

CURRICULUM VITAE

Brian D. Schmit

Marquette University
Department of Biomedical Engineering
P.O. Box 1881
Milwaukee, WI 53201-1881
(414) 288-6125
e-mail: brian.schmit@marquette.edu

16420 Alverno Drive
Brookfield, WI 53005
(262) 938-0683

EDUCATION

Doctorate in Biomedical Engineering, Case Western Reserve University, Cleveland, OH.
Graduation: August, 1995. Dissertation: "Electrical Activation of the Diaphragm for Ventilatory Assist". Research Advisor: J. Thomas Mortimer.

Master of Science in Biomedical Engineering, Case Western Reserve University, Cleveland, OH.
Graduation: May, 1992.

Bachelor of Science in Engineering, (Major: Biomedical Engineering) Marquette University,
Milwaukee, WI. Graduation: May, 1988, Summa Cum Laude.

WORK EXPERIENCE

- | | |
|----------------|---|
| 2005 - present | Associate Professor
Department of Biomedical Engineering, Marquette University |
| 2000 - present | Adjunct Assistant Professor
Department of Physical Medicine and Rehabilitation, Northwestern University |
| 2000 - present | Adjunct Assistant Professor
Department of Physical Medicine and Rehabilitation, Medical College of Wisconsin |
| 2000 - 2005 | Assistant Professor
Department of Biomedical Engineering, Marquette University |
| 1999 - 2000 | Associate Director, Sensory Motor Performance Program
Sensory Motor Performance Program, Rehabilitation Institute of Chicago |
| 1998 - 2000 | Research Assistant Professor
Department of Physical Medicine and Rehabilitation, Northwestern University |
| 1996 - 2000 | Lab Manager
Sensory Motor Performance Program, Rehabilitation Institute of Chicago |
| 1995 - 1998 | Research Associate
Sensory Motor Performance Program, Rehabilitation Institute of Chicago |
| 1995 - 1998 | Post-Doctoral Fellow |

Department of Physical Medicine and Rehabilitation, Northwestern University

1988 - 1995 Biomedical Engineer
Cleveland VA Medical Center

1988 - 1995 Research Assistant
Applied Neural Control Laboratory, Department of Biomedical Engineering,
Case Western Reserve University

GRANTS

Co-Principal Investigator. "Diffusion Tensor Imaging of the Injured Spinal Cord", VA RR&D Merit Review, I01 RX000113, Funded October 1, 2009 to September 30, 2012.

Principal Investigator. "Reflex Regulation of Motor Function in Human SCI", NINDS #R01-NS062982, Funded September 20, 2009 to August 31, 2011.

Co-Investigator. "Improving Delivery of Intensive Gait Training in the Clinical Setting to Augment Community Ambulation" a subproject of "RRTC on Enhancing the Functional and Employment Outcomes of Individuals who Experience a Stroke", NIDRR Rehabilitation Research and Training Center, Funded October 1, 2008 to September 30, 2013.

Principal Investigator. "Diffusion Tensor Imaging in Spinal Cord Injury", Way-Klingler Fellowship Application, Marquette University, Funded July 1, 2008 to June 30, 2011.

Co-Principal Investigator "Motor Adaptation in Human SCI", Paralyzed Veterans of America Spinal Cord Research Foundation, Funded June 1, 2008 to May 31, 2010.

Co-Investigator. "Enhanced Motor Recovery Using Serotonergic Agents", NIDRR Field-Initiated Research Grant, Funded October 1, 2006 to September 30, 2009.

Co-Principal Investigator. "Novel Technologies for Spinal Regeneration and Assessment of Motor Function" BTA research grant, Funded May 1, 2006 to April 30, 2007.

Co-Investigator, "Diffusion Tensor Imaging of the Spinal Cord" a subproject of "Engineering for Neurological Rehabilitation" NICHD #R24-HD050821, Funded September 23, 2005 to May 31, 2008.

