



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

October 3-4 | Albuquerque, New Mexico

**NSF Program:** Cybersecurity Innovation for CI (CICI)

**Program Area:** Cybersecurity Enhancement **Award Number:** 1738962

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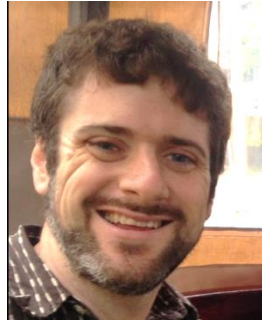
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Todd Tannenbaum (UW-Madison), Alexander Withers (NCSA)

**Project Title:** **SciTokens: Capability-Based Secure Access to  
Remote Scientific Data** (<https://scitokens.org>)



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## Quad Chart for: SciTokens: Capability-Based Secure Access to Remote Scientific Data

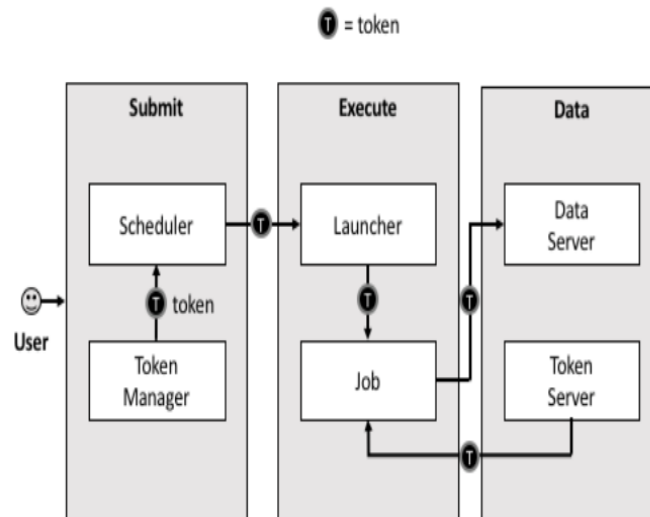
### Challenge:

- Scientists often use long-lived, highly privileged credentials (e.g., enabling the workflow to fully impersonate their identity) based on X.509 GSI certificates on compute grids to access data.
- Use of impersonation credentials can create risk to scientist's accounts and to the underlying computational infrastructure
- The GSI library is approaching support end-of-life.

### Deliverables:

- SciTokens: An open source software infrastructure that uses IETF-standard OAuth tokens for capability-based secure access to remote scientific data instead of impersonation certificates.
- Incorporate SciTokens software into widely used high throughput computing platforms (e.g. HTCondor)
- Demonstrate effectiveness by converting LIGO and LSST computing workflows to utilize SciTokens for data access.

### The SciTokens Model



### Scientific Impact:

- Advance knowledge through use of distributed, least-privilege authorization in our nation's scientific computing infrastructures
- Adoption of current Internet standards (i.e., OAuth) enables knowledge transfer of Internet security methods across sectors.

### Metadata tag:

- *Project URL - <https://scitokens.org/>*
- *Code and Documentation - <https://github.com/scitokens>*
- *Keywords: SciTokens, OAuth, JSON Web Tokens (JWT), OA4MP, HTCondor, LSST, LIGO*