

# SCI 2020: Launching a Decade for Disruption in Spinal Cord Injury Research

February 12-13, 2019

NIH Natcher Conference Center, Bethesda, MD

DRAFT



**Lead Institute: NINDS**

**NIH co-sponsors/partners: NICHD/NCMRR, NIBIB, NIH OD/ODP**

**Federal partners: DOD, VA RR&D, NIDILRR/SCIMS and MSKTC**

**Other Partners:** Craig H. Neilsen Foundation, American Spinal Injury Association, Wings4Life, Spinal Research, the Rick Hansen Institute, United Spinal Association, Christopher and Dana Reeve Foundation, North American Spinal Cord Injury Consortium

**Background:** The spinal cord injury (SCI) research community has seen striking advances in the last decade. New imaging capabilities have enabled detailed mapping of cells and circuits, regenerative interventions have elicited remarkable axon growth, researchers and clinicians are focusing on the systemic nature of SCI, technology enabled rehabilitation has become feasible, cell therapies are showing benefits, and neuromodulation effects have shattered previous understanding of the capacity of the injured spinal cord for recovery of function. Despite these developments, current research efforts appear largely siloed and somewhat mired in the discovery phase. In addition, shifting demographics and changes in care have revealed additional gaps across the translational spectrum. To enable disruptive problem solving and implementation in the 2020s, SCI researchers and the community must come together to discuss and define the current key research priorities. Input from consumers and individuals living with SCI is essential to making meaningful change. A two-day, comprehensive stakeholder’s meeting hosted by NIH and partners will bring diverse voices to the room to critically evaluate the state of the science, assess areas of technological and community readiness, and build collaborations to change the trajectory of research and clinical options for people with SCI.

Why do this now? Recent workshops and symposia in SCI effectively address emerging topics and highlight selected research gaps. However, these efforts can unintentionally foster discipline-specific thinking. Researchers and consumers are rarely asked to challenge their own thinking and existing dogma, to cross boundaries to develop new collaborations, and to discuss and debate ideas together. The purpose of ‘SCI 2020: Launching a Decade for Disruption’ is to overcome some of the barriers and initiate these discussions.

Six primary sessions are organized around the major post-injury time frames (acute, sub-acute or chronic) and panels will address both preclinical and clinical evidence and opportunities. Session panelists will convene pre-meeting teleconferences to define key “big picture” starting questions. Each session will consist of a brief overview by the Session Chair and short presentations of ongoing opportunities from panelists representing multiple viewpoints. Then, invited “Opportunity experts” will be charged with driving Q&A sessions that highlight the contrasting evidence and gaps, and the audience will be invited to assess readiness and further define priorities.

An evening poster session on Day 1 will allow informal discussion of additional research ideas. Lunch and learn sessions will highlight available resources. Breakout sessions on Day 2 will provide time for attendees to define potential collaborations to reach the prioritized goals. At the end of the meeting, each panel will be asked to identify 2-3 top priorities to be addressed in the next 5-10 years.

**Registration Site:** <https://meetings.ninds.nih.gov/meetings/SCI2020/>

The meeting will be open and available on videocast for those unable to attend in person on the NIH Campus. We encourage those in attendance to plan to stay for the full two days in order to participate in all aspects of the program.

# SCI 2020: Launching a Decade for Disruption in Spinal Cord Injury Research



## Day 1: Tuesday February 12, 2019

- 8:30-9:00**      **Registration**
- 9:00-9:15**      **Welcome** NINDS (Lyn Jakeman, PhD), NICHD/NCMRR (Alison Cernich, PhD)
- 9:15-10:00**     **Keynote Presentation:** Michael L. Boninger MD, University of Pittsburgh
- 10:00-10:30**    **Lived Experience:** Robert Wudlick, Get Up Stand Up to Cure Paralysis
- 10:30-11:00**    **Break**
- 11:00-11:30**    **Goals and Intentions for SCI 2020: (NIH staff)**
- 11:30-12:45**    **Session 1: Fire and Smoke - Opportunities in the acute post-injury phase [NINDS, OD-ODP]**  
Chair: Linda Noble-Haeusslein, PhD, University of Texas at Austin  
Panelists: William Whetstone, MD, University of California San Francisco  
Alexander Rabchevsky, PhD, University of Kentucky  
Marc Simard, MD, PhD, University of Maryland  
Q&A Facilitators:  
James D Guest, MD, PhD, FACS, FRCS, University of Miami  
Dana McTigue, PhD, The Ohio State University
- 12:45-1:45**     **Lunch/networking (option to pre-order box lunch)**
- 1:45-3:00**      **Session 2: Beyond the Gap – Innovating repair and plasticity in the subacute period [NINDS, NCMRR]**  
Chair: Michael Sofroniew MD, PhD, University of California at Los Angeles  
Panelists: Zhigang He, PhD, Harvard University  
James D Guest, MD, PhD, FACS, FRCS, University of Miami  
Jennifer Dulin, PhD, Texas A&M University  
Q&A Facilitators:  
Veronica Tom, PhD, Drexel University  
Sam Pfaff, PhD, Salk Institute
- 3:00-3:30**      **Perspective: Rigor and Reporting in SCI Research**  
Dana McTigue, PhD, The Ohio State University
- 3:30-4:00**      **Break**
- 4:00-5:15**      **Session 3: With Us, Not for Us: Community activity and priorities [NINDS/ NCMRR/NINR]**  
Co-Chairs: Matthew Rodreick, Executive Director, Unite 2 Fight Paralysis and Robert Wudlick, Chair, Get Up Stand Up to Cure Paralysis

