

Undergraduate Research Center Newsletter

Issue 2 June 17, 2008

CALENDAR

- June 18, 2008**
12:00 noon **Ramin Naimi, Mathematics Dept.**
Samuelson Pavilion, includes lunch
- June 19- June**
29, 2008 Los Angeles Film Festival
Westwood Village
Buy tickets online on
<http://www.lafilmfest.com/>
- June 22, 2008**
6:30 pm Norton Simon Museum of Art
411 W. Colorado Boulevard
Pasadena, CA 91105-1825
626.449.6840
<http://www.nortonsimon.org/>
- June 25, 2008**
12:00 noon **Diana Akiyama, Office for Religious &**
Spiritual Life
Mosher One, includes lunch
- June 27, 2008**
10:00 am-8:00
pm Pacific Asia Museum Free Day
Pacific Asia Museum
46 N Los Robles AVE
Pasadena CA 91105
<http://www.pacificasiamuseum.org>

CHECK THIS OUT!!!!!!!!!!!!

Great food! Trendy restaurants! Special Offers!

(Courtesy of ABC 7 News)

DOLCE (50% off on food on Monday nights)-West Hollywood

<http://www.losangelesrestaurants.com/restaurant.cfm/restaurant/883/Dolce>

KETCHUP (50% off on food on Sunday nights)-West Hollywood

<http://www.losangelesrestaurants.com/restaurant.cfm/restaurant/1386/Ketchup>

CITIZEN SMITH (50% off on food on Monday nights)-Hollywood

http://www.opentable.com/rest_profile.aspx?rid=5848

Wednesday's Featured Speaker

Professor Ramin Naimi



Associate Professor of Mathematics

Research Areas include: 3-Manifold Topology, Knot Theory,
Topological Graph Theory

B.S. University of California, LA; Ph.D. from the California Institute of
Technology



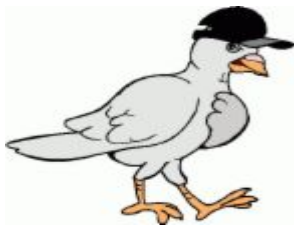
Here's a Sneak Peek:

Why do automobile sunshades fold oddly, and how are they priced?

Abstract:

You've probably seen one of those "automatic folding" automobile windshield sunshades, the ones that are kind of round and have a springy wire inside them (I don't mean the ones that fold in and out like a hand-held paper fan). Have you ever thought about how these shades fold, and why? Is there more than one way to fold them? I'll answer these questions by using Topology (a branch of Mathematics). I'll also explain why you get twists and kinks in garden hoses and electrical cords, and how to avoid them. The only math you need to know for this talk is to be able to count.

WHO'S GOT PIGEON FEVER?



Dina Abdel-Massih and Luca Valle

Pigeon Fever....one would associate this disease with the members of the *Aves* family; however, it is actually a reference to a malignant bacterium that affects Southern California's *Equus caballus* family. This summer, biology students Dina Abdel-Massih ('10) and Luca Valle ('10) are working with Professor Roberta Pollock to research Dryland Distemper, commonly known as "Pigeon Fever." One form of Pigeon Fever results in the formation of abscesses primarily in the upper chest area in horses. These abscesses are typically painful and contain massive amounts of bacteria and pus, giving the breast region a puffed appearance that resembles a pigeon breast. The internal form of Pigeon Fever results in abscesses on the spleen, kidney, and liver. The number of cases is not tracked, but veterinarians say that they are increasing each year.

Corynebacterium pseudotuberculosis, the bacterium which causes the disease, produces a toxic substance called PLD. This substance is the antigen which must be neutralized by an antibody. Pollock and her students are attempting to investigate what antibody would suppress the PLD, when the antibody is produced, how much is produced at each stage, and to what class the antibody belongs. The bacterium is found mostly in the soil of drier regions and can infect many other types of animals, however, Professor Pollock and her students have decided to concentrate their research on horses and their response to the disease. During the past year, Professor Pollock (an aficionado of horses) has been collecting blood samples from horses throughout Southern California. No vaccine currently exists and treating an infected horse costs \$5,000. Because the disease is contagious, it can contaminate an entire herd (which can imagine be both sad and expensive for the owner).

Pharmaceutical companies have been reluctant to invest the large amounts of money needed to research and develop a vaccine for the bacteria because the problem seems to be primarily concentrated in California. Pollock and her students would like to present their research to various pharmaceutical companies in the hope that one would be willing to produce a vaccine once the research has been completed for them. Because the students do not yet have the horse blood samples, they have been

working with mouse hybridomas, which have been vaccinated to produce PLD antibodies; the students have been characterizing the antibodies produced to compare with horse antibodies. With their cutting edge research and drive, Professor Pollock and her students are off to a promising start to save Southern California's horses!

(Story by Vanda Ayrapetyan)