



South Carolina Spinal Cord Injury Research Fund

2005/2006

Annual Report



Members of Fund Board and Staff meet with Fund appointing official, Governor Mark Sanford, for a progress report. (L to R), The Honorable Mark Sanford, Dr. Brian Cuddy, Dr. Jim Krause, Walker Coleman, and Dr. Danny Westercam.



Discussion with the Governor and staff, including Mr. Scott English.

State of South Carolina

Spinal Cord Injury Research Fund Board

"Dum Spiro Spero - While I breathe I Hope"

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Scientific Director

Mark S. Kindy, PhD
Associate Scientific Director

Medical University of South Carolina
Office of the President
P.O. Box 250001
Charleston, SC 29425

September 2006

Dear Friends and Supporters;

Fiscal Year 05/06 was one of continued accomplishment along with a few more firsts for the South Carolina Spinal Cord Injury Research Fund. On behalf of the Fund Board and staff I am pleased and proud to present this fifth published Annual Report.

The year started with awards made to seven Round 04 projects; however, an additional mid-year review cycle made possible five more awards. These included a major commitment to help build state research infrastructure through a new Center for Spinal Cord Research. The year ended just as strong with approval of four Round 05 projects after finalizing priorities, issuing a request for proposals (RFP), and conducting full scientific review. A reissued RFP for a rehabilitation study initiative also resulted in an award at year's end that eventually should prove instrumental in plans and activities required to meet the serious additional need for such services throughout our state. A third RFP was issued to offer potential bridge-funding support for established scientists who have a temporary lapse in support as they work to secure larger Federal Grants for spinal cord research. Work also began to set parameters for an RFP to establish an endowed chair in spinal cord research that will be issued next year and will strengthen our capability to perform clinical research and SCI rehabilitation within the state of South Carolina.

To date fifty-eight projects have been received and reviewed, with forty-one approved and recently completed or currently in operation. The \$ 4 million mark in DUI collections was being approached as the year ended. We are particularly pleased with the additional research activity that the projects have achieved. Section III of this Report provides extensive lists of additional grants, publications, and lectures made possible directly or indirectly by our Fund's carefully managed investments. Disseminating the results to professionals and consumers with SCI is essential so that the information can be used to improve treatment and care. We expect this productivity to continue at ever increasing rates.

Our Board and staff look forward to even more achievement over the upcoming months including a Round 06 of projects, a second Scientific Conference, and awarding the endowed chair. Special thanks is due to all who have been so interested and supportive—particularly the South Carolina Legislature, the Governor, the Medical University of South Carolina, Clemson University, and the University of South Carolina.

Sincerely,

Brian G. Cuddy, M.D., Board Chair



The Fund Board and Staff with guest Representative Chip Limehouse.
 (L to R) Seated: Mr. John Stevens, Dr. James Krause, The Honorable Chip Limehouse, Dr. Brian Cuddy.
 Standing: Mr. Walker Coleman, Dr. Phanor Perot, Dr. David Shallcross, and Dr. Mark Kindy.



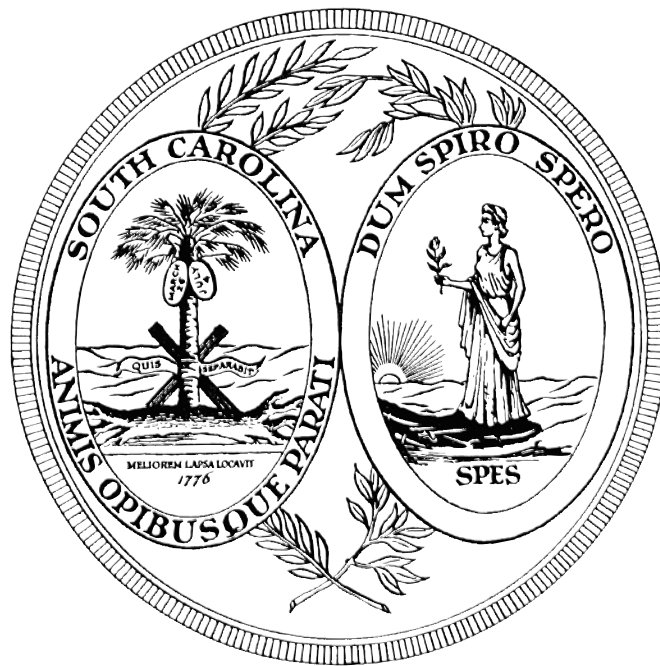
Dr. Sunil Patel presents a proposal to the Fund Board and Staff.
 (L to R) Perot, Coleman, Stevens, Patel, Krause, and Cuddy.



Board Chair Cuddy welcomes Representative Chip Limehouse who sponsored the legislation creating the Fund in 2000.

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PART I

OVERVIEW: {01/01/01 through 06/30/06}

PURPOSE/CHARGE: Promoting research to develop better understanding of causes and effective treatment strategies for paralysis, sensory loss, and other consequences of spinal cord injury and disease.

LEGISLATIVE BACKGROUND: The South Carolina Spinal Cord Injury Research Fund (SSCIRF) was established in 2000 by amendment (Bill S54 44-38-510) to Section 2, Chapter 38, Title 44 of the 1976 S.C. Code as signed by the Governor on July 20, 2000.

GOVERNANCE: The Fund is governed by a 7 member Board appointed by the Governor upon recommendation of the President of the Medical University of South Carolina. It is comprised of two medical doctors from MUSC; two medical doctors at large specializing or significantly engaged in the treatment of spinal cord injury; two members who have a spinal cord injury or a family member; and one at large medical doctor who is a member of the South Carolina. See **Appendix 1** for detailed Board Member Information.

ADMINISTRATION: The Fund is administered by the Medical University of South Carolina through a part-time Administrator (J. Walker Coleman, MBA) assigned from the Office of the President and two part-time Scientific Directors (Dr. James Krause and Dr. Mark Kindy) who oversee all aspects of research development and implementation including setting goals, developing project invitations to meet goals, and scientific review and recommendation to the Board of all such projects received.

AMOUNT COLLECTED: The \$ 100 per DUI surcharges started on January 1, 2001. As of July 2006, the Fund had raised almost \$ 4 Million. The average monthly amount collected over the first 66 months has been right at \$ 60,000. **Appendix 2** presents cumulative DUI collection figures.

PRIMARY OBJECTIVES:

- Advance knowledge of SCI injury repair and regeneration within the SC research community by encouraging physicians and scientists to apply expertise to SCI field.
- Foster collaborative interdisciplinary approaches to SCI research among SC hospitals, rehabilitative centers, research universities, and interested organizations.
- Nurture next generation of SCI researchers through support of young scientists and post-doctoral fellows.
- 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.
- 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.

INITIAL FUNDING PRIORITIES:

- Translating basic and pre-clinical findings into clinical applications.
- Studying strategies to promote growth and survival at cellular level.
- Assuring efficacy of drugs or other interventions to prevent or reduce secondary injury and to provide insight to the mechanisms causing this progressive damage.
- Exploring the role of tissue transplantation in restoration of spinal cord function.
- Studying other disorders of spinal cord or brain that are reasonably expected to produce new insight into the mechanism or treatment of dysfunction following spinal cord injury.
- Defining anatomical, pathophysiological, inflammatory, and neurochemical characteristics of spinal cord injury or disease in well defined animal models.
- Elucidating biological and physical mechanisms that improve functions compromised by spinal cord injury, including dysfunction, chronic pain, and uncontrolled spasticity. Developing strategies to prevent or treat secondary complications from injury or disease of the spinal cord.
- Developing innovative rehabilitative strategies, services, or priorities to promote recovery and function following spinal cord injury.
- 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.
- Developing education programs for the injured and their families.

REQUESTS FOR PROPOSALS (RFP): There have been five regular rounds completed with two special initiatives under active review and a new round (Round 06) being developed for a 12/15/06 target issue date:

- ROUND 01—RFP issued 12/15/01 with 3/15/02 deadline. Received 12 proposals and awarded 8.
- ROUND 02—RFP issued 02/01/03 with 5/13/03 deadline. Received 12 proposals and awarded 10. Added were five Funding Mechanisms: Primary Research, Care Access/Delivery, Career Development, NIH Grand Seed, and Research Result Dissemination.
- ROUND 02A (Recruitment)—RFP issued 12/15/03 and remains open for special faculty recruitment initiative. To date no proposals have been received.
- ROUND 02B (Rehabilitation)—RFP issued 02/01/04 for special contract initiative to complete an Assessment of Need and Feasibility of Enhancing Rehabilitation Services in the State of South Carolina. Received 3 bids, but the Board subsequently required additional clarifications and reissued on 12/15/05 with 2 of the original bidders resubmitting and one awarded Funds.
- ROUND 03—RFP issued 12/15/03 with 03/15/04 deadline. Received 9 regular proposals plus 1 unsolicited special request and awarded 7.
- ROUND 04—RFP issued 12/15/04 with 03/15/05 deadline. Received 9 plus 1 supplemental proposals. Awarded 3 full, and 4 more as initial seed awards.
- ROUND 04 OFF-CYCLE—resulting from Scientific Director recommendations, 6 mid-cycle revised seeds and/or new proposals were received and 5 were awarded.
- ROUND 05—RFP issued 12/15/05 with 03/15/06 deadline. Received 6 with 4 approved (2 contingent upon meeting special conditions).
- ROUND 05A (Bridge Funding)—RFC issued in 05/06 and is open. To date no proposals have been received.
- ROUND 06—RFP under draft with updated priorities for a targeted 12/15/06 issue date.

ROUND 01 PROJECTS: A first round of eight (8) research projects were approved and awarded funds on 07/01/02 for periods ranging from 12 to 18 months, several subsequently receiving no-cost extensions as noted below.

- **SCIRF0202—Gene Expression Profiling of CNS Regions Implicated in a Mouse Model of Spinal Cord Injury** *{\$ 85,466 for 18 months}*
P.I.: Jacqueline F. McGinty, PhD, Professor, Physiology and Neuroscience
Medical University of South Carolina
- **SCIRF 0302—Statewide Outcome Assessment for Spinal Cord Injury (SOASCI): Assessing the Implementation and Effectiveness of Methylprednisolone Protocol and Other Outcomes of Spinal Cord Injury In South Carolina** *{\$ 123,349 for 12 months, with subsequent 12 month no-cost extension}*
P.I.: Stephen J. Haines, MD, Professor and Chair, Department of Neurological Surgery and Anbesaw W. Selassie, DrPH., Assistant Professor, Department of Biometry and Epidemiology., Medical University of South Carolina
- **SCIRF 0602—Assessment and Treatment of Musculoskeletal Pain in the Shoulder Girdle in SCI Through Surface-Recorded EMG and EMG Biofeedback** *{\$ 91,990 for 18 months, with subsequent 6 month no-cost extension }*
P.I.: Susan J. Middaugh, PhD, PT, Professor, Department of Anesthesia and Perioperative Medicine, Medical University of South Carolina
- **SCIRF 0802—Spinal Modulation of the Nociceptive Pressor Reflex** *{\$ 87,978 for 18 months, with subsequent 6 month no-cost extension }*
P.I.: Britt Wilson, PhD., Associate Professor, Pharmacology and Physiology, University of South Carolina School of Medicine.
- **SCIRF 1102—An In Vitro Model of the Reflex Arc as Applied to Spinal Cord Injury** *{\$ 100,252 for 18 months}*
P.I.: James J. Hickman, PhD., Hunter Endowed Chair of Biomaterials
Department of Bioengineering, Clemson University
- **SCIRF 1202—Taking Charge of Your Life”—Statewide Conference for People With Spinal Core Injuries** *{\$ 29,476 for 12 months}*
P.I.: Kermit L. Short, Executive Director, SC Spinal Cord Injury Association
- **SCIRF 1302—Recruitment Assistance for James S. Krause, PhD as Chair of the Department of Rehabilitative Sciences at MUSC and Scientific Director of the SCI Research Fund** *{\$ 125,000 for 12 months, with 4 subsequent no-cost extensions adding 48 months}*
P.I.: James S. Krause, PhD., (& Danielle N. Ripich, PhD.), Chair, Department of Rehabilitative Sciences, College of Health Professions, Medical University of South Carolina
- **SCIRF 1402—Recruitment Assistance for Mark S. Kindy, PhD as The Admiral Pihl Endowed Chair of Neuroscience at MUSC and Associate Scientific Director of the SCI Research Fund** *{\$ 75,000 for 12 months, with 3 subsequent no-cost extensions adding 36 months}*
P.I.: Mark S. Kindy, PhD., (& Peter Kalivas, PhD.), Admiral Pihl Endowed Chair of Neuroscience, Department of Physiology/Neuroscience, Medical University of South Carolina

ROUND 02 PROJECTS: A second round of ten (10) projects was approved on July 11, 2003 for periods ranging from 12 to 18 months and awarded funds as of September 1, 2003 or shortly thereafter.

- **SCIRF 0103—“Taking Charge of Your Life”—Continuing Education for People With Spinal Cord Injury** *{\$65,000 for 12 months}*
P. I.: Kermit Short, Executive Director, SC Spinal Cord Injury Association
- **SCIRF 0303—Development of a Laser Cell Micropatterning System for In Vitro Investigation of Adult Stem Cell Spinal Cord Injury Treatment** *{\$149,890 for 18 months, with subsequent 18 month extension and \$ 23,000 supplement—see 0303S under Round 04 following}*
P. I.: Bruce Z. Gao, PhD., Assistant Professor, Department of Bioengineering, Clemson University
- **SCIRF 0403—In Vitro System to Determine Factors Promote Survival and Regeneration of Principal Neurons of the Spinal Cord** *{\$ 74,892 for 18 months}*
P. I.: Peter Molnar, PhD., Research Assistant Professor, Department of Bioengineering, Clemson University
- **SCIRF 0503—Determination of Occurrence and Causes of Death Among South Carolina Residents with Traumatic Spinal Cord Injury** *{\$ 145,000 for 18 months, with subsequent no-cost extension adding 21 months}*
P. I.: Elisabeth Pickelsimer, DA, Research Assistant Professor, Department of Biometry and Epidemiology/ Rehabilitative Sciences, Medical University of South Carolina
- **SCIRF 0603—The Prevalence of Upper Quarter Pain Among Persons with Long-term Spinal Cord Injury** *{\$ 75,000 for 18 months, with subsequent no-cost extension adding 12 month}*
P. I.: David Morrisette, PT, ATC, MTC, PhD., Associate Professor, Physical Therapy Education Program, Department of Rehabilitative Sciences, Medical University of South Carolina
- **SCIRF 0703—Frequency, Severity, ad Risk Factors for Falls and Fall-Related Injuries Sustained by Individuals with Incomplete Spinal Cord Injury** *{\$ 75,000 for 18 months, with subsequent no-cost extension adding 16 month}*
P. I.: Sandra S. Brotherton, PhD., Assistant Professor, Department of Rehabilitative Sciences, Medical University of South Carolina
- **SCIRF 0803—Estrogen Therapy for Spinal Cord Injury** *{\$ 137,592 for 18 months, with 2 subsequent no-cost extensions adding 24 months}*
P. I.: Swapan K. Ray, PhD., Assistant Professor, Department of Neurology, Medical University of South Carolina
- **SCIRF 0903—Therapeutic Use of Minocycline for Spinal Cord Injury** *{\$ 24,988 for 12 months}*
P. I.: Narayan R. Bhat, PhD., Professor, Department of Neurology, Medical University of South Carolina
- **SCIRF 1003—Project M.I.L.E. (Mobile Inclusion Life-Training Evaluation)** *{\$ 3,000 seed funds for additional conceptual development, never subsequently expended}*
P. I.: Michael E Godkin, Director, Disabilities Resource Center, North Charleston
- **SCIRF 1103—Anti-inflammatory Approaches for Spinal Cord Injury** *{\$ 75,000 for 18 months}*
P. I.: Ernest Barbosa, MD, Associate Professor, Departments of Neurology and Pediatrics, Medical University of South Carolina

ROUND 03 PROJECTS: A third round of seven (7) projects were approved on June 25, 2004 for periods ranging from 12 to 24 months and awarded funds as of July 1, 2004 or shortly thereafter:

