

Date: November 20, 2019

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Contact Information

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Present Position

2016-present Professor
Program in Physical Therapy and Department of Neurology
Washington University School of Medicine in St. Louis
St. Louis, MO 63108

Education

| | | |
|-----------------|-----------------------|--------------------------------------|
| January 4, 1974 | B.S. Physical Therapy | Saint Louis University, St. Louis MO |
| May 21, 1988 | Ph.D. Physiology | Saint Louis University, St. Louis MO |

Academic Positions / Employment

1974-1975 Physical Therapist
Veterans Administration, Jefferson Barracks Division, St. Louis, MO

1975-1979 Physical Therapist
Rusk Rehabilitation Center, University of Missouri Medical Center
Columbia, MO

1979-1982 Instructor
1982-1988 Lecturer
Department of Physical Therapy
Saint Louis University School of Medicine, St. Louis, MO

1986-1988 Lecturer
Program in Physical Therapy
Washington University School of Medicine in St. Louis, St. Louis, MO

1988-2004 Instructor
2004-2011 Assistant Professor
2011-2016 Associate Professor
Program in Physical Therapy
Washington University School of Medicine in St. Louis, St. Louis, MO

Teaching Title and Responsibilities

Current Teaching Responsibilities:

Professional Clinical Doctorate (DPT) curriculum

Cells Systems and Disease I (M02 604), 4 credits

2001-present: Course master and major lecturer

Enrollment: 88

Instructor Evaluation Fall 2018: Mean 4.81/5.00, Median 5.00/5.00

Cells Systems and Disease II (M02 610), 4 credits

2001-present: Course master

Enrollment: 88

Instructor Evaluation Spring 2019: Mean 4.73/5.00, Median 5.00/5.00

Health, Fitness and Prevention (M02 653): guest lecture

2013-present

Diagnosis and Evidence Analysis in PT Practice (M02 650): Journal Club Facilitator

2018-present

Danforth campus

Principles in Human Physiology (L41 Biol. 328), 4 credits

1999-present: Course master and major lecturer

Enrollment: 124-140

Instructor Evaluation Spring 2019: Mean 4.7/5.00, Median 5.00/5.00

Movement Science Program

Teaching Practicum (L63-5210), 2 credits

2005-present: Course master

Enrollment: 2-3 per academic year

Former Teaching Responsibilities:

Interprofessional Education: faculty facilitator, fall semester

2014-2019

Professional Physical Therapy (MSPT and DPT) curriculum

Cells, Systems, and Disease I (PT 504a), 4 credits

1995-2001: Coordinator and major lecturer

Previously known as Physiology (PT 504), 4 credits

1988-1995: Coordinator and major lecturer

Cells, Systems, and Disease II (PT 524a), 4 credits each
1994-2001 Coordinator
Previously known as Medical Pathophysiology (PT 524), 4 credits
1988-1989, coordinator
1990-1994, co-coordinator

Neuroscience (PT 522 and M02 605), 3.5 credits
1992; Lecturer
1993; coordinator and major lecturer
2001-2004: Lecturer

Exercise Physiology (M02 621)
2000-2002; Lecturer

Post-Professional Clinical Doctorate (DPT) curriculum

Teaching Practicum (M22 900), 3 credits
2005-2014: Course master

Muscle Structure, Function and Mutability (M22 600), 3 credits
2007, 2009, 2011, 2013: Lecturer,
2003, 2005: Course master and major lecturer

Independent Study (M22 500)
2006-2009: 1-6 credits; Course Mentor (occasional)

Post-professional Masters of Health Science (MHS) U-College curriculum

Skeletal Muscle Structure, Function and Mutability
1998: major lecturer

Movement Science Program

Movement Science I: Bioenergetics (L63-5410) 4 credits
1990, 1992 Course coordinator and major lecturer
1994-2012 Co-coordinator and lecturer

Movement Science III: Biocontrol (L63-5610), 2002 guest lecturer

Danforth campus

Introductory Human Physiology (M02 PHTH 320)
1988-1998, 3-4 credits
1999: course became L41 BIO 328, four credits
Course coordinator and major lecturer

