Oral Presentation X

**Pliocene diatom record of Baringo Basin, Kenya**

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The Hominin Site Paleolakes Drilling Project (HSPDP) has obtained sediment cores from several important hominin fossil and artifact sites in Kenya and Ethiopia in an effort to investigate the role of environmental forcing in shaping human evolution. Kenya's Baringo Basin and Tugen Hills site comprises the most complete late Neogene section known from the African rift. The Chemeron Formation (3.2-2.35 Ma) contains ~100 fossil vertebrate localities, including three hominin sites, within 0.5-3km of the drill site that can directly linked to the drill sequence. At this time in East Africa we also observe the diversification of *Paranthropus* and *Homo* and the earliest evidence for stone toolmaking.

The 227-meter long Baringo Basin sediment core is highly variable, with sands and gravels alternating with sequences of silts and clays, as well as periodic diatomites. While we observe no diatoms in the bottom section of the core, there are at least six distinct sections with abundant, preserved diatoms in the upper 132 meters. Based on sedimentology, we interpret the environment as alternating between lake and alluvial fan. When diatoms are present, *Aulacoseira* and *Cyclostephanos* dominate, suggesting a deep lake. Benthic diatoms are also present but at very low abundances.

*Aulacoseira* is abundant in all diatom sequences. Several species are observed, but the dominant *Aulacoseira* taxon appears most closely related to *Aulacoseira granulata*. While *Cyclostephanos* is present in all sections, it becomes more abundant in the younger sections. The longest and one of the best preserved sequences is characterized by alternating dominance between *Aulacoseira* and *Cyclostephanos*. This pattern is repeated in other sequences within the top 20 meters of the sediment core.