- **SCIRF 0104—Biomaterial-based Gene Delivery for Spinal Regeneration** *{\$ 150,000 for 24 Months, with 2 subsequent no-cost extensions adding 18 months}*
P. I: C. Kenneth Webb, Ph.D., Assistant Professor, Department of Bioengineering, Clemson University
- **SCIRF 0204—2005 Statewide Conference for People with Spinal Cord Injury in South Carolina; And Beyond the Walls—Education Outside of Rehabilitation** *{\$ 60,000 for 12 Months}*
P. I: Kermit L. Short, Executive Director, South Carolina Spinal Cord Injury Association
- **SCIRF 0304—Home Physical Activity Program for the Promotion of Health and Wellness in Individuals with Spinal Cord Injury** *{\$ 150,000 for 24 Months, with subsequent no-cost extension adding 12 months}*
P. I: Holly H. Wise, PT, Ph.D., Assistant Professor, Department of Rehabilitative Sciences, Medical University of South Carolina
- **SCIRF 0604—Patterns of Care for Spinal Cord Injury: South Carolina and the Model Systems** *{\$ 61,632 for 12 Months, with subsequent no-cost extension adding 6 months}*
P.I.: David E. Murday, Ph.D., Assistant Director, Center for Health Services Policy & Research Arnold School of Public Health, University of South Carolina
- **SCIRF 0704—Telemedicine: A Lifeline for Continuity of Care for Spinal Cord Injury** *{\$ 3,000 seed funds for additional conceptual development, never subsequently expended}*
P.I.: Tracie L. Mertz, Ph.D., Clinical Psychologist, Neuropsychologist, Roger C. Peace Rehab Hospital, Greenville Hospital System
- **SCIRF 0804—Dissemination of Information Regarding Evidenced-Based Practices to Enhance Independent Lifestyles for People with Spinal Cord Injuries** *{\$ 70,000 for 24 Months , with subsequent no-cost extension adding 12 months}*
P.I.: Jill Monger, P.T., MHS; Michael Godkin, Executive Director DisAbility Resource Center of Charleston
- **SCIRF 1004—Bridge Funding Support for the S. C. Statewide Traumatic Spinal Cord Injury Surveillance and Registry System** *{\$ 102,000 for 24 Months, with subsequent no-cost extension adding 12 months}*
P.I.: Anbesaw W. Selassie, DrPH., Assistant Professor, Department of Biometry and Epidemiology/Rehab. Sci., Medical University of South Carolina

ROUND 04 PROJECTS: A fourth round of three (3) fully funded and four (4) initial seed projects were approved July 01, 2005 and awarded funds on 07/01/05 and 09/01/05 for periods ranging from 3.5 to 24 months. It was anticipated that several of the seed projects could be fully funded mid-year in December after Fund Board review of revised proposals responding to concerns/suggestions arising during the initial scientific review. In addition, an earlier Round 02 project received a supplemental award. Following are the awards made based on Board decisions at its July 1, 2005 meeting:

- **SCIRF 0105A—(SEED REDEVELOPMENT) Repetitive Movement Therapy as an Intervention for Individuals with Incomplete Spinal Cord Injury {\$ 5,000 for 3.5 Months}**
P:I: Stacy L. Fritz, Ph.D., PT, Clinical Assistant Professor, Department of Exercise Science, Physical Therapy Program, University of South Carolina
- **SCIRF 0205—Modulation of Inflammatory Response and Secondary Injury {\$ 25,000 for 12 Months, with subsequent no-cost extension adding 12 months}**
P:I: Stephen Tomlinson Ph.D., Professor, Department of Microbiology and Immunology Medical University of South Carolina
- **SCIRF 0505A—(SEED INITIATION AND REDEVELOPMENT) Engineering Regeneration Through Bridge/Host Distal Interference {\$ 25,000 for 6 Months , with subsequent no-cost extension adding 6 months}**
P:I: Andrew T. Metters, Ph.D., Assistant Professor, Department of Chemical and Biomolecular Engineering, Clemson University
- **SCIRF 0605—Tissue Engineering for Spinal Cord Regeneration {\$ 100,000 for 24 Months}**
P:I: Xuejun Wen, M.D., Ph.D., Assistant Professor, Clemson-Medical University of South Carolina Bioengineering Program
- **SCIRF 0705—Assessing Disparities in Patterns of Health Care After Traumatic Spinal Cord Injury {\$ 119,598 for 24 Months}**
P:I: Elisabeth Pickelsimer, DA, Research Assistant Professor, Department of Biometry and Epidemiology/ Rehabilitative Sciences, Medical University of South Carolina
- **SCIRF 0805—(SEED REDEVELOPMENT) Dynamic Postural Patterns during Task Performance in Individuals with Paraplegia {\$ 5,000 for 3.5 Months, with subsequent no-cost extension adding 12 months}**
P:I: Hon K. Yuen, Associate Professor, Department of Rehabilitative Sciences
- **SCIRF 1005—(SEED DEVELOPMENT) South Carolina Spinal Cord Injury Association Cooperative Study {\$ 5,000 for 9 Months}**
P:I: Richard F. Bridges, Executive Director, South Carolina Spinal Cord Injury Association
- **SCIRF 0303S—(SUPPLEMENTAL AWARD) Development of a Laser Cell Micropatterning System for In Vitro Investigation of Adult Stem Cell Spinal Cord Injury Treatment {\$ 23,000 added to the original \$149,890 for an extended period of 30 months}**
P. I.: Bruce Z. Gao, PhD., Assistant Professor, Department of Bioengineering Clemson University

ROUND 04 OFF-CYCLE PROJECTS: In followup to decisions made at the the prior July Board meeting, a mid-cycle additional review resulted in approval by the Board on 01/27/06 of three mid-cycle revised seed projects as well as two new unsolicited proposals responding to Fund priorities. Projects were awarded on 02/01/06 for periods ranging from 12 to 36 months.

- **SCIRF 0105B—Intensive Mobility Training as an Intervention for Individuals with Incomplete Spinal Cord Injury** *{ \$ 119,829 for 24 Months }*
P:I: Stacy L. Fritz, Ph.D., PT, Clinical Assistant Professor, Physical Therapy Program, University of South Carolina
- **SCIRF 0505B—Engineering Regeneration Through Bridge/Host Distal Interference** *{ \$ 120,000 for 24 Months }*
P:I: Andrew T. Metters, Ph.D., Assistant Professor, Department of Chemical and Biomolecular Engineering, Clemson University
- **SCIRF 1005B—Contract to Disseminate Results to Consumers** *{ \$ 34,602 for 12 Months }*
P:I: Richard F. Bridges, Executive Director, South Carolina Spinal Cord Injury Association
- **SCIRF 1105—A Proposal to Build SCI Research Infrastructure via the Development of a Center of Interdisciplinary Spinal Cord Injury Research** *{ \$ 499,309 for 36 Months }*
P:I: James Krause, Ph.D, Scientific Director SCIRF, Mark Kindy, PhD, Associate Scientific Director SCIRF, Medical University of South Carolina
- **SCIRF 1205—Bridge Funding for Role of Proteinase in Spinal Cord Injury** *{ \$ 50,000 for 12 Months }*
P:I: Naren L. Banik, Ph.D., Professor, Department of Neurosciences, Medical University of South Carolina

ROUND 02B & 05 PROJECTS: On 06/09/06 the Board approved the final revision of an earlier Round 02 contract proposal as well as four (4) new proposals submitted in Round 05. These were awarded funds on 07/01/06 or shortly thereafter for periods ranging from 12 to 24 months.

- **SCIRF 0102B(REVISED 2005)—The Feasibility of Enhanced Primary Rehabilitation Services in SC** *{ \$ 99,209 for 12 Months }*
P:I: David E. Murday, Ph.D., Interim Director, Center for Health Services Policy & Research, Arnold School of Public Health, University of South Carolina
- **SCIRF 0206—Nanoscale Biomedical Devices for Treatment of Secondary Spinal Cord Injury** *{ \$ 100,000 for 24 Months }*
P:I: Alexey Vertegel Ph.D., Assistant Professor, Department of Bioengineering, Clemson University
- **SCIRF 0406—Modulation of Astroglisis by Statins for Spinal Cord Therapy** *{ \$ 100,000 for 24 Months }*
P:I: Mushfiquddin Khan, Ph.D., Research Assistant Professor, Department of Pediatrics, Medical University of South Carolina
- **SCIRF 0506—Therapeutic Efficacy of Statin in Neuroprotection in Spinal Cord Injury** *{ \$ 80,000 for 24 Months }*
P:I: Shailendra Giri, Ph.D., Research Assistant Professor, Department of Pediatrics, Medical University of South Carolina
- **SCIRF 0606—Household Composition, Care Giving Intensity and Labor Market Participation of Individuals with Spinal Cord Injury** *{ \$ 79,955 for 24 Months }*
P:I: Clara E. Dismuke, Ph.D., Assistant Professor, Department of Health Administration and Policy, Medical University of South Carolina.

SUMMARY PROGRESS: Between July 1, 2002 and June 30, 2006, the Fund obligated a total of \$ 4,205,216 (\$ 134,853 in Administration/Other; \$ 246,358 in Research Development; and \$ 3,824,005 in Funded Projects). These obligations covered Administration and Scientific Development through 06/30/06, and will cover all of the projects until they end, some as late as on 01/31/09. Actual expenditures for the period totaled \$ 2,264,909. The Fund is expected to continue collections at a rate of approximately \$ 60,000 per month as well as recoup additional unexpended funds at year-end from various budget components.

So far there have been fourteen (14) Basic Science projects awarded, eleven (11) Applied Science, two (2) Interdisciplinary, six (6) Education, two(2) Capacity, two (2) Special Initiatives, two (2) Career Development, and one (1) Bridge Funding. The Medical University of South Carolina has competitively secured twenty-two grants totaling \$ 2,344,248; Clemson has eight (8) for \$ 842,034; University of South Carolina with five (5) at \$ 194,078; the South Carolina Spinal Cord Injury Association with five (5) for \$ 194,078; and the Disabilities Resource Center of Charleston received one (1) totaling \$ 70,000.

Two of the education projects held very successful statewide conferences on spinal cord injury and continuing education programs for people with SCI (May of 2003 and 2005). In addition, the Fund and its Scientific Staff held the first Annual Scientific Conference on the MUSC campus May 13, 2005 which included presentations about current and future state of spinal cord research from national leaders as well as findings/accomplishments by Principle Investigators of ten (10) of the completed Fund projects. The Fund also organized, financed, and co-sponsored (with the South Carolina Spinal Cord Injury Association, the South Carolina Brain Injury Alliance, and the South Carolina Brain Injury Leadership Council) the "South Carolina Rehabilitation Meeting" of statewide leadership to discuss parameters of an acute care rehabilitation services need/feasibility study. This resulted in RFP 02B as summarized above. Plans are underway for a second Scientific Conference in the Spring of 2007 with a statewide provider education offering being worked on for the following Fall.

FUTURE GOALS: Fund goals have been and will continue to be driven by the needs of people with SCI in the state of South Carolina. Following are main ongoing focus areas:

- Review/explore opportunities to support a broad range of research projects that will address the needs of people with SCI in the state, similar to those that have been done previously with respect to access to care, life expectancy, and needs for rehabilitation.
- Continue to fund education for both professionals and consumers. This is fundamental to the research mission since it disseminates important findings directly to those stakeholders that will use them -- -- consumers for whom it may directly impact decisions of regarding care, and professionals who will use the information in the provision of care.
- Give particular priority to continuing great strides already made in affecting the environment, both in terms of people and the physical environment, such as to increase the resources for people with SCI. Primary examples include funds allocated for an endowed chair that will bring a specialist in SCI and bring both research and clinical skills to the state; evaluation of rehabilitation needs and funding of programs that may serve as a basis for both research and clinical care; skill development through career development grants that bring establish investigators and clinicians from other areas into the area of SCI; and basic, applied, and interdisciplinary research that will position the state of South Carolina with the National Institute of Health (NIH). This will serve the multiple purposes of enhancing competitiveness for research grant funds, increasing the amount of federal funds coming back to the state of South Carolina for SCI research, and ensuring that qualified clinicians are available in the state to deliver state-of-the-art care based on evidence from scientifically valid research.

PART II

HIGHLIGHTS OF FY 05-06 {07/01/05--06/30/06}

CHRONOLOGICAL HIGHLIGHTS OF FY 05-06: The year witnessed a steady progression of activity, the highlights of which follow:

- **July/August:** The fourth Round of three (3) seed and four (4) regular projects awarded funds for periods ranging from 3.5 to 24 months.
- **October:** Board Chair Cuddy made Fund presentations at the Annual Meeting of the South Carolina Spinal Society.
- **December:** Board finalized and issued RFP 02B (Rehabilitation) and RFP 05 (see **Appendix 5**).
- **January:** The corrected S. C. Spinal Cord Injury Research Fund Board entry included in the “2006 South Carolina Legislative Manual” (pp. 548 & 549).
- **January:** The Board met and approved the Fund’s Annual Report 04/05, a strengthened Scientific Review Process for projects, a Round 05 RFP, completed the revised RFP 02B for issuance, provided scientific review to seven (7) special mid-cycle Round 04 seed and new projects, and approved five(5) of these for immediate funding.
- **February/March:** Award funds to the five (5) Round 04 mid-cycle projects.
- **March:** Two (2) Round 02B and six (6) Round 05 proposals were received and forwarded for scientific review.
- **April:** Special Web announcement of open RFC 05A, Bridge Funding (see **Appendix 5**).
- **June:** The Board met and approved one (1) RFP 02B proposal and four (4) Round 05 projects for funding, set parameters for a new special Endowed Chair RFP, set priorities and timetable for RFP 06, 2nd finalized and discussed possible contractual initiatives for a provider oriented educational conference.

BUDGET DISCUSSION: FY 05-06 witnessed the fourth full year of research project activity with final budget and actual expenditures as follows:

<u>PROGRAM</u>	<u>BUDGET</u>	<u>EXPENDITURES</u>
I. ADMINISTRATION CORE		
PERSONN	29,432.00	29,432.52
OTHER	<u>5,818.00</u>	<u>5,549.14</u>
TOTALS	35,250.00	34,981.66
II. RESEARCH DEVELOPMENT CORE		
PERSONN	47,208.00	36,242.71
OTHER	<u>29,250.00</u>	<u>4,590.48</u>
TOTALS	76,458.00	40,833.19
III. ONGOING ROUND 01 PROJECTS (EXTENSION)		
SCIRF 1302 KRAUSE	97,263.00	52,907.61
SCIRF 1402 KINDY	<u>150.00</u>	<u>-</u>
TOTALS	97,413.00	52,907.61
IV. ONGOING ROUND 02 PROJECTS (EXTENSION)		
SCIRF 0303 GAO	16,138.00	38,204.33
SCIRF 0503 PICKELSIMER	51,347.00	47,753.23
SCIRF 0603 MORRISETTE	19,119.00	17,942.60
SCIRF 0703 BROTHERTON	14,868.00	16,303.33
SCIRF 0803 RAY	<u>66,193.00</u>	<u>36,400.75</u>
TOTALS	167,665.00	156,604.24
V. ONGOING ROUND 02 PROJECT (SUPPLEMENTAL)		
SCIRF 0303S GAO	22,300.00	-
VI. ONGOING ROUND 03 PROJECTS (FINAL YEAR)		
SCIRF 0104 WEBB	102,049.00	64,023.06
SCIRF 0304 WISE	104,720.00	72,147.32
SCIRF 0604 MURDAY	23,105.00	14,092.07
SCIRF 0804 MONGER/GODK	67,904.00	6,205.32
SCIRF 1004 SELASSIE	<u>111,886.00</u>	<u>34,777.35</u>
TOTALS	409,664.00	191,245.12
VII. SET ASIDE FOR ROUND 02B PROJECT	100,000.00	-
VIII. AWARDED ROUND 04 PROJECTS		
SCIRF 0105A FRITZ	5,000.00	5,000.00
SCIRF 0205 TOMLINSON	25,000.00	3,989.63
SCIRF 0505A METTERS	25,000.00	25,000.00
SCIRF 0605 WEN	100,000.00	27,764.82
SCIRF 0705 PICKELSIMER	119,598.00	3,755.29
SCIRF 0805A YUEN	5,000.00	3,357.03
SCIRF 1005A BRIDGES	<u>5,000.00</u>	<u>5,000.00</u>
TOTALS	284,598.00	73,866.77

IX. AWARDED OFF CYCLE ROUND 04 PROJECTS

SCIRF 0105B	FRITZ	119,829.00	23,154.02
SCIRF 0505B	METTERS	120,000.00	17,372.39
SCIRF 1005B	BRIDGES	34,602.00	29,176.00
SCIRF 1105	KRAUSE/KINDY	499,309.00	8,503.65
SCIRF 1205	BANIK	<u>50,000.00</u>	<u>6,913.62</u>
TOTALS		823,740.00	85,119.68
TOTAL BUDGET/EXPENDITURES 05/06		2,017,088.00	635,558.27

A more detailed 05-06 budget is presented in **Appendix 3**. While it might appear from the above actual expenditures that over two thirds of the budget was saved, it should be remembered that the \$ 2 Million dollar budget included obligations for the full project periods of all projects awarded--some for as long as 24 months, and one for 36 months. These funds will continue to be expended until the projects actually end as can be noted in a review of the following draft budget approved for FY 06-07. As mentioned in previous Reports, Program Administration saves significant funds each year through the assistance volunteered by several offices of MUSC including the Office of the President, Research Office (particularly Mr. Darren McCants), Grants Accounting (Mr. Mike Bull), the MUSC Medical Center Marketing Department (Ms. Willette Smith) that coordinated the Annual Report statewide mailings, and the College of Health Professions (Ms. Ruth Wyse) which designed and maintains the Web page

The following first draft budget was approved for FY 06-07. It includes consideration of actual ongoing project expenditures through June 30 as well as estimated expenditures of those operational throughout the year. Note that it includes a \$ 500,000 set aside for the Endowed Chair which should be voted on at the January 2007 Board meeting and, if approved, would require an immediate commitment of the whole \$ 500,000 total.

