

Ceren Yarar-Fisher, PT., Ph.D.
Formerly published as Ceren Yarar
Assistant Professor
Department of Physical Medicine and Rehabilitation
School of Medicine
The University of Alabama at Birmingham (UAB)
506, Spain Rehabilitation Center
Birmingham, AL 35294
Phone: (205) 996-0569
Email: cyarar@uab.edu

EDUCATION

- **University of Alabama at Birmingham, Birmingham, AL**
Postdoctoral Fellow, Department of Cell, Developmental and Integrative Biology, and Nutrition and Obesity Research Center (2011-2014)
Focus: *Spinal cord injury, secondary health complications, skeletal muscle biology*
Mentor: Marcas Bamman, Ph.D.
- **Auburn University, Auburn, AL**
Ph.D. Kinesiology, August 2011
Dissertation: *Acute Effects of Whole Body Vibration on Central and Peripheral Hemodynamic Responses in Individuals with Spinal Cord Injury*
Dissertation Advisor: JoEllen Sefton, Ph.D.
GPA: 3.79
- **Baskent University, Ankara, Turkey**
B.A. in Physical Therapy and Rehabilitation, June, 2005
GPA: 3.76

SPECIAL SKILLS AND ADDITIONAL TRAINING

Laboratory Skills

- PCR
- Cell Culture
- Immunoblotting
- Immunohistochemical Analysis
- Microscopy
- Electromyography (muscle strength, fatigue, and Hoffman reflex measurements)
- Near Infrared Spectroscopy
- Dynamic Infrared Thermography
- Echocardiography (M mode measurements)
- Doppler Ultrasound
- Metabolic and performance testing (VO₂ max/peak, resting metabolic rate, and Wingate tests)
- Phlebotomy (certified)

Additional Training

- UAB Office of Postdoctoral Education Lab Management Course, 2013 Fall
- Training in protein-DNA Interactions: Gene Specific and Epigenetic Regulation of Expression of the Mammalian Genome by completing 35 lecture and laboratory hours at the National Institutes of Health (NIH) in Bethesda, MD, 2012 Fall
- UAB Office of Postdoctoral Education Grant Writing Course, 2011 Spring
- Preparing Future Faculty at Auburn University, 2009-2010

LICENSURE/MEMBERSHIP

- Registered physical therapist in Turkey (Educational credentials are deemed equivalent to US trained physical therapists, evaluation is performed by International Credentialing Associates, 2011)
- American Congress of Rehabilitation Medicine
- American Physiological Society
- American College of Sports Medicine
- Southeastern American College of Sports Medicine

HONORS AND AWARDS

- Creativity is a Decision Award, Nutrition and Obesity Research Center, University of Alabama at Birmingham, AL, 2015
- Post-doctoral Scholars Grant Incentive Award, Office of Postdoctoral Education, University of Alabama at Birmingham, AL, 2013
- Mary Switzer Merit Research Fellowship; Research project: Novel Exercise and Diet Prescription to Improve Body Composition and Metabolic Health in Individuals with Long-Standing Spinal Cord Injury, National Institute on Disability and Rehabilitation Research, 2013.
- 1st place Post-doctoral research day competition; Research project: Effects of Contractile Activity on Skeletal Muscle Glucose Uptake Signaling in Spinal Cord-Injured vs. Able-Bodied Individuals, Office of Postdoctoral Education and UAB Postdoctoral Association, University of Alabama at Birmingham, AL, 2013
- Career Enhancement Award, Office of Postdoctoral Education, University of Alabama at Birmingham, AL, 2012
- Graduate Research Award, Graduate School, Auburn University, AL, 2010
- G. Dennis Wilson Graduate Award, Department of Kinesiology, Auburn University, AL, 2010
- Outstanding Graduate Student, Department of Kinesiology, Auburn University, AL, 2010
- Graduate Travel Award, Graduate School, Auburn University, AL, 2010
- 2009 Society for Neuroscience abstract chosen as part of the press package to promote the 2009 International Conference
- Graduate Travel Award, Graduate School, Auburn University, AL, 2009
- Outstanding International Student, Department of Kinesiology, Auburn University, AL, 2009
- Preparing Future Faculty Fellow, Biggio Center, Auburn University, AL, 2009
- Graduate Travel Award, Graduate School, Auburn University, AL, 2008
- %50 Academic Scholarship , Physical Therapy and Rehabilitation Department, Baskent University, Ankara, Turkey, 2001-2005

