OCE 290A – (Topics in Chemical Oceanography)
Application of Isotopes in Geological and Environmental Research

Location – IGPP Conference Room  Time: Friday 2-4pm
Instructor – Adina Paytan (contact by email if you have questions apaytan@ucsc.edu)
Class attendance limited to ~15 students

CLASS DETAILS:

This is a combined lecture and seminar course given for 3 units. The class is offered to graduate students in the ocean, earth, biology and environmental sciences.

The main topic of this class is learning about various applications of different isotope systems in geological, oceanographic, biological and environmental studies at low temperature. The use of isotopes as tracers for weathering rate, biogeochemical cycling, food-web structure, ecology, paleo-chemistry, archeology, provenance, circulation, anthropogenic and extraterrestrial inputs and more. We will cover a broad array of elements including: C, O, N, Si, S, Sr, Nd, Ra, Os, B, Li, Pb, Ca, Mg, Se, Mo and Fe.

Emphasis will be given to developing skills for critically reading and discussing of scientific papers, preparing oral presentations, conducting literature searches, manuscript reviews, and proposal preparation.

GRADING:

Class participation 25%, Oral presentation 25%, Mid-term manuscript to review 25%, Final 3-5 page Proposal 25%
Class Schedule

Jan 10 – Quick Introduction to Isotopes – Oxygen, Hydrogen and Carbon Isotopes

Jan 17 – C and N isotopes

Jan 24 – S isotopes

Jan 31 – B and Si isotopes

Feb – 7 Sr isotopes

Feb 14 – Ca and Mg isotopes

Feb 21 – Li and Os isotopes

Feb 28 – Ocean Science move to March 3? Nd, Pb and Hf isotopes

Mar 7 – Mo, Fe, U and other metals

Mar 14 – Ra, Rn and noble gases, Cosmogenic isotopes