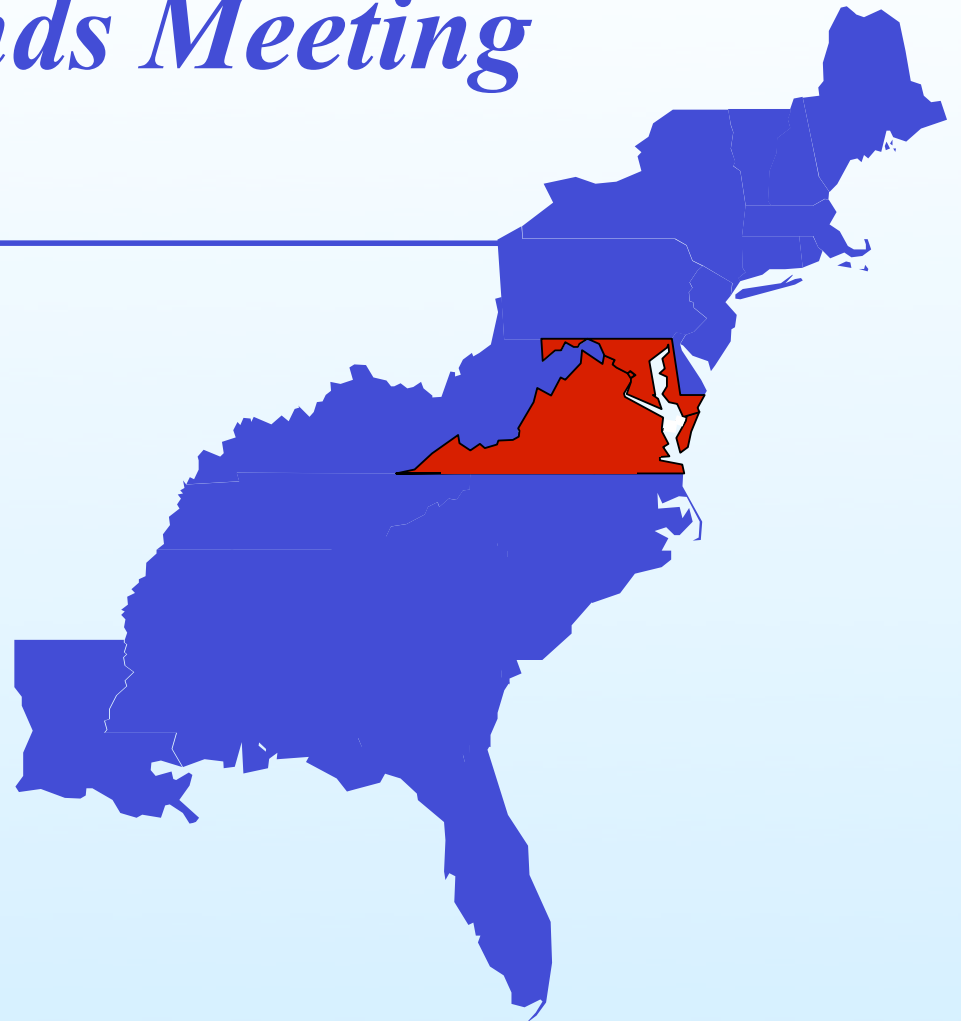


# *MAX All-Hands Meeting*

**Peter O'Neil**  
Executive Director  
poneil@maxgigapop.net  
May 9, 2008



## *Outline*

- Staffing Update
- Business Overview
- Research Initiatives
- Governance/Organization
- Partnerships