~FISCAL YEAR 06-07 BUDGET, SCI RESEARCH FUND~
{ 1st Draft }

I. PROGRAM ADMINISTRATION CORE	\$ 37,097
PERSONNEL (Incl. F. B. at 28.6%)	29,432
Fund Administrator (20%)	
BOARD MEETING TRAVEL/MEALS/REFRESHMENTS	1,615
Avg. 4 Board 1500 mi. two times year @ \$.345 mi= \$ 1035	
Meals at official meetings and while traveling (\$20x4x2)=\$160	
Meals/Refreshments for Board Meetings (\$21x10peoplex2)=\$420	
OTHER	6,050
Printing stationery/envelopes (next run of 2,500)= \$ 500	
Printing letters, RFPs, Guidelines, insert card, report= \$250	
Printing 05/06 Annual Report=\$ 1,500	
Mail processing (Target Mail)/Postage of any major mailouts=\$200	
Other mailing throughout the year (RFPs, reports)= \$ 100	
Meeting support materials (visuals/photos)= \$ 500	
Photocopy and basic office supplies=\$ 2,000	
Contingency for unexpected overruns= \$1,000	
II. RESEARCH DEVELOPMENT CORE	\$ 76,458
PERSONNEL (Incl. F. B. at 28.6%)	47,208
Scientific Director (15%) and Assoc. Dir (10%)	
ANNUAL CONFERENCE SCIENTIFIC SESSIONS	12,000
TRAVEL (Fund Promotion)	10,000
REVIEW PROCESS	
Stipends(\$1,000), Travel(\$2,000), Meetings(\$3,000), Mail(\$500), Other (\$704)	7,250

III. ONGOING ROUND 01 PROJECTS (Extension)			\$ 44,356
SCIRF 1302	Krause	44,356	
IV. ONGOING ROUND 02 PROJECTS (Extension)			\$ 34,007
SCIRF 0503	Pickelsemer	3,622	
SCIRF 0803	Ray	30,385	
V. ONGOING ROUND 03 PROJECTS (Extension)			\$ 206,406
SCIRF 0104	Webb	38,026	
SCIRF 0304	Wise	35,572	
SCIRF 0804	Monger/Godk	61,699	
SCIRF 1004	Selassie	71,109	
VI. ONGOING ROUND 04 PROJECTS			\$ 607,143
SCIRF 0205	Tomlinson	21,010	
SCIRF 0605	Wen	72,235	
SCIRF 0705	Pickelsimer	115,852	
SCIRF 0805A	Yuen	1,643	
SCIRF 0105B	Fritz	96,697	
SCIRF 0505B	Metters	102,627	
SCIRF 1005B	Bridges	5,426	
SCIRF 1105	Krause	148,578	
SCIRF 1205	Banik	43,075	
VII. AWARDED ROUND 02B PROJECT			\$ 99,206
SCIRF 0102B	Murday	99,206	
VIII. AWARDED ROUND 05 PROJECTS			\$ 180,000
SCIRF 0206	Vertigel	50,000 (est. ½)	
SCIRF 0406	Khan	50,000 (est. ½)	
SCIRF 0506	Giri	40,000 (est. ½)	
SCIRF 0606	Dismuke	40,000 (est. ½)	
IX. SET ASIDE FOR ENDOWED CHAIR			\$ 500,000
TOTAL BUDGET ESTIMATE 06/07			<u>\$1,784,673</u>

Also presented in **Appendix 3** is the ongoing Fund “Cash Analysis” through June 30, 2006 with projections through June 30, 2007 based on the above draft budget. The bottom line in this Analysis is helpful to the Board in determining the amount of funds they will have to work safely with in the Round 06 projects which will be reviewed and voted on at the May 2007 Board meeting. It also shows Fund expenditures since it began.

PART III

RESEARCH ACCOMPLISHMENTS

(REPORT OF SCIENTIFIC DIRECTORS)

Following is a listing to date of accomplishments by those awarded grants from the South Carolina Spinal Cord Injury Research Fund that resulted directly or indirectly from the Fund support. The information is summarized in several sections including: (a) funded grants, (b) grant applications either pending or not funded, (c) publications, (d) manuscripts under review or in preparation, (e) presentations at conferences, and (f) dissemination to consumers. All information was provided by awardees, some of whom updated information through the end of the calendar year when this Annual Report was being completed. The outputs are primarily from projects which are either completed or near completion¹.

These accomplishments represent tangible outcomes from our funding, but not the only outcomes of interest or importance to people with spinal cord injury (SCI). Funded grants resulting from the seed monies we provide are very important because they bring additional funds into the state for SCI research. This increases the visibility of SCI research in the state, encourages investigators to focus on SCI rather than other conditions, and increases the likelihood that new discoveries will be quickly available for people with SCI in the state of South Carolina. Our grants also help to bring needed expertise into the state.

Publications and presentations at conferences are important because they convey new discoveries and new rehabilitation techniques to professionals both inside and outside the state. Enhancing the reputation of investigators within the state of South Carolina encourages other rehabilitation and health professionals to bring their expertise into the state and will begin helping to improve services at all levels.

Although not directly reflected in grants or publications, there are several other very important contributions of the SC Spinal Cord Injury Research Fund to the lives of people with SCI and their loved ones in our state. For instance, and as a result of several years of interest and planning activity, we recently funded research to investigate the feasibility of establishing adequate SCI rehabilitation throughout the state. This research will help to identify the most appropriate ways in which such rehabilitation could be delivered given the unique characteristics of the state, and will provide concrete information to legislators and opinion makers regarding the needs of people with SCI so they can most effectively respond. This planning has also helped to fuel a resurgence of interest in SCI rehabilitation in the low country, particularly at Medical University of South Carolina where there are concrete plans to redevelop inpatient rehabilitation—a commitment heavily fueled by the promise of spinal cord research and clinical trials.

Our research has also been used to validate the importance of Medicaid waivers for people with SCI in South Carolina. We have also committed to funding an endowed chair at one of the universities within the state, and this money would be used to attract sufficient matching funds to recruit an outstanding clinician-researcher who will commit her/his time to SCI rehabilitation and research. Although this individual must serve on the faculty of a state research university, a significant component of her/his mission will be to develop a collaborative network

¹ Information on accomplishments has been submitted directly by grant recipients who are responsible for the accuracy of the information. There has been no independent verification as to the accuracy of the information. References are made in either medical or psychological format, depending on author/recipient preference.

of professionals across the state. Lastly, some funds have been allocated for special technology, such as motion analysis, that will be used to identify unique problems of people with SCI, either during ambulation or through wheelchair propulsion.

This past year has witnessed a significant number of accomplishments due to the dedication of professionals directly and indirectly involved with the research fund, all of whom share the vision of and dedication to improved quality of life for people with SCI in the state of South Carolina

Grants Funded

Banik, N.L. (Principal Investigator), Ray, S.K. (co-Principal Investigator), The role of proteinase in spinal cord injury (RO1, NS-31622), NIH/NINDS, \$1,152,025, 2001-2006.

Banik, N.L. (Principal Investigator) Ray, S.K. (co-Principal Investigator), Attenuation of axonal damage and neuronal death in EAE (RO1, NS-56176), NIH/NINDS, \$1,825,000, 2006-2011.

Bhat, N (Principal Investigator) & Kindy, MS (Co-Principal Investigator) Neuroinflammation in cholesterol-induced AD pathogenesis, 1 RO1 NS-01, \$225,000, 7/1/06-11/30/11.

Gao, B.Z. (Co-Principal Investigator) Automatic Multiple Beam Laser Cell Micropatterning System, Clemson University Research Instrumentation Equipment Grant, \$50,000, 04/16/04-08/15/04.

Hickman, J. (Principal Investigator) & Kindy, M.S. (co-Principal Investigator) An In Vitro Model of Stem Cell Innervation of Myotubes 1 RO1 NS050452-01A1, \$499,580, 10/01/05-07/31/10.

Hickman, J. (Principal Investigator) & Kindy, M.S. (co-Principal Investigator) In Vitro Model of the Reflex Arc for Spinal Disorders, NIH, \$3,750,000 Total, 8/15/05-8/14/10.

Kindy, MS (Principal Investigator) Expectatory and Anticipatory Behavior in Natural and Artificial Intelligence Systems, SC EPSCoR, \$75,000, 4/1/05-7/31/06.

Kindy, MS. (Principal Investigator) Oxidized Lipoproteins in Neurodegeneration. NIH 1.152 M (Total) 08/15/01-8/31/07

Kindy MS. (Principal Investigator) The Role of Neprilysin in Alzheimer's Disease, NIH 1.05 M (Total) 04/01/02-11/30/07.

Kindy, MS (Principal Investigator) Neprilysin and Amyloid-beta-degradation in Alzheimer's disease, VA Merit Review, \$85,000/yr (\$125,000/yr from 4/1/06), 4/1/02-3/31/10.

Kindy, MS (Principal Investigator) South Carolina Commission on Education – Center of Economic Excellence in Neuroscience Research, \$6,000,000 Total, 7/01/03-6/30/07

Kindy MS (Principal Investigator) South Carolina Spinal Cord Injury Fund, \$75,000, 8/1/02-7/31/07.

Kindy MS (Principal Investigator) Research Career Scientist, VA Career Scientist Award, \$85000/yr (salary only), 4/1/03-3/31/09.

Kindy, MS (Principal Investigator) MUSC/NSF EPSCoR Minority Undergraduate Research Program, SC EPSCoR \$30,000, 4/01/06-3/31/07.

Kindy, MS (Principal Investigator) Phenomics Center, \$75,000/yr, 7/1/05-6/30/08.

Kindy, MS (Principal Investigator) RAGE and A induced Oxidative Stress, VA, \$250,000 Total, 09/01/05-08/31/07.

Kindy, MS (Principal Investigator) MELATONIN- A NEW ANTI-AMYLOIDOGENIC & ANTIOXIDANT AGENT, NIH/ NIA, \$200,000(Total/year) 7/1/06-6/30/07.

Kindy, M.S. (Principal Investigator) EPSCoR Phenomics Center for Neuroscience Research, NSF, \$1,200,000, 06/01/05-05/31/08.

Krause, J.S. (Principal Investigator) A 6-Year Longitudinal Study of Community Integration, Subjective Well-Being, and Health after Spinal Cord Injury: Relationship with Gender, Race/Ethnicity, and Environmental Factors, National Institute on Disability and Rehabilitation Research, Department of Education; \$449,515, 9/1/02-8/31/06

Krause, J.S. (Principal Investigator) Mortality Rates and Causes of Death in the First Decade After Spinal Cord Injury Onset: A Comparative Study of Veterans and Non-Veterans, Veteran's Administration (VISN-7), \$116,000, 7/03-7/05.

Krause, J.S. (Principal Investigator) Stability of Vocational Interests Two Years after Spinal Cord Injury: Relationship with Employment, Participation, and Subjective Well-Being, National Institute on Disability and Rehabilitation Research, Department of Education; \$444,209, 10/01/03-9/30/06.

Krause, J.S. (Principal Investigator) Risk for Early Mortality After Spinal Cord Injury, National Institute on Disability and Rehabilitation Research, Department of Education; \$449,944, 10/01/03- 9/30/06.

Krause, J.S. (Principal Investigator) Risk for Adverse Outcomes after SCI: A Longitudinal Study. RO1, National Institutes of Health; \$2,098,101, 01/01/06-12/31/11.

Krause, J.S. (Principal Investigator) Risk for Adverse Health Events after SCI: A Longitudinal Study of 1,391 participants, National Institute on Disability and Rehabilitation Research, Department of Education, \$449,990, 12/01/05-11/30/08.

Krause, J.S. (Principal Investigator) A Longitudinal Study of Risk for Hospitalizations, Pressure Ulcers, and Subsequent Injuries after Spinal Cord Injury. Field Initiated Research Grant, *National Institute on Disability and Rehabilitation Research, Department of Education*; \$449,990, December 1, 2005 to November 30, 2008.

Krause, J.S. (Principal Investigator) Participation, Subjective Well Being, Health, and Spinal Cord Injury: A 35-Year Longitudinal Study. Field Initiated Research Grant, *National Institute on Disability and Rehabilitation Research, Department of Education*; \$449,887, December 1, 2006 to November 30, 2009.

Metters, A. (Principal Investigator), Webb, K. (co-Principal Investigator) Engineering regeneration through the distal bridge/ host interface, South Carolina Spinal Cord Research Foundation, \$25,000. 8/05-12/05.

Metters, A. (Principal Investigator), Webb, K. (co-Principal Investigator) Engineering regeneration through the distal bridge/host interface, South Carolina Spinal Cord Research Foundation, \$120,000, 6/06-6/08.

Obeid, L. (Principal Investigator) & Kindy, MS (Co-Principal Investigator) Center of Biomedical Research Excellence in Lipidomics and Pathobiology, NIH COBRE 5P20RR017677-04, Obeid-\$1,000,000/yr, Kindy-\$150,000, 9/26/02-09/01/12.

Ray, S.K. (Principal Investigator) Estrogen therapy for spinal cord injury (SCIRF-0803), South Carolina Spinal Cord Injury Research Foundation, \$137,592, 2003-2007.

Ray, S.K. (Principal Investigator) Differentiation and apoptosis in malignant neuroblastoma (RO1, NS-57811), NIH/NINDS, \$1,460,000, 2006-2010.

Tomlinson, S (Principal Investigator) & Kindy, MS (Co-principal Investigator) Controlling complement in cerebral ischemic injury, 1 R01 HL082485-01, \$225,000, 12/01/05-11/30/10

Vertegel, A. (co-Principal Investigator) Acquisition of a Microsystem Analyzer for Integrated Research and Education in Dynamic Analysis, Surface Topography, and Characterization of Active Microstructure, NSF, \$280,000, 8/15/06-7/31/20.

Vyavahare, N. (Principal Investigator) Automatic Multiple Beam Laser Cell Micropatterning System, Clemson University, \$35,000, 10/04-9/05.

Webb, K. (Principal Investigator) Development of cyanoacrylate/polyethylene glycol diacrylate blends as internal tissue adhesives, Spartan Medical, \$100,000, 9/1/05-9/1/06.

Webb, K. (Principal Investigator) Cyanoacrylates as internal adhesives, Spartan Medical Associates, LLC, \$148,000, 9/05-12/06.

Non-Spinal Cord Related grants (Funds from SCSCIRF helped obtain these funds)

Boland, T. (Principal Investigator) Gao, B.Z. (co-Principal Investigator) BBSI in Biomaterials Science and Engineering Program, NSF and NIH, \$15,000, 1/07-12/10.

Gao, B.Z. (Principal Investigator) A Novel Laser Diagnostic System for Early Detection of Cancer Cells, the Oak Ridge Associated Universities (ORAU), \$10,000, 06/04 – 11/05.

Gao, B.Z. (Principal Investigator) A Novel Laser Diagnostic System for Early Detection of Cancer Cells, DOE via Oak Ridge Associated Universities (ORAU), \$5,000, 06/04 – 5/05..

Gao, B.Z. (Co-Investigator) 3-D Test Systems: New Tools for Unlocking the Mysteries of Breast Cancer, Department of Defense, \$250,000, 01/01/2005 - 12/31/2009.

