CURRICULUM VITAE

**Bradley J Bowser**

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Assistant Professor

South Dakota State University

Department of Health and Nutritional Sciences

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**EDUCATION**

Aug 2009-July 2011 **Postdoctoral Research Fellow** in Biomechanics and Movement Science

University of Delaware Running Injury Research Lab, Newark, DE

Aug 2009 **Doctor of Philosophy**in Kinesiology (emphasis in Biomechanics)

University of Georgia, Athens, GA

May 2005 **Master of Science** In Exercise Science (emphasis in Biomechanics)

Utah State University, Logan, UT

June 2003 **Bachelor of Science** in Exercise Science (minors in coaching and recreation) Brigham Young University-Hawaii, Laie, HI

May 2001 **Associate of Arts and Sciences** in General Education Health & Education

Brigham Young University-Idaho, Rexburg, ID

**PROFESSIONAL EXPERIENCE**

2011-Present Director of the Biomechanics Laboratory: South Dakota State University, Brookings, SD

2011-Present Assistant Professor of Biomechanics and Exercise Science: Department of Health and Nutritional Sciences, South Dakota State University, Brookings, SD

2009-2011 Post-Doctoral Research Fellowin Biomechanics and Movement Science: Department of Physical Therapy,University of Delaware, Newark, DE

2010 Teaching Assistant, Functional Anatomy, Department of Physical Therapy,University of Delaware, Newark, DE

2007-2009 Graduate Research Assistant: Biomechanics Laboratory, Department of Kinesiology, University of Georgia, Athens, GA

2007-2009 Biomechanics Lab Coordinator: Biomechanics Laboratory, Department of Kinesiology, University of Georgia, Athens, GA

2005-2008 Graduate Teaching Assistant: Biomechanics & Activity Courses, Department of Kinesiology, University of Georgia, Athens, GA

2003-2005 Graduate Teaching Assistant: Biomechanics & Activity Courses, Department of Health, Physical Education and Recreation, Utah State University,Logan, UT

2001-2002 Men’s and Women’s High School Varsity Cross Country Coach, Waialua High School, Waialua, HI

2002-2003 Life Guard and Swim Instructor, Brigham Young University-Hawaii, Laie, HI

2000-2001 Teaching Assistant and Tutor, Human Anatomy and Physiology, Department of Biology, Brigham Young University-Idaho, Rexburg, ID

**AWARDS & HONORS**

2014 Whitaker Research Finalist at the 2014 Cooperative Meeting of the Consortium of Multiple Sclerosis Centers (CMSC) and the Americas Committee for Treatment and Research in Multiple Sclerosis (ACTRIMS®).

2012 Americas Committee for Treatment and Research in Multiple Sclerosis (ACTRIMS) Young Scientist Award

2008 University of Georgia Graduate School Outstanding Teaching Assistant Award

2008 Certificate of Recognition for Excellence in Documentation of Teaching Proficiency by University of Georgia Graduate School’s Teaching Portfolio Program

2005 Inducted into Phi Kappa Phi National Honor Society

2005 Most Outstanding Graduate Studentby the Department of Health Physical Education and Recreation, Utah State University

2005 Best Poster Presentation, Utah State University Intermountain Graduate Paper/Poster Symposium

2004 Runner-up Poster Presentation, Utah State University Intermountain Graduate Paper/Poster Symposium

2003 Graduated Summa Cum Laude, Brigham Young University-Hawaii

2002-2003 Member of the National Dean’s List for college students

2002-2003 Recipient of Makana Ike Full Tuition Academic Transfer Scholarshipfrom Brigham Young University-Hawaii

2000-2001 Recipient of Ricks College Half Tuition Academic Excellence Scholarshipby Brigham Young University-Idaho

**PROFFESIONAL AFFILIATIONS**

2011-Present Northland Chapter of the American College of Sports Medicine (NACSM)

2008-Present American College of Sports Medicine (ACSM)

2007-Present American Society of Biomechanics (ASB)

2005-2012 Phi Kappa Phi National Honor Society

2004-2009 International Society of Biomechanics (ISB)

**TEACHING EXPERIENCE**

2014-Present Programming in Labview (HNS 798), Department of Health and Nutritional Sciences, South Dakota State University

2014-Present Biomechanics Laboratory (PE 454L), Department of Health and Nutritional Sciences, South Dakota State University

2013-Present Applied Biomechanics (PE 745), Department of Health and Nutritional Sciences South Dakota State University

2011-Present Biomechanics (PE 454), Department of Health and Nutritional Sciences South Dakota State University