Panel – North American Spinal Cord Injury Consortium

Jennifer French, Executive Director, Neurotech Network  
Kimberly Anderson-Erisman, PhD, Cleveland FES Center  
Alexander Rabchevsky, PhD, University of Kentucky  
John Chernesky, Consumer Engagement Lead, Rick Hansen Institute  
Barry Munro, Ontario Neurotrauma Foundation

**5:30-7:00**      **Poster Session**

**Day 2: Wednesday February 13, 2019**

**8:30-8:45**      **Welcome** NIH and SCI Research (Walter Koroshetz)

**8:45-10:00**      **Session 4: No Plateau! Neuromodulation to improve neurological function months and years after SCI [NCMRR/NINDS/NIBIB]**

Chair: Edelle Field-Fote PT PhD, Shepherd Center and Emory University

Panelists:      D. Michele Basso, EdD, PT, The Ohio State University  
Mary Jane (MJ) Mulcahey, PhD, Thomas Jefferson University  
Chet Moritz, PhD, University of Washington

Q&A Facilitators:

Kimberly Anderson-Erisman, PhD, Cleveland FES Center  
Gregoire Courtine, PhD, Swiss Federal Institute of Technology Lausanne

**10:00-10:30**      **Break**

**10:30-12:00**      **Session 5: SCI in Context: Health and secondary health effects (SHE) of chronic SCI [NCMRR/OD-ODP]**

Chair: Richard Shields PT PhD, University of Iowa

Panelists:      Phillip Popovich, PhD, The Ohio State University  
Melissa Morrow, PhD, Mayo Clinic  
Michael J. Kennelly, MD, FACS, FPMRS, University of North Carolina

Q&A Facilitators:

James Krause, PhD, Medical University of South Carolina  
Joetta Khan, PhD, MPH, RD, Walter Reed National Military Medical Center

**12:00-1:00**      **Lunch and Learn (details TBD)**

**1:00-2:15**      **Session 6: Technological Facilitation, Prosthetic and robotic interventions and therapies across the spectrum of mild/moderate/severe SCI [NIBIB/NCMRR/NINDS]**

Chair: Jose Contreras-Vidal, PhD, University of Houston

Panelists:      Ann M. Spungen, EdD, Mount Sinai Medical Center and James J. Peters VAMC  
Jennifer Collinger, PhD, University of Pittsburgh  
Gregoire Courtine, PhD, Swiss Federal Institute of Technology Lausanne

Q&A Facilitators:

Vivek Pinto, PhD, FDA, Physical Medicine and Rehabilitation Devices Branch  
Jennifer French, Executive Director, Neurotech Network

**2:15-2:45**      **Break**

**2:45-4:00**      **Breakout Sessions: Research priorities for the next decade**

*Moderators will facilitate discussions and try to build consensus on 1-3 critical research needs, stemming from the conference sessions. Participants may choose which breakout session they wish to attend:*

- A. Research priorities for acute care (Room, TBD)
- B. Research priorities for repair and plasticity (Room, TBD)
- C. Research priorities for neurological recovery in SCI (Room, TBD)
- D. Research priorities for health and secondary health effects (Room, TBD)
- E. Research priorities for prosthetic and robotic devices in SCI (Room, TBD)

**4:00-4:30      Reconvene (breakout leaders report back)**

**4:30-6:00      Summary, Top Priorities and Next Steps**

**Adjourn**

**External Steering Committee:**

- Linda Noble-Haeusslein, PhD
- Michael V. Sofroniew, MD, PhD
- Matthew Rodreick
- Robert Wudlick
- Edelle Field-Fote, PT, PhD, FAPTA
- Richard Shields, PT, PhD, FAPTA
- Jose (Pepe) Contreras-Vidal, ITESM, MS, PhD,
- Veronica Tom, PhD
- Dana McTigue, PhD
- Michael Boninger, MD
- Leslie Morse, DO, Craig Hospital, U Colorado Denver
- Jeanne Zanca, PhD, Kessler Foundation

**With additional support through travel grants from:**

- Christopher & Dana Reeve Foundation
- North American Spinal Cord Injury Consortium
- Rick Hansen Institute
- United Spinal Association
- Wings4Life



**Acknowledgements**

*NINDS and NICHD would like to thank the following organizations for their generous contributions to the SCI 2020 Conference*

**Financial gifts provided by:**

- American Spinal Injury Association
- Craig H. Neilsen Foundation
- Mission Connect, a program of the Texas Institute for Rehabilitation and Research (TIRR)

**Our Federal Partners:**

- US Department of Defense Congressionally Designated Medical Research Programs (CDMRP)
- Veteran’s Administration Research and Rehabilitation
- National Institute of Disability, Independent Living and Rehabilitation Research (NIDILRR)
- Federal Drug Administration
- Center for Medicaid and Medicare Services