Gao, B.Z. (Principal Investigator) Laser Cell Micropatterning to Study Electrical Coupling between Cardiac Fibroblasts and Myocytes, American Heart Association, \$120,000, 07/01/2005 - 06/30/2007.

Ray, S.K. (Principal Investigator) Proteolytic Control of Glioblastoma R01 (CA-91460), National Cancer Institute of the National Institutes of Health Award Period, \$1,095,000, 2003-2008.

Grants Submitted (either pending or not funded)

Banik, N.L. (Principal Investigator) & Ray, S.K. (Co-Principal Investigator) Involvement of spinal cord in MPTP-induced parkinsonism, National Institutes of Health, 2005-2007.

Banik, N.L. (Principal Investigator) & Ray, S.K. (Co-Principal Investigator) Involvement of spinal cord in MPTP-induced parkinsonism (RO1), National Institutes of Health/ NINDS, \$1,825,000, 2007-2009. (Pending)

Barbosa, E. (Principal Investigator) Atorvastatin enhances Neuronal Regeneration and Remyelination following Spinal Cord Injury. National Institutes of Health, 2005-2009.

Frankel B.M. (Principal Investigator), Ray, S.K. (Co-Investigator) Gliomagenesis: Understanding and targeting the origin of glioblastoma multiforme, CTSA Innovative Collaborative Translational Pilot Projects at MUSC, \$50,000, 2007-2008. (Pending)

Gao, B.Z. (Principal Investigator) Laser Cell Micropatterning to Study the Formation of a Neuronal Circuit on MEA, NSF-CAREER, \$459,943, 02/01/06 - 01/31/11. (Not funded)

Gao, B.Z. (Principal Investigator) Laser Cell Micropatterning to Study the Formation of a Neuronal Circuit on MEA, NSF-CAREER, \$423,269, 3/07-2/12. (Not funded)

Gao, B.Z. (Principal Investigator) Nanosensors for Feedback Control of Micropatterned Neuromuscular Junctions, NSF-NER, \$160,000.

Gao, B.Z. (Principal Investigator) Development of a Laser Cell Micropatterning Microscope Based on Optical Force, NSF-MRI, \$321,497, 10/05-9/08. (Not funded)

Gao, B.Z. (Principal Investigator) Laser Patterned Hybrid Interface for in vitro 3D Neuronal Network Construction, DoD-SCEPSCoR, \$750,000, 5/06-4/09. (Not funded)

Gao, B.Z. (Principal Investigator) Laser Micropatterned Cardiac cell coculture to model scar formation following myocardial infarction, American Heart Association, Mid-Atlantic Affiliate, \$131,642, 7/04-6/06. (Not funded)

Gao, B.Z. (Principal Investigator) Development of a Novel Laser Micropatterning System for 3D Neuron-Glia Coculture Research, DOD-EPSCoR, \$750,000, 3/05-2/08. (Not funded)

Gao, B.Z. (Principal Investigator) Development of a Laser Cell Micropatterning Technique for 3D Neuron Network Construction, NSF-CAREER, \$500,000, 3/05-2/10. (Not funded)

Gao, B.Z. (Principal Investigator) Pathways to the Development of Nanosensor based Neural Prostheses, NSF-NER, \$150,000, 9/05-8/06. (Not funded)

Gao, B.Z. (Principal Investigator) Myocyte Hypertrophic Response to Mechanical Force Generated by Fibroblast, American Heart Association, \$264,000, 7/06-6/10. (Not funded)

Gao, B.Z. (Principal Investigator) Programmable Bench Top Laser-Guided Cell Patterning Microscope, NIH-R21, \$547,600, 10/06-9/09. (Not funded)

Gao, B.Z. (Principal Investigator) Differentiation of Bone Marrow Stem Cells in a Laser Patterned Myocyte Coculture, NIH-K25, \$1,068,613, 9/07-8/12. (Pending with a fundable score)

Gao, B.Z. (Principal Investigator) Stem Cell Myocyte Electrical Coupling via a Laser Patterned Cell Bridge, NIH-COBRE, \$450,000, 1/08-12/11. (Pending)

Gourdie, R (Principal Investigator) **Gao, B.Z. (co-Principal Investigator)** Patterning of Gap Junction Coupling in the Developing Heart, NIH-RO1, \$73,20010/06-9/08, (Not funded)

Kindy, M.S. (Principal Investigator) In Vitro Model of the Reflex Arc for ALS, Bioengineering Research Partnership at NIBIB and NINDS, NIH, \$250,000/year, 7/1/06 6/30/11.

Kindy, MS (Principal Investigator) Role of AGE receptors in Alzheimer's Disease, NIH/NIA, \$250,000 (Total/year), 12/1/06-11/30/11. (Pending)

Kindy, MS (Principal Investigator) Therapeutic Intervention in Cervical Spinal Cord Injury, VA, \$125,000, 4/1/07-3/31/11. (Submitted)

Kindy, MS (Principal Investigator) Therapeutic Intervention in Cervical Spinal Cord Injury, NIH, \$250,000, 4/1/07-3/31/12. (Submitted)

Kindy, MS (Principal Investigator) Therapeutic Intervention in Cervical Spinal Cord Injury, Dept of Defense \$150,000, 4/1/07-3/31/11. (Submitted)

Krause, J.S. (Principal Investigator) Rehabilitation Research and Training Center on Psychological Aspects of Aging with a Disability, United States Department of Education, \$3,612,163, 10/1/03-09/30/08.

Krause, J.S. (Principal Investigator) Risk for Adverse Health Outcomes After Spinal Cord Injury: A Longitudinal Study of 1,391 Participants, United States Dept. of Education, \$308,217, 8/1/04-7/31/09.

Krause, J.S. (Principal Investigator) Personality, Behavior, and Coping After Spinal Cord Injury, National Institutes of Health, \$1,250,000, 8/1/04-7/31/09.

Krause, J.S. (Principal Investigator) Risk of Adverse Outcomes After Spinal Cord Injury: A Longitudinal Study, National Institutes of Health, \$1,900,484, 1/1/05-12/31/09.

Krause, J.S. (Principal Investigator) Participation, Subjective Well-being, Health, and Spinal Cord Injury: A 33-year Longitudinal Study, United States Department of Education, \$449,989, 10/1/05-9/30/08.

Krause, J.S. (Principal Investigator) Disparities in Earnings form Gainful Employment After Spinal Cord Injury: Environmental Factors and Job Accommodations, National Institutes of Health, \$2,967,312, 1/1/06-12/31/10.

Krause, J.S. (Principal Investigator) Early Risk for Mortality After Spinal Cord Injury, National Institutes of Health, \$2,967,312, 1/1/06-12/31/10.

Krause, J.S. (Principal Investigator) Early Risk for Mortality After Spinal Cord Injury, National Institute of Health, \$2,666,994, 10/1/06-9/30/11.

Markwald, R. (Principal Investigator) **Gao, B.Z. (co-Principal Investigator)** Engineering in vitro Human Cardiac Drug Toxicity Assay, \$434, 623, 1/07-12/11. (Not funded)

Ray, S.K. (Principal Investigator) Cell Death Mechanisms and Therapeutic Strategies in SCI R21, National Institutes of Health, 2005-2007.

Ray, S.K. (Principal Investigator) Photodynamic therapy (PDT) and paclitaxel nanotechnology (PNT) for treating brain tumor, NASA EPSCoR Partnership Program 2005-2006.

Ray, S.K. (Principal Investigator) Photodynamic therapy (PDT) and paclitaxel nanotechnology (PNT) for treating brain tumor, NASA EPSCoR Partnership Program, \$50,000, 2007-2008. (Pending)

Ray, S.K. (Principal Investigator) Apoptosis and therapeutic strategies in SCI (RO1), NIH/NINDS, \$1,825,000, 2007-2009. (Pending)

Thomas, K.J. (Principal Investigator) Wise, H.H. (co-Principal Investigator) Peer versus Professional Support in Home-based Physical Activity, Christopher Reeve Foundation, \$25,000. (under review)

Varma, A. (Principal Investigator) & Ray, S.K. (co-Principal Investigator) Melatonin as a Therapy for Spinal Cord Injury, South Carolina Spinal Cord Injury Research Foundation (SCIRF-0905), 2006-2008.

Varma, A. (Principal Investigator) & Ray, S.K. (co-Principal Investigator) Melatonin as a Therapy for Spinal Cord Injury, South Carolina Spinal Cord Injury Research Foundation (SCIRF-0905), \$80,000, 2007-2009. (Pending)

Vertegel, A. (Principal Investigator) Design of Nanoscale Vascular Cleaners, NSF-CAREER, \$400,002. 3/1/07-2/28/12. (Not funded)

Vertegel, A. (co-Principal Investigator) In Vitro and In Vivo Evaluation of Adhesin-Specific Nanoparticles for the Removal of Campylobacter Jejuni from Poultry, USDA, \$487,053, 10/1/06-9/30/09. (Not funded)

Vertegel, A. (Principal Investigator) Collaborative Research: Nanoelectromechanics of Biomolecular Systems, NSF, \$173,395, 5/1/07-4/30/10. (Pending)

Vertegel, A. (Principal Investigator) Nanoelectromechanics of Vascular Smooth Muscle Cells, NSF, EFRI CBE Preliminary Proposal, \$1,524,692, 11/1/07-10/31/11. (Pending)

Vyavahare, N.R. (Principal Investigator), Webb, K. (Project Principal Investigator) Biomaterials for guided neural regeneration, NIH-COBRE, \$580,000, 9/05-9/08. (Declined)

Vyavahare, N.R. (Principal Investigator), Webb, K. (Project Principal Investigator) Biomaterials for guided neural regeneration, NIH COBRE, \$655,000, 9/07-9/10. (Pending Review)

Webb, K. (Principal Investigator) Scaffold-derived spatio-temporal signals for stem cell recruitment and differentiation, DARPA, \$1,425,000, 2005-2007. (Declined)

Webb, K. (Principal Investigator) Biomaterials for guided neural regeneration, NIH COBRE. \$400,000, 2006-2008. (Declined)

Webb, K. (Principal Investigator) Topographic fibers as templates for tissue regeneration, National Textile Council, \$300,000, 2005-2008.

Webb, K. (Principal Investigator) Molecular gradients for directing axonal regeneration, NIH R21 (NINDS), \$250,000, 2006-2007.

Webb, K. (Principal Investigator) Engineering regeneration through the distal bridge / host interface, Christopher Reeve Paralysis Foundation, \$148,324, 2004-2006. (Declined)

Webb, K. (Principal Investigator) Engineering regeneration through the bridge / host interface, Paralysis Project of America, \$50,000, 2004-2005. (Declined)

Webb, K. (Principal Investigator) Topographic fibers as templates for tissue organization, National Textile Council, \$300,000, 2004-2007. (Declined)

Webb, K. (Principal Investigator) Topographic fibers as templates for tissue organization, National Textile Council, \$423,000, 5/05-5/08. (Declined)

Webb, K. (Principal Investigator) Molecular gradients for directing axonal regeneration, NIH/NINDS, \$359,970, 4/06-4/08. (Declined)

Webb, K. (Principal Investigator) Channel grooved polymer fibers as tissue templates, National Textile Center, \$495,000, 5/06-5/09. (Declined)

Webb, K. (Principal Investigator) Capillary channel polymer fiber scaffolds for ligament tissue engineering, AO Foundation, \$97,000, 4/07-4/09. (Declined)

Webb, K. (Principal Investigator) Molecular gradients for directing axonal regeneration, NIH/NINDS, \$359,970, 11/07-11/09 (in preparation for submission)

Wilson, L.B. (Principal Investigator) Influence of Inflammation and Gender on Reflex Control of the Circulation, American Heart Association—Mid Atlantic, \$120,000.

Wilson, L.B. (Principal Investigator) Influence of Inflammation and Gender on Reflex Control of the Circulation, National Science Foundation, \$350,000.

Wise, H.H. (Principal Investigator) Thomas, K.J. (co-Principal Investigator) Effectiveness of Peer versus Professional Support in Home-based Physical Activity Programs, Center for Disease Control and Prevention, \$941,140. (Not funded)

Wise, H.H. (Principal Investigator) Thomas, K.J. (co-Principal Investigator) Peer versus Professional Support in Home-based Physical Activity, Paralyzed Veterans, \$150,000. (Not funded)

Non-spinal cord related grants

Gao, B.Z. (Principal Investigator) Laser Micropatterning of Adult Stem Cells and Cardiomyocytes, NIH-COBRE, \$150,000/yr, 01/01/06 – 12/31/10.

Gao, B.Z. (Principal Investigator) Laser Micropatterning of Adult Stem Cells and Cardiomyocytes, NIH-COBRE, \$450,000, 9/05-8/08. (Not funded)

Gao, B.Z. (Principal Investigator) Myocyte Hypertrophic Response to Mechanical Force Generated by Fibroblast, American Heart Association, \$264,000, 01/01/2006 - 12/31/2009.

Gao, B.Z. (Principal Investigator) Laser Micropatterning to Study Cardiac Scar Formation, NIH R21, \$360,450., 1/05-12/07. (Not funded)

Gao, B.Z. (Principal Investigator) Development of a Laser Cell Deposition Microscope for Cancer Immunotherapy Studies, Coulter Foundation, \$240,000, 7/06-6/08. (Not funded)

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Krause, J.S., & Saladin, L. (2006). Disparities in subjective well-being, participation and health after spinal cord injury: a 6-year longitudinal study. *Archives of Physical Medicine and Rehabilitation*, submitted.

Kutty J, Cho EH, Lee JS, Vyavahare, NR, and **Webb K**. Incorporation of hyaluronic acid increases fibroblast spreading and proliferation within PEG diacrylate-based semi-IPNs. In preparation for submission to Biomaterials (Feb 2007).

Kutty JK, Cho EH, Lee JS, and **Webb K**. Polyethylene glycol diacrylate / hyaluronic acid semi-IPNs support increased cell spreading and proliferation. Submitted 2007 Society for Biomaterials.

Lee JS, Cribb R, Cho EH, Kutty JK, and **Webb K**. Synthesis and characterization of di-functional PEG-based crosslinkers for L1 immobilization. Submitted 2007 Society for Biomaterials.

Morrisette DC, Richards JS, **Krause J**, Coker J. Nietert P. Prevalence of Upper Quarter Pain in Individuals with Chronic SCI.

Morrisette DC, Richards JS, **Krause J**. Inter-rater Reliability and Agreement for Classification of Pain Types in Individuals with Chronic SCI.

Nicholas JS, **Selassie AW**, **Pickelsimer**, Yallapragada A, Haines S. Administration of Methylprednisolone for Spinal Cord Injury in South Carolina Acute Care Hospitals. Under review.

Olbrich, J., Satishkumar, R., & **Vertegel, A.** (submitted). Study of protein to polybutylcyanoacrylate nanoparticles. Society of Biomaterials Annual Meeting, 2007.

Pickelsimer EE, Gabella BA, Wilson DA, **Selassie AW**, DeVivo MJ. Differences in occurrence, probability of dying, and causes of death of South Carolina and Colorado residents with traumatic spinal cord injury.

Pickelsimer EE, Gabella BA, Wilson DA, DeVivo MJ. Differences in the Occurrence and Causes of Death of South Carolina and Colorado Residents with Traumatic Spinal Cord Injury. In preparation.

Pirlo RK, **Gao BZ**. Automatic Laser Cell Micropatterning System. To be submitted to IEEE Journal of Biomedical Engineering 2006

Ray SK, Karmakar S, Nowak MW, and Banik NL. Inhibitors of calpain and caspase-3 prevented apoptosis and preserved electrophysiological properties of voltage-gated and ligand-gated ion channels in rat primary cortical neurons exposed to glutamate. *Neuroscience* (Under revision). 2005.

Ray SK, Sribnick EA, and Banik NL (2007) Rationale for using estrogen for treatment of spinal cord injury. In: Handbook of Neurochemistry and Molecular Neurobiology – CNS injuries and disorders (eds., Banik NL, Ray SK), Springer, New York, NY, Vol. 24. (in preparation)

Samantaray S, Knaryan VH, Guyton MK, Matzelle DD, **Ray SK**, and Banik NL (2007) The prakinsonian neurotoxin rotenone activates calpain and caspase-3 leading to motoneuron degeneration in spinal cord of Lewis rats. *Neuroscience* (Under minor revision).

