



SC19

Denver, CO | hpc
is NOW.

scinet

SCinet Technical Challenge TC

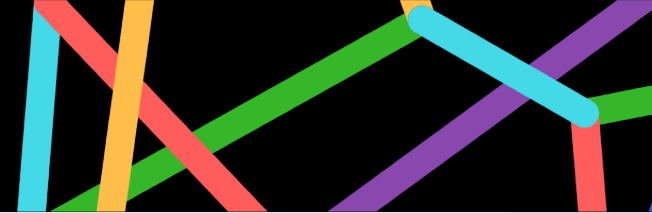
Presented by Cees de Laat for

Organizers:

Ilya, Marc, Paola, Sarah, JP, Michelle, Christer, Troy, NRE team, others

Jury:

Jim Rogers, Kathy Yellick, Dan Stanzione,
Inder Monga, Rodney Wilson, Cees de Laat



Bring Supercomputing and Networking together!

- Networks & SuperComputers become commodity
- Quantum around the corner (very big corner ;-))
- **The art of doing Science is changing!**
- Machine Learning and Artificial Intelligence coming up
- Data poor to Data rich, wireless, streaming/real time & decision support
- We are past Bandwidth Challenges

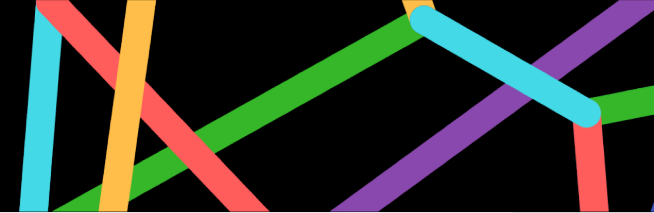
If you still show iPerf you have a problem,
not a solution!



Therefore:

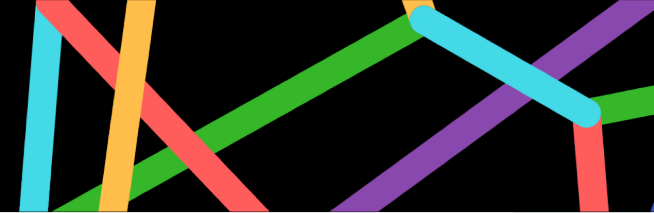
The first annual SCinet Technology Challenge (TC) will feature scientific demonstrations and experiments that highlight **interdependent operations** of **sophisticated networking, computing** and **storage** infrastructures.

The goal of the challenge was to demonstrate that **both networking and high-performance computing resources are essential** elements of the cyber infrastructure required to advance modern data-driven scientific applications.



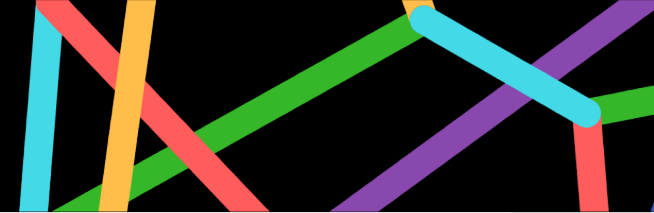
The teams:

- **5G Citizens Broadband Radio Service (CBRS) Proof-of-Concept for Scientific Applications**
 - University of Utah Center for High Performance Computing, Murray School District and the Utah Education and Telehealth Network
- **Dynamic Network-Centric Multi-Cloud Platform (DyNamo) for Real-Time Weather Forecasting Workflows**
 - RENCI/UNC Chapel Hill, USC/ISI, UMass Amherst and Rutgers University
- **Real-Time Analysis of Streaming Synchrotron Data**
 - Argonne National Laboratory, Northwestern University, Starlight, Northern Illinois University, University of Chicago



The Awards:

