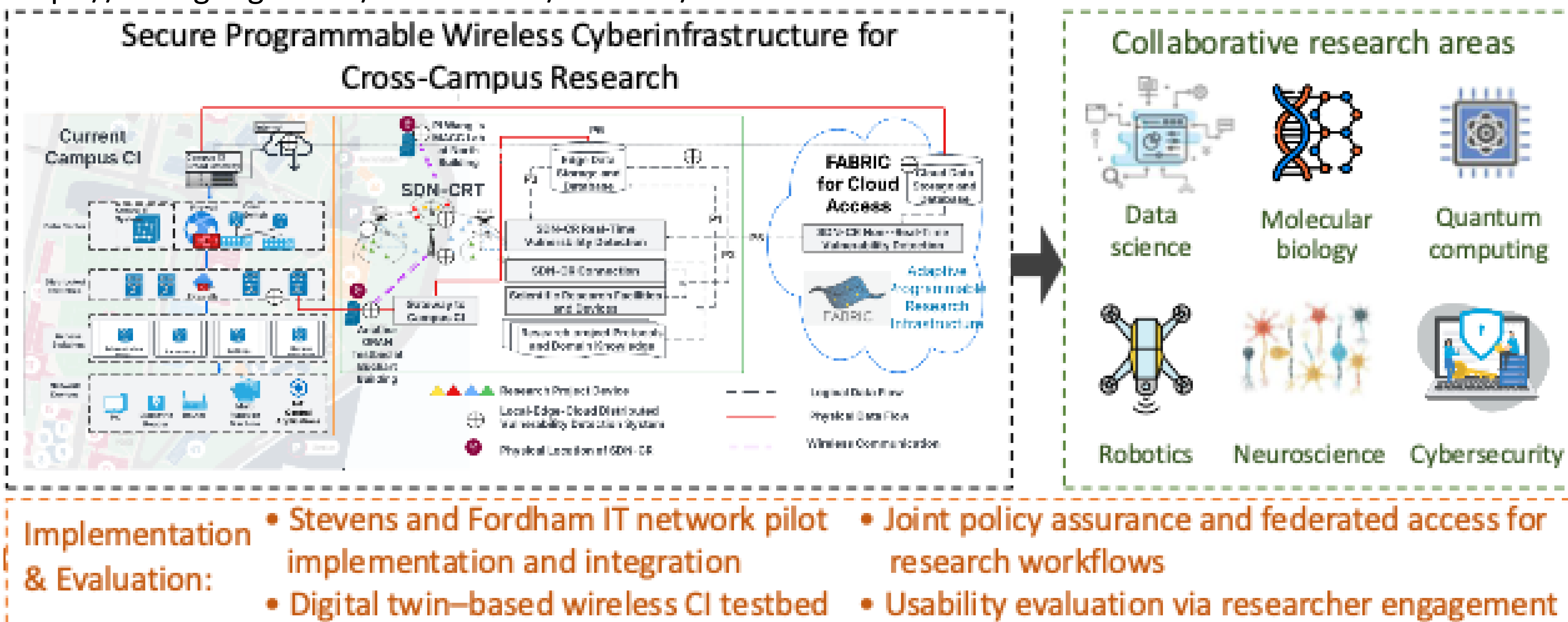


# CICI: UCSS: Programmable Wireless Infrastructure with Formal Assurance for Cross-Campus Research

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## Collaboration and Usability Challenge Addressed

Collaborative research requires dynamic cross-campus wireless access, but the state of practice security approaches limit flexibility.

WRAP combines open program infrastructure with formal assurance to align usability and compliance. Researcher-facing tools simplify configuration while IT teams maintain visibility and control.

## Technical Cybersecurity Solution

Formal assurance translates researcher goals into verifiable policies.

Runtime anomaly detection ensures continuous, secure operation.

Replicable architecture unites programmability, assurance, and usability.

### Benefits to Scientific Cyberinfrastructure

- Enables secure, policy-compliant collaboration across campuses.
- Reduces friction between researcher agility and IT enforcement.
- Supports diverse workflows in genomics, AI, robotics, quantum, and more.
- Provides reusable open-source toolkits and training materials for adoption.

### Result Dissemination Plans

Open-source release of WRAP toolkits, policy models, and verification datasets.

Deployment templates, dashboards, and training materials for replication at peer institutions.

Publications, workshops, and cross-campus demos to engage both researchers and IT teams.

### Risks Versus Potential For Advances

**Risk:** Unforeseen domain regulations, cross-campus policy conflicts, and stakeholder priorities may limit seamless adoption.

**Payoff:** Cross-domain researcher and IT engagement builds a replicable, evolving architecture with error resilience, sustainability, and scalability beyond campuses.