

CURRICULUM VITAE

Mary Kristina (Kristi) Henzel, MD, PhD
10/27/2017

PERSONAL INFORMATION

Contact Information

Office Address: Spinal Cord Injury and Disorders Service
Louis Stokes Cleveland Department of Veterans Affairs Medical Center
10701 East Boulevard, Cleveland, OH 44106

Education

School: Vanderbilt University, Nashville, TN
Degree: B.E. (*cum laude*), Biomedical Engineering
Dates: 1991-1995

School: University of Louisville
Degree: Ph.D., Physiology & Biophysics
Thesis: "Vascular Reactivity in the Rat Aortic Coarctation Model of Preeclampsia"
Advisor: Nancy L. Alsip, Ph.D.
Dates: 1995-2001

School: University of Louisville School of Medicine
Degree: M.D.
Dates: 2002-2006

Post-Graduate Training

Institution: University of Pittsburgh Medical Center, Pittsburgh, PA
Position: Residency, Physical Medicine & Rehabilitation
Dates: 2006-2010

Institution: Louis Stokes Cleveland Dept. of Veterans Affairs Medical Center,
Cleveland, OH
Position: Advanced Fellowship in Spinal Cord Injury Research
Dates: 2010-2011
Mentors: Chester Ho, MD; Kath Bogie, DPhil

Institution: MetroHealth Medical Center/Case Western Reserve University,
Cleveland, OH
Position: Fellowship in Spinal Cord Injury Medicine
Dates: 2011-2012

PROFESSIONAL APPOINTMENTS

10/1/2013-present Director of Inpatient Spinal Cord Injury Medical Services, Louis Stokes
Cleveland Dept. of Veterans Affairs Medical Center
07/1/2012-present Staff Psychiatrist, Spinal Cord Injuries & Disorders Service, Louis Stokes
Cleveland Dept. of Veterans Affairs Medical Center

ACADEMIC APPOINTMENTS

03/21/2017-present Assistant Professor, Case Western Reserve School of Medicine/
MetroHealth Medical Center; Department of Physical Medicine &
Rehabilitation. Cleveland, OH.

MEDICAL LICENSURE

Licensure State/Number: Commonwealth of Pennsylvania, MD439178
Date Issued: 2/8/2010/-12/31/2019

BOARD CERTIFICATION

Name of Board: American Board of Physical Medicine & Rehabilitation
Certificate Number: #10116
Date Issued: 7/1/2011-12/31/2021

Name of Board: American Board of Physical Medicine & Rehabilitation –Spinal Cord
Injury Medicine
Certificate Number: #603
Date Issued: 12/1/2012-12/31/2022

PATIENT SAFETY TRAINING

May 2014 Agency for Healthcare Research and Quality - TeamSTEPPS Master
Training Course, Independence, OH.
April 2015 National Patient Safety Foundation – Patient Safety Curriculum

HONORS AND AWARDS

1991-1995 Paul Harrawood Engineering Honor Scholarship
National Merit Scholar, Vanderbilt University
1995–1999 University Fellowship, University of Louisville
2005 Israel Muss Memorial Award for Scholarliness and Humanism
University of Louisville School of Medicine
2008 Best Resident Research Award, UPMC IRR Day
2015 CWRU School of Medicine Scholarship in Teaching Award

MEMBERSHIP IN PROFESSIONAL SOCIETIES

2007-2011 Member, American Academy of Physical Medicine & Rehabilitation
(AAPM&R)
2007-2012 Member, Association of Academic Physiatrists
2010-2011 Member, Wound Healing Society
2010-Present Member, American Spinal Injury Association
2011-Present Member, Academy of Spinal Cord Injury Professionals/American Paraplegia
Society

PROFESSIONAL SERVICE

National:

2008 –2009 Board Member, AAPM&R Resident Physician Council
2017 Oral Board Examiner, American Board of Physical Medicine & Rehabilitation

National Scientific Review

2011 Ad Hoc Reviewer, Rehabilitation Research Experience for Medical Students (RREMS), Association of Academic Physiatrists.
2014 Clinical Practice Guideline Reviewer: Consortium for Spinal Cord Injury Medicine, Pressure Ulcer Prevention and Treatment Following Spinal Cord Injury: A Clinical Practice Guideline for Health-Care professionals, 2nd Ed, 2014.