Principal Investigator. "Multi-Joint Sensorimotor Dysfunction of the Stroke Arm", NINDS #R01-NS52509, Funded September 1, 2005 to May 31, 2009

Principal Investigator. "Reflex Control of Motor Coordination in Stroke", American Heart Association, National Center Research Program Bugher Stroke Award, Funded July 1, 2005 to June 30, 2009 (resigned August 31, 2005)

Principal Investigator, "Reflex Control of Motor Coordination in Stroke", American Heart Association, Greater Midwest Affiliate Grant in Aid, Funded January 1, 2005 to December 31, 2007 (resigned on July 1, 2005)

Consultant, “Effects of Baclofen on Muscle Strength in Cerebral Palsy”, NINDS #R01-NS043143, Funded January 1, 2004 through June 30, 2006

Co-Principal Investigator, “Enhanced Upper Limb Motor Control by Reduced Synergistic Muscle Patterns and Spasticity after Chemodenervation, NIDRR, Field Initiated Research Project, Funded September 1, 2002 through August 31, 2005

Principal Investigator, “Role of Interneuronal Circuits in Human Spinal Cord Injury”, NINDS #R01-NS40901, Funded September 28, 2000 through August 31, 2006

Co-Investigator, “Muscle Activity Initiation During Hemiparetic Locomotion”, NICHD #R01-HD39406, Funded September 10, 2000 through May 31, 2004

Principal Investigator, “Monitoring the Neuromuscular Status of the Spinal Motor System in Chronic Spinal Cord Injury: Mechanical and Electrical Measurements”, Whitaker Foundation, Funded, May 1, 1999 through April 30, 2002

Co-Investigator, “The Effects of Botulinum Toxin in the Upper Extremity in Children with CNS Dysfunction”, Buchanan Family Fellowship in Occupational Therapy, Funded July 1, 1999 through June 30, 2000

Co-Principal Investigator, “Spasticity in Spinal Cord Injury: Novel Roles for Muscle and Skin Mechanoreceptors”, American Paralysis Association/Christopher Reeve Paralysis Foundation, Funded December 15, 1998 through December 14, 2000 (includes renewal)

Co-Investigator, “Development of a Rehabilitator for Arm Therapy after Brain Injury”, NIDRR Field Initiated Research Project. Funded March 1, 1998 through February 28, 2001

NRSA Post-Doctoral Fellowship, “Effects of Cutaneous Stimulation on Spasticity”, NIH, NINDS. Funded July 1, 1996 through June 30, 1998

Co-Investigator, "Electrical Activation of the Diaphragm for Ventilatory Assist", VA Merit Review. Funded October 1, 1993 through September 30, 1996

COURSES TAUGHT

Marquette University – Department of Biomedical Engineering

BIEN 151/160 (2X) – Neural Engineering

BIEN 155 (5X) – Signals and Systems in Biomedical Engineering

BIEN 185 – Computer Applications in Biomedical Engineering

BIEN 289/268 (4X) – Rehabilitative Biosystems

BIEN 289 (3X) – Advanced Laboratory Computing for Biomedical Engineering

U.S. PATENTS

Brian D. Schmit and J. Thomas Mortimer, “Laparoscopic Vacuum Delivery Apparatus for Diaphragm Pacer”, US5472438

GRADUATE STUDENTS

Robert E. Steldt, MS, August 2003

Michael F. McDonald, MS, August 2003

Kelly K. Heglund, MS, December 2003

Richard J. Ivnik, MS, December 2003
Yahya Y. Bahloul, MS, August 2005
Tiffany L. Kline, MS, August 2005
M. Kevin Garrison, PhD, December 2005
Debjani Chaudhuri, MS, May 2006
David R. Cotey, MS, August 2006
Mukta Joshi, MS, August 2006
Vaidehi Chaukulkar, MS, December 2006
Matthew Cole, PhD, December 2006
Tanya Onushko, MS, May 2007
Andrew Starsky, PhD, May 2007
Benjamin M. Ellingson, PhD, May 2008
Samir Sangani, PhD, August 2008
Jay Mehta, MS, December 2008
Vijayasarathy Govindarajan, MS, December 2008
Megan Conrad, PhD, May 2009

