

## Sedimentology/Stratigraphy Discussion Questions

- What are we looking to do with stratigraphic models?
- What are the key datasets that inform our stratigraphic models?
- Which are the most discrete lines of evidence for change vertically?
- How to distinguish between stratigraphic packages at different scales?
- Which are most useful concepts from marine stratigraphic approaches?
- What is your approach? What datasets are you using?
- What's the difference between climate vs. stratigraphic cycle?
- Sedimentation and depositional system relating to paleo-ecological questions
- Who's working on sedimentology??
- How can we sed to:
  - Recognize conditions in lakes
  - Strat packaging, contacts
  - Specific problems:
    - Coarse-grained facies
    - Rooted facies
    - Wetland vs lakes
    - Wetland vs paleosols
- Ongoing Issues
  - Correlating to outcrops
    - Some scales that can link, but not all
    - How far can we push it?
    - What were the hominins responding to?
    - How to translate into spatial variability
    - New chronostratigraphic indicators
    - Finding surfaces correlating to beach complex at WTK
  - Alluvial fans protruding into basin issue in Chew Bahir
    - Real fluvial vs alluvial?
    - Architecture of fans thru time because close to margin at Chew Bahir
    - What does tell about what's going on fan?
    - Also issue in OLO
    - From short cores have input from alluvial fans
    - Modern alluvial fans, so likely were in the past
    - Grain size changes Fining upward vs Coarsening upward
  - Shoreline sands vs. other types of coarse-grained deposits
    - Chew Bahir
      - Grain size data
      - Getting modern grain size samples to compare
    - Heavy mineral concentrations lamina at modern Lake Turkana indicative of shoreline processes, see in the paleo as well
  - Unique horizons like very high concentrations of phytoliths
    - Marsh with Baffling vegetation like Typha
    - Need for modern analogs?
    - Why aren't there diatoms? Or very few diatoms? They should be preserved

- Chew Bahir
        - Mollusks – did they wash in? Issues with correlations between cores.
        - Do they represent same bed?
  - Wetlands vs lakes depositional environments
    - Incorporating other proxies
      - Bedding diffuse
      - Diatoms, pollen, phytoliths
      - Mineralogy
    - Develop a criteria that everyone agrees upon for all the cores, for comparison
    - What length of time?
- Things that need to coordinate across groups:
  - Modifying initial core descriptions from smear slide data
    - Updating in PSICAT new data relevant to sedimentology
      - Problems correlating proxies because not sampling every facies
      - No standardization
      - Different approaches for each ICD
      - Most sites voiced need to update
    - Ologesailie outcrops are in PSICAT now for comparison
    - Grain size hard to understand just looking at core
    - Update your version of PSICAT because lots of bugs fixed
      - Problems with fitting descriptions on pdf printout sheets
  - Sharing experience for lithologies/facies that not familiar with
    - Setup a forum to upload images for posting examples and to share experience
    - Eventually something similar to TMI core deformation
  - What do paleoanthropologists want to know from the sed strat?