Local Scientific Review

2014 Reviewer, Cleveland APT Center Garverick Innovation Incentive Program

National Editorial Review

2011-present Ad Hoc Reviewer for *American Journal of Physical Medicine & Rehabilitation*, *American Journal of Infection Control*, *JRRD*, *PM&R*

COMMITTEE SERVICE

National

2008 –2009 Member, Membership Committee, AAPM&R
2012-2016 Member, Program Committee, American Paraplegia Society
2014-2016 Member, Early Career, Trainee, & Students Committee, Academy of Spinal Cord Injury Professionals
2016-present Clinical Practice Committee, Academy of Spinal Cord Injury Professionals

Louis Stokes Cleveland Department of Veterans Affairs Medical Center

2011-present Member, Wound Care Committee, LSCDVAMC
2016-present Member, Ethics Committee, LSCDVAMC
2016-present Member, VA Advanced Platform Technology Center Research Data Safety Monitoring Committee, LSCDVAMC

University of Louisville School of Medicine

1997 Member, Library Subcommittee LCME Institutional Self-Study, University of Louisville School of Medicine.
1997 Graduate Student Representative, Faculty Forum, University of Louisville School of Medicine.

Educational Committees

2005-2006 Member, Ethics Curriculum Reform Committee, University of Louisville School of Medicine

TEACHING ACTIVITIES

Curriculum/Course Development

1. PM&R Residency Geriatrics Course Development, 2009-10, University of Pittsburgh Medical Center: 35 hours.
2. **Specialty Care Access Network-Extension for Community Healthcare Outcomes (SCAN-ECHO) -Spinal Cord Injury course:** Team Leader/Presenter, June 2014-present. Develop and provide content for continuing tele-education SCI curriculum utilizing case discussion model for SCI “Spoke Clinic” primary care providers. 50+ hours/year.

Invited Lectures

1. Challenges Posed by Chronic Wounds, panel member. Austen BioInnovation Institute in Akron Synergy Seminar, Akron, Ohio. 05/18/2011
2. Aging with Spinal Cord Injury. Northeast Ohio Chapter of the National Spinal Cord Injury Association, Cleveland, Ohio. 10/10/2011
3. Evaluation and Treatment of Pressure Ulcers. Mayo Clinic Physical Medicine & Rehabilitation Grand Rounds. Rochester, Minnesota. 01/06/2012
4. Identification and Management of Spinal Cord Injury-Related Medical Emergencies. Case Western Reserve University School of Medicine, Department of Medicine Grand Rounds. Cleveland, OH. 03/11/2014
5. Spasticity Management in Spinal Cord Injury and Disorders: General Function Issues. Cleveland Clinic Center for Continuing Education “Spasticity and other Movement Disorders Pediatric and Adult Symposium 2016”. Cleveland, OH. 03/14/2016.