Experiences in the Life Sciences (L41 Biol. 265, section 2), 2-3 credits
2009-2013: Course master

Mentor for independent studies or internships (e.g., Biology 200, Anthropology 300 or Medicine and Society internship, U-College) 3 credits, 2002-2017

Human Anatomy and Physiology Lab (M02 322)
1998-2000: Co-coordinator and lecturer

Independent Study in Physical Therapy Research (M02 PHTH 5001), 1-6 credits
Course coordinator: facilitate matching of student with appropriate preceptor, 1994-2000

Licensure/Registration MO #00555

Community Service Contributions

- 1988-present Member, Program in Physical Therapy, Committee on Academic and Professional Evaluation of Students (previously known as PT CAES)

- 1995-2000: Member of Program in Physical Therapy Admissions Committee

- 1997-2001: Faculty liaison for Pre-PT/OT Society, Danforth campus

- 2003-2004: Workshop Task Force for Academic Publishing Services
Washington University School of Medicine

- 2003-2005: Social Norms Marketing Committee; Health Promotion and Wellness
Washington University Danforth (Hilltop) campus

- 2000, 2006-10: Coordination of Annual Symposium
Steven J. Rose Symposium and Alumni Day Symposium
Program in Physical Therapy, Washington University School of Medicine

- 2009-2013: Member Community-Based Teaching and Learning Cohort
Gephardt Institute for Public Service

- 1999-2014: Faculty Associate for Residential Life, Danforth campus

- 2003-2015: Discussion leader, Washington University's First Year Reading Program

- 2004-present: Member of Program in Physical Therapy Emergency Planning Committee

- 2008-present: Program in Physical Therapy International Travel Committee, student liaison

- 2013, 2018-19: Faculty Search Committee, Program in Physical Therapy

- 2014-present: Faculty Scholar in the Institute for Public Health
Washington University School of Medicine in St. Louis

- 2018-present: Member of Curriculum Refresh Committees:
Curriculum Leadership, Chair of Learning Science Committee, Competencies
and EPA Writing Team, Architecture Team

Professional Societies and Organizations

1989- Member American Physical Therapy Association
1989 - Member Missouri Physical Therapy Association
1991-2014 Member of the Society for Neuroscience
2005- Member The American Physiological Society

Research Support

Governmental

#5T32 HL07050

"Lung Diseases Training Grant"

National Institutes of Health

09/01/1983 - 08/31/1986

\$15,000

Pre-doctoral trainee

NIH; #T32 5 T32 HD007434

"Doctoral Training in Movement Science"

Principal Investigator: Michael Mueller, P.T., Ph.D.

National Institute of Child Health and Human Development/NIH

Project period: 05/01/05 - 04/30/10

Direct Costs: \$131,841

Role: Preceptor

Q215F120077

"Aim for Fitness"

Carol M. White Physical Education Program, United States Department of Education

Prime Award: St. Louis Public School District, \$2,197,109.00

Subcontract: Washington University School of Medicine, \$459,897.00

Project period: 08/01/12 - 07/31/2015

Role: Co-Principal Investigator

Percent Effort: 15%

U54 CA155496 Pilot Project

"Urban public schools: influence of environment on child weight status and health indices"

Principal Investigator: Susan Racette, Ph.D.

Main Project: "Transdisciplinary Research on Energetics and Cancer (TREC)"

National Cancer Institute

Washington University Principal Investigator: Graham Colditz, MD, DrPH

Project Period: 07/01/2014 - 06/30/2015

Direct Cost: \$49,984

Role: Investigator

Percent Effort: 2%

R21 DK100793-01

"Diabetic Upper Extremity Pathophysiology, Limited Joint Mobility and Disability"

Principal Investigator: Michael Mueller, P.T., Ph.D., FAPTA

National Institute of Diabetes and Digestive and Kidney Diseases and National Center for Medical

Rehabilitation Research of the Eunice Kennedy Shriver National Institute Of Child Health & Human Development (NICHD)

