

NSRC

Network Startup Resource Center

The NSRC cultivates collaboration among a community of peers to build and improve a global Internet that benefits all parties. We facilitate the growth of sustainable Internet infrastructure via technical training and engineering assistance to enrich the network of networks. Our goal is to connect people.

Dale Smith
GLIF Americas Meeting
September 28, 2016



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IRNC: Engage: Building Network Expertise and Capacity for International Science Collaboration

- \$3.7M five-year award from NSF IRNC (Oct. 2014-Sept. 2019)
- Additional monetary and in kind contributions from APIA, APNIC, Cisco Systems, Facebook, GÉANT, Google, ICANN, NetworkTheWorld, O' Reilly Media, RIPE NCC, Shuttleworth Foundation, TEIN*CC, Tides Foundation and numerous private donors
- Complementary funding and large cadre of volunteer support leverage the NSF IRNC investment in NSRC' s R&E development activities, thereby providing effective use of NSF funds
- Working with other IRNC grantees (University of Hawaii, Indiana University, Florida International University, PRAGMA) and other US entities such as Internet2 and Energy Sciences Network (ESnet)

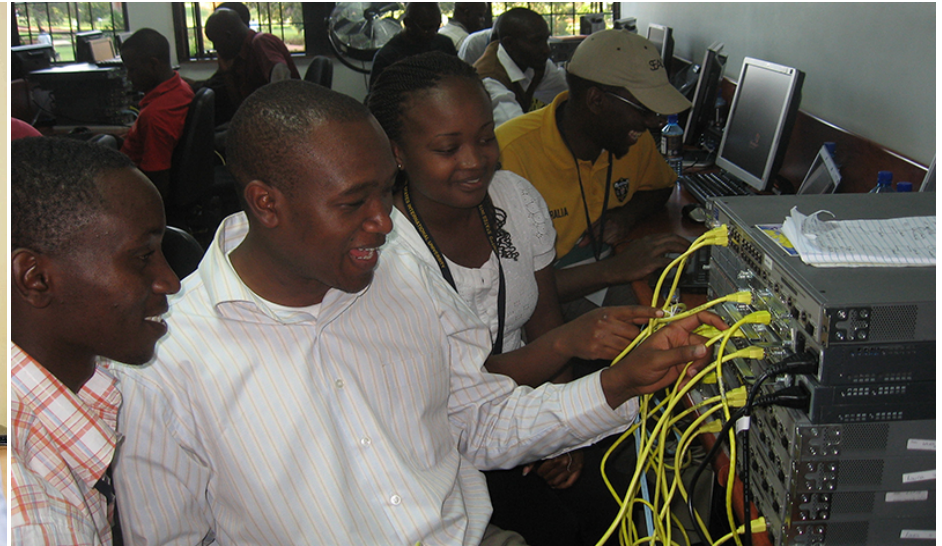


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The NSRC Model

- Technical training and human resource development activities
- Direct engineering assistance (DEA)
- Participatory development (request-driven)
- Local hands cultivating local expertise (scaling)



NSRC In the Field 2016 (Q1-Q3)

Argentina (2)

Bhutan

Botswana

China

Colombia

Cuba

Czech Republic

Germany

Guam

Jordan

Laos

Myanmar

Nepal

New Zealand

Pakistan

Philippines

Rwanda

Senegal (3)

Tanzania (2)

Thailand

Turkey

United States



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From Q1-Q3* 2016 NSRC has worked in 22 countries in 42 locations at 36 events training and assisting 1,567 technicians:

	Africa	AsiaPac	Europe	LA-Carib	NorthAm	Mid-East	Total
Men	291	779	0	32	25	105	1224
Women	119	172	0	11	15	16	333

- Facilitated donations of 2,400 pounds of network equipment and books worth \$250,000 to universities, research institutes, libraries and emerging NRENs
- Five direct engineering assistance activities to improve campus network infrastructure and R&E networks in Africa and Asia-Pacific
- Arranged for ~\$20,000 in fellowship funding to support dozens of network technicians from Africa, Asia/Pacific and Latin America to attend networking events and science meetings for collaboration with U.S and European counterparts

Worked with many RENS providing direct assistance and training:

APAN CENIC GÉANT mmREN RedCLARA snRER ThaiREN
 AfREN CEPES Internet2 PERN RedUniv TEIN UbuntuNet
 ASREN DrukREN LERNET PREGINET RwEdNet TERNET WACREN

*18 additional events are planned for Q4 2016

ESnet / NSRC Collaboration

- ESnet engineers and NSRC staff filmed and created 45+ informational and training videos on perfSONAR and Science DMZ concepts
- Each video is 3-5 minutes in length, includes copy/paste text of relevant commands and shows step-by-step details on perfSONAR configuration, or...
- ...overall conceptual ideas leading to step-by-step configuration of perfSONAR.
- Diagrams and demonstrations are included.
- Available at <https://learn.nsrc.org>
- Reports from the field indicate that engineers are using these to assist with initial deployment

Partnerships

- GEANT partnership on AfricaConnect2
 - WACREN in West and Central Africa
 - ASREN in North Africa
 - CAREN in Central Asia
- TEIN*CC partnership
 - Focus on providing assistance to TEIN beneficiary countries throughout Asia



Cuba

- Working on connecting to the global R&E fabric
- NSRC sponsored two leaders from the Cuban Academic Network to participate in TICAL
- The Cuban Academic Network (REDUNIV) and the Cuban Ministry of Higher Education have asked the NSRC to team up with them to organize and deliver a campus network design and operations course, which includes 24 member institutions.



Bhutan

- Provided training and engineering assistance for the formation of DrukREN, the Bhutan NREN.
- DrukREN acquired dark fiber on power transmission infrastructure and NSRC has provided assistance with design and deployment of a WDM infrastructure that provides Nx10Gbs backbone
- Campuses going from being connected at several Megabits to each connected with at least one Gigabit



Increased Activity in the Pacific

- Recent work in Guam with the University of Guam to provide training for institutions on Guam nearby islands as well as direct engineering assistance
- Helping provide foundational resources to support an R&E Exchange Point in Guam
 - Many players looking at Guam with 10G and 100G circuits to Asia (likely 2 or 3 circuits), USA (likely 2 circuits), and Australia





NetworkTheWorld.org

Richard A. Karp Foundation



google.org



APNIC



Organization of the American States
RedHUCyT



United Nations
Development Programme



Sears, Fram and Associates, LLC



The Andrew W. Mellon Foundation

THE KRESGE FOUNDATION



MacArthur Foundation



The World Bank



AT&T Labs Research



Walnut Creek/FreeBSD Mail



Vint and Sigrid Cerf
James Forster
Joel Jaeggli
Randy Neals
Jim Williams
Suzanne Woolf



USENIX



Foundation for Research Development
National Research Foundation



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FRENIA: Fostering Research &
Education Networking in Africa

