## Abstract

In August 2020, Calvin University brought 630 tons of sand to its campus, 40 miles from Lake Michigan, to simulate a dune environment as a COVID-19 adaptation for student research. Our research focused on how this artificial dune named Perseverance Dune compares with Lake Michigan dunes and whether sand is leaving the dune area over time. At Perseverance Dune, we measured minerology, grain size distribution, wind characteristics, erosion, deposition, sand depth, spread, and slope angles as well as collecting observational data and aerial imagery. We compared these with prior research, LiDAR data, and sand samples from the Michigan lakeshore. Our results show that Perseverance Dune is a layer of sand roughly 41 cm deep spread over an existing slope which determines its slope angles. The sand is smaller than Michigan dune sand but has a similar composition with mostly quartz grains and traces of magnetite. Sand is leaving the dune, but surface changes from wind processes are consistent with coastal dunes. However, water erosion on the lower dune is unusual. Measurements suggest the dune will shrink in

## Methods

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Conclusions

## Works Cited