

Contact: Andrea Anania

EQUIPMENT PURCHASES

Action Requested:

For the University of Iowa, approve:

- ▶ An Atipa Technologies High Performance Computer Cluster for \$1,095,137;
- ▶ A Siemens Medical Solutions USA Incorporated Biograph Molecular Computed Tomography (MCT) Scanner (S) 64 Positron Emission Tomography (PET) Computer Tomography (CT) Scanner for \$2,335,252; and
- ▶ A Siemens Medical Solutions USA Incorporated Skyra 3T (Tesla) MRI Scanner for \$2,604,965.

For Iowa State University, ratify:

- ▶ The Executive Director's August 28, 2013, approval for Iowa State University to purchase an 800 MHz Nuclear Magnetic Resonance Spectrometer at a cost of \$2,325,950.

Executive Summary: Equipment purchases at the Regent institutions costing more than \$1 million are required by Board policy to be approved by the Board of Regents.

UNIVERSITY OF IOWA

ATIPA TECHNOLOGIES HIGH PERFORMANCE COMPUTER CLUSTER (AT HPCC)

Description of the Equipment

The AT HPCC is a large array of individual computing nodes that perform large, complex computations in parallel resulting in decreased time needed to produce results.

Justification of the Need for the Equipment

The purchase of an AT HPCC for SUI's Information Technologies department:

- ▶ Will provide a competitive platform for use by multiple departments with large research simulation requirements;
- ▶ Will provide the computational power each researcher needs along with centralized system management, security, and support. The collaboration will enable access to the entire computer cluster for extremely large research simulations;
- ▶ Is expandable should additional researchers wish to utilize the equipment; and
- ▶ Will be utilized throughout campus, including the following areas: Biochemistry, Institute for Human Genetics, Physics and Astronomy, Cancer Center, Business Administration College, Orthopaedic Surgery, Psychiatry, Statistics Actuarial Science, Medicinal Natural Products, Public Policy Center, Ophthalmology and Visual Sciences, Hydroscience and Engineering and the Stead Technical Services Group.

Any Known Alternatives to the Equipment Proposed

A Request for Proposal was issued and five proposals were received. The evaluation committee determined that the most responsive and best value was the proposal submitted by Atipa Technologies.

Estimated Cost and Source of Funding

The University reports that the: (1) cost of the AT HPCC is \$1,095,137; (2) source of funds is general education, equipment, and grant funds; and (3) the final amount may differ slightly based on the actual number of nodes required to support the departments involved.

SIEMENS MEDICAL SOLUTIONS USA INCORPORATED (SIEMENS) BIOGRAPH MOLECULAR COMPUTED TOMOGRAPHY SCANNER (MCT S) 64 POSITRON EMISSION TOMOGRAPHY (PET) COMPUTER TOMOGRAPHY (CT) SCANNER FOR \$2,335,252.

Description of the Equipment

Positron Emission Tomography/Computed Tomography (PET/CT) is a medical imaging technique using a device which combines in a single gantry system both a PET and an x-ray CT so that images acquired from both devices can be taken sequentially in the same session from the patient and combined into a single superposed (co-registered) image.

Thus, functional imaging obtained by PET (which depicts the spatial distribution of metabolic or biochemical activity in the body) can be more precisely aligned or correlated with anatomic imaging obtained by CT scanning.

Justification of the Need for the Equipment

The Biograph MCT S 64 PET/CT Scanner:

- ▶ Will provide significantly improved image quality and the ability to perform new exams that were previously unattainable on the existing PET/CT scanner;
- ▶ Is expected to increase imaging capacity by 25-30% due to decreased scan times, which will result in higher patient throughput and directly and immediately benefit patients by decreasing wait and exam times as well as minimize patient radiation exposure;
- ▶ Will position UIHC to meet the continuing growth in requests for clinical PET/CT imaging studies without adding an additional unit; and
- ▶ Will replace an existing technologically obsolete eleven year old Siemens Biograph Duo PET/CT scanner; Siemens has officially notified all hospitals using the Biograph Duo PET/CT model that it will no longer guarantee parts and service support. Also, due to continually increasing equipment failures, the cost of both parts and labor for repair has been significant and has increased revenue loss and decreased patient satisfaction due to downtime.

The UIHC PET Imaging Center also has an active clinical research program that generates significant extramural research revenues from the National Institutes of Health, private foundations, and industry. In addition to keeping the UIHC PET Imaging Center competitive for research dollars, the state-of-the-imaging capabilities associated with this new PET/CT scanner will make it possible for researchers to compete for funded projects that have not previously been accessible.

If the equipment is not replaced, physicians and patients will not receive the benefits available through technical and clinical diagnostic improvements and continuing to use the existing equipment will result in increased repair costs.

