

Campus Cyberinfrastructure (CC)
and
Cybersecurity Innovation for
Cyberinfrastructure (CICI)
2019 PI Meeting*



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Office of Advanced Cyberinfrastructure
Computer & Information Science & Engineering

September 2019



- Thanks to Wendy Huntoon and Jen Leasure
- Thanks to the Program Committee
- NSF'ers here...
- Outline
 - Quick status of CC*
 - Quick status of CICI
 - Reporting



Summary #s for NSF's Campus CI Program 2012-2019

- ~290 awards (not including workshops, EAGER)
- \$100M+ invested over 8 years (FY12-FY19)
- 49 states and jurisdictions represented on award map
- Award categories [aggregate (FY19)]:
 - Campus Networking Upgrades: 137 (7)
 - Network Integration/Innovation: 50 (3)
 - Regional/Network Design (small institutions): 34 (5)
 - CI Engineer/Cyberteam: 28 (3)
 - Compute: 14 (12)
 - Other: 27 (0)



CC* status

- CC* 19-533 produced ~30 awards, a few notes:
 - 3 networking-centric areas
 - CyberTeam returned
 - CC*Compute added
- 2019-2020 CC* solicitation
 - Expected later in 2019



CC* 2019 Awards

Award#	PI Name	Institution	Title	Award
1925484 Area#1	Crichigno, Jorge	U of South Carolina	CC* Networking Infrastructure: Building a Science DMZ for Data-intensive Research and Computation at the University of South Carolina	\$498,525
1925747 Area#1	Ketterling, Matthew	Colorado School of Mines	CC* Network Infrastructure: Enabling Research with Mines' Underground Research Facility	\$480,591
1925641 Area#1	Brenn, Joey E	Claflin University	CC* Networking Infrastructure: Claflin Research Network	\$352,505
1925704 Area#1	Reinhard, Sheryl	Duquesne University	CC* Networking Infrastructure: A High-Performance Science DMZ and Dedicated Research Network for Duquesne University	\$462,680
1925623 Area#1	Whitworth, Jeff	University of North Carolina Greensboro	CC* Networking Infrastructure: Gate City Research Network - A Multi-Institution Science DMZ	\$499,912
1925678 Area#1	Khan, Javed I	Kent State University	CC* Networking Infrastructure: Network for Data Driven Science in Allied 21st Century Smart Multi-Campus System: A Use Case Design Through Kent State's Sharable Science DMZ	\$383,734
1925598 Area#1	Kandah, Farah	U of Tennessee Chattanooga	CC* Networking Infrastructure: Advancing High-speed Networking at UTC for Research and Education	\$499,663



CC* 2019 Awards

Award#	PI Name	Institution	Title	Award
1925689 Area #2	Arviso, Jason K	Navajo Technical University	CC* Regional: Tribal Consortium Research Network	\$792,181
1925744 Area #2	Wheat, Stephen R	Oral Roberts University	CC* Regional: Extended Vital Education Reach Multiple Organization Regional OneOklahoma Friction Free Network (EVER-MORE-OFFN)	\$500,000
1925632 Area #2	Burrell, Steven C	Northern Arizona University	CC* Regional: Sun Corridor Network - Arizona Community College Research Expansion	\$690,708
1925752 Area #2	Meehl, Marla	University Corporation For Atmospheric Res	CC* Regional: Integrating the Colorado Western Slope Research and Education (R&E) Community into the National R&E Infrastructure	\$85,000
1925553 Area #2	Shah, Pankaj	LEARN: Lonestar Education and Research Network	CC* Regional: Accelerating Research and Education at Small Colleges in Texas via an Advanced Networking Ecosystem Using a Virtual LEARN Science DMZ	\$799,649



CC* 2019 Awards

Award#	PI Name	Institution	Title	Award
1925550 Area #3	Futhey, Tracy	Duke University	CC* Integration: Archipelago: Linking Researchers On-Campuses and in the Cloud through SDN-Enabled Microsegmentation	\$999,631
1925482 Area #3	Von Oehsen, James B	Rutgers University	CC* Integration: Rutgers University Next-Generation Edge Testbed (RU-NET)	\$999,024
1925476 Area #3	Boyd, Eric	University of Michigan Ann Arbor	CC* Integration: NetBASILISK: NETwork Border At Scale Integrating and Leveraging Individual Security Components	\$999,715



