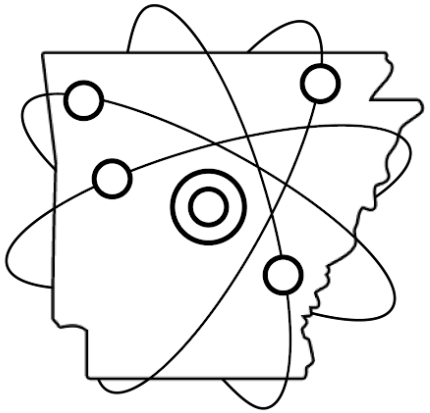
Arkansas Quantum Computing Working Group

Building a Quantum Future for Arkansas



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This event is supported by

Arkansas NSF EPSCoR

and the

Arkansas Economic Development Commission

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Very excited to announce:

AWARD INFORMATION

Award Number (FAIN): 2622168
Award Instrument: Standard Grant
Award Date: 06/01/2026
Award Period of Performance: Start Date: 07/01/2026 End Date: 06/30/2027
Project Title: Conference: CI / PAOS: Developing a Statewide Quantum Computing Working Group in the State of Arkansas
Managing Division Abbreviation: OAC
Research and Development Award: Yes
Funding Opportunity: PD 24-7414 Cyberinfrastructure for Public Access and Open Science
Assistance Listing Number(s) and Name(s): 47.070 Computer and Information Science and Engineering (Predominant source of funding for SEFA reporting)

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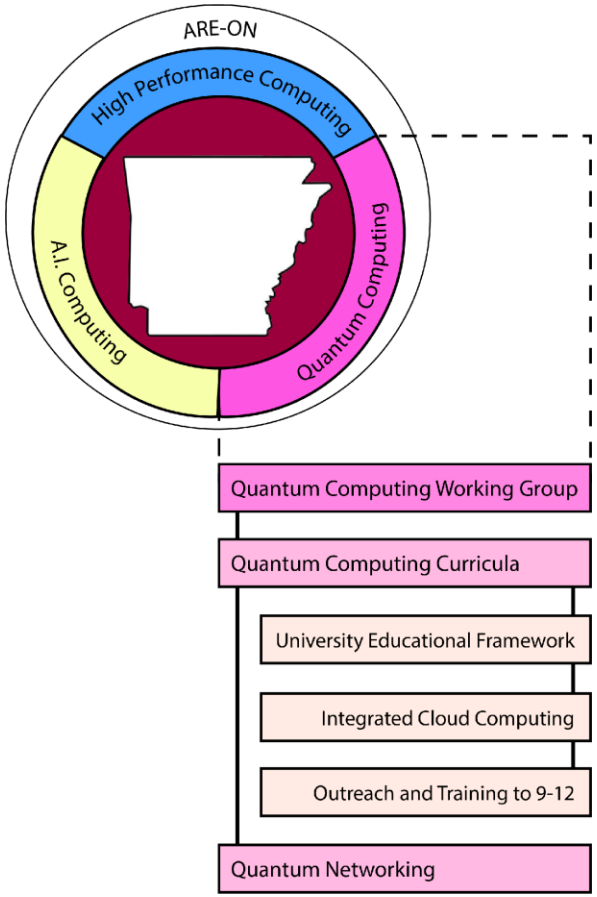

