Department of Computer Science and Engineering

Presents

Chip Elliott, Director, GENI Project Office, BBN
GENI - Global Environment for Network Innovations

The Global Environment for Network Innovations (GENI) is a suite of research infrastructure components rapidly taking shape in prototype form across the US. It is sponsored by the US National Science Foundation, with the goal of becoming the world's first laboratory environment for exploring future Internets at scale, promoting innovations in network science, security, technologies, services, and applications.

GENI will allow academic and industrial researchers to perform a new class of experiments that tackle critically important issues in global communications networks:

- **Science issues**—we cannot currently understand or predict the behavior of complex, large-scale networks
- **Innovation issues**—we face substantial barriers to at-scale experimentation with new architectures, services, and technologies
- **Society issues**—we increasingly rely on the Internet but are unsure that can trust its security, privacy or resilience

GENI will enable researchers to explore these issues by running large-scale, well-instrumented, end-to-end experiments engaging substantial numbers of real users. These experiments may be fully compatible with today's Internet, variations or improvements on today's Internet protocols, or indeed radically novel "clean slate" designs.

Starting in October 2009, the GENI project will begin to pave the way to such experiments by a "mesoscale" build-out through more than a dozen US campuses, two national backbones, and several regional networks. If this effort proves successful, it will provide a path toward more substantial build-out.

GENI is being created as a series of rapid prototypes via spiral development so that hands-on experience with early experimentation and trials can drive its evolution. Rather than build a separate, parallel set of infrastructure "as big as the Internet," current plans call for GENI-enabling existing testbeds, campuses, regional and backbone networks, cloud computation services, and commercial equipment.

This talk presents current plans for GENI, but leaves plenty of time for discussion and brain-storming, both for the eventual infrastructure suite and for prototypes that are now being built and integrated.

Bio: Chip Elliott is Project Director for GENI, the National Science Foundation's virtual laboratory for exploring future internets at scale. He is Chief Engineer at BBN Technologies and an AAAS and IEEE Fellow with over 85 patents issued and pending. Mr. Elliott has served on many national panels and has held visiting faculty positions at Dartmouth College, Tung

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Knox 14 - University at Buffalo - North Campus

This talk is free and open to the public.

For more information, please email **cse-dept@cse.buffalo.edu** or contact (716) 645-3180