POST-DOCTORAL FELLOWS

T. George Hornby, PhD (50% with W. Zev Rymer, November 2000 to October 2002)
Ming Wu, PhD (100% April 2002 to April 2007)
Katherine M. Deutsch, PhD (50% with W. Zev Rymer, November 2003 to October 2004)
Renee D. Theiss, PhD (50% with W. Zev Rymer, September 2005 to July 2009)
Keith Gordon, PhD (50% with W. Zev Rymer, July 2006 to present)
Krishnaj Gourab, MD (50% with T. George Hornby, July 2006 to July 2009)
Gilles Hoffmann, PhD (50% with Derek G. Kamper and W. Zev Rymer, September 2006 to present)
Allison Hyingstrom, PhD (100% October 2007 to August 2008)
Virginia Chu, PhD (100% November 2009 to present)

PROFESSIONAL SOCIETIES

IEEE EMBS Society, Member
Society for Neuroscience, Member
Alpha Sigma Nu, Jesuit Honor Society, Member
Sigma Xi, Member

ACADEMIC AND PROFESSIONAL HONORS

Awarded Way-Klingler Science Fellowship, Marquette University, 2008
Awarded Outstanding Researcher Award, Marquette University, College of Engineering, 2005
Awarded Institutional NRSA Post-Doctoral Fellowship, Northwestern University, 1995-1996
Awarded Second Place, IEEE Engineering in Biology and Medicine Student Paper Competition, 1994
Awarded National Science Foundation Graduate Student Fellowship, 1989-1993
Awarded NIH Traineeship Grant, Case Western Reserve University, 1988-1989
Graduated Summa Cum Laude, Marquette University, 1988

MANUSCRIPT REVIEWER

Annals of Biomedical Engineering
Archives of Physical Medicine and Rehabilitation
Brain
Brain Research
Clinical Neurophysiology

IEEE Transactions on Biomedical Engineering
IEEE Transactions on Neural Systems and Rehabilitation Engineering
Journal of Biomechanics
Journal of Rehabilitation Research and Development
Journal of Neural Engineering
Journal of Neurophysiology
Journal of Neuroscience Methods
Journal of Neurotrauma
Journal of Physiology
Lancet-Neurology
Medical and Biological Engineering and Computing
Muscle and Nerve
Neurorehabilitation and Neural Repair
Neuroscience
Neuroscience Letters
NMR in Biomedicine
Sensors and Actuators
Stroke

GRANT REVIEWER

Paralyzed Veterans of America
Association Francaise contre les Myopathies (AFM)
Health Research Board Ireland
New York State Spinal Cord Injury Research Program
Craig H. Neilson Foundation
Austrian Science Fund (FWF)
National Institutes of Health, MRS Study Section, ad hoc reviewer
Alberta Heritage Fund
Ontario Research Fund

BIBLIOGRAPHY

Research Papers

(Numbered references are original, full, peer-reviewed, Medline-referenced research papers. Nonnumbered papers are peer-reviewed short communications)