PUBLICATIONS

Published Manuscripts (Peer Reviewed)

Sefton JM, **Yarar C**, Berry, J, Pascoe DD. Effect of therapeutic massage on peripheral blood flow as assessed by skin temperature measures in the neck and shoulders. *Journal of Alternative and Complimentary Medicine*. 2010; 16: 723-732.

Sefton JM, Hicks-Little CA, **Yarar C**, Berry J, Cordova ML. The effect of a 6-week balance training program on sensorimotor measures in chronically unstable ankles. *Journal of Orthopedic and Sports Physical Therapy*. 2011; 41: 81-89.

Sefton JM, **Yarar C**, Carpenter DM, Berry J. Physiological and clinical changes after therapeutic massage of the neck and shoulder. *Manual Therapy*. 2011; 16: 487-494.

Sefton JM, **Yarar C**, and Berry J. Massage therapy produces short term improvements in balance, neurological and cardiovascular measures in older persons. *International Journal of Therapeutic Massage Therapy and Body Work*. 2012; 5:16-27.

Sefton JM, **Yarar C**, and Berry J. Six weeks of massage therapy produces changes in balance, neurological and cardiovascular measures in older persons. *International Journal of Therapeutic Massage Therapy and Body Work*. 2012; 5: 28-40.

Yarar-Fisher C, Chen Y, Jackson AB, and Hunter G. Body mass index (BMI) underestimates adiposity in women with SCI. *Obesity*. 2013; 21: 1223-1225.

Yarar-Fisher C, Pascoe D, Gladden LB, Quindry J, Hudson J, Sefton JM. Physiological effects of whole body vibration in individuals with spinal cord injury. *Disability and Rehabilitation*. 2014; 36: 136-145.

Yarar-Fisher C, Bickel CS, Windham ST, McLain AB and Bamman MM. Skeletal muscle signaling associated with impaired glucose tolerance in spinal cord-injured men and the effects of contractile activity. *Journal of Applied Physiology*. 2013; 115: 756-764.

Yarar-Fisher C, Bickel CS, Kelly NA, Windham ST, McLain AB and Bamman MM. Mechanosensitivity may be enhanced in skeletal muscles of spinal cord injured (SCI) vs. able-bodied men (AB). *Muscle and Nerve*. 2014; 50: 599-601.

Bickel CS, **Yarar-Fisher C**, Mahoney ET, and McCully KK. Neuromuscular electrical stimulation induced resistance training after SCI—the Dudley Protocol. *Topics in Spinal Cord Injury Rehabilitation*. 2015; 21: 294-302.

Yarar-Fisher C, Bickel CS, Windham ST, McLain AB and Bamman MM. Heightened TWEAK-NF-kB signaling and inflammation-associated fibrosis in paralyzed muscles of men with chronic spinal cord injury. In Press. *American Journal of Physiology - Endocrinology and Metabolism*.

Manuscripts in Review

Yarar-Fisher C, Zanca JM, Heyn P, Horn S, Charlifue S, Hsieh CJS, Brienza DM, Chen Y, Dyson-Hudson T, Backus D. Cardiovascular disease risk in individuals with longstanding spinal cord injury; education page for primary physicians. In review. *Archives of Physical Medicine and Rehabilitation*.

