



NSF Campus Cyberinfrastructure PI and Cybersecurity Innovation for Cyberinfrastructure PI Workshop

September 24 – 26, 2018 | University of Maryland, College Park, MD

NSF Program: CC

Program Area: Integration

Award Number: 1826997

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Project Title: Delivering a Dynamic Network-centric Platform for
Data-driven Science (DyNamo)



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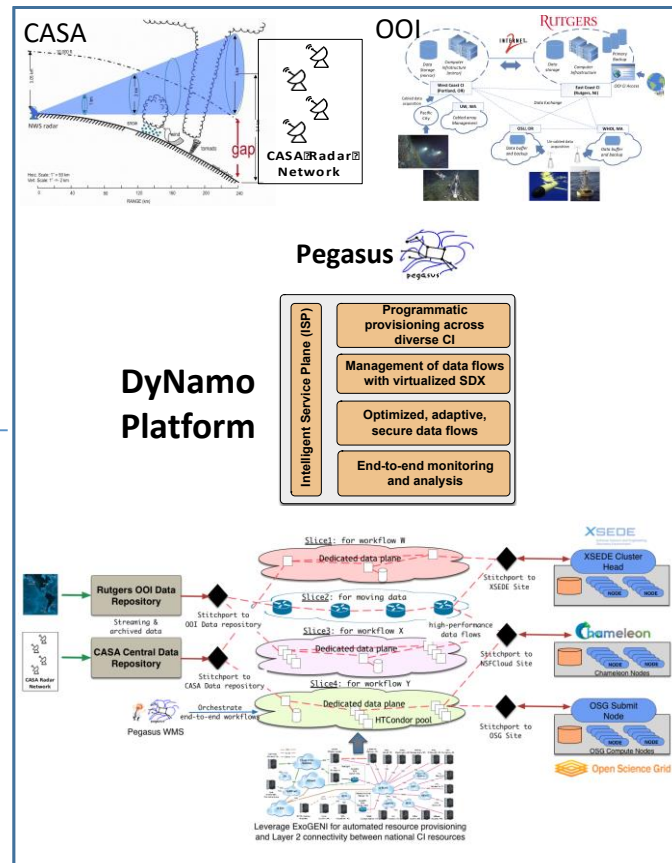
Quad Chart for: *CC* Integration: Delivering a Dynamic Network-centric Platform for Data-driven Science (DyNamo)*

Challenges:

- A major challenge for data-driven science applications is the integration of data into the scientist’s workflow.
- Domain science applications and workflows have seldom taken advantage of advanced technologies like SDN and dynamic, networked cloud infrastructures.

Deliverables:

- Develop novel algorithms, policies, and mechanisms in a network-centric platform to offer optimized data-flows across different kinds of national CI – ExoGENI, Chameleon, OSG, XSEDE.
- Novel network-aware workflow scheduling approaches in Pegasus.
- Deploy solutions for use in observational science communities - Collaborative and Adaptive Sensing of Atmosphere (CASA) and Ocean Observatory Initiative (OOI) .



Broader Impact:

- Advances in the CASA and OOI workflows enabled by DyNamo will improve weather forecasting and ocean sciences.
- DyNamo will enable other domain sciences that rely on data captured from scientific instruments (LIGO, LHC, etc.).
- DyNamo’s workflow management improvements will be available to broad range of domains that rely on Pegasus.

Metadata tag:

- *<<https://sites.google.com/view/dynamo-nsf/>>*
- *<Network-aware data and workflow management for observational science workflows>*
- *<Leverage national CI>*
- *<Project starting up: looking for more use cases>*

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