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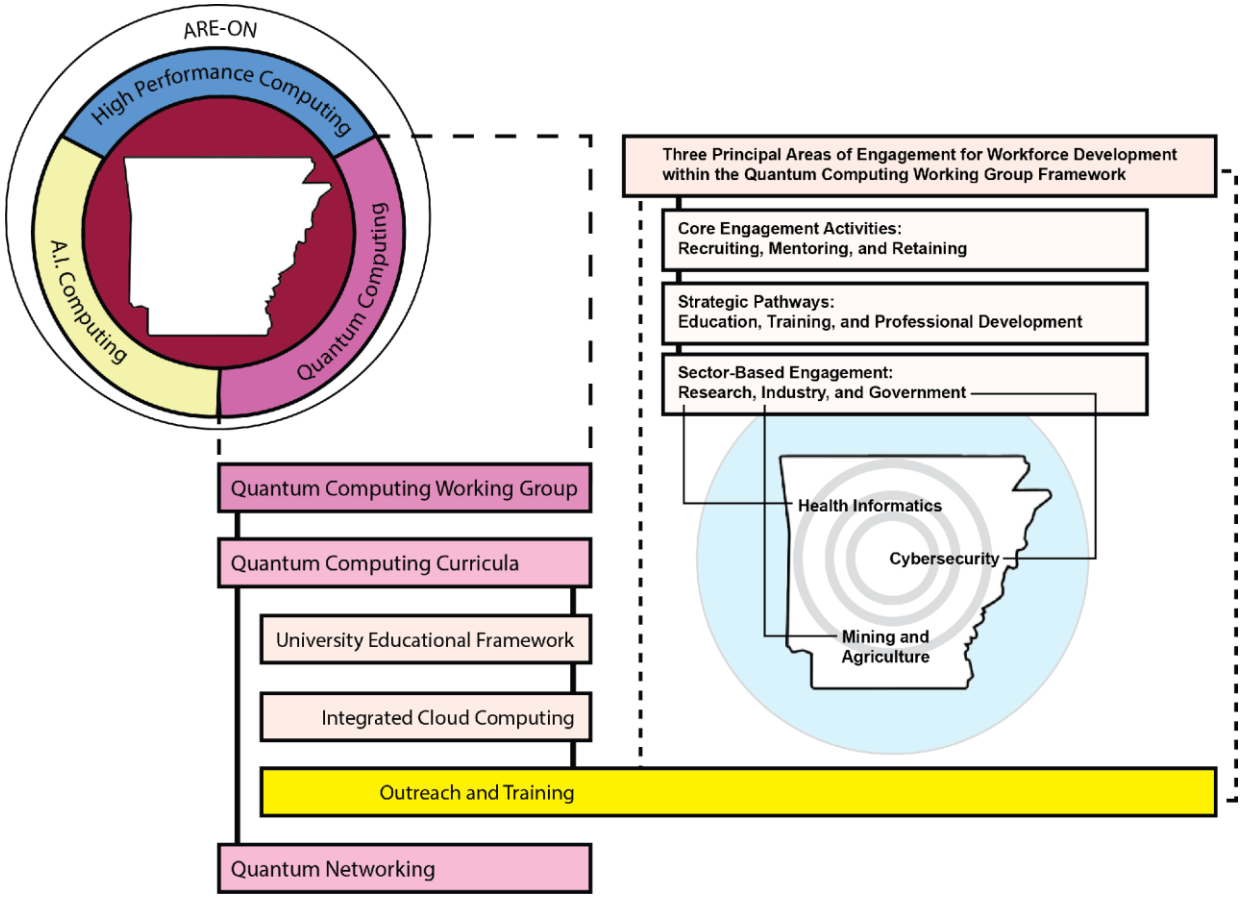