2011-Present Research Methods (HPER 783), Department of Health and Nutritional Sciences South Dakota State University

2010 Laboratory Instructor: Functional Anatomy (PHYT 604), Department of Physical Therapy, University of Delaware

2005-2008 Laboratory Instructor: Biomechanics (EXRS 4200/6200L), Department of Kinesiology, University of Georgia

2005-2007 Beginning Racquetball (PEDB 1230), Department of Kinesiology, University of Georgia

2006-2007 Introduction to Weight Training (PEDB1400), Department of Kinesiology, University of Georgia

2006 Beginning Bowling (PEDB 1080), Department of Kinesiology, University of Georgia

2006 Beginning Badminton (PEDB 1020), Department of Kinesiology, University of Georgia

2004-2005 Laboratory Instructor: Biomechanics (KINS 4200L), Department of Health, Physical Education, and Recreation, Utah State University

2003-2005 Beginning Racquetball (PE 1110), Department of Health, Physical Education, and Recreation, Utah State University

2003-2005 Lap Swim (PE 1301), Department of Health, Physical Education, and Recreation, Utah State University

2003-2004 Weight Training (PE 1320), Department of Health, Physical Education, and Recreation, Utah State University

2004 Laboratory Instructor: Dynamic Fitness (PE 3000), Department of Health, Physical Education, and Recreation, Utah State University

2003 Beginning Swimming (PE 1400), Department of Health, Physical Education, and Recreation, Utah State University

2003 Intermediate Racquetball (PE 1240), Department of Health, Physical Education, and Recreation, Utah State University

2001-2002 Laboratory Instructor: Human Anatomy & Physiology (BIO 264), Department of Biology, Brigham Young University-Idaho

**TEACHING/LEARNING – PROFEESIONAL DEVELOPMENT**

2013 Teaching and Learning Technology Summer Academy-Advanced Cohort, South Dakota State University.

2012 Teaching and Learning Technology Summer Academy, South Dakota State University.

2012 Effective Teaching & Assessment of Teaching presented by R. Kirby Barrick, South Dakota State University.

2012 Teaching and Learning Center Workshop “Relationship Between Grading and Course Evaluations, South Dakota State University.

2011-2012 New Faculty Orientation Program, (Topics included: Pedegogy, Assessing Teaching Effectiveness, Research and Grant Writing, Professional Staff Evaluations, Accessing Library Resources, Transitioning from Student to Faculty), South Dakota State University .

2011 Graduate Faculty Guidelines and Training Workshop, South Dakota State University.

2009-2011 Monthly Journal Club, (Topics Included: Modelling of the lower extremity, Dynamic Joint Center calculations, Marker Sets used in Kinematic Data Capture), University of Delaware.

2009-2011 Biomechanics and Movement Science Seminar, Series of Research Presentations by Scientists from around the world and Professional Development Workshops (Balancing Life in Academia, Transitioning from Student to Faculty, Obtaining the Dream Job), University of Delaware.

2008-2009 Graduate School Teaching Portfolio Program, University of Georgia.

2005-2009 Biomechanics Seminar, weekly presentation of journal articles, research proposals, and special topics in the field of Biomechanics, University of Georgia.

2005 Teaching Assistant Orientation Program (Example Topics included: Best Practices in Physical Activity Courses, Emergency Response, Developing Effective Lesson Plans, Creating a Course Syllabus, Policies and Procedures of the Kinesiology Department), University of Georgia.

2003-2004 University Teaching Seminar, (Sample Topics included: Classroom management, Creating Effective Course Syllabi, Adapting classroom settings for students with special needs), Utah State University

2002 Tutor Training Program, Best Practices in tutoring, Brigham Young University-Idaho

**MENTORING EXPERIENCE**

2013-Present Pre-OT/PT Club Advisor, South Dakota State University

2013 Mentor for MS student from University of Massachusetts as part of the American Society of Biomechanics Student Mentor Program, during the National Meeting, Omaha, NE.

