Request for Technology Fee Funds: FY17

NOTE: A separate request should be made for each initiative.

I. Department Number/Department Name: 360 College of Computing

Title of Request *(please be brief):* IBM POWER-based systems for Data Analysis and HPC Courses

Amount of Request *(formula from detailed budget below):* $120,196

Are there any installation/renovation costs associated with this request? ☐ Yes ☑ No

If "Yes" then indicate the source of approved funding:

(Note: Tech Fees are not allowed for installation/renovation)

Executive Summary of Request (100 words or less):

IBM's new POWER-based LC systems provide a unique architecture for our students in data analysis and HPC courses to compare to our current x86-based machines. We are proposing to purchase 4 of these machines to provide a new resource to the students studying Data Analysis and High Performance Computing.

Specific class and/or lab initiative(s) if applicable:

Contact person for this request (incl. phone #): Jason Riedy, David Bader, Andrew Leonard (5-2805)

Indicate priority per department if applicable: Number ____ of ____

Indicate priority per college or unit: Number 7 of 10

II. Impact on Students - Provide course title, course number, and anticipated enrollments:

Titles/Numbers of Course(s) CSE6140, 6220, 6230, 6643, 6730, 6242, 6740

Anticipated Enrollments

Graduate:	*1,019*	○ per sem ◉ per year
Undergraduate:	0	○ per sem ◉ per year
Total:	1,019	(select one)

NOTE: Other impacts on students should be described in narrative.

III. Narrative - *Provide narrative justification for your intended use of the technology fee funds. Include narrative on how the education or research of the students will be enhanced. Also include how the request aligns with the Strategic Plan of Georgia Tech. Continue in the block below if necessary.*

Massive data analysis now is an expected ingredient of many computing, science, and engineering courses. In line with the campus strategic goal of providing an education that produces leaders and innovation, the School of Computational Science and Engineering (CSE) requires platforms that can support both current and emerging next generation data analysis tools. Educating with current tools and platforms like Hadoop produces students that serve current industry needs, but pushing forward to future systems like Georgia Tech's STINGER and FODAVA test bed produces students who will lead industry and research. Many systems on the forefront of data analysis use large amounts of fast, shared memory tightly coupled to processors, storage, and accelerators. CSE proposes to acquire large memory platforms to support the interdisciplinary courses that are CSE's specialty as well as courses in the College of Computing's undergraduate threads and graduate programs. These systems permit rapid deployment of data analytics for complex, varied data sets, letting courses focus more on what is done while providing easier access to how it's done. Students can follow the development from mathematics to computational expression and then down to the mapping onto hardware. These students will be well prepared to tackle the next generation data problems in bioinformatics, material science, national security, urban planning, logistics, and other "big data" areas.

IV. Detailed Budget - Requested Items by Category *List separately any equipment, software, and other allowable expenses (see Tech Fee Guidelines). There is a formula in the "total column" that multiplies the number of items times the unit price. You may enter a figure into the total column if the unit pricing is not applicable. If you need additional rows, contact the Budget Office to receive a modified form.*

Supporting documentation is required *- Include price justification in some form, such as quotations, published price lists, etc. as a separate PDF attachment. All supporting information should be in a single PDF.*

	Proposed Number of Items	Estimated Price per Unit	Total ($)
IBM Power System S822LC with 1TiB of memory	4	$30,049	$120,196
Total *(linked to the total amount of request line above)*			$120,196

Please return form via e-mail in Excel format to: tina.clonts@business.gatech.edu. Supporting information only in a PDF file.

III. Continuation of narrative justification, if necessary

Our current configuration consists primarily of x86-based nodes, so students cannot compare architectural features like different memory consistency models, trade-offs in memory and processor balances. The new IBM Power Based LC systems offer an emerging architecture that's use in the classroom would provide unique exposure to our students to compare the way differing architectures influence memory management, high performance computing, and data analysis.