Presentations

1. Use of botulinum toxin in the management of pain. UPMC Department of Physical Medicine & Rehabilitation Resident Grand Rounds. Pittsburgh, PA. 12/5/2007.
2. Acute effects of botulinum neurotoxin-A (BoNT-A) on *in vitro* rabbit articular chondrocytes. University of Pittsburgh Medical Center Institute for Rehabilitation Research Day. Pittsburgh, PA. 06/06/2008.
3. Pressure ulcers: Etiology and treatment. UPMC Department of Physical Medicine & Rehabilitation Resident Grand Rounds. Pittsburgh, PA. 03/04/2009.
4. Case of the month: Autonomic dysreflexia in traumatic brain injury. UPMC Department of Physical Medicine & Rehabilitation Resident Didactics. Pittsburgh, PA. 04/22/ 2009.
5. Pressure ulcers: Clinical update, advances in care and technological horizons. (Symposium with Brienza D, Horton JH, and Wood S), American Academy of Physical Medicine & Rehabilitation 70th Annual Assembly. Austin, TX. 10/23/ 2009.
6. The Aging Game. UPMC PM&R Resident Didactics Series, Pittsburgh, PA 01/2010.
7. SCI Jeopardy: Clinical Practice Guidelines on Prevention of Thromboembolism in Spinal Cord Injury. Spinal Cord Injury Teaching Series. Louis Stokes Cleveland VA Medical Center. 09/27/ 2010.
8. What is a Spinal Cord Injury? Patient Education Series. Spinal Cord Injury Service, Louis Stokes Cleveland VA Medical Center, 2011-present, ~2x/yr
9. Palliative Management of Chronic Pressure Ulcers: Developing an Ethical and Biopsychosocial Framework Using Shared Decision Making. (Symposium with Fluellen V, Kuemmel A, and Gatliff J.) Academy of Spinal Cord Injury Professionals 2015 Expo and Educational Conference, New Orleans, LA. 09/08/2015.

Presentations, cnt'd

10. Sexuality and Spinal Cord Injury. 20th Annual SCI Forum. MetroHealth Rehabilitation Institute of Ohio. Cleveland, OH. 09/11/2015.
11. Sexuality after SCI/D. Advanced Patient Education Series, Spinal Cord Injury Service, Louis Stokes Cleveland VA Medical Center, 2015-present, once/year.
12. Aging and SCI/D. Advanced Patient Education Series. Spinal Cord Injury Service, Louis Stokes Cleveland VA Medical Center, 10/23/2016.
13. Male Fertility after SCI. Spinal Cord Injury Medical Professionals Continuing Medical Education Series. Spinal Cord Injury Service, Louis Stokes Cleveland VA Medical Center, 04/10/2017.
14. Sexuality and Fertility after Spinal Cord Injury. 22nd Annual SCI Forum. MetroHealth Rehabilitation Institute of Ohio. Cleveland, OH. 08/25/2017.
15. What is a spinal cord injury? Spinal Cord Injury Care in the 21st Century: Bridging Knowledge of the Past and Present Conference, Louis Stokes Cleveland VA Medical Center, 10/25/2017
16. Trends in Mortality after SCI. Spinal Cord Injury Care in the 21st Century: Bridging Knowledge of the Past and Present Conference, Louis Stokes Cleveland VA Medical Center, 10/25/2017

Trainees / Mentees

	<u>Dates</u>	<u>Program</u>	<u>Current Position</u>
Elizabeth Ruedrich	2012-2013	Undergraduate Research	Medical Student, Toledo
Sarah Chang	2012-2016	Biomed Eng Doctoral Committee	PhD student, CWRU
Bryce Beddard	2016-	Vanderbilt University Biomedical	Undergraduates, VU
Garrett Camps		Engineering Alumni Mentoring Program	

Teaching Administration

1. Site Director, MetroHealth Medical Center Spinal Cord Injury Fellowship, 1/2013-present.
2. SCI Experience Coordinator, UH/CWRU Neurology Residency NeuroRehab Rotation, 1/2013-06/2014.
3. VA Spinal Cord Injury Rotation Director, MetroHealth/CWRU Medical Center Physical Medicine & Rehabilitation Residency, 7/2013-present.
4. VA Spinal Cord Injury Rotation Director, Cleveland Clinic Physical Medicine & Rehabilitation Residency Program, 7/2016-present.

