

Stephen Sprigle  
 Professor  
 Schools of Industrial Design and Mechanical Engineering  
 Georgia Institute of Technology

**EDUCATION**

Masters of Physical Therapy	Oct 1998	Mercy College, Dobbs Ferry, NY <i>Georgia State License #PT007574</i>
Doctor of Philosophy	May 1989	University of Virginia (Biomechanics)
Master of Science	May 1985	University of Virginia (Biomedical Engineering)
Bachelor of Science	Dec 1982	University of Florida (Engineering Science & Mechanics)

**EMPLOYMENT EXPERIENCE**

Georgia Institute of Technology

Professor, Schools of Industrial Design & Mechanical Engineering	7/2016-
Professor, Schools of Applied Physiology and Industrial Design	3/2009-6/2016
<i>Courtesy Appt: School of Mechanical Engineering: 2013- 2016</i>	
Associate Professor of Industrial Design, College of Design	9/2002-3/2009
Associate Professor of Applied Physiology, College of Sciences	7/2004-3/2009
Program Faculty: Interdisciplinary Bioengineering Graduate Program	9/2004-present
Director, Center for Assistive Technology and Environmental Access,	9/2002-8/2008
Director, Graduate Program in Industrial Design	06/2009-12/2009
Interim Chair, School of Industrial Design	01/2010-8/2010
<i>(note: the School of ID was formed in Jan 2010)</i>	

Helen Hayes Hospital, West Haverstraw, NY

Director, Center for Rehabilitation Technology	2/1996-9/2002
--	---------------

Academic Appointments

Assistant Professor of Clinical Physical Therapy, Department of Rehabilitation Medicine,  
 College of Physicians and Surgeons, Columbia University  
 Senior Lecturer, Graduate School of Health Sciences, New York Medical College

State University of New York at Buffalo

Senior Research Scientist	8/1993-1/1996
Adjunct Assistant Professor of Mechanical Engineering and Occupational Therapy,	

University of Virginia, Charlottesville, Virginia,

1/1987-7/1993

Biomedical Engineering Department

Research Assistant Professor	8/1990-7/1993
Director, Central Virginia Assistive Technology Resource Center	4/1992-6/1993

Good Shepherd Rehabilitation Hospital, Allentown, PA - Rehabilitation Engineer

8/1985-1/1987

## STEPHEN SPRIGLE, PHD, PT

### HONORS AND AWARDS

Rehabilitation Engineering & Assistive Technology Society of North America (RESNA)  
Mentor Award, 2006  
Distinguished Service Award: 1996, 2001, 2006  
RESNA Fellow: 2008  
Fellow, American Professional Wound Care Association, 2017  
Visiting Scholar, University of Ulster, Northern Ireland 2010-2014

### RESEARCH & SCHOLARSHIP

#### **External Proposals and Grants funded as Principal Investigator** (Ordered by starting date)

Title: Mechanical Properties of dressings: friction and laminar strain  
Principal Investigator: Stephen Sprigle, PhD PT  
Amount Funded: \$16,090  
Funding Type & Agency:  
Dates: May 2019- Jun 2020  
Purpose: to characterize the mechanical properties of preventative wound dressings

Title: Ergonomic Infant Gear  
Principal Investigator: Stephen Sprigle, PhD PT  
Amount Funded: \$88,426  
Funding Type & Agency:  
Dates: Jan 2019- Jun 2020  
Purpose: to collect anthropometric information on infants and toddlers and parental insight to inform the design of ergonomic infant & toddler gear

Title: Development of a Test Method for Wheelchair Cushion Load-bearing Performance  
Principal Investigator at GT: Stephen Sprigle, PhD PT  
Amount Funded: \$329,000  
Funding Type & Agency: University of Pittsburgh via a NIDILRR RERC award  
Dates: Jul 2018- Jun 2021  
Purpose: To develop a standardized test method to measure the performance of wheelchair cushions

Title: Development of the Wheelchair In-Seat Activity Tracker (WiSAT)  
Principal Investigator: Stephen Sprigle, PhD PT  
Amount Funded: \$1,043,424  
Funding Type & Agency: DOD CDMRP in Spinal Cord Injury  
Dates: Jul 2017- Jun 2020  
Purpose: To develop a consumer product that measures and informs wheelchair users about their weight-shifting behaviors

Title: Use of wheelchair seat elevators in everyday life  
Principal Investigator: Stephen Sprigle, PhD PT  
Funding Agency: Quantum Rehab  
Amount Funded: \$95,100  
Dates: Aug 2016-Jul 2018  
Purpose: To measure usage of a wheelchair elevating seat and the daily activities performed while the elevating

## STEPHEN SPRIGLE, PHD, PT

function is engaged

Title: Creating Rehabilitation Engineering and Assistive Technology Experiences (cREATe)

Principal Investigator: Stephen Sprigle, PhD PT

Funding Agency: VentureWell

Amount Funded: \$21,600

Dates: March 2016-March 2018

Purpose: cREATe directs multidisciplinary teams of design, engineering and physical therapy students to develop technology solutions to increase the function and independence of persons with disabilities.

Title: Development of the Engage Wheelchair Seat

Principal Investigator: Stephen Sprigle, PhD PT

Amount Funded: \$13,629

Sponsor: The Posture Works, Wellesly, MA

Dates: July 2014- June 2016

Purpose: To design a new wheelchair seat for commercial production

Title: Pressure Relief Behaviors and Weight-Shifting Activities to Prevent Pressure Ulcers in Persons with SCI;

Principal Investigator: Stephen Sprigle, PhD PT

Amount Funded: \$550,633

Funding Type & Agency: DOD CDMRP in Spinal Cord Injury

Dates: Sept 2013- Aug 2017

Purpose: To study the impact on weight-shift activity as a preventative behavior

Title: Evaluation of a Sil-Air Truck Seat

Principal Investigator: Stephen Sprigle, PhD PT

Amount Funded: \$4105

Funding Type & Agency: Cushion by Design, Dalton, GA

Dates: May 2013- April 2014

Purpose: evaluation of a prototype truck seat

Title: Evaluation of the Low Force Handrim

Principal Investigator: Stephen Sprigle, PhD PT

Amount Funded: \$15,037

Funding Agency: *NexTek Mobility* via SBIR from NIH

Period of Performance Sep 2010 to May 2012

Purpose: evaluation of a new handrim to reduce propulsion forces during manual wheelchair use

Title: Time-activity study of wheelchair suppliers

PI/PD: Stephen Sprigle, Ph.D., PT

Amount Funded: \$29,500

Funding Agency: Sam Schmidt Paralysis Foundation

Period of Performance 08/01/09 - 07/31/10

Purpose: Assessing the activities involved in supplying manual and power wheelchairs

Title: Rehabilitation Engineering Center on Wheeled Mobility

PI/PD: Stephen Sprigle, Ph.D., PT

Amount Funded: \$950,000/Yr (\$4,750,000 Total)

Funding Agency: National Institute on Disability and Rehabilitation Research, Dept of Ed

Period of Performance 10/01/08 - 09/31/17

## STEPHEN SPRIGLE, PHD, PT

Purpose: Center grant to study myriad aspects of wheelchairs and wheelchair seating

Title: Development and Testing of the Next Version of the Wound Measurement Device

PI/PD: Stephen Sprigle, Ph.D., PT

Amount Funded: \$106,000

Funding Agency: IP2Biz (licensee of the device)

Period of Performance 01/01/08 - 05/30/09

Purpose: Complete development and perform clinical testing of a new wound measurement device developed at Ga Tech and licensed to IP2Biz

Title: Research Utilization Award: Web-based manual wheelchair training

PI/PD: Stephen Sprigle, Ph.D., PT

Amount Funded: \$62,013

Funding Agency: Southeast Developmental Laboratory

Period of Performance 07/01/07 - 09/30/08

Purpose: Assess the effectiveness of a web-based evidenced-based course on manual wheelchairs

Title: Wheelchair cushion degradation

PI/PD: Stephen Sprigle, Ph.D., PT

Amount Funded: \$113,950

Funding Agency: Shepherd Center via Model System Program

Period of Performance 01/01/07 - 09/30/10

Purpose: To develop test methods able to characterize the degradation of wheelchair cushion performance after typical use

Title: Development of Tweel Technology for the wheelchair market

PI/PD: Stephen Sprigle, Ph.D., PT

Amount Funded: \$109,000

Funding Agency: Michelin Americas

Period of Performance 09/01/05 - 07/01/06

Purpose: Study of new tire technology, called Tweel Technology, for use in wheelchairs. Study included user needs, field trials and engineering analysis

Title: Wheelchair cushion evaluation and testing

PI/PD: Stephen Sprigle, Ph.D., PT

Amount Funded: \$10,000

Funding Agency: Palmetto GBA (SADMERC)

Period of Performance 10/01/03 - 09/30/05

Purpose: Wheelchair cushion test method development

Title: Erythema and deep tissue injury detector

PI/PD: Stephen Sprigle, Ph.D., PT

Amount Funded: \$481,173

Funding Agency: National Institute of Biomedical Imaging and Bioengineering

Period of Performance 09/16/04 - 09/15/06

Purpose: Study and development of a handheld device to assist in the detection of pressure ulcers and bruising in elders. Spectral and acoustic imaging form the basis of the device.

Title: Rehabilitation Engineering Center on Wheeled Mobility

PI/PD: Stephen Sprigle, Ph.D., PT

Amount Funded: \$950,000/Yr (\$4,750,000 Total)

## STEPHEN SPRIGLE, PHD, PT

Funding Agency: National Institute on Disability and Rehabilitation Research  
Period of Performance: 11/01/03 - 10/31/08  
Purpose: Center grant to study myriad aspects of wheelchairs and wheelchair seating

Title of Grant: Cost-utility and Cost-benefit of a Comprehensive Assistive Technology Program  
PI/PD: Stephen Sprigle, Ph.D., PT  
Amount Funded: \$210,000  
Funding Agency: Langeloth Foundation  
Period of Performance 01/01/02 - 6/30/04  
Purpose: Development of tools and procedures to measure the economic impact of assistive an technology service delivery program

Title of Grant: Development of Valid and Reliable Measures of Seated Stability  
PI/PD: Stephen Sprigle, Ph.D., PT  
Amount Funded: \$250,000  
Funding Agency: National Institute on Disability and Rehabilitation Research  
Dates of Funding: 10/1/01 - 9/30/03  
Purpose: Develop and validate clinical measures of seated stability of persons with spinal cord injury

Title: Validation of ISO Wheelchair Cushion Tests  
PI/PD: Stephen Sprigle, Ph.D., PT  
Amount Funded: \$22,500  
Sponsor: Beneficial Designs  
Period of Performance: May 2003- Sept 2003  
Purpose: Participate in inter-laboratory reliability testing of standardized tests of wheelchair cushions

Title: Tests for Adjustability and Positioning Features of Wheelchair Cushions  
PI/PD: Stephen Sprigle, Ph.D., PT  
Amount Funded: \$25,007  
Sponsor: Sunrise Medical  
Period of Performance: June 2003- May 2004  
Purpose: Develop test methods to characterize the adjustability and stability properties of wheelchair cushions

Title: Tests for Adjustability and Positioning Features of Wheelchair Cushions  
PI/PD: Stephen Sprigle, Ph.D., PT  
Amount Funded: \$25,007  
Sponsor: The Roho Group  
Period of Performance: May 2003- April 2004  
Purpose: Develop test methods to characterize the adjustability and stability properties of wheelchair cushions

