

## Facilities, Equipment and Other Resources

Sou-Cheng Terrya Choi (co-PI), Research Associate Professor of Applied Mathematics, will join the regular management team meetings, in addition to working remotely. She is employed full-time outside academia but will contribute to the project on a volunteer basis. No salary is requested for her, but her travel related to the project will be supported.

Kiah-Wah Ong (Senior Personnel), Lecturer in Applied Mathematics, will contribute to the project as a regular faculty member, whose summer teaching is supported by tuition income.

April Welch (Internal Collaborator), Associate Vice-President of Strategic Initiatives, is supporting this project through the resources of the Admissions Office. No salary is requested for her.

All Illinois Tech faculty, PhD students, and visitors have offices provided at Illinois Tech. Summer CoD students and CISC Fellows will be provided shared work areas. In addition to offices and conference rooms provided by the home departments of the (co-)PIs and senior personnel, the Center for Interdisciplinary Scientific Computation (CISC) also has office and meeting space available for this project.

CISC has a 256-core cluster named von Neumann funded by the College of Science. An increase in the number of cores within 2018 is likely. Von Neumann is available to all Illinois Tech research faculty and is centrally managed by Illinois Tech Office of Technology (OTS) Services.

Sun directs the Scalable Computing Software (SCS) Laboratory at IIT. The computing facilities at the SCS Laboratory include a 64-node Sun Microsystems ComputeFarm, a 17-node Dell cluster, a 14-node IBM Linux-based cluster, a 12-node Cray XD1 supercomputer, a 72-processor SiCortex cluster, and other advanced computing and communication facilities. The Sun ComputeFarm is connected fully with Gigabit Ethernet and partially with InfiniBand.

Sun and his group also have access to the Chameleon Cloud platform. Chameleon is consisted with two clusters located in Texas Advanced Computing Center (TACC) at Texas and University of Chicago. Chameleon has 291 compute nodes fully connected with 10Gbps Ethernet network, and 41 of them are also double connected via Fourteen Data Rate (FDR) InfiniBand (56Gbps).

Wereszczynski's lab has exclusive access to a cluster that has 12 compute nodes, each of which is comprised of 16 CPU cores running at 2.6 GHz, 64 GB of RAM, and four NVIDIA GTX 1080 GPU cards. The cluster has an infiniband interconnect, a head node, and 100 TB of storage. This lab also has access to desktops with NVIDIA GTX 980, 1080, and 1080 Ti GPUs.

Illinois Tech is connected to the [Open Science Grid](#) through its own GridIIT. Wereszczynski is the campus champion for XSEDE. He can assist research groups who wish to take advantage of that facility apply for time.

Illinois Tech is partnering with our advisory board, which is comprised of scientists at College of DuPage, Argonne National Laboratory, and Fermilab (see Sect. 5). Argonne and Fermilab have large-scale computational facilities that our students will be able to access when involved in projects with these two laboratories.

Illinois Tech has site licenses for Mathematica, MATLAB, SAS, and JMP. Other open source software is also installed in our research and teaching laboratories.

Illinois Tech's university library provides access to journals, research monographs, and databases, either on-site, online, or via inter-library loan.

Illinois Tech was listed on the National Federal Register of Historic Places in 2005. The proposed research activities will not make any physical changes to Illinois Tech's campus and buildings.