



**National Science Foundation
4201 Wilson Boulevard
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Dear Colleague Letter - Strategic Technology for CyberInfrastructure (STCI)

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The commercial world has been rapidly developing cloud services to provide "as needed" services of a wide variety of types. More and more of these services coincide with needs of the scientific and engineering research community. These advances may provide solutions for researchers without needing to invest in the construction, operation, or maintenance of those services. This can have a substantial impact on the amount and quality of research that can be produced by freeing up resources which would have otherwise been diverted.

We encourage submission of proposals to the Strategic Technology for CyberInfrastructure (STCI) Program for modest pilot projects presenting experimental national services to the NSF scientific and engineering community through a standard interface. These interfaces should allow for programmatic access to the service with usage and costs being tracked on a per researcher and per group basis. Proposals should present ideas about how they might deal with cost recovery in a permanent service. These cloud services might be at the Infrastructure as a Service (IaaS) (for example, compute cycles or storage), Software as a Service (SaaS) (for example, MatLab or ANSYS), or Platform as a Service (PaaS) (for example, Google Docs) level. Services presented should allow for surge capability to draw on additional resources (up to 10x more) should demand spike. This is not a new program. Proposals should be submitted in accordance with guidance found on the STCI program description page at http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503475.

A few investigatory science programs have previously been funded in other directorates and some of them have preliminary results which indicate a number of issues using this as infrastructure. We believe it is time to experiment with innovative cyberinfrastructure services for science addressing shortcomings in this technology. Common themes of areas of difficulty in using cloud services have been a) lack of quality documentation and worked example use cases, b) lack of necessary skills in porting/developing codes for the cloud environments, c) interoperability of services across multiple providers, and d) difficulty in procuring and managing services in the highly collaborative academic research environment.

Proposals for collaborations between universities and production providers (commercial or private) are encouraged.

Subject to availability of funds and quality of proposals, up to \$750K will be made available for this activity in fiscal year 2012. Typical funding for a proposal is expected to be approximately \$250K. Investigators interested in submitting proposals should contact the program directors below immediately. Additional information about the STCI Program can be found at http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503475.

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Signed,
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