

## MIT Job Description

<b>Job Title: Associate Director</b>	<b>Position Title: STS Associate Director for Research Computing</b>
<b>Reports to: Chief Technology Officer</b>	<b>% Effort or Wkly Hrs: 40hrs/wk</b>

### 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;
- understanding the trends and disruptive forces in the research computing;
- building a shared, aspirational research computing support strategy for the school;
- and developing a plan to bring that strategy to fruition.

This role requires excellent leadership skills in addition to extensive research computing technical experience needed to support faculty and researchers. The incumbent must be able to help develop and communicate a clear vision of research computing for the school. They will need to be self-motivated and have demonstrated ability to energize others towards achieving a vision. The incumbent will work closely with Sloan Technology Services (STS) and Institute colleagues to coordinate activities for STS's partition in the MIT research computing platform, Engaging. The Associate Director will work closely with the Sloan Director of Faculty and Research Services and their team, and with the MIT Business and Management Librarian.

The role reports to the MIT Sloan Chief Technology Officer and plays an important leadership role as a key member of the CTO'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, practices and aspirations of faculty, students and staff across Sloan in order to recommend effective use of technology to enabling successful research. Understand how best to leverage technology to assist faculty in achieving their research goals.
- Lead the development and maintenance of guidelines, procedures and associated plans for utilizing the Engaging 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 and researchers 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.
- Provide clarity to the Sloan community on what services STS is able to, or cannot, provide in relation supporting research computing.

#### Coordinate the provision of STS's research computing services

- Work with Engaging Admins to ensure the Engaging grid is patched and secured appropriately, and that any available software packages (e.g., MATLAB, Stata) are maintained and licensed appropriately.
- Work closely with the STS Infrastructure, Operations and Security (IO&S) team to deliver custom research solutions for faculty.
- Work with IO&S to develop a roadmap that articulates how STS's services and architecture (including the MIT Engaging grid) 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 challenges, best practices, security and risk management and aspirations to develop a common understanding within the Sloan community of the challenges and opportunities for research computing at the school
- Maintain an up to date understanding of trends in research methodologies, technologies and practices, translating that understanding into strategic and tactical plans for Sloan researchers.
- 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.
- In collaboration with Faculty and Research Services, 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. There is a dotted-line reporting to the Director of Faculty and Research Services.

### **Supervision Exercised:**

Supervise one or more Research Computing Specialists, who focus on statistical software and methods support. Supervision includes goal setting, annual reviews and work product evaluation. Will encourage and enable the professional development of staff members, both technically and with regard to “soft” skills, through training, work assignments and coaching techniques such as “10 minute conversations”.

### **Qualifications & Skills:**

- Bachelor’s degree required; master’s degree in a technical field preferred
- Minimum 5 years experience
- Extensive experience working in a research computing environment.
- 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, Mathematical, and Gauss
- Experience with SLURM, MySQL, server virtualization preferred
- Knowledge of financial and economic data sets such as those available through WRDS
- Knowledge of Information Security and Privacy implications of handling sensitive or regulated research data (e.g., HIPAA, PCI-DSS, 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