



*The polar cyberinfrastructure
program at the
National Science Foundation*

Marco Tedesco

Program Director, Polar Cyberinfrastructure Program

Polar Cyberinfrastructure Workshop

September 10th , 2013



The CIF21 initiative

- The Cyberinfrastructure Framework for 21st Century Science and Engineering (CIF21) aims at building a comprehensive, integrated, secure and sustainable cyberinfrastructure to support transformative science and engineering research and education.
- The main goal of the Polar Cyberinfrastructure Program is to support the advance of discovery, innovation and education across the Arctic and Antarctic disciplines through the integration of updated computing; data management; information; networking; sensor and software technologies into polar research.



- Examples
 - data-enabled discoveries;
 - the storage and distribution of large complex data sets
 - the continuity of access to long-lived publicly accessible data sets
 - data discovery, integration and visualization
 - sensor development, real-time data transmission and networking
 - development and implementation of software technologies for polar research and education.



CyberPolar and EarthCube

- The program interacts with other NSF ongoing cyberinfrastructure activities, such as the EarthCube program (<http://www.nsf.gov/pubs/2013/nsf13529/nsf13529.htm>) and programs at the Division of the Advanced Cyberinfrastructure (ACI, <http://www.nsf.gov/div/index.jsp?div=ACI>).



Examples of FY'13 funded activities

- This workshop (PI: J. Pundsack)
- Workshop on Polar Sensors and technologies (co-sponsored w/ Earthcube, PI: A: Behar)
- Building an Effective Service-Oriented Cyberinfrastructure Portal to Support Sustained Polar Sciences, PI: W. Li
- An open source framework for metadata exploration and discovery of Polar Data, PI: C. Mattman
- BIGDATA: Small: DCM: ESCE: Condensate Database for Efficient Anomaly Detection and Quality Assurance of Massive Cryospheric Data, PI: Lv (co-sponsored with BigDATA Program)





Opportunities for FY'14



Arctic and Antarctic solicitations

- application of existing cyberinfrastructure to polar research or education or on the synergistic use of mature cyberinfrastructure components and polar research activities
- proposal team should be composed of at least one member from the polar science community and one member from the cyberinfrastructure community
- address how the cyberinfrastructure component would be fundamental in accomplishing the project's objectives and should focus on advancing not only the polar element (either research or education) but also the science of the cyberinfrastructure component.
- Development of the next generation workforce, through support for early career investigators and students at the graduate and undergraduate levels



RCN proposals

- Research Community Network (RCN) cyber polar proposals:
 - communicate and coordinate research, training and educational activities across disciplinary, organizational, geographic and international boundaries
 - Innovative ideas for implementing novel networking strategies, collaborative technologies, and development of community standards
 - max \$300k, 2 years



Workshops

- thematic workshops that would focus on building a ‘cyberpolar’ community through bridging of the Polar and Cyberinfrastructure communities
- Proposers should identify thematic areas that are unique for polar cyberinfrastructure and should consider the outcomes of previously funded workshops (e.g., this one or Earthcube workshops)
- Proposers are encouraged to contact the program officer before submission
- Max \$100k

