RESEARCH ON SPINAL CORD INJURY (SCI)  
REQUEST FOR PROPOSALS (RFP)  

ISSUED BY THE SPINAL CORD INJURY RESEARCH FUND BOARD  
Judge Charles L. Allen, Brian G. Cuddy, MD(Chair), David Griesemer, MD, Terry Peacock, Phanor L. Perot, MD, PhD,  
David L. Shullcross, MD, and W. Daniel Westerkam, MD  

ADMINISTERED BY THE MEDICAL UNIVERSITY OF SOUTH CAROLINA (MUSC)  

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Deadline for Submission: April 15, 2003 (extended to May 15)  

Background: Amendment (Bill S54 44-38-510) to Section 2, Chapter 38, Title 44 of the 1976 S.C. Code was ratified on July 20, 2000 and authorized the new South Carolina Spinal Cord Injury Research Fund provided from a $100 surcharge on each Driving Under the Influence (DUI) conviction. The Fund is administered by new Spinal Cord Injury Research Board appointed by the Governor, and was attached to MUSC for staff and administrative purposes. The law authorizes Fund use to cover basic operating and administrative costs, but directed that the balance be provided for spinal cord injury research projects.

The Board set the following primary Fund objectives: 1). Advance knowledge of SCI injury repair and regeneration within the SC research community by encouraging physicians and scientists to apply expertise to SCI field. 2). Foster collaborative interdisciplinary approaches to SCI research among SC hospitals, rehabilitative centers, research universities, and interested organizations. 3). Nurture next generation of SCI researchers through support of young scientists and post-doctoral fellows. 4). Improve well-being and quality of life of individuals with SCI by research programs that prevent or treat the secondary conditions and consequences of SCI. 5). Set budgets and administer funds for SCI research as mandated by the SC Legislative Act, and assure highest quality of research and commitment by investigators.

It also set initial research funding priorities and focus: 1). Translating basic and preclinical findings into clinical applications. 2). Studying strategies to promote growth and survival at cellular level. 3). Assuring efficacy of drugs or other interventions to prevent or reduce secondary injury and to provide insight to the mechanisms causing this progressive damage. 4). Exploring the role of tissue transplantation in restoration of spinal cord function. 5). Defining anatomical, pathophysiological, inflammatory, and neurochemical characteristics of spinal cord injury or disease in well-defined animal models. 6). Elucidating biological and physical mechanisms that improve functions compromised by spinal cord injury, including dysfunction, chronic pain, and uncontrolled spasticity. 7). Developing innovative rehabilitative strategies, services, or priorities to promote recovery and function following spinal cord injury. 8). Developing public education programs to help decrease the occurrence of spinal cord injury by safety education, better safety practices, and decreased alcohol use as a contributing factor. 9). Developing education programs for the injured and their families.

Request For Proposals: The South Carolina Spinal Cord Injury Research Board invites grant and contract applications for research on all aspects of spinal cord injury (SCI) in an
effort to develop better understanding and ultimately treatment for paralysis and other consequences of spinal cord injury and disease. This is the second annual call for grants that outline innovative and potentially groundbreaking research. It is estimated that $1,000,000 will be available for projects funded in response to this request.

SCI is a serious and seldom reversible cause of disability. Often traumatic in origin, it may also result from inflammatory, neoplastic, developmental, or rarely infectious causes. The consequences of SCI are legion, including paralysis of legs and arms, even muscles of respiration; loss of sensation and autonomic control; chronic pain; impairment of bowel, bladder, and sexual dysfunction; metabolic disorders such as hypercalcemia; muscle spasticity with contractures of joints, fractures, and heterotopic ossification; complications such as decubitus ulcers, uncontrolled blood pressure, and frequent infections. Victims of SCI typically lose the ability to function productively in society because of extraordinary demands of their medical care, limitations in rehabilitation resources after profound loss of mobility, and psychosocial difficulties associated with their severe impairment and total dependency upon others. The loss to spouses and children of SCI victims is substantial and the cost of care to families and the residents of South Carolina is extraordinary and ongoing. The long-term goal of this research initiative is to minimize the risk and incidence of SCI, interrupt or reverse the process of SCI, and improve the quality of life for residents of South Carolina with SCI.

Areas of potential research interest include: basic neurobiology, including regeneration of cells and axons, modulation of inflammatory and destructive processes, prevention of injury-induced neurotoxicity or secondary injury; pre-clinical studies, including refinement of animal models of SCI; translation of pre-clinical findings into treatment, including pharmacological trials, surgical approaches, and previously unexplored treatments; clinical issues, including diagnostic assessment and monitoring, relationship to other spinal cord disorders and psychological disorders; outcomes of rehabilitation, including therapies (prosthetic, physical, occupational, speech/language, recreational), quality of life (technological solutions, functional improvement), and attendant care; epidemiology, including factors affecting incidence, availability and quality of SCI care in South Carolina; education and prevention, including education curriculum for patients and families in appropriate and adequate SCI care (classroom, career), community (prevention of alcohol-related injury, opportunities for therapy and rehabilitation), and health care providers (curriculum at South Carolina colleges and universities, professional education).

