own calculations
- you should write up your answer in your own words
- you should hand in your own solution

Even if you discuss in a group

Your work should reflect **your own** understanding not the group's

Research Ethics

Q: regarding data and results?

Q: regarding authorship?

Q: regarding acknowledgment?

Q: what if you realize your paper has an error?

Research Ethics

data and results: maintained in form allowing review, analysis, and reproducibility

fabrication and/or selective reporting with intention to mislead are unethical

honest errors occur, but must be acknowledged and corrected

authorship: should be offered to everyone who has significantly contributed
not people who have not significantly contributed

acknowledgment: proper acknowledgment of other work
deliberate omission is unacceptable

Ethics Resources

On campus:

- your advisor
- any faculty, in astro or other departments
- Dept. Chair
- LAS advising
- Office of Diversity, Equity, and Access
- campus Ethics Office

AAS

- online resources linked in todays page