



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

NSF Program: CICI

Program Area: Data Provenance

Award Number: 1547467

PI: Ashish Gehani

Project Title: Protecting Provenance Integrity and Privacy



Ashish Gehani

Staff Scientist

SRI

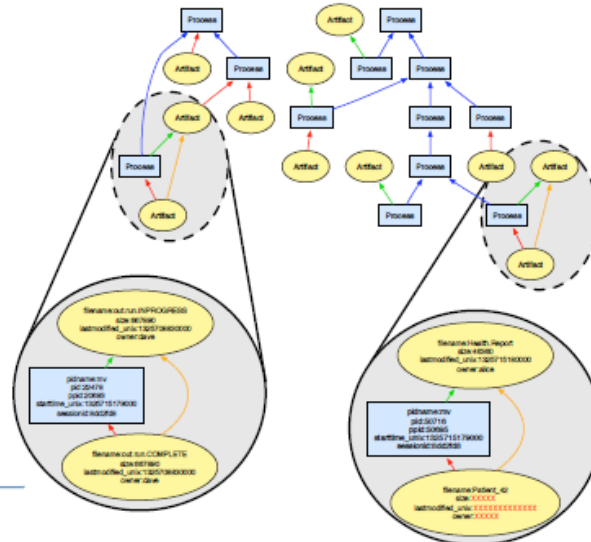
ashish.gehani@sri.com



Protecting Provenance Integrity and Privacy

Challenges:

- Scientific analyses use “big data”, generating “big provenance”
- Raises concerns about human subject and patient privacy, safeguarding of intellectual property
- Significant effort required to validate claims about the antecedents of data products

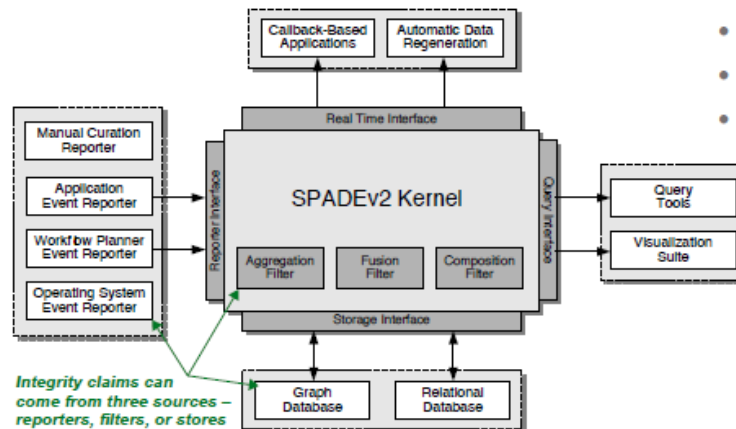


Broader Impact:

- Simplify process of making data provenance “externally” available
- Automate commitment to history of data products and transformations
- Motivate sharing of provenance for diagnostics, profiling, validation of workflows

Solution:

- Framework to provide privacy assurance for responses to provenance queries
- Middleware extension for cryptographic binding of data products to provenance claims
- System support for efficiently computing integrity witnesses



Project:

- <http://spade.csl.sri.com>
- *GPL code on GitHub*
- *Ashish Gehani, Hasanat Kazmi, and Hassaan Irshad, **Scaling SPADE to “Big Provenance”**, 8th USENIX Theory and Practice of Provenance, 2016.*