Title: Development and Validation of Test Methods that Measure a Wheelchair Cushion's Ability to Distribute Load  
PI/PD: Stephen Sprigle, Ph.D., PT  
Amount Funded: \$120,000  
Sponsor: Paralyzed Veterans Administration SCI Research Foundation  
Period of Performance: 2001-2003  
Purpose: Develop and validate standardized test methods of wheelchair cushions

Title: Assistive Technology Loan Program  
PI/PD: Stephen Sprigle, Ph.D., PT  
Amount Funded: \$25,000

## STEPHEN SPRIGLE, PHD, PT

Sponsor: Christopher Reeve Paralysis Foundation

Period of Performance: 2000-2001

Purpose: Establish an assistive technology loan program for people with spinal injury

Title: Optimizing Posture, Trunk Control and Reach in Wheelchair Users

PI/PD: Stephen Sprigle, Ph.D., PT

Amount Funded: \$450,000

Sponsor: National Institute on Disability and Rehabilitation Research

Period of Performance: 1999-2002

Purpose: Study the effects of cushion, back height and posture on the reach and postural stability of wheelchair users

Title: Determining Wheelchair Cushion Characteristics

PI/PD: Stephen Sprigle, Ph.D., PT

Amount Funded: \$90,000

Sponsor: Paralyzed Veterans Administration SCI Research Foundation

Period of Performance: 1998-2001

Purpose: Develop test methods and uniform terminology to describe the characteristics of wheelchair cushions

Title: Clinical Evaluation of Wheelchair and Seating Supports

PI/PD: Stephen Sprigle, Ph.D., PT

Amount Funded: \$105,000

Sponsor: Various Sponsors- manufacturers of seating systems

Period of Performance: 1996-2001

Purpose: Contract testing of wheelchair cushions and seating supports

Title: Ambulatory Monitoring of Diabetic Amputees

PI/PD: Stephen Sprigle, Ph.D., PT

Amount Funded: \$525,000

Sponsor: National Institutes of Health

Period of Performance: 1996-2000

Purpose: Study the reactive hyperemic response after ischemia of diabetic amputees and to monitor ambulatory activity

Title: Detecting Incipient Pressure Ulcers in People with Darkly Pigmented Skin

PI/PD: Stephen Sprigle, Ph.D., PT

Amount Funded: \$450,000

Sponsor: National Institute on Disability and Rehabilitation Research

Period of Performance: 1996-1999

Purpose: Spectrographic study of erythema and Stage I pressure ulcers

Title: Development and Testing of Modular Seating Components

PI/PD: Stephen Sprigle, Ph.D., PT

Amount Funded: \$15,000

Sponsor: Span America Medical Systems

Period of Performance: 1994-1996

Purpose: Development and testing of wheelchair cushions and postural devices

Title: Central Virginia Training Center

PI/PD: Stephen Sprigle, Ph.D., PT

## STEPHEN SPRIGLE, PHD, PT

Amount Funded: \$40,000  
Sponsor: National Institute on Disability and Rehabilitation Research  
Period of Performance: 1992-1993  
Purpose: Establish and operate a regional resource center on assistive technology

Title: Rehabilitation Engineer Training Program  
PI/PD: Stephen Sprigle, Ph.D., PT  
Amount Funded: \$375,000  
Sponsor: Rehabilitation Services Administration  
Period of Performance: 1990-1993  
Purpose: Develop and operate a training program for rehabilitation engineers

Title: Evaluation of GeoMatt Cushions and Overlays  
PI/PD: Stephen Sprigle, Ph.D., PT  
Amount Funded: \$20,000  
Sponsor: Span America Medical Systems  
Period of Performance: 1990-1993  
Purpose: Contract testing of product performance

### **External Proposals and Grants funded as *Co-Investigator***

Principal Investigator: Soneneblum S & Sprigle, S  
Title of Grant: SBIR: E2-C SEAT Improved Habitability and Vibration Mitigation  
Funding Type & Agency: ATA Engineering via an SBIR from Dept of the Navy  
Dates: 15-OCT-2012 to 28-FEB-2014  
Amount funded: \$56,012.00  
Purpose: Train Sponsor in techniques to assess efficacy of a new seat for Flight Officers

Principal Investigator: Qi Wang, PhD  
Co-I Stephen Sprigle, PhD PT  
Title of Grant: Handheld Device To Mechanically Interrogate Tissue And Skin Across Research Settings  
Funding Type & Agency: National Institute of Health-NCRR, 1 R21 RR032402-01  
Dates: 8/15/11 - 7/31/14  
Amount funded: \$ 297,303  
Purpose: Validate and refine the design of a device capability of assessing tissue mechanical properties

Rehabilitation Engineering Center on Technology Transfer, National Institute on Disability and Rehabilitation Research, 1993-1996; center funded at \$1.5 million/yr direct & indirect combined  
Graduate Training Program in Developmental Disabilities; NYS Office of Mental Retardation and Developmental Disabilities, 1993-1995; total funding unknown  
Rehabilitation Engineering Center on Transportation Safety, National Institute on Disability and Rehabilitation Research, 1990-1993; center funded at \$500,000/yr direct & indirect combined  
Rehabilitation Engineering Center on Wheeled Mobility and Seating, National Institute on Disability and Rehabilitation Research, 1989-1993; center funded at \$750,000/yr direct & indirect combined

### **Inventions and Patents**

#### Patents

Wheelchair In-Seat Activity Tracker, Soneneblum S, Sprigle S, Martin J. US20180042525A1. July 2019  
Sit-To-Stand and Walking Assistive Mobility Aid. Liles, Howard, Sprigle, Stephen, Paulus, Kenneth, Kirk, Thomas; US Patent 9,597,251, March 21, 2017  
Wheelchair cushion with adjustable/multi-stiffness fluid; Whelan; Thomas J, Sprigle; Stephen, McKenna;

## STEPHEN SPRIGLE, PHD, PT

Alison, Kolajo; Ezekiel, Mittal; Sanchit, Sathananthan; Saranya, Tile; Christopher; US Patent 9,021,637, May 5, 2015

Suspension seat for use on wheelchair, SPRIGLE Stephen, BERNARD Randy US patent #:8960699, 02/24/2015

In-Hub Braking System for Manual Wheelchairs, JOWERS Jonathon, SPRIGLE, Stephen; No. 8,622,178, Jan 7, 2014

Systems and methods for the analysis of mechanical properties of materials, SPRIGLE Stephen, KONG, Linghua, WANG, Qi, HAYWARD, Vincent, CASPALL, Jayme, US Patent: 8,095,706; date: Jan 12, 2012

Modular Backrest Unit, Sprigle, S and Raburn, R, US Patent no. D374368, issued Oct 8, 1996

### Patent Applications:

Systems and Methods For The Measurement Of Surfaces, SPRIGLE, Stephen, STARNER, Thad, DUCKWORTH, Mark, PATEL, Nirmal, J., LANKTON, Shawn, M.; Application No. 12/443,158  
Publication Date: 24 November 2009,

Systems And Methods For Real Time Multispectral Imaging, SPRIGLE, Stephen, H, KONG, Linghua, CASPALL, Jayme, J, DUCKWORTH, Mark, G.Pub. No.: WO/2008/074019 International  
Application No.: PCT/US2007/087479 Publication Date: 19.06.2008

### Licensed Technologies

Suspension Seat- The Posture Works, Westerly, MA

Stand-up Walker- URise Products, Charlotte, NC

WoundZoom- WoundZoom, Steven's Point, WI

Adjustable Fluid Wheelchair Cushion- Ki Mobility, Steven's Point, WI

### Provisional Applications for Patent filed

Open-chain perturbation device for neurorehabilitation; Wheelchair In-seat Activity Monitor; Prevention of skin insults using elastomeric elements; Sit-to-stand and walking assistive mobility aid ; Off-loading, dynamic wheelchair cushion, Dynamic seating system for persons with high extensor tone, Non-contact, wound measurement device, Handheld erythema and bruise detector, Tissue interrogation device, Height adjustable wheelchair seat; Suspension Seat for Wheelchair

### Invention Disclosures (submitted to Office of Technology Licensing- Georgia Tech):

Elder wheelchair; Off-loading, dynamic wheelchair cushion, Dynamic seating system for persons with high extensor tone, Non-contact, wound measurement device, Handheld erythema and bruise detector, tissue interrogation device, Sensor to characterize stress and strain, Low cost durable wheelchair cushion.  
Add-on adjustable height seat for wheelchairs.

## **PUBLISHED BOOKS AND PARTS OF BOOKS**

Brienza D, Zulkowski K, Sprigle S & Geyer MJ. Pressure Redistribution: Seating, Positioning and Support Surfaces in "Wound Care Essentials, Practice Principles", 4th edition, Sharon Baranoski, and Elizabeth A. Ayello, eds., Lippincott, Williams & Wilkins, 2015;

Garcia, A & Sprigle S, "Pressure Ulcers" in Atlas of Wounds and Integumentary Disorders, Rose Hamm, editor- McGraw-Hill Professional, 2015.

Brienza D, Geyer MJ & Sprigle S. Seating, Positioning and Support Surfaces in "Wound Care Essentials, Practice Principles", 3rd edition, Sharon Baranoski, and Elizabeth A. Ayello, eds., Lippincott, Williams & Wilkins, 2012;

Rappl L, Sprigle S. "Prevention and Treatment of Pressure Ulcers" in Wound Healing- Evidence-based



## STEPHEN SPRIGLE, PHD, PT

Management; 4th edition; JM McCulloch and LC Kloth, ed. FA Davis Company, 2010

Choi YM, Sabata D, Todd R, Sprigle S; Building a Consumer Network to Engage Users with Disabilities in Designing Exclusive Futures, P Langton, J Clarkson, P Robinson, eds. Springer 2008. p 55-64

Davis K, Kreutz D, Maurer C, Sprigle S; Seating and Positioning in Therapeutic Interventions for Patients with Spinal Cord Injuries, Sue Ann Sisto, Erica Druin, Martha Macht-Sliwinski, eds. Elsevier Inc., 2008; chapter 11, pp, 254-295

Fleck C, Sprigle S, Support Surfaces: Tissue Integrity, Terms, Principles and Choice in Chronic Wound Care: A Clinical Source Book for Healthcare Professionals, 4<sup>th</sup> Edition, Diane L. Krasner, R. Gary Sibbald, George T. Rodeheaver, eds, HMP Communications, LLC., 2007

Brienza D, Geyer MJ & Sprigle S. *Seating, Positioning and Support Surfaces* in “Wound Care Essentials, Practice Principles”, 2<sup>nd</sup> edition, Sharon Baranoski, and Elizabeth A. Ayello, eds., Lippincott, Williams & Wilkins, 2006;

Brienza D, Geyer MJ & Sprigle S. *Seating, Positioning and Support Surfaces* in “Wound Care Essentials, Practice Principles”, Sharon Baranoski, and Elizabeth A. Ayello, eds., Lippincott, Williams & Wilkins, 2004; ppg 187-216

Sprigle S & Abdelhamied, *The relationship between ability measures and assistive technology selection, design and use* in “Designing and Using Assistive Technology, The Human Perspective”, David B. Gray, Louis A. Quatrano, and Morton L. Lieberman, eds. Paul H. Brookes Publishing Company, 1998, pp 229-248.

Sprigle S & Lane J, *Assistive Technology for Persons with Physical Disabilities* in “Assistive Technology for Persons with Disabilities: The Role of Occupational Therapy”, William C. Mann and Joseph P. Lane, eds. American Occupational Therapy Association, Bethesda, MD, 1995, ppg 31-74.