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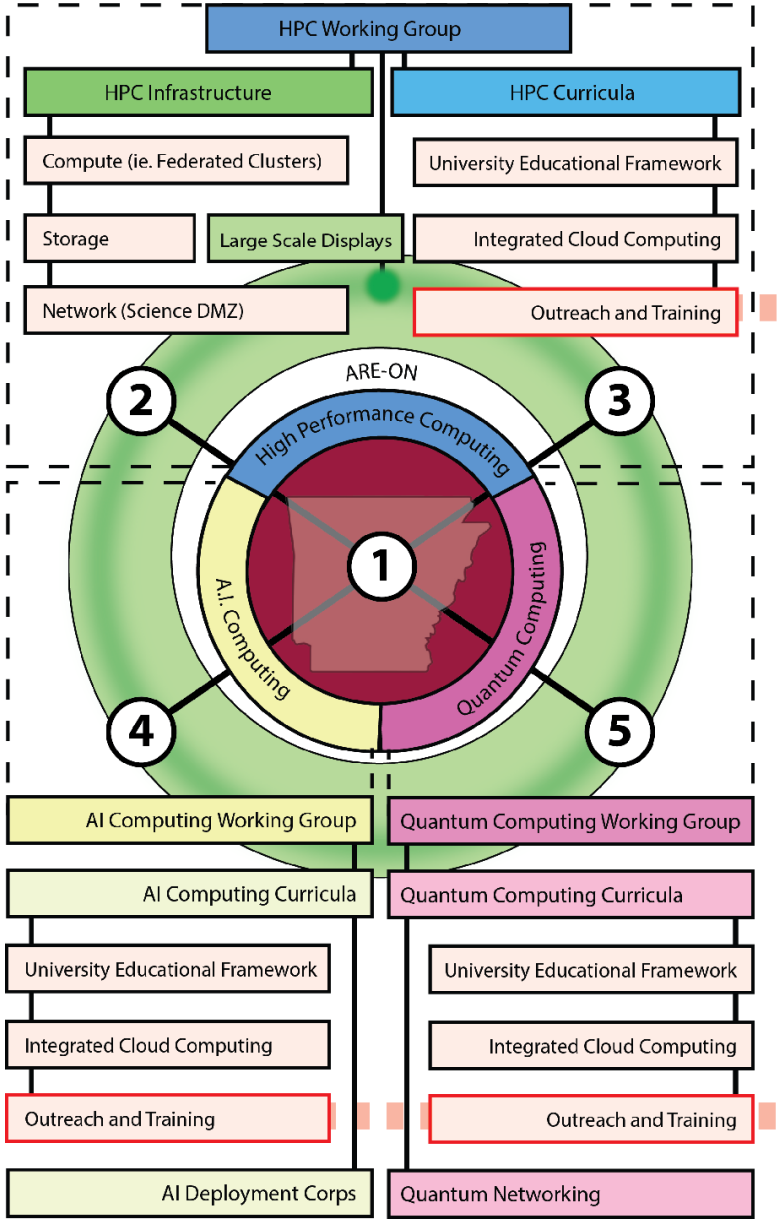


State of Arkansas

Strategic Vision, Management and Research Ecosystem

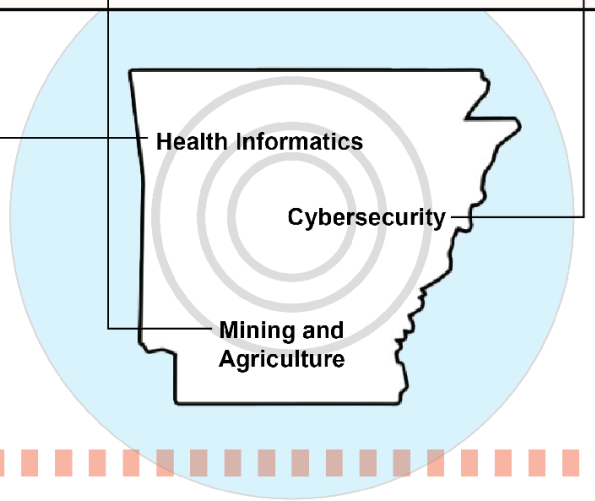
Working Group, Advisory and Executive Committees
(1) Lead Project Manager, Administrative Assistant
(2-5) Technical and Subject Matter Experts [HPC(2&3), AI(4), Quantum(5)]:
Dedicated engagement managers accountable for the milestones within their specific core, providing regular progress reports to the Project Manager.

Three Principal Areas of Engagement for Workforce Development within the E-CORE Framework through Curricula