2011-Present Major Advisor**,** South Dakota State University (Currently 3 first year MS students, 2 second year MS students, 1 third year MS student, 1 third year PhD student)

2009-2011 Research Mentor, University of Delaware, Physical Therapy Department (3 PhD students, 4 undergraduate students)

2007-2009 Research Mentor, University of Georgia, Department of Kinesiology (3 undergraduate research assistants)

**RESEARCH EXPERIENCE**

2011-Present Director: Biomechanics Research Laboratory, South Dakota State University

2011 Founder and Creator of the Biomechanics Research Laboratory, South Dakota State University

2009-2011 Post-Doctoral Research Fellowin Biomechanics and Movement Science: Dr. Irene S. Davis, Department of Physical Therapy,University of Delaware

2007-2009 Graduate Research Assistant: Biomechanics Laboratory, Dr. Cathleen N. Brown, Department of Kinesiology, University of Georgia

2007-2009 Biomechanics Lab Coordinator: Biomechanics Laboratory, Dr. Kathy J. Simpson, Department of Kinesiology, University of Georgia

**RESEARCH INTERESTS**

My research interests focus on lower extremity biomechanics as it relates to clinical populations. The overall purpose of my research is to enhance quality of life by improving functional performance and increasing physical activity in clinical populations, including runners, persons who are overweight/obese, and persons with multiple sclerosis. Specific areas of interest include: the relationship between running mechanics and overuse running injuries, the effects of childhood obesity on joint loading during exercise, and the effects of exercise interventions on the neuromechanics and biomechanics of functional tasks in people with multiple sclerosis.

**PEER REVIEWED MANUSCRIPTS**

**Bowser, B.,** Rose, B., McGrath, R., Salerno, J., Wallace, J., Davis, I. Effect of Footwear on Dynamic Stability During Single Leg Jump Landings. *International Journal of Sports Medicine* (In Press).

Davis, I., **Bowser, B.*,*** Mullineaux, D. (2015) A Prospective Investigation of Vertical Impact Loading and Injury in Runners. *British Journal of Sports Medicine.* Epub **0** 1-7.

**Bowser, B.,** O’Rourke, S., Simpson, K., White, L. (2015). Biomechanical analysis of the sit to stand movement in people with multiple sclerosis. *Clinical Biomechanics.* 30, 788-794.

Brown, C., **Bowser, B.**, Simpson KJ. (2012). Movement variability during single leg jump landings in individuals with and without chronic ankle instability. *Clinical Biomechanics.* 27, 52-63.

Brown, C., **Bowser, B.**, Orellana, A. (2010). Dynamic postural stability in females with mechanical and functional ankle instability. *Medicine & Science in Sports & Exercise.* 42(12), 2258-2263.

**MANUSCRIPTS IN PREPARATION**

**Bowser.,** Fellin, R., Altman, A., Pohl. M., Davis, I. Reducing Impact Loading in Runners: A One Year Follow-up. *Journal of Sport and Physical Therapy* (In Preparation).

**Bowser, B.,** Roles, K., Wanderscheid, M., Increased vertical loading during running in obese children. *Medicine & Science in Sports & Exercise.* (In Preparation).

McCullough, C., Roles, K., Lundgren, P., Daughters, S., **Bowser, B.** Biomechanical changes to vertical jump pre- and post-foam rolling. *European Journal of Sports Science*. (In Preparation).

Brown, C., Larson, R., **Bowser, B.**, Simpson, K., White, K. Limb asymmetry during limits of stability testing in individuals with multiple sclerosis. *Clinical Rehabilitation.* (In Preparation)

**Bowser, B.,** Brown, C., White, L., Simpson, K. (2013). Loading asymmetry during sit to stand and stand to sit tasks for people with multiple sclerosis. *Gait and Posture.* (In Preparation).

Iadevaia, C., Labate, S., Mead, A., Rogriguez, J., **Bowser, B.** Ground Reaction Forces and Power Production During Various Forms of Push-ups. *Journal of Strength and Conditioning Research*. (In preparation).

**Bowser, B.,** Fellin, R., Davis, I. Kinematic strategies used by runners who reduce tibial shock following a gait retraining protocol. *British Journal of Sports Medicine.* (In preparation).

**Bowser, B.,** Hamill, J., Davis, I. Vertical impact and loading in runners with a history of patellofemoral pain syndrome. *Clinical Biomechanics.* (In Preparation)

**Bowser, B.,** Hamill, J., Davis, I. A prospective study of loading variables in female runners who develop plantar fasciitis. *Medicine & Science in Sports & Exercise.* (Data Analysis).

**PEER REVIEWED ABSTRACTS**

Kettlehut, C., Akram, F., **Bowser, B.** (2016). Multiple Sclerosis: Peak torque and power asymmetry. *Northland American College of Sports Medicine Conference Proceedings.*

Akram, F., **Bowser, B.** (2016). The effect of resistance training on the movement phases of the timed up and go for persons with multiple sclerosis. Accepted for presentation at Americas Committee for Treatment and Rehabilitation of Multiple Sclerosis Forum 2016. New Orleans, LA.