Media Articles

Yarar C. Weight Management and Spinal Cord Injury: Exercise. Pushin' On. Available at: <http://www.uab.edu/medicine/sci/images/SCIMS/PushinOn/2013-2.pdf>

Yarar C. (2013, Issue 5) Nutritional Needs. Paraplegia News. Available at: http://pvamag.com/pn/article/5465/nutritional_needs

Yarar C. (2013, Issue 1) Weight Management following Spinal Cord Injury: Nutrition. Pushin' On. Available at: <http://www.uab.edu/medicine/sci/uab-scims-information/pushin-on-enewsletter>

Yarar C. (2013, Issue 2). Answers on Weight. Paraplegia News. Available at: http://pvamag.com/pn/article/5280/answers_on_weight

Yarar, C. (2012, Issue 2). Weight management and spinal cord injury: Understanding obesity. Pushin' On. Available at: <http://www.uab.edu/medicine/sci/uab-scims-information/pushin-on-enewsletter>

Published Abstracts

Yarar-Fisher, Bickel CS, Windham ST, McLain AB and Bamman MM. The effects of high protein diet and combination exercise on metabolic health in people with long-standing spinal cord injury. American Congress of Medicine Annual Conference, October, 2015.

Yarar-Fisher C, Bickel CS, Windham ST, McLain AB and Bamman MM. Systemic vs. skeletal muscle inflammation in spinal cord injured man. ACSM Conference on Integrative Physiology of Exercise. September, 2014.

Yarar-Fisher C, Bickel CS, Kelly NA, Windham ST, McLain AB and Bamman MM. Mechanosensitivity may be enhanced in skeletal muscles of spinal cord injured (SCI) vs. able-bodied men (AB). Advances in Skeletal Muscle Biology in Health and Disease Conference. March, 2014.

Yarar-Fisher C, Bickel CS, Kelly NA, Windham ST, McLain AB and Bamman MM. Acute effects of NMES resistance exercise on skeletal muscle protein synthesis signaling responses in spinal cord injured vs. able-bodied men. UAB Center for Exercise Medicine's Inaugural Symposium. Focus on exercise biology in medicine and rehabilitation. October, 2014.

Yarar-Fisher C, Bickel CS, Windham ST, Bamman MM. Effects of contractile activity on skeletal muscle glucose uptake signaling in spinal cord-injured vs. able-bodied. Integrative Biology of Exercise Meeting. October, 2013.

Yarar-Fisher C, Bickel CS, Windham ST, Bamman MM. Glucose metabolism and effects of contractile activity on skeletal muscle glucose uptake signaling in spinal cord-injured vs. able-bodied individuals. Advances in Skeletal Muscle Biology Conference. Feb, 2012.

Yarar C, Gladden LB, Pascoe D, Quindry J, Sefton JM. Whole body vibration effects on hemodynamics and oxygen consumption in individuals with spinal cord injury. American College of Sports Medicine Annual Meeting. May, 2012.

Yarar C, Bickel CS, Stec JM, Bamman MM. Effects of contractile activity on skeletal muscle glucose uptake signaling in spinal cord-injured vs. able-bodied humans. Advances in Skeletal Muscle Biology in Health and Disease. February, 2012.

Yarar C, Sefton JM, Pascoe DL. Skin temperature response to whole body vibration. Submitted to South East American College of Sports Medicine Annual Meeting. February, 2012.

Yarar C, Sefton JM, Berry J. Massage therapy produces long term modulation of postural control and sensorimotor measures in older persons. Society of Neuroscience Meeting. November, 2011.

Sefton JM, **Yarar C**, The Effect of Therapeutic Massage on Soleus Motor Neuron Pool Excitability in Older Individuals. AMTA 2011 National Convention. October, 2011.

Sefton JM, **Yarar C**, Berry J. Massage therapy produces short term improvements in balance, neurological and cardiovascular measures in older persons. AMTA 2011 National Convention. October, 2011.

Sefton JM, **Yarar C**, & Berry J. Massage therapy produces long-term modulation of postural control and sensorimotor measures in older persons. AMTA 2011 National Convention. October, 2011.

