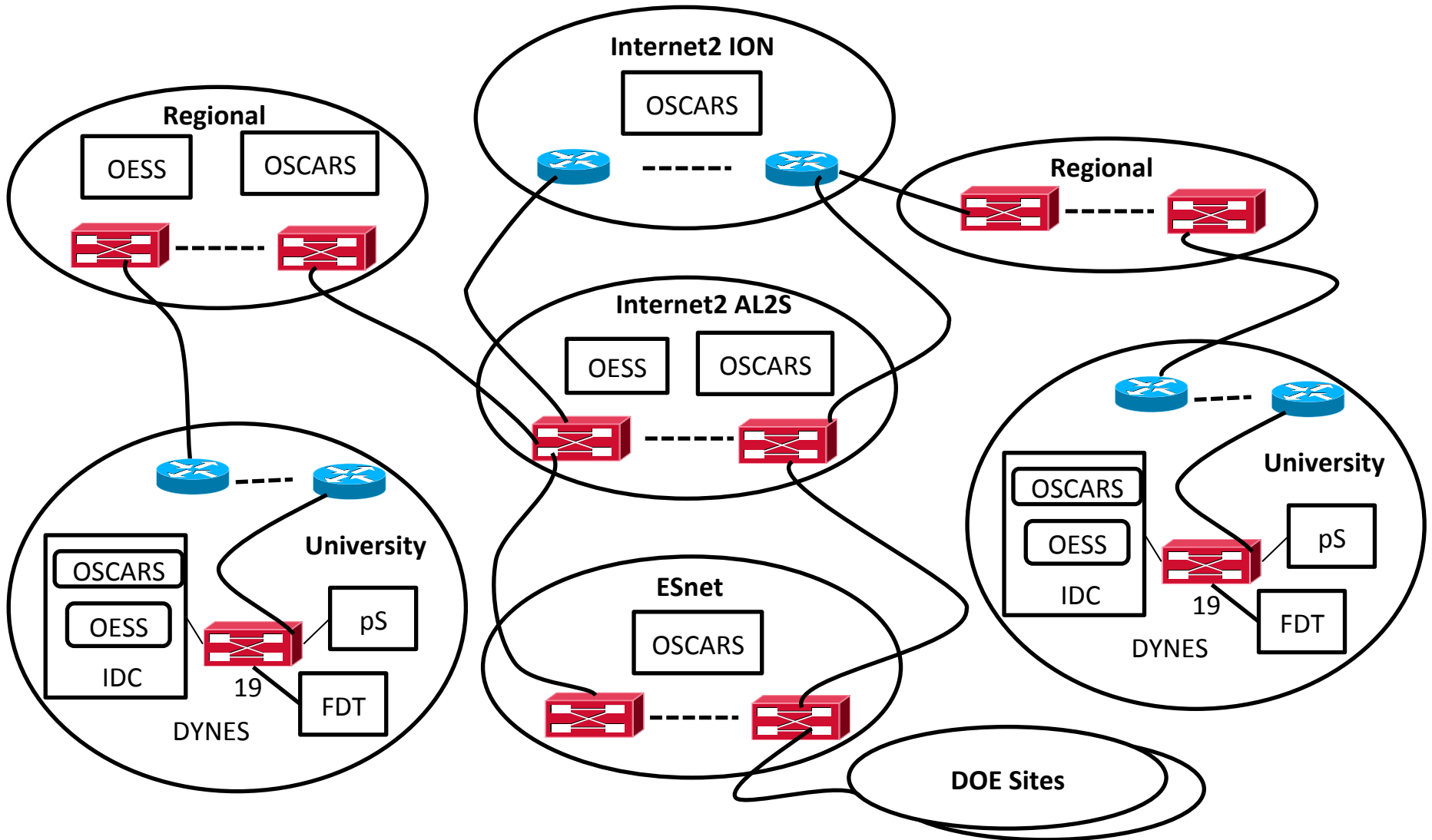# Grow inter-domain dynamic path-based networking service
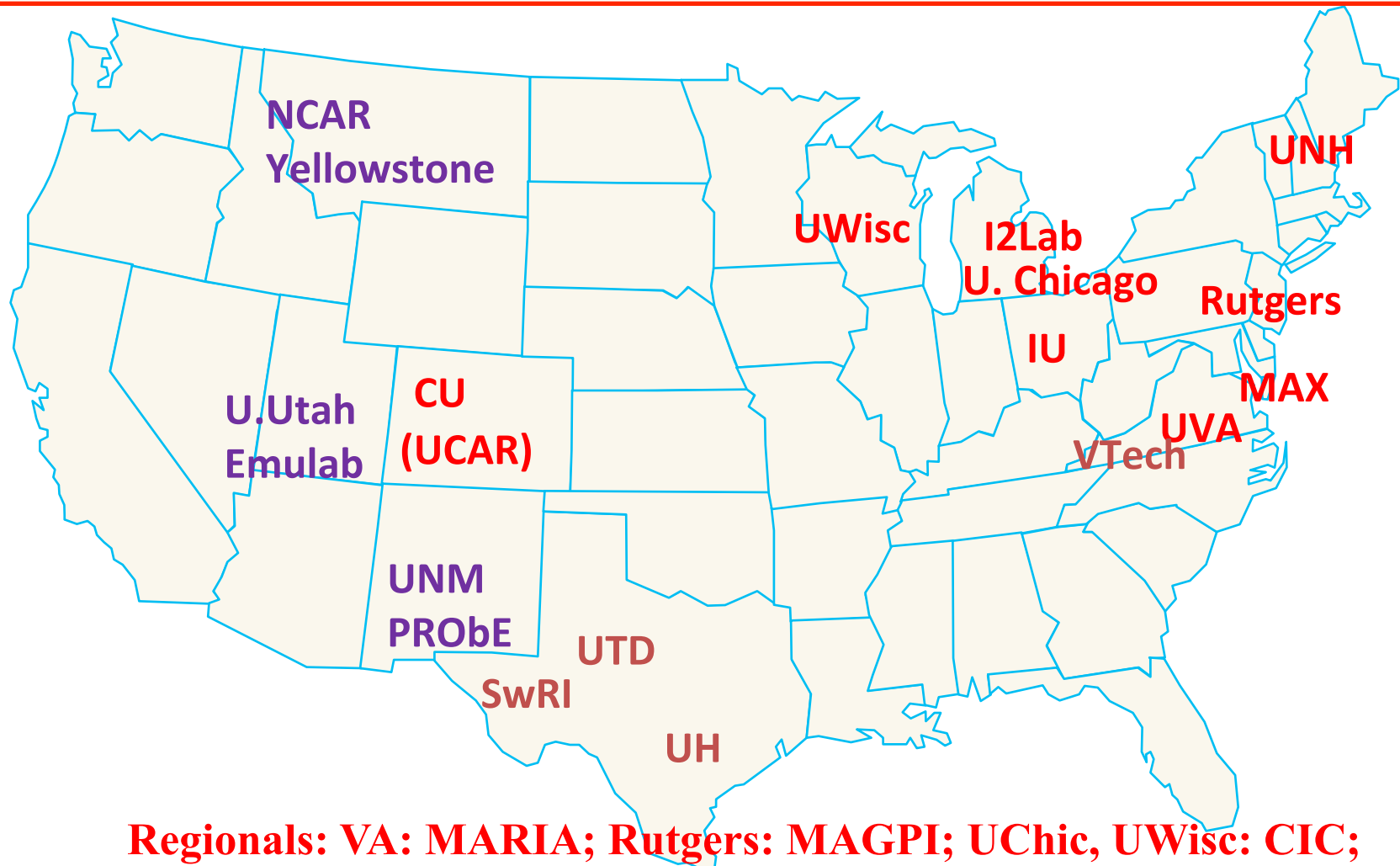
- Currently accomplished:
  - Leveraged deployed infrastructure
    - Internet2's AL2S
    - NSF MRI project called DYNES
    - NSF-ACI projects under CC-NIE /CC-IIE program
  - Leveraged controller software (OESS and OSCARS)
  - Built relationships with individuals at 9 universities and configured equipment to support new service
  - Dynamically create/release **inter-domain** L2 paths (VCs)
  - Circuit TCP with Linux tc rate shaping
  - GridFTP: achieve throughput equal to VC rate (~0 loss)
  - 14 TB dataset: U.Cincinnati → UVA (biomedical)
  - **Applications** are key at this juncture; improvements to control-plane software and network management will keep coming

