



Bridges: Connecting Researchers, Data, and HPC



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Presentation Abstract

Bridges is a new kind of supercomputer being built at the Pittsburgh Supercomputing Center (PSC) to empower new research communities, bring desktop convenience to supercomputing, expand campus access, and help researchers facing challenges in Big Data to work more intuitively. Funded by a \$9.65M NSF award, *Bridges* emphasizes usability, flexibility, and interactivity and consists of 846 large-shared-memory HPE servers having 12TB, 3TB, and 128GB each, dedicated nodes for database, web, and data transfer, high-performance shared and distributed data storage, and powerful new CPUs and GPUs. *Bridges* is the first production deployment of Intel's new Omni-Path Architecture (OPA) Fabric. Widely-used languages and frameworks such as Java, Python, R, MATLAB, Spark, and Hadoop benefit transparently from large memory and the high-performance OPA fabric. Virtualization and containers enable hosting web services, NoSQL databases, and application-specific environments and facilitate portability and reproducibility. *Bridges*, allocated through XSEDE, is available at no charge to the U.S.-based PIs leading open research and their collaborators. A portion of *Bridges* is also available to industry through PSC's corporate programs.

About the Webinar Series

The **BRIDGE** webinar series is designed to prepare for the next generation of big data analytics, woven into transdisciplinary and intersectoral sciences, policy and innovation, and serving as catalyst for solutions at scale to better address the seemingly intractable problems that lie at the nexus of health and wealth production, distribution and consumption. A key to accelerate change lies in establishing bridges between sectoral big data, and between data and content. To foster real time learning, the **BRIDGE** webinar series brings together a new solution-oriented transdisciplinary translational paradigm for the four *Ms* of big data sciences used on both sides of the health and economic divide (*Machines, Methods, Models and Matter*).