Selassie AW, **Pickelsimer EE**, Lineberry LA, Nicholas J, Veldheer, L. Epidemiology of Traumatic Spinal Cord Injury in South Carolina, 1981-2003. JSCMA February 2006.

Selassie AW, **Pickelsimer E**, Nicholas J, Lineberry L., Gu J. Functional Outcomes of TSCI one year after discharge from acute care facilities. To be submitted to the Journal of Trauma by April 2006.

Selassie AW, **Pickelsimer E**, Nicholas J, Lineberry L, Gu J. Psychosocial Outcomes of TSCI one year after discharge from acute care facilities. To be submitted to the Journal Spinal Cord by June 2006.

Sinclair KD, Brown PJ, and **Webb K**. Capillary channel polymer fibers as structural templates for ligament regeneration. Submitted 2006 American Association of Textile Colorists and Chemists Journal.

Sinclair KD, Brown PJ, and **Webb K**. Novel fibers as structural templates for ligament regeneration. Submitted 2007 Society for Biomaterials.

Sribnick EA, Matzelle DD, **Ray SK**, and Banik NL. Estrogen treatment of spinal cord injury attenuates calpain activation and apoptosis. (Submitted to J. Pharmacol. Exp. Therap.).2005.

Sribnick EA, Delre AM, **Ray SK**, and Banik NL. Estrogen attenuates glutamate-induced cell death by inhibiting Ca²⁺ influx through L-type voltage-gated Ca²⁺ channels. (Submitted to *Eur. J. Neurosci.*). 2005.

Stewart MC, Fulk LJ, **Wilson LB**. Afferent pathways and central nervous system sites involved in the nociceptive pressor reflex evoked by heat. In Preparation.

Suzuki S, Gerhold LM, Böttner M, Rau SW, Cruz CD, Yang E, Zhu H, Yu J, Cashion AB, **Kindy MS**, Merchantlhaler I, Gage FH, Wise PM. Estradiol Enhances Neurogenesis After Ischemic Brain Injury: Roles of Estrogen Receptor and Brain Research, Submitted.

Sweeney AJ, Pirlo RK, Ma W, and **Gao BZ**. Neurite Outgrowth Stimulated by the NGF Encapsulated in Biodegradable Microspheres. To be submitted to Acta Biomaterialia

Vyavahare NR, Lu Q, **Webb K**. Micro-grooved fibers as scaffold in tissue engineering. U. S. Patent Application.

Webb K, Vyavahare NR. Hydrogels with variable degradation rates. U. S. Patent Application.

Yu, J., Zhu, H., Guo, J.T., Hersh, L.B., **Kindy, M.S.** Inhibition of neprilysin increases amyloid deposition in APP transgenic mice. J. Alz. Dis. Submitted

Yu J, Zhu H, Guo JT, Mucke L, Hersh LB, **Kindy MS**. Neprilysin modulates A peptide levels and amyloid deposition in APP transgenic mice. *Neurobiology of Aging*; submitted.

Yu J, Zhu H, Guo JT, Hersh LB, **Kindy MS**. Accelerated A amyloid deposition in neprilysin gene-inactivated mice. J. Neuroscience; submitted

Invited Talks and Presentations

Barbosa E. Attenuation of Acute Inflammatory Response by Atorvastatin after Spinal Cord Injury. Presented at the annual meeting of the American Society of Neurochemistry, August 14, 2004.

Barbosa E. HMG-CoA Reductase Inhibitor protects against Endothelial Dysfunction and Inflammatory Disease in a Rat Model of Spinal Cord Injury. To be presented at the annual meeting of the Society for Neuroscience, November 12, 2005.

Brotherton SS, Nietert PJ. Falls among individuals with incomplete spinal cord injury. Platform presentation at: South Carolina Spinal Cord Injury Research Fund Scientific Conference; Charleston, SC, May 2005.

Brotherton SS, **Krause JS**, Nietert PJ. Risk factors for falls among individuals with incomplete spinal cord injury. Abstract submitted to the APTA Combined Sections Meeting; San Diego, CA, February 2006.

Brotherton SS, **Krause JS**, Nietert PJ. Falls among individuals with incomplete spinal cord injury Abstract submitted to the APTA Combined Sections Meeting; San Diego, CA, February 2006.

Brotherton SS, **Krause JS**, Nietert PJ Falls in individuals with incomplete spinal cord injury. Poster accepted for presentation: APTA Scientific Meeting and Exposition; June 2007; Denver, CO.

Brotherton SS, **Krause JS**, Nietert PJ Risk and protective factors for falls among individuals with incomplete spinal cord injury. *J Neurol Phys Ther.* 2005;29;2004.

Cribb RC, Lee JS, and **Webb K**. Cloning and expression of bioactive recombinant L1 neural cell adhesion molecule (submitted Regenerate World Tissue Engineering Congress 2006).

Datar K, Lee JS, Vyavahare NR, **Webb K**. Controlled release hydrogel coatings on deep groove polymer fibers for spinal cord regeneration. Society for Biomaterials; Memphis, TN, 2005.

Gao BZ. Automation of laser micro cell patterning. Presented at The First US National Symposium on Frontiers in Biomechanics Forging a New Biomechanics in the Era of Modern Biology; Nashville, TN, September 30 – October 1, 2003.

Gao BZ. Mechanical interactions between cardiac myocytes, cardiac fibroblasts and extracellular matrix. Presented at the First US National Symposium on Frontiers in Biomechanics Forging a New Biomechanics in the Era of Modern Biology; Nashville, TN, September 30 – October 1, 2003.

Gao BZ. Generalized analysis and design of radiation force-based systems (optical trapping, laser guidance). Presented at the Annual fall meeting of the Biomedical Engineering Society; Nashville, TN, October 1-4, 2003.

Gao BZ. Laser Cell Guidance of Embryonic Chick Forebrain Neuronal Cell for Study of Spinal Cord Microenvironments. Presented at the Fifth Frontiers in Neuroscience Research Day, Charleston, SC; March 19, 2004.

Gao BZ. Multiple beam system for single cell patterning. Presented at the Fifth Frontiers in Neuroscience Research Day; Charleston, SC, March 19, 2004.

Gao BZ. Multiple beam laser cell micropatterning system. Presented at the International Symposium on Optical Science and Technology (SPIE 49th Annual Meeting); Denver, Colorado, August 2-6, 2004.

Gao BZ. Laser Micropatterning of Polylactide Microspheres into Neuronal-Glial Coculture to Quantitatively Study Axonal Regeneration. Presented at the 2004 Polymer Networks Conference; Bethesda, MD, August 15-19, 2004.

Gao BZ. Investigation of Axonal Regeneration Using Laser Cell Micropatterning. Presented at the Society for Biomaterials' Symposium on Biomaterials in Regenerative Medicine: The Advent of Combination Products; Philadelphia, PA, October 16 - 18, 2004.

Gao BZ. Laser Cell Micropatterning to Engineer Microenvironments for Cardiomyocyte-Fibroblast Interactions. Presented at the 2004 BMES Annual Fall Meeting; Philadelphia, PA, October 13-16, 2004.

Gao BZ. Electrical Coupling between Laser Patterned Fibroblasts and Myocytes. Presented at the 2nd International Workshop on Bioprinting, Biopatterning and Bioassembly; Charleston, SC, March 13-15, 2005.

Gao BZ. Laser Cell Micropatterning System. Presented at the 2nd International Workshop on Bioprinting, Biopatterning and Bioassembly; Charleston, SC, March 13-15, 2005.

Gao BZ. Release of Nerve Growth Factor from Polylactide-co-glycolide Microspheres for use in Laser Micropatterning. Presented at the 6th Annual Frontiers in Neuroscience Research Day – Neuromics: From Genomics to Metabolomics; Charleston, SC, March 18, 2005.

Gao BZ. Analysis of Neurite Outgrowth for a Laser Patterned Neuronal Culture. Presented at the 2nd International IEEE EMBS Conference on Neural Engineering; Washington D.C., March 16-19 2005.

Gao BZ. Mechanical Interactions between Myocytes and Fibroblasts at the Single Cell Level. Presented at the Society For Biomaterials 30th Annual Meeting; Memphis, TN, April 27-30 2005.

Gao BZ. Axon Guided by the Release of Neuron Growth Factor from Polylactide-co-glycolide Microspheres. Presented at the Society For Biomaterials 30th Annual Meeting; Memphis, TN, April 27-30 2005.

Gao BZ. Electrical Coupling of Myocyte and fibroblast on various ECMs. Presented at the Society For Biomaterials 30th Annual Meeting; Memphis, TN, April 27-30 2005.

Gao BZ. Multielectrode Arrays Surface Characterization and Modification for Neuronal Cell Adhesive and recording. Presented at the Society For Biomaterials 30th Annual Meeting; Memphis, TN, April 27-30, 2005.

Gao BZ. Motor Units Created on a Homogenous Coated Biosurface. Presented at the Society For Biomaterials 30th Annual Meeting; Memphis, TN, April 27-30, 2005.

Gao BZ. Cell Diagnosis Based on Optical Forces. Presented at the International Society for Optical Engineering Annual Meeting; San Diego, CA, July 31-August 4, 2005

Gao BZ. Mechanical Interactions between Myocytes and Fibroblasts at the Single Cell Level. To be presented at the Biomedical Engineering Society's 2005 Annual Meeting; Baltimore, MD, September 28 - October 1, 2005.

Gao BZ. Laser Cell Micropatterning for the Formation of Neuromuscular Junctions on an MEA. To be presented at the Biomedical Engineering Society's 2005 Annual Meeting; Baltimore, MD, September 28 - October 1, 2005.

Gao BZ. Effects of Nerve Growth Factor Release from a Single PLGA Microsphere on Individual Neurons. To be presented at the Biomedical Engineering Society's 2005 Annual Meeting; Baltimore, MD, September 28 - October 1, 2005.

Gao BZ. Automated Laser Patterning of Neurons into Isolated Microenvironments on an MEA. To be presented at the Biomedical Engineering Society's 2005 Annual Meeting; Baltimore, MD, September 28 - October 1, 2005.

Gao BZ. Fibroblast-Myocyte Electrical Coupling in a Micropatterned Cell Coculture. To be presented at the Biomedical Engineering Society's 2005 Annual Meeting; Baltimore, MD, September 28 - October 1, 2005.

Gao BZ. "Optical Techniques in Biomedical Research", lectured in School of Precision Instrument and Optoelectronics Engineering, Tianjin University, PR China, Nov. 25, 2005

Gao BZ. "Laser Micropatterning Technique", lectured in Institute of Materials Processing & Automation, Tsinghua University, PR China, Nov. 29, 2005

Gao BZ. "Laser Cell Micropatterning Technique", lectured in School of Electrical and Electronic Engineering, Yanyong Technological University, Singapore, Dec. 1, 2006

Gao BZ. "Biophotonics", lectured in Institute of Optoelectronics, Shenzhen University, , PR China, Dec. 8, 2006

Harrison-Felix C, Brown A, **Pickelsimer EE**, DeVivo M, Whiteneck G, Hammond FM. Rehabilitation Practice Implications of Research on Life Expectancy After Spinal Cord Injury and Traumatic Brain Injury. 2-hour course presented at the American Congress of Rehabilitation Medicine Annual Conference, Boston, September 28-30, 2006.

Kindy, MS. Society for Neuroscience, Atlanta, GA, October 14-18, 2006, "AGE Receptor Mechanisms and therapeutics in Alzheimer's disease".

Kindy, MS. Queensland Brain Institute, August 6, 2006, University of Queensland, Brisbane, Australia, "Mechanisms and therapeutics in Alzheimer's disease".

Kindy, MS. International Conference on Alzheimer's Disease, July 15-20, 2006, Madrid, Spain, "Mechanisms and therapeutics in Alzheimer's disease"

Kindy, MS. Foundation for Research Development, April 20, 2006, "Biotechnology in South Carolina".

Kindy, MS. SCBIO, March 27, 2006, “Starting a Biotechnology Company in South Carolina”.

Kindy, MS. Department of Commerce, March 23, 2006, “Biotechnology in South Carolina”

Kindy, MS. Charleston Small Business Consortium, March 15, 2006, “Biotechnology in South Carolina”.

Kindy, MS. Medical University of South Carolina, Interview for Associate Provost for Research, January 30, 2006, “A tale of two receptors: Mechanisms and therapeutics in Alzheimer’s disease”.

Kindy, MS. Department of Bioengineering, USC, December 6, 2005, “AGE receptors in Alzheimer’s Disease”.

Kindy, MS. Department of Veterans Affairs, December 13, 2005, “A tale of two receptors: Mechanisms and therapeutics in Alzheimer’s disease”.

Kindy, MS. Cell signaling in stroke, Shandong University, Jinan, China, July 11, 2005.

Kindy, MS. Therapies in Alzheimer’s disease, Jinan Central Hospital, Jinan, China, July 9, 2005.

Kindy, MS. Stroke: Mechanisms of disease, Great Wall Hospital, Jinan, China, July 8, 2005.

Kindy, MS. Systemic interactions in Alzheimer’s disease, Laling Hospital, July 10, 2005.

Kindy, MS. Systemic interactions in Alzheimer’s Disease, University of Central Florida, Orlando, FL, May 16, 2005

Kindy, MS. Society for Neuroscience Meeting, San Diego, CA October 23-27, 2004, RAGE and Abeta amyloid deposition in Alzheimer’s disease.

Kindy, MS. II International Congress on Neuroregeneration, Rio De Janeiro, Brazil, September 20-24, 2004, Invited Speaker and Chair, Session on “The State of Clinical Trials for Neuronal Repair”

Kindy, MS. Xth International Symposium on Amyloidosis, Tours, France, April 18-22, 2004, Organizer/Invited Speaker.

Kindy, MS. 2nd International Beijing Stroke Forum, Beijing, China, June 13-15, 2003 Cell Signaling in Stroke.

Kindy, MS. Clemson University, Department of Bioengineering, March 7, 2003.

Kindy, MS. Stroke and Neuronal Degeneration, Apoptosis 2003, Luxembourg, Jan. 28-Feb. 1, 2003.

Kindy, MS. Abeta degradation in AD, American Society for Neurochemistry Meeting, Palm Beach, FL, June 22-26, 2002

Krause JS. Vocational interests of persons with recent spinal cord injuries. (co-presenter: Broderick, L.E.) Presented at the annual conference of the American Association of Spinal Cord Injury Psychologists and Social Workers; Las Vegas, NV, September 2003.

Krause JS. Pressure ulcer history and spinal cord injury. Presented at the annual conference of the American Congress of Rehabilitation Medicine; Tucson, Arizona, October 2003.

Krause JS. The use of longitudinal design in spinal cord injury research. Pre-conference course to be presented at the annual conference of the American Spinal Injury Association; Denver, CO, May 2004.

Krause JS. Risk Factors for Mortality After SCI. (co-presenters: DeVivo, M.J, Jackson, A.) Presented at the annual conference of the American Spinal Injury Association; Denver, CO, May 2004.

Krause JS. Patterns of alcohol and substance use/abuse with SCI: Risk factors and correlates. (presented by: Tate, D. G.; co-presenters: Forchheimer, M., Meade, M. & Bombardier, C.) Presented at the annual conference of the American Spinal Injury Association; Denver, CO, May 2004.

Krause JS. The frequency, phenomenology and correlates of probable major depression one year after spinal cord injury. (presented by: Bombardier, C. H.; co-presenters: Richard, J. S., S., Tulskey, D., Tate, D. G.) Presented at the annual conference of the American Spinal Injury Association; Denver, CO, May 2004.

Krause JS. Maintenance of healthy affect and avoidance of depression after spinal cord injury. (presented by: Coker, J.; co-presenter: Broderick, L.) Presented at the annual conference of the American Association of Spinal Cord Injury Psychologists and Social Workers; Las Vegas, NV, September 2004.

Krause JS. Preinjury Alcohol Use, Intoxication at Injury, and Personality Among Persons With SCI. (presented by: Coker, J.; co-presenter: Broderick, L.) Presented at the annual conference of the American Association of Spinal Cord Injury Psychologists and Social Workers; Las Vegas, NV, September 2004.

Krause JS. Spiritual Coping: Differences between Caucasians and African Americans with spinal cord injuries. (presented by: Coker, J.; co-presenter: Broderick, L.) Presented at the annual conference of the American Association of Spinal Cord Injury Psychologists and Social Workers; Las Vegas, NV, September 2004.