Thacker J, Sprigle S, Morris B, Understanding the Technology When Selecting Wheelchairs, RESNA Press, Arlington, VA, 1994

### PUBLISHED JOURNAL PAPERS (REFEREED)

2020

Sprigle, S., & Huang, M. (2020). Manual wheelchair propulsion cost across different components and configurations during straight and turning maneuvers. *Journal of rehabilitation and assistive technologies engineering*, 7, 2055668320907819.

Sonenblum SE, Seol D, Sprigle S, Cathcart J. Seated buttocks anatomy and its impact on biomechanical risk, *Journal of Tissue Viability*, Volume 29, Issue 2, 2020, Pages 69-75, <https://doi.org/10.1016/j.jtv.2020.01.004>.

2019

Sprigle, S., Huang, M., & Misch, J. (2019). Measurement of rolling resistance and scrub torque of manual wheelchair drive wheels and casters. *Assistive Technology*, 1-13. doi:10.1080/10400435.2019.1697907

Sonenblum SE, Maurer CL, Hanes CD, Piriano J & Sprigle SH (2019) Everyday use of power adjustable seat height (PASH) systems, *Assistive Technology*, DOI: 10.1080/10400435.2019.1634659 (published on-line Aug 2019)

Sprigle S, Sonenblum S. Visualizing Tissue Strain Under the Sacrum and Coccyx in Different Supine Postures: A Case Series. *Adv Skin Wound Care*. 2019 Jun;32(6):264-271. doi: 10.1097/01.ASW.0000554445.59743.44. PubMed PMID: 30958412.

Sprigle S, Sonenblum SE, Feng C. Pressure redistributing in-seat movement activities by persons with spinal cord injury over multiple epochs. *PLoS One*. 2019;14(2):e0210978. doi: 10.1371/journal.pone.0210978. eCollection 2019. PubMed PMID: 30759106;

Lin JT, Sprigle S. The influence of operator and wheelchair factors on wheelchair propulsion effort. *Disabil Rehabil Assist Technol*. 2019 Feb 27; pp:1-8. doi: 10.1080/17483107.2019.1578425. [Epub ahead of print] PubMed PMID: 30810404.

## STEPHEN SPRIGLE, PHD, PT

2018

- Sprigle S & Pubillones S (2018) Developing a process for assessing equivalency of wheelchair cushion pressure redistribution performance, *Assistive Technology*, DOI: 10.1080/10400435.2018.1493709
- Sonenblum, S. E., & Sprigle, S. H. (2018). Buttock tissue response to loading in men with spinal cord injury. *PloS one*, 13(2), e0191868.
- Sonenblum, S. E., Ma, J., Sprigle, S. H., Hetzel, T., & Cathcart, J. M. (2018). Measuring the impact of cushion design on buttocks tissue deformation: An MRI approach. *Journal of Tissue Viability*.
- Sonenblum, S. E., & Sprigle, S. H. (2018). Buttock tissue response to loading in men with spinal cord injury. *PloS one*, 13(2), e0191868.
- Wendland, D. M., & Sprigle, S. H. (2018). The Characterization of Plantar Skin Across Environmental Condition and Time. *Adv Skin Wound Care*, 31(3), 123-129.
- Barbareschi, G., Holloway, C. S. M., Berthouze, N., Sonenblum, S., & Sprigle, S. (2018). Use of a Low Cost, Chest-Mounted Accelerometer to Evaluate Transfer Skills of Wheelchair Users During Everyday Activities. *JMIR Rehabilitation and Assistive Technologies*.

2017

- Sprigle, S. and S. Johnson Taylor (2017). "Data-mining analysis of the provision of mobility devices in the United States with emphasis on complex rehab technology." *Assistive Technology* (on-line)

2016

- Sonenblum, S. E., & Sprigle, S. H. (2016). Some people move it, move it... for pressure injury prevention. *J Spinal Cord Med*, 1-5. doi:10.1080/10790268.2016.1245806
- Sprigle, S., Huang, M., & Lin, J.-T. (2016). Inertial and frictional influences of instrumented wheelchair wheels. *Journal of Rehabilitation and Assistive Technologies Engineering*, 3. doi:10.1177/2055668316649892
- Sonenblum, S. E., Sprigle, S., & Martin, J. S. (2016). Everyday sitting behavior of full time wheelchair users. *J Rehabil Res Dev*, 53(5).
- Sonenblum SE, Sprigle S. Wheelchair use in ultra-lightweight wheelchair users. *Disabil Rehabil Assist Technol*. 2016 Jul 19:1-6. [Epub ahead of print] PubMed PMID: 27434257.
- Paleg G, Huang M, Vasquez Gabela SC, Sprigle S, Livingstone R. (2016) Comparison of the Inertial Properties and Forces Required to Initiate Movement for Three Gait Trainers. *Assistive Technology : the official journal of RESNA*. Jan 28 2016.

2015

- Lin, J.T., M. Huang, and S. Sprigle, *Evaluation of wheelchair resistive forces during straight and turning trajectories across different wheelchair configurations using free-wheeling coast-down test*. *J Rehabil Res Dev*, 2015. **52**(7): p. 763-74.
- Sprigle, S. and M. Huang, *Impact of Mass and Weight Distribution on Manual Wheelchair Propulsion Torque*. *Assist Technol*, 2015. **27**(4): p. 226-35; quiz 236-7.
- Kumar N, Sprigle S, Martin J. Measurement of Load Redistribution Properties of Wheelchair Cushions Using a Compliant Cushion Loading Indenter. *Assistive Technology: The Official Journal of RESNA; Volume 27, Issue 3, 2015* pages 129-135 DOI:10.1080/10400435.2014.986772
- Sonenblum, S. E., Sprigle, S. H., Cathcart, J. M., & Winder, R. J. (2015). 3D anatomy and deformation of the seated buttocks. *J Tissue Viability*, 24(2), 51-61. doi: 10.1016/j.jtv.2015.03.003

2014

- Sprigle, S. (2014). Measure it: proper wheelchair fit is key to ensuring function while protecting skin integrity. *Adv Skin Wound Care*, 27(12), 561-572. doi: 10.1097/01.asw.0000456446.43330.70
- Liles, H., Huang, M., Caspall, J., & Sprigle, S. (2014). Design of a Robotic System to Measure Propulsion Work of Freewheeling Wheelchair Maneuvers. *IEEE Trans Neural Syst Rehabil Eng*. doi:

## STEPHEN SPRIGLE, PHD, PT

10.1109/tnsre.2014.2371339

- Medola F, Dao P, Caspall J, Sprigle S. Partitioning Kinetic Energy during Freewheeling Wheelchair Maneuvers. *IEEE transactions on neural systems and rehabilitation engineering: a publication of the IEEE Engineering in Medicine and Biology Society*. 2014. Mar;22(2):326-33 doi: 10.1109/tnsre.2013.2289378. PubMed PMID: 24235308. 2014
- Sonenblum, S. E., Vonk, T. E., Janssen, T. W., & Sprigle, S. H. (2014). Effects of wheelchair cushions and pressure relief maneuvers on ischial interface pressure and blood flow in people with spinal cord injury. *Arch Phys Med Rehabil*, 95(7), 1350-1357. doi: 10.1016/j.apmr.2014.01.007
- Sprigle, S., & Delaune, W. (2014). Factors that influence changes in wheelchair cushion performance over time. *Assist Technol*, 26(2), 61-68; quiz 69-70.

### 2013

- Cohen L, Greer N, Berliner E, Sprigle S. mobilityRERC state of the science conference: Considerations for developing an evidence base for wheeled mobility and seating service delivery. *Disabil Rehabil Assist Technol*. 2013;8(6):462-71. Epub 2013/08/16. doi: 10.3109/17483107.2013.823577. PubMed PMID: 23944758.
- Hostak RS, Edwards D, Sprigle S. mobilityRERC state of the science: How science influences public policy in seating and mobility. *Disabil Rehabil Assist Technol*. 2013;8(6):447-53. Epub 2013/11/12. doi: 10.3109/17483107.2013.823575. PubMed PMID: 24206366.
- Sprigle S. Introduction to special section: state of the science on wheeled mobility and seating. *Disabil Rehabil Assist Technol*. 2013;8(6):445-6. Epub 2013/08/13. doi: 10.3109/17483107.2013.825016. PubMed PMID: 23931549.
- Sprigle S, Sonenblum S, Conner-Kerr T. mobilityRERC state of the science conference: Individualizing pressure ulcer risk and prevention strategies. *Disabil Rehabil Assist Technol*. 2013;8(6):454-61. Epub 2013/11/12. doi: 10.3109/17483107.2013.823574. PubMed PMID: 24206367.
- Stinson, M, Schofield, R, Gillian, C, Morton, J, Gardiner, E, Sprigle, S and Porter-Armstrong, A (2013) Spinal cord injury and pressure ulcer prevention: using functional activity in pressure relief. . *Nursing Research and Practice*, 2013 (860396). pp. 1-8.
- Sprigle, S., & De laune, W. (2013). Factors contributing to extended activity times during the provision of wheeled mobility devices. *Disabil Rehabil Assist Technol*, 8(3), 225-231. doi: 10.3109/17483107.2012.713436
- Sonenblum, S. E., Sprigle, S. H., Cathcart, J. M., & Winder, R. J. (2013). 3-dimensional buttocks response to sitting: A case report. *Journal of tissue viability. Journal of Tissue Viability*; 22(1), Pages 12-18, February 2013
- Caspall JJ, Seligsohn E, Dao PV, & Sprigle S. (2013). Changes in inertia and effect on turning effort across different wheelchair configurations. *Journal of Rehabilitation Research and Development*, 50(10). doi: <http://dx.doi.org/10.1682/JRRD.2012.12.0219>

### 2012

- Wendland, Deborah Michael, and Sprigle, S. Activity monitor accuracy in persons using canes. *Journal of rehabilitation research and development* 49.8 (2012): 1261-1268.
- Sonenblum SE, Sprigle S, Lopez RA. Manual Wheelchair Use: Bouts of Mobility in Everyday Life, *Rehabilitation Research and Practice*, vol. 2012, Article ID 753165, 7 pages, (2012). doi:10.1155/2012/753165
- Sonenblum SE, Sprigle S, Caspall J, Lopez R. Validation of an accelerometer-based method to measure the use of manual wheelchairs. *Med Eng Phys*. 2012 Jul;34(6):781-6. Epub 2012 Jun 12.
- Eicholtz MR, Caspall JJ, Dao PV, Sprigle S, Ferri A. Test method for empirically determining inertial properties of manual wheelchairs. *J Rehabil Res Dev*. 2012;49(1):51-62
- Sprigle S, Nemeth M, Gajjala A. Iterative design and testing of a hand-held, non-contact wound measurement device. *J Tissue Viability*. 2012 Feb;21(1):17-26. Epub 2011 Sep 25.
- Sprigle S, Lenker J, Searcy K. Activities of suppliers and technicians during the provision of complex and

## STEPHEN SPRIGLE, PHD, PT

standard wheeled mobility devices. *Disabil Rehabil Assist Technol*. 2012 May;7(3):219-25. Epub 2011 Oct 21.