**Research Guidelines:** A broad range of applications is encouraged. Examples of development and research programs that will be considered include:

(1) **Pilot Projects.** Obtaining significant extramural funding for creative, high-impact research or treatments may be hampered by lack of resources to obtain the preliminary data or products necessary to demonstrate the value of the hypotheses. Grants will be made available to fund such novel and innovative research that significant extramural funding and/or product development is subsequently probable.

(2) **Collaborative Projects.** Proposals requiring cooperation between professionals, specialties, laboratories, or institutions may require additional resources for larger projects or coordination of effort. Grants will be made available to fund such collaborative efforts if innovative efforts or productive new relationships develop.
(3) Research of High Value to the Citizens of South Carolina. Certain research projects may be of demographic or cultural value specific to the State of South Carolina and may not be easily justified on a national research agenda. Proposals of such unique benefit to South Carolina will be considered.

(4) Assist in Recruiting Clinicians, Educators, or Researchers into the State of South Carolina. Under exceptional circumstances monies may be made available to assist in attracting nationally recognized clinicians, educators or researchers in the field of SCI into state institutions.

Eligibility and Terms of Support: Applications will be accepted from clinicians, therapists, educators, and scientists in South Carolina who have a terminal professional degree in their field and, in the case of research involving human subjects, have access to an Institutional Review Board. This includes, but is not limited to, faculty members of research and educational institutions throughout the state. All applicants will be required to submit a two-page progress report within 60 days of the termination of the award period. In addition, all applicants will be required to present their research at a Spinal Cord Injury Research Fund meeting and to have prepared a research proposal on SCI to be submitted within 6 months of the termination of the award.

Funding: Grant or contract support will be awarded initially for 18 months, with no guarantee of renewal. Further funding will depend on progress reports at 6-month intervals that include evidence of productivity, with consideration for renewal of projects that show progress or significant promise on re-submission. Reasonable amount of funds for support of the Principal Investigator's salary will be considered, but should not exceed 20% of the total requested budget (except for Career Development applications where it shall not exceed 50%). Grant or contract fund uses for equipment are not encouraged, but minor items will be considered provided they are clearly justified as absolutely essential to the successfully conduct of proposed research. Requests for travel should be focused on development of networking necessary for the conduct of research. The Spinal Cord Injury Research Fund does not provide support for indirect costs and any such related costs essential to the proposed research should be included in the direct cost budget request.

Timeframes: There will be at least one call for proposals annually. The review of all proposals will be completed within 60 days following the grant submission deadline. The deadline for applications in response to this Request for Proposals is Tuesday, April 15, 2003, at 5:00 PM. The South Carolina SCI Research Board will make money available within 30 days following a recommendation for funding by the Review Committee and approval.

Funding Mechanisms

1. Primary research grants will not exceed $150,000 over an 18-month period. These will support research activities of junior faculty (usually within 1 to 5 years of their first faculty position) that range from basic science to applied science. Anticipated are three to four awards, with no more than a 2:1 ratio in either basic versus applied science. The primary goal of these research grants will be to perform studies that lay the foundation for larger projects that may being federal funds into the state of South Carolina.
One grant, not to exceed $150,000 over an 18-month period will be awarded for a project that specifically addresses issues related to access to care or the health care delivery in the state of South Carolina. This project should address one or more of the following priorities: attendant care, access to primary rehabilitation, access to follow-up services, availability of physicians and other health care professions, the efficacy of existing programs, or outcomes associated with the quality of existing or pilot programs. The successful applicant must demonstrate that individuals in South Carolina are disadvantaged in terms of having access to a particular type of resource, or that there are particular shortcomings in the health care delivery system, then go on to investigate the impact of this disadvantage on important outcomes such as secondary health conditions, function, and quality of life. For instance, there is only one CARF certified rehabilitation center that handles SCI rehabilitation in South Carolina which means that many citizens with SCI must go out of state for inpatient rehabilitation, and a substantial portion of people with SCI receive no inpatient rehabilitation at all. Therefore, a researcher may choose to investigate to role of primary rehabilitation after the onset of an SCI on the development of secondary conditions. This mechanism is specifically intended to identify shortcomings in the health care service delivery system and their impact on the lives of people with SCI in South Carolina. The results of the study should lay a foundation for the development of either programs or legislation that will intervene to improve the quality of life in people with SCI in this state.

3. Career development awards will be utilized to support new investigators in the field of spinal cord injury, or to support the work of individuals crossing over to spinal cord injury research from other areas. A maximum of $75,000 will be granted over an 18-month period. The primary goals of this mechanism will be to increase the likelihood that a researcher will be able to successfully compete for a federally funded K grant or other federally funded career development award upon completion of the project. The proposed award will give new investigators set-aside time from their other activities to focus on research, not to exceed 50% FTE, and lay the foundation for them to obtain awards. These awards may reflect either basic science projects or applied projects.