Project Period: 09/01/2014 - 08/31/2016

Direct Costs: \$275,000

Role: Co-investigator

Percent Effort: 5%

Non-Governmental

“Development of a Congenic Strain of the Shaker Mutant Rat: An animal model of hereditary ataxia”

Principal Investigator

National Ataxia Foundation

Project Period: 01/01/1996 - 12/31/1996

\$2,500

“Development of a Congenic Strain of the Shaker Mutant Rat: An animal model of hereditary ataxia”

Principal Investigator

National Ataxia Foundation

Project Period: 01/01/97 - 12/031/97

\$5,000

“Teaching Experience in Anatomy and Physiology”

Principal Investigator

Gephardt Institute for Public Service, Washington University in St. Louis

Innovation in Community Service-Based Teaching and Learning

Project Period: 01/01/09 - 12/031/10

\$2,500

“Nourishing an Urban Community: Phase I”

Washington University Institute for Public Health; Interdisciplinary Public Health Projects

Role: Co-investigator

Principal Investigator: Susan Racette, Ph.D.

Project Period: 07/01/09 - 12/31/2011

\$20,000

Role: Co-investigator

“Assessment of Shoulder Pain & Disability in a Group of Individuals with Diabetes Mellitus”

Principal Investigator

Research Division Pilot Award, Program in Physical Therapy, Washington University School of Medicine in St. Louis

Project Period: 06/11/10 - 06/30/11

\$2,326.80

“Nourishing an Urban Community II”

St. Louis Community University Health Research Partnerships

St. Louis Regional Health Commission

Principal Investigator: Susan Racette, Ph.D.

Project Period: 10/01/10 - 03/31/2013

\$200,000

Role: Co-investigator

Percent Effort: 4%

“Play Across St. Louis: Presence and Condition of Publicly Accessible Parks, Facilities, and Playgrounds” #72091

Principal Investigator: Cassandra Arroyo Johnson, Ph.D., M.S.

Robert Wood Johnson Foundation

Project Period: 09/01/2014 - 08/31/2015

Role: Collaborator

Percent Effort: 2%

“Obesity Surveillance in St. Louis”

City of St. Louis Department of Health

Principal Investigator: Susan Racette, Ph.D.

Project Period: 04/01/15 - 03/31/16

\$20,000

Role: Co-Principal Investigator

Percent Effort: 4%

Trainee/Mentee/Sponsorship Record

Graduate Students, Washington University in St. Louis

06/01/10- 05/31/11: TL1 Predoctoral Program: Co-Mentor for Irene Tran

Washington University Institute of Clinical and Translational Sciences

Nutrition and Physical Education Intervention to Promote Health and Wellness in St. Louis Public Schools

07/01/11-05/31/13: TL1 Predoctoral Training Program: Co-Mentor for Carling Butler

Washington University Institute of Clinical and Translational Sciences

Physical activity for campus employees: a worksite wellness program

07/01/11-05/31/13: TL1 Predoctoral Training Program: Co-Mentor for Jaquelyn Castillo

Washington University Institute of Clinical and Translational Sciences

Pedometer-determined in-school physical activity in urban elementary children.

2012-2014: Dissertation Committee member for Kshamata Shah, Ph.D.

Movement Science Program, Program in Physical Therapy

Washington University School of Medicine in St. Louis

Dissertation: *Diabetes Mellitus and Limited Joint Mobility in the Upper Extremity*

2013: Dissertation Committee Member for: Julia Marie Maki, Ph.D.

Department of Anthropology, Washington University in St. Louis

Dissertation Title: *The Biomechanics of Spear Throwing: An Analysis of the Effects of Anatomical Variation on Throwing Performance, with Implications for the Fossil Record*

2013: Apprenticeship Mentor for: Tiffany C. Dill, MPH; OTD Candidate
Program in Occupational Therapy
Washington University School of Medicine in St. Louis

2013-2014: Dissertation Committee Member for Cara Ocobock Ph.D.
Department of Anthropology, Washington University in St. Louis
Dissertation Title: *Measuring and predicting daily energy expenditure of highly active humans in natural environments*

