

KeystoneREN Overview

Joint Engineering Team - SC24

Jennifer Oxenford, Chief Relationship Officer
Ken Miller, Chief Technology Officer



KINBER/PennREN → KeystoneREN

- ▶ KINBER was founded in 2010.
- ▶ Firstlight largely bought all of KINBER's PennREN fiber and networking assets along with commodity customers on May 1, 2021. KINBER retained existing the Internet2 customers as well as the Internet2 Connector status.
- ▶ KINBER established Keystone REN LLC, as a non-profit LLC, on August 8, 2023
 - ▶ KeystoneREN remains the only statewide research and education network across the state of Pennsylvania
- ▶ Grant Dull, previously of KINBER and FirstLight, was hired as the Keystone Executive Director on July 24, 2023.
- ▶ Ken Miller, previously of ESnet and Penn State, was hired at the Chief Technology Officer on August 26, 2024.
- ▶ Jennifer Oxenford, previously of NYSERnet and KINBER, was hired as the Chief Relationship Officer on October 1, 2024.

Meet the Leadership Team



Grant Dull, Executive Director



Ken Miller, Chief Technology Officer



Jennifer Oxenford, Chief Relationship Officer



Ben Miller, Director Engineering and Operations



Wendy Huntoon, Strategic Advisor

KINBER/PennREN services → KeystoneREN services