Roles, K., Lundgren, K., **Bowser, B.** (2015). Kinematic changes to the landing phase of vertical jump pre and post foam rolling. *Medicine & Science in Sports & Exercise.* 47(5S):427.

Sternhagen, J., Akram, F., **Bowser, B.** (2015). Leg strength asymmetry in people with multiple sclerosis. *International Journal of Exercise Science: Conference Proceedings*: 12(1), Article 21.

Akram, F., Sternhagen, J., **Bowser, B.** (2015). Multiple sclerosis: gait mechanics of timed-up and go at preferred and fast speeds. *International Journal of Exercise Science: Conference Proceedings*: 12(1), Article 52.

**Bowser, B.,** Brown, C., White, L., Simpson, K. (2014). Step Down Movement Kinematics of Persons with Multiple Sclerosis Who Display Leg Weakness. World Congress on Biomechanics, International Meeting, Boston, MA.

Roles, K., **Bowser, B.** (2014). Differences in Running Mechanics Between Obese and non-Obese Children. World Congress on Biomechanics, International Meeting, Boston, MA.

**Bowser, B.,** Brown, C., White, L., Simpson, K. (2014). Changes in step down kinematics following 16 weeks of supervised progressive resistance training for people with multiple sclerosis. *International Journal of MS Care.* 16(S3), 107.

Roles, K., Horne, J., Wanderscheid, M., **Bowser, B.** (2014). Increased vertical loading during running in obese children. *Medicine & Science in Sports & Exercise.* 46(5S):809-816.

Brown, C., Larson, R., **Bowser, B**., Simpson, K., White, L. (2014) Limits of stability limb asymmetry in individuals with multiple sclerosis. *Medicine & Science in Sports & Exercise.* 46(5S):910-911.

**Bowser, B.,** Brown, C., White, L., Simpson, K. (2013). Loading asymmetry during a stand to sit task for people with multiple sclerosis. American Society of Biomechanics, National Meeting. Omaha, NE.

Maas, D., Mattison, L., Michelson, M., **Bowser, B.** (2013). The effect of fatigue on vertical loading during running. American Society of Biomechanics, National Meeting. Omaha, NE.

**Bowser, B.,** Brown, C., White, L., Simpson, K. (2013) Loading asymmetry during the sit to stand in people with multiples sclerosis. *Medicine & Science in Sports & Exercise.* 45:5:3774.

Wanderscheid, M., **Bowser, B.** (2013). Differences in Vertical Loading in Obese vs. non-Obese Children. *Northland American College of Sports Medicine Conference Proceedings.*

**Bowser, B.,** Larsen, R., Brown. C., White, L., Simpson, K. (2012). Exercise improves sit-to-stand function in people with multiple sclerosis. *Multiple Sclerosis Journal*. 18: S3: S5-S23

Rose, W., **Bowser, B.,** McGrath, R., Salerno, J., Wallace, J., Davis, I. (2011). Effect of Footwear on Balance. American Society of Biomechanics, National Meeting Proceedings. Long Beach, CA.

**Bowser, B.**,Fellin, R., Davis, I. (2011) Kinematic Strategies used by Runners to Reduce Tibial Shock Following Gait Retraining. *Medicine and Science in Sports and Exercise,* 43(5).

Brown, C., **Bowser, B.** (2011) Ankle Kinematic Variability is Negatively Correlated with Postural Stability. National Athletic Trainers’ Association, National Meeting, New Orleans, LA. Journal of Athletic Training.

**Bowser, B.**,Davis, I. Hamill, J. (2010) A prospective study of loading variables in female runners who develop plantar fasciitis. American Society of Biomechanics, National Meeting Proceedings. Providence, RI.

Davis, I., **Bowser, B.**, Mullineaux, D. (2010) Do impacts cause running injuries? A prospective investigation. American Society of Biomechanics, National Meeting Proceedings. Providence, RI.

Brown, C., **Bowser, B.**, Orellana, A. (2010) Lower extremity joint kinematics in individuals with chronic ankle instability during a lateral single leg jump landing. National Athletic Trainers’ Association,National Meeting. Philadelphia, PA. Journal of Athletic Training.

Davis, I., **Bowser, B.**, Hamill, J.(2010) Vertical impact loading in runners with a history of patellofemoral pain syndrome. American College of Sports Medicine, National Meeting. Baltimore, MD. *Medicine and Science in Sports and Exercise*, 42:5:682.

