

South Carolina Spinal Cord Injury Research Fund Fiscal Year 2023 (FY23) Annual Report EXECUTIVE SUMMARY

Injury to the spinal cord can be irreversible and may cause permanent disability. The consequences of spinal cord injury (SCI) may include paralysis, loss of sensation, loss of control over movement and bodily functions, chronic pain, metabolic disorders, and complications such as uncontrolled blood pressure and infections. People with SCI may face extra demands due to the costs of medical care and rehabilitation and the absence of environmental support. Family members of people with SCI may also be affected.

The South Carolina Spinal Cord Injury Research Fund (SCIRF) was established by Amendment (Bill S54 44-38-510) of the SC Code ratified on July 20, 2000. The SCIRF is provided from a \$100 surcharge on each Driving Under the Influence (DUI) conviction in the state. Surcharges are used to finance SCI research in South Carolina as well as cover the basic operation costs of the SCIRF. The SCIRF is governed by a seven member Board of Directors (BOD) appointed by the Governor upon recommendation of the President of the Medical University of South Carolina (MUSC) and is attached to MUSC for administrative purposes.



The long-term goal of the SCIRF is to interrupt or reverse the process of such injuries, and improve the health and quality of life for residents of South Carolina who have an SCI. This will reduce both the human and economic cost of SCI for people in South Carolina.

The SCIRF BOD is charged with promoting research to develop better understanding of causes and effective treatment strategies for paralysis, sensory loss and other consequences of SCI and disease with a primary objective of advancing knowledge of SCI repair and regeneration within the South Carolina research community by encouraging physicians and scientists to apply expertise to the SCI field.

The BOD includes two medical doctors specializing or significantly engaged in the treatment of SCI, two people with an SCI or a family member with an SCI, two medical doctors from MUSC, and one medical doctor at large who is a member of the South Carolina Medical Association. The SCIRF has a full time Executive Director, part time Scientific Director and part time Associate Scientific Director. Board meetings are held two times per year in various locations throughout South Carolina.

The SCIRF BOD had seven open Requests for Proposals (RFPs) in order to solicit proposals from physicians, scientists and researchers throughout the state related to Primary Research, Pilot Research, Student Research Internship, Bridge Support, Recruitment/Seed Support, Postdoctoral Research, and Conference/Education/Training. All RFP details can be found on the [SCIRF Website](#).

The SCIRF made five awards in FY23 (two awards begin in FY24) and one no cost extension. Two of our grantees concluded their work in FY23. As of the end of FY23 we had seven active grantees including our Administrative and Research Cores.

The SCIRF supports a variety of research activities that include basic science, clinical, epidemiologic, rehabilitative, and translational studies. Examples of the range of research include: 1) “bench science” to identify injury and recovery mechanisms 2) animal interventions that can be translated into 3) clinical trials in humans. Before clinical trials in humans 4) participant identification must occur as well as 5) a more complete understanding of health care access and health outcomes after SCI.

We support these multiple types of research to improve the lives of people with SCI, while concurrently creating opportunities for investigators within the state of South Carolina to successfully compete for larger federal grants that both bring new money into the state and advance knowledge used to help people with SCI.

The SCIRF income derived from the DUI surcharge is collected monthly. Collections for FY23 were \$530,050.67 with an average monthly collection of \$44,170.89.

We look forward to the upcoming year and are pleased to present this FY23 Annual Report.

South Carolina Spinal Cord Injury Research Fund
Catherine Leigh Graham, MEBME – Executive Director
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LETTER FROM THE EXECUTIVE DIRECTOR AND BOARD CHAIR

Dear Friends and Supporters:

On behalf of the Board of Directors and the Executive Director, it is our pleasure to present the fiscal year 2023 (FY23) Report. This report highlights the progress and accomplishments in implementing the legislative mandate of promoting spinal cord injury (SCI) research throughout South Carolina from July 1, 2022-June 30, 2023.