KeystoneREN

Internet2 R&E ←

Internet2 Peering I2PX ←

Internet2 Cloud Connect ←

Keystone Member Exchange ←

KINBER

~~Internet2 R&E~~

~~Internet2 Peering IX~~

~~Internet2 Cloud Connect~~

~~Keystone Member Exchange~~

~~PennREN Fiber and Network
Assets~~

~~PennREN IP Space and ASN~~

~~PennREN Commodity
Customers~~

~~PennREN Managed Routers~~

Digital Inclusion

Digital Equity

FirstLight

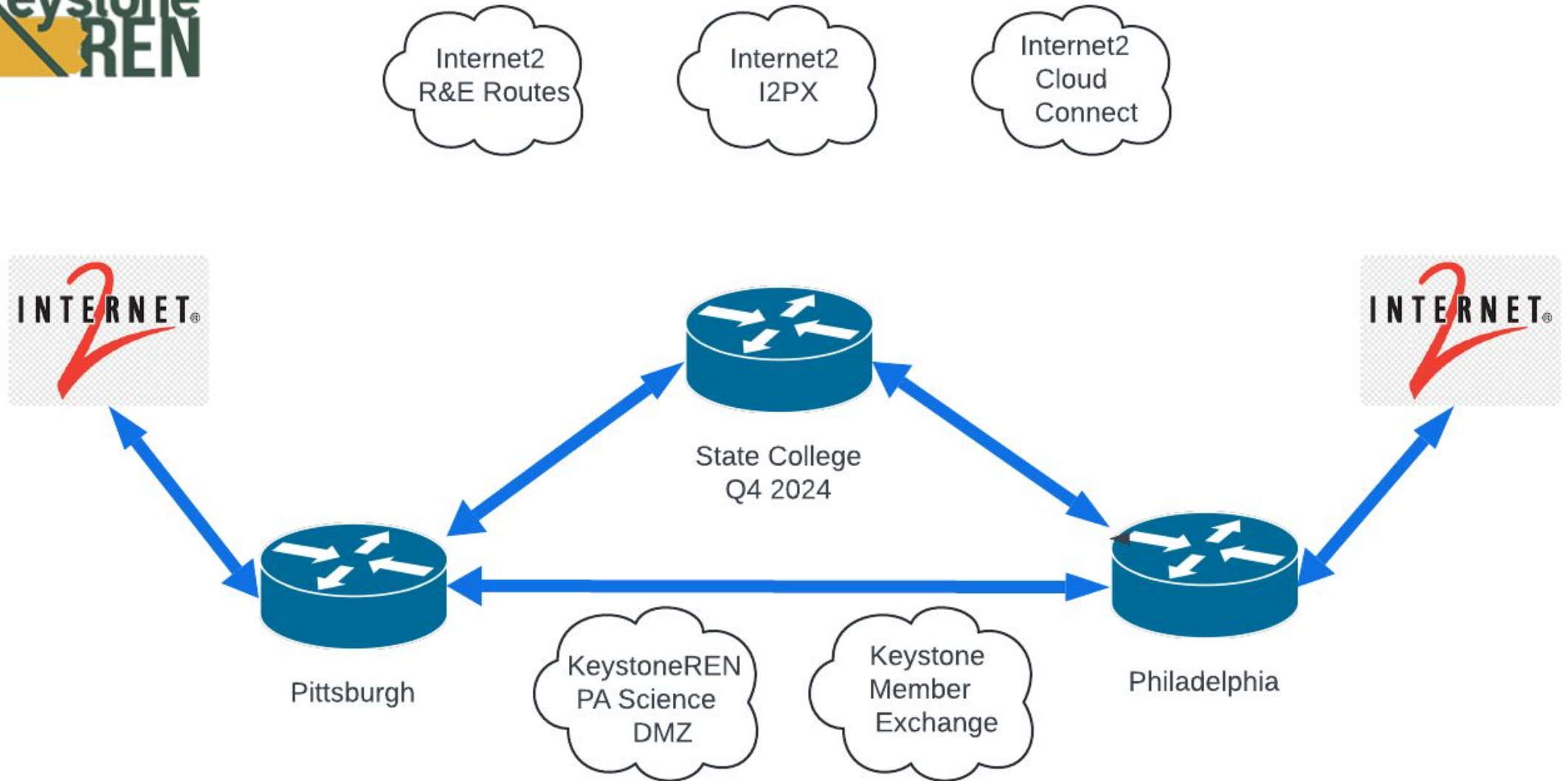
→ PennREN Fiber and Network
Assets

→ PennREN IP Space and ASN

→ PennREN Commodity
Customers

→ PennREN Managed Routers

KeystoneREN Network Diagram



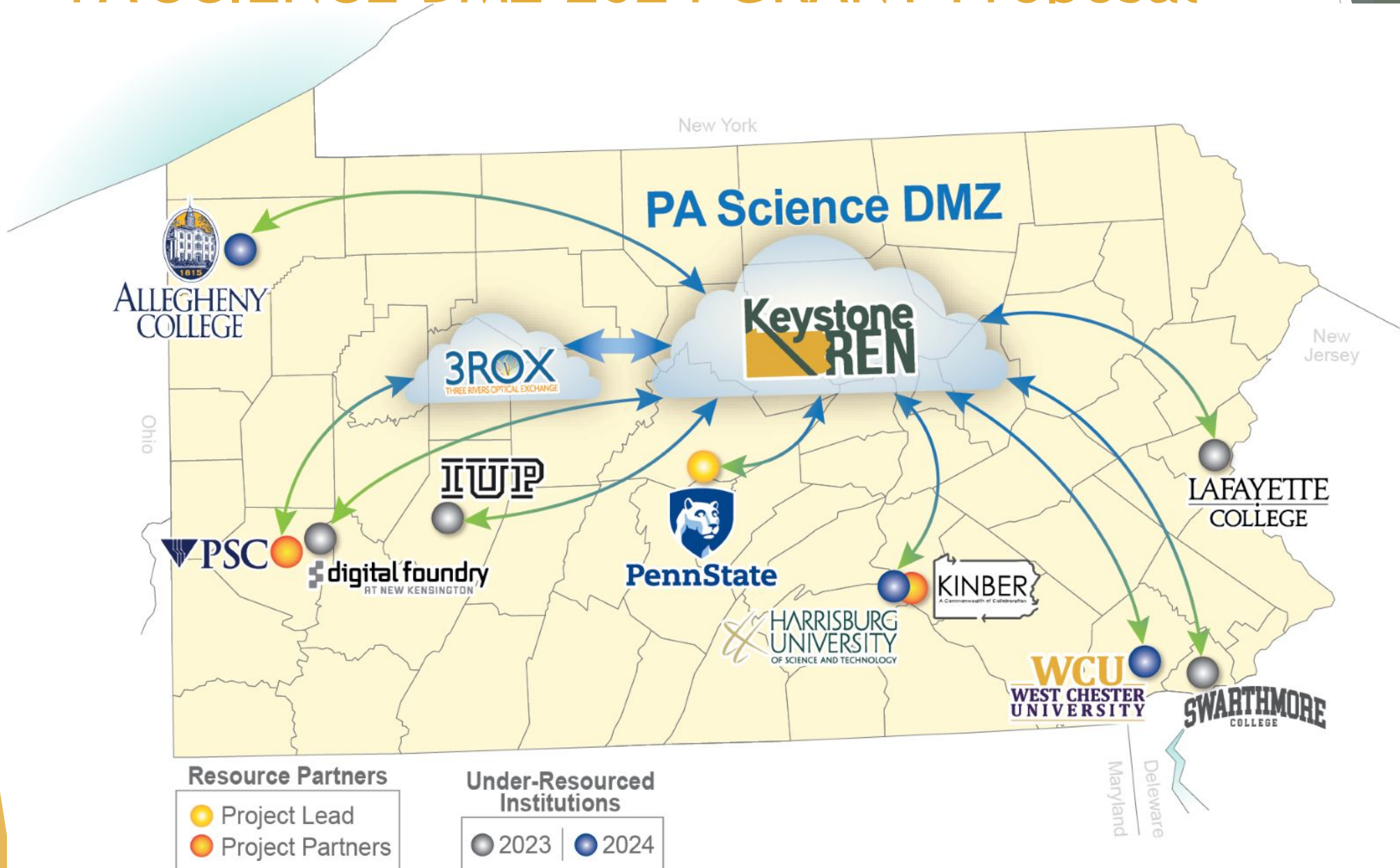
PA-Science DMZ PROJECT OVERVIEW

- ▶ Frictionless Science DMZ Network Paths
 - ▶ Goal - establish the foundation for a statewide Pennsylvania Regional Science DMZ (PA-DMZ) that enables and enhances access for under resourced PA institutions of higher education to cyberinfrastructure-based resources and services in support of science driven research and education applications.
- ▶ Grant supports
 - ▶ Networking hardware and connectivity
 - ▶ Installation and support for 2+ years (organizations to provide support years 3-5)
 - ▶ Broader Impacts and Research Enablement