Undergraduate Students and/or Post-baccalaureate students

2010-2011: Atkins M, Bagchi D, Racette S, Clark R. *Nourishing an Urban Community: Gardening and Nutrition at The Learning Tree Intergenerational Center.*
Faces of Hope Conference, Gephardt Institute for Public Service, April 2011

2011-2012: Pazhanisamy, A., Strutz, P., and Clark, B.R. *Teaching Anatomy and Physiology at Central Visual and Performing Arts High School.*
Faces of Hope Conference, Gephardt Institute for Public Service, April 2012

Saint Louis University, St. Louis MO

1991: Member of doctoral preliminary committee for Christopher Stein, Department of Pharmacological and Physiological Science, Saint. Louis University

2000: Committee member, Master's Thesis for Emeline Tolod, Department of Anatomy and Neurobiology, Saint. Louis University

2004-2005: Committee member of Master's Thesis for David Horwitz, Center for Anatomical Science and Education, Saint. Louis University

2009-2010: Dissertation Committee Member for Nour Erekat,
Center for Anatomical Science and Education, Saint. Louis University
Dissertation Title: *Multiple Death Pathways in the Cerebellar Purkinje Cells of Shaker Mutant Rats: An Ultrastructural Study*

Knox College, Galesburg, IL.

1994: Faculty mentor for McNair Entry Level Fellowship student; Tasha Weatherspoon

1995: Faculty mentor for undergraduate research fellowship for Tasha Weatherspoon funded by the Associated Colleges of the Midwest, Minority Students and Academic Careers Program

1996: Outside examiner for Honors Thesis; Tasha Weatherspoon, Knox College IL

Bibliography:

Original peer reviewed articles in refereed journals

Clark BR, Liu MS. Kinetic studies on the biological activity of calmodulin in canine heart and liver during endotoxin shock. *Can. J. Physio. Pharm.* 1991; 69 (11): 1670-1676. PMID: 1666534

Tolbert DL, Alisky JM, **Clark BR**. Lower thoracic-upper lumbar spinocerebellar projections in rats: a complex topography revealed in computer reconstructions of the unfolded anterior lobe. *Neuroscience* 1993;55 (3): 755-774. PMID: 7692349

Tolbert DL, Pittman T, Alisky JM, **Clark BR**. Chronic NMDA receptor blockade of muscimol inhibition of cerebellar cortical neuronal activity alters the development of spinocerebellar afferent topography. *Develop. Brain Res.*1994: 80 (1-2): 268-274. PMID: 7525115.

Clark BR, LaRegina M, Tolbert DL. X-linked transmission of the *shaker* mutation in rats with hereditary Purkinje cell degeneration and ataxia. *Brain Res.* 2000: 858 (2): 264-273. PMID: 10708677

Busiguina S, Fernandez AM, Barrios V, Tolbert DL, **Clark R**, Berciano J, Torres-Aleman I. Neurodegeneration is associated to changes in serum insulin-like growth factors. *Neurobiology of Disease*, 2000: 7 (6 pt B): 657-665. PMID: 11114263

Tolbert DL, **Clark BR**. Olivocerebellar projections modify hereditary Purkinje cell degeneration. *Neuroscience*, 2000: 101, (2): 417-433. PMID: 11074164

Tolbert DL, Bradley MW, Tolod EG, Torres-Aleman I, **Clark BR**. Chronic intraventricular infusion of glial cell line-derived neurotrophic factor (GDNF) rescues some cerebellar Purkinje cells from heredodegeneration. *Exp. Neurol.*, 2001: 170 (2): 375-379. PMID: 11476604

Tolbert DL, **Clark BR**. GDNF and IGF-I trophic factors delay hereditary Purkinje cell degeneration and the progression of gait ataxia. *Exp. Neurol.* 2003: 183 (1): 205-219. PMID: 12957504

Earhart G, Tabbal S, **Clark BR**, Perlmutter J. Gait and Balance in Essential Tremor: Variable Effects of Bilateral Thalamic Stimulation. *Movement Disorders*, 2009: 24, 386-391. PMID: 19006189