4. Small pilot grant funds of $20,000-$25,000 will be available for single year projects. The goal of this award is specifically to support investigators who need to collect a modest amount of pilot data or purchase equipment necessary to position themselves for NIH grants. This mechanism will support the work of senior investigators. Three to five such awards per year are anticipated as funding levels permit. This mechanism also will have a second midyear cycle in which proposal may come directly to the Scientific Director or Associate Scientific Director who will set up a review from an external panel and then submit recommendations to the Board regarding approval.

5. Up to $50,000 will be set aside for projects that disseminate the results of research to the citizens in South Carolina with spinal cord injury. This dissemination component is of great importance to the mission of the SCI Research Fund, as the information derived from the research studies must reach those individuals who can
utilize it. Three types of activities will be supported under this mechanism: development of annual conference, generation of educational materials for consumers that may be directly disseminated to them (e.g., pamphlets), and funds for the continuation and updating of the website.

**Review Process:** Proposals will be reviewed by committees of reviewers approved by the Spinal Cord Injury Research Fund Board as drawn from a list of volunteers as well as those recommended by knowledgeable peers. One review committee will consider basic science or pre-clinical proposals, and another review committee will consider applied or clinical proposals. Investigators will be asked to submit the names of two (2) reviewers qualified to review their proposals, and these individuals may be selected as ad hoc reviewers. Each member of the Review Committees will have or have had a national competitive research award. Grants will be scored in a manner similar to an NIH grant review committee where 100 is the best possible score and 500 is the lowest score. Two reviewers will be assigned to each grant and all members of the appropriate review committee present for the review will have an opportunity to vote on each proposal. The Board will consider these reviews and scores in making all final award decisions.

**Submission Address:** Grant applications should be submitted to Mark S. Kindy, PhD, Associate Scientific Director, South Carolina Spinal Cord Injury Research Fund, c/o Fund Administrator, Office of the President, Medical University of South Carolina, 171 Ashley Avenue, Suite 200-A, PO Box 250001, Charleston, SC 29425.

**Application Format:** The proposal must not exceed 12 pages in length, including the biosketch of the Principal Investigator. Pilot proposals should not exceed 5 pages. Proposals not adhering to page limitation may be refused. The format is similar to that of a National Institutes of Health (NIH) research proposal. Specific elements that should be included are:

I. Face page (name, position, department, proposal title, abstract)
II. Response to previous critique (only for renewal applications or resubmission of a previously unfunded proposal – maximum of 1 extra page)
III. Specific aims
IV. Value to the State of South Carolina (benefit to the people of the State and/or plans for obtaining extramural funding and/or compatibility with Fund’s primary objectives and initial priorities. This section is particularly important to those applying for set aside funds for a project that specifically addresses the health care needs of individuals with SCI in South Carolina.)
V. Background and rationale (Career Development applications should focus on their rationale on how the proposed activities will facilitate the applicant’s research career development and how the award will assist the applicant in successfully competing for a federally funded career development award. Applicants should clearly specify which award(s) for which they intend on submitting an application).
VI. Methods
VII. Evaluation strategy (with measurable goals)
VIII. References
IX. Detailed Budget (with narrative justification)
X. Biosketch (abridged NIH format, additional biosketches for each co-investigator should be included, adjusting page limit to accommodate more than one)

Please submit the original and six copies.
Review Criteria: Proposals will be reviewed by the Review Committees according to the following criteria:

1. Originality and significance of the hypothesis or product.
2. Feasibility and adequacy of the proposed research or product.
3. Qualifications and experience of the Principal Investigator and other key personnel. Special consideration will be given to new faculty and individuals less familiar with the extramural funding process. Career Development Awards will be reviewed based on the quality and clarity of the overall career development plan and how the current award will enhance the qualifications of the investigator.
4. Likelihood of the project ultimately receiving extramural support and/or benefiting the people of the State of South Carolina.
5. Availability of adequate facilities to conduct the proposed project.
6. Appropriateness of the budget.
7. Relevance to the Fund’s primary objectives and initial priorities as presented in the Background section of this RFP.

Awarding of Funds: Projects will be awarded by grant or contract based upon applicable South Carolina policies, procedures, and laws concerning the expenditure of State funds.

For Questions or Additional Information: Potential applicants should contact Dr. James Krause, Scientific Director or Dr. Mark S. Kindy, Associate Director, South Carolina Spinal Cord Injury Research Fund. Procedural and basic science questions should be addressed to Dr. Kindy. Questions regarding applied or clinical research, the set aside funds for special needs of people with SCI in South Carolina, career development awards, or consumer education should be addressed to Dr. Krause.

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