

**DEPARTMENT OF EDUCATION****National Institute on Disability and Rehabilitation Research**

**AGENCY:** Office of Special Education and Rehabilitative Services, Department of Education.

**ACTION:** Notice of proposed priorities.

**SUMMARY:** We propose funding priorities under the Rehabilitation Engineering Research Center (RERC) program for up to five Rehabilitation Engineering Research Centers under the National Institute on Disability and Rehabilitation Research (NIDRR) for Fiscal Years 2002–2004. We take this action to focus research attention on areas of national need. We intend these priorities to improve the rehabilitation services and outcomes for individuals with disabilities.

**DATES:** We must receive your comments on or before April 11, 2002.

**ADDRESSES:** Address all comments about these proposed priorities to Donna Nangle, U.S. Department of Education, 400 Maryland Avenue, SW., room 3412, Switzer Building, Washington, DC 20202–2645. If you prefer to send your comments through the Internet, use the following address: [donna.nangle@ed.gov](mailto:donna.nangle@ed.gov).

**FOR FURTHER INFORMATION CONTACT:** Donna Nangle. Telephone: (202) 205–5880.

If you use a telecommunications device for the deaf (TDD), you may call the TDD number at (202) 205–4475 or via the Internet: [donna.nangle@ed.gov](mailto:donna.nangle@ed.gov).

Individuals with disabilities may obtain this document in an alternative format (e.g., Braille, large print, audiotope, or computer diskette) on request to the contact person listed under **FOR FURTHER INFORMATION CONTACT**.

**SUPPLEMENTARY INFORMATION:****Invitation To Comment**

We invite you to submit comments regarding these proposed priorities.

We invite you to assist us in complying with the specific requirements of Executive Order 12866 and its overall requirement of reducing regulatory burden that might result from these proposed priorities. Please let us know of any further opportunities we should take to reduce potential costs or increase potential benefits while preserving the effective and efficient administration of the program.

During and after the comment period, you may inspect all public comments about these priorities in Room 3412, Switzer Building, 330 C Street SW.,

Washington, DC, between the hours of 8:30 a.m. and 4 p.m., Eastern time, Monday through Friday of each week except Federal holidays.

**Assistance to Individuals With Disabilities in Reviewing the Rulemaking Record**

On request, we will supply an appropriate aid, such as a reader or print magnifier, to an individual with a disability who needs assistance to review the comments or other documents in the public rulemaking record for these proposed priorities. If you want to schedule an appointment for this type of aid, please contact the person listed under **FOR FURTHER INFORMATION CONTACT**.

We will announce the final priorities in a notice in the **Federal Register**. We will determine the final priorities after considering responses to this notice and other information available to the Department. This notice does not preclude us from proposing or funding additional priorities, subject to meeting applicable rulemaking requirements.

**Note:** This notice does *not* solicit applications. In any year in which we choose to use these proposed priorities, we invite applications through a notice published in the **Federal Register**. When inviting applications we designate each priority as absolute, competitive preference, or invitational. The effect of each type of priority follows:

**Absolute priority:** Under an absolute priority we consider only applications that meet the priority (34 CFR 75.105(c)(3)).

**Competitive preference priority:** Under a competitive preference priority we give competitive preference to an application by either (1) awarding additional points, depending on how well or the extent to which the application meets the priority (34 CFR 75.105(c)(2)(i)); or (2) selecting an application that meets the priority over an application of comparable merit that does not meet the priority (34 CFR 75.105(c)(2)(ii)).

**Invitational priority:** Under an invitational priority we are particularly interested in applications that meet the invitational priority. However, we do not give an application that meets the priority a competitive or absolute preference over other applications (34 CFR 75.105(c)(1)).

**Note:** The proposed priorities support President Bush's New Freedom Initiative (NFI). The NFI can be accessed on the Internet at the following site:

<http://www.whitehouse.gov/news/freedominitiative/freedominitiative.html>.

The proposed priorities are also in concert with NIDRR's Long-Range Plan,

which can be accessed on the Internet at the following site: <http://www.ed.gov/offices/OSERS/NIDRR/#LRP>.

**Rehabilitation Engineering Research Centers Program**

We may make awards for up to 60 months through grants or cooperative agreements to public and private agencies and organizations, including institutions of higher education, Indian tribes, and tribal organizations, to conduct research, demonstration, and training activities regarding rehabilitation technology in order to enhance opportunities for meeting the needs of, and addressing the barriers confronted by, individuals with disabilities in all aspects of their lives. Each RERC must be operated by or in collaboration with an institution of higher education or a nonprofit organization.

**Description of Rehabilitation Engineering Research Centers**

RERCs carry out research or demonstration activities by:

(a) Developing and disseminating innovative methods of applying advanced technology, scientific achievement, and psychological and social knowledge to (1) solve rehabilitation problems and remove environmental barriers and (2) study new or emerging technologies, products, or environments;

(b) Demonstrating and disseminating (1) innovative models for the delivery of cost-effective rehabilitation technology services to rural and urban areas and (2) other scientific research to assist in meeting the employment and independent living needs of individuals with severe disabilities; or

(c) Facilitating service delivery systems change through (1) the development, evaluation, and dissemination of consumer-responsive and individual and family-centered innovative models for the delivery to both rural and urban areas of innovative cost-effective rehabilitation technology services and (2) other scientific research to assist in meeting the employment and independence needs of individuals with severe disabilities.