Brown, C., **Bowser, B.**, Simpson, K. (2010) Movement variability in chronic ankle instability during an anterior single leg jump. American College of Sports Medicine, National Meeting. Baltimore, MD. *Medicine and Science in Sports and Exercise*, 42(5):582.

**Bowser, B.,** O’Rourke, S., White, L., Simpson, K., (2009) Biomechanics of the sit to stand in people with multiple sclerosis. American Society of Biomechanics, National Meeting Proceedings, University Park, PA.

Brown CN, **Bowser B**, Orellana A. (2009) Sagittal plane kinematics in individuals with chronic ankle instability during single leg jump landing. National Athletic Trainers’ Association, National Meeting, San Antonia, TX. *Journal of Athletic Training*, 44(3)S-18.

**Bowser, B.,** Fu, Y., & Brown, C. (2008). Dynamic postural stability in chronically unstable and stable ankles during a laterally directed single leg jump landing. National Athletic Trainers’ Association, National Meeting, St. Louis , MO. *Journal of Athletic Training,* St. Louis , MO43(3), S-108-109.

**Bowser, B.,** Fu, Y., Brown, C. (2008) Differences in landing forces in individuals with and without chronic ankle instability. American College of Sports Medicine, National Meeting, Indianapolis, IN. *Medicine & Science in Sports & Exercise,* 40(5): S80.

**Bowser, B.,** Fu, Y., Brown, C. (2008) Gender differences in ground reaction forces and dynamic postural stability while performing a single leg jump landing (podium presentation). *Proceedings of the 2008 Southeastern American Society of Biomechanics Meeting*, pp. 12.

Yom, J.P., **Bowser, B.**, Arnett, S.W. Fu, Y-C., & Simpson, K.J. (2008). The effects of a prophylactic ankle brace on lower extremity biomechanics during drop landings. *Proceedings of Research Retreat IV- ACL Injuries: The Gender Bias*, pp. 16.

Yom, J.P., Fu, Y-C., Arnett, S.W., **Bowser, B.,** Law, M., Embertson, R.E., O’Rourke, S., Brown, C.N., & Simpson, K.J. (2008). A prophylactic ankle brace alters lower extremity kinematics during drop landings (podium presentation). *Proceedings of the 2008 Southeastern American Society of Biomechanics Meeting*, pp. 13.

Sigurdsson, P., Arnett, S., Fu, Y-C., **Bowser, B.,** & Simpson, K. (2008). How does stiffness of a shock-absorbing prosthetic foot influence hip and knee joint displacement and limb symmetry in transtibial amputee gait? *Proceedings of the 2008 Southeastern American Society of Biomechanics Meeting*, pp.35.

Sigurdsson, P., Fu, Y-C., Arnett, S., **Bowser, B.**, and Simpson, K. J., (2007). How does stiffness of a shock absorbing prosthetic feet influence the biomechanics of bilateral amputee gait. *Southeast American Society of Biomechanics Conference – Free Communications.* Durham, NC.

**Bowser, B.,** Kristen, G., Brady, H., Lovell, L., Bressel, E. The effects of acute static stretching of the calf muscles on ankle proprioception. *2005 UAHPERD Convention – Free Communication*. Provo, Utah, March 12, 2005.

**PROFESSIONAL PRESENTATIONS**

*Step Down Movement Kinematics of Persons with Multiple Sclerosis Who Display Leg Weakness.* Poster Presentation: World Congress on Biomechanics, International Meeting, Boston, MA. 2014.

*Changes in step down kinematics following 16 weeks of supervised progressive resistance training for people with multiple sclerosis.* Podium Presentation: Cooperative Meeting of the Consortium of Multiple Sclerosis Centers (CMSC) and the Americas Committee for Treatment and Research in Multiple Sclerosis (ACTRIMS®). Dallas, TX, 2014.

*Loading asymmetry during a stand to sit task for people with multiple sclerosis*. Poster Presentation: American Society of Biomechanics, National Meeting. Omaha, NE, 2013.

*Loading asymmetry during the sit to stand in people with multiples sclerosis.* Poster Presentation: American College of Sports Medicine, National Meeting. Indianapolis, IN, 2013.

*Exercise improves sit-to-stand function in people with multiple sclerosis*. Slide Presentation: America’s Committee for Treatment and Research in Multiple Sclerosis and Consortium of Multiple Sclerosis Centers, Combined National Meeting. San Diego, CA, 2012.

*Kinematic Strategies used by Runners to Reduce Tibial Shock Following Gait Retraining.* Poster Presentation: American College of Sports Medicine, National Meeting, Denver, CO, 2011.

