

SOUTH DAKOTA BOARD OF REGENTS

Budget and Finance
Consent

AGENDA ITEM: 4 – D

DATE: October 3-5, 2017

SUBJECT: Capital Asset Purchase Greater than \$500,000

South Dakota State University requests approval of the following item:

MRI: Acquisition of a Cluster Instrument for Parallel and Symmetric Multiprocessing for Supporting Multidisciplinary Research

SDSU has experienced significant growth in research over the past several years. One of the critical elements needed to increase grant and contract research involves access to High Performance Computing (HPC). The proposed cluster will be a crucial resource for a variety of researchers who require large amounts of computational clock cycles (high CPU) and high-speed file transfers.

This cluster will serve two broad categories of research: bioinformatics and engineering. The first requires high computational clock cycles and the ability to process many data files of various sizes. Image processing also requires high processing speed and a system that can handle a large amount of file transactions. Engineering is CPU intensive and demands large memory blocks.

Both categories of research require the ability to simulate large-scale models of very complex physical systems. Derek J. Posselt, associate professor at the University of Michigan, attests that “most of the results we obtain would have been impossible without the use of HPC resources. For those results that we could obtain with ordinary desktop computing, HPC has increased our efficiency by at least an order of magnitude 4”. Such simulations are commonly concentrated within the physical and biological sciences, mathematics, and various engineering disciplines, all of which are represented with this proposal.

The total project cost is estimated to be \$1,137,656, with NSF funding \$796,359 of the solution. The remaining \$341,297 will come from university plant funds. The grant funds were

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DRAFT MOTION 20171003_4-D: I move approval of SDSU’s request to purchase an MRI: Acquisition of a Cluster Instrument Parallel and Symmetric Multiprocessing for Supporting Multidisciplinary Research at an estimated cost of \$1,137,656, which includes \$796,359 of funding from the National Science Foundation and \$341,297 from university plant funds.

Capital Asset Purchase Greater than \$500,000

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awarded to SDSU from NSF in support of a grant proposal written by Dr. Mike Adelaine, Vice President for Technology and Safety, and Dr. Adam Hoppe, Associate Professor of Chemistry and Biochemistry.