- **2019 SCinet Technical Challenge Most diverse resource set**
 - For highest diversity of resource types and geographic distribution, their utilization and degree of orchestration/automation
- **2019 SCinet Technical Challenge Most original technical approach**
 - For innovation and the originality of the technical approach
- **2019 SCinet Technical Challenge Best presentation and visualization**
 - For best human interactivity and effectiveness of the presentation and best quality/originality of visualization
- **2019 SCinet Technical Challenge Winner**
 - Brings networking, computing and storage together, top award



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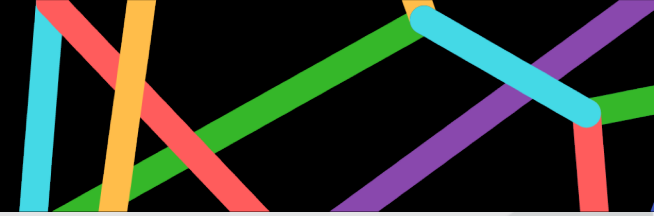
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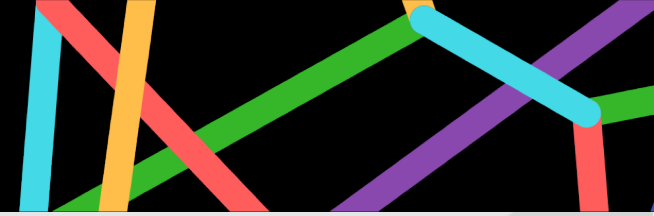
- **2019 SCinet Technical Challenge Most diverse resource set**
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 - In this category the jury was most impressed by the different types of resources, the different types of computing that had to be done and the very critical real time workflow needed to make a difference before the information becomes historical and statistics. This application scales well, it has to and it is computationally very doable, also in terms of fanning out. By now you guessed it probably, the 2019 award Most diverse resource set goes to

NSF CC* DyNamo Project
RENCI, USC, UMass Amherst, Rutgers



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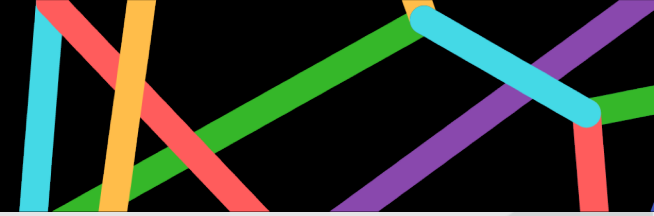
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 - For innovation and the originality of the technical approach
 - It does not happen often you see new things. This challenger introduced new instrumentation to deploy at a large scale. It pulled together data to be processed to save lives and aid to decision support systems in societal environments with severe deadlines, literally. The Most original technical approach award goes to:

**NSF CC* DyNamo Project,
RENCI, USC, UMass Amherst, Rutgers**



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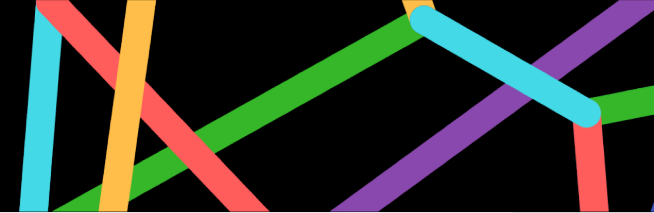
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The Awards:

- **2019 SCinet Technical Challenge Best presentation and visualization**
 - For best human interactivity and effectiveness of the presentation and best quality/originality of visualization
 - For this award the jury was most impressed both by the presentation on stage as well as how the goals of the project are presented in the society. The cost effective approach and affordability that make this project building a bridge between science and society. The Best presentation and visualization award goes to:

Utah 5G Collaboration



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- **2019 SCinet Technical Challenge Winner**
 - Brings networking, computing and storage together, top award
 - For the massive scale, pointing science to how data intensive science is going to be done in the future, presenting facility overarching concepts and making real time science with feedback effective we recognize the:

**Argonne National Laboratory, StarLight and
Northwestern University**

**Real-Time Analysis of Streaming Synchrotron
Data over High-Speed WAN using Deep Learning
and HPC**

See you in Atlanta @ SC20

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