Krause JS. Factors associated with earnings from gainful employment after spinal cord injury. (presented by: Coker, J.; co-presenter: Broderick, L.) Presented at the annual conference of the American Association of Spinal Cord Injury Psychologists and Social Workers; Las Vegas, NV, September 2004.

Krause JS. Risk factors for mortality after spinal cord injury. (Presented by: Pickelsimer, E.; co-presenters: DeVivo, M., Jackson, A., Broderick, L.) Presented at the annual conference of the American Congress of Rehabilitation Medicine; Ponte Vedre Beach, FL, September 2004.

Krause JS. Health Status, community integration and economic risk factors for mortality after spinal cord injury. (presented by: DeVivo, M. J.; co-presenter: Jackson, A.) Presented at the annual conference of the International Spinal Cord Society; Athens, Greece, September 2004.

Krause JS. Spiritual coping: Differences between Caucasians and African Americans with SCI. (Presented by: Broderick, L.) Presented at the annual conference of the American Public Health Association; Washington, DC, November 2004.

Krause JS. Maintenance of healthy affect and avoidance of depression after spinal cord injury. (Presented by: Broderick, L.; co-presenters: Kemp, B, Coker, J). Presented at the annual conference of the American Public Health Association; Washington, DC, November 2004.

Krause JS. Spiritual coping: Differences between Caucasians and African Americans with SCI. (Presented by: Broderick, L.) Presented at the annual conference of the American Spinal Injury Association; Dallas, TX, May 2005.

Krause JS. Vocational Interests among participants with spinal cord injury. (co-presenter Broderick, L.) To be presented at the annual conference of the American Psychological Association; Washington, DC, August 2005.

Krause JS. A 30-year longitudinal study of outcomes after spinal cord injury. To be presented at the annual conference of the American Congress of Rehabilitation Medicine; Chicago, IL, September 28-October 1, 2005.

Krause JS. Depressive symptoms during inpatient rehabilitation for spinal cord injury. To be presented at the annual conference of the American Congress of Rehabilitation Medicine; Chicago, IL, September 28-October 1, 2005.

Krause JS. A 30-year longitudinal study of outcomes after spinal cord injury. (co-presenter, Broderick, L.) To be presented at the annual conference of the American Public Health Association; New Orleans, LA, November 5-9, 2005.

Krause JS. Depressive symptoms during inpatient rehabilitation for spinal cord injury. (co-presenter, Broderick, L.) To be presented at the annual conference of the American Public Health Association; New Orleans, LA, November 5-9, 2005.

Krause JS. An EMG-driven model to investigate cocontraction of lower extremity muscles during gait. (co-presentors: Karakostas, T., Berne, N., Hsiang, S.M.) Presented at the 5th World Congress of Biomechanics, Munich, Germany: 2006.

Krause JS. Pain Interference and Ambulatory Spinal Cord Injury. (co-presentors: Broderick, L., Brotherton, S., Morrisette, D., Karakostas, T.) Presented at the annual conference of the International Spinal Cord Society and American Spinal Injury Association, Boston, MA: July, 2006.

Krause JS. Earnings from gainful employment after spinal cord injury: Disparities attributable to sex, race, age, injury severity, and education. ((co-presentors: Broderick, L., Terza, J.) Presented at the annual conference of the International Spinal Cord Society and American Spinal Injury Association, Boston, MA: July, 2006.

Krause JS. Pain Interference, Depression, and Ambulatory Spinal Cord Injury. (co-presentors: Newman, S., Brotherton, S., Morrisette, D., Karakostas, T.) Presented at the annual conference of the American Association of Spinal Cord Injury Psychologists and Social Workers, Las Vegas, NV: September 2006.

Krause JS. Health, Participation, and Subjective Well-being after SCI: Relationship as a Function of Ambulatory and Mobility Status. (co-presentors: Brotherton, S.) Presented at the annual conference of the American Spinal Injury Association, Tampa, FL: June 2007.

Krause JS. Earnings From Gainful Employment After Spinal Cord Injury: Disparities Attributable To Biographic, Injury, Educational, And Work Factors. (co-presentors: Terza, J, Dismuke, C.) Presented at the annual conference of the American Spinal Injury Association, Tampa, FL: June 2007.

Kutty JK, Reifsnider C, Lu Q, Vyavahare NR, **Webb K.** Synthesis and characterization of composite hydrogels for vocal fold applications. Society for Biomaterials; Memphis, TN, 2005.

Lineberry L, Selassie AW, **Pickelsimer EE**, Nicholas JS. Population-based outcome of traumatic spinal cord injury in South Carolina. NCIPC Injury Conference, Denver, May 9-11, 2005.

McGinty JF. Gene Expression Profiling of CNS Regions Implicated in a Mouse Model of Spinal Cord Injury-Induced Pain. Presented at the South Carolina Spinal Cord Injury Research Fund Scientific Conference, Medical University of South Carolina; Charleston SC, May 13th, 2005,

Middaugh SJ, Thomas KJ, Klingmueller J, Smith AR, McFall TL, Gilbert SP, and Bailey JA. Assessment and treatment of musculoskeletal pain in the neck and shoulder in manual wheelchair users with spinal cord injury. First Annual South Carolina Spinal Cord Injury Research Conference; Charleston, SC, May, 2005 (Platform Presentation).

Middaugh SJ, Thomas KJ, Klingmueller J, Smith AR, McFall TL, Gilbert SP, and Bailey JA. Treatment of musculoskeletal pain in the neck and shoulder in manual wheelchair users with spinal cord injury. Association for Applied Psychophysiology and Biofeedback 35th Annual Meeting; Colorado Springs, Colorado, 2004 (Poster presentation). Prevalence of Upper Quarter Pain in Individuals with Chronic SCI. Presented at the annual meeting of the South Carolina Spinal Cord Injury Research Fund; Charleston, SC., May 13, 2005

Pickelsimer EE, Gabella BA, Wilson DA, **Selassie AW,** DeVivo MJ. Determination of occurrence and causes of death within five years of injury among South Carolina and Colorado residents with traumatic spinal cord injury. American Congress of Rehabilitation Medicine Annual Conference; Chicago, September 28-October 3, 2005.

Pickelsimer EE. Occurrence and causes of death of persons with traumatic spinal cord injury. South Carolina Spinal Cord Injury Annual Conference; Columbia, SC, May 12, 2005.

Pickelsimer EE, Wilson DA. Occurrence and causes of death of persons with traumatic spinal cord injury. South Carolina Spinal Cord Injury Research Fund Scientific Meeting; Charleston, SC, May 13, 2005.

Pickelsimer EE, Gabella BA, Wilson DA, **Selassie AW,** DeVivo MJ. Death within seven years of traumatic spinal cord injury. American Congress of Rehabilitation Medicine Annual Conference, Chicago, September 28-October 3, 2005.

Pickelsimer EE, Gabella BA, Wilson DA, **Selassie AW,** DeVivo MJ. Occurrence, causes of death, and probability of dying within five years of injury among South Carolina residents with traumatic spinal cord injury. 8th World Conference on Injury Prevention and Safety Promotion; Durban, South Africa, April 2-5, 2006. (accepted)

Ray SK. Experimental Therapeutics for Activation of Apoptosis in Glioblastoma, MCBP External Seminar Series, Medical University of South Carolina; Charleston, SC, October 23, 2003.

Ray SK. Glioblastoma – an update from the AACR 2004 meeting', Neurology, Medical University of South Carolina; Charleston, SC, May 12, 2004.

Ray SK. Dexamethasone damages chemotherapeutic action of temozolomide in glioblastoma', Department of Neurosciences, Medical University of South Carolina; Charleston, SC, February 8, 2005.

Ray SK. Therapeutic Effects of Estrogen in Spinal Cord Injury', SC Spinal Cord Injury Research Foundation (SCIRF) Conference; May 13, 2005.

Ray SK. Combination therapy for controlling the growth of

human glioblastoma in cultures and xenografts, Department of Neurosciences, Medical University of South Carolina, Charleston, SC; February 14, 2006.

Ray SK. Brain tumors of astroglial origin: Glioblastoma immunology and immunotherapy, M&I Graduate Program, Medical University of South Carolina, Charleston, SC; September 28, 2006.

Ray SK. Regression of human glioblastoma T98G xenografts by all-trans retinoic acid and taxol, The 26th Annual Convention of the Indian Association for Cancer Research (IACR) and International Symposium on Translational Research in Cancer, Bhubaneswar, Orissa, India; January 19, 2007.

Sinclair K, Brown PJ, and **Webb K.** Capillary channel polymer fibers as structural templates for ligament reconstruction. (submitted Regenerate World Tissue Engineering Congress 2006).

Webb, K. Deep groove fiber applications in axonal regeneration. 56th Southeastern Regional Meeting of the American Chemical Society; November 2004.

Webb, K. Applications of capillary channel polymer fibers in regenerative medicine. Medical Textiles Conferences, March 21-22, 2006, Greenville, SC.

Wilson DA, **Pickelsimer EE**, **Selassie AW.** Mortality within seven years after traumatic spinal cord injury. American College of Epidemiology; New Orleans, LA, Sept 17-20, 2005. (Note: This presentation was cancelled due to Hurricane Katrina's destruction in New Orleans.)

Wilson LB. Poster presentation at 2004 Experimental Biology Meeting in Washington, D.C.: Effect of gender on reflex cardiovascular responses to heat stimulation in decerebrate Guinea Pigs.

Wilson LB. Role of spinal ionotropic excitatory amino acid receptors in the nociceptive pressor reflex evoked by noxious heat (poster presentation). International Congress of Physiological Sciences Meeting; San Diego, CA, 2005.

Wilson LB. Afferent neural pathways and central nervous system sites involved in the nociceptive pressor reflex (poster presentation). International Congress of Physiological Sciences Meeting; San Diego, CA, 2005.

Wise HH, Thomas JK, Sword DS, Diehl NS, Brown DD, Nietert P. Home physical activity programs for individuals with a spinal cord injury (poster presentation). CDC's 2006 Annual Health Promotion Conference: Innovations in Health Promotion: New Avenues for Collaboration, September 12-14, Atlanta, GA.

Wise HH, Thomas JK, Diehl N, Sword DO, Brown DD. Home programs of physical activity for the promotion of health and wellness in individuals with spinal cord injury (poster presentation). Annual Conference and Exposition of the American Physical Therapy Association, June 2007, Denver, Colorado. (Abstract will be published in a few months.)

Dissemination to SCI Consumers, Providers, and Researchers

- **Website:** **The SC Spinal Cord Injury Association (SCSCIA)** maintains a very informative web-site (www.scschia.org) that includes contact/program information about the Association as well as new legislation that may or may not help the physically challenged and resource information about spinal cord injury.
- **Website:** **The Disabilities Resource Center of Charleston** offers a website to people with SCI to gain access to all of its programs.
- **Newsletter:** **South Carolina Spinal Cord Injury Association:** Quarterly newsletter that the association publishes. This newsletter includes new updates on spinal cord injury research, a legal column, updates from the association from the Executive Director and the Board of Directors.
- **Consumer Oriented Conferences** by the **SCSCIA**

The First Statewide Conference for people with Spinal Cord Injury and their "Circle of Friends" met at the Sheridan Convention Center on May 1, 2003 in Columbia, SC. It was indeed a historic occasion with 160 participants, 15 exhibitors and representatives from agencies and providers of SCI services throughout the state. The highlights of the conference were the enthusiastic individuals with spinal cord injury that "soaked up" invaluable information that educated and empowered them to "Take Charge of Their Own Lives". A diverse group of individuals interested in learning about staying healthy and about prevention and methods of improving their lives was enthusiastically supported by the participants.

The Second Statewide Conference was held on May 12, 2005 at the Columbia Hotel and Conference Center with a title of "Experience The Power: A One Day Conference For People With SCI". There were 279 registrants, 29 vendors & exhibitors, and a succession of excellent presentations including :

- ~ Optimism in SCI Research: Progress of New Treatments
- ~ Nuts and Bolts of Wheelchair Selection and Seating

- ~ Getting What You Need Through Effective Advocacy
- ~ News You Can Use: Update on Preventive Medical and Management of Common Complications After SCI
- ~ Ask The Experts Panel Session
- ~ SCIRF Fund Abstract Presentations

In addition to exhibit handout materials and a notebook with extensive resource information relative to all Conference subject matter, several publications were available including the “Paralysis Resource Guide” of the Christopher & Dana Reeve Paralysis Resourced Center; the “Exercise Guide for Individuals with SCI” published by the Rehabilitation Institute of Chicago; and the “Directors Summary 2003—2004” of the Miami Project To Cure Paralysis which highlighted research entitled “Axons Cross Spinal Cord Graft in Breakthrough Study”.

Plans are underway for an educational conference targeting providers to be held in the fall of 2007.

- **Scientific Conference by the S. C. Spinal Cord Injury Research Fund:**

The Fund’s first scientific conference was held May 13, 2005 in the Storm Eye Institute of the Medical University of South Carolina-- attended by approximately 100 scientists and clinicians from throughout South Carolina. Dr. Cuddy, as Fund Board Chair, provided opening remarks covering the Fund’s history to date, followed by Fund Scientific Director, Dr. Krause, giving an overview of the scientific accomplishments and future directions.

James Shepherd, chairman of the Board of Directors of the Shepherd Center in Atlanta GA, made the first formal presentation of the day, describing how his own spinal cord injury led to the development of the Shepherd Center, the leading specialty hospital in the treatment of SCI in the country and perhaps the world. A morning keynote address was then delivered by Dr. Barth Green of the Miami project who discussed the history and current status of research to enhance function after SCI. The morning session concluded with five Principle Investigators of Fund projects from the first two funding rounds presenting their work which focused on clinical and applied research.

Dr. Scott Whittemore, Director of the Kentucky Spinal Cord Injury Research Center and the University of Louisville, gave the afternoon keynote highlighting the status of his research which focused on restoring function after SCI. This was followed by Dr. Mark Kindy, Associate Scientific Director, updating on the “Current Status of Spinal Cord Injury Research. The conference closed with five Principle Investigators of Fund projects from the first two funding rounds presenting their work which focused on basic science research.

Plans are being finalized for a second conference in May 2007 which would concentrate n Spinal Cord Injury Health Care and Research issues that are helping in improving the quality of life for the SCI.

