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Comments from Dr. Douglas S. Gale

Comments from SURA regarding the NGI initiative to the Presidential Advisory Committee

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Thank you for the opportunity to testify today. I am Douglas Gale, Assistant Vice President for Information Systems and Services and Adjunct Professor of Physics at The George Washington University. Today I will be speaking on behalf of the Southeastern Universities Research Association or SURA. SURA is a consortium of forty-one universities in the southeastern United States whose goals are to foster excellence in scientific research, to strengthen the scientific and technical capabilities of the nation and of the Southeast and to provide outstanding training opportunities for the next generation of scientists and engineers.

SURA was created to support a world-class laboratory in nuclear physics. That effort culminated in the dedication of the 600 million dollar Thomas Jefferson National Accelerator Facility on May 24, 1996 -- on time and within budget. That facility will also house the Free Electron Laser program which is part of SURA's broader efforts in materials science and engineering.

SURA is probably best known for SURAnet, one of the first regional networks in the NSFNET. Covering thirteen southeastern states between Delaware and Louisiana, West Virginia and Florida, SURAnet grew rapidly to become the largest and most robust of the regional networks. When SURAnet was sold to BBN Inc. in 1994, it provided connectivity to 422 primary and nearly 1000 secondary sites, with a combined estimated user base of more than 1 million persons.

More recent SURA projects include the Monticello Electronic Library initiative in scholarly communications, the Southeast Partnership to Share Computational Resources (SEPSCoR) project to build a virtual supercomputer, and a regional partnership with the National Computational Science Alliance as part of the Partnership in Advanced Computational Infrastructure (PACI) initiative.

Immediately following the sale of SURAnet, the Southeastern Universities Research Association began working with its member institutions to identify their future collective research and education networking needs. It found that universities and their researchers are increasingly aware of, and attracted to, the rapidly growing potential of Internet-enabled services.

They are especially attracted to providing new distance-learning opportunities, for a mid-career workforce and citizens in remote communities; they seek also to build forefront network-supported research collaboratories, both across institutional barriers and at remote specialized laboratories; they also aspire to digitize and make available their vast specialized scholarly library collections, through network-supported real-time multi-media; and finally, leading computational scientists seek greater network bandwidth to calculate simultaneously on distant-but-linked supercomputers. As the potential of such high-speed network applications is understood across the Southeast, so too are the costs for their implementation. Since most attractive network applications are really created to be shared, there is also growing awareness that much larger regional partnerships must be forged if cost effective solutions are to be found.

These southeastern concerns are not unique. In an effort to overcome these hurdles, the Internet2 initiative has brought leading research institutions together nationwide. The Next Generation Internet (NGI) initiative represents a still broader base of users that include federal agencies. Within the Southeast, SURA is working with regional networking experts and researchers to elucidate a vision to guide future network deployment. The vision that has emerged within SURA, one of a robust highly meshed network which supports high bandwidth applications and provides acceptable Quality of Service (QoS), has been dubbed the "Southern Crossroads." This name implies the existence of congregating points, as well as of secondary activities like sharing and commerce. Perhaps most importantly for SURA's member institutions, it also implies a sense of community. The Southern Crossroads will not replace the commodity Internet; it will extend the next generation of networking technology to a broad base of users.

Individual universities within SURA are preparing for the Southern Crossroads by upgrading their campus networks to support high bandwidth and QoS. States and localized regions are working together to link and support individual institutions. Examples range from predominantly rural areas such as the six states in the SEPSCoR project to networks clustered around high-tech areas such as northern Virginia (Network Virginia), the DC metropolitan area (Washington Research and Education Network), Atlanta, Florida, and the Research Triangle. The role of SURA, through the Southern Crossroads project, is to coordinate and facilitate these efforts.

If institutions, states, and SURA are already making these investments, why do we need the NGI? The need for federal support can be found by considering the pivotal role played by the government in creating the current Internet. In addition to providing funding for basic research and "priming the pump," the government provided the crucial leadership that encouraged individual institutions to make the necessary investments.

For regional initiatives like SURA's Southern Crossroads to reach their full potential and become a cost effective reality for all their members, they must be part of a national effort. That will require the leadership, coordination, and support of the NGI.