### 2011

- Sprigle S, Sonenblum SE. Assessing evidence supporting redistribution of pressure for pressure ulcer prevention: A review. (2011) . *J Rehabil Res Dev* 48(3):203-214.
- Choi, Y. M. and S. H. Sprigle (2011). Approaches for Evaluating the Usability of Assistive Technology Product Prototypes. *Assistive Technology* 23(1): 36-41.
- Sonenblum, S. E., & Sprigle, S. H. (2011). The impact of tilting on blood flow and localized tissue loading. *J Tissue Viability*, 20(1), 3-13. doi: 10.1016/j.jtv.2010.10.001

### 2010

- Sprigle S, Chung B, Meyer T. (2010) Assessment of the ISO Impact Damping Test for Wheelchair Cushions. *Assistive Technology*; Volume 22, Issue 4, December, Pages 236 - 244
- Kong, L., Yi D, Sprigle S, et al. (2010). "Single Sensor that Outputs Narrowband Multispectral Images." *Journal of Biomedical Optics* 15: 010502-010503.
- Sprigle, S., C. Maurer, et al. (2010). "Load Redistribution in Variable Position Wheelchairs in People with Spinal Cord Injury." *Journal of Spinal Cord Medicine* 33(1): 58-64.
- Harris FH, Sprigle S, Sonenblum SE, Maurer C. The Participation and Activity Measurement System (PAMS): an example application among people who use wheeled mobility devices. *Disability and Rehabilitation: Assistive Technology* 2010; 5(1):48-57.

### 2009

- Limroongreungrat W, Chang L-S, Wang YT, Acker C, Maurer C, Sprigle S. Effectiveness Of Immediate Video Feedback On Wheelchair Propulsion Training For Patients With Spinal Cord Injuries. *Medicine & Science in Sports & Exercise* 2009; 41(5):430.
- Sprigle S, Zhang L, Duckworth M. Detection of Skin Erythema in Darkly Pigmented Skin Using Multispectral Images. *Advances in Skin and Wound Care*, 2009 Apr;22(4):172-9
- Sonenblum SE, Sprigle S, Maurer CL. Use of power tilt systems in everyday life. *Disabil Rehabil Assist Technol* 2009; 4(1):24-30.

### 2008

- Pipkin L, Sprigle S. Effect of model design, cushion construction, and interface pressure mats on interface pressure and immersion. *J Rehabil Res Dev* 2008;45(6):875-82.
- Wang YT, Bernard R, Cope C, Chang LS, Limroongreungrat W, Sprigle S. Fundamental locomotive activity time efficiency with differently positioning drive-axis wheelchairs among elders. *Adapt Phys Activ Q* 2008;25(4):322-34.
- T. Wang, R. Bernard, C. Cope, L. Chang, W. Limroongreungrat, and S. Sprigle, "Fundamental Locomotive Activity Time Efficiency with Differently Positioning Drive-Axis Wheelchairs Among Elderly," *Medicine & Science in Sport & Exercise* **40**, s447 (2008).
- Kong L, Caspall J, Duckworth M, Sprigle S. Assessment of an ultrasonic dermal scanner for skin thickness measurements; *Medical Engineering & Physics*; 30(6): 804 – 807, July 2008
- Harris F, Sprigle S. Outcomes measurement of a wheelchair intervention; *Disability and Rehabilitation: Assistive Technology*, 2008 Jul;3(4):171-80
- Kong L, Sprigle S, Duckworth M, Yi D, Caspall J, Wang J, Zhao F. Handheld erythema and bruise detector, *Proceedings of SPIE -- Volume 6915, Medical Imaging 2008: Computer-Aided Diagnosis*, Maryellen L. Giger, Nico Karssemeijer, Editors, 69153K (Mar. 17, 2008)
- (note: SPIE papers are submitted, reviewed and revised like traditional journal articles)*
- Duckworth M, Caspall J, Mappus R, Kong L, Yi, D, Sprigle S. Bruise chromophore concentrations over time. *Proceedings of SPIE -- Volume 6915, Medical Imaging 2008: Computer-Aided Diagnosis*, Maryellen L. Giger, Nico Karssemeijer, Editors, 69152S (Mar. 17, 2008)

## STEPHEN SPRIGLE, PHD, PT

Sonenblum SE, Sprigle S, Harris FH, Maurer CL. Characterization of power wheelchair use in the home and community. *Arch Phys Med Rehabil* 2008;89:486-91.

### 2007

Ganesh S, Hayter A, Kim J, Sanford J, Sprigle S, Hoenig H. Wheelchair use by veterans newly prescribed a manual wheelchair. *Arch Phys Med Rehabil* 2007; 88(4):434-439.

Sprigle S, Maurer C, Holowka M. (2007) Development of valid and reliable measures of postural stability. *Journal of Spinal Cord Medicine* 30(1): 40-49

Sprigle S, Yi D, Caspall J, Linden M, Kong L, Duckworth M; Multispectral image analysis of bruise age. *Medical Imaging 2007: Computer-Aided Diagnosis*. Edited by Giger, M; Karssemeijer, N. Proceedings of the SPIE, Volume 6514, pp. 65142T (2007). 8 pages.

### 2006

Hong, S. W., V. Patrangenu, Singhose W, Sprigle S. (2006). "Identification of human-generated forces on wheelchairs during total-body extensor thrusts." *Clin Biomech (Bristol, Avon)* **21**(8): 790-8.

Hong, S. W., V. Patrangenu, Singhose W, Sprigle S. (2006). "A method for identifying human-generated forces during an extensor thrust." *International Journal of Precision Engineering and Manufacturing* **7**(3): 66-71.

### 2005

Ankrom MA, Bennett. R., Sprigle S, Langemo D, Black JM, Berlowitz DR, Lyder and C. NPUAP (2005). "Pressure-related deep tissue injury under intact skin and the current pressure ulcer staging systems." *Adv Skin Wound Care* **18**(1): 35-42

### 2004

Sprigle, S. (2004). The NPUAP Support Surface Standards Initiative *Ostomy Wound Manage* **50**(8): 6-8.

Maurer C, Sprigle S. Effect of Seat Inclination on Seated Pressures of Individuals with Spinal Cord Injury. *Physical Therapy*, 2004; 84:255-261

### 2003

Harris F, Sprigle S. Cost analyses in assistive technology research. *Assistive Technology*. 2003 Summer;15(1):16-27.

Sprigle S, Dunlop W, Press L, Reliability of bench tests of interface pressure. *Assistive Technology*, 2003; 15:49-576, Summer

Sprigle S, Press L. Reliability of the ISO wheelchair cushion test for loaded contour depth. *Assistive Technology*, 2003; 15:145-150, Winter

Sprigle S, Wootten M, Sawacha Z, Theilman G. Relationships between cushion type, backrest height, seated posture and reach of wheelchair users with spinal cord injury. *J Spinal Cord Medicine*; 2003;26(3):236-243

Sprigle S, Flinn N, Wootten M, McCorry S. Development and testing of a pelvic goniometer to measure pelvic tilt and hip flexion. *Clinical Biomechanics* 2003; 18:462-465

Sprigle S, Linden M, Riordan B. Analysis Of Localized Erythema Using Clinical Indicators And Spectroscopy. *Ostomy Wound Management*. 2003; 49(3):18-26, March

### 2002

Sprigle S, Linden M, Riordan B. Characterizing reactive hyperemia via tissue reflectance spectroscopy in response to an ischemic load across gender, age, skin pigmentation and diabetes. *Medical Eng & Physics*. 24 (2002); 651-661.

Sprigle S, Wootten M, Bresler M, Flinn N. Development of a non-invasive measure of pelvic and hip angles in a seated posture, *Arch Physical Medicine & Rehabilitation*, 2002; 83:1597-602, Nov.

### 2001

Sprigle S, Press L, Davis K. Development of uniform terminology and procedures to describe wheelchair cushion characteristics, *Journal of Rehabilitation Research and Development*, 38(4):449-461, Jul/Aug 2001

## STEPHEN SPRIGLE, PHD, PT

- Sprigle S, Linden M, McKenna D, Davis K, Riordan B. "Clinical skin temperature measurement to predict incipient pressure ulcers". *Advances in Skin and Wound Care*, 2001;14(3):133-138
- Riordan B, Sprigle S, Linden M. Testing the validity of erythema detection algorithms. *Journal of Rehabilitation Research and Development*. 2001;38(1)pp.13-22.

### 1999

- Sprigle S. Effects of forces and the selection of support surfaces *Topics in Geriatric Rehabilitation* 2000;16(2)47-62.
- Hughes CJ, Hurd K, Jones A, Sprigle S. Resistance properties of Thera-Band tubing during shoulder abduction exercise, *J Orthopaedic & Sports Physical Therapy*; 29(7):413-420, 1999.

### 1998

- Rahman MR, Sprigle S, Sharit J, Guidelines for force-travel combinations of push button switches for older persons, *Applied Ergonomics*, 29(2):93-100, 1998
- Sprigle S, Sposato B, Physiologic Effects and Design Considerations of Tilt and Recline Wheelchairs, *Orthopedic Physical Therapy Clinics of North America*. 6(1):99-121, March 1997.

### 1997

- Rahman MM, Sprigle S, Physical Accessibility Guidelines of Consumer Product Controls, *Assistive Technology*, 9(1):3-14, 1997

### 1996

- Karg P, Sprigle S, Development of test methodologies for determining the safety of wheelchair headrest systems during vehicle transport, *Journal of Rehabilitation Research & Development*. 33(3):290-304, 1996
- Sprigle S, Linden M, Accelerations experienced by wheelchair users with spinal cord injury in a moving van, *Technology and Disability*, 5:81-91, 1996
- Linden M, Sprigle S. Development of instrumentation and protocol to measure the dynamic environment of a modified van, *Journal of Rehabilitation Research & Development*, 33(1):23-29, 1996

### 1995

- Mann WC, Nochajski SM, Sprigle SH, Riordan BM. Custom Device development and professional training in developmental disabilities. *Technology and Disability*; 4:295-329, 1995.
- Sprigle S, Morris B, Nowacek G, Karg P, "Assessment of the Evaluation Procedures of Drivers with Disabilities", *OT Journal of Research*, Summer, 15(3): 147-164, 1995

### 1994

- Sprigle S, Morris B, Nowacek G, Karg P, "Assessment of Adaptive Transportation Technology: A Survey of Users and Equipment Vendors", *Assistive Technology*, vol 6.2, 111-119, 1994

### 1993

- Sprigle S, Schuch J, "Using Seat Contour Measurements During Seating Evaluations of the SCI", *Assistive Technology*, 5(1),24-35, 1993
- Cron L, Sprigle S, "Clinical Evaluation of the Hemi Cushion", *The American Journal of Occupational Therapy*, 47(2),141-144, 1993

### 1990

- Sprigle S, Chung KC, Brubaker C, "Reduction of Sitting Pressures with Custom Contoured Cushions", *Journal of Rehabilitation Research & Development*, 27(2):127-134, 1990.
- Sprigle S, Chung KC, Brubaker C, "Factors Affecting Seat Contour Characteristics", *VA Journal of Rehabilitation Research & Development*, vol. 27, no. 2,1990, pgs 135-140
- Sprigle S, Faisant T, Chung KC, "Clinical Evaluation of Custom Contoured Cushions for the Spinal Cord Injured", *Archives of Physical Medicine and Rehabilitation*, 71(9)655-658, 1990

