The B.S. Meteorology Program at Western Kentucky University, housed within the Department of Geography and Geology, is currently the only meteorology program in Kentucky and Tennessee that meets all Federal Civil Service requirements (GS-1340) for employment by the National Weather Service and enables broadcast meteorologists to immediately pursue the "Certified Broadcast Meteorologist" program of the American Meteorological Society upon graduation. The program is further facilitated by a variety of atmospheric science centers and laboratories, including the College Heights Atmospheric Observatory for Students (CHAOS), the Kentucky Mesonet (http://www.kymesonet.org/), and the Kentucky State Climate Center. Faculty and students within the WKU Meteorology Program also maintain close working relations with the National Weather Service-Louisville (http://www.weather.gov/lmk/) and other nearby offices for lectures series, workshops, storm surveys, and student employment.

The emphasis of the WKU Meteorology Program is on advanced theoretical and applied coursework, coupled with student engaged, hands-on active learning with meteorological instruments, field work, and data visualization. Students undergo extensive training in each course using a variety of Unidata and other software for data visualization regarding forecasting and research applications.

With the goal to continuously professionalize the learning experience at WKU, Dr. Josh Durkee and Dr. Eric Rappin sought Unidata for support of implementation of AWIPS2 for a contemporary/enhanced approach toward meteorological education and research. During the fall 2015 semester, the WKU Meteorology Program gained a new EDEX server, along with three CAVE clients to test the AWIPS2 system. Upon

installation, a variety of students, faculty, and staff explored the software capabilities to provide feedback to and seek further support from Unidata for potential improvement of subsequent release versions.

In March 2016, Mark Jarvis, Lead Forecaster with the NWS in Louisville visited the WKU Meteorology Program to provide an AWIPS2 training workshop (Figure 1). Participants were afforded the opportunity to look beyond the face value of AWIPS2 and learn the deeper capabilities and powerful forecast visualization options of the software.

Another exciting exercise related to AWIPS2 implementation at WKU included examination of data visualization design and output with a Tobii X2-60 Eye Tracker (Figure 2). In a pilot study, Dr. Durkee tested experienced and non-experienced AWIPS2 users for software design and usability, as well as visualization of fundamental meteorological output. This eye-tracking technology provided the ability to quantitatively measure an individual's points of interest and precise eye movements with 2D or 3D visualizations. Specific eye movements were statistically correlated to the attention path demonstrated by student observers (Figure 3). In a forthcoming formal study, Dr. Durkee and Dr. Rappin plan to provide feedback from using eye-tracking approaches toward understanding software design and meteorological education and understanding.

Looking ahead, the goal is to implement additional methods of data retrieval, including the use of the onsite NOAAPort system at WKU and utilizing Python data access methods. Currently, students and faculty heavily use the Unidata software suite (e.g., IDV, GEMPAK, McIDAS) for daily forecast discussions, instruction, class assignments and exams, and research. The overarching goal is to compliment these utilities by providing access to AWIPS2 as a fundamental weather and climate analysis tool at the start of the 2016-17 academic year.

Figure 1: Mark Jarvis, Lead Forecaster with the NWS in Louisville demonstrating various AWIPS2 capabilities in the WKU CHAOS forecast facility.

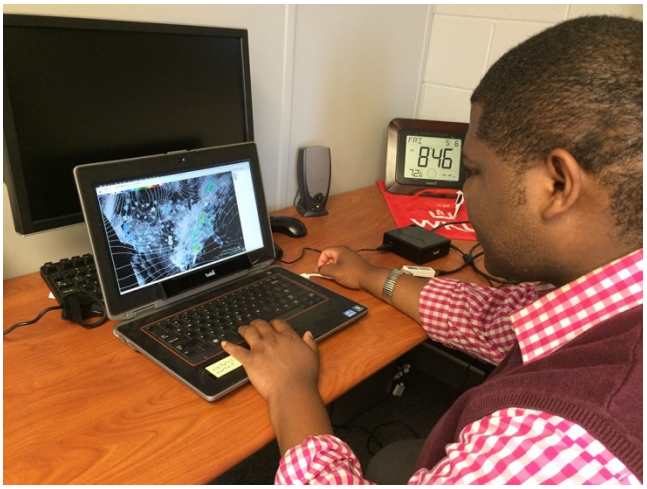

Figure 2: Meteorology student, Christopher Reece analyzing 500 hPa heights, visible satellite imagery, and mosaic radar using AWIPS2 under inspection of the Tobii X2-60 Eye Tracker.

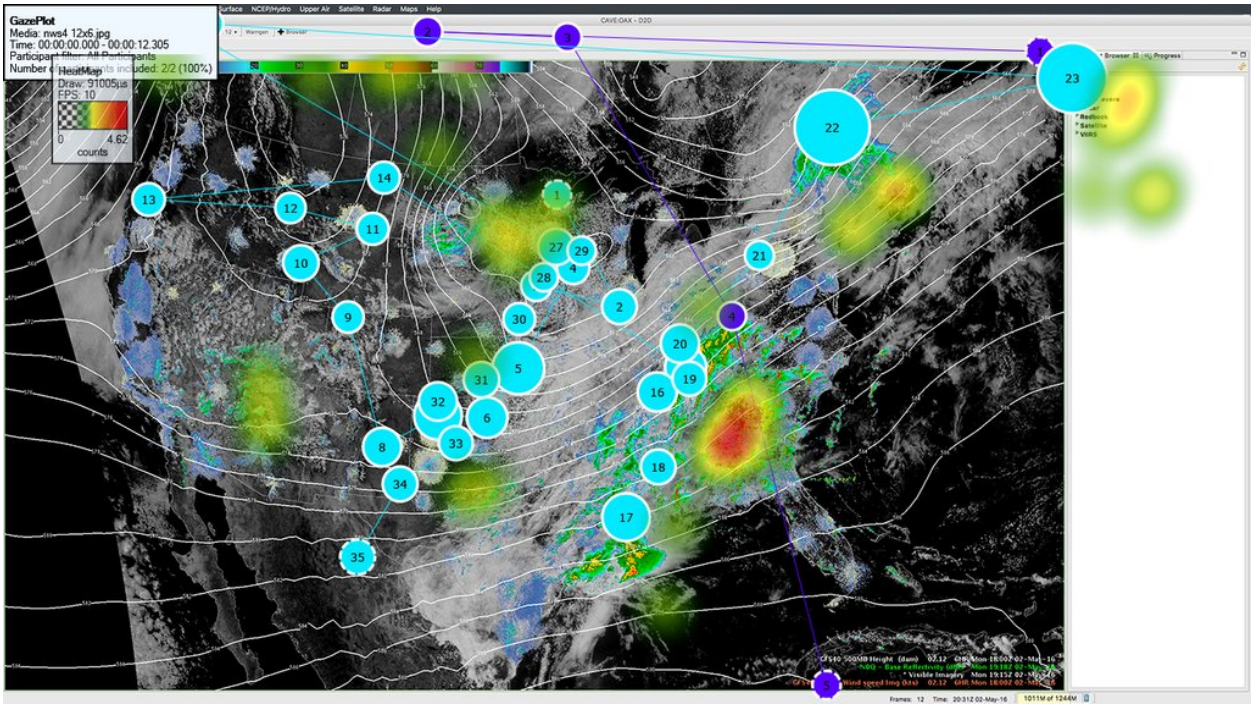

Figure 3: Data visualization analysis output from Figure 2.