## *Paige Jillian Tracy*

- New addition



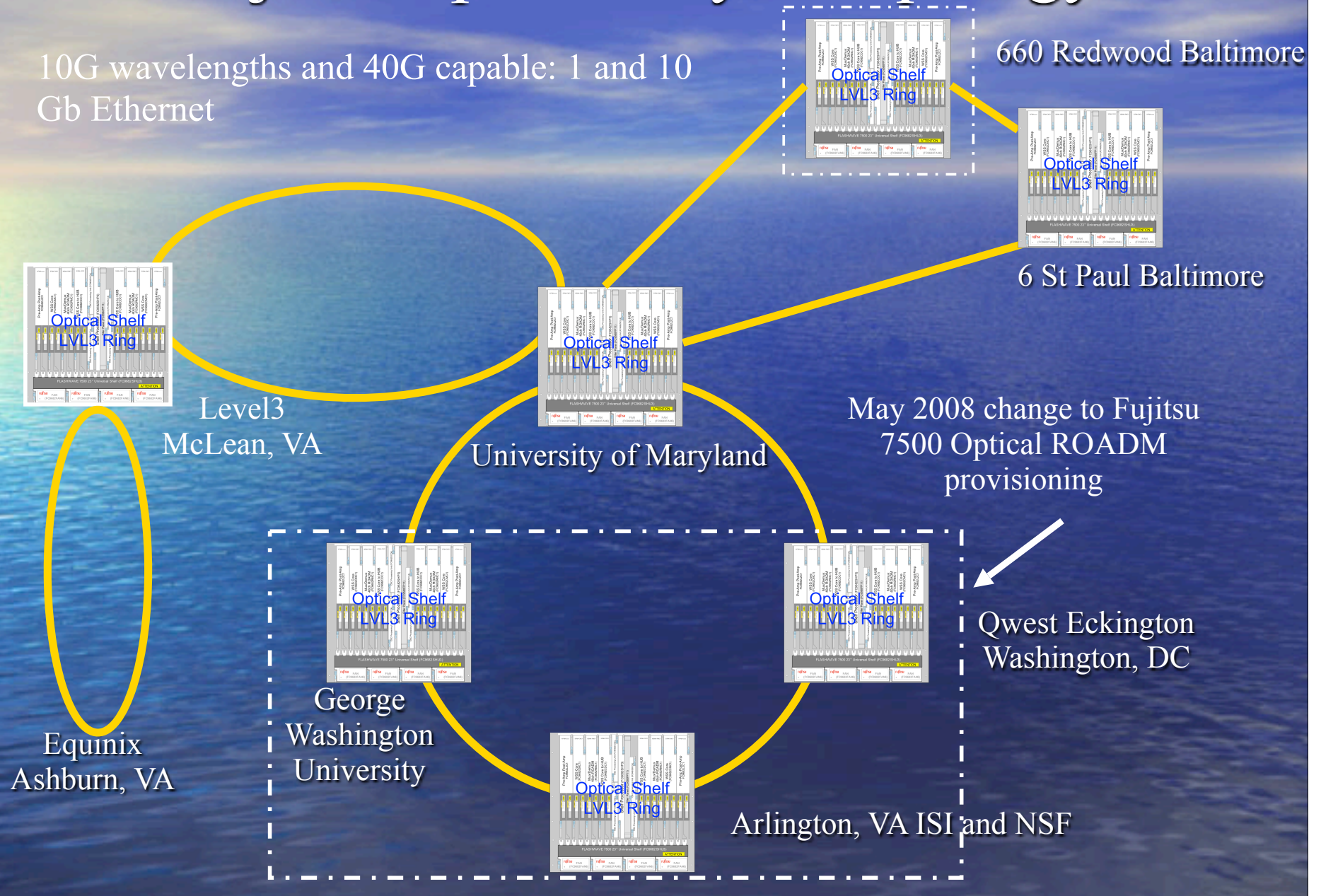
## *Jerry's Departure*

- Cisco & Pancho



# Fujitsu Optical Layer Topology

10G wavelengths and 40G capable: 1 and 10 Gb Ethernet



## ***Business Development***

- Fujitsu DWDM upgrade
  - McLean to Baltimore complete
  - BERnet extensions and enhancements
  - Layer 2 service offering enabled
  - DC ring in process now
- Participant Drops & Adds
  - Lost US Census Bureau and World Bank June 30th
  - Added American University & Veterans Administration
  - Pending: DoT/FHA, CMS, State Department, & FDA; IBM Federal for v6; Hurricane Electric to NGIX/GEANT, STSCI, Howard University
- Disaster Recovery Plan developed and compliant with State requirements
  - MIT fiber in Level 3 Baltimore to NYSERnet for I2 & NLR backup
- Trusted Internet Connection (TIC) OMB mandate
- Revised Mission, Values, and Benefits Statements
- Operate and engineer NGIX & Atlantic Wave
- Flow scan measurement and view initiative
- NSF Petascale consortium solicitation & search for data center space

## *Costs*

- Production Costs tracked and rolled up with budget
  - for most part predictable and straightforward
- Research Initiatives Costs tracked and rolled up
  - some core funds matching - ~5% of yearly budget
  - soft funding from grants and project engineering efforts
  - transaction costs for management and F&A time higher
    - » maintain separate accounts
    - » juggling of staff time to burn funds by certain dates
    - » setting and meeting expectations with external funders
    - » but, benefits (externalities) well outweigh costs; distinctive
- No state funding but benefit from State fiber IRUs and bartering with others

## *Services, Pricing, & Cost Recovery*

- Cost data analysis supports MAX pricing model
  - Pricing is log scale of port bandwidth and dollars
  - Port fee provides R&E access to I2 and NLR
- Layer 1 Lambda Transport Service and Layer 2 vLANS useful offering and being requested for specialized research purposes
- Qwest, Cogent commodity service - Quilt aggregate pricing
- TransitRail commodity peering new; gain experience and learn from it; may share 10G with MATP in the fall if all goes well
- Provide initial start-up engineering & routing support
  - Consulting offered ongoing and use of optical tools on fiber
- Semi-annual All-Hands meetings and occasional technical workshops
  - v6 next week (two due to high level of interest)
- MAX services comprise a “portfolio” of offerings