Core Engagement Activities:
Recruiting, Mentoring, and Retaining

Strategic Pathways:
Education, Training, and Professional Development

Sector-Based Engagement:
Research, Industry, and Government



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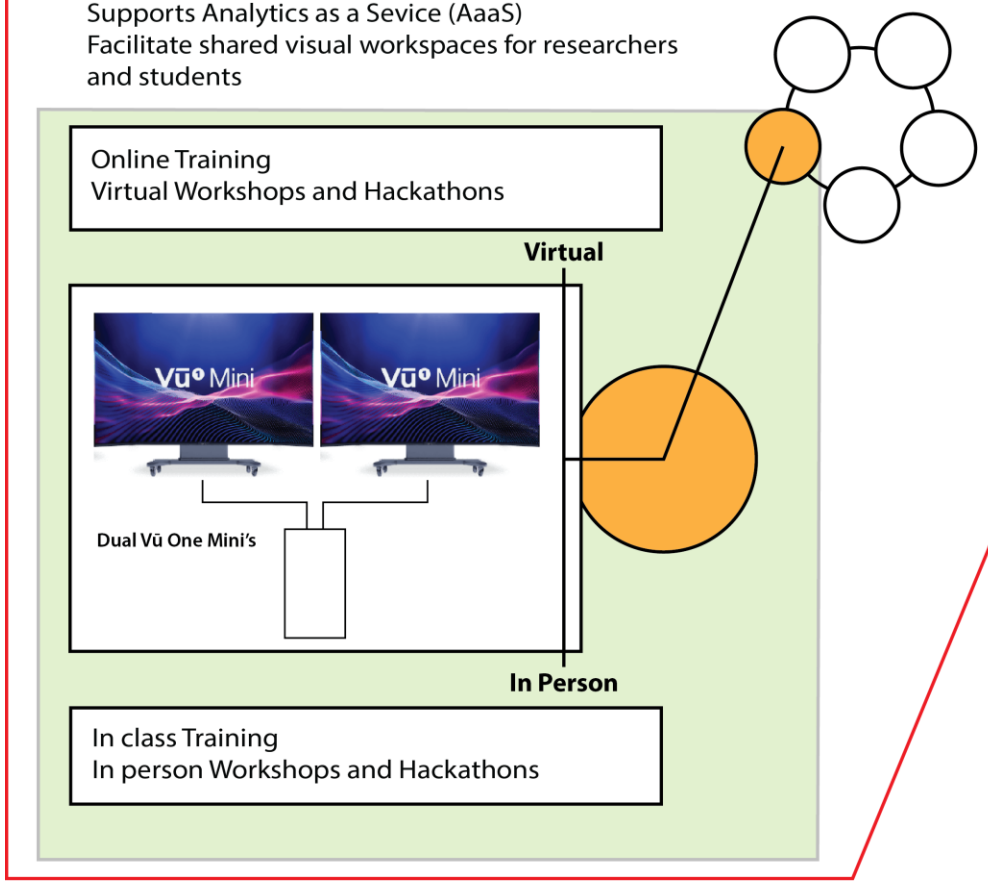
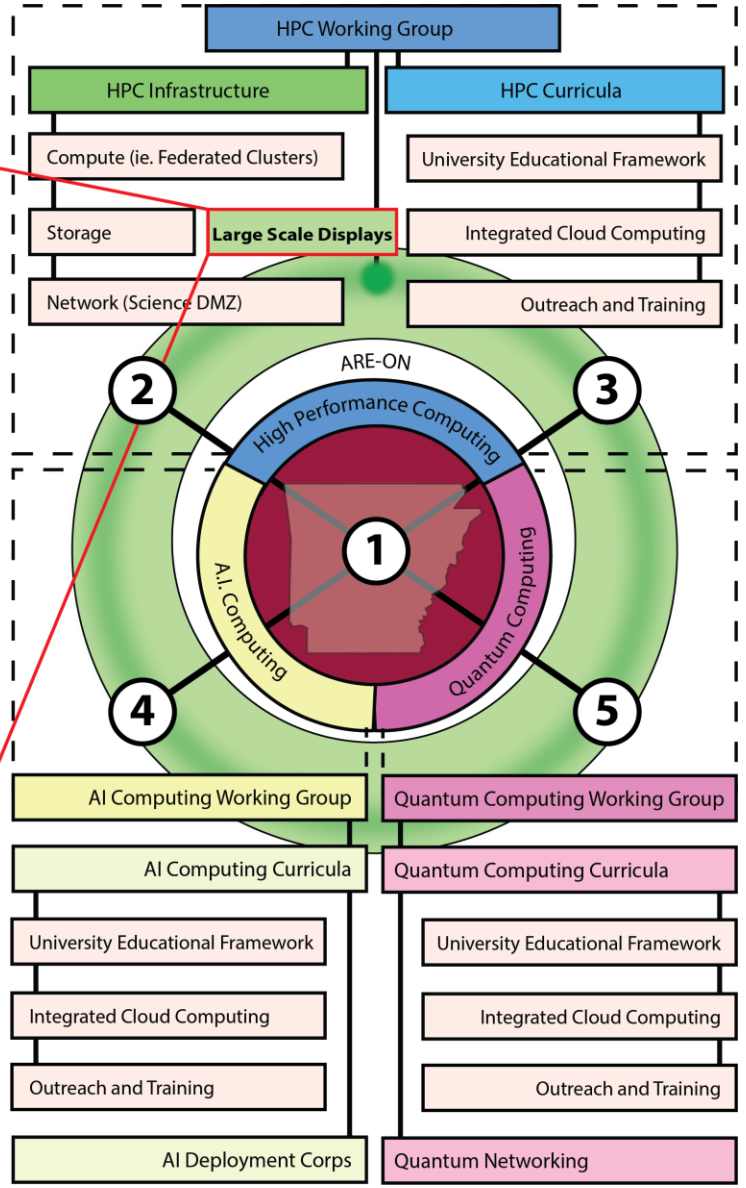
Large Scale Displays; Facility especially designed **at each institution** to enable in person and virtual training. Design is modular so that each curriculum expert can use the system as an operator.