54. Ellingson, B.M., **Schmit, B.D.** and Kurpad, S.N., “Lesion growth and degeneration patterns measured using diffusion tensor MRI in rat spinal cord injury at 9.4T”, *Journal of Neurosurgery: Spine*, In Press.
53. Garrison, M.K. and **Schmit, B.D.**, “Flexor reflex decreases during sympathetic stimulation in chronic human spinal cord injury”, *Experimental Neurology*, Vol. 219, No. 2, pp. 507-515, 2009.
52. Hoffmann, G., Kamper, D.G., Kahn, J.H., Rymer, W.Z. and **Schmit, B.D.** “Modulation of stretch reflexes of the finger flexors by sensory feedback from the proximal upper limb post-stroke” *Journal of Neurophysiology*, Vol. 102, No. 3, pp. 1420-9, 2009.
51. Sangani, S.G., Starsky, A.J., McGuire, J.R. and **Schmit, B.D.**, “Multijoint Reflex Responses to Volitional Isokinetic Movements of the Stroke Elbow”, *Journal of Neurophysiology*, Vol. 102 No. 3, pp. 1398-410, 2009.
50. Cotey, D., Hornby, T.G. and **Schmit, B.D.**, “Increases in muscle activity produced by vibration of the thigh muscles during locomotion in chronic human spinal cord injury” *Experimental Brain Research* Vol. 196, No. 3, pp. 361-74, 2009.
49. Mehta, J.P., Verber, M.D., Wieser, J.A., **Schmit, B.D.** and Schindler-Ivens, S., “A novel technique for examining brain activity during pedaling using fMRI” *Journal of Neuroscience Methods*, Vol. 179, No. 2, pp. 230-239, 2009.
48. Gordon, K.E., Wu, M., Kahn, J.H., Dhaher, Y.Y. and **Schmit, B.D.** “Ankle Load Modulates Hip Kinetics during Human Locomotion” *Journal of Neurophysiology*, Vol. 101, No. 4, Pages: 2062-2076, 2009.
47. Wu, M., Kahn, J.H., Hornby, T.G. and **Schmit, B.D.**, “Rebound responses to prolonged flexor reflex stimuli in human spinal cord injury”, *Experimental Brain Research*, Vol. 193, No. 2, pp. 225-37, 2009.
46. Ellingson, B.M., Kurpad, S.N. and **Schmit, B.D.**, “Ex Vivo Diffusion Tensor Imaging of the Rat Spinal Cord during Long-Term Recovery from Traumatic Contusion Injury” *Journal of Magnetic Resonance Imaging*, Vol. 28, No. 5, pp. 1068-79, 2008.
45. Ellingson, B.M., Kurpad, S.N. and **Schmit, B.D.**, “Characteristics of mid- to long-latency spinal somatosensory evoked potentials following spinal trauma in the rat”, *Journal of Neurotrauma*, Vol. 25, No. 11. pp.1323-34, 2008.
44. Ellingson, B.M., Ulmer, J.L., Kurpad, S.N. and **Schmit, B.D.**, “Diffusion tensor magnetic resonance imaging in chronic human spinal cord injury”, *AJNR -American Journal of Neuroradiology*, Vol. 29, No. 10:1976-82 2008.

43. Ellingson, B.M., Ulmer, J.L., Kurpad, S.N. and **Schmit, B.D.**, “Diffusion tensor magnetic resonance imaging of the neurologically intact human spinal cord”, *AJNR -American Journal of Neuroradiology*, Vol. 29, No. 7, pp. 1279-1284, 2008.
42. Ellingson, B.M., Kurpad, S.N., Li, S.-J. and **Schmit, B.D.**, “In vivo diffusion tensor imaging of the rat spinal cord at 9.4T”, *Journal of Magnetic Resonance Imaging*, Vol. 27, No. 3, pp. 634-642, 2008.
41. Garrison, M.K., Ng, A.V. and **Schmit, B.D.**, “Local sympathetic response to noxious skin stimuli is similar in high and low level human spinal cord injury”, *Clinical Neurophysiology*, Vol. 119, No. 2, pp. 466-74, 2008.
40. Ellingson, B.M., Ulmer, J.L., and **Schmit, B.D.**, “Morphology of the human spinal cord in chronic injury: diffusion characteristics and tissue classification using diffusion tensor magnetic resonance imaging and fuzzy logic”, *Annals of Biomedical Engineering*, Vol. 36, No. 2, pp. 224-236, 2008.
39. Lewek, M.D., Hornby, T.G., Dhaher, Y.Y. and **Schmit, B.D.**, “Prolonged quadriceps activity following imposed hip extension: A neurophysiological mechanism for stiff-knee gait?”, *Journal of Neurophysiology*, Vol. 98, No. 6, pp. 3153-62, 2007.
38. Kim, Y., Youm, Y., Wu, M. and **Schmit, B.D.**, Modulation of flexor reflexes by static and dynamic hip proprioceptors in chronic human spinal cord injury. *Journal of Clinical Neuroscience*, Vol. 14, No. 11, pp.1078-88, 2007.
37. *Sangani, S.G., *Starsky, A.J., McGuire, J.R. and **Schmit, B.D.**, “Multijoint reflexes of the stroke arm: Neural coupling of the elbow and shoulder” *Muscle and Nerve*, Vol. 36, pp. 694-703, 2007.
36. Onushko, T. and **Schmit, B.D.**, “Reflex responses to imposed bilateral hip oscillations in human spinal cord injury”, *Journal of Neurophysiology*, Vol. 98, pp. 1849-1861, 2007.
35. Knikou, M., **Schmit, B.D.**, *Chaudhuri, D., Kay, E., and Rymer, W.Z. “Soleus H-reflex excitability changes in response to sinusoidal hip stretches in spinal cord lesioned subjects”, *Neuroscience Letters*, Vol. 423, No. 1, pp. 18-23, 2007.
34. *Ellingson, B.M., Ulmer, J.L. and **Schmit, B.D.**, “Gray and White Matter Delineation in the Human Spinal Cord Using Diffusion Tensor Imaging and Fuzzy Logic”, *Academic Radiology*, Vol 14, pp. 847-58, 2007.
33. Knikou, M., Kay, E. and **Schmit, B.D.**, “Parallel facilitatory reflex pathways from the foot and hip to flexors and extensors in human SCI.” *Experimental Neurology*, Vol. 206, No. 1, pp. 146-158, 2007.
- Ellingson, B.M., Ulmer, J.L. and Schmit, B.D., “Optimal diffusion tensor indices for imaging the human spinal cord.” *Biomedical Sciences Instrumentation*. Vol. 43, pp. 128-33, 2007.
32. Kline, T.L., **Schmit, B.D.** and Kamper, D.G., “Effects of posture on exaggerated finger flexion following stroke”, *Brain*, Vol. 130, pp.159-69, 2007.

