UNIVERSITY OF SOUTHERN CALIFORNIA

Director, High-Performance Computing

Job Code: 165881

OT Eligible: No

Comp Approval: 12/18/2018

JOB SUMMARY:

Oversees the High-Performance Computing (HPC) infrastructure, supporting data-intensive and computational research across disciplines at the university. Leads the design, development and evaluation of cloud and big-data systems to support research efforts. Develops a strategic vision and provides high-level direction for HPC, driving continuous improvements in business processes and managing the implications of security and compliance guidelines. Builds and maintains strong relationships with ITS leaders, customers and partners, and participates in governance boards and campus-wide technology initiatives to understand current and future business needs. Responsible for the development of team members, leading by example and fostering an inclusive environment that values differences and creates a sense of belonging and appreciation. Administers department budget, creating, planning, monitoring, reconciling, and directing resources.

JOB ACCOUNTABILITIES:

*E/M/NA   **% TIME**

_____   _____   Leads the design, development and evaluation of cloud and big-data systems to support research efforts, defining and refining policies and programs to meet customer technology needs. Identifies and develops opportunities for innovation in research computing by leveraging expertise, industry trends and leading practices, and a deep understanding of stakeholder needs.

_____   _____   Develops HPC's strategic vision, including priorities, resourcing and ownership per activity, timelines, and dependencies in collaboration with campus business partners. Provides consulting services for faculty and researchers. Drives continuous improvements in business processes by establishing key metrics, and develops and manages reporting mechanisms to track and measure departmental demand, impact, and performance.

_____   _____   Provides vision and high-level direction for HPC within the larger context of the ITS and USC environments. Manages the implications of security and compliance guidelines by embedding university policies and procedures into work plans and workflows. Works closely with customers to relay the importance of and sensitivity around risk identification, mitigation and remediation. Establishes governance for HPC through the implementation of standards, procedures, and quality measures. Responsible for the execution of HPC's service portfolio.

_____   _____   Builds and maintains strong relationships with ITS leaders, customers and partners, ensuring consistent, reliable service is delivered to a broad range of university stakeholders. Develops and manages a holistic strategy for delivering quality and continuously improved service. Participates in governance boards, councils, meetings, and campus-wide technology initiatives to understand current and future business needs.

_____ _____ Responsible for the development of team members, helping them set and achieve goals for career growth. Fosters an inclusive environment that values differences and creates a sense of belonging and appreciation. Leads by example, demonstrating strong ethics, high accountability, and actively driving the process of embedding ITS values and behaviors. Creates a culture of trust and transparency. Drives best-in-class customer service through effective team member engagement.

_____ _____ Administers department budget, creating, planning, monitoring, reconciling, and directing resources. Works closely with ITS leadership to identify, implement, and support cost-effective, leading solutions for all aspects of HPC by maintaining currency with industry innovations and providing thought leadership around process optimization.

Performs other related duties as assigned or requested. The university reserves the right to add or change duties at any time.

*Select E (ESSENTIAL), M (MARGINAL) or NA (NON-APPLICABLE) to denote importance of each job function to position.

EMERGENCY RESPONSE/RECOVERY:

Essential: ☐ No

☐ Yes In the event of an emergency, the employee holding this position is required to "report to duty" in accordance with the university's Emergency Operations Plan and/or the employee's department's emergency response and/or recovery plans. Familiarity with those plans and regular training to implement those plans is required. During or immediately following an emergency, the employee will be notified to assist in the emergency response efforts, and mobilize other staff members if needed.

JOB QUALIFICATIONS:

Minimum Education:

Bachelor's degree

Minimum Experience:

8 years

Minimum Field of Expertise:

Bachelor's degree in data science, computer science, computer engineering or other relevant field. Proven ability to develop and manage a high-performing team. Extensive experience with leading, complex cloud and big-data systems, specifically Linux HPC clusters and other cloud-based technologies, firewalls and encryptions, as well as DNS, DHCP and other routing-and-switching fundamentals. Direct, hands-on experience with network transport, design, planning and implementation. Experience with computational resources, data storage and management, and architecture and system administration. Strong understanding of higher education institutions and staff, with demonstrated experience supporting large-scale network implementations and upgrades, and delivering reliable and quality network service within a higher education environment or large private-sector organization with federated operations. Experience working with researchers and other stakeholders to translate business needs into technical strategies with corresponding technology roadmaps. Exceptional written and oral communication and interpersonal skills, with extensive experience presenting ideas and solutions in non-technical, business-friendly terms. Demonstrated experience serving productively and effectively as both a team leader and member, establishing positive working relationships and strong rapports with groups diverse in culture, discipline, and background, and developing high-performing teams. Excellent organizational, planning and problem-solving skills. Ability to prioritize and

manage multiple projects while developing and managing audit processes and reporting results. Strong customer service orientation.

Preferred Education:

Master's degree

Doctorate

Preferred Experience:

10 years

Preferred Field of Expertise:

Master's degree or doctorate in data science, computer science, computer engineering or other relevant field. Proficiency in information technology and with high-performance computing platforms. Security+ certification. Substantial development experience with C++ and C. Experience with networking and storage concepts and architectures, including HPC storage and architecture. Demonstrated track record of driving emerging and/or disruptive technologies. Knowledge of functional programming (i.e. Haskell, SML, OCaml) and object-oriented and multi-paradigm system development (i.e. Scala). Ability to articulate complex concepts to cross-functional audiences.

SIGNATURES:

Employee: _____ **Date:**_____

Supervisor: _____ **Date:**_____

The above statements are intended to describe the general nature and level of work being performed. They are not intended to be construed as an exhaustive list of all responsibilities, duties and skills required of personnel so classified.

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