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RCCI Executive Committee
RCCI Data Centers Working Group
Matt Decker, Interim Vice Provost
for Information Technology
Mark Saussure, Director of Data Centers

Dear Rob and Colleagues,

Thank you for your letter detailing the depth of the Data Centers' impending resource challenges. I am responding on behalf of my fellow addressees. Not to make light of the problem, but I am indeed always happy to have to deal with an issue where PSU research is growing too quickly! That said, I do have some concerns about the specific projections the report contains (as I did with the original report). I am most comfortable with planning for increased utilization over time (that is clear) but the urgency is argued in a less compelling manner given that many of the drivers represent "possibilities" rather than actual, specific, funded needs.

I am pleased at the excitement about the evolving ACI offerings and with the new effective rates my office has worked with ICS to provide. The current expansion of ACI, along with the active proposals that, if funded, will require additional space and power, of course also argue for further expansion in compute/Data Centers infrastructure.

I want to make sure that you are aware that the new ICS-ACI business model – and the new rates for Penn State researchers – incorporated considerable cost savings realized from the new ACI/Tower Road Data Center infrastructure compared to existing HPC systems. The savings were based on the modern ACI architectures adopted being more power-efficient as well as efficiencies in staffing while expanding ACI and associated services. These savings, however, can only be fully realized through phase out of existing compute resources to take maximum advantage of power savings and staff effort optimization.

Given the timeline for carrying out any expansions in the Tower Road Data Center beyond the 1.4 MW for research currently in process, it is imperative that in the interim all power, space and staff efficiencies be realized. I am aware that a number of existing HPC systems remain in the Computer Building, and until these legacy systems are removed from the Computer Building, no other timely option for power expansion for HPC is available. Furthermore, the new rates we have stretched to provide may not be sustainable without the infrastructure savings this decommissioning provides. As a result, I look forward to hearing that the older legacy systems have been appropriately disposed of (i.e., not at Penn State) and that the remaining viable systems have been ported over to ACI in the Tower Road Data

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Center. At that time, we can refurbish the Computer Building white space to allow for an additional 0.6MW of research HPC power to help us through this transition.

I would also add that it is important that we consider other emerging models as we move forward, especially in the data space. The new leasing approach, as I think you know, has really enabled us to rethink the manner in which HPC compute resources have been provided. This was a model we were barely even thinking about a year ago, but we have adopted with considerable effectiveness and efficiency. In the data realm, cloud-based solutions continue to emerge and evolve, and these too should be considered carefully as part of the planning and transition process. I acknowledge that these are not appropriate for some of the special-purpose computing that we do, but for some of the more commodity-oriented HPC this may well be not only now a viable alternative, but also a more cost-efficient, effective, and scalable consideration that we must consider.

Until all options for resource efficiencies around HPC are realized, I really am unable to support additional resources for Data Center expansions; this was part of the business model, and must be effected. It is my intention that Penn State researchers receive quality and reliable HPC support, but the HPC community must work with us in true partnership to optimize the entire enterprise so we can realize the efficiencies we have counted upon.

I look forward to working with ICS, RCCI and the Data Center team as we continue to develop and expand Penn State's HPC community and infrastructure.

Sincerely,

A handwritten signature in black ink, appearing to read 'Nicholas P. Jones'. The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Nicholas P. Jones

cc: Eric Barron
Jenni Evans
David Gray
Neil Sharkey
Ford Stryker