*A prospective study of loading variables in female runners who develop plantar fasciitis*. Poster Presentation: American Society of Biomechanics, National Meeting. Providence, RI. 2010.

*A prospective study of loading variables in female runners who develop plantar fasciitis*. Slide Presentation: Center for Biomechanical Engineering Research Day, Newark, DE. 2010.

*Biomechanics of the sit to stand in people with multiple sclerosis.* Poster Presentation: American Society of Biomechanics, National Meeting, University Park, PA. 2009

*Dynamic postural stability in chronically unstable and stable ankles during a laterally directed single leg jump landing.* Poster Presentation: National Athletic Trainers’ Association, National Meeting, St. Louis , MO. *2008*

*Differences in landing forces in individuals with and without chronic ankle instability.* Slide Presentation: American College of Sports Medicine, National Meeting, Indianapolis, IN. 2008

*Gender differences in ground reaction forces and dynamic postural stability while performing a single leg jump landing.* Slide Presentation: American Society of Biomechanics, South Eastern Regional Meeting, Birmingham, AL. 2008.

*The effects of acute static stretching of the calf muscles on ankle proprioception.* Poster Presentation: American Alliance for Health, Physical Education, Recreation, and Dance, Utah Regional Meeting, Provo, UT, 2005.

**RESEARCH SUPPORT**

**Graduate Student Grants (submitted by students I advise or mentor):**

Engles, R., **Bowser, B.** Northland Chapter of the American College of Sports Medicine. *The effect of delayed onset muscle soreness on jumping mechanics and performance.* Role: Co-Investigator, Research Advisor. Funding Amount: $1,000. Funding Period: 05/01/16-05/01/17.

Ernst, W., **Bowser, B.** USDA Innovation and Collaboration: Creating a Transdisciplinary Childhood Obesity Prevention Graduate Program (T.O.P Program). *Differences in jumping mechanics in children.* Role: Co-Investigator, Research Advisor. Funding Amount: $2,495. Funding Period: 11/01/15-03/01/17.

Roles, K., **Bowser, B.** USDA Innovation and Collaboration: Creating a Transdisciplinary Childhood Obesity Prevention Graduate Program (T.O.P Program). *Differences in running mechanics of children.* Role: Co-Investigator, Research Advisor. Funding Amount: $5,615. Funding Period: 11/01/14-09/01/16.

Kaur, G., **Bowser, B.** Women and Giving at South Dakota State University. *Movement Mechanics of the Timed Up and Go for People with Multiple Sclerosis.* Role: Co-Investigator, Research Advisor. Funding Amount: $2,000. Funding Period: 01/01/14-06/06/16.

Evans, C., **Bowser, B.**  Women and Giving at South Dakota State University. *The Effects of Resistance and Balance Training on Motor Coordination in Patients with Multiple Sclerosis.* Role: Co-Investigator, Research Advisor. Funding Amount: $2,000. Funding Period: 01/01/14-06/06/16.

**Undergraduate Student Grants: (submitted by students I mentor):**

Kaddatz, K. **Bowser, B.** Northland Chapter of the American College of Sports Medicine. *Lower Extremity Jumping and Landing Mechanics in Children.* Role: Co-Investigator, Research Advisor. Funding Amount: $500. Funding Period: 05/01/15-05/01/16.

Wanderscheid, M., **Bowser, B.** Griffith Undergraduate Research Award at South Dakota State University. *Lower extremity biomechanics during running in obese children.* Role: Co-Investigator, Research Advisor. Funding Amount: $3,000. Funding Period: 06/01/12-12/31/13.

Bentzen, S., **Bowser, B.** Nelson Undergraduate Research Mentorship at South Dakota State University. *Effects of balance training on postural stability in people with multiple sclerosis.* Role: Co-Investigator, Research Advisor. Effort = 50%. Funding Amount: $2,500. Funding Period: 06/01/12-05/01/13.

**Completed Research Support:**

**Bowser, B.,** Bruns, K. South Dakota State University Research/Scholarship Support Fund. *The impact of exercise and cognitive behavioral therapy (CBT) on persons with Multiple Sclerosis.* Funding Period: April 2015-March 2016. Role: PI. Funding Amount: $7,500.

**Bowser, B.** Academic and Scholarly Excellence Grant. *Start-up funding for wireless EMG and 3D accelerometry in the Biomechanics Research Laboratory*. Funding Period: 01/01/13-01/01/14. Role: PI. Funding Amount: $5,000.

