NCRR FACT SHEET

High-End Instrumentation Grants

www.ncrr.nih.gov/hei
September 2008

Rapid technological development has led to the production of a new generation of advanced instruments. As the capabilities of these high-sensitivity, high-resolution instruments increases, so does their cost. To meet the investigators' needs for this advanced technology, in FY 2002, NCRR began the High-End Instrumentation (HEI) grant program, which allows institutions to acquire equipment that costs more than $750,000. The maximum award is $2.0 million. The HEI grant program complements the Shared Instrumentation Grant program and also uses the S10 funding mechanism.

The program will provide 12-month, nonrenewable awards up to a maximum of $2.0 million. Only one major item of equipment can be requested per application. Supplemental applications will not be accepted. Generally, if the funds requested do not cover the total cost of the instrument, documentation of the availability of the remainder of the funding, signed by an appropriate institutional official, must be submitted to NCRR prior to issuance of an award.

Instrumentation

Examples of key instruments — and their applications — that may be funded by the HEI grant program include but are not limited to:

Biomedical Imagers

The boundaries of imaging technology have been extended to acquire functional, biochemical and physiological information in intact biological systems including humans. This has led to an increased demand for multinuclear spectroscopy and functional magnetic resonance and PET imaging instruments, among others.

Nuclear Magnetic Resonance Spectrometers

There is a significant demand for increased sensitivity and resolution of high-field NMR spectrometers to determine three-dimensional structures of large proteins and protein complexes in extremely small samples. This need is magnified by the extended run time for data collection at lower fields, which limits access to these instruments.

Mass Spectrometers

Instruments that combine electrospray ionization with Fourier transform ion cyclotron resonance (FTICR) mass spectrometry are now available. The FTICR methods provide very high resolution and accurate molecular weight measurement to study large biopolymers and their interactions.

Electron Microscopes

The frontier of cell biology now focuses on elucidating the nature and function of cell organelles and the role of complex protein machines. Such studies require intermediate voltage electron microscopes with field emission illumination for high-resolution imaging of single molecules. Such microscopes are also needed to perform computer reconstruction at the subnanometer scale for macromolecular assemblies that are too large and complex to study by X-ray crystallography and NMR spectroscopy.

Supercomputers

Computational biologists require computers or clusters of computers with high-performance visualization hardware, parallel architectures, and large data storage and transfer capabilities at increased speed.

Eligibility

Applications are accepted from domestic public and nonprofit institutions only. These include health professional schools, graduate institutions, hospitals, health departments, and research organizations. Foreign institutions are not eligible to apply. To be eligible, the application must identify three or more NIH-funded investigators (Principal Investigators of active P01, R01, U01, R35, R37, DP1, and DP2 research grants) who will be users of the instrument. However, the Principal Investigator of an HEI does not have to be NIH funded.

Since the HEI program interfaces with other NCRR and NIH grant programs, applicants are encouraged to contact NCRR program staff at 301-435-0772 or HEI@mail.nih.gov before applying for a grant.

Guidelines

Depending on the availability of funds, a Program Announcement for the HEI program is published in a June issue of the *NIH Guide for Grants and Contracts* (http://grants1.nih.gov/grants/guide/index.html) with a receipt date in September. This announcement includes information on the research objectives, eligibility criteria, application and review procedures, award criteria, and contact information. HEI applications are submitted to NIH electronically through Grants.gov (www.grants.gov) using the SF 424 Research and Related forms.

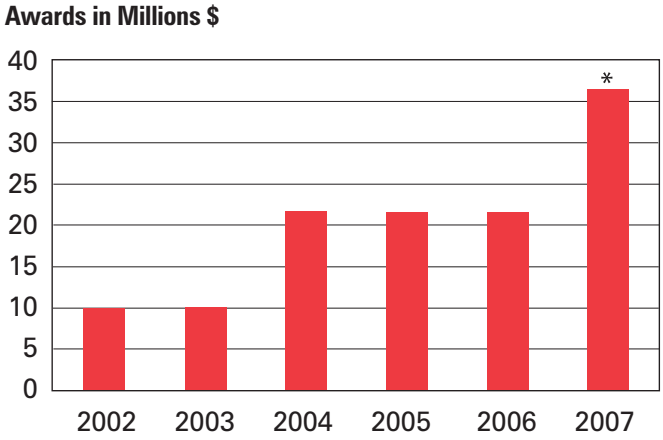
Review Criteria

Instrument-specific study sections review HEI applications and base their evaluations on a number of criteria, which are listed in the Program Announcement. The application also should show a clear need for the instrumentation by projects supported by multiple NIH peer-review research grants and demonstrate that these projects will require at least 75 percent of the total usage of the instrument.

Funding

Awards are for one year, and matching funds are not required. However, NCRR expects institutions that compete for HEI awards to provide an appropriate level of support for associated infrastructure, such as building alterations or renovations, technical personnel, and post-award service contracts for instrument maintenance and operation.

Since its inception in 2002, the HEI program has provided 120 awards to biomedical research institutions in 24 states, totaling $187,215,654.



*Includes FY2007 supplemental funding

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