

## **The Science of Science Fiction**

01:090:293:04 Index# 14568

Eric Gawiser, SAS - Physics & Astronomy

T 10:20A-01:20P

SEC Room 218

Busch Campus

We will use the creative and fascinating world of science fiction as a motivation to discuss the frontiers of scientific knowledge and the limits of possibility. Barry Luokkala's recent textbook, "Exploring Science Through Science Fiction," offers a marvelous collection of topics for discussion derived from the science fiction literature, ranging from the physics of time travel and space travel to computer science, extraterrestrial intelligence, biotechnology, bioethics and futurism.

The course material will be accessible to students who have not taken college level science or math courses, although science majors are also welcome. The first major assignment will be an essay comparing the scientific accuracy of a science fiction book/short story and its TV/movie adaptation. Students will then peer review these essays, incorporate feedback from peers and the instructor, and summarize them in class presentations during the second half of the term. The final major assignment will be to compose a short science fiction story that is scientifically feasible. There are no exams, but preparation for and participation in class discussions is expected and will be a significant portion of the final grade.

This seminar satisfies the three criteria for the Core Curriculum goal of "Writing and Communication in the Discipline [WCd]": [t] Communicate effectively in modes appropriate to a discipline or area of inquiry, [u] Evaluate and critically assess sources and use the conventions of attribution and citation correctly, and [v] Analyze and synthesize information and ideas from multiple sources to generate new insights.

ERIC GAWISER is an Associate Professor in the Department of Physics & Astronomy. Gawiser studies galaxies, stars and black holes to understand how these objects form and to probe fundamental physics. He received a bachelor's degree in Physics and Public Policy from Princeton University and earned his Ph.D. in Physics from U.C. Berkeley, specializing in theoretical cosmology. He began using the world's largest telescopes to study distant galaxies as a postdoctoral fellow at U.C. San Diego and Yale University. Since he joined the Rutgers faculty in 2007, Gawiser's research has been supported by NASA, the Department of Energy, and the National Science Foundation, including an NSF CAREER Award. He is part of the leadership of the Large Synoptic Survey Telescope (LSST) Dark Energy Science Collaboration, which will study billions of distant galaxies to determine the nature of dark matter and dark energy. Gawiser has published over 200 scientific papers and has given more than 100 invited talks at conferences and universities. He is also an accomplished teacher and public speaker, including an appointment as an Associate of the Hayden Planetarium, an Outstanding Teacher Award from the Rutgers Society of Physics Students, and recognition for Distinguished Contributions to Undergraduate Education from the Rutgers School of Arts and Sciences.