



NSF Campus Cyberinfrastructure PI and  
Cybersecurity Innovation for Cyberinfrastructure PI Workshop  
October 3-4 | Albuquerque, New Mexico

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**NSF Program: CICI**

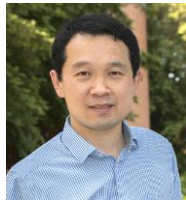
**Program Area:** Secure and  
Resilient Architecture

**Award Number:** 1642143

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**co-PIs:** Richard Brooks, Kuang-Ching Wang, Nuyun Zhang

**Project Title:** SciGuard: Building a Security Architecture for  
Science DMZ Based on SDN and NFV Technologies



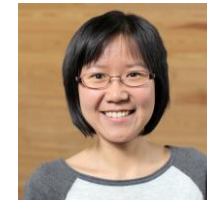
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# NSF Campus Cyberinfrastructure PI and Cybersecurity Innovation for Cyberinfrastructure PI Workshop

October 3-4, 2017 | Albuquerque, NM

## Quad Chart for:

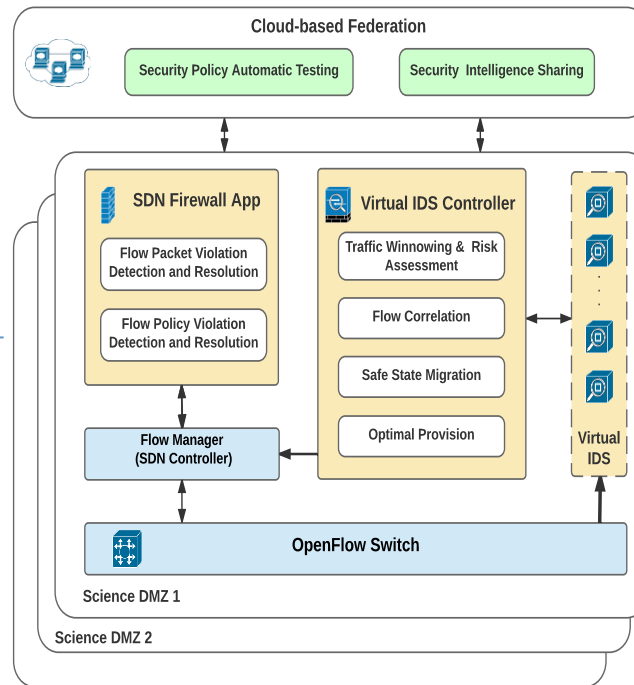
### *SciGuard: Building a Security Architecture for Science DMZ Based on SDN and NFV Technologies*

#### Challenge

- Institutional firewalls are ill-suited to high-performance science environments
- Existing solutions for securing the Science DMZ depend on legacy institutional firewalls and IDS clusters, both of which are expensive and rigid to adapt

#### Solution

- Develop a new secure and resilient architecture for Science DMZs based SDN and NFV
- Design an SDN firewall application, which can scale well without bypassing firewalls
- Build a virtual IDS to deal with attack traffic variation in Science DMZs



#### Scientific Impact

- This research provides novel analysis, design techniques, and toolkits to better protect our critical Science DMZ infrastructures from attacks and unauthorized access leveraging emerging SDN and NFV Technologies

#### Metadata tag:

- A paper about building robust SDN firewall applications has been submitted to a security journal
- A paper about designing virtual IDSes has been preparing and will be submitted to a top-tier security conference
- Looking for transition target