**DAY 36: Wed Nov 16** CAVE BEAR cont PETREL stable isotopes

1. **10:00-10:03 Business—**
   1. **PROJECT DESCRIPTION DUE TODAY** 
      1. **Look at the conventions for writing sci papers in bio doc**
   2. Don’t forget to put your completed message box in the folder today!
   3. Friday is a RAT on Museomics. There will be a reading guide explaining the assignments. Basically one reading, a definitions page, one very short youtube video and an interactive youtube video to practice for the RAT
2. **Earlham Master of Arts in Teaching Information Session**
   1. Noon on Wednesday, November 19, in the Center for Integrated Learning Commons on the first floor of the Landrum Bolling Center. The session will include a panel of current M.A.T. students who are also Earlham alums. Lunch will be provided
   2. AMNH REU
3. **10:3-10:25** **Cave Bear Activity** Write the 4 big questions up on the board. Write down which figure supports each one—and what the result is
   1. Were all cave bears herbivorous when they co-occurred? THEY THOUGHT ABOUT THIS, NEED MORE TIME ON IT
      1. Yes, Fig 3, lower 15N signifieis herbiovry
   2. When they lived together for significant periods, did they partition their ecological niches?
      1. Yes, fig 4 18Ocarb varies with env water used and 13C coll varies by altitude
      2. Fig 5 says they lived at different elevations 18O measures suggest colder climate
      3. It does not work to say they partitioned niches by eating different plant parts or in denser vegetation b/c the C/O ratios don’t work for that even though the C values were low (a sig of denser vegetation)
   3. How flexible were the dietary habits of cave bears in relation to individual choices and phylogenetic affiliation?
   4. Is there a link between the occurrence of different cave bear types and climatic fluctuations?
4. 10:25-1040 talk
5. **My notes on cave bears**
   1. Write U.spelaeus eremus and U.ingressus and U. arctos on your board
      1. Write under the two cave bears which one was physically bigger, For all 3: which one lived in the higher altitude cave and which in the lower altitude cave, For all 3 species: which was herbivorous, omnivorous and/or carnivorous
      2. Now write up Ramesch and Gamssulzen and write: high altitude or lower altitude under each
6. **10:25-10:45 Petrel Activity**—start with message box, figure out which figures support the take-home points
   1. **Research Questions**
   2. **Results—be clear about what is a result and what is an interpretation**
7. **10:45-10:50 Discuss answers and grade**

**THEIR PREP: Finish their project description**

**READ:**

Bocherens, Hervé, et al. "Niche partitioning between two sympatric genetically distinct cave bears (< i> Ursus spelaeus</i> and< i> Ursus ingressus)</i> and brown bear (< i> Ursus arctos</i>) from Austria: Isotopic evidence from fossil bones." *Quaternary International* 245.2 (2011): 238-248.

**MY PREP:**

* Team folders
  + Packet of all materials for Unit 6
  + Copies of figures (in color) from Wiley
  + Cave bear paper copies
  + Graded message boxes