Yarar C, Sefton JM. The effect of weekly therapeutic massage on soleus motor neuron pool excitability in older individuals. American College of Sports Medicine Annual Meeting. June, 2011.

Yarar C, Sefton JM, Gladden LB, Pascoe DL. Modulation of blood flow, blood oxygenation and non-contact surface temperature after massage therapy. GSC Graduate Research Forum, March, 2011.

Yarar C, Plueger M, Sefton JM. The effects of ankle bracing during a 6-week rehabilitation protocol on spinal reflex modulation during double and single legged stance. Society of Neuroscience Meeting. November, 2010.

Yarar C, Pascoe DL, Sefton JM. Therapeutic massage effects on skin and muscle blood flow. American College of Sports Medicine Annual Meeting. June, 2010.

Sefton JM, **Yarar C**. The effect of therapeutic neck and shoulder massage on segmental spinal reflexes, muscle activity and range of motion. Complementary and Integrative Medicine Annual Meeting. May, 2010.

Yarar C, Sefton JM. The effect of therapeutic neck and shoulder massage on flexor carpi radialis motor neuron pool excitability. The Society for Neuroscience Annual Meeting. October, 2009.

Sefton JM, **Yarar C**, Berry, J, Pascoe DD. Effect of Therapeutic Massage on Peripheral Blood Flow as Assessed by Skin Temperature Measures in the Neck and Shoulders. American Massage Therapy Association Annual Conference. September, 2009.

Sefton JM, Hicks-Little CA, **Yarar C**, Cordova ML. Does 6-Weeks of balance training enhance sensorimotor function in chronically unstable ankles? Society of Neuroscience Annual Meeting. November, 2008.

GRANTS RECEIVED

KL2 Scholar in Translational Science Award

Type: 1KL2TR001419

Principal Investigator: **Ceren Yarar-Fisher**

Project Title: Utilizing Ketogenic Diet to Improve Neuro-recovery Following Spinal Cord Injury

Role on project: Project design, oversight, data collection and analysis, dissemination

Funding Source: UAB Center for Clinical and Translational Science

Funding Amount: \$221,400- awarded in November, 2015

Funding Period: November 2015-October 2017

Post-doctoral Scholars Grant Incentive Award

Goal: This award provides a financial incentive designed to encourage scholars to apply for individual fellowships. The OPE anticipates that this award will increase the number of individual fellowships within various programs at UAB.

Principal Investigator: **Ceren Yarar-Fisher**

Funding Source: Office of Postdoctoral Education

Funding Amount: \$1000- awarded in September, 2013

Mary Switzer Merit Research Fellowship

Type: ED-GRANTS-011713-002

Principal Investigator: **Ceren Yarar-Fisher**

Project Title: Novel Exercise and Diet Prescription to Improve Body Composition and Metabolic Health in Individuals with Long-Standing Spinal Cord Injury

Role on project: Project design, oversight, data collection and analysis, dissemination

Funding Source: National Institute on Disability and Rehabilitation

Funding Amount: \$65,000- awarded in July, 2013

Funding Period: October 2013-2015

Career Enhancement Award, Office of Postdoctoral Education, University of Alabama at Birmingham, AL

Goal: To enhance postdoctoral trainee's professional development by encouraging participation in NIH extramural courses to learn new skills, and visiting laboratories to conduct collaborative studies.

Principal Investigator: **Ceren Yarar-Fisher**

Role on project: Receive training in protein-DNA Interactions: Gene Specific and Epigenetic Regulation of Expression of the Mammalian Genome by completing 35 lecture and laboratory hours at the National Institutes of Health (NIH) in Bethesda, MD

Funding Source: Office of Postdoctoral Education

Funding Amount: \$1500- awarded in July, 2012

NIH Funded Nutrition and Obesity Training Grant, University of Alabama at Birmingham (UAB), Birmingham, AL

Principal Investigator: David B. Allison, Ph.D. Agency: NIDDK

Role: Postdoctoral Trainee

Type: T32DK062710 Period: 11/01/2011 – present

Equipment Donation for research on the effect of whole body vibration treatment on cardiovascular responses in healthy individuals and individuals with spinal cord injury.