**Bowser, B.,** Larsen, R., Brown. C., White, L., Simpson, K. Americas Committee for Treatment and Research in Multiple Sclerosis (ACTRIMS) Young Scientist Award (Travel). *Exercise improves sit-to-stand function in people with multiple sclerosis.* Funding Period: 05/01/12-07/01/12. Role: PI. Funding Amount: $1,500.

**Bowser, B.** Mary Ella Lunday Soule Doctoral Fellowship. *Examining the influence of exercise interventions on functional outcomes for people with multiple sclerosis.* Funding Period: 06/01/08-06/31/09. Role:PI. Funding Amount: $22,300.

Brown CN, **Bowser B.** UGA Faculty Research Grant: Chronic ankle instability: Comparing time to stabilization and variability in mechanically and functionally unstable ankles. Funding Period: 11/01/06-12/31/07.Role: Co-Investigator. Funding Amount: $5924.

**Bowser, B.** Seely-Hinckley Scholarship awarded by the School of Graduate Studies, Utah State University, Funding Period: 08/01/04-05/31/05. Role:PI. Funding Amount: $4,000.

**Bowser, B.** BYU-Hawaii Undergraduate Research Grant,*Examining the effects of outdoor recreation on behavior of at risk teens (Senior Research Project).* Funding Period: 01/01/03-05/31/03. Role:PI. Funding Amount: $2,000.

**Grants Submitted without Funding:**

Huarte, E., **Bowser, B.** National Multiple Sclerosis Society. *A “2 step” probiotic treatment for the management of multiple sclerosis.* Role: Co-Investigator. Funding Requested: $43,520. Submitted: September 2016.

**Bowser, B.,** Bruns, K. National Multiple Sclerosis Society. *The impact of combining exercise and cognitive behavioral*

*therapy on functional ability, mental health, and quality of life for persons with multiple sclerosis.* Submitted: April 2015. Role: Primary-Investigator. Funding Requested: $43,499.

**Bowser, B.,** Bruns, K.,McCormack, L. The Wellmark Foundation. *Neuro Fitness: Establishing a community fitness program for people with neurological illnesses.* Submitted: February 2015. Role: Primary-Investigator. Funding Requested: $24,923.

**Bowser, B.** South Dakota Board of Regents Competitive Research Grant Program. *The influence of muscle strength, muscle coordination, and movement biomechanics during functional tasks on postural stability and balance in persons with multiple sclerosis.* Submitted: March 2014. Role: Primary-Investigator. Funding Requested: $97,541.

Vukovich, M., Weidauer, L., Specker, B., Clapper, J., **Bowser, B.** United States Army Medical Research and Material Command.*Musculoskeletal Changes Across the Menstrual Cycle: Relationship between Menstrual Cycle Induced Musculoskeletal Changes and Known Predictors of ACL Injury.* Submitted: May 2013. Role: Co-Investigator. Funding Requested: $254,215.

**Bowser, B.** Louise E. Kindig Research Award. *The effects of flexibility training on the biomechanics of functional tasks of women with Multiple Sclerosis.* Submitted: February 2008. Funding Requested: $1,595.48.

**PROFESSIONAL MEETING – RESEARCH PROFESSIONAL DEVELOPMENT**

2017 Northland American College of Sports Medicine Regional Fall Meeting, Mankato, MN.

2016 Northland American College of Sports Medicine Regional Spring Tutorial, St. Paul, MN.

2015 Northland American College of Sports Medicine Regional Fall Meeting, Mankato, MN.

2015 Multiple Sclerosis Research Symposium, National MS Society, Upper Midwest Chapter, Bismarck, ND.

2015 Northland American College of Sports Medicine Regional Spring Tutorial, St. Cloud, MN.

2014 Cooperative Meeting of the Consortium of Multiple Sclerosis Centers (CMSC) and the Americas Committee for Treatment and Research in Multiple Sclerosis (ACTRIMS®). Dallas, TX.

2014 World Congress on Biomechanics, Boston, MA.

2014 Northland American College of Sports Medicine Regional Fall Meeting, Mankato, MN.

2013 Northland American College of Sports Medicine Regional Fall Meeting, Eua Claire, WI.

2013 American Society of Biomechanics National Meeting, Omaha, NE.

2013 American College of Sports Medicine National Meeting, Indianapolis, IN.

2013 South Dakota State University’s Grant Writer’s Seminars and Workshops “Writing Winning Grant Proposals.”

2013 Chronic Disease Partners Meeting, South Dakota Department of Health, Oacoma, SD.

2012 Northland American College of Sports Medicine Regional Spring Meeting, St. Paul, MN.

2012 America’s Committee for Treatment and Research in Multiple Sclerosis and Consortium of Multiple Sclerosis Centers Combined National Meeting, San Diego, CA.

