Michigan Technological University

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Carl G. Schwenk Endowed Faculty Fellow in Applied Geophysics
Annual Report 2022-2023

The Carl G. Schwenk Endowment directly supports GE4090 Field Geophysics, a required course for Geological Engineering, Geology, and Applied Geophysics majors in the Department of Geological and Mining Engineering and Sciences. Students gain hands-on experience with specialized equipment utilized for gravity, magnetic, seismic refraction, ground penetrating radar, electrical resistivity, and electromagnetic surveys. A class such as this is offered at only a handful of institutions in the country.

Maintaining and updating the suite of equipment necessary for such a diverse class is financially challenging. The endowment provided by Mr. Schwenk has provided the means to do this in perpetuity. In addition, the cost associated with equipment maintenance was tied to a $450 student laboratory fee. The endowment has now eliminated that fee for our students.

This past year, endowment funds were used to purchase a new magnetometer complete with integrated GPS. An instrument such as this is commonly used in industry for environmental site investigations and geological reconnaisance. A survey grid or line can be walked in a matter of minutes while simultaneously collecting thousands of measurements. Our students recently used this instrument to survey a series of ancient lava flows in the Keweenaw known as the 'Lake Shore Traps'. These lava flows represent the last stages of magmatism in the 1.1 billion year old Midcontinent Rift System. Students also used this magnetometer to detect buried metal artifacts on the site of a copper stamp mill near Lake Linden.

Sadly, Mr. Schwenk passed away in December, 2022. Our department, myself, and current and future students will forever be grateful for his lasting contribution to the educational experience at his alma mater, Michigan Tech.