1 Echo Doppler machine.

Principal Investigator: **Ceren Yarar** Co-investigators: JoEllen Sefton, David Pascoe, John Quindry

Role on project: Project design, oversight, data collection and analysis, dissemination

Funding Source: Holistic Veterinary Medical Center of Alabama

Funding Amount: \$60,000 equipment loan, indefinite time- awarded in January, 2011

AU Graduate Research Award

Goal: To partially fund dissertation project for investigating the effects of whole body vibration on cardiovascular responses in healthy individuals and individuals with spinal cord injury.

Principal Investigator: **Ceren Yarar** Co-investigators: JoEllen Sefton, David Pascoe, John Quindry

Role on the project: Study design and oversight, data collection and analysis, dissemination

Funding Source: Auburn University, Graduate School

Funding amount: \$1,000- awarded in May, 2010

Equipment Donation for research on the effect of vibration treatment on cardiovascular responses in healthy individuals and individuals with spinal cord injury.

1 Whole body vibration System

Principal Investigator: **Ceren Yarar** Co-investigators: JoEllen Sefton, David Pascoe, John Quindry

Role on project: Project design, oversight, data collection and analysis, dissemination

Funding Source: Wave Manufacturing Inc.

Funding Amount: \$20,000 equipment loan, indefinite time- awarded in April, 2009

UNIVERSITY TEACHING EXPERIENCE

Auburn University, 2008-2011

- Developed detailed lesson plans and established grading and evaluation guidelines for each class.
- Developed lab course for practice and application of biomechanical and physiological principles of human movement.
- Instituted Blackboard-based course site and on-line quizzes for pre-class preparation.
- Developed Blackboard course site for assisted learning and resources.

KINE3620 Principles of Biomechanics and Human Motion	1 hour laboratory & 3 hour lecture
Weight Training for Older Populations	2 hour activity class
KINE3620 Principles of Biomechanics and Human Motion	1 hour laboratory & 3 hour lecture
KINE 3020 Scientific Foundations of Kinesiology/Exercise Physiology	4 hour lecture
KINE 1100 Wellness	2 hour lecture
KINE 3020 Scientific Foundations of Kinesiology/Neuromotor Control	4 hour lecture

CLINICAL EXPERIENCE

Physical Therapy, 2005-2006

- Worked on orthopedic and neuro-rehabilitation focus in ACL and shoulder reconstruction (orthopedic rehabilitation) and cerebral palsy and spinal cord injury (neuro-rehabilitation).
- Planned treatments, modalities, and therapeutic exercise programs encompassing active and passive ranges of motion, muscle re-education, massage, heat/water/ice/electrical/light stimulation.
- Performed diagnostic and prognostic exams to evaluate muscle, nerve, joint, and functional abilities.
- Documented patients' progress and completed discharge summaries, home-program treatment plans. Ensured all documentation was clear, timely, and accurate.

Intern Physical Therapy, 2003-2005

- Under the supervision of a licensed physical therapist provided physical therapy services for specialized acute-care hospital treatments.
- Assessed patients' rehabilitative needs, jointly developed patient plan of care and treatment goals and conducted physician-prescribed treatment programs for medically complex patients (From Children to Geriatric).