Other Teaching

1998-1999

Lecturer, University of Louisville School of Nursing, Human Organ Systems, PHY/BSC 312
(Director: Anderson): Acid/Base Physiology and Peripheral Circulation

2001-2002

Life Science Coordinator, Louisville Science Center

- *BioLab* and *The World Within Us* exhibit sessions for elementary-high school students and public
- Continuing Education Workshops for primary through secondary school science teachers

Other Teaching, cnt'd

2011-Present

Medical Student Teaching:

1. CWRU School of Medicine "Musculoskeletal Anatomy Week"

<u>Type of Contact</u>	<u>Year</u>	<u>Contact Hours/Year</u>	<u>Topic</u>
Small group leader	2011	4	Elbow, Hand & Wrist
Small group leader	2012	4	Cervical & Lumbar Spine
Small group leader	2013	4	Elbow, Hand & Wrist

2. CWRU School of Medicine Fourth Year Geriatrics Rotation through Spinal Cord Injury Service

<u>Type of Contact</u>	<u>Year</u>	<u>Contact Hours/Year</u>
SCI Inpatient Attending	2012	12
with student	2013	8
	2014	8
	2015	12
	2016	6

3. CWRU School of Medicine Fourth Year PM&R/SCI Elective Rotation

<u>Type of Contact</u>	<u>Year</u>	<u>Contact Hours/Year</u>
SCI Inpatient Attending	2015	12
with student	2017	20

House Officer Teaching

1. Spinal Cord Injury Inpatient Service: 6 months/year with 1 resident per rotation, 3 months/year with each Spinal Cord Injury Fellow (1-2/year)

2. Resident Didactics - MetroHealth Medical Center, Physical Medicine & Rehabilitation

<u>Type of Contact</u>	<u>Year</u>	<u>Contact Hours/Year</u>	<u>Topic</u>
Lecture	2011	1.5	Pressure Ulcers in Spinal Cord Injury
Lecture	2012	1.5	Pressure Ulcers in Spinal Cord Injury
Lecture	2012	1.5	Autonomic Dysfunction after SCI
Lecture	2015	1.5	Pressure Ulcers in Spinal Cord Injury
Lectures	2017	2.5	Pressure Ulcers in Spinal Cord Injury Sexuality & Fertility after SCI

3. Resident Noon Lecture – LSCVAMC Internal Medicine Residents

<u>Type of Contact</u>	<u>Years</u>	<u>Contact Hr/Year</u>	<u>Topic</u>
Lecture	2013-17	4	Autonomic Dysreflexia after SCI

GRANTS AND CONTRACTS

1. NIH R25 RR15656 "KY-HEROS, Kentucky Health Education Rural Outreach Scientists" NCCR-Science Education Partnership Award (SEPA), Program Coordinator, 2001 – 2002.
2. Co-investigator, U.S. Department of Defense SCI Research Program, Toward Personalized Pressure Ulcer Care Planning: Development of a Bioinformatics System for Individualized Prioritization of Clinical Practice Guideline. (PI: Kath Bogie), 2015-2018.
3. Co-investigator, U.S. Department of Defense SCI Research Program, Development of a personalized model for pressure ulcer prevention acutely following spinal cord injury: biomarkers of muscle composition and resilience. (PI: Kath Bogie), 2014-2017.

GRANTS AND CONTRACTS, cnt'd

4. Co-investigator, Craig H. Nielsen Foundation, Development of a personalized pressure ulcer /deep tissue injury risk tool. (PI: Kath Bogie). 2014-2017.
5. Co-investigator, Veterans Affairs Rehabilitation R&D, Does Treatment of Sleep-Disordered Breathing Improve Functional Outcomes in SCI? (PI: Safwan Badr) 2017 –2020
6. Principal Investigator, VA Innovation Accelerator Network, Smart foot position sensor to prevent power wheelchair user foot and leg injuries. 2017-2018.
7. Co-investigator, VA Rehabilitation Research & Development Service, Toward smart personalized electrotherapy for enhanced healing of ischemic wounds (PI: Bogie) 2017-2021.

