

Position Statement for “From Theory to Practice: Design, Vision and Visualization” Workshop

Applying Design & Color Theory to creating a Perfect Storm Visualization

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In January 2008, the Renaissance Computing Institute’s Engagement Center at North Carolina State University (RENCI@NCSU) began working with meteorologists of NC State University’s Department of Marine, Earth and Atmospheric Sciences to visualize large computational simulations of hurricane data. The intent was to depict the “Future Perfect Storm”.

The RENCI@NCSU visualization team used the VisIt open source software developed at Lawrence Livermore National Laboratory to import the netCDF simulation data sets and build time series animation sequences. A key design challenge was how to build effective color maps that depicted the multiple data sets and the path of the hurricane. Building upon the color schemes from ColorBrewer, developed by Cindy Brewer and Mark Harrower at Pennsylvania State University, a successful “Future Perfect Storm” visualization was developed. The Future Perfect Storm animation sequence (also entitled: “WRF Simulation of Hurricane Katrina Animation”) can be viewed at: <http://research.csc.ncsu.edu/cva/examples.htm>

At the “From Theory to Practice: Design, Vision and Visualization” Workshop during IEEE Visualization Week 2008, we would like to share the creative processes that went into creating this visualization as well as the polished video production that was later created in June/July 2008.