GOAL: Stable isotope ratios of carbon, nitrogen, oxygen, sulfur and hydrogen, and the radiogenic isotopes of strontium in animal tissues, plant tissues, and soils indicate aspects of diet and ecology. This course will introduce students to this approach for reconstructing paleodiet, paleoenecology, paleoclimate, and migration patterns. Students are expected to learn the basics of stable isotope systematics, to understand the kinds of questions that can be addressed, and to interpret the results published thus far.

Class Organization will be a mixture of lecture and discussion depending on the specific topic of the week. You will be expected to articulate the main points in class and also to discuss any data presented. I will try to guide you in sorting out the most important points; but you will have to read carefully and you will be expected to understand the points I emphasize. You will have to draw on those points later when you begin reading the primary literature. Be sure to bring the required readings to be able to discuss specific graphs during class. After the first few weeks, groups of students will be expected to lead the discussion.

Grading:
25% In class discussion
25% Weekly: 2 page (double spaced) summary of the main points in the readings. Due in class each week.
15%: Annotation of chosen topic readings,
35%: Topic presentation or 10-page double spaced term paper.

Academic Integrity: Students are expected to do their own work, as outlined in the UCSD Policy on Academic Integrity published in the UCSD General Catalog. Cheating will not be tolerated, and any student who engages in suspicious conduct will be confronted and subjected to the disciplinary process. Cheaters will receive a failing grade on the assignment or the exam and/or the entire course. They may also be suspended from UCSD.
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| Week 1| Jan. 12 | Introduction to class and background  
Discussion of readings week 6-10, based on students’ interests |
| Week 2| Jan. 19 | Isotope systematics                                                   |
| For those interested in more detailed readings:  
| Week 3 | Jan. 26 | C,H,O, & N variation in plants  
stable&radiogenic isotopes in vertebrates |
| Readings:  
| Skim the following:  
| Week 4 | Feb. 2 | Forensics (Dr. Melanie Beasley) |

Week 5 Feb. 9 Bioarchaeology (Dr. Melanie Beasley)
Giacomo Gaggio


Suggested:


Week 6 Feb. 16 Conservation (Dr. Carolyn Kurle)


Carolyn M. Kurle et al. 2016 Terrestrial scavenging of marine mammals: cross-ecosystem contaminant transfer and potential risks to endangered california condors (*Gymnogyps californianus*). *Environmental Science and Technology*.


Week 7 Feb. 23 Climate Change (Dr. Isabel Rivera-Collazo)


Week 8 March 2 Nonhuman primates (Dr. Melanie Beasley)
Isabel Hermsmeyer


Schoeninger MJ et al. 2015 Environmental variables across Pan troglodytes study sites correspond with the carbon, but not the nitrogen stable isotope ratios of chimpanzee hair. American Journal of Primatology.

Week 9 March 9 Paleoecology&human/animal interactions (Dr. Andrew Somerville)