31. Lewek, M.D. **Schmit, B.D.**, Hornby, T.G. and Dhaher, Y.Y., “Hip joint position modulates volitional knee extensor muscle activity post-stroke”, *Muscle Nerve*, Vol. 34, No. 6, pp. 767-74, 2006.
30. Wu, M. and **Schmit, B.D.**, “Spastic reflexes triggered by ankle load release in human spinal cord injury”, *Journal of Neurophysiology*, Vol. 96, No. 6, pp. 2941-50, 2006.
29. Knikou, M., Chaudhuri, D., Kay, E. and **Schmit, B.D.**, “Pre and post α -motoneuronal control during sinusoidal hip movements in human spinal cord injury” *Brain Research*, Vol. 1103, pp. 123-139, 2006.
- Ellingson B.M., Ulmer J.L. and **Schmit B.D.**, “A new technique for imaging the human spinal cord in vivo.” *Biomedical Sciences Instrumentation*, Vol. 42, pp. 255-60, 2006.
28. Kim, Y., **Schmit, B.D.** and Youm, Y. “Stimulation Parameter Optimization for Functional Electrical Stimulation Assisted Gait in Human Spinal Cord Injury Using Response Surface Methodology” *Clinical Biomechanics*, Vol. 21, No. 5, pp. 485-94, 2006.
27. Hornby, T.G., Hilb, J, Wu, M and **Schmit, B.D.**, “Temporal summation of stretch reflexes following human spinal cord injury” *Journal of Physiology*, Vol. 571, No. 3, pp. 593-604, 2006.
26. Wu, M., Hornby, T.G., Hilb, J. and **Schmit, B.D.**, “Flexor reflex responses triggered by imposed knee extension in chronic human spinal cord injury”, *Experimental Brain Research*, Vol. 168, No. 4, pp. 566-576, 2006.
25. McDonald, M.F., Garrison, M.K. and **Schmit, B.D.** “Length-Tension Properties of Ankle Muscles in Chronic Human Spinal Cord Injury”, *Journal of Biomechanics*, Vol. 38, No. 12, pp. 2344-2353, 2005.
24. Starsky, A.J., Sangani, S.G., McGuire, J.R., Logan, B. and **Schmit, B.D.**, “A Biomechanical Assessment of the Reliability of Spasticity Measurements at the Stroke Elbow”, *Archives of Physical Medicine and Rehabilitation*, Vol. 86, pp. 1648-1654, 2005.
23. Deutsch, K.M., Hornby, T.G. and **Schmit, B.D.**, “The Intralimb Coordination of the Flexor Reflex Response is Altered in Chronic Human Spinal Cord Injury”, *Neuroscience Letters*, Vol. 380, pp. 305-310, 2005.
22. Wu, M., Hornby, T.G., Hilb, J. and **Schmit, B.D.**, “Extensor Spasms Triggered by Imposed Knee Extension in Chronic Human Spinal Cord Injury” *Experimental Brain Research*, Vol. 162, pp. 239-249, 2005.
21. Benz, E.N., Hornby, T.G., Bode, R.K., Scheidt, R.A. and **Schmit, B.D.**, “A Physiologically Based Clinical Measure for Spasticity in Spinal Cord Injury”, *Archives of Physical Medicine and Rehabilitation*, Vol. 86, pp. 52-59, 2005.
20. Hornby, T.G., Tysseling-Mattiace, V.M., Benz, E.N. and **Schmit, B.D.**, “Contribution of Muscle Afferents to Prolonged Flexion Withdrawal Reflexes in Human Spinal Cord Injury”, *Journal of Neurophysiology*, Vol. 92, pp.3375-3384, 2004.