## *Governance & Organization*

- July 1999; Founded by Georgetown University, George Washington University, University of Maryland, and Virginia Tech
- Administrative home is University of Maryland
  - run as a project of the university reporting to CIO
  - Procurement, Legal, Payroll & Benefits through UMD
- Working to transition from a project to a sound business;
  - structure inducing efforts to develop policies
  - adopt and follow best (better) practices of all kinds
  - striving for quality in all we do
- Pursuing 501c3 not-for-profit status (finally)
- Will perform audit and seek CFO financial practice review
- Looking at different office space - on fiber path (March 2009)
  - sufficient power & cooling for lab space equipment

## *Research Initiatives*

- Questions about future research efforts
  - MAX will continue to seek opportunities to be involved in leading edge networking initiatives that align with your interests and goals
  - Jarda taking lead on the LTS project, & DCN
  - Discussions have been taking place with DRAGON user community: NRL, LTS, NASA GSFC, ISI-East, Haystack Observatory, NG
  - Waiting to hear on NSF GENI proposal end of this month (possible ISI role)
  - Financial constraints may drive use of single infrastructure
    - » still want to explore repurposing research infrastructure for next generation optical testbed
    - » Set up wave(s) on production infrastructure for experimental use
    - » maintain research staff most important
    - » MORPHnet model (add paper link)
  - Starting to implement control plane capabilities on production network
  - Performance tuning to explore issues involved with using network rather than sending HDs by FedEx
- MAX committed to continue being nationally recognized for leading edge networking

## *MORPHnet*

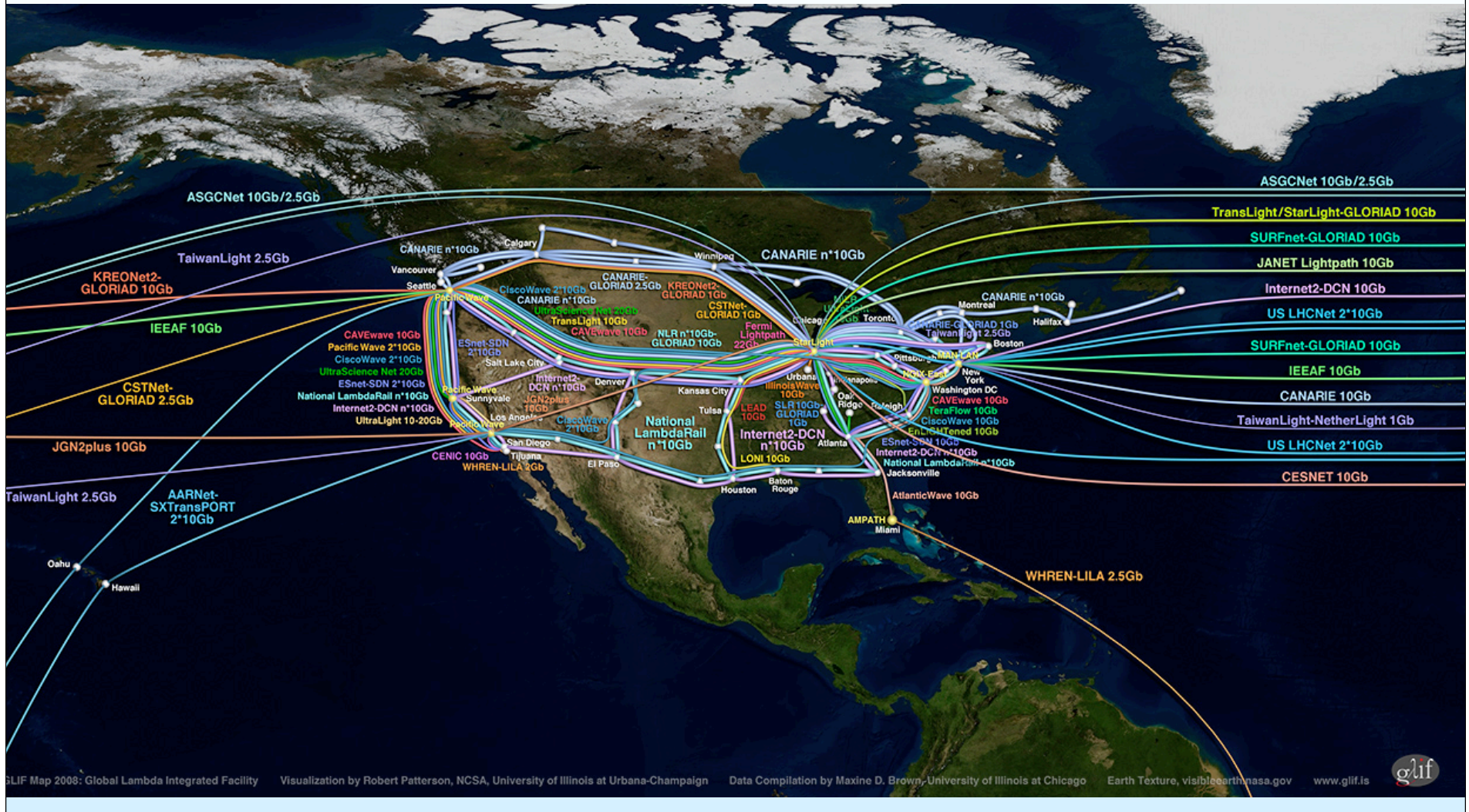
- “The research and education (R&E) community requires persistent and scalable network infrastructure to concurrently support production and research applications as well as network research. In the past, the R&E community has relied on supporting parallel network and end-node infrastructures, which can be very expensive and inefficient for network service managers and application programmers. The grand challenge in networking is to provide support for multiple, concurrent, multi-layer views of the network for the applications and the network researchers, and to satisfy the sometimes conflicting requirements of both while ensuring one type of traffic does not adversely affect the other.”