INVITED LECTURES AND SYMPOSIA

- American Congress of Rehabilitation Medicine Annual Meeting, October 2014-Invited symposia: Skeletal Muscle Adaptations Following Spinal Cord Injury and Their Impact on Establishing Appropriate Interventions
- Howard Hughes Med-Grad Program, July 2013- Invited lecturer at Modeling Human Disease class. Presented "Accelerated Aging with Spinal Cord Injury"
- Graduate Biomedical Sciences Program- Invited Lecturer in Muscle Biology. Presented "Skeletal Muscle After Spinal Cord Injury"
- Physical Medicine and Rehabilitation Grand Rounds, University of Alabama at Birmingham, June 2013- invited speaker at Grand Rounds. Presented "Long-standing Spinal Cord Injury (SCI), Cardiometabolic Health and Exercise- Time to Re-evaluate the Current Goals of rehabilitation after SCI"

- Physical Medicine and Rehabilitation Grand Rounds, University of Alabama at Birmingham, February 2012- invited speaker at Grand Rounds. Presented “Acute Effects of Therapeutic Massage on Tissue Oxygenation and Neurological Function”
- Physical Therapy/ Occupational Therapy (PTOT) Club, Auburn University, September 2009- invited speaker at PTOT club. Presented “Career Potential in Physical Therapists and Specialties within Physical Therapy”
- Physical Therapy/ Occupational Therapy (PTOT) Club, Auburn University, September 2010- invited speaker at PTOT club. Presented “Neurorehabilitation”

SERVICE

- Treasurer, American Congress of Rehabilitation Medicine, Spinal Cord Injury (SCI) Interdisciplinary Special Interest Group (October 2014-present)
- American Congress of Rehabilitation Medicine, Spinal Cord Injury (SCI) Interdisciplinary Special Interest Group-Secondary Complications and Aging Task Force Member (October 2013-present)
- Content developer for University of Alabama at Birmingham/Spinal Cord Injury Model Systems’ Primary Care Provider website (August 2013-present)
- Volunteer muscle biology lecturer for Center for Community Outreach and Development, Birmingham, AL (May 2012-Present)
- Nutrition Obesity Research Center Professional Workshop Development Committee Member (January 2012-Present)
- President of Auburn University College of Education Diversity Committee (2009- 2011)

Journal Peer Reviewer:

- Obesity (November 2011-Present)
- Journal of Intellectual Disability Research (November 2012-Present)
- Medicine & Science in Sports & Exercise (March 2013-Present)
- Disability and Rehabilitation (November 2013-Present)
- PLOS One (June 2015- Present)

MENTORING

University of Alabama at Birmingham

Kathryn Yamamoto Henley (PhD student in UAB Rehabilitation Science Program, Spring 2015): Taught Mrs. Henley sectioning of human muscle sections and immunohistochemical analysis to determine myofiber type distribution and size, fluorescent imaging and data analysis in Image Pro imaging software.

Mark Peppin (medical student in UAB MD/PhD program, Summer 2013): Taught Mr. Peppin cell culture basics to determine differences in proliferation and differentiation between paralyzed skeletal muscle cells and muscle cells from able-bodied controls.

Sung-Yu (Theo) Lin (PhD student in UAB Rehabilitation Science Program, Fall 2012): Taught Mr. Lin immunohistochemical analysis to determine myofiber type distribution, size, and satellite cell content in paralyzed skeletal muscle.

Susan Silverman (PhD student in UAB Rehabilitation Science Program, Fall 2012): Taught Mrs. Henley sectioning of human muscle sections and immunohistochemical analysis to determine myofiber type distribution and size.

Auburn University

Mentored Kenny Howard athletic training master students and a Kinesiology PhD student in various research projects at Auburn University, AL (2009-2011)

Molly Plueger, MS (The effects of ankle braces on rehabilitation)

Latoya Franklin, MS (The effects of kinesio-tape on shoulder strength and range of motion)

Brooke Jackson, MS (The effects of ankle braces on rehabilitation)

Laura Wapples, MS (The effects of cryotherapy on proprioception and postural control)

Erin Chatwin, MS (The effects of ankle braces on postural control and sensorimotor function)

Jared Kiernicki, MS (The effects of cryotherapy on proprioception and postural control)

Kenneth Games, PhD candidate (The effects of whole body vibration on neurological and circulatory parameters)