The South Carolina Spinal Cord Injury Research Fund (SCIRF) received monthly DUI (Driving Under the Influence) collections. The monthly average and yearly collections for FY23 were \$44,170.89 and \$530,050.67, respectively, which were a slight increase over FY22 collections. We continue to judiciously award grants as funds allow, while working to promote high quality SCI research and its translation within the state of South Carolina.

The SCIRF continues to be a source of research funding for South Carolina entities that respond to the public requests for proposal (RFP) announcements. In the past year, the SCIRF promoted and supported SCI research through seven RFPs. Applications were reviewed for both scientific merit, often involving outside scientific reviewers knowledgeable with the topic, and for relevance to the mission of SCIRF.

The SCIRF made five new awards in FY23 (two awards will begin in FY24) and one no cost extension. Two of our awardees concluded their research in FY23. As of the end of FY23, the SCIRF had seven active grantees including our Administrative and Research Cores.

This year, our Scientific Director, Dr. James S. Krause, received special acknowledgment of his research on SCI in South Carolina. Dr. Krause received the Governor's Award for Excellence in Scientific Research, a special acknowledgment for outstanding research across fields of study and institutions throughout South Carolina. Dr. Krause indicated that "this award was particularly rewarding since it establishes research on SCI is of similar importance as other fundamental areas of science such as neurobiology, engineering, neuroscience, and medicine. The award was largely based on the importance of contributions to the SCIRF."



We are pleased to provide this annual report for FY23.

Respectfully submitted,

Heather W. Walker, MD
Board Chair

Catherine Leigh Graham, MEBME
Executive Director

LETTER FROM THE SCIENTIFIC DIRECTORS

Dr. Naren Banik and I (Dr. James Krause) have been privileged to serve as Scientific Directors for the SCIRF for more than a decade and we continue our commitment to support and conduct research to improve the lives of people with SCI by advancing knowledge through research. Over the past two decades, the SCIRF has supported research at multiple institutions throughout the state of South Carolina, built infrastructure for research, and assisted investigators in becoming established in the field of SCI research. We are proud of the number of researchers who have benefited from SCIRF opportunities, and we will continue our commitment every subsequent year for which we are given the honor to serve as Scientific Directors.

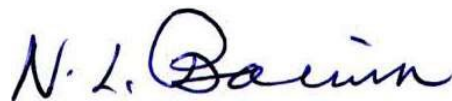
Within our roles as Scientific Directors, we continue to monitor national trends in research to ensure that South Carolina is at the cutting edge of SCI research. This is no small task. It requires engaging multiple investigators across the state and regular review of funding mechanisms to ensure that we meet the needs of investigators in the state of South Carolina.

By promoting and supporting SCI research, we address our primary concern, which is the well-being of individuals with SCI and their families. The success of our work may be witnessed in the number of investigators who have been supported by SCIRF who have built upon their work by successfully competing for federal grants which are highly competitive, based on the quality and importance of the work.

We look forward to the continued success of SCIRF investigators throughout the state of South Carolina and to the people for whom we serve.



James S. Krause, PhD
Scientific Director



Naren L. Banik, PhD
Associate Scientific Director

PART I: OVERVIEW

PURPOSE/CHARGE

Promoting research to develop better understanding of causes and effective treatment strategies for paralysis, sensory loss, and other consequences of SCI and disease.

NEED

Injury to the spinal cord can be irreversible and may cause permanent disability. The consequences of spinal cord injury (SCI) may include paralysis, loss of sensation, loss of control over movement and bodily functions, chronic pain, metabolic disorders, and complications such as uncontrolled blood pressure and infections. People with SCI may face extra demands due to the costs of medical care and rehabilitation and the absence of environmental support. Family members of people with SCI may also be affected. The long-term goal of the SCIRF is to minimize the risk and incidence of SCI, interrupt or reverse the process of such injuries, and improve the health and quality of life for residents of South Carolina who have an SCI.

LEGISLATIVE BACKGROUND

The South Carolina SCIRF was established by the South Carolina General Assembly 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. The legislation calls for a \$100 surcharge to be levied on every South Carolina "Driving Under the Influence" conviction. The proceeds from this surcharge go to the SCIRF and are used to finance SCI research in South Carolina as well as cover basic operation and administrative costs for the SCIRF.

