

Computation Directorate wins R&D100 Award for Chromium

Two Computation Directorate computer scientists, Randall Frank and Sean Ahern, teamed with external collaborators to win a prestigious R&D100 Award, one of only five won by LLNL scientists this year. These awards, often called the "Oscars of Invention," are given by the trade journal *R&D Magazine* to recognize the top 100 industrial innovations worldwide. This is the third year in a row that Computation employees have been on an award-winning team.

This year's award recognizes the Chromium software product, which was designed and developed by Frank and Ahern in collaboration with researchers from Stanford University, the University of Virginia, Charlottesville, and a commercial company, Tungsten Graphics.

Chromium provides a way for interactive two and three dimensional graphics applications to take full advantage of powerful distributed, graphics-enabled clusters of off-the-shelf (commodity) PCs. It provides an extensible mechanism that allows applications to draw computer graphics imagery on such clusters with a high degree of data, display, and performance scalability, and offers unique capabilities not previously available in existing systems. It allows most existing applications to run without modification, and enables creation of powerful new parallel graphics applications capable of fully exploiting the power of these clusters.

The advanced architecture draws its name from the phrase "Clustered Rendering," or CR for short. CR happens to be the atomic symbol for the element Chromium, providing the project name.

Since its Open Source public release, the Chromium system has proven to be an extremely popular program, with more than 18,000 downloads of the software. The Chromium infrastructure has been adopted by a large number of users and is rapidly forming the basis of a great deal of clustering research at national laboratories and a number of other research institutions.