Each RERC must provide training opportunities, in conjunction with institutions of higher education and nonprofit organizations, to assist individuals, including individuals with disabilities, to become rehabilitation technology researchers and practitioners.

## Priorities

### Background

Technology plays a vital role in the lives of millions of disabled and older Americans. Advances in assistive technology and adoption of principles of universal design have significantly improved the quality of life for these individuals. Individuals with significant disabilities regularly use products developed as the result of rehabilitation and biomedical research to achieve and maintain maximum physical function, live independently, study and learn, and attain gainful employment. The range of engineering research has broadened to encompass not only assistive technology but also technology at the systems level (i.e., the built environment, information and communication technologies, transportation, etc.) and technology that interfaces between the individual and systems technology and is basic to community integration.

The NIDRR RERC program has been a major force in the development of technology to enhance independent function for individuals with disabilities. The RERCs are recognized as national centers of excellence in their respective areas and collectively represent the largest federally supported program responsible for advancing rehabilitation engineering research. For example, the RERC program was an early pioneer in the development of augmentative communication and has been at the forefront of prosthetics and orthotics research for both children and adults. A recently established RERC is responsible for designing prosthetics for land mine survivors from developing countries using indigenous materials and fabrication capabilities. The RERC on Telerehabilitation is developing methods for the efficient delivery of rehabilitation services in rural settings and to reduce the cost of long-term care. RERCs have played a major role in the development of voluntary standards that industry uses when developing wheelchairs, wheelchair restraint systems, information technologies, and the World Wide Web. The RERC on Low Vision and Blindness helped develop talking sign technologies that are currently being utilized in major cities in both the United States and Japan to help blind and visually impaired individuals navigate city streets and subways. RERCs have been a driving force in the development of universal design principles that can be applied to the built environment, information technology and telecommunications, transportation, and consumer products. The clinical use of electromyography,

gait analysis, and functional electrical stimulation has been made possible due to earlier research supported by the RERC program.

Significant financial investments in basic biomedical science and technology are paying off with new opportunities to further enhance the lives of people with disabilities. Recent advances in biomaterials research, composite technologies, information and telecommunication technologies, nanotechnologies, micro-electro mechanical systems (MEMS), sensor technologies, tissue engineering, and the neurosciences also provide a wealth of opportunities for individuals with disabilities and should be incorporated into research focused on disability and rehabilitation. In recognition of this need, the President's "New Freedom Initiative" has identified the RERC program as one worthy of expansion and the Administration has significantly increased the RERC budget for fiscal year 2002 (New Freedom Initiative, 2001).

NIDRR intends to fund up to five new RERCs in fiscal year 2002. Applicants must select from the following priority topic areas: (a) Spinal Cord Injury; (b) Recreational Technologies and Exercise Physiology Benefiting Persons with Disabilities; (c) Applied Biomaterials; (d) Measurement and Monitoring of Functional Performance; (e) Accessible Medical Instrumentation; (f) Universal Interface Technologies; (g) Work Place Accommodations; (h) Accessible Airline Transportation; and (i) Rehabilitation Robotics and Telem Manipulation Systems. NIDRR is particularly interested in applications that address topic areas (a) and (b). Applicants are allowed to submit more than one proposal as long as each proposal addresses only one RERC topic area.

### Letters of Intent

Due to the open nature of this competition, NIDRR is requiring all potential applicants to submit a Letter of Intent (LOI). Each LOI must be limited to a maximum of four pages and must include the following information: (1) The title of the proposed RERC, the name of the host institution, the name of the Principal Investigator (PI), and the names of partner institutions and entities; (2) a brief statement of the vision, goals and objectives of the proposed RERC and a description of its research and development activities at a sufficient level of detail to allow potential reviewers to be selected; (3) a list of proposed RERC staff including the Center Director and key personnel; and (4) a list of individuals whose selection as a reviewer might constitute

a conflict of interest due to involvement in proposal development, selection as an advisory board member, co-PI relationships, etc.

The signed, original LOI must be received by NIDRR no later than four weeks after the Notice of Final Funding Priorities for this competition is published in the **Federal Register**. Submission of a LOI is a prerequisite for eligibility to submit an application. With prior approval, an email or facsimile copy of a LOI will be accepted, but the signed original must be sent to: William Peterson, U.S. Department of Education, 400 Maryland Avenue, SW., room 3425, Switzer Building, Washington, DC 20202-2645. For further information regarding the LOI requirement, contact William Peterson at (202) 205-9192 or by e-mail at: [william.peterson@ed.gov](mailto:william.peterson@ed.gov).