GOVERNANCE

The SCIRF is governed by a seven-member Board of Directors (BOD) appointed by the Governor upon the recommendation of the President of the Medical University of South Carolina (MUSC). It is comprised of two medical doctors specializing or significantly engaged in the treatment of people with SCI in South Carolina; two members who have an SCI or have a family member with an SCI; two medical doctors from MUSC, and one at large medical doctor who is a member of the South Carolina Medical Association.

ADMINISTRATION/SCIENTIFIC DIRECTORS

The SCIRF is attached to MUSC for administrative purposes. The SCIRF has a full time Executive Director, Catherine Leigh Graham, MEBME, a part time Scientific Director, James S. Krause, PhD, and a part time Associate Scientific Director, Naren L. Banik, PhD. The Scientific Directors are involved in aspects of all research development and implementation including setting goals, developing project invitations to meet goals, and making recommendations based on their reviews to the SCIRF BOD of all such projects received.

PRIMARY OBJECTIVES

Advance knowledge of SCI repair and regeneration within the South Carolina research community by encouraging physicians and scientists to apply expertise to the SCI field.

Foster collaborative interdisciplinary approaches to SCI research among South Carolina hospitals, rehabilitative centers, research universities, and interested organizations.

Nurture next generation of SCI researchers through support of young scientists and post-doctoral fellows.

Improve the 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 South Carolina Legislative Act and assure highest quality of research and commitment by investigators.

PART II: REQUESTS FOR PROPOSALS (RFP)

The SCIRF has maintained a focus on building research infrastructure, expertise and capacity throughout South Carolina. In order to accomplish this task, the SCIRF posted seven RFP's throughout FY23 which can be found on the SCIRF website under [Request for Proposals](#). We encourage any potential investigators to contact the Scientific Directors for additional information.

RFP I (Investigator Initiated Research)

Investigator Initiated Research grants support clinicians, therapists, educators, and scientists in South Carolina researching aspects of spinal cord injury in an effort to develop a better understanding and ultimately treatment for paralysis and other consequences of spinal cord injury and spinal cord disease.

RFP P (Pilot)

Pilot Research grants are to support investigators who need to collect pilot data to position themselves for extramural grants.

RFP S (Student Research Internship)

Student Research Internship grants support the mentor of a student in medicine, nursing, health professions, epidemiology, neuroscience or other related fields that apply to basic, clinical or translational research with spinal cord injury or spinal cord disease.

RFP PD (Postdoctoral Research)

Postdoctoral Research grants increase the number of individuals with doctorates who seek postdoctoral training in SCI, working with a mentor who has an independent program of research in SCI.

RFP B (Bridge Funding)

Bridge Funding grants provide an investigator, with a research program in spinal cord injury with a research grant whose federal competing continuation application was not funded, an opportunity to obtain one year of bridge support.

RFP R (Recruitment/Seed Funding)

Recruitment/Seed Funding grants promote the recruitment/seed funding for scientists and clinician scientists, who specialize in the area of spinal cord injury, to the state of South Carolina.

RFP CET (Conference/Education/Training)

Conference/Education/Training grants support entities that will improve the knowledge of people with SCI in South Carolina and/or health care professionals that provide care for people with spinal cord injuries in South Carolina.

PART III: NEW AWARDS/EXTENSIONS

New Awards in FY23

2022 P-01 Contrast Enhanced Ultrasound for the Evaluation of Intraoperative SCI following Surgical Decompression of a Chronically Compressed Spinal Cord

Brian Saway, MD, Neurological Surgery – Medical University of South Carolina

Pilot Research Award

(8/1/2022-7/31/2023 for \$29,847)

2022 PD-01 Inducing corticospinal plasticity for improving upper extremity motor function recovery in people with chronic cervical spinal cord injury

Aiko K. Thompson, PhD, Associate Professor, Dept of Health Sciences and Research – Medical University of South Carolina