APPENDIX 1—DETAILED BOARD INFO

~ **2 MEDICAL DOCTORS FROM THE STAFF OR FACULTY OF THE MEDICAL UNIVERSITY OF SOUTH CAROLINA (both initially appointed for 2 year terms, subsequently 4 year terms).**

- * **Phanor L. Perot, Jr, M.D., PhD.**, Charleston, SC—Board Certified in Neurological Surgery and Professor Emeritus of Neurosurgery and past Department Chairman. *{initial 2 year term expired 2003, 1st 4 yr. Term Expires 2007}*
- * **David A. Griesemer, M.D.**, Charleston, SC—Board Certified in Child Neurology, Director of Pediatric Neurosciences, and Professor of Neuroscience and Pediatrics. *{initial 2 year term expired 2003, 1st 4 yr. Term Expires 2007}*

~ **2 MEDICAL DOCTORS SPECIALIZING OR SIGNIFICANTLY ENGAGED IN THE TREATMENT OF SPINAL CORD INJURIES IN SOUTH CAROLINA (both appointed for 4 year terms).**

- * **David L. Shallcross, M.D.**, Greenville, SC---Board Certified in Physical Medicine and Rehabilitation and conducts a private practice, Upstate Medical Rehabilitation, as well as serves as Medical Director of the inpatient rehabilitation unit at BonSecours St. Francis Health System in Greenville. *{1st 4 yr. Term Expired 2005, reappointed through 2009}*
- * **W. Daniel Westerkam, M. D.**, Columbia, SC--specialist in Physical Medicine and Rehabilitation who is Director of Rehabilitative Services at Palmetto Richland Memorial Hospital as well as Associate Medical Director at HealthSouth Rehabilitation Hospital in Columbia. *{1st 4 yr. Term Expires 2005, reappointed through 2009}*

~ **2 MEMBERS WHO HAVE A SPINAL CORD INJURY OR WHO HAVE A FAMILY MEMBER WITH A SPINAL CORD INJURY (4 year terms, one will serve only 2 years for the first term).**

- * **Charles L. Allen**, Mt. Pleasant, SC—spinal cord injured, Charleston Municipal Court Judge and teaches at Trident Technical College. *{initial 2 year term expired 2003, 1st 4 yr. Term Expires 2007, but deceased 12/29/03}*
- * **John H. Stevens, M.Ed.**, Columbia, SC—spinal cord injured, retired Division Administrator, Head and Spinal Cord Injury of the S. C. department of Disabilities and Special Needs. *{appointed by Governor on to fill vacated Judge Allen 1st 4 year Term which will Expire 2007}*
- * **Terry Peacock**, Columbia, SC—mother of a spinal cord injured who retired from the Office of Minority Affairs of the SC Department of Health and Environmental Control. *{1st 4 yr. Term Expired 2005, 2nd 4 yr. Term Expires 2009}*

~ **1 AT LARGE MEMBER WHO IS A MEDICAL DOCTOR AND A MEMBER OF THE SOUTH CAROLINA MEDICAL ASSOCIATION (initial term of 3 years, 4 year terms thereafter).**

- * **Brian G. Cuddy, M.D.**, Charleston, SC—Board Certified Neurosurgeon in private practice, Clinical Associate Professor of Neurosurgery at MUSC, and directly involved in establishing the Spinal Cord Injury Research Fund. *{initial 3 year expired 2004, 1st 4 yr. Term Expires 2008}*

APPENDIX 2—CUMULATIVE DUI

~ DUI FINE COLLECTIONS FOR THE SCIR FUND

SINCE INCEPTION OF FUND {running total as of 06/30/06}

	~2001~	~2002~	~2003~	
Jan.	\$ 4,285.00	43,035.45	56,063.61	
Feb.	10,774.90	67,213.13	79,548.82	
Mar.	26,570.32	110,797.84	75,621.55	
Apr.	41,513.91	68,851.75	67,871.19	
May	42,606.41	73,028.36	69,933.84	
June	50,170.12	82,816.19	64,092.46	
Extra			14,143.05	
July	54,159.28	58,312.09	49,138.21	
Aug.	62,635.31	76,064.34	70,190.90	
Sept.	53,845.08	60,925.72	62,249.13	
Oct.	61,642.97	67,764.04	52,129.53	
Nov.	60,039.88	69,631.96	55,817.92	
Dec.	<u>63,716.54</u>	<u>65,987.31</u>	<u>49,267.84</u>	
	<u>\$ 531,929.72</u>	<u>\$ 849,428.11</u>	<u>766,068.05</u>	
	~2004~	~2005~	~2006~	~Cumulative~
Jan.	63,663.52	53,425.96	44,937.24	3,540,688.99
Feb.	57,270.58	57,445.32	69,271.72	3,609,960.71
Mar.	59,148.68	59,519.99	66,122.55	3,676,083.26
Apr.	57,654.32.	65,713.64	57,349.43	3,733,432.69
May	68,408.00	71,195.33	76,984.57	3,810,417.26
June	49,806.85	47,422.28	58,308.24	3,868,725.50
Extra	4,318.19	11,840.75	2,890.34	3,871,615.84
July	55,373.62	55,200.43		
Aug.	61,492.46.	52,186.44		
Sep.	47,197.81	48,844.66		
Oct.	32,037.14	65,694.81		
Nov.	51,7 73.76	55,735.32		
Dec.	54,640.47	41,315.54		
TOT:	<u>662,785.40</u>	<u>685,540.47</u>		
	{avg. per mo. \$ 55,232}	{avge. per mo. \$ 57,128}		

APPENDIX 3—FUND BUDGET INFO

~FISCAL YEAR 05-06 BUDGET, SCI RESEARCH FUND~

{Final Draft 09/06 based on Board decisions at several meetings and final expenditure figures}

I. PROGRAM ADMINISTRATION CORE		\$ 35,250 *
PERSONNEL (Incl. F. B. at 28.6%)		29,432
Fund Administrator (20%)		
BOARD MEETING TRAVEL/MEALS/REFRESHMENTS		1,268
Avg. 4 Board 1200 mi. two times year @ \$.345 mi= \$ 828		
Meals at official meetings and while traveling (\$20x4x2)=\$160		
Meals/Refreshments for Board Meetings (\$14x10peoplex2)=\$280		
OTHER		4,550
Printing stationery/envelopes (next run of 2,500)= \$ 500		
Printing letters, RFPs, Guidelines, insert card, report= \$250		
Printing 04/05 Annual Report=\$ 1,500		
Mail processing (Target Mail)/Postage of any major mailouts=\$200		
Other mailing throughout the year (RFPs, reports)= \$ 100		
Meeting support materials (visuals/photos)= \$ 500		
Photocopy and basic office supplies=\$ 500		
Contingency for unexpected overruns= \$1,000		
II. RESEARCH DEVELOPMENT CORE		\$ 76,458 *
PERSONNEL (Incl. F. B. at 28.6%)		47,208
Scientific Director (15%) and Assoc. Dir (10%)		
ANNUAL CONFERENCE SCIENTIFIC SESSIONS		12,000
TRAVEL (Fund Promotion)		10,000
REVIEW PROCESS		
Stipends(\$1,000), Travel(\$2,000), Meetings(\$3,000), Mail(\$500), Other (\$704)		7,250
III. ONGOING ROUND 01 PROJECTS (Extension)		\$ 97,413
SCIRF 1302 Krause	97,263	
SCIRF 1402 Kindy	150	
V. ONGOING ROUND 02 PROJECTS (Extension)		\$ 167,692
SCIRF 0303 Gao	16,138	
SCIRF 0503 Pickelsemer	51,347	
SCIRF 0603 Morrisette	19,119	
SCIRF 0703 Brotherton	14,868	
SCIRF 0803 Ray	66,193	
V. ONGOING ROUND 02 PROJECT (Supplemental)		\$ 22,300 *
SCIRF 0303S Gao	22,300	
VI. ONGOING ROUND 03 PROJECTS (Final Year)		\$ 409,664
SCIRF 0104 Webb	102,049	
SCIRF 0304 Wise	104,720	
SCIRF 0604 Murday	23,105	
SCIRF 0804 Monger/Godk	67,904	
SCIRF 1004 Selassie	111,886	

VII. **SET ASIDE FOR ROUND 02B PROJECT** **\$ 100,000**

VIII. **AWARDED ROUND 04 PROJECTS** **\$ 175,000 ***

SCIRF 0105A	Fritz	\$ 5,000
SCIRF 0205	Tomlinson	25,000
SCIRF 0505A	Metters	25,000
SCIRF 0605	Wen	100,000
SCIRF 0705	Pickelsimer	119,598
SCIRF 0805A	Yuen	5,000
SCIRF 1005A	Bridges	5,000

IX. **AWARDED OFF CYCLE ROUND 04 PROJECTS** **\$ 128,000 ***

SCIRF 0105B	Fritz	119,829
SCIRF 0505B	Metters	120,000
SCIRF 1005B	Bridges	34,602
SCIRF 1105	Krause/Kindy	499,309
SCIRF 1205	Banik	50,000

TOTAL BUDGET ESTIMATE 05/06 **\$1,211,777**

***NOTE:** These four categories are the newly awarded and committed funds for period. The totals in this budget are rough estimates for this year only, while many of the projects will run for 24 months or longer. Actual totals for VIII are \$ 248,598 and IX at \$ 823,740.

SOUTH CAROLINA SPINAL CORD INJURY RESEARCH FUND—
ONGOING CASH/COMMITMENT ANALYSIS
(09/06: incl. 06/09/06 Board Actions)

• **INITIAL 18 MONTHS (01/01/01—06/30/02)**

Total Collections	977,703
Total Expenditures	30,675

YEAR-END CASH BALANCE **947,028**

• **FY 03 (07/01/02—06/30/03)**

Carryover from Prior Period	947,028
DUI Collections through 06/30/03	825,957
TOTAL CASH	1,772,985

Program Admin. Core Expenditures	27,624
Program Scientific Core Expenditures	18,987
Round 01 Projects First 12 Mos. Expenditures	301,951
TOTAL EXPENDITURES	349,562

YEAR-END CASH BALANCE **1,423,423**

• <u>FY 04 (07/01/03—06/30/04)</u>		
Carryover from Prior Period	1,423,423	
Additional Collections through 06/30/04	699,064	
TOTAL CASH	2,122,487	
Program Admin. Core Expenditures	32,184	
Program Scientific Core Expenditures	21,093	
Round 01 Projects Expenditures	228,719	
Round 02 Projects Expenditures	386,838	
TOTAL EXPENDITURES	668,834	
YEAR-END CASH BALANCE		1,453,653
• <u>FY 05 (07/01/04—06/30/05)</u>		
Carryover from Prior Period	1,453,653	
Additional Collections through 06/30/05	669,078	
TOTAL CASH	2,122,731	
Program Admin. Core Expenditures	33,058	
Program Scientific Core Expenditures	62,152	
Round 01 Ongoing Projects Expenditures	54,716	
Round 02 Ongoing Projects Expenditures	267,099	
Round 03 Ongoing Projects Expenditures	193,929	
TOTAL EXPENDITURES	610,955	
YEAR-END CASH BALANCE		1,511,776
<u>FY 06 (07/01/05—06/30/06)</u>		
Cash Carryover from Prior Period	1,511,776	
Additional Collections through 06/30/06	694,841	
TOTAL CASH	2,206,617	
Program Admin. Core Expenditures	34,981	
Program Scientific Core Expenditures	40,834	
Round 01 Ongoing Projects Expenditures	52,907	
Round 02 Ongoing Projects Expenditures	156,605	
Round 03 Ongoing Projects Expenditures	191,245	
Round 04 Ongoing Projects Expenditures	73,866	
Round 04 Off-Cycle Ongoing Proj. Expend.	85,120	
TOTAL EXPENDITURES	635,558	
YEAR-END CASH BALANCE		1,571,059

FY 07 (07/01/06—06/30/07)

Cash Carryover from Prior Period	1,571,059
Additional Collections through 06/30/07(est)	700,000
TOTAL CASH	2,271,059

Program Admin. Core Budget 06/07	37,097
Program Scientific Core Budget 06/07	76,458
Extended Round 01 Projects	44,356
Extended Round 02 Projects	34,007
Extended Round 03 Projects	206,406
Ongoing Round 04 Projects (Last Year)	607,143
Round 02 B Project (1 Year Commitment)	99,206
Round 05 Projects (2 Year Commitment)	360,000
Set Aside For Endowed Chair	500,000
COMMITTED FUNDS	1,964,673

EST. UNCOMMITTED YEAR-END BALANCE	306,388
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TOTAL SCIRF EXPENDITURES SINCE 2001

			FY03	FY04	FY05	FY06	TOTAL	BUDGET	BUDGET VARIANCE
PROGRAM ADMINISTRATION	84076-02		27,623.95	32,184.08	33,057.69	34,981.66	\$ 127,847.38	133,603.00	5,755.62
RESEARCH AND DEVELOPMENT	85458-03		18,987.08	21,093.53	62,152.69	40,833.19	\$ 143,066.49	243,900.00	100,833.51
FUNDED PROJECTS									
ROUND 1 PROJECTS									
SCIRF 0202	McGinty	83964-01	46,685.30	15,605.81	11,445.54		\$ 73,736.65	85,466.00	11,729.35
SCIRF 0302	Haines	84020-01	57,852.09	17,787.70	47,709.21		\$ 123,349.00	123,349.00	-
SCIRF 0602	Middaugh		46,671.89	43,762.98	-		\$ 90,434.87	91,990.00	1,555.13
SCIRF 0802	Wilson		10,745.24	67,305.00	-		\$ 78,050.24	87,978.00	9,927.76
SCIRF 1102	Hickman		48,824.34	51,427.66	-		\$ 100,252.00	100,252.00	-
SCIRF 1202	Short		29,422.27	-	-		\$ 29,422.27	29,476.00	53.73
SCIRF 1302	Krause	84511 / 85076	9,315.59	18,420.80	-	52,907.61	\$ 80,644.00	125,000.00	44,356.00
SCIRF 1402	Kindy	84087-01	53,434.51	14,408.96	7,006.92		\$ 74,850.39	75,000.00	149.61
ROUND 2 PROJECTS									
SCIRF 0103	Short			50,541.45	14,457.00		\$ 64,998.45	65,000.00	1.55
SCIRF 0903	Bhat	84545-01		13,970.13	10,881.91		\$ 24,852.04	24,988.00	135.96
SCIRF 0303	Gao			72,136.93	61,614.78	38,204.33	\$ 171,956.04	172,280.00	323.96
SCIRF 0403	Molnar			72,475.66	2,416.34		\$ 74,892.00	74,892.00	-
SCIRF 0503	Pickelsheimer	84525-01		32,988.67	60,636.06	47,753.23	\$ 141,377.96	145,000.00	3,622.04
SCIRF 0603	Morrisette	84546-01		37,353.68	18,526.32	17,942.60	\$ 73,822.60	75,000.00	1,177.40
SCIRF 0703	Brotherton	84565-01		30,310.07	29,821.34	16,303.33	\$ 76,434.74	74,996.00	(1,438.74)
SCIRF 0803	Ray	84526-01		13,662.91	57,143.65	36,400.75	\$ 107,207.31	137,592.00	30,384.69
SCIRF 1103	Barbosa	84681-01		63,398.25	11,601.75		\$ 75,000.00	75,000.00	-
ROUND 3 PROJECTS									
SCIRF 0104	Webb				47,950.21	64,023.06	\$ 111,973.27	150,000.00	38,026.73
SCIRF 0204	Short				60,000.00		\$ 60,000.00	60,000.00	-
SCIRF 0304	Wise	85226-01			45,279.80	72,147.32	\$ 117,427.12	150,000.00	32,572.88
SCIRF 0604	Murday				38,526.20	14,092.07	\$ 52,618.27	61,632.00	9,013.73
SCIRF 0804	Monger/Godkin				2,095.39	6,205.32	\$ 8,300.71	70,000.00	61,699.29
SCIRF 1004	Selassie	85136-01			78.20	34,777.35	\$ 34,855.55	111,965.00	77,109.45
ROUND 4 PROJECTS									
SCIRF 0105A	Fritz					5,000.00	\$ 5,000.00	5,000.00	-
SCIRF 0205	Tomlinson	85573-01				3,989.63	\$ 3,989.63	25,000.00	21,010.37
SCIRF 0505A	Metters					25,000.00	\$ 25,000.00	25,000.00	-
SCIRF 0605	Wen					27,764.82	\$ 27,764.82	100,000.00	72,235.18
SCIRF 0705	Pickelsimer	85826-01				3,755.29	\$ 3,755.29	119,598.00	115,842.71
SCIRF 0805A	Yuen	85607-01				3,357.03	\$ 3,357.03	5,000.00	1,642.97
SCIRF 1005A	Bridges					5,000.00	\$ 5,000.00	5,000.00	-
OFF CYCLE ROUND 4 PROJECTS									
SCIRF 0105B	Fritz					23,154.02	\$ 23,154.02	119,829.00	96,674.98
SCIRF 0505B	Metters					17,372.39	\$ 17,372.39	120,000.00	102,627.61
SCIRF 1005B	Bridges					29,176.00	\$ 29,176.00	34,602.00	5,426.00
SCIRF 1105	Krause/Kindy	85940-01				8,503.65	\$ 8,503.65	157,082.00	148,578.35
SCIRF 1205	Banik	85923-01				6,913.62	\$ 6,913.62	49,989.00	43,075.38
TOTALS FOR FUNDED PROJECTS			302,951.23	615,556.66	527,190.62	559,743.42	\$ 2,005,441.93		
TOTAL EXPENDITURES			<u>349,562.26</u>	<u>668,834.27</u>	<u>622,401.00</u>	<u>635,558.27</u>	<u>2,276,355.80</u>		

APPENDIX 4—BOARD AGENDAS

~AGENDA~

SPINAL CORD INJURY RESEARCH FUND BOARD

Friday January 27, 2006, 12:00 Noon

Corporate Offices of the Medical Society of South Carolina,

69-B Barre Street, Charleston, S.C. (carriage house behind Edward Bennett House)

Roll Call/Introductions/Approval of July 01, 2005 Board Minutes

Report of Chairman

- Update on Legislative Manual, State Web Page, and PR initiatives
- Presentations/Publications
- Board Reappointments/Meeting with Governor

Report of Fund Administrator

- DUI Collections Update
- Final 04/05 Budget/Expenditures
- 3rd Draft 05/06 Budget
- Total SCIRF Expenditures Since 2001
- Cash Analysis Update
- Round 04 and 02 Supplemental Board Approved Projects
- Current Status of All SCIRF Funded Projects
- FY 04/05 Annual Report

Report of Scientific Directors

- Overview of PI Achievements/Outputs (Fund leverage)
- Final RFP 05
- Discussion of Final Revised RFC 02B
- Revised Round 04 Project Applications for Review
- Board Invited Proposal for Review
- Special Request From Scientific Directors:
- Proposed Special RFP 05B (Bridge Funding)

New Business

- Date of Next Board Meeting
- Other New Business

Adjourn

~AGENDA~

SPINAL CORD INJURY RESEARCH FUND BOARD

Friday June 9, 2006, 12:00 Noon

*Corporate Offices of the Medical Society of South Carolina,
69-B Barre Street, Charleston, S.C. (carriage house behind Edward Bennett House)*

Roll Call/Introductions

Approval of January 27, 2006 Board Minutes

Report of Chairman

- Contacts with Legislature and Office of Governor
- Update on special SCI edition of South Carolina Medical Association Journal

Report of Fund Administrator

- DUI Collections Update
- Updated 05/06 Budget
- Updated Cash/Commitments Analysis
- Updated Draft 06/07 Budget
- Off-Cycle Round 04 Projects Awarded Since Last Board Meeting
- Current Status of All SCIRF Funded Projects

Report of Scientific Directors

- Final Bridge Funding RFP
- Progress on Endowed Chair RFP
- Next Scientific Conference
- Recommended Funding Priorities/Timetable RFP 06
- ROUND 02B Projects Received
- ROUND 05 Projects Received
- Scientific Review of Final Revised RFC 02B Applications
- Scientific Review of SCIRF Round 05 Project Proposals

New Business

- Date of Next Board Meeting
- Other New Business

Adjourn

APPENDIX 5—RFPs ISSUED FY 05-06

RFC 02B REVISED

RESEARCH ON SPINAL CORD INJURY (SCI)

Request For COntacts (RFC)

FEASIBILITY STUDY FOR REHABILITATION SERVICES IN SOUTH CAROLINA

Issued by the Spinal Cord Injury Research Fund Board

Brian G. Cuddy, MD(Chair), David Griesemer, MD, Terry Peacock, Phanor L. Perot, MD, PhD, David L. Shallcross, MD, John H. Stevens, MD, and W. Daniel Westerkam, MD

RFC 02B—REVISED 2005

special Announcement

assessment of need and feasibility of enhancing rehabilitation services in the state of South Carolina

Administered by the Medical University of South Carolina (MUSC)

Date of Release: December 15, 2005

Deadline for Submission: March 15, 2006

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.