PA SCIENCE DMZ 2023 GRANT



PA SCIENCE DMZ 2024 GRANT Proposal



SCIENCE DRIVER METRICS & OUTCOMES

- ▶ Baseline: Gather existing data transfer bottleneck or limitations
- ▶ Top Source/Destination
 - ▶ IPs/Collaborators
 - ▶ ASNs/Sites
 - ▶ Applications
- ▶ Document Total Science Data Transferred
- ▶ How has Science Improved?
- ▶ Develop a performant data architecture and training to assist others within PA to prefer R&E networks first
- ▶ Develop a managed router service to prefer R&E networks first
- ▶ Collaborate with PA schools to establish IPv6 connectivity

Contact Info

ken@keystoneren.org

gdull@keystoneren.org

joxenford@keystoneren.org

bmiller@keystoneren.org

<https://noc.keystoneren.org>

noc@keystoneren.org

1-317-278-0328

"Any opinions, findings, conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the Networking and Information Technology Research and Development Program."

The Networking and Information Technology Research and Development
(NITRD) Program

Mailing Address: NCO/NITRD, 2415 Eisenhower Avenue, Alexandria, VA 22314

Physical Address: 490 L'Enfant Plaza SW, Suite 8001, Washington, DC 20024, USA Tel: 202-459-9674,
Fax: 202-459-9673, Email: nco@nitrd.gov, Website: <https://www.nitrd.gov>