TECHNOLOGY TRANSFER ACTIVITY

Bogie, KM; **Henzel, M**; Majerus, SJ, Mitchell, SJ. "A smart foot position sensor for power wheelchair users." U.S. Provisional Application No.: 62/480,804. Filed 04/03/2017.

BIBLIOGRAPHY

Peer Reviewed Articles

1. Adeagbo ASO, **Henzel MK** Cytosolic phospholipase A₂ (PLA₂) mediates the production of endothelium-derived hyperpolarizing factor in perfused rat mesenteric pre-arteriolar bed. *J. Vasc.Res.*1998; 35(1):27-35.
2. Saha PR, Alsip NL, **Henzel MK**, Asher EF. Role of nitric oxide and cyclooxygenase products in controlling vascular tone in uterine microvessels of rats. *J. Reprod. Fertil.* 1998; 112(2):211-6.
3. Alsip NL, Hornung JW, **Henzel MK**, Asher EF. Pregnancy-induced alterations of uterine arteriolar reactivity in the rat: observations with a new *in vivo* microcirculatory preparation. *Am. J. Obstet. Gynecol.* 2000; 183(3):621-6.
4. **Henzel MK**, Alsip NL. Systemic vascular reactivity in an aortic Coarctation model of preeclampsia in the rat. *Pathophysiology* 2001; 8:133-140.
5. **Henzel MK**, Munin MC, Niyonkuru C, Skidmore ER, Weber DJ, Zafonte RD. Comparison of surface and ultrasound localization to identify forearm flexor muscles for botulinum toxin injections. *PM&R.* 2010 Jul;2(7):642-6.
6. **Henzel MK**, Bogie KM, Guihan ML, Ho CH. Pressure ulcer management and research priorities for patients with spinal cord injury: Consensus opinion from SCI QUERI Expert Panel on Pressure Ulcer Research Implementation. *JRRD.* 2011; 48(3): xi-xxxi.
7. Howe DS, Dunning JL, Henzel MK, Graebert JK, Bogie KM. A wearable stimulation bandage for electrotherapy studies in a rat ischemic wound model. *Conf Proc IEEE Eng Med Biol Soc.* 2011; 2011:298-301.
8. Ruedrich ED, **Henzel MK**, Hausman BS, Bogie KM. Reference gene identification for reverse transcription-quantitative polymerase chain reaction analysis in an ischemic wound healing model. *J Biomolecular Techniques.* 2013 Dec; 24(4):181-6.
9. Graebert JK, **Henzel MK**, Honda KS, Bogie KM. Systemic evaluation of electrical stimulation for ischemic wound therapy in a preclinical *in vivo* model. *Adv Wound Care* (New Rochelle). 2014 Jun 1; 3(6):428-437.
10. Ziraldo C, Solovyev A, Allegretti A, Krishnan S, **Henzel MK**, Sowa GA, Brienza D, An G, Mi Q, Vodovotz Y. A Computational, Tissue-Realistic Model of Pressure Ulcer Formation in Individuals with Spinal Cord Injury. *PLoS Comput Biol.* 2015 Jun 25;11(6):e1004309. doi: 10.1371/journal.pcbi.1004309. eCollection 2015 Jun.

Electronic Publications:

1. **Henzel MK.** Is a rehabilitation research career right for you? *The PM&R Resident*. pp. 5-6, October 2009. (WebCite® <http://www.webcitation.org/64z0msfaI>).
2. **Henzel MK.** Operation Medical Libraries. *The PM&R Resident*. October 2010. (WebCite® <http://www.webcitation.org/64z0hyApS>)
- 3.

Electronic Publications, cnt'd

4. **Henzel MK,** Campea SJ. Pressure Ulcer Management. American Academy of Physical Medicine & Rehabilitation AcadeME: *Knowledge NOW*. (WebCite® <http://www.webcitation.org/64z0Xn3d0>)

Book Reviews and Other

1. **Henzel MK,** Page SJ. Book Review: Living with Brain Injury. *Complementary Health Pract. Rev.*, 9(2), 2004.

