

The California Los Padres Section of the American Chemical Society

Winter Dinner Meeting

6:30 p.m. Wednesday, February 11, 2009

Antonio's Ristorante

626 West Tefft Street, Nipomo

with **ACS Tour Speaker**

Dr. R. Paul Philp

University of Oklahoma

Speaking on

Environmental Forensics, or Who Was Responsible for the Spill?

As soon as organic compounds are spilled into the environment, changes will start to occur to them as a result of weathering process. For example with crude oils changes will range from evaporation and loss of light ends to extensive biodegradation and loss of many of the compounds typically used for correlating spilled oils with their original source. As a result of these weathering processes, it is often difficult to correlate the spilled oils with their suspected sources. It is essential that these correlations be made to determine who is responsible for the spill and who pays for the clean-up process. There are a number of sophisticated techniques available for this type of forensic geochemistry which can be used for correlating weathered samples with their respective source materials. In this talk specific emphasis will be directed towards the most recent technique for use in this area namely gas chromatography combined with isotope ratio mass spectrometry (GCIRMS). Examples will be presented to demonstrate that the isotopic composition of individual compounds in complex mixtures, such as crude oils, can be used to correlate them with their weathered counterparts. It is clear from the results that GCIRMS is a powerful new tool in forensic geochemistry particularly when combined with the more traditional techniques such as GC and GCMS. Other applications will be described to demonstrate that GCIRMS can also be used to determine the source of leaks from underground storage tanks and sources of gases from leaking pipelines. Variations in the isotopic composition of the MTBE added to gasolines also provides the opportunity of using GCIRMS as a means of monitoring, and determination of the source of, gasoline spills from underground storage tanks. Applications are many and varied but with this relatively new technique the ability to correlate heavily weathered samples with their unweathered counterparts have been elevated to a new level and provided forensic geochemistry with a new dimension.

The cost for the event will be **\$25** per person, **\$15** for students.
Dinner includes a *choice of entrée*: **Baked Lamb Shank, Grilled Salmon, or Eggplant Parmesan.**

For more info go to the CALPACS website www.chem.ucsb.edu/~calpacs, email us at calpacs@chem.ucsb.edu or call James Pavlovich at 805-893-4252.

Please return your check with the form below by **Friday, February 6, 2008.**

Please RSVP with Payment to:	Name(s) of Attendees	Entrée Choice	Student?
California Los Padres ACS	_____	_____	_____
Dept. of Chemistry and Biochemistry	_____	_____	_____
University of California	_____	_____	_____
Santa Barbara, CA 93106-9510	_____	_____	_____

Please provide contact email or phone # _____ Amount Enclosed: _____

Directions to Antonio's Ristorante in Nipomo.

From the North: Take 101 South to Nipomo. Take Tefft St Exit. Turn Right onto West Tefft Street. Go about 1 block to 626 W. Tefft.

From the South: Take 101 North to Nipomo (~7 miles north of Santa Maria). Take Tefft St Exit. Turn Left onto West Tefft St. Crossover Freeway and proceed ~1 block to 626 W. Tefft St

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