CC* 2019 Awards

Award#	PI Name	Institution	Title	Award
1925596 Area #4	Fiske, Joshua A	Clarkson University	CC* Compute: Accelerating Computational Research for Engineering and Science (ACRES) at Clarkson University, A Campus Cluster Proposal	\$396,950
1925645 Area #4	Lannon, Kevin	University of Notre Dame	CC* Compute: CAML - Accelerating Machine Learning via Campus and Grid	\$400,000
1925467 Area #4	Cinabro, David A	Wayne State University	CC*: Campus Computing and the Computing Continuum: Campus Cluster Resource: Expanded High Performance Computing at Wayne State	\$399,944
1925603 Area #4	Skjellum, Anthony	University of Tennessee Chattanooga	CC* Compute: A Cost-Effective, 2,048 Core InfiniBand Cluster at UTC for Campus Research and Education	\$392,235
1925192 Area #4	Rampp, Carrie	Franklin and Marshall College	CC* Compute: Building a state-of-the-art campus compute resource at Franklin & Marshall College	\$400,000
1925267 Area #4	Rossmiller, Zachary	University of Montana	CC* Compute: Improved Computing for Advanced Research and Education (ICARE)	\$394,895
1925716 Area #4	Jones, Richard T	University of Connecticut	CC* Compute: Shared Computing Infrastructure for Large-scale Science Problems	\$400,000
1925558 Area #4	Hawkins, Ronald B	University of California-San Diego	CC* Compute: Triton Stratus	\$399,514
1925590 Area#4	Montes, Juan	American Museum Natural History	CC* Compute: High Performance Campus Computing for Institutional Research at the American Museum of Natural History	\$399,258
1925541 Area#4	Belgin, Mehmet	Georgia Tech Research Corporation	CC* Compute: Integrating Georgia Tech into the Open Science Grid for Multi-Messenger Astrophysics	\$399,883
1925766 Area#4	Hauser, Thomas	UC Boulder	CC* Compute: A Hybrid Cloud Environment for the Rocky Mountain Advanced Computing Consortium	\$399,532
1925717 Area#4	Delaney, Kris	UC Santa Barbara	CC* Compute: A high-performance GPU cluster for accelerated research	\$394,804



CC* 2019 Awards

Award#	PI Name	Institution	Title	Award
1925681 Area #5	Middelkoop, Timothy	University of Missouri-Columbia	CC* Team: Great Plains Regional CyberTeam	\$1,399,479*
1925764 Area #5	Chakravorty, Dhruva K	Texas A&M University Main Campus	CC* Team: SWEETER -- SouthWest Expertise in Expanding, Training, Education and Research	\$1,400,000*
1925687 Area #5	Nichols, Brian	University of Kentucky Research Foundation	CC* Team: KyRC - A Kentucky Research Computing Team	\$1,399,638*



CICI

- Cybersecurity Innovation for Cyberinfrastructure
- 5th year of CICI
- NSF 19-514 had 3 areas:
 - **Secure Scientific Cyberinfrastructure (SSC):** These awards seek to secure the scientific workflow by encouraging novel and trustworthy architectural and design approaches, models and frameworks for the creation of a holistic, integrated security environment that spans the entire scientific CI ecosystem.
 - **Research Data Protection (RDP):** These awards provide solutions that both ensure the provenance of research data and reduce the complexity of protecting research data sets regardless of funding source.
 - **Cybersecurity Center of Excellence (CCoE):** This award seeks to provide the NSF community with a centralized resource of expertise and leadership in trustworthy cyberinfrastructure.



CICI 2019 Awards

- #1920462 “CICI: RDP: Enforcing Security and Privacy Policies to Protect Research Data”
 - Yuan Tian, Univ of Virginia, \$924,503
- #1917117 “CICI: SSC: Proactive Cyber Threat Intelligence and Comprehensive Network Monitoring for Scientific Cyberinfrastructure: The AZSecure Framework”
 - Hsinchun Chen, Univ of Arizona, \$998,014
- #1920430 “CICI: CCoE: Trusted CI: Advancing Trustworthy Science”
 - Von Welch, Indiana U, \$12,486,560



Reporting

- **You are expected write and submit quality on-time annual and final reports!**
- **Other divisions and programs have required new award start dates pre-June and post-September to avoid overdue reports from blocking award actions in the summer**



Reporting

- OAC expects to see scientific impact reflected in the reports
 - Final reports especially should be able to **address qualitative and quantitative impact on the science drivers** originally described in your proposals
- For Region/Small Institution awards – please remember: your 1st year annual report must include the technical solution and equipment quotes – detailed topology is appreciated.
- Talk to me if you have any questions on reporting



Finally

- Consider joining the network engineering email list cybinf-engr@es.net
- If you're at SC'19 and showing off your project at a booth, and/or giving a talk, let me know
- **Thank you for serving on NSF review panels!**
- Please take the opportunity to share your experiences, ideas and knowledge this week



Thanks!