## **PUBLISHED PAPERS (NON-REFEREED)**

## STEPHEN SPRIGLE, PHD, PT

- 2016 Sprigle S, & Sonenblum SE. (2016, Fall 2016). Pressure Injury Prevention. Seated but not still. *Rehab Management*.
- 2015 Sprigle S. Ultralight Research Part 2: Manual Chair Propulsion: New Insight Into Maneuvering Efficiency. *Mobility Management* Jan 1, 2015
- 2014 Sprigle S. Ultralight Research Part 1: Manual Chair Propulsion: New Insight Into Maneuvering Efficiency. *Mobility Management*. Nov 1, 2014
- 2007  
Sprigle S Research priorities: seating and positioning. *Disability and Rehabilitation Assistive Technology* 2(3):181-187, May 2007
- Sprigle, S, Cohen L, Davis K, Establishing seating and mobility research priorities. Measuring the health, activity and participation of wheelchair users. *Disability and Rehabilitation Assistive Technology* 2(3):169-172, May 2007
- 2004 Sprigle S, "Categorizing Cushions", *Rehabilitation Management*, April 2004; vol 17, no 4
- 2001 Miller D, Sprigle S, "Wheelchair Seating Safety", *Rehabilitation Management*, June/July 2001
- 2000 Sprigle S, "Prescribing Pressure Ulcer Treatment". *Rehabilitation Management*, June/July 2000
- 1999 Sprigle S, "Wheelchair Cushion Materials", [www.SpinLife.com](http://www.SpinLife.com), Dec 1999
- 1995 Sprigle S, "Finding the Right Assistive Device", *PT Magazine*, August 1995
- 1993 Sprigle S, Thacker J, Conley P, Shaw G, "Setting Standards", *TeamRehab Report*, Jan/Feb 1993
- 1992  
Sprigle S, "The Match Game", *TeamRehab Report*, May 1992
- Brubaker C, Digges K, Sprigle S, Thacker J, eds, *Transportation I- A State of the Art Conference on Personal Transportation of Persons with Disabilities*, RESNA Press, Washington, DC, 1992
- 1990  
Brubaker CE, Sprigle S, "Seating and Wheelchairs", *Current Opinions in Orthopaedics Current Science*, 1990, 1:445-449
- 1989  
Sprigle S, "The Buttock-Cushion Interface", *Pin Dot News*, Oct/Nov 1989

## INVITED LECTURES- KEYNOTE ADDRESSES; SPECIAL SESSION MODERATORS

### 2019

- Invited lecture, AAWC Pressure Ulcer Summit, Atlanta, Feb 2019  
Workshop, International Seating Symposium, Pittsburgh, Mar 2019

### 2018

- Keynote address. AAWC Pressure Ulcer Summit, Atlanta, Feb 2018  
Plenary Lecture, International Seating Symposium, Vancouver, Feb 2018  
Research Seminar, Department of Bioengineering, University of Texas- Dallas, Feb 2018  
Plenary Lecture, European Seating Symposium, Dublin, May 2018

### 2016

- Research Seminar, Wheelchair design and configuration. Johns Hopkins University, Biomedical Engineering,

## STEPHEN SPRIGLE, PHD, PT

Sept 2016

### 2015

Grand Rounds, NIH Mark O. Hatfield Clinical Research Center: The Impact of Manual Wheelchair Design & Configuration on Propulsion Torque; Oct 2015  
Partnering with Physical Therapy Parts 1 and 2; Clinical Symposium for Advanced Wound Care, New Orleans, Sept 2015 (with M Ostler & C Maurer)  
Keynote Address: The Impact of Manual Wheelchair Design & Configuration on Propulsion Torque, 6<sup>th</sup> Nordic Seating Symposium, Oslo; May 2015  
Invited Lecture: Dedicated pressure reliefs and functional in-seat movements as pressure redistributing strategies, 6<sup>th</sup> Nordic Seating Symposium, Oslo; May 2015  
Invited seminar: The Impact of Manual Wheelchair Design & Configuration on Propulsion Torque, International Seating Symposium, Nashville, Feb 2015  
Panelist: "ISS Morning Show", International Seating Symposium, (with K Betz, S Southerland, M Bonniger)- Feb 2015

### 2014

Invited Speaker, "Shear and tissue integrity – the state of the science"; 20 October 2014, London Seating and Wheeled Mobility (with C Maurer); Clinical Symposium for the Advances of Skin and Wound Care, Las Vegas, September 2014  
Writing workshop- how to share your clinical experiences as an author; Clinical Symposium for the Advances of Skin and Wound Care, Las Vegas, September 2014  
Wheelchair Seating: The Science Behind Clinical Choices; (with T Whelan) Symposium for Advances in Wound Care, Orlando, April 2014  
Focus Tract Moderator: Pressure Ulcers; American Professional Wound Care Association, March 2014, Philadelphia  
Oral Abstract Moderator, American Professional Wound Care Association, March 2014, Philadelphia

### 2013

Support Surface and Their Effectiveness in PU Management, American Professional Wound Care Association, 12th Annual National Clinical Conference, Orlando, FL, April 2013  
Preventing PU's in Spinal Cord Injury Patients American Professional Wound Care Association, 12th Annual National Clinical Conference, Orlando, FL, April 2013  
Pre-Conference Workshop: Pressure Pitfalls: Comprehensive Workshop for Offloading & Pressure Relief (with R Frykberg and J Driscoll); American Professional Wound Care Association, 12th Annual National Clinical Conference, Orlando, FL, April 2013  
Grand Rounds, Physical Medicine and Rehabilitation Department, Johns Hopkins University  
Biomedical Engineering Seminar, School of Biomedical Engineering, University of Alabama at Birmingham

### 2012

Keynote Speaker. CanWheel Annual Meeting, Vancouver, Oct 2012  
The biomechanics of seating. Clinical Symposium for Advances in Wound Care. Las Vegas, October 2012  
Spinal Cord Injury and Pressure Ulcer Development. Clinical Symposium for Advances in Wound Care. Las Vegas, October 2012  
Bates-Jensen B, Conner-Kerr T, Sprigle S, Weingarten M. Devices to Detect Early Skin Damage (with Bates-Jensen B, Conner-Kerr T, Weingarten M). Clinical Symposium for Advances in Wound Care. Las Vegas, October 2012  
Pressure Ulcer Prevention. State of the Science Conference on Wheeled Mobility and Seating (with Sonenblum S, Conner-Kerr, T), RESNA Annual Conference, June 2012, Baltimore  
Sprigle S, Whelan T. The biomechanics and wheelchairs and seating. Symposium for Advanced Wound Care. Atlanta, GA, April 2012



## STEPHEN SPRIGLE, PHD, PT

Sprigle S. How manual wheelchairs are used during everyday mobility. International Seating Symposium, Vancouver, March 2012

### 2011

Sonenblum S, Sprigle S, Brienza D. Challenges and Strategies when designing Wheeled Mobility and Seating Intervention Studies 2011 ACRM-ASNR Joint Educational Conference, Atlanta, GA, October 11–15, 2011  
Sprigle S, The use of manual and powered wheelchairs in everyday life; European Seating Symposium, Dublin, Nov 2011

### 2010

Sprigle S, Maurer C, Sonenblum S. Use of Power Tilt-in-space Wheelchairs. 2010 International Seating Symposium, Vancouver, March  
Zachow K, Sprigle S, Chua W; Spinal Cord Injury: Pressure Management and Wound Care. Spring 2010 Symposium of Advanced Wound Care, Orlando, April  
Orgill P, Sprigle S, Brienza D. Putting Mechanical Stress to Use, Fall 2010 Symposium of Advanced Wound Care, Anaheim, September

### 2009

Sprigle S. Load redistribution. 2nd International Evidence Based Practice in Wound Care Conference, Cleveland  
Keynote Speaker. Wheelchair Use in Everyday Life, 4<sup>th</sup> Nordic Seating Symposium, Reykjavik  
Sprigle S. Use of Wheelchairs in Everyday Life. International Seating Symposium, Lake Buena Vista, FL, March  
Sprigle S. Wheelchair cushion performance in Everyday Life. International Seating Symposium, Lake Buena Vista, FL, March  
Maurer C, Sonenblum SE, Sprigle S. Wheelchair Use in Everyday Life. RESNA Annual Meeting. New Orleans, LA; 2009.

### 2008

Davis K, Sprigle S. The Science of Interface Pressure Mapping – Updates for Clinical Application. 24th International Seating Symposium, Vancouver, March 2008

### 2007

Sprigle S, Davis K. Clinical applications of Interface Pressure Measurement. 1<sup>st</sup> European Seating Symposium, Dublin, May 2007  
Sprigle S, Pratt S. The Science of Seat Cushions. 1<sup>st</sup> European Seating Symposium, Dublin, May 2007  
Mobility RERC Report on the State of the Science. 23<sup>rd</sup> International Seating Symposium, Orlando, March 2007  
Wheelchair Seating: Tests, Measurement and Analysis, from the Lab to the Clinic, 23<sup>rd</sup> International Seating Symposium, Orlando, March 2007  
Session Organizer & Moderator- “That’s not my responsibility”- Ethics; 23<sup>rd</sup> International Seating Symposium, Orlando, March 2007

### 2006

Sprigle S, What to consider in pressure redistribution, Wound Care Congress, Colorado Springs, Oct 2006  
Sprigle S, Call E, Pratt S, The Science of Seating, Medtrade, Atlanta, Sept 2006  
Pratt S, Sprigle S, Call E, The science of Seating Materials- Why do we care from a clinical perspective?, 22<sup>nd</sup> International Seating Symposium, Vancouver, March 2006,  
Harris F, Sprigle S. Emerging measures of participation in assistive technology. 22<sup>nd</sup> International Seating Symposium, Vancouver, March 2006,

## STEPHEN SPRIGLE, PHD, PT

### 2005

- Clinical protocol for the administration and interpretation of interface pressure mapping for seating. 21<sup>st</sup> International Seating Symposium, Orlando, January 2005
- Measurement Of Interface Pressure- Research Versus Clinical Applications, 21<sup>st</sup> International Seating Symposium, Orlando, January 2005
- Debate: Are pressure ulcers avoidable. Mobility 2005, International Conference on Posture and Wheeled Mobility, Exeter, England, April 2005
- Test methods for measuring physical characteristics, envelopment and immersion of wheelchair cushions. Mobility 2005, International Conference on Posture and Wheeled Mobility, Exeter, England, April 2005
- Tissue Load distribution and support surfaces. National Pressure Ulcer Advisory Panel Biennial Conference, Tampa, FL
- Tissue response to stress: implications for pressure ulcer prevention (with T Conner-Kerr), Clinical symposium on advances in skin and wound care, Las Vegas, Oct 23-26, 2005
- Tissue Load Management, Physical Medicine Department, Metro Health, Cleveland, OH, June 2005
- Use of technology to assist in the measurement of participation, FES NP Seminar, FES Center, Cleveland, June 2005

### 2004

- Sprigle, S. *Advances in Assistive Technology*. Association of Rehabilitation Nurses; 30<sup>th</sup> Annual Educational Conference, Atlanta, October 2004
- Support *Surface Effectiveness: Standardized Support Surface Performance Testing*. 2<sup>nd</sup> World Union of Wound Healing Societies Meeting, Paris, July 2004
- Moderator & organizer. *World Union Initiative: Support Surface Standards Development*. 2<sup>nd</sup> World Union of Wound Healing Societies Meeting, Paris, July 2004
- Function as a clinical outcome measure*, (with Harris F) RESNA 27<sup>th</sup> International Conference, Orlando, June 2004
- Understanding Pressure Relief: Linking Cellular Responses/Tissue Biomechanics to Support Surface and Off-loading Therapy Designs* (with Conner-Kerr T & Cavanaugh P); Symposium on Advanced Wound Care, Orlando, May 2004
- . *Best Practice for Assessment and Treatment of Pressure Ulcers*, with Allman R, Black J, Posthauer ME, Wilking S) National Pressure Ulcer Advisory Panel, Birmingham, April 2004
- Sprigle S, Harris F. *How to do a cost evaluation in assistive technology*. International Seating Symposium, Vancouver, March 2004

