NSF Campus Cyberinfrastructure PI and Cybersecurity Innovation for Cyberinfrastructure PI Workshop

September 23 – 25, 2019 | Minneapolis, MN

NSF Program (either CC or CICI): CC **Award Number:** 1925716

Program Area: Data Driven Networking Infrastructure for Campus

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Project Title: Shared Computing Infrastructure for Large-scale Science Problems

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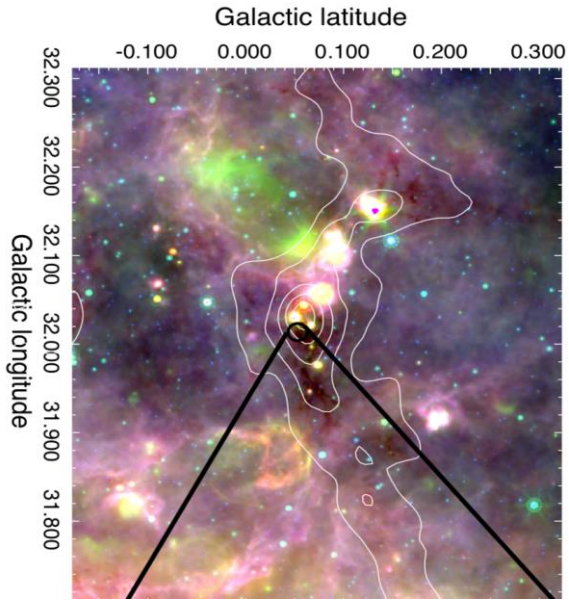
Quad Chart for: *Shared Computing Infrastructure for Large-scale Science Problems*

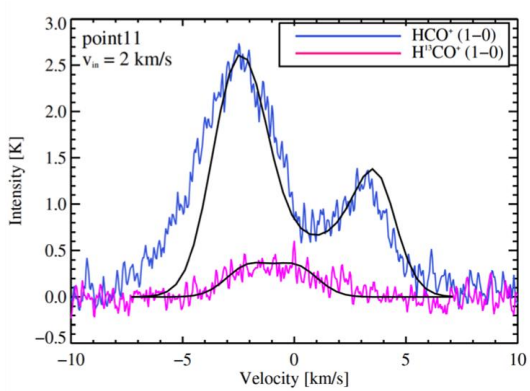
Challenge Project Seeks to Address:

- simulation of interactions between light and matter at high energies
- understanding star formation by relating models to observational data
- probing the inner structure of the earth using seismic waves
- meaningful information in real time extracted from dynamic market data

Solution(s) or Deliverables:

- 28-node cluster with data storage
  - 1120 Intel cores / 2240 HT ...
  - 2.4 GB of RAM / HT
  - 1.2 PB of shared disk
  - 100 Gb/s local network
  - 10 Gb/s wide area network
  - >100 Gb/s link to Internet2
- local + global integration
  - Open Science Grid site
  - uses UConn HPC "condo model"
  - access by all UConn + OSG users





Scientific Impact or Broader Impact:

- benefits all members of large international collaborations
  - GlueX (130 scientists)
  - CLAS12 (250 scientists)
  - Origins space telescope, ...
- sharing with UConn, OSG researchers
  - goal of 25% shared
- broadening the participation of women, persons with disabilities, and under-represented minorities in data science
  - new undergrad course component
  - BiteScis: K-12 teacher enrichment

Metadata tags:

- https://zeus.phys.uconn.edu/beowulf
- https://zeus.phys.uconn.edu/UConn-OSG
- https://geodynamics.org
- https://doi.org/10.1103/PhysRevLett.123.072001
- http://adsabs.harvard.edu/abs/2018MNRAS.474.2373W
- https://bitescis.org/