Tran I, **Clark BR**, Racette SB. Physical Activity During Recess Outdoors and Indoors Among Urban Public School Students, St. Louis, Missouri, 2010–2011. *Prev Chronic Dis.* 2013 Nov 21;10:E196. doi: 10.5888/pcd10.130135. PMID: 24262028

Racette SB, Inman CL, **Clark BR**, Royer NK, Steger-May K, Deusinger SS. Exercise and cardiometabolic risk factors in graduate students: a longitudinal, observational study. *J Am Coll Health.* 2014: 62 (1): 47-56. doi: 10.1080/07448481.2013.843535. PMID: 24313696

Butler CE, **Clark BR**, Burlis TL, Castillo JC, Racette SB. Physical Activity for Campus Employees: A University Worksite Wellness Program. *J Phys Act Health.* 2014 Jun 4. [Epub ahead of print] PubMed PMID: 24905703; PubMed Central PMCID: PMC4308577

Shah, KM, **Clark, BR**, McGill, JB, Mueller, MJ. Upper extremity impairments, pain and disability in patients with diabetes mellitus. *Physiotherapy.* 2015 Jun;101(2):147-54. doi: 10.1016/j.physio.2014.07.003. Epub 2014 Sep 19. PMID: 25442298

Shah, KM, **Clark, BR**, McGill, JB, Lang, CE, Mueller, MJ. Shoulder limited joint mobility in people with diabetes mellitus. *Clinical Biomechanics* 2015 Mar; 30(3):308-13. doi: 10.1016/j.clinbiomech. 2014.12.013 Epub 2015 Jan 6. PMID: 25595462

Racette, SB, Dill, TC, White, ML, Castillo, JC, Uhrich, M, Inman, CL, DuPont, NC, **Clark, BR**. Influence of physical education on moderate-to-vigorous physical activity of urban public school children in St. Louis, 2011-2014. *Prev Chronic Dis.* 2015 Mar 12;12:E31. doi: 10.5888/pcd12.140458. PMID: 25764137

Shah KM, **Clark BR**, McGill JB, Lang CE, Maynard J, Mueller MJ. Relationship Between Skin Intrinsic Fluorescence, an Indicator of Advanced Glycation End Products, and Upper Extremity Impairments in Individuals With Diabetes Mellitus. *Phys Ther.* 2015 Apr 9. [Epub ahead of print] PMID: 25858973

Castillo JC, **Clark, BR**, Butler, CE, Racette SB. Support for Physical Education as a Core Subject in Urban Public Elementary Schools. *Am J Prev Med.* 2015 Jul2. pii: S0749-3797(15)00199-3. doi: 10.1016/j.amepre.2015.04.015 [Epub ahead of print] PMID: 26143954

Clark BR, White ML, Royer NK, Burlis TL, DuPont NC, Wallendorf M, Racette SB. Obesity and Aerobic Fitness among Urban Public School Students in Elementary, Middle, and High School. *PLOS ONE.* 2015 Sep 17;10(9):e0138175. doi: 10.1371/journal.pone.0138175. eCollection 2015. PMID: 26378914

Parra DC, Bradford EC, **Clark BR**, Racette SB, Deusinger SS. Population and Community-Based Promotion of Physical Activity: A Priority for Physical Therapy. *Phys Ther.* 2017 Feb 15; 97(2): 159-160. doi: 10.1093/ptj/pzw006. PMID: 28204780

Sorensen CJ, Hastings MK, Lang CE, McGill JB, **Clark BR**, Bohnert KL, Mueller MJ. Relationship of shoulder activity and skin intrinsic fluorescence with low level shoulder pain and disability in people with type 2 diabetes. *Journal of Diabetes and Its Complications.* 2017 31(6): 983-987. doi: 10.1016/j.jdiacomp.2017.03.005.

Racette SB, Yu L, DuPont NC, **Clark BR**. BMI-for-Age Graphs with Severe Obesity Percentile Curves: Tools for Plotting Cross-Sectional and Longitudinal Youth BMI Data. *BMC Pediatrics.* 2017 May 24;17(1):130. doi: 10.1186/s12887-017-0885-x.