### 2003

- Tissue Load Management*; National Pressure Ulcer Advisory Panel 8<sup>th</sup> Annual Conference, New Orleans, Feb 2003
- Examining Changing Paradigms in Standardizing Pressure Ulcer Care for the 21<sup>st</sup> Century* (with Black J, Bennett R), Symposium on Advanced Wound Care, Las Vegas, May 2003
- Management of Tissue Loads*. Alabama Quality Assurance Foundation Symposium, Birmingham, July 2003
- Physical Modalities in Wound Management*, (with Geyer, Mary Jo) Clinical Symposium on Advances in Skin and Wound Care, Chicago, October 2003
- Keynote Speaker *Transporting People with Disabilities Safely*; Tallahassee Seating and Mobility Symposium, Feb 2003
- Keynote Speaker *Wheelchair Seating, Forces and Tissue Integrity*, , Tallahassee Seating and Mobility Symposium, Feb 2003

### 2002

- Sprigle S. *Development of Performance Measures for Support Surfaces*. Medtrade, Atlanta, GA Oct 2002

## STEPHEN SPRIGLE, PHD, PT

Sprigle S & McLeod A. Testing Support Surface Performance. 17<sup>th</sup> Annual Clinical Symposium on Advances in Skin & Wound Care, Dallas, Sept 2002

### 2001

Presenter: Chris Bar Research Forum – 17<sup>th</sup> International Seating Symposium, Orlando, Feb 2001

*Statement of the Problem- Are Pressure Ulcers Avoidable or Unavoidable?*; National Pressure Ulcer Advisory Panel & New York University, New York, Oct 2001

### 2000

*Statement of the Problem- Are Pressure Ulcers Avoidable or Unavoidable?*; National Pressure Ulcer Advisory Panel & University of Southern California, Los Angeles, Aug 2000

“Wheelchair Seating, Forces and Tissue Integrity”, 15<sup>th</sup> Annual Clinical Symposium on Advances in Skin & Wound Care, Nashville, Oct 2000

### 1999

*Statement of the Problem- Are Pressure Ulcers Avoidable or Unavoidable?*; National Pressure Ulcer Advisory Panel & New York University, Oct 1999

Keynote Speaker- Pressure Ulcer Prevention, at the New Horizons in Rehabilitation Equipment and Technology Symposium, Central NY DDSO, Utica, NY May, 1999

### 1997

Seating and Pressure Ulcer Prevention in Spinal Cord Injury”, Invited Lecture. Institute of Orthopedics and Trauma, Sao Paulo, Brazil, November 1997

### 1996

Keynote Speaker “Technical Considerations in Manual Wheelchair Selection and Adaptation”, at the New Horizons in Rehabilitation Equipment and Technology Symposium, Central NY DDSO, Utica, NY May, 1996

### 1995

Sprigle S, "The relationship of functional measures to assistive technology use, selection, and design", Behavioral Adaptations to the Use of Assistive Technology, National Center For Medical Rehabilitation Research , NIH, Baltimore, April 1995

### 1994

Postural support of persons with spinal injury, Invited Lecture. Institute of Orthopedics and Trauma, Sao Paulo, Brazil, April 1994

The importance of adequate seating and its basic principles", Invited Lecture. Center for Independent Living, Rio de Janeiro, Brazil, April 1994

### 1993

Minkel J, Sprigle S, Wheelchair Pressure Measurement and Management", RESNA '93 Annual Conference, Las Vegas, June 1993

### 1992

Sprigle S, Thacker J, "Technical Aspects of Powered Wheelchairs", Third RESNA Mid-Atlantic Regional Conference, Washington, DC, August 1992

Sprigle S, "Materials Used in Seating and Positioning", RESNA International '92, Toronto, June 1992

Sprigle S, Digges K, Morris B, Thacker J, "Progress Towards the Safe Transportation of Wheelchair Users", RESNA International '92, Toronto, June 1992

Thacker J, Sprigle S, Morris B, "Understanding the Technology when Prescribing Wheelchairs", RESNA International '92, Toronto, June 1992

## STEPHEN SPRIGLE, PHD, PT

### 1991

- Sprigle S, "Engineering Wheelchairs", Pediatric Equipment and Resource Fair 1991, Children's Hospital, Richmond, VA, Aug 1991
- Sprigle S, "Seating and Positioning", Accessibility is more than a Grab Bar, Jefferson Area Board for Aging, Charlottesville, VA, April 1991
- Sprigle S, "Seating and Wheelchairs for the Spastic Child", Fourth Annual Kluge Research Symposium on Cerebral Palsy, Charlottesville, VA, April 1991
- Sprigle S, "Materials used in seating and positioning", 2nd Mid-Atlantic RESNA Conference, Newark, DE, Sept 1991
- Invited Lecture Technology and State of the Art in Wheelchairs and Seating", Assistive Technology and Wheelchair Prescription Seminar, Slippery Rock University, Slippery Rock, PA, July 1991

### 1990

- Sprigle S, "Latest developments in contoured pressure relief seating", Innovative Advancements in Pressure and Tissue Management, Gainesville, FL, August 1990
- Sprigle S, Nidiffer B, "Equipment Options for Seating", Pressure Sores: Issues and Concerns, A seminar for Health Care Personnel, Charlottesville, VA, March 1990

## CONFERENCE PROCEEDINGS (Refereed)

### **2017**

Sprigle, S, Huang M, Test methods to determine propulsion work while maneuvering manual wheelchairs, RESNA, New Orleans

Barbareschi, G., C. Holloway and S. Sprigle Assistive Technology Design Courses: The Mutually Beneficial Relationship between Engineering Education and the Provision of Orphan Devices. Rehabilitation Engineering and Assistive Technology Society of North America, New Orleans.

### **2016**

Lin, J. and S. Sprigle (2016). *The Impact of Wheelchair Weight Distribution and Human Physiological Fitness on Over-Ground Maneuver*. RESNA, Arlington, VA.

Sonenblum, S. E., & Sprigle, S. (2016). *You Got to Move It, Move It! Pressure Reliefs, Weight Shifts, and Wheelchair Mobility in Individuals with SCI*. Paper presented at the RESNA, Arlington, VA.

### **2015**

Sonenblum, S. E., & Sprigle, S. (2015). *Do you know how people move in their wheelchairs? Measuring and describing real-world wheelchair use*. Paper presented at the RESNA Annual Meeting, Denver, CO.

Sonenblum, S. E., & Sprigle, S. (2015). *Do you know how people move in their wheelchairs? Measuring and describing real-world wheelchair use*. Paper presented at the RESNA Annual Meeting, Denver, CO.

Lin, J.-T., Huang, M., & Sprigle, S. (2015). *The Mechanical Impact of an Instrumented Push-rim on a Wheelchair System*. Paper presented at the 2015 Biomedical Engineering Society Annual Meeting Tampa.

Huang, M., & Sprigle, S. (2015). *The Impact of Drive Wheels on Manual Wheelchair Propulsion Torque*. Paper presented at the 2015 Biomedical Engineering Society Annual Meeting, Tampa.

### **2014**

Liles, H., Huang, M., Caspall, J., & Sprigle, S. (2014). Design and evaluation of an anthropometric modeling propulsion system for wheelchair testing. Paper presented at the RESNA Annual Conference, I

Sonenblum, S. E., & Sprigle, S. (2014). Risk factors affecting buttocks tissue deformation and blood flow response to loading Paper presented at the RESNA Annual Conference, Indianapolis, IN.

Lin, J., & Sprigle, S. (2014). Evaluation of total wheelchair resistance in straight and curvilinear coast-down test. Paper presented at the RESNA Annual Conference, Indianapolis.

## STEPHEN SPRIGLE, PHD, PT

Kumar, N., Sprigle, S., & Martin, J. (2014). Validation of load redistribution properties using a compliant cushion loading indenter Paper presented at the RESNA Annual Conference, Indianapolis, IN

### 2013

Stinson, M, Schofield, R, Gillian, C, Morton, J, Gardiner, E, Sprigle, S and Porter-Armstrong, A “Spinal Cord Injury and Interface Pressure: Using Functional Activity in Pressure Relief” International Seating Symposium, Nashville, 2013

### 2012

Sprigle, S., & Singhose, W. (2012). Developing a sustainable Rehabilitation Engineering course. Paper presented at the BMES, Atlanta, GA.

Sprigle, S. (2012). Low Profile Tension Seat for Wheelchair Users who Propel with One or Both Feet. Paper presented at the 28th International Seating Symposium, Vancouver, Canada.

Sprigle, S. (2012). Changes in Wheelchair Cushions Over Time. Paper presented at the 28th International Seating Symposium, Vancouver, Canada.

Sonenblum, S. E., & Sprigle, S. (2012). Getting Blood to the Butt: Response to Sitting and Pressure Relief. Paper presented at the 28th International Seating Symposium, Vancouver, Canada.

Sonenblum S, Sprigle S Tissue Deformation in the Seated Buttocks Model. 2012 American Society of Biomechanics Annual Meeting in Gainesville, Florida August 2012

Sonenblum, S. E., Cathcart, J., Winder, R. J., & Sprigle, S. (2012). Tissue deformation in the seated buttocks model. Paper presented at the BMES, Atlanta, GA.

Dai, Rui Sonenblum, S.E. Sprigle, S. (2012). A robust wheelchair pressure relief monitoring system. IEEE Eng Med Biol Soc. San Diego, CA.

2011 Sprigle S. A Methodology to Measure the Use of Manual Wheelchairs 2nd Biennial Conference of the Society for Ambulatory Assessment. Ann Arbor, June 2011

Michael D, Sprigle S. Validation of StepWatch in persons using ambulation assistive devices. 2nd Biennial Conference of the Society for Ambulatory Assessment. Ann Arbor, June 2011

Stinson, M, Schofield, R, Sprigle, S and Porter-Armstrong, A “Functional Activity and Interface Pressure: The effect of forward reach on seating interface pressures for able bodied subjects sitting in a wheelchair” European Seating Symposium, Dublin, 2011

### 2010

Sprigle S, Maurer C. Inventor Driven Product Development. RESNA 2010, Las Vegas, June

Sprigle S, Chung B, Meyer T. Assessment Of The ISO Impact Damping Test For Wheelchair Cushions; RESNA 2010, Las Vegas, June

### 2009

Sprigle S, Eicholtz M. Temperature and Humidity at the Buttock-Wheelchair Cushion Interface. BMES Annual Meeting. Pittsburgh, PA; 2009.

Sprigle S. Wheelchair Cushion Degradation During Everyday Use. BMES Annual Meeting. Pittsburgh, PA; 2009.

Sonenblum SE, Caspall J, Lopez R, Sprigle S. An Analysis Method for Detecting Manual Wheelchair Movement. BMES Annual Meeting. Pittsburgh, PA; 2009.

Meyer T. Dynamic Response of Wheelchair Cushions to the ISO Impact Damping Test. BMES Annual Meeting. Pittsburgh, PA; 2009.