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. People with SCI may face extraordinary demands due to the costs of medical care, limitations in rehabilitation resources after profound loss of mobility, and the absence of environmental supports. The spouses and children of people SCI also face additional demands 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 health and quality of life for residents of South Carolina with SCI.

Request For Contracts: The South Carolina Spinal Cord Injury Research Board invites applications for a Phase I comprehensive study on the need and feasibility of enhancing primary rehabilitation services across the state of South Carolina. Primary rehabilitation is defined as that which occurs during that time shortly after the onset of spinal cord injury (within the first few days to the first few months). It is noteworthy that there is only one CARF accredited rehabilitation facility in the state of South Carolina and this is located in the northern part of the state in Greenville.

Assessment of need should address: 1) the needs for rehabilitation in South Carolina; 2) what is being done to meet these needs, including the currently availability and general quality of inpatient rehabilitation services in South Carolina; and 3) what can be done to improve or enhance the rehabilitation services in South Carolina. Surveillance data is available to assist in the assessment of need and distribution of SCI by region throughout the state.

The major component of the study will involve an evaluation of the feasibility of a minimum of 3 alternative models of rehabilitation. Comparison between traditional and nontraditional innovative models will be given a priority. Examples of possible traditional models to explore are: A) totally public state and federally supported and run state program; B) totally private program supported by non-profit and for-profit entities; C) combination of the A and B; D) long-term acute care facility. Alternative models may be inpatient, outpatient, or home and community based, and may follow models developed elsewhere and adapted to do the circumstances of the state of South Carolina. Based on the results of the study, applicants must provide suggestions on the potential for rehabilitation services as either a free standing facility or in conjunction with other existing organizations/entities existing in South Carolina.

The goal of this request for proposals is to identify one or more feasible options that may be realistically implemented to enhance rehabilitation services in the state of South Carolina. Therefore, applications that have the greatest potential to identify means of enhancing rehabilitation services in the state of South Carolina will be given priority.

Applicants are required to:

1. Budget to bring key staff (financial and administrative) from a model SCI center that treats a minimum of 100 SCIs per year to consult on final plans.
2. Develop a political strategy to solicit and obtain needed additional South Carolina Medicaid partnerships/support.
3. Develop plans for a model outpatient service.
4. Develop plans for a model acute care unit (not less than 8 beds).
5. Derive and include in all planning the most up-to-date and complete data on payor mix for acute spinal cord injury patients (absolutely essential for any valid strategic plans).
6. Demonstrate that individuals who sustained spinal cord injuries and received post-acute medical rehabilitation at a center with an emphasis, focus, and long term expertise in the area of spinal cord injury rehabilitation, obtained better long term outcomes in the areas of post- injury related health and social re-integration into the community.
7. Demonstrate that long term it is cost beneficial to the state to provide spinal cord injury patients lacking appropriate insurance with a specialized post-acute medical comprehensive rehabilitation program.

It is recommended that applicants consult with appropriate staff from at least one Model SCI Center to provide guidance in absence of SC having background and/or extensive experience in this area and at least one stakeholder group, such as the South Carolina Spinal Cord Injury Association and the South Carolina Brain Injury Alliance, in order to gain an understanding of need from the perspective of the stakeholders. Notes from a meeting held on December 5th, 2003 among interested parties from around the state are attached to this announcement along with comments from Kermit Short (former Director of the South Carolina Spinal Cord Injury Association) regarding special needs and concerns in the state of South Carolina. We recommend that applicants read the ideas, although applicants are not required to address these points unless they explicitly appear within the RFP itself.

Eligibility and Terms of Support: Applications will be accepted from individuals, groups, consultants and others in South Carolina who have expertise in performing feasibility studies for services. Upon receipt of funding, the awardee will have 6 months to provide a comprehensive written report on the study. The maximum award is \$100,000. At the three-month midpoint, the awardee will be required to present to the SCSCIRF Board of Directors the status of the study and will incorporate any suggestions into the final report. This report will be used to help generate support for a Phase II Development program. The awardee maybe requested to attend meetings for the Phase II program.

Funding: Contract support will be awarded for 6 months. 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: 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 Contracts is **March 15, 2006, 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.

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. 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 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. Please send a cover letter indicating that you are applying for this special announcement and you may include the names and contact information for up to 2 reviewers who are experts in the field (this cover letter will not count against the page limit). 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. Specific aims
- III. 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.
- IV. Background and rationale
- V. Methods
- VI. Evaluation strategy (with measurable goals)
- VII. References
- VIII. Detailed Budget (with narrative justification)
- IX. 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. Extent to which the proposal addresses the absolute priority.
4. Likelihood that the proposed study will be successful in identifying at least one of feasible option for enhancing rehabilitation services in the state of South Carolina.
5. Qualifications and experience of the Principal Investigator and other key personnel.
6. Likelihood of the project will provide the needed information in order to assist in making decisions regarding the development of rehabilitation programs in the State of South Carolina.
7. Availability of adequate facilities to conduct the proposed project
8. Appropriateness of the budget.
9. Relevance to the priorities as presented in the Background section of this RFP.

Awarding of Funds: 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.

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NOTES FROM 12/05/03 MEETINGS RE RFP

Three issues/incentives need to be addressed in any RFP:

1. Incentives/return on investment for private and public providers.
2. Incentives/future costs for third party payors.
3. Special incentives/issues for SC and Federal governments to secure Medicare/Medicaid and other support (i.e., employment, taxes, and quality of life as well as basic governmental responsibilities).

Other suggestions that should be addressed or considered:

1. Any study should probably be in two phases, with a six month maximum Phase 1 findings being presented back to the larger group to fine tune specifications of Phase 2.
2. Determine what is already being spent on SCI/TBI and other relevant rehabilitation services with target of demonstrating that long term cost of no activity is more expensive than putting necessary funds up front.
3. Leave some flexibility or “creativity” in RFP.
4. Since SC is last in everything, consider totally new models (i.e., shorter inpatient combined with outpatient center of excellence).
5. Look at making inpatient rehab more competitive with other acute care beds.
6. More use of Long Term Acute Care Hospitals (LTAC).
7. Look at Nevada “Rehabilitation Without Walls Program”.
8. Take full advantage of Pete Bailey’s information including the full State employee insurance database with its wealth of information on an insured population.
9. Overview highlights of already existing services/resources.

10. Determine current and future needs of SC to identify gaps of focus followed by options/feasibilities of addressing these gaps.

“Special issues in the State of South Carolina”--Comments from Kermit Short, Director, South Carolina Spinal Cord Injury Association

1. No incentive for health care facilities to build/develop new services for rehabilitation due to the allocated cost for DRG's and CPU's. This results in patients being prematurely discharged home without education or understanding of their numerous problems. Many health care facilities refuse to accept or provide rehabilitation services and refuse to accept Medicaid patients.
2. Many of our SCI consumers are being discharged directly to nursing homes. Especially those without strong family support.
3. We strongly need support from the South Carolina Health and Human Services Department. (Responsible for Administering the Medicaid Health Care Budget of 3.5 billion dollars per year in South Carolina. They must understand the problem in order to support our advocacy.
4. We need the General assembly to understand our problem and provide funding quality rehabilitation programs. (Medicaid)

RFP 05

RESEARCH ON SPINAL CORD INJURY (SCI)

Request For Proposals (RFP) 05

Issued by the Spinal Cord Injury Research Fund Board

Brian G. Cuddy, MD(Chair), David A Griesemer, MD, Terry Peacock, Phanor L. Perot, MD, PhD, David L. Shallcross, MD, John H. Stevens, MEd, and W. Daniel Westerkam, MD

Administered by the Medical University of South Carolina (MUSC)

RFP 05

Date of Release: December 15, 2005

Deadline for Submission: March 15, 2006

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.

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. People with SCI may face extraordinary demands

due to the costs of medical care, limitations in rehabilitation resources after profound loss of mobility, and the absence of environmental supports. The spouses and children of people SCI also face additional demands and the cost of care to families and the residents of South Carolina are 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 health and 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).

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 fourth annual call for grants that outline innovative and potentially groundbreaking research. It is estimated that \$600,000 will be available for projects funded in response to this request.

Funding Mechanisms

1. Primary research grants will not exceed \$100,000 over a 24-month period (\$50,000 per year). These will support research activities of junior faculty (usually within 1 to 5 years of their first faculty position or first research 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 bring federal funds into the state of South Carolina. We are particularly interested in funding project that specifically addresses issues related to access to care or the health care delivery in the state of South Carolina. Possible topics include but are not limited to 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. No more than 20% effort for principal investigator may be paid from primary grant funds.
2. 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 \$80,000 will be granted over a 24-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% effort and lay the foundation for them to obtain awards. These awards may reflect either basic science projects or applied projects. Investigators must include a plan to develop an application for a federal career development

as part of their scope of work. Quality of investigators career plans and likelihood of success in obtaining future extramural funds will be heavily weighed in evaluating career development applications.

3. Small pilot grant funds of up to \$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.

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 24 months (except for pilot projects which are 12 months), with no guarantee of renewal. Further funding will depend on progress reports at 12-month intervals that include evidence of productivity, with consideration for renewal of projects that show progress or significant promise on re-submission. All grantees must submit a progress report summarizing the accomplishments during the preliminary year of the award and submit this to the fund administrator 30 days prior to completion of the first 12 months of project. 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 (the exception being the open announcement), but minor items will be considered provided they are clearly justified as absolutely essential to the successful 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 **March 15, 2005, 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, approval from the Board of Directors, and receipt of acceptance forms from successful applicants.

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. 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. Three 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 10 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.* Please send a cover letter and complete the face page (attached to the end of this announcement) indicating which of the grant mechanisms to which you are applying and you may include the names and contact information for up to 2 reviewers who are experts in the field (this cover letter will not count against the page limit). The format is similar to that of a National Institutes of Health (NIH) research proposal. Specific elements that should be included are:

- X. Face page (name, position, department, proposal title, abstract)
- XI. Response to previous critique (only for renewal applications or resubmission of a previously unfunded proposal – maximum of 1 extra page)
- XII. Specific aims
- XIII. 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.)
- XIV. Background and rationale (Note: 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 also need to describe and highlight the qualifications of at least one mentor who will provide mentorship to them during the 24-month period and outline a plan for mentorship (e.g., how often they will meet).
- XV. Methods
- XVI. Evaluation strategy (with measurable goals)
- XVII. References
- XVIII. Detailed Budget (with narrative justification)
- XIX. 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:

- 10. Originality and significance of the hypothesis or product.
- 11. Feasibility and adequacy of the proposed research or product.
- 12. 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.
- 13. Likelihood of the project ultimately receiving extramural support and/or benefiting the people of the State of South Carolina.
- 14. Availability of adequate facilities to conduct the proposed project
- 15. Appropriateness of the budget.
- 16. Relevance to the Fund's primary objectives and initial priorities as presented in the Background section of this RFP.

Note: 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 and assist in obtaining an extramural career development award. Quality of mentorship will also be evaluated in applications for Career Development Awards. Although applicants research plan will be evaluated, it will not be expected

to be as rigorous as with primary grants, as a greater emphasis will be placed on the career development plan, particularly how the applicant will gain expertise in spinal cord injury.

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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SPECIAL OPEN RFC—BRIDGE FUNDING

RESEARCH ON SPINAL CORD INJURY (SCI)

Request For Contracts (RFC)

FEASIBILITY STUDY FOR REHABILITATION SERVICES IN SOUTH CAROLINA

Issued by the Spinal Cord Injury Research Fund Board

Brian G. Cuddy, MD(Chair), David Griesemer, MD, Terry Peacock, Phanor L. Perot, MD, PhD, David L. Shallcross, MD, John H. Stevens, M.Ed. and W. Daniel Westerkam, MD

BRIDGE FUNDING

special Announcement

Administered by the Medical University of South Carolina (MUSC)

Date of Release: 2005

Deadline for Submission: Open

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.

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. People with SCI may face extraordinary demands due to the costs of medical care, limitations in rehabilitation resources after profound loss of mobility, and the

absence of environmental supports. The spouses and children of people SCI also face additional demands 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 health and quality of life for residents of South Carolina with SCI.

Request For Applications: The South Carolina Spinal Cord Injury Research Board invites applications for bridge support funding. The goal of this request for proposals is to provide any investigator with a research program in spinal cord injury with a research grant whose NIH competing continuation application was not funded an opportunity to obtain one year of bridge support.

Eligibility and Terms of Support: Applications will be accepted from investigators in South Carolina who have a research program in spinal cord injury with a research grant whose NIH competing continuation application was not funded expertise in performing feasibility studies for services. The investigator must have already unsuccessfully applied for all available institutional interim funds, such as departmental or university based funding (e.g., URC interim funds at MUSC).

The applicant must provide a statement of need to the SCSCRIF Scientific Directors addressing the following criteria:

- 1) the critique sheets of the unfunded proposal,
- 2) the 3-page introduction to address the specific concerns of the review panel,
- 3) new and projected progress prior to resubmission.
- 4) a simple budget and a budget justification for the interim funds,
- 5) a list of the funds currently available for no cost extensions and other support.

Funding: Awards up to \$50,000 can be requested for one year. Consideration for an award is the demonstrated need by the investigator for such funds to support the laboratory until a revised application for extramural support is funded. If the extramural proposal is funded prior to the end of the bridging funds or if the funds are not expended at the end of 1 year the funds must be returned. The funds may not be used to cover the PI's salary. 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: The review of all proposals will be completed within 60 days following the receipt of the application. The South Carolina SCI Research Board will make money available within 30 days following a recommendation for funding by the Review Committee and approval.

Review Process: The SCSCRIF Scientific Directors will meet as needed to consider the requests.

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, PO Box 250001, Charleston, SC 29425.

Application Format: The proposal must include the 3 page introduction for the NIH resubmission, as well as attaching the reviews. The face page must be completed and include an abstract on an attached page.

Please submit the original and six copies.

Review Criteria: Proposals will be reviewed based solely on the value of the research program to SCI research in the state of South Carolina and the likelihood that the NIH project will receive a competitive renewal.

Awarding of Funds: Award 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.

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Web Page: <http://www.scscirf.org/>

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