



PACIFIC RESEARCH
PLATFORM

CENIC-NSRC Partnership

**PRP/NRP-FIONA
Workshop Series**



Goals of the PRP FIONA Workshops

Throughput is more important than bandwidth

Inder Monga, ESnet

Bigger picture in context of R&E community

- Our researchers should not also have to be CI / network engineers
- *Hands-on* training for our CI and network engineers can help them be more effective
 - develop and deploy end-to-end data movement measurement and analysis tools
 - a better understanding of scientific workflows, and where they may make an impact
- Democratizing access to data movement, container, and other CI technologies

How this fits within the scope of the PRP and, ...



... scaling the PRP toward an NRP and GRP

“For the hardest problems—not just in physics but in climate science and genomics—there are massive teams working around the world. Our job is to make geography irrelevant.”

Former

ESnet Director Greg Bell

Inter-Institutional ScienceDMZ (PRP) kick-off meeting, Stanford, November 2014

“WHAT TO EXPECT IN 2015: ULTRAFAST DATA TRANSFER SPEEDS UP SCIENCE” Popular Science, December 2014



GLIF Americas session: 2018 NORDUnet Conference



PRP FIONA Workshops during 2018

Three workshops with 70 participants and 50 organizations:

1. Monterey (CENIC 2018 - March 3-4)

<http://prp.ucsd.edu:8080/prpworkshop>

2. Copenhagen (NORDUnet - April 16-17)

<https://nordu-fiona-workshop.ucsd.edu>

3. Bozeman (2NRP - August 2-5)

<https://bozeman-fiona-workshop.ucsd.edu/>

Adv. Science & Tech. Institute, Philipines	Kansas State University	RNP: Rede Nacional de Ensino e Pesquisa	UC Berkeley, ETS	University of California, Davis
California Institute of Technology	Kavli Institute for Theoretical Physics/UCSB	San Diego State University	UC Irvine	University of Hawaii
California State University-San Bernardino	Navajo Technical University	South Carolina State University	UC Merced	University of Idaho
Claflin University	NORDUnet	South Dakota State University	UC Santa Cruz	University of Missouri
Clark Atlanta University	North Dakota State University	Stanford University	UCAR	University of Montana
College of Engineering - University of Idaho	NYSERNet	SURFnet	UCLA	University of Nebraska
Florida International University	Oklahoma State University	SURFsara	UCSF	University of Nevada, Reno
FRGP: Front Range GigaPop	Oklahoma Supercomp Ctr for Educ & Research	Texas Advanced Computing Center	Universidad del Turabo	University of Oregon
Holland Computing Center, Univ. of Nebraska	Oregon Health & Science University	The University of the South Pacific	University of Amsterdam	University of South Dakota
Jackson State University	Oregon State University	Tuskegee University	University of California, Berkeley	



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PRP FIONA Workshop Sample Agenda



August 2-5, 2018 in Bozeman, Montana

Supported in part by NSF CC*DNI DIBBs award (#ACI-1541349) and CENIC, with assistance from NSRC

DAY 1

- The basics
- perfSONAR
- Science DMZs and Security
- Data Transfers and Demo

DAY 3

- Diagnose testing and visualization environment
- Deep dive Q&Q from Day 1 and 2
- Performance analysis
- Deployment planning

DAY 2

- FIONAs
- Data movement tools
- MaDDash and archiving
- perfSONAR and GridFTP use and visualization

DAY 4

- JupyterHub
- Kubernetes
- Rook orchestration of Ceph storage
- Cluster performance monitoring and visualizations



Lessons learned and results...

- Workshop Planning: *Started early, received input from participant base and iterated*
- Hardware: *Evaluated cost / benefits to optimize 1Gbps FIONettes*
- Communications: *Worked with EPSCOR institutions and regional RENs for outreach*
- Resources: *Published resources for others wishing to develop their own workshops:*

<https://gitlab.com/ucsd-prp/tutorials/bozeman-tutorial>



Photo credit: Tom DeFanti

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