### 2008

Rivard D, Sprigle S, Linden M Investigation of the Lifespan for Wheelchair Cushions used on a Daily Basis, RESNA 2008 Conference Proceedings, Washington, DC, June 2008, CD-ROM

Sonenblum S, Sprigle, S, Maurer C, Harris F. Why Full-time Power Wheelchair Users Tilt; RESNA 2008 Conference Proceedings, Washington, DC, June 2008, CD-ROM

## STEPHEN SPRIGLE, PHD, PT

- Choi YM, Sprigle S. The When of User Engagement in Proceedings of the 4<sup>th</sup> Cambridge Workshop on Universal Access and Assistive Technology, PJ Clarkson, J Goodman-Deane, P Robinson, eds. Cambridge, UK, April 2008; p31-36
- Sonenblum S, Sprigle S, Maurer C, Harris F Understanding Wheelchair Use Patterns Within and Outside of the Home; 24<sup>th</sup> International Seating Symposium, Vancouver, March 2008
- Hoenig H, Harris F, Griffiths P, Sanford J, Sprigle S. Outcomes of an Expert vs Usual Care Intervention for Manual Wheelchairs. 24<sup>th</sup> International Seating Symposium, Vancouver, March 2008
- Hoenig H, Griffiths P, Sanford J, Sprigle S., "Symposium: Accelerating advancement in AT outcomes research to enhance independence in aging.," in International Conference on Aging, Disability and Independence, (St. Petersburg, Fla., 2008).

### 2007

- Harris F, Sonenblum SE, Sprigle S, A Case Study Comparing Activity and Participation Measurement in Two Subjects, RESNA 2007 Conference Proceedings, Phoenix, AZ, June 2007, CD-ROM
- Linden M, Sprigle S Methodology to Measure the Adjustability of Skin Protection Features of Wheelchair Cushions, RESNA 2007 Conference Proceedings, Phoenix, AZ, June 2007, CD-ROM
- Dharne, MG, Lenker J, Harris F, Sprigle S, Reliability and Validity of Assistive Technology Outcome Measure (ATOM), Version 1.0 for Adults with Physical Disability using Wheelchairs, RESNA 2007 Conference Proceedings, Phoenix, AZ, June 2007, CD-ROM
- Pipkin L, Sprigle S. Impact of an Interface Pressure Mat on Immersion and Pressure Distribution. 23<sup>rd</sup>, International Seating Symposium, Orlando, March 2007
- Maurer C, Sprigle S. Load redistribution in standing, tilt-in-space and reclining wheelchairs. 23<sup>rd</sup>, International Seating Symposium, Orlando, March 2007

### 2006

- Sprigle S , Duckworth M, Zhang L, Kong L, Use of multispectral imaging to detect erythema in persons with dark skin. Clinical Symposium on the Advances in Skin & Wound Care, Lake Buena Vista, FL, Oct 2006
- Sprigle S, Patel N, Joshi A, Starner T, Handheld, noncontact wound measurement device, Clinical Symposium on the Advances in Skin & Wound Care, Lake Buena Vista, FL, Oct 2006.
- Dharne M, Lenker J, Harris, F, Sprigle S. Content Validity of Assistive Technology Outcome Measure (ATOM), Version 2.0; RESNA 2006 Conference Proceedings, Atlanta, June 2006, CD-ROM
- Sonenblum SE, Sprigle S, Maurer C, Monitoring Power Upright and Tilt-In-Space Wheelchair Use; RESNA 2006 Conference Proceedings, Atlanta, June 2006, CD-ROM
- Linden M, Sprigle S, Changes in Wheelchair Cushions as a Result of Simulated Use Protocols; RESNA 2006 Conference Proceedings, Atlanta, June 22-26, 2006, CD-ROM

### 2005

- Sonenblum S, Sprigle S, Maurer C , Whittaker E. Kinematics of Lateral Transfers: A Pilot Study, International Society of Biomechanics, Cleveland, July, 2005
- Sonenblum S, Sprigle S, VanHiel L, Maurer C, Lin C-J. Kinematics of Lateral Transfers: A Pilot Study, 28<sup>th</sup> International Conference on Technology & Disability: Research, Design, Practice and Policy; RESNA, Atlanta, June 2005
- Sonenblum S, Sprigle S, West L, Wood J, Prabhakara S. Non-Invasive Erythema Detection Using Spectral Imaging; 28<sup>th</sup> International Conference on Technology & Disability: Research, Design, Practice and Policy; RESNA, Atlanta, June 2005
- Lankton S, Sonenblum S, Sprigle S, Wolf J, Oliveira M. Use of GPS and Sensors in Studies of Activity and Participation; 28<sup>th</sup> International Conference on Technology & Disability: Research, Design, Practice and Policy; RESNA, Atlanta, June 2005

### 2004

- Sprigle, S, Maurer C. Effects of Seat Inclination on interface pressures of individuals with spinal cord injury. 20<sup>th</sup> International Seating Symposium, Vancouver, March 2004

## STEPHEN SPRIGLE, PHD, PT

Sprigle S, Relationship between cushion type, backrest height, seated posture and reach, 20<sup>th</sup> International Seating Symposium, Vancouver, March 2004

Sprigle S, Maurer C, Development of reliable measures of postural stability, 20<sup>th</sup> International Seating Symposium, Vancouver, March 2004

Andreasen D, Aviles AA, Allen SK, Guthrie KB, Jennings BR, Sprigle SH. Exoskeleton for forearm pronation and supination rehabilitation. Conf Proc IEEE Eng Med Biol Soc. 2004;4:2714-7

### 1998

Linden M, Sprigle S, Skin temperature measurement to predict incipient pressure ulcers, RESNA 1998 Annual Conference, Minneapolis, MN, June 1998

Riordan B, Sprigle S, Linden M, Testing of an activity monitor with below knee prosthesis users, RESNA 1998 Annual Conference, Minneapolis, MN, June 1998

### 1994

Sprigle S, Haynes S, Hale J, Uniaxial and hydrostatic loading at the core of a gel buttock model, RESNA '94 Annual Conference, Nashville, June 1994

Sprigle S, Linden M, Accelerations experienced by wheelchair users with SCI in a moving van RESNA '94 Annual Conference, Nashville, June 1994

Linden M, Sprigle S, Development of instrumentation and protocols to measure the dynamic environment of a modified van, RESNA '94 Annual Conference, Nashville, June 1994

### 1993

Sprigle S, Karg P, Static Testing of Commercial Headrests to Evaluate Transportation Safety, RESNA '93 Annual Conference, Las Vegas, June 1993

Karg P, Sprigle S, Determining the Transportation Safety of Chest Supports and Pelvic Restraints, RESNA '93 Annual Conference, Las Vegas, June 1993

### 1992

Sprigle S, Cron L, Development and Evaluation of Wheelchair Cushion Prototypes, RESNA International '92, Toronto, June 1992

Sprigle S, Morris B, Karg T, Assessment of Transportation Technology: Survey of Equipment Vendors, RESNA International '92, Toronto, June 1992

Sprigle S, Morris B, Karg T, "Assessment of Transportation Technology: Survey of Driver Evaluators" RESNA International '92, Toronto, June 1992

Morris B, Sprigle S, Karg T, "Assessment of Transportation Technology: Survey of Consumers" RESNA International '92, Toronto, June 1992

### 1990

Sprigle S, Schuch J, "Using Seat Contour Measurements as an Evaluation and Prescription tool for SCI Persons", Partners in Progress- Seating the Disabled, 6th Int'l Seating Symposium, Vancouver, Feb 1990

### 1989

Sprigle S, Chung KC, "The Use of Contoured Foam to Reduce Interface Pressures", Proceedings of the 12th Annual RESNA Conference, New Orleans, June 1989

Sprigle S, Chung KC, "The Influence of Physical Characteristics on Seat Contours", Proceedings of the 12th Annual RESNA Conference, New Orleans, June 1989

Schunkewitz J, Sprigle S, Chung KC, "The Effect of Postural Stress on Lower Limb Blood Flow in SCI Persons", Proceedings of the 12th Annual RESNA Conference, New Orleans, June 1989

### 1988

Sprigle S, Chung KC, Faisant T, "Clinical Evaluation of Custom Contoured Cushions on Spinal Cord-Injured Subjects", Proceedings of the Int'l Conference of the Association for the Advancement of Rehabilitation Technology, Montreal, June 1988

Sprigle S, Brubaker C, Martin G, Wilson AB, Hunt G, "Development of a Biomedical Data Logger for Long Term

## STEPHEN SPRIGLE, PHD, PT

- Physiological Monitoring", Proceedings of the Int'l Conference of the Assoc. for the Advancement of Rehabilitation Technology, Montreal, June 1988
- Chung KC, Sprigle S, Brienza D, Brubaker CE, McLaurin CA, "Effect of Contoured Support Surfaces on Pressure Distribution", Proceedings of the Int'l Conference of the Assoc. for the Advancement of Rehabilitation Technology, Montreal, June 1988

### Research Reports

- 2000 Sprigle S; "Defining Wheelchair Cushion Characteristics, Helen Hayes Hospital, 2000
- 1999 Sprigle S, DuBoff A, "Devices Used to Test Wheelchair Cushions and Supports", Helen Hayes Hospital 1999
- Sprigle S, Kilb, J, Duboff A. "Standardized Terminology Used in Wheelchair Seating and Positioning, Helen Hayes Hospital, 1999
- 1991 Sprigle S, Karg P, "Static Fatigue of Compression Packaging", University of Virginia Rehabilitation Engineering Center Report No. UVA-REC 101-91, May 1991
- Karg P, Sprigle S, "Shear Characteristics of Foam Mattress Overlays", University of Virginia Rehabilitation Engineering Center Report No. UVA-REC 102-91, May 1991
- Sprigle S, "Effect of Cover on Segmented Cushion Deflection", University of Virginia Rehabilitation Engineering Center Report No. UVA-REC 103-91, May 1991
- Sprigle S, "Clinical Evaluation of Segmented Wheelchair Cushion Prototypes", University of Virginia Rehabilitation Engineering Center Report No. UVA-REC 100-91, May 1991
- 1990 Sprigle S, "Testing Segmented Polyurethane Wheelchair Cushions", University of Virginia Rehabilitation Engineering Center Report No. UVA-REC 101-90, July 1990
- 1989 Sprigle S, Chung KC, "Development and Analysis of Custom Contoured Wheelchair Cushions", University of Virginia Rehabilitation Engineering Center Report No. UVA-REC 101-89, June 1989
- Schunkewitz J, Chung KC, Sprigle S, "Effects of Posture on Changes in Lower Limb Blood Flow and Volume", Univ of Virginia Rehabilitation Engineering Center Report No. UVA-REC 100-89, June 1989
- 1988 Sprigle S, Brubaker C, "Evaluation of the Therm-A-Rest Wheelchair Cushion Manufactured by Cascade Designs", University of Virginia Rehabilitation Engineering Center Report No. UVA-REC 103-88, October 1988
- 1987 Thacker J, Sprigle S, Hammond J, "Testing of the Kuschall of America Champion 2000 Wheelchair", University of Virginia Rehabilitation Engineering Center Report No. UVA-REC 110-87 October 1987

