



<http://kicp-courses.uchicago.edu/2014/>

SHORT COURSE PROGRAM



<http://kicp.uchicago.edu/>

Alan Alda Center
for Communicating Science

AT STONY BROOK UNIVERSITY

<http://www.centerforcommunicatingscience.org/>

ADLER
PLANETARIUM

<http://www.adlerplanetarium.org/>



<http://www.uchicago.edu/>

Who Should Attend: Museum & Planetarium Staff

What to Expect:

- A better understanding of the BIG Picture of cosmology
- To meet and talk with researchers at the forefronts
- To visit the Adler Planetarium & Astronomy Museum to see innovative ways to bring current cosmology into a museum
- Practicum sessions that will allow you test drive programming ideas developed during the course
- Tools and resources to bring forefront research into your home institution

In our eighth short course KICP researchers will share the most current research about the cosmos focused on the theme of change and evolution. The course will feature a practicum, where teams of participants develop sky show presentations, which will be juried on the final day.

Course Description

The heavens fixed no more. Discoveries made over the past decade have revealed that the Universe and objects within are changing on timescales from shorter than a microsecond to longer than a billion years. From our own solar system and other planetary systems to stars, galaxies and clusters of galaxies astronomers are chronicling an evolving and evermore interesting universe with their sophisticated instruments.

Though astronomers since antiquity have realized that new objects sometimes appear in the night sky, they considered the cosmos to be timeless and unchanging. Even as recently as the 1920s, astrophysicists had difficulty comprehending a universe that was not eternal. Now we know differently. Change is the rule. Planets form and orbit other stars; stars explode in violent supernovas; galaxies and black holes merge; and the Big Bang set it all in motion.

Astronomers now regularly witness many of these phenomena -- fleets of space satellites and ground based telescopes monitor the sky in real time, detecting transient events like solar flares, gamma ray bursts and supernovae within hours. Telescopes in Antarctica are mapping the spacetime ripples from the Big Bang, the Universe's most dramatic period of evolution. These events let us observe new physics in extreme conditions which are only ever reproduced on Earth in massive computer simulations revealing how galaxies collide and stars explode.

Instructors

Daniel Fabrycky
University of Chicago

Joshua Frieman
KICP

Elise Jennings
KICP

Richard Kron
University of Chicago

Donald Lamb
University of Chicago

Randall Landsberg
KICP

Christopher Sheehy
KICP

Mark SubbaRao
Adler Planetarium & Astronomy Museum

Michael Turner
KICP

Sunday - September 21, 2014

10:00 AM - 10:15 AM	LECTURE: 0 - WELCOME <i>Randall H. Landsberg</i>
10:15 AM - 11:00 AM	LECTURE: 1 - OVERVIEW <i>Michael S. Turner</i>
11:00 AM - 11:30 AM	Coffee Questions & Answer Session
11:30 AM - 1:00 PM	LECTURE: 2 - EXPLODING STARS <i>Donald Q. Lamb</i>
1:00 PM - 2:00 PM	Lunch
2:00 PM - 3:30 PM	LECTURE: 3 - EXOPLANETS IN MOTION <i>Daniel Fabrycky</i>
3:30 PM - 4:00 PM	Coffee Questions & Answer Session
4:00 PM - 6:30 PM	PRACTICUM I <i>visual resources & idea pitches</i>
6:30 PM	Working Dinner & Social

Monday - September 22, 2014

8:30 AM - 9:10 AM	Coffee Questions & Answer Session
9:00 AM - 10:30 AM	LECTURE: 4 - GALAXIES EVOLVING <i>Richard G. Kron</i>
10:30 AM - 11:00 AM	Coffee Questions & Answer Session
11:00 AM - 12:30 PM	LECTURE: 5 - GRAVITY SHAPES THE UNIVERSE: LARGE SCALE STRUCTURE <i>Joshua A. Frieman</i>
12:30 PM - 1:30 PM	Informal Lunch
1:30 PM - 2:15 PM	LECTURE: 6 (PART I) - ORIGIN AND DESTINY OF THE UNIVERSE <i>Elise Jennings</i>
2:15 PM - 3:00 PM	LECTURE: 6 (PART II) - ORIGIN AND DESTINY OF THE UNIVERSE <i>Christopher Sheehy</i>
3:00 PM - 3:30 PM	Coffee Questions & Answer Session
3:30 PM - 6:30 PM	PRACTICUM II <i>experts input, resources, storyboard development</i>

6:30 PM

Dinner & Social

Tuesday - September 23, 2014

6:30 AM - 7:45 AM	Breakfast & Questions @ TBD
7:45 AM	Board - Transportation to Adler Planetarium
8:00 AM	Depart to Adler Planetarium
8:30 AM - 12:30 PM	PRACTICUM III <i>Presentations & Feedback</i>
12:30 PM - 1:00 PM	LECTURE: 7 - WRAP UP <i>Michael S. Turner</i>
1:00 PM - 2:30 PM	Lunch & Informal Q&A - Close Out <i>Michael S. Turner</i>
2:30 PM	Travel or more time @ Adler <i>Space Visualization Lab (SVL) (Mark SubbaRao + KICP researchers)</i>