



NSF Campus Cyberinfrastructure PI and  
Cybersecurity Innovation for Cyberinfrastructure PI Workshop

October 3-4 | Albuquerque, New Mexico

**NSF Program:** CICI     **Award Numbers:** 1642158 and 1642134

**Program Area:** ACI Cybersecurity – Cyberinfrastructure

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**Project Title:** Collaborative Research: CICI: Secure and Resilient  
Architecture: NetSecOps — Policy-Driven, Knowledge-Centric,  
Holistic Network Security Operations



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## Quad Chart for:

Secure and Resilient Architecture: **NetSecOps** — Policy-Driven, Knowledge-Centric, Holistic Network Security

Operations (A collaborative NSF CICI project between Univ of Utah and Univ of KY)

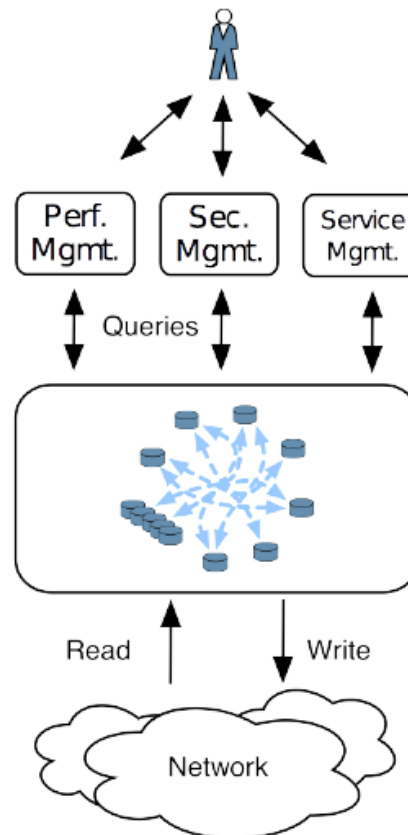
### Challenge:

- Campus security operations rely on human domain experts to interpret and map high-level policy documents to low-level network configurations.
- Segments of the campus have very different policies and regulation.
- Data-intensive scientific research traffic often requires exceptions to IT policies.
- Goal: Assist IT security teams by automating operational steps that are tedious and error-prone.

### Solution/Approach:

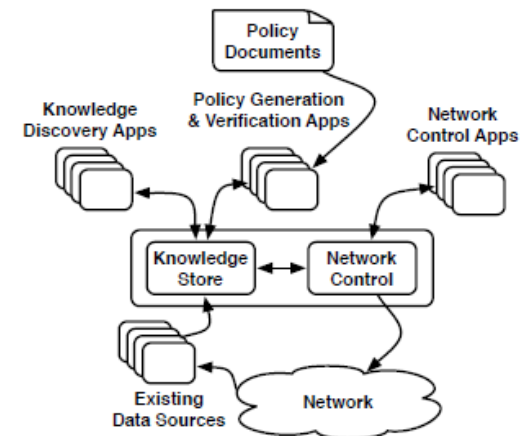
- Systematically capture campus network security policies.
- Develop fine-grained control abstractions and SDN capabilities to implement both security policies and (research) policy exception.
- Create policy traceability tools to verify integrity of policy mappings.
- Reason about security using information from point solutions.

<http://www.flux.utah.edu/project/NetSecOps>



### Broader Impact:

- Limit or prevent the growing number of attacks on campus networks.
- Address the shortage of qualified security experts on campuses, and make IT security teams more effective.
- Advance scientific research, particularly research using big data



<http://www.netlab.uky.edu/NetSecOps>