### ACTIVITIES AS A TEACHER AND EDUCATOR

#### *Georgia Institute of Technology*

ID 6100 Industrial Design Research Methods Fall 2009- present

ID 6101- Human Centered Design- Spring 2008-present

ME4182/ID4082- ME/ID Collaborative Capstone Design, Fall & Spring, 2016-

ID/ME 4833: Rehabilitation and Assistive Technology Design: Summer 2015-2017



## STEPHEN SPRIGLE, PHD, PT

ME 6746: Rehabilitation Engineering: 2010-present  
APPH4699 Undergraduate Research- Rehabilitation Engineering Design- 2009-2016  
APPH 6997- Assistive Technology 2003-2016  
ID8900.4900 Design Issues in Disability Biomechanics- 2003-2005  
Research Seminar Sequence in Prosthetics and Orthotics Program: 2006-2007

### *New York Medical College*

DIS 6050 Rehabilitation Technology and Human Performance- Fall 1997-Fall 2001

## **Graduate Student Dissertation, Thesis and Masters Project Advising**

### Georgia Institute of Technology

#### Post-Doctoral Fellows

Linghua Kong: 2005-2006  
Liwei Zheng: 2006  
Weerawat Limroongreungrat: 2006-2008

Ph.D, School of Applied Physiology  
Deborah Michael- 2010- 2013  
Jui-Te Lin- 2011-2016

Ph.D. College of Architecture- Principal Advisor  
Young Mi Choi – 2005-2010  
Vickie Haberman, 2004 - 2009

PhD. Bioengineering- Principal Advisor  
Jacob Misch, 2017-  
Morris Huang, 2013 - 2017  
Sharon Sonenblum, 2005-2009  
Bummo Chung, 2007-2009 (left ABD to Dental School)

M.S., Bioengineering- Major Advisor  
J.J. O'Brien, 2017-

PhD: Bioengineering- Dissertation Committee  
Leanne Metcalf, 2008

PhD. Electrical Engineering- Dissertation Committee  
Xueliang Huo, 2009-2011

Master's of Industrial Design- Advisor  
Class of 2018: Chenan Ni, XiuXiu Yuan, Suzie Wang  
Class of 2017: Kara Kenna; Chris Bartlett  
Class of 2015: Mark Husack, Phillip Chen, Mauricio Uruena  
Class of 2014: Rui Chen, Shaungxin Chen  
Class of 2012: Zichen (Jason) Yuan, Yuanyuan (Erin) Lin)  
Class of 2011: Yiran Li, In-O Hwang  
Class of 2010: Dale Kim  
Class of 2009: Jon Jowers

Master's of Science: Prosthetics & Orthotics, College of Sciences, Advisor  
Class of 2004: Mark Holowka

## STEPHEN SPRIGLE, PHD, PT

Class of 2005: Vibhor Agarwal  
Class of 2006: Sam Hale, Deanna Oldani  
Class of 2007, Leigh Pipkin, Tina Bui  
Class of 2008, Calli Vance, John Alexander

Master's of Science: Bioengineering – Principal Advisor  
Sandeep Prabhakara, 2004-2006  
Abiodun Otolorin, 2007-2008

Master's of Science, Mechanical Engineering- Thesis Committee  
Jim Kitchen, Vlad Patranganaru, Azeem Meruani, Matt Eicholz, Efrain Teran

### University of Buffalo

Masters Thesis Advisor  
John Noisseux- Mechanical Engineering  
Moin Rahman- Industrial Systems Engineering.  
Amy Baxter- Mechanical Engineering

### University of Virginia

Master's of Engineering in Biomedical Engineering- Project Advisor  
Brent Williams, Eileen Beiter, Scott Haynes, Patricia Karg  
Maureen Linden, Brian Riordan, Jamie Schunkewitz, Michele (Racicot) Longo

## SERVICE ACTIVITIES

### Professional Activities

Board of Directors, American Professional Wound Care Association, 2012-  
Treasurer, Executive Board: 2015-2017  
Advisory Council, RERC on Recreational Technologies, UAB, 2012-2017  
Scientific Advisory Board, Center for Translation of Rehabilitation Engineering Advances and Technology  
(TREAT), NIH R24 Center, 2010-2015  
RESNA, Rehabilitation Engineering and Assistive Technology Society of North America  
Executive Committee- 2008-2009  
Board of Directors- 2006- 2009  
Meetings Committee: 1996- 1999  
Annual Conference Scientific Program Chair: 1997-1999  
RESNA List Coordinator: 1994- 2005  
Seating and Positioning SIG- 1985- Present  
Mid-Atlantic Regional Liaison- 1989-1990  
Vice-Chair SIG-09- 1993-94  
Chair SIG-09- 1995-1997  
Computer Applications SIG- 1985- 1996  
Transportation SIG- 1991-1994  
Publications Committee: 1995- 1999  
Regional Conference Committee- 1990- 1994  
Planning Committee-  
Mid-Atlantic Regional Conference, 1989; 1991, 1992  
National Pressure Ulcer Advisory Panel, Board of Directors, 1997-2003  
Research Committee Chair, 2000-2002

## STEPHEN SPRIGLE, PHD, PT

Treasurer, 2000-2001

Coordinator, Support Surface Standards Initiative, 2002-2004

Biomedical Engineering Society, 1991-2000; 2009-present

Local Planning Committee, BMES Fall Meeting, Oct 1991, Charlottesville, VA

American Physical Therapy Association, 1995-2001

National Rehabilitation Association, 1993-1995

### **Book/Manuscript Reviews**

Editorial Board:

*Advances in Skin and Wound Care*, 1999-2008; 2010- present

*Rehabilitation Research and Practice*, Associate Editor, 2013-present

*Assistive Technology*, 1994-2009; 2012-2015

*Technology & Disability*, 1994-2001

Manuscript Reviewer: (over the past 5 years)

Advances in Skin and Wound Care

American Journal of Physical Medicine and Rehabilitation

Archives of Physical Medicine and Rehabilitation

Assistive Technology

Disability & Rehabilitation- Assistive Technology

Frontiers in Bioengineering

Gait and Posture

IEEE Transactions on Neural and Rehabilitation Engineering

Journal of Medical Engineering and Physics

Journal of Rehabilitation Medicine

Journal of Tissue Viability

PLOS ONE

Posture and Gait

International Journal of Prosthetics and Orthotics

### **Outreach Activity and Public Service**

ANSI/RESNA Wheelchair Seating Standards Subcommittee, 1998- Present

Pressure Management Devices Workgroup

Terminology and Definitions & Postural Support Device Workgroups

Grant Reviewer:

NIH Special Study Section- Rehabilitation and Orthopedics, 1995-2003, 2012-14; 2017

NIH, Risk, Prevention, and Health Behavior Integrated Review Group- 2015; 2017

NIH Special Study Section- Ruth A Kirchstein Fellowships, 2006-2011

Veterans Administration: 2008, 2009, 2015. 2017

Patient Centered Outcomes Research Initiative, 2012

NIDRR grant reviewer, RERC program, 2001, 2006, 2008

Craig Neilson Foundation, 2006

TATRC, US Army, 2009

Professional Meetings via Invitation

FDA Review Panel: Dec 2013

## **STEPHEN SPRIGLE, PHD, PT**

NSF U.S.-Turkey Assistive Technology Workshop, Istanbul June 2011  
Cleveland VAMC: Pressure Ulcers and SCI, June 2009  
IEEE Accessing the Future Conference- Panelist, July 2009  
Telemedicine & Advanced Technology Research Center, Army; Product Line Review: Spinal Cord Injuries, Fort Detrick, MD, Sept 2009  
Spinal Cord Injury Stakeholders Meeting- Dept of Defense, March 2009, Washington, DC  
Medicaid Evidence-Based Decisions (MED) Project Annual Meeting, May 2008  
State-of-the-Science of Wheeled Mobility Seating, RERC on Wheeled Mobility and Seating, Feb 2001  
Stakeholder Forum on Wheeled Mobility. National Institute on Disability and Rehabilitation Research, May, 1999  
Behavioral Adaptations to the Use of Assistive Technology, National Center For Medical Rehabilitation Research , NIH, Baltimore, April 1995  
Assistive Technology Futures Think Tank, New Mexico Technology Deployment Project, Albuquerque, NM, September 1994  
Transportation I, a State of the Art Conference on Personal Transportation for Persons with Disabilities, Charlottesville, VA, April 1991  
Colloquium on the Prevention of Secondary Disabilities in People with Spinal Injury, Centers for Disease Control, Atlanta, February 1990  
Planning Conference on Improved Utilization of Rehabilitation Technology, Rehabilitation Services Administration, Philadelphia, June 1989

### **On-campus Activities (Georgia Tech)**

Interim Chair, School of Industrial Design, 01/2010- 08-2010  
Director, Graduate Program in Industrial Design, 06/2009-12/2009  
(note: the School of ID was formed in Jan 2010)  
Director, Center for Assistive Technology & Environmental Access, 2002- 2008  
Search Committees within College of Design  
    for Oliver Chair in Design and Engineering, 2010 (Chair)  
    for Faculty, School of Industrial Design, 2008, 2014, 2015  
    for Dean, College of Architecture, 2008 & 2012  
    for Director, Program in Industrial Design 2004  
Search Committee within Applied Physiology  
    for Faculty members in Applied Physiology, 2004 & 2005  
Bioengineering Graduate Advisory Committee, 2008- present  
Admissions Committee, Master's Program in Prosthetics & Orthotics, 2003-2008  
Retention, Promotion & Tenure Committee, School of ID, 2016-17  
Retention, Promotion & Tenure Committee, CoA- 2005-2008; 2012-2015  
Retention, Promotion & Tenure Committee, School of Applied Physiology, 2011, 2015  
Institute Advisory Committee on Promotion of Research Faculty, 2007  
Institute Committee on Promotion & Tenure, 2013  
Provost Workgroup in Interdisciplinary Research and Education, 2007-2008  
Diversity Committee, College of Sciences, 2014-2016

### **INTERNATIONAL AND NATIONAL PROFESSIONAL RECOGNITION**

2015 Keynote Speaker, 6<sup>th</sup> Nordic Seating Symposium, Reykjavik, May 2015  
2014 Invited Speaker, "Shear and tissue integrity – the state of the science"; 20 October 2014, London  
2014 Dissertation Reviewer, Indian Institute of Technology Kharagpur  
2012 Keynote Speaker. CanWheel Annual Meeting, Vancouver, Oct 2012

**STEPHEN SPRIGLE, PHD, PT**

2011 Keynote Speaker, European Seating Symposium, Dublin Oct 2011

2010-2014 Visiting Scholar, University of Ulster, Northern Ireland

2012-present elected to the Board of Directors, American Professional Wound Care Association

Treasurer: 2015-present

2009 Keynote Speaker, 4<sup>th</sup> Nordic Seating Symposium, Reykjavik, May 2009

2008 Invited Grant Reviewer for International Organizations

Austrian Science Fund (FWF) application for a National Research Network NFN

Innovation and Technology Commission, a funding agency of the Government of Hong Kong

2007- Invited Lecturer for the 1<sup>st</sup> European Seating Symposium, Dublin

2006- Elected to the Board of Directors of RESNA, the Rehabilitation and Assistive Technology Association of North America

1997-2003 Elected Board Member of the National Pressure Ulcer Advisory Panel-

2004 -Invited Moderator & Session Organizer for the 2<sup>nd</sup> World Union of Wound Healing Societies, Paris 2004

2002-2008 Advisor and consultant for the Statistical Analysis Durable Medical Equipment Regional Carrier (SADMERC), the entity responsible for the coding of DME for Medicare coverage.

1998-present Member of the ISO Subcommittee on Wheelchairs and Related Equipment; serve on Working Group 11 that focuses on wheelchair seating; host of Subcommittee meeting on October 2006