

**College of Science and Technology
Interdepartmental Seminar Series
Spring 2008**

*All seminars are in Meade 112 at 3:30pm
Coffee and cookies will be served 30 minutes before each talk.*

8 February Harvesting solar energy at sea surface

3:30pm. Dr. Cris Koutsougeras, Department of Computer Science and Industrial Technology

Abstract: Even though solar energy harvesting is still expensive, other priorities emanating from the effects of global warming and fossil fuel costs make its use a worthwhile investment. Solar energy in particular is interesting in that it is the major energy influx into the earth's ecosystem. At a large scale of harvesting it there is a "real estate" problem. Harvesting at sea surface by floating very large grids of solar panels is a way around it but it presents a few different engineering challenges. In this talk we will entertain the audience with our ideas on meeting these challenges. But what we hope to accomplish further than that is to interest the audience and perhaps spark some related research by other people from fields beyond engineering.

7 March Applications of Near-rings

3:30pm Dr. Lucy Kabza, Department of Mathematics

Abstract: We will look at a design of a specific experiment for testing combinations of 6 out of 10 engine ingredients and how abstract mathematical structures like groups, rings, fields and, in this particular case, near-rings, can help optimize such a design. We will discuss how this can be generalized.

4 April Fusion Energy: Building a Star on Earth

3:30pm Dr. Daniel McCarthy, Department of Chemistry and Physics

Abstract: With the price of petroleum skyrocketing, demand for energy rising, and greenhouse gases wreaking havoc on our planet, it is hard to overstate the importance of developing a clean and sustainable energy source. Controlled thermonuclear fusion, the source of energy that powers the stars, is one such source. As it happens, controlled fusion has not proven to be a simple problem, and research on this problem has been ongoing for over a half a century internationally. The problem is simple: in order to achieve fusion, one has to heat significant quantities of a gas (which will then become a plasma) to about a half billion degrees - and keep it in one place. Although the problem itself is straightforward, the solutions to this problem have proven to be remarkably difficult. In this talk, I will discuss a few of the physics problems that have occurred in the quest, and describe the current state of affairs in this fascinating field of science and engineering.

2 May What's the story? Lessons on evolution from morning glories

3:30pm Dr. Richard E. Miller, Department of Biological Sciences

Abstract: Morning glories are emerging as a model system in evolutionary biology. These flowering plants have been the focus of studies in a wide range of areas within evolution and provide excellent examples of how current questions in this field are being addressed using modern approaches. A few of the main themes of these research programs will be presented, along with lots of pretty pictures.