Malathi Veeraraghavan, University of Virginia, mvee@virginia.edu
Jan. 2015, SwitchON Workshop

Multi-domain deployment

Deployed and working: red

NCAR Yellowstone

UNH

UWisc

I2Lab U. Chicago

Rutgers

IU

U.Utah Emulab

CU (UCAR)

MAX

UVA

VTech

UNM PRObE

UTD

SwRI

UH

Regionals: VA: MARIA; Rutgers: MAGPI; UChic, UWisc: CIC; IU: Indiana GigaPop; UNH: NOX; CU: FRGP

DYNES sites (in use); New sites (just started); Other resources

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INTERNET2 NETWORK INFRASTRUCTURE TOPOLOGY
OCTOBER 2014

Visions of ARPAnet-like growth

2009 proposal: UVA-Brazil collaboration

- Use of Wide-Area File Systems over circuits/VCs for distributed Genomic applications: "cross-leverage genomic information in US and Brazil databases on cowpea and common bean by investigators in both countries to enhance the speed at which new varieties can be generated."

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- Brazil: Francisco Brasileiro, Distributed Systems Lab, UFCG (Universidade Federal de Campina Grande) – Distributed Systems, and Francisco J. L. Aragão, Embrapa, Brasilia (biologist)

Now: Explore collaborations with Brazil univs. and FIU

- Rogerio L. Iope (UNESP)

- Tereza Cristina M. B. Carvalho (USP)

- FIU: Jeronimo A. Bezerra, Aurisabel Fereira, James Grace

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