

## NLR: Providing the Nationwide Network Infrastructure for Network and “Big Science” Research

The NLR infrastructure is designed to foster the concurrent advancement of networking research and next generation network-based applications in science, engineering and medicine. NLR aims to reenergize innovative research and development into next generation network technologies, protocols, services and applications.

NLR is a very networking initiative of the research community following in the footsteps of ARPANET, NSFnet and Internet2. NLR strives to again stimulate and support innovative network research to go above and beyond the current incremental evolution of the Internet.

There are three major characteristics that distinguish NLR from the predecessor initiatives. First, NLR is self-funded by the investment of a consortium of leading U.S. research universities and Cisco Systems. There were no direct federal funds underwriting the foundation costs. We anticipate federal funding going to the researchers as part of grants to enable the uses of NLR.

Second, NLR is not a single network, but instead, a unique and rich set of facilities, capabilities and services that will support a set of multiple, distinct, experimental and production networks for the U.S. research community. On NLR, these many different networks will exist side-by-side in the same fiber optic cable pair, but will be physically and operationally independent of each other as each network will be supported by its own lightwave or ‘lambda.’

Third, it is the first time a nationwide network infrastructure is OWNED by the research and education community. As a result, our community will have the control and flexibility over network architecture, deployment and and uses. NLR is being deployed to be responsive to the specific networking requirements of various scientific research endeavors and to network research intended to advance our understanding of network technologies and protocols.

The talk will endeavor to highlight just how NLR came into being, what it is comprised of, and how it is being initially used.