<http://www.anl.gov/ECT/Public/research/morphnet.html>

## *Partnerships*

- MATP
  - sharing on gateway costs for NLR and I2
- NOAA
  - growing relationship for nationwide lab Layer 1 & 2 services
- DRAGON Users
- RONs & Quilt
  - share experiences and problem solving on challenges and evolution of our businesses
  - I2 “connectors” first time ever meeting at MSP
- TransitRail
  - I2 connectors recommending TR/CPS single service to keep R&E separate from commodity
- Internet2 & NLR
- GLIF-North America - growing engagement

## GLIF-North America



## ***MATP & MAX Partnership MoU***

- MATP will once again pay MAX for shared access to I2
- MAX will pay MATP for:
  - shared access to NLR's 10G Layer 3 service (May 2007)
  - MAX Participants now will have rights to directly access NLR's Layer 1 and Layer 2 services
  - MAX will join in calls and email lists with MATP on coordination matters associated with NLR
  - strengthens partnership with MATP

## *Participants*

### **Federal Labs and Agencies:**

- [ATDnet – NRL, LTS, DISA](#)
- [D.C. Government](#)
- [Energy Sciences Network \(ESnet\)](#)
- [Laboratory for Telecommunications Sciences \(LTS\)](#)
- [Library of Congress](#)
- [NASA / GSFC](#)
- [National Archives and Records Administration \(NARA\)](#)
- [National Institutes of Health \(NIH\)](#)
- [National Institute of Standards and Technology \(NIST\)](#)
- [National Library of Medicine \(NLM\)](#)
- [National Oceanic and Atmospheric Administration \(NOAA\)](#)
- [National Science Foundation \(NSF\)](#)
- [USDA, Beltsville Agricultural Research Center](#)
- [U.S. Department of Health and Human Services \(HHS\)](#)
- [U.S. Department of State \(through GWU\)](#)
- [U.S. Geological Survey](#)
- [U.S. Holocaust Memorial Museum](#)
- [U.S. Veterans Administration](#)

### **Corporate and Non-profit:**

- [Columbia Telecommunications Corporation \(CTC\)](#)
- [Howard Hughes Med. Institute](#)
- [Fujitsu Labs of America](#)
- [Inter-American Development Bank \(IADB\)](#)
- [Northrop Grumman Corporation](#)
- [The Institute for Genomic Research](#)
- [Windber Professional Services, Inc](#)
- [World Bank](#)
- [The Venter Institute](#)

### **Higher Education:**

- [American University](#)
- [Baltimore Education & Research Network \(BERnet\)](#)
- [Catholic University](#)
- [GEANT](#)
- [Georgetown University](#)
- [George Mason University](#)
- [George Washington University](#)
- [Johns Hopkins University](#)
- [Johns Hopkins University – Applied Physics Laboratory \(JHU-APL\)](#)
- [Montgomery College](#)
- [National Consortium for Supercomputing Applications / ACCESS](#)
- [Network Virginia \(aggregating the State of Virginia\)](#)
- [Smithsonian Institution](#)
- [Southern Universities Research Association \(SURA\)](#)
- [University of California, D.C. campus](#)
- [University Consortium for Advanced Internet Development \(UCAID / Internet2\)](#)
- [University of Maryland, College Park](#)
- [University of Maryland, Baltimore](#)
- [University of Maryland, Baltimore Co.](#)
- [Univ. System of Maryland Network \(aggregating 11 campuses\)](#)
- [University of Southern California, Information Sciences Institute / East](#)
- [Washington Research Library Consortium](#)