SIGN UP FOR THIS CLASS  
A Half-Semester Biology Lab Experience

Biology 3960 (Section 8)  
Stable Isotopes: You Are What You Eat (Your mother was right)  
(1 unit elective)

Overview: Enter the world of stable isotopes. Here chemistry from your diet and metabolism are recorded naturally in breath, hair, teeth, and bones. In this fresher seminar, students will get lab experience along with discussions on how stable isotopes are used in health, ecology, evolution, and physiology.

Instructor: Jim Ehleringer  
Office; 522 ASB, Phone: 801-581-7623  
Email: jim.ehleringer@utah.edu  
Office hours by appointment

Class meets: Thursdays, 4:35-5:55 pm, 504 ASB (October 22 – December 10)

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Lab activity</th>
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<tbody>
<tr>
<td>Oct 22</td>
<td>Carbon isotopes and breath – your carbohydrate metabolism; introduction to C3/C4 photosynthesis</td>
<td>Visit SIRFER; collect and analyze student breath samples</td>
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<td>Oct 29</td>
<td>How are carbon isotopes used to reconstruct human diets today, animal diets, as well those of early hominids</td>
<td>Interpret student breath results</td>
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<tr>
<td>Nov 5</td>
<td>Carbon and nitrogen isotopes and hair – your protein metabolism; introduction to trophic levels and diets</td>
<td>Collect and analyze student hair samples</td>
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<td>Nov 12</td>
<td>How are hair isotopes used in anthropology, biology, ecology, and forensics today?</td>
<td>Interpret hair sample results</td>
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<td>Nov 19</td>
<td>Where did your beverages and waters really come from? An introduction to spatial isoscapes</td>
<td>Joint project to analyze beverage and water samples from students</td>
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<td>Dec 3</td>
<td>Food fraud – use isotopes to authenticate origins and quality of the foods and beverages you eat every day</td>
<td>Joint project to analyze foods selected by students</td>
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<td>Dec 10</td>
<td>Learning how to present your data results effectively to friends and colleagues</td>
<td>Create a poster to be presented at the Fresher Science Gathering</td>
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Readings (provided as PDF files):


Grading: There are no exams in this course. Your grade will be based on weekly engagement and classroom participation. All work in this course will be collaborative and all products produced will be the joint responsibility of all participants. All students must be able to explain results to Mom.

Content accommodation: No content accommodation will be made in this course.

Americans with Disabilities Act (ADA): The University of Utah seeks to provide equal access to its programs, services and activities for people with disabilities. If you will need accommodations in this class, reasonable prior notice must be given to the instructor and to the Center for Disability Services. Call or visit: http://disability.utah.edu, 162 Olpin Union Bldg, 581-5020 (V/TDD) for arrangements.
You are what you eat (isotopically)

BIOL 3960-008

Fall Semester
Thursdays, 4:30 - 6:00
Oct 22 – Dec 10
1 unit elective credit

NEW for 2015

A hands-on, lab introduction to human diets and nature’s stable isotope tracers