2011 South Dakota Experimental Program to Stimulate Competitive Research, National Science Foundation Career Grant Workshop, Sioux Falls, SD.

2011 Northland American College of Sports Medicine Regional Fall Meeting, Fargo, ND.

2011 American College of Sports Medicine National Meeting, Denver, CO.

2011 Center for Biomechanical Engineering Research Day, Newark, DE.

2010 American Society of Biomechanics National Meeting, Providence, RI.

2010 American College of Sports Medicine National Meeting, Baltimore, MD.

2010 Center for Biomechanical Engineering Research Day, Newark, DE.

2009 American Society of Biomechanics National Meeting, College Park, PA.

2009 American Society of Biomechanics Southeast Regional Meeting, Birmingham, AL.

2008 American College of Sports Medicine National Meeting, Indianapolis, IN.

2008 National Athletic Trainers Association National Meeting, St. Louis, MO.

2008 American Society of Biomechanics Southeast Regional Meeting, Durham, NC.

**SERVICE TO THE PROFESSION**

2017-Present Director of the Student Activities of the Northland American College of Sports Medicine

2015-Present Reviewer for Clinical Biomechanics

2015-Present Reviewer for Journal of Sports Sciences

2014-Present Reviewer for Journal of Strength and Conditioning Research

2013-2016 Northland American College of Sports Medicine Executive Board member representing the state of South Dakota

2013-Present Reviewer for Journal of Applied Biomechanics

2013 Abstract Reviewer for American Society of Biomechanics National Conference, Omaha, NE

2010-PresentReviewer for Research Quarterly for Exercise and Sport

2005 Book Review, *Biomechanics of Sport and Exercise, 2nd Ed.* Publisher: Human Kinetics.

**SERVICE TO THE UNIVERSITY**

2013-2016 South Dakota State University Graduate Council member

2011-Present Exercise Science Curriculum Committee, Department of Health and Nutritional Sciences, South Dakota State University

2011-2012 Exercise Science Faculty Search Committee, Department of Health and Nutritional Sciences, South Dakota State University

2003-2004 Budget Committee Chairman of the Graduate Student Senate, Utah State University, Logan, UT

**SERVICE TO THE COMMUNITY**

2014-Present Volunteer for Annual Multiple Sclerosis Trick or Trot Halloween Run, Brookings, SD

2013-Present Faculty Advisor for the pre-Physical Therapy/Occupational Therapy Club

2013 Habitat for Humanity’s Brush with Kindness, Brookings, SD

2012-Present Boys Youth Basketball Coach, Brookings Basketball Association, Brookings, SD

2012-2014 Youth Football Coach, Brookings Youth Football Program, Brookings, SD

2012-Present Youth Baseball Coach, Brookings Baseball Association, Brookings, SD

2011 Habitat for Humanity’s Brush with Kindness, Brookings, SD

2011-Present Troop 6 Committee member Boys Scouts of America, Brookings, SD

2010-2011 Varsity Scout Leaderof Boy Scouts of America DelMarVa Council, Wilmington, DE

2010 YMCA Youth Basketball Coach, Wilmington, DE

2008-2009 Youth Soccer Coach in Athens-Clarke County Youth Soccer League, Athens, GA

2006- 2009 Troop Committee Chairmanof Boy Scouts of America North Georgia Council, Athens, GA

2005 Volunteerfor Emergency Disaster Relief of hurricane Katrina 2005

1998-2000 Missionary service in El Salvador, Central America and Cleveland, OH for the Church of Jesus Christ of Latter-Day Saints

**TECHNICAL EXPERIENCE**

Kinematic, Kinetic, and Electromyography data collection:

* Qualisys Track Manager v. 2.8 or newer
* Delsys® TrignoTM EMG system
* Vicon Nexus (v. 1.3-1.6) and Work Station (v. 5.2.4)
* Flock of Birds (Innovative Sports v. 7)
* Peak Motus (v. 9)
* MYOPAC® EMG

Data reduction software and computer programming packages:

* LabView 2011 or newer
* C-Motion Visual3D v. 4 or newer
* EMGWorks
* Matlab® v.7.0
* Polygon Authoring Tool v. 3.1
* Motion Monitor® software v. 7