19. Steldt, R.E. and **Schmit, B.D.**, “Modulation of Coordinated Muscle Activity during Imposed Sinusoidal Hip Movements in Human Spinal Cord Injury”, *Journal of Neurophysiology*, Vol. 92, pp. 673-685, 2004.
 18. Hidler, J.M. and **Schmit, B.D.**, “Evidence for Force-Feedback Inhibition in Chronic Stroke”, *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, Vol 12, pp.166-176, 2004.
 17. **Schmit, B.D.** and Gaebler-Spira, D., “Mechanical Measurements of the Effects of Intrathecal Baclofen Dosage Adjustments in Cerebral Palsy: A Pilot Study”, *American Journal of Physical Medicine and Rehabilitation*, Vol. 83, pp 33-41, 2004.
 16. **Schmit, B.D.**, Hornby, T.G., Mattiace, V.M. and Benz, E.N. “Absence of Local Sign Withdrawal in Chronic Human Spinal Cord Injury”, *Journal of Neurophysiology*, Vol. 90, pp. 3232-3241, 2003.
 15. Hornby, T.G., Rymer, W.Z., Benz, E.N. and **Schmit, B.D.**, “Windup of Flexion Reflexes in Chronic Human Spinal Cord Injury: A Marker for Neuronal Plateau Potentials?”, *Journal of Neurophysiology*, Vol. 89, pp. 416-426, 2003.
- Schmit, B.D.**, Benz, E.N. and Rymer, W.Z., “Reflex Mechanisms for Motor Impairment in Spinal Cord Injury”, *Advances in Experimental Medicine and Biology*, Vol. 508, pp. 315-323, 2002.
14. **Schmit, B.D.** and Benz, E.N., “Extensor Reflexes in Human Spinal Cord Injury: Activation by Hip Proprioceptors”, *Experimental Brain Research*, Vol. 145, pp. 520-527, 2002.
 13. **Schmit, B.D.**, Benz, E.N. and Rymer, W.Z., “Afferent Mechanisms for the Reflex Response to Imposed Ankle Movement in Chronic Spinal Cord Injury”, *Experimental Brain Research*, Vol. 145, pp. 40-49, 2002.
 12. Kamper, D.G., **Schmit, B.D.** and Rymer, W.Z., “Effect of Muscle Biomechanics on the Quantification of Spasticity”, *Annals of Biomedical Engineering*, Vol 29, pp. 1122-1134, 2001.
 11. **Schmit, B.D.** and Rymer, W.Z., “Identification of Static and Dynamic Reflex Sensitivity of Spastic Elbow Flexors Using an Activation Function Model”, *Annals of Biomedical Engineering*, Vol. 29, pp. 330-339, 2001.
 10. Reinkensmeyer, D.J., Kahn, L., Averbuch, M., McKenna, A., **Schmit, B.D.** and Rymer, W.Z., “Understanding and Treating Arm Movement Impairment After Chronic Brain Injury: Progress With the ARM Guide”, *Journal of Rehabilitation Research and Development*, Vol. 37, pp. 653-662, 2000.
 9. **Schmit, B.D.**, McKenna-Cole, A. and Rymer, W.Z., “Flexor Reflexes in Chronic Spinal Cord Injury Triggered by Imposed Ankle Rotation”, *Muscle & Nerve*, Vol. 23, pp. 793-803, 2000.
 8. **Schmit, B.D.**, Dewald, J.P.A. and Rymer, W.Z., “Stretch Reflex Adaptation in Elbow Flexors During Repeated Passive Movements in Unilateral Brain-Injured Patients”, *Archives of Physical Medicine and Rehabilitation*, Vol. 81, pp.269-278, 2000.
- Reinkensmeyer D.J., **Schmit B.D.**, Rymer W.Z., “Mechatronic Assessment of Arm Impairment After Chronic Brain Injury”, *Technology and Health Care*, Vol. 7, pp. 431-435, 1999.