Post Doc Award

(1/1/2023-12/31/2023 for \$67,494)

2022 CET-01 SC Spinal Cord Injury Research Fund 2023 Scientific Conference

Catherine Leigh Graham, MEBME, Executive Director – SC Spinal Cord Injury Research Fund Conference/Education/Training Award

(1/1/2023-12/31/2023 for \$24,850)

2022 SI-01 Basic Science Research Initiative (Starting in FY24)

Naren L. Banik, PhD, Professor, Dept of Neurosurgery – Medical University of South Carolina

Special Initiative Award

(7/1/2023–6/30/2028 for \$693,980)

2023 I-01 Evaluation of toxicity and therapeutic treatment window of rolipram-loaded PgP for SCI (Starting in FY24)

Jeoung Soo Lee, PhD, Associate Professor – Clemson University

Investigator Initiated Award

(7/1/2023-6/30/2025 for \$150,000)

No Cost Extensions in FY23

2022 P-01 Contrast Enhanced Ultrasound for the Evaluation of Intraoperative SCI following Surgical Decompression of a Chronically Compressed Spinal Cord

Brian Saway, MD, Neurological Surgery – Medical University of South Carolina

Pilot Research Award

(8/1/2022-7/31/2023 for \$29,847, *extension 7/31/2024)

PART IV: AWARDS CLOSED in FY23

2019 CET-01 WIND 2020 Conference

Angela Rodriguez, MSW, Executive Director – SC Spinal Cord Injury Association
Conference/Education/Training Award

(8/1/2019-7/31/2020 for \$24,801, *extension 1/31/2021, *ext 7/31/2021, *ext 12/31/2022)

2016 SI-03 Basic Science Research Initiative

Naren L. Banik, PhD, Professor, Dept of Neurosurgery – Medical University of South Carolina
Special Initiative Award

(7/1/2016 – 6/30/2021 for \$775,810, *extension 6/30/2023)

PART V: ACTIVE AWARDS (as of the end of FY23)

Grant #	Title	PI	Insti- tution
Admin. Core	SCIRF Administrative Core Services	Graham	N/A
Research Core	SCIRF Research Core Services	Krause	N/A
2017 SI-02	Measuring Outcomes after SCI throughout South Carolina: Statewide Outcomes Database	Krause	MUSC
2021 SI-01	SC Traumatic SCI Surveillance & Registry	Selassie	MUSC
2022 P-01	Contrast Enhanced Ultrasound for the Evaluation of Intraoperative SCI following Surgical Decompression of a Chronically Compressed Spinal Cord	Saway	MUSC
2022 PD-01	Inducing corticospinal plasticity for improving upper extremity motor function recovery in people with chronic cervical spinal cord injury	Thompson	MUSC
2022 CET-01	SCIRF 2023 Scientific Conference	Graham	SCIRF

PART VI: INCOME

The income to the SCIRF comes exclusively from revenue attributed to a \$100 fee levied on every “Driving Under the Influence” (DUI) conviction in South Carolina. MUSC is the legislated administrator of these collected funds and is the state agency responsible for their oversight.

The \$100 per DUI surcharges are received monthly throughout each fiscal year. Below is the table of monthly collections for FY23. The total collected was \$530,050.67 with a monthly average of \$44,170.89.

Month	2022-2023
Jul	\$ 47,305.50
Aug	\$ 36,912.27
Sep	\$ 32,791.65
Oct	\$ 49,051.55
Nov	\$ 35,591.37
Dec	\$ 44,457.02
Jan	\$ 40,339.44
Feb	\$ 39,559.73
Mar	\$ 47,981.99
Apr	\$ 52,327.21
May	\$ 54,699.26
Jun	\$ 49,033.68
FY TOTAL	\$ 530,050.67
Monthly Average	\$ 44,170.89

PART VII: FINANCIAL OVERVIEW (March 2001 - June 2023)

Income (DUI Surcharges)	\$ 15,625,254.07
Expenditures	\$(12,674,261.37)
Committed Funds	<u>\$ (1,428,792.60)</u>
BALANCE	\$ 1,522,200.10

