

Abstract Submitted  
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**Using Seismic Refraction Method to Image the Subsurface Structure of the Eastern Bushveld Complex in South Africa**<sup>1</sup> ABEBAW BELAY, North Carolina A&T State University, ANDREW NYBLADE, AUBREYA ADAMS, Penn State University, MULUGETA DUGDA, North Carolina A&T State University — Few undergraduate students had the opportunity to go to the field and image the subsurface structure of the eastern Bushveld Complex in South Africa. We applied the seismic refraction method which is a method based on a seismic wave refracted by 90 degrees (critical angle) and will generate a head wave that will be picked up by geophones as detectors. Sledgehammer was used to generate seismic waves (artificial pulses). Software called SeisModule Controller was used to record and process the seismic data. The idea is to model the subsurface structure and the modeling gave us the depth and velocity of different layers. We also utilized aeromagnetic and borehole information to make comparison with the results obtained. Each student in the field had a chance to utilize four different geophysical methods (electrical resistivity, magnetic, gravity and seismic refraction) but focused more on one of those methods in this geologically remarkable place that is rich in minerals.

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