7. Reinkensmeyer, D.J., **Schmit, B.D.** and Rymer, W.Z., "Origins of Workspace Deficits in Chronic Spastic Hemiparesis", *Annals of Biomedical Engineering*, Vol. 27, pp. 805-814, 1999.
6. **Schmit, B.D.**, Dhaher, Y., Dewald, J.P.A. and Rymer, W.Z., "Reflex Torque Responses To Constant Velocity Movements in Spastic Elbow Muscles: Theoretical Analyses and Implications for Quantification of Spasticity", *Annals of Biomedical Engineering*, Vol. 27, pp. 815-829, 1999.
5. **Schmit, B.D.** and Mortimer, J.T., "The Effect of Epimysial Electrode Location on Phrenic Nerve Recruitment and the Relation between Tidal Volume and Interpulse Interval", *IEEE Transactions on Rehabilitation Engineering*, Vol. 7, pp. 150-158, 1999.
4. **Schmit, B.D.**, Kayyali, H., Makovos, B. and Mortimer, J.T., "An Implantable Impedance Pneumograph Monitor for Detection of Diaphragm Contraction and Airway Obstruction During Diaphragm Pacing", *Medical & Biological Engineering & Computing*, Vol. 37, pp. 162-168, 1999.
3. **Schmit, B.D.**, Stellato, T.A., Miller, M.E. and Mortimer, J.T., "Laparoscopic Placement of Epimysial Electrodes for Diaphragm Pacing using Stimulation to Locate the Phrenic Nerve Motor Points", *IEEE Transactions on Rehabilitation Engineering*, Vol. 6, pp. 382-390, 1998.
2. **Schmit, B.D.** and Mortimer, J.T., "The Tissue Response to Epimysial Electrodes for Diaphragm Pacing in Dogs", *IEEE Transactions on Biomedical Engineering*, Vol. 44, pp. 921-930, 1997.
1. **Schmit, B.D.**, Stellato, T.A. and Mortimer, J.T., "Staple Penetration and Staple Histological Response for Attaching an Epimysial Electrode onto the Abdominal Surface of the Diaphragm using a Laparoscopic Approach" *Surgical Endoscopy*, Vol. 11, pp. 45-53, 1997.

Reviews/Book Chapters

- Ellingson, B.M., **Schmit, B.D.**, Ulmer, J.L. and Kurpad, S.N., "Diffusion tensor magnetic resonance imaging in spinal cord injury", *Concepts in Magnetic Resonance A*, Vol. 32A, No. 3, pp. 219-237, 2008.
- Schmit, B.D.**, "Mechanical Measures of Spasticity in Stroke", *Topics in Stroke Rehabilitation*, Vol. 8, pp. 13-26, 2001.
- Katz, R.T., Dewald, J.P.A. and **Schmit, B.D.**, "Spasticity", in Physical Medicine & Rehabilitation, 2d, Braddom, R.L., ed., pp. 592-615, 2000.
- Nochomovitz, M.L., **Schmit, B.D.** and Mortimer, J.T., "Electrical Activation of the Diaphragm", *Problems in Respiratory Care*, Vol. 3, No. 3, pp. 507-533, 1990.