Any Known Alternatives to the Equipment Proposed

A Request for Proposal was issued for a PET/CT system and three proposals were received. The evaluation committee determined that Siemens' proposal was responsive and the value provided was in the best interest of the University. UIHC has standardized on Siemens equipment due to the advantages gained in equipment pricing, maintenance, and training.

Estimated Cost and Source of Funding

The cost for the Siemens Biograph MCT S 64 PET/CT scanner is \$2,335,252 and the source of funding is UIHC capital equipment acquisition funds.

The amount is discounted 53% off the list price and is contingent upon the purchase of a Skyra 3Telsa MRI scanner as part of a special bundle offered by Siemens. The request for that purchase is on page 3.

SIEMENS MEDICAL SOLUTIONS USA INCORPORATED (SIEMENS) SKYRA 3T (TESLA) MRI SCANNER

Description of the Equipment

Magnetic Resonance Imaging (MRI) is a medical imaging technique used in radiology to visualize internal structures of the body in detail and can create more detailed images of the human body than are possible with X-rays.

Justification of the Need for the Equipment

The Siemens Skyra 3T MRI Scanner will:

- ▶ Be utilized to perform advanced state of the art MRI sequences that far exceed those capabilities available on the existing Siemens Trio 3T MRI scanner, including: (1) the ability to perform advanced functional imaging exams; (2) greatly improved neuro imaging and dedicated ortho; and (3) spine and small joint procedures at a level of image quality previously unattainable by any existing scanner;
- ▶ Improve patient through-put and efficiency due to faster scan times. The University projects that faster scan times and advanced imaging capabilities will make it possible to perform an additional four MRI patient exams per day (an additional 1040 patient exams/year);
- ▶ Provide an enhanced patient experience by decreasing both patient exam times and patient wait times; and
- ▶ Improve patient comfort and experience from the increased bore size, which will decrease lost exam time and revenue by minimizing the number of delayed and rejected exams due to patient claustrophobia issues.

The installation of a new, state-of-the-art 3T MRI Scanner for the UIHC Radiology Department will position SUI to meet the continuing growth in requests for clinical MRI studies and better serve patients within Iowa and the surrounding region. The Siemens Skyra 3T MRI Scanner will replace an existing Siemens Trio 3T MRI Scanner that has been in use for over 10 years and is past its technological useful life.

If the equipment is not replaced, physicians and patients will not receive the benefits available through technical and clinical diagnostic improvements and continuing to use the existing equipment will result in increased repair costs.

Any Known Alternatives to the Equipment Proposed

The equipment pricing is based on the Strategic Alliance Purchasing Agreement between Siemens and SUI. UIHC has standardized on Siemens equipment due to the advantages gained in equipment pricing, maintenance, and training.

Estimated Cost and Source of Funding

The cost for the Siemens Skyra 3T MRI Scanner is \$2,604,965 and the source of funding is UIHC capital equipment acquisition funds.

The amount is discounted 43% off the list price and is contingent upon the purchase of a Biograph MCT S 64 scanner as part of a special bundle offered by Siemens. The request for that purchase is on page 2.

800 MHz NUCLEAR MAGNETIC RESONANCE SPECTROMETER (NMR SPECTROMETER)

Description of the Equipment

An NMR Spectrometer consists of a high strength magnet, computer console, probes designed for particular applications (i.e. solids and liquids), and operational/analytical software.

The high field strength (800 MHz) will allow better resolution when analyzing samples and be used to determine more accurately the molecular structure of chemical compounds.

Justification of the Need for the Equipment

The 800 MHz NMR will be used for conducting research associated with a Carver Trust award and other research facilitated through the Biomolecular NMR core facility. The University has several NMRs on campus, however, none operate in the 800 MHz range.

Any Known Alternatives to the Equipment Proposed

The University reports that two potential sources provide high field strength research NMR spectrometers at 800 MHz. The Biomolecular NMR Facility requirements were competitively bid utilizing the formal sealed bid process proscribed in Board of Regents policy. The offer received from Bruker Biospin was the low compliant offer.

Estimated Cost and Source of Funding

The cost for the 800 MHz NMR Spectrometer is \$2,325,950 and the source of funding is a grant from the Carver Trust and several University departments.

Background: Chapter 7.06B(12) of the Regents Policy Manual requires that:

- ▶ Equipment costing more than \$1,000,000 must be submitted to the Board for approval; and
- ▶ Requests submitted to the Board Office for approval must include the following information:
 - ◆ Description of the equipment;
 - ◆ Justification of the need for the equipment;
 - ◆ Any known alternatives to the equipment proposed; and
 - ◆ Estimated cost and source of funding.