PART VIII: DIRECTORS (as of end of FY23)

Board of Directors



Heather W. Walker, MD - CHAIR

Mount Pleasant, SC

(Category A) – Medical Doctor from MUSC

PM&R, SCI Medicine, Medical Director

MUSC Rehabilitation Hospital/Encompass Health Affiliate



Abhay K. Varma, MD, MBBS

Mt. Pleasant, SC

(Category A) – Medical doctor from MUSC

Associate Professor of Neurosurgery at MUSC



Victoria L. Turgeon, PhD

Greenville, SC

(Category C) – Family member with an SCI

Professor, Furman University



Sherwood L. Toatley

Chapin, SC

(Category C) – Person with an SCI

911 Telecommunicator with the City of Columbia



David J. Powell, III, MD

Mount Pleasant, SC

(Category B) – Medical Doctor specializing in treatment of people with SCI

Medical Director, Center for Spinal Cord Injury at Roper Rehabilitation Hospital/St.

Francis Health Care System



Jeffrey M. Derbas, MD

Greenville, SC

(Category B) – Medical Doctor specializing in treatment of people with SCI
Board Certified in Physical Medicine and Rehabilitation. SCI Medical Director at Prisma Health - Greenville



Stephen E. Rawe, MD, PhD

Charleston, SC

(Category D) – At large medical doctor, member of the SC Medical Association
Board Certified Neurosurgeon – Retired

Executive Director



Catherine Leigh Graham, MEBME

Executive Director

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Scientific Directors



James S. Krause, PhD

Scientific Director

Associate Dean for Clinical Research College of Health Professions, MUSC

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Naren L. Banik, PhD

Associate Scientific Director

Professor, Department of Neurology and Neurosurgery, MUSC

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Terms

Category A. Two medical doctors from MUSC

Heather W. Walker, MD – (2025)
Abhay K. Varma, MD – (2023)

Category B. Two medical doctors at large specializing or significantly engaged in the treatment of people with an SCI

Jeffrey M. Derbas, MD – (2025)
David J. Powell, III, MD – (2026)

Category C. Two members who have an SCI or a family member with an SCI

Victoria L. Turgeon, PhD – (2026)
Sherwood L. Toatley – (2027)

Category D. One at large medical doctor who is a member of the SC Medical Association

Stephen E. Rawe, MD, PhD – (2024)

Passing of the Gavel

The SCIRF Board of Directors elected Dr. Heather W. Walker as the Board Chair at the fall Board meeting in 2022 and she began serving her third year as Chair in March of 2023.

Meetings

The Board of Directors holds in-person meetings, usually two per year, to address the organization of the SCIRF as well as directional goals. Meeting dates and locations are listed below. The Board is responsible for approval of any proposals as well as budgets for Administrative and Research Core functions.

October 28, 2022 – Roger C. Peace Rehabilitation Hospital, Greenville (included a tour of the facility and demonstration of the Zero Gravity equipment)

April 4, 2023 – MUSC, Charleston

PART IX: RESEARCH OVERVIEW

As Scientific Directors, we always look for new research trends so that opportunities in cutting edge SCI research are not overlooked. The Department of Defense (DoD), Veterans Administration (VA), and National Institute of Health (NIH) have emphasized research on chronic SCI.

There was significant progress in research over the past year in both basic science and applied research. This progress was reflected in multiple funded projects, with several currently funded projects in applied science. There are also ongoing special initiatives in both applied and basic science.

Basic science.

Significant progress was made by Dr. Naren Banik (MUSC) in his **Basic Science Research Initiative** during the final year. This Special Initiative assisted in maintaining the continuity of basic science research state-wide through student training in SCI research. Through training and mentorship from Dr. Banik, students Ali Myatich and Giovanna Leone garnered substantial experience and made significant progress in a variety of SCI research areas including acute and sub-acute (1) bone mineral loss and changes in structure, (2) mechanisms of pain, (3) changes in cholinergic transmission via cortico-spinal tract, and (4) muscle atrophy with alterations in muscle structure as well as neuromuscular junction. For the 2022-2023 fiscal year, multiple manuscripts were published and an abstract was presented.