### Proposed Priorities

The Assistant Secretary proposes to fund up to five RERCs that will focus on innovative technological solutions, new knowledge, and concepts to promote the health, safety, independence, active engagement in daily activities and quality of life of persons with disabilities. Each RERC must:

(1) Contribute substantially to the technical and scientific knowledge-base relevant to its respective subject area;

(2) Research, develop, and evaluate innovative technologies, products, environments, performance guidelines, and monitoring and assessment tools as applicable to its respective subject area;

(3) Identify, implement, and evaluate, in collaboration with the industry, professional associations, and institutions of higher education, innovative approaches to expand research capacity in its respective field of study;

(4) Monitor trends and evolving product concepts that represent and signify future directions for technologies in its respective area of research;

(5) Provide technical assistance to public and private organizations responsible for developing policies, guidelines, and standards that affect its respective area of research.

In addition to the activities proposed by the applicant to carry out these purposes, each RERC must:

- Develop and implement in the first year of the grant, in consultation with the NIDRR-funded National Center for the Dissemination of Disability Research (NCDDR), a plan to disseminate the RERC's research results to disability organizations, persons with disabilities, technology service providers, businesses, manufacturers, and appropriate journals;

- Develop and implement in the first year of the grant, in consultation with the NIDRR-funded RERC on Technology Transfer, a plan for ensuring that all new and improved technologies developed by this RERC are successfully transferred to the marketplace;

- Conduct a state-of-the-science conference on its respective area of research in the third year of the grant cycle and publish a comprehensive report on the final outcomes of the conference in the fourth year of the grant cycle; and

- Coordinate on research projects of mutual interest with relevant NIDRR-funded projects as identified through consultation with the NIDRR project officer.

Each RERC must focus on one of the following priority topic areas:

(a) *Spinal Cord Injury*: This center must conduct research and develop applications that address problems in the treatment, rehabilitation, employment, and reintegration into society of persons with spinal cord injury. This center will be expected to work collaboratively with the NIDRR-funded Model Spinal Cord Injury Centers program;

(b) *Recreational Technologies and Exercise Physiology Benefiting Persons With Disabilities*: This center must research and develop technologies that will enhance recreational opportunities for people with disabilities and develop methods to enhance the physical performance and endurance of people with disabilities;

(c) *Applied Biomaterials*: This center must facilitate the application of advances in materials and tissue engineering for medical rehabilitation applications such as prosthetics and orthotics, implants, reconstructive surgery, and burns. It will bring together leaders in biomedical research, medical practitioners, and consumers to promote the design, development, and utilization

of state-of-the-art methodologies and products for rehabilitation and disability applications;

(d) *Measurement and Monitoring of Functional Performance*: This center must research and develop technologies and methods that effectively assess the outcomes of rehabilitation therapies by combining measurements of physiological performance with measures of functional performance;

(e) *Accessible Medical Instrumentation*: This center must research, develop, and evaluate methods and technologies to increase the usability and accessibility of diagnostic, therapeutic, and procedural healthcare equipment (i.e., equipment used during medical examinations, treatment, etc.) for people with disabilities. This includes developing methods and technologies that are useable and accessible for patients and health care providers with disabilities;

(f) *Universal Interface Technologies*: This center must develop universal interface technologies that will allow for easy integration of multiple technologies used by individuals with disabilities (e.g., augmentative communication devices, powered mobility devices, environmental control systems, telecommunication systems, and information technologies, including multimedia systems). This includes effective speech to text systems, eye and head control systems, and methods to enhance the utility of graphical devices for the visually impaired;

(g) *Work Place Accommodations*: This center must identify, design, and develop devices and systems to enhance the productivity of people with disabilities in the workplace. It must emphasize the application of universal design concepts to improve the utility of workplace tools and devices for all workers;

(h) *Accessible Airline Transportation*: This center must research and develop

methods, systems, and devices that will promote and enhance the ability of people with disabilities to safely and efficiently embark/disembark, travel comfortably, and use restroom facilities on commercial passenger airliners; and

(i) *Rehabilitation Robotics and Telem Manipulation Systems*: This center must explore the use of human-scale robots and telem Manipulation (the integration of human-control with a manipulator) systems that will address the unique needs of people with disabilities and rehabilitation.

*Applicable Program Regulations*: 34 CFR part 350.

#### Electronic Access to This Document

You may view this document, as well as all other Department of Education documents published in the **Federal Register**, in text or Adobe Portable Document Format (PDF) on the Internet at the following site: <http://www.ed.gov/legislation/FedRegister>.

To use PDF you must have Adobe Acrobat Reader, which is available free at the previous site. If you have questions about using PDF, call the U.S. Government Printing Office (GPO), toll free, at 1-888-293-6498; or in the Washington, DC, area at (202) 512-1530.

**Note:** The official version of this document is published in the **Federal Register**. Free Internet access to the official edition of the **Federal Register** and the Code of Federal Regulations is available on GPO Access at: <http://www.access.gpo.gov/nara/index.html>. (Catalog of Federal Domestic Assistance Number: 84.133E, Rehabilitation Engineering Research Center Program)

**Program Authority:** 29 U.S.C. 762(g) and 764(b)(3).

Dated: March 6, 2002.

**Loretta L. Petty,**

*Acting Assistant Secretary for Special Education and Rehabilitative Services.*

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