Racette SB, Uhrich ML, White ML, Yu L, **Clark BR**. Sex differences in FITNESSGRAM® health risk based on aerobic capacity and body composition among urban public elementary school children. *Prev Med.* 2017 Aug 3. 103:56-59. pii: S0091-7435(17)30279-7. doi: 10.1016/j.ypmed.2017.07.032, PMID: 28782561.

Mueller MJ, Sorensen CJ, McGill JB, **Clark BR**, Lang CE, Chen L, Bohnert KL, Hastings MK. Effect of a Shoulder Movement Intervention on Joint Mobility, Pain, and Disability in People With Diabetes: A Randomized Controlled Trial. *Phys Ther.* 2018 Jun 11. doi: 10.1093/ptj/pzy070. [Epub ahead of print] PMID: 29893977

Clark BR, Uhrich ML, Dill TC, White ML, Milam L, Ackermann N, Arroyo C, Racette SB. Failure to meet aerobic fitness standards among urban elementary students. *Prev Med Rep.* 2018 Oct 17;12:330-335. doi: 10.1016/j.pmedr.2018.10.011. PMID:30416952

Dey, R. **BR Clark**, Ackerman, N, Racette, SB. Weight status perception and weight loss intention among urban youth. *Obesity Research & Clinical Practice.* 2019 Jul - Aug;13(4):391-394. doi: 10.1016/j.orcp.2019.04.004. Epub 2019 May 17, PMID: 31109794

EDUCATOR PORTFOLIO

EDUCATIONAL CONTRIBUTIONS

Didactic Teaching: Pre-clinical Physical Therapy – Professional DPT curriculum

Course master and major lecturer: **Cells, Systems, and Diseases I (CSD I), M02 604**

Target audience: 1st semester graduate students in the Program in Physical Therapy

4 credits, primarily lecture format, 2 lecture hours twice weekly

Total lecture hours: 34-38 hours, remaining 16-20 hours provided by content expert guest speakers

Brief course description: Course is designed to give the physical therapy student a comprehensive review of the fundamental principles of physiology of the major organ systems. Autonomic Nervous System and Hormonal mechanisms to maintain homeostasis are emphasized throughout the course.

Course master/coordinator: **Cells, Systems, and Disease II (CSD II), M02 610**

Target audience: 2nd semester graduate students in the Program in Physical Therapy

4 credits, primarily lecture format

Lectures are provided by guest faculty from Washington University School of Medicine and St. Louis College of Pharmacy. I am responsible for all aspects of course coordination to include development of learning objectives, exam questions, and conduct in-class case study activities.

Brief course description: This course focuses on the medical management of selected diseases or medical conditions frequently encountered in the practice of physical therapy. Physicians and/or selected health care specialist from the community of Washington University's Medical School or neighboring health care facility provide lecture information on the etiology, incidence, diagnosis, medical management, and prognosis of medical conditions present in today's healthcare environment.

Clinical relevance to the practice of Physical Therapy: Course content and learning objectives provided in CSD I and II are critical for the development of clinical decision skills. Course objectives include presentations of Case Scenarios presented in class or on exams for which the student is expected to:

1. Interpret vital sign measurements and determine appropriate action: Examples: Is the patient's status stable? Is patient safe for therapist to initiate evaluation and treatment? Is medical referral indicated and if so is it emergent? Is the patient demonstrating the appropriate response to exercise?

2. Understand the importance of assessing clinical signs & symptoms; interpret relevance of clinical lab values and other health information to judge appropriateness for physical therapy intervention.
3. Assess/Evaluate clinical laboratory values, vital sign measurements and patient's signs and symptoms to establish accurate intensity of exercise/activity prescription.