- Supports Analytics as a Sevice (AaaS)
- Facilitate shared visual workspaces for researchers and students





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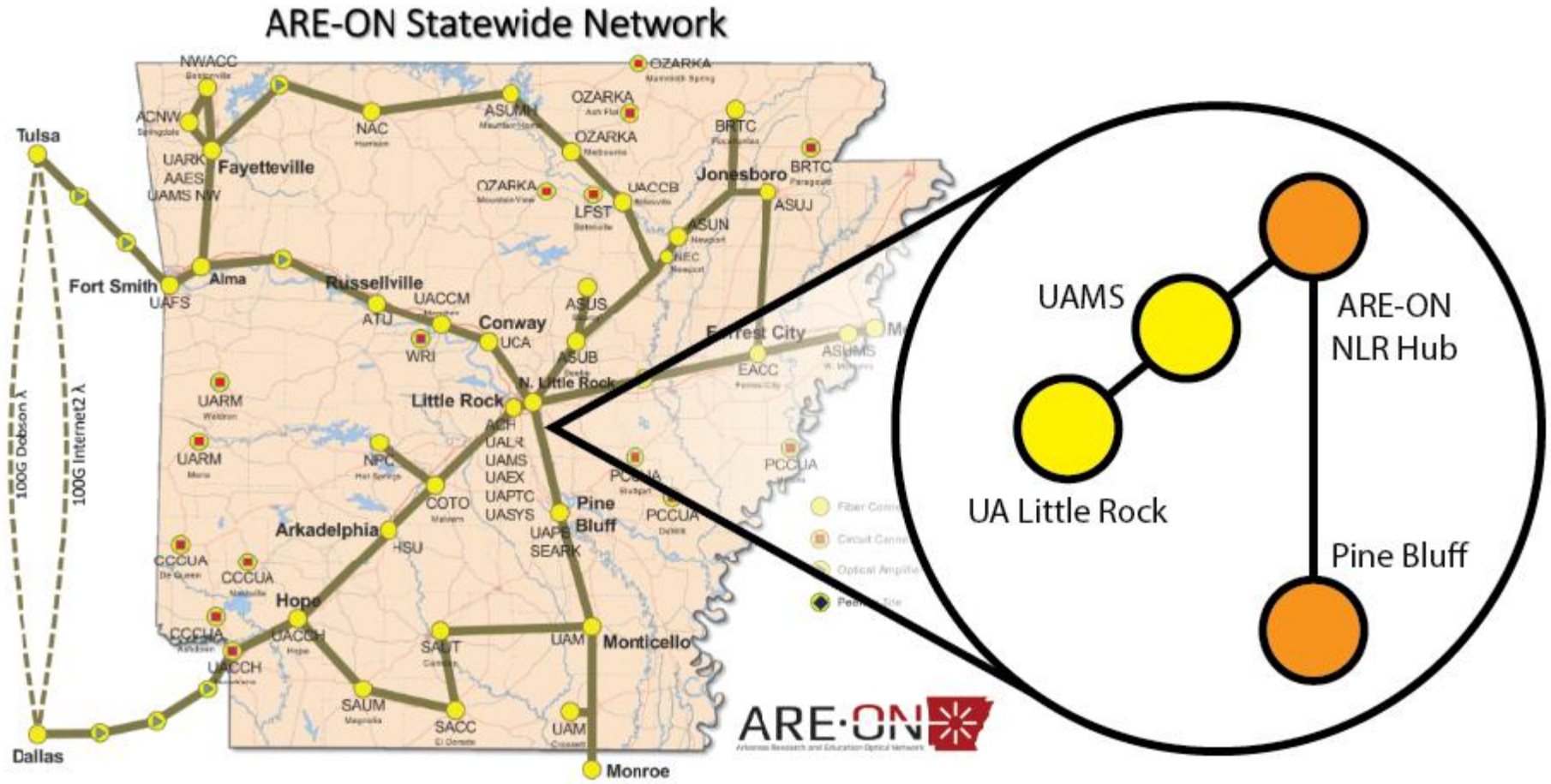

