Montague-CTE Scholar
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# College of Geosciences

Center for Teaching Excellence
DEAN OF FACULTIES

Bringing Virtual Reality into the Geosciences Classroom and Research

- Geospatial data, including weather and atmospheric sciences data are inherently four-dimensional.

- Students often struggle to conceptualize four-dimensional structures and processes from standard two-dimensional visualization.

- Virtual Reality (VR) offers a fully immersive educational opportunity for classroom learning and data exploration in research.

- We are using Montague-CTE Scholar funds to produce interactive, immersive learning experiences for undergraduate classes in Severe Weather and Mesoscale Forecasting (ATMO 352) and Radar Meteorology (ATMO 443).

- A "Virtual Reality Studio" has been established in the Department of Atmospheric Sciences, using relatively affordable HTC Vive VR headset and hand controllers.

- Collaborations with departments of Aerospace Engineering and the Visualization in the Colleges of Architecture and Engineering ensure future development of educational visualizations.

Above: Students use Google Cardboard VR headset in ATMO 352, exploring a supercell thunderstorm.
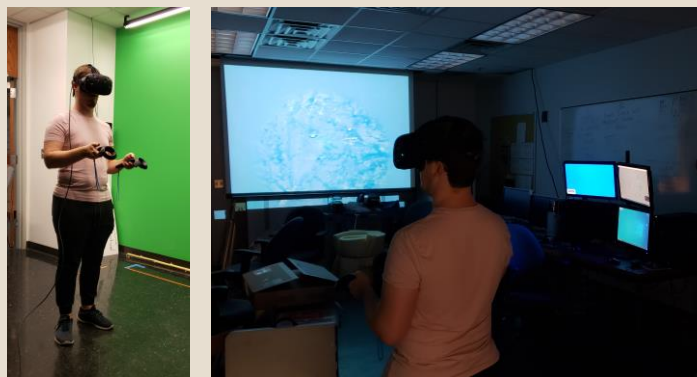
Student in the VR Studio exploring geospatial data via Google Earth VR.
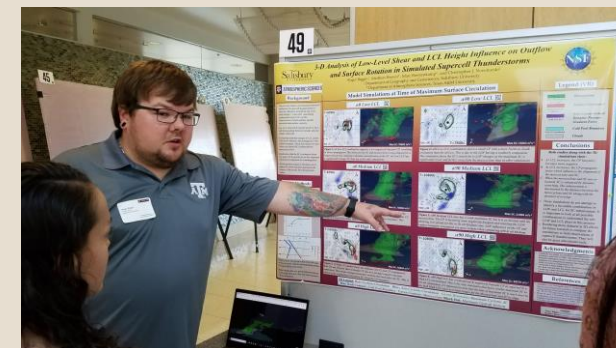
Above: REU student Roger Riggin presents his summer work visualizing simulation results based on M.S. Student, Matt Brown's research.

Below: 2D simulation results from published research are shown visualized in 3D from VR screen shots.