Ali Myatich, a masters student, worked on the effects of clemastine in remyelination and protection of neurons and skeletal muscle after SCI. She found that clemastine reduced inflammation, protected cells, promoted remyelination, and preserved myelin integrity. She also found that clemastine can aid not only in the remyelination and preservation of myelin sheath integrity, but also protects neurons. In an extended study, she also tested the effect of clemastine on neurogenic muscle loss which is still ongoing. These findings and narratives were published in [Neural Regeneration Research: Clemastine in remyelination and protection of neurons and skeletal muscle after spinal cord injury](#).

Hannah McCoy, a masters student, examined the role of cell surface enolase expression and inflammatory events in SCI. While enolase is normally expressed in the cytosol, her work showed that enolase expression is upregulated at the cell surface following injury, promoting glial cell activation and signal transduction pathway activation. Her work also showed that SCI-induced microglia activation triggers pro-inflammatory mediators at the injury site, activating other immune cells and metabolic events, i.e., Rho-associated kinase, contributing to the neuroinflammation found in SCI. Ms. McCoy also tested an enolase inhibitor, ENOblock, which attenuated the activation of Rho-associated kinase that decreases glial cell activation and promotes functional recovery following SCI. The importance of enolase activation and inhibition as a potential therapeutic target following SCI was published in [Neural Regeneration Research: Regulation of enolase activation to promote neural protection and regeneration in spinal cord injury](#).

Giovanna Leone, another masters student, worked on skeletal muscle and bone loss in SCI. She recently wrote a review article on sarcopenia and osteoporosis after SCI. This article discusses the importance of preserving and maintaining bone mass to decrease the risk of fragility and fracture in vulnerable SCI populations. This review also focuses on current and future pharmacological and non-pharmacological therapies for reducing neurogenic bone loss following SCI.

Research under the initiative, “Enolase activation triggers gliosis and neuronal death after spinal cord injury”, was presented by Dr. Azizul Haque at the 54th Annual American Society for Neurochemistry Meeting (ASN 2023) in Lexington, Kentucky (March 18-22, 2023)

Also under this initiative, work began to generate samples collected from the rat model of SCI at different levels of injury, including moderately severe (clinically relevant), severe, and very severe. While survivability will eventually be assessed up to 18 months post-injury, the preliminary results indicated moderately severe and severe animals can survive at least 6 months.

Applied science.

Dr. Anbesaw Selassie (MUSC) continued his work on the state **SCI Surveillance and Registry**. This is a Special Initiative used to identify all instances of SCI within the state of South Carolina. It allows researchers to investigate, identify, and quantify the types of injuries that occur within the state and to utilize this information to identify the needs of people with SCI in South Carolina. The information also serves to develop a roster of individuals who may be contacted for additional projects, included those funded by the SCIRF to serve as participants in valuable research. Dr. Selassie's findings indicate a substantially higher rate of SCI among men, suggesting that this is related to high-risk behaviors among young men. He also noted that nonwhites had a 1.28 times greater rate of SCI compared to whites. Falls were the primary cause of SCI, followed by motor vehicle crashes. Falls were higher among those in older age groups, while motor vehicle crashes were higher among younger individuals.