Abstracts

1. **Henzel MK,** Adeagbo ASO. Differential Effects of the Arachidonic Acid (AA) Analog, AACOCF₃, on Vascular Contractility and Hyperpolarization in Perfused Rat Mesentery. *FASEB J.* 10(3): A140, 1996.
2. **Henzel MK,** Alsip NL. Uterine Arteriolar Response to Serotonin in Rat Aortic Coarctation (ACOR) Model of Preeclampsia. *FASEB J.* 12(5): A92, 1998.
3. **Henzel MK,** Alsip NL. Evaluation of a Rat Aortic Coarctation (ACOR) Model of Preeclampsia. *FASEB J.* 2000 (#495.15).
4. **Henzel, MK.** Sowa, GA, Georgescu, HI, Munin, MC, Kang, JD. Acute effects of botulinum neurotoxin-A (BoNT-A) on *in vitro* rabbit articular chondrocytes. American Academy of Physical Medicine & Rehabilitation 69th Annual Assembly. 2008 (#172), San Diego, CA.
5. Ziraldo C, Solovyev A, **Henzel MK,** Sowa GA, Brienza D, An G, Vodovotz Y. Inferring mechanism from morphology: understanding pressure ulcer formation in spinal cord injury patients using agent-based mechanistic simulations. Wound Healing Society 20th Annual Meeting. 2010 (#4.06), Orlando, FL.
6. Mawla M, Munin M, **Henzel K,** Calloway T. A Routine work-up for dysphagia that led to the diagnosis of myotonic dystrophy. Academy of Academic Physiatrists Annual Meeting 2010 (#202), Colorado Springs, CO.
7. **Henzel MK,** Nagy J, Roach MJ, Nemunaitis G, Mejia M. Impact of Time since Injury on Pushrim Kinetics During Advanced Wheelchair Skills in Manual Wheelchair Users with Spinal Cord Injury (SCI). American Spinal Injury Association 38th Annual Scientific Meeting. 2012, Denver, CO.
8. **Henzel MK,** Howe DS, Graebert J, Bogie KM. Optimization of a rat ischemic wound model for evaluation of the effects of electrotherapy on wound healing. *Wound Rep Reg.* 20(2):A24, 2012.
9. **Henzel MK,** Brose S, Kiene J, Nemunaitis, G. Impact of Dantrolene on Respiratory Function in Persons with Spinal Cord Injury: a Case Series. Academy of Spinal Cord Injury Professionals Annual Educational Conference and Expo 2014 (P17), St Louis, MO.

Abstracts, cnt'd

10. **Henzel MK**, Mitchell S. Interface Between Pressure Ulcers, Amputation, and Wheelchair Design: Challenges Requiring Interdisciplinary Collaboration. Academy of Spinal Cord Injury Professionals Annual Educational Conference and Expo 2014 (P92), St Louis, MO.
11. Richmond MA, Kubiak M, **Henzel MK**, Brose S. Lessons Learned in the Medication Reconciliation Process: a case study. Academy of Spinal Cord Injury Professionals Annual Educational Conference and Expo 2014 (P20), St Louis, MO.
12. Richmond MA, **Henzel MK**, Strozewski R. Virtual Care Services-Innovative Tools of Delivering Care. Case Western Reserve University School of Medicine Education Retreat 2015, Cleveland, OH.
13. **Henzel MK**, Mosher MC, Lorenz RR, Schlenk R, Richmond MA, Patel S. Esophageal erosions secondary to anterior cervical hardware presenting as aspiration pneumonia and dysphagia: a case series. Academy of Spinal Cord Injury Professionals Annual Educational Conference and Expo 2016, Nashville, TN.
14. **Henzel MK** and Mitchell S. Relationships between complex power wheelchair seating design and lower extremity trauma after spinal cord injury. Academy of Spinal Cord Injury Professionals Annual Educational Conference and Expo 2016, Nashville, TN.