

THE DEPARTMENT OF PHYSICS AND ASTRONOMY PRESENTS
A SERIES OF LECTURES, DEMONSTRATIONS, AND FILMS

WHAT PHYSICISTS DO

"Physicists like to think that all you have to do is say, these are the conditions, now what happens next?" - Richard Feynman

**EIGHTY-SIXTH SERIES
FALL 2013**

Mondays at 4:00 p.m.

Darwin 103

Coffee at 3:30 p.m.

- SEP 9 **MAGNETIC FIELDS ON THE SUN: ALL THAT STUFF FROM E&M REALLY WORKS!**
Dr. Brian Welsch from the University of California, Berkeley, Space Sciences Laboratory will explain the manifestations of solar activity and the applications of textbook E&M to describe the structure and evolution of solar magnetic fields.
- SEP 16 **A CITIZEN SCIENCE COLONIZATION MODEL FOR THE KOPRULU SECTOR IN STARCRAFT 2**
Dr. Tom Targett, visiting professor of Physics & Astronomy at Sonoma State, will discuss how a video game like StarCraft 2 can increase the public's understanding of the scientific method. He will also discuss the scientific potential of the video game industry.
- SEP 23 **DARK MATTER: AND HOW WE WOULD NOT BE ALIVE WITHOUT IT**
Dr. Tom Abel from SLAC and KIPAC at Stanford University will explain how telescopic observations have convinced scientists that Dark Matter must exist. The talk will also discuss the importance of supercomputers in studying how Dark Matter influences the Universe.
- SEP 30 **S4: SMALL SATELLITES FOR SECONDARY STUDENTS**
Kevin John ('07) of Sonoma State's NASA Education and Public Outreach group will talk about an exciting ongoing project to teach STEM principles to middle and high school students, through the thrill of building electronics and launching them on high-powered rockets.
- OCT 7 **PHYSICS AND LAW: INTELLECTUAL PROPERTY AND 21ST CENTURY BUSINESS**
Wayne Sobon of Inventergy, Inc, a Cupertino-based investment and licensing company, will be discussing how intellectual property is a modern business asset with ties to science, business, and language. Mr. Sobon will delve into his career path from an undergraduate degree in physics to patent law.
- OCT 14 **EXO AND THE QUEST FOR MAJORANA NEUTRINO MASSES**
Dr. Giorgio Gratta from Stanford University will discuss recent evidence pointing towards a non-zero mass for neutrinos, and will describe how the EXO program might be able to measure neutrino masses.
- OCT 21 **SOALR FUELS PRODUCTION BY ARTIFICIAL PHOTOSYNTHESIS**
Dr. Joel Ager from the Lawrence Berkeley National Laboratory will explain his research on practical methods to use sunlight to generate liquid transportation fuels, using a carbon-neutral energy source. Artificial photosynthesis is the first step to such alternative fuels.
- OCT 28 **DEVELOPING SCIENTIFIC WRITING: CURRICULUM AND CLASSROOMS TO SUPPORT SCIENCE LITERACY**
Dr. Leslie Atkins of California State University, Chico, will describe what makes scientific writing "scientific" and how it might be excluding a wider participation in science. The relationship between the classroom and scientific literacy will be further explained through Dr. Atkins' research.
- NOV 4 **WHAT (SOME) PHYSICISTS DO: ONE HILLBILLY'S PERSPECTIVE ON THE SUBJECT**
Dr. Jerry Johnston from Optical Coating Laboratory Inc. in Santa Rosa will be talking about his career evolution from being an academic to a technical project manager position in the aerospace and defense industry.
- NOV 18 **THE DARK UNIVERSE THROUGH EINSTEIN'S LENS**
Dr. Deborah Bard from SLAC and KIPAC will be talking about how gravitational lensing was first observed and how it is used for studying exoplanets to Dark Matter and much more.



This series is supported by private donations and Instructionally Related Activities (IRA) funds.

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