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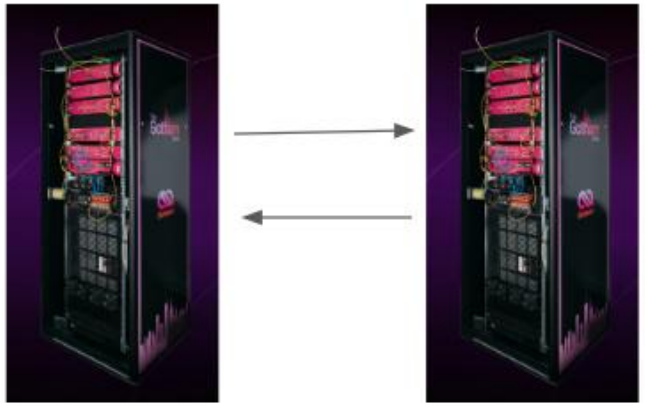
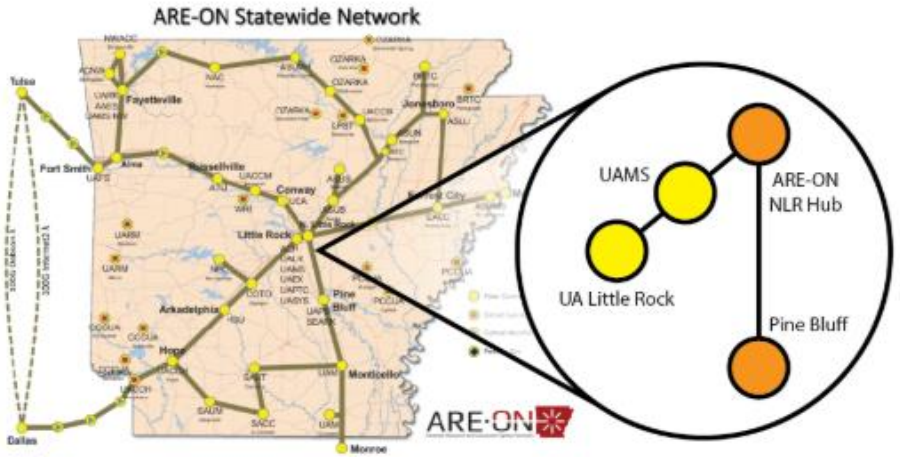
Quantum Security on a Quantum Network

Experimental Quantum Network
Between UALR and UAMS

2nd Phase to extend to UAPB

https://www.qunnect.inc/carina





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Quantum Encryption for Network Security

What this means for network security

Two parallel paths forward — one mathematical, one physical.

SOFTWARE PATH

Post-Quantum Cryptography

New math, runs on classical hardware

- Lattice-based, hash-based, and code-based algorithms
- NIST has standardized CRYSTALS-Kyber and Dilithium
- Drop-in upgrade for TLS, VPNs, and digital signatures

HARDWARE PATH

Quantum Key Distribution

Physics-based, needs special hardware

- Provably secure against any computational attack
- Requires fiber or satellite quantum channels
- Used today in finance and government networks

The transition has already begun — what you encrypt today must outlast the arrival of cryptographically relevant quantum computers.

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