MIT Job Description

Job Title: Associate Director	**Position Title: STS Associate Director for Research Computing**
Reports to: Chief Information Officer	**% Effort or Wkly Hrs: 40hrs/wk**
Department: Sloan Technology Services	**Prepared by: John Letchford**
Date: June 2, 2015	

Position Overview:

The Associate Director for Research Computing leads the ongoing development, implementation and support of technology to meet the diverse and evolving research needs of the Sloan community. This includes developing a deep and broad understanding of faculty, students and staff expectations, accounting for the trends and disruptive forces in the research computing landscape around the world today and laying out, and energizing support for, a clear path forward for the school.

In addition to extensive research computing technical experience needed to support faculty and researchers, this role requires excellent leadership skills. The incumbent must be able to help develop and communicate a clear vision for the school. They will need to be self-motivated and have demonstrated ability to energize others towards achieving the vision. In addition to providing strategic leadership for the Sloan community, the incumbent will also work closely with STS colleagues to coordinate activities for STS's research computing platform, Equity.

The role reports to the MIT Sloan Chief Information Officer and also plays an important leadership role as a key member of the CIO's Leadership team.

Principal Duties and Responsibilities (Essential Functions):

Provide support to faculty, staff and students for their research computing needs

- Develop a deep understanding of the needs of faculty, students and staff across Sloan with regard to use of technology for enabling successful research. Understand how best to leverage technology and available resources at Sloan to assist faculty in achieving their research goals.
- Lead the development and maintenance of guidelines, procedures and associated plans for utilizing the Equity research computing grid or other available research computing platforms.
- Act as the primary STS contact within the Research Datasets Working Group that oversees the procurement and usage of research computing data subscriptions such as Wharton Research Data Services (WRDS). Manage accounts and help the research community use available data services.
- Provide training and guidance for how faculty, researchers and students can best use available mathematical and statistical software such as MATLAB, Stata, and Mathematica.
- Advise on general techniques and tools for manipulating research data.
- Work with faculty and researchers to experiment/pilot usage of alternate research computing platforms such as those provided by other departments within the Institute or cloud services provided by vendors

- Advise on practices related to handling sensitive or regulated research data in accordance with both standard university regulations or broader data access regulations. Ensure that Sloan is providing data storage services that comply with these regulations
- Provide clarity to the Sloan community on what services STS is able to, or cannot, provide in relation supporting research computing.
- Introduce new graduate students to the research computing facilities and services available at Sloan

Coordinate the provision of STS's research computing services

- Work closely with the STS Infrastructure, Operations and Security (IO&S) team to deliver the in-house Equity research computing grid services.
- Work with IO&S to ensure the in-house shared research computing grid ("Equity") is patched and secured appropriately, and that any available software packages (e.g. MATLAB, Stata) are maintained and licensed appropriately.
- Work with IO&S to develop a roadmap that articulates how STS's services and architecture (including Equity) will evolve as part of the overall research computing landscape at MIT Sloan. Review standard client architecture to ensure consistency with research computing tools and direction.
- Implement a process to forecast research computing demand and develop comprehensive reports/analytics on research computing resource usage for the Sloan community e.g. wait times, utilization, cost / core hour.
- Work closely with the STS Service Desk to provide streamlined support for common research incidents and requests. Develop clear escalation paths for complex or urgent issues. In coordination with Service Desk Manager monitor and review performance of support teams.
- Manage the STS research computing budget. Propose the annual budget and track expenditures throughout the year. Provide input on the research data services budget.
- Research and evaluate emerging technologies. Guide the purchase of equipment and services to support research computing.
- Develop research computing technology standards and procedures as needed
- Benchmark Sloan research computing capabilities vs other MIT research computing centers vs peer business school institutions

Assist with setting the strategic direction for research computing at MIT Sloan

- Catalog and gather consensus around existing shortcomings and challenges. Foster a common understanding within the Sloan community of the challenges and opportunities for research computing at the school
- Understand cloud-based computing, mobile, social and big data influences on research computing. Assess the risks and opportunities associated with market trends and disruptive forces e.g. increases in cybersecurity attacks
- Research how best to develop a scalable, hybrid research computing approach that can provision dedicated or pooled computing resources that may be centralized, distributed (campus-wide or outside MIT), vendor-supported or cloud based depending on processing throughput and data privacy needs
- Engage IS&T and the VPR MIT Research Computing Project (http://researchcomputing.mit.edu) to explore collaborative synergies and possible economies of scale.
- Partner with key stakeholders across the school to determine what skills and resources are most needed beyond core infrastructure to better support the needs of faculty and researchers: data manipulation skillsets, highly complex statistical techniques, software, visualization systems,

subscription data services, standards. Help explore and develop sustainable approaches to providing such capabilities across the school.
- Help drive the development of a vision and strategic plan for research computing services that will meet the current and future needs of faculty and students at MIT Sloan.

Supervision Received:

This position reports to the MIT Sloan Chief Information Officer and works closely in the coordination of activities with peers on the STS senior management team.

Supervision Exercised:

This position does not have supervisory responsibility but will work with researchers in conjunction with faculty.

Qualifications & Skills:

- Minimum of five years working in a research computing environment
- Bachelor's degree required; Master's degree preferred in technical field or equivalent experience
- Extensive experience Deep understanding of high performance computing architectures and methods. Well versed in how various sub-components (nodes, interconnect, networking, memory, storage, Message Passing Interface, file systems, programming tools, schedulers etc.) need to be configured effectively to meet diverse research needs.
- Experience with scripting (Unix shell, Perl, Python) preferred
- Experience with various techniques and tools for manipulating and parsing data preferred
- Experience with research computing software such as MATLAB, Stata, SAS, R, Mathematica, and Gauss
- Experience with Univa, SunGrid platform, MySQL, server virtualization preferred
- Experience in Cloud Computing platforms
- Knowledge of financial and economic data sets such as those available through WRDS. Familiarity with and interest in management research that includes non-financial data.
- Knowledge of Information Security and Privacy implications of handling sensitive or regulated research data (e.g. HIPAA, PCI, PII).
- Must be a self-starter with excellent interpersonal skills. An analytical and creative thinker who can build strong productive relationships across the school, institute and beyond.
- Exceptional analytical, conceptual, and problem-solving abilities.
- Superior written and oral communication skills.
- Strong interpersonal and consultative skills.
- Proven project planning and management experience.
- Experience with vendor selection and vendor management.
- Good knowledge of applicable data privacy practices and laws.
- A high degree of professionalism, diplomacy and sensitivity to the needs of faculty, staff and students
- The ability to work well in an academic setting and be comfortable with the tempo of the academic calendar. Experience working in an academic environment preferred