Another SCIRF Special Initiative, Dr. James Krause's (MUSC) **Statewide Health Outcomes Database**, continued with detailed data collected on outcomes among those with SCI in South Carolina to have a greater understanding of a wide range of outcomes. This information is critical to understanding how factors, such as the pandemic, affect people with SCI in South Carolina. In the first report, over half of people with SCI in South Carolina who participated in the study (58.9%) reported a negative impact of the pandemic in at least one of five life areas, with community participation being the primary area affected (51%).¹ 25% of the participants reported delaying a medical procedure because of fear of catching COVID. Among those requiring personal assistance services (i.e., attendant care), 32% reported a decrease in quality of care and 52% relied more on family to assist with their care. A [pandemic research brief](#) on this publication was distributed to the research participants and posted to the Health, Employment, and Longevity Project website. In a second COVID-19 report looking at factors that predicted post pandemic onset problems, 22% of those reporting stated difficulties obtaining daily necessities and 19% reported difficulty obtaining SCI services.² Having more health conditions and nonroutine access to services prior to the pandemic was associated with more difficulties obtaining daily necessities and SCI services post pandemic. This second COVID-19 report resulted in a [obtaining services during the pandemic research brief](#). A third [research brief on opioid use](#) was produced for this project. Research briefs summarize findings from a manuscript analyzing specific data and are written for stakeholders, emphasizing implications. Two newsletters were also produced for study participants to summarize key research findings. The [Fall 2022 newsletter](#) was disseminated in December 2022 and the [Summer 2023 newsletter](#) was disseminated in August 2023.

Dr. Aiko Thompson's (MUSC) work focuses on functional recovery after incomplete SCI. She has been successful in developing a research program that has led to substantial federal funding. Through her Post Doc award, Dr. Thompson mentored one research fellow, Dr. Allison Lewis, who worked on **Inducing corticospinal plasticity for improving upper extremity motor function recovery in people with chronic cervical spinal cord injury**. Dr. Lewis learned to use invasive and non-invasive (TMS and taVNS) brain stimulation and peripheral nerve stimulation methods for examining neural pathways in upper extremity of people with chronic cervical SCI. Dr. Lewis worked with participants with SCI administering 3 months of upper extremity MEP conditioning study sessions. She also learned the soleus H-reflex down-conditioning paradigm and protocol for alleviating spastic hyperreflexia and spastic movement disorders in people with chronic incomplete SCI.

Dr. Thompson hosted a retreat, for people with SCI and other stakeholders, on June 24th in Charleston to showcase what SCI research studies are ongoing at her [EPOC lab](#) as well as how to participate in ongoing and future research studies. Speakers spoke regarding state and local resources including the South Carolina Spinal Cord Injury Association and their support groups. Dr. Krause gave an overview of the SCIRF at this retreat as well as his ongoing research.



Dr. Brian Saway (MUSC) began his study researching **Contrast Enhanced Ultrasound for the Evaluation of Intraoperative SCI Following Surgical Decompression of a Chronically Compressed Spinal Cord**. Dr. Saway aims to evaluate and quantify micro- and macrovascular changes that lead to areas of hyper-perfusion as well as areas of ischemia intraoperatively in patients that undergo elective cervicothoracic posterior decompression for chronic compression. While this study start was delayed due to IRB approvals, if successful, this study will help surgeons predict and prognosticate the degree of post-operative neurologic injury.

Ms. Angela Rodriguez led the South Carolina SCI Association, comprised of stakeholders with SCI, in holding their conference for people and families of those with SCI. The **WIND (Wheeling In New Directions)** conference which had been postponed due to Covid, was held October 22, 2022 and brought several speakers together with expertise on SCI research who shared their findings and general findings from the field of SCI so that individuals could benefit from applying them to their own lives. Session slides and audio can be found on the [SCSCIA 2022 WIND Conference](#).

Lastly, planning began for the sixth **SCIRF Scientific Conference** which will be held at MUSC on November 3, 2023 and will highlight the work of SCIRF grantees in relation to the larger SCI field of research.

Summary. This has been another successful year of research supported by the SCIRF. We are proud of the accomplishments during the past year and we look forward to continued success.

1. Krause JS, Jarnecke M. [Perceived impact of the COVID-19 pandemic among people with spinal cord injury: A descriptive study](#). *Arch Rehabil Res Clin Transl*. Jun 2 2023;100271. doi:10.1016/j.arrct.2023.100271
2. Cao Y, Clark JMR, Krause JS. [Difficulty obtaining daily necessities and difficulty obtaining SCI services during the COVID-19 pandemic among people with spinal cord injury](#). *Arch Phys Med Rehabil*. Aug 18 2023;doi:10.1016/j.apmr.2023.08.002

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