

Early Career Collaboration award  
Report 2014  
Dylan Wilmeth

From the 19<sup>th</sup> to the 31<sup>st</sup> of May 2014, Dylan Wilmeth, a PhD student at the University of Southern California, performed field research in South Africa using funds from the NAI Early Career Collaboration Award. The primary research goal was to investigate geochemistry and sedimentology of stromatolites within lacustrine deposits of the Ventersdorp Supergroup (2.7 Ga). This work was performed with the help of Prof. Nic Beukes of the University of Johannesburg, who helped initiate contact with local farmers. Prof. Beukes also contributed invaluable advice on interpreting sedimentary environments in the field. Within the field, samples and stratigraphic columns were collected from various localities around ancient lake deposits. Sample petrography and geochemistry was analyzed at the University of Southern California. Zeiss photomosaic software helped create detailed petrographic images of large-format thin sections, highlighting mesoscale features too large to capture with single microscope images. Cathodoluminescence microscopy was used to determine the diagenetic history of collected samples. Elemental analyses of samples was performed using energy-dispersive x-ray spectroscopy. Dylan, his adviser Dr. Frank Corsetti, and Prof. Beukes all express their thanks for the NAI's support of this research.



Picture 1: Nic Beukes points out local outcrops and structures to student Conrad de Kock, Tyboschfontein.



Picture 2: Dylan Wilmeth stands beside a giant stromatolite, Hartbeesfontein