Other: Guest lectures/faculty role in other professional DPT courses

- 1) Guest lecture in Health, Fitness and Prevention (M02 653)
Target audience: 5th semester graduate students in The Program in Physical Therapy
New lecture content 2013 - present: "*Fitness and Health Promotion in Schools*"
Novel classroom activity: interactive activity that allows students the opportunity to explore State specific mandated Physical Activity, Recess and Physical Education directives and report findings with discussion in class.
- 2) Physical Therapy faculty mentor for Introductory IPE course. I participated as faculty mentor in the optional IPE course offered in fall 2014 and continue participation in the IPE course (fall, first year sessions) Target audience includes 1st semester students from the three institutions: Washington University School of Medicine, Goldfarb School of Nursing, St. Louis College of Pharmacy.
- 3) Guest Faculty Discussion Leader in Diagnoses and Evidence Analysis in PT Practice III, M02 650. Target Audience: 5th semester graduate students in The Program in Physical Therapy
- 4) Guest Faculty Discussion Leader in Movement System III-Biocontrol class for PhD students. 2018 Target Audience: Graduate students

Didactic Teaching: Undergraduate pre-health students

Course master and lecturer: **Principles in Human Physiology, L41 Bio 328**

Target audience: upper classmen interested in pursuing a medical career or graduate studies.

Enrollment ranges between 125-130 students per year.

4 credits, lecture format

Total lecture hours: 54 hours

Total office hours and review sessions: 45-50

Brief course description: The course provides students with an understanding of the function & regulation of the human body and physiological integration of the organ systems to maintain homeostasis. The course is designed to expand biological and physiological concepts presented in prerequisite courses. Principles of exercise physiology are integrated into course content throughout the semester. Relevance to public health is emphasized. Case studies are provided to enhance integration of course content.

Service Learning Course

Experiences in the Life Sciences (L41 Biol. 265, section 2), 2-3 credits,

2009-2013: Course master

Brief course description: This course provided students interested in health careers with the opportunity to deliver and participate health-related activities at community sites and/or assist with health-related assessments. Major community collaborates where the Saint Louis Public Schools,

The Learning Tree Intergenerational Center, and The city of St. Louis Department of Health.

New handouts or other guides for trainees

Course handouts are continually updated with new information. Clinical Case Studies are utilized to assist with development of clinical decision making.

Educational leadership and Curriculum development

I participate in education retreats and am an active member of a curricular subgroup that evaluates, develops, and makes recommendations regarding physiology, exercise physiology, cardiopulmonary specialty, general medical conditions, and health prevention & fitness.

Beginning in academic year 2018-2019, I am a member of a number of the Program in Physical Therapy's Curriculum Renewal Committees.

Development of new methods of education

Primary lecture style has been a "chalk board talk" that keeps students engaged with drawing of flow diagrams and figures to comprehend physiological principles. Newer presentation techniques include the use of a tablet, drawing as we go, with projection throughout the classroom. Case studies, both during class and as a study guide, have been used to assist students with integration of content and relevance to health care (this occurs in physical therapy courses and in undergraduate physiology course). Students have enjoyed the opportunity to work together to develop clinical decision skills and to comment on each other's presentations during in-class discussion of case studies.

Students for whom mentorship was provided

- Doctoral students in the Movement Science Program: course coordinator and mentorship on completion of the Teaching Practicum (L63-5210). This course allows me the opportunity to assist graduate students with development of lecture presentations. Additionally, I provide mentorship as students prepare scientific presentations for meetings.
- Dissertation Committee Member
2012-2014: Dissertation Committee member for Kshamata Shah, Ph.D.
Movement Science Program, Program in Physical Therapy
Washington University School of Medicine in St. Louis
Dissertation: *Diabetes Mellitus and Limited Joint Mobility in the Upper Extremity*

2013: Dissertation Committee Member for: Julia Marie Maki, Ph.D.
Department of Anthropology, Washington University in St. Louis
Dissertation Title: *The Biomechanics of Spear Throwing: An Analysis of the Effects of Anatomical Variation on Throwing Performance, with Implications for the Fossil Record*

2013-2014: Dissertation Committee Member for Cara Ocobock Ph.D.
Department of Anthropology, Washington University in St. Louis
Dissertation Title: *Measuring and predicting daily energy expenditure of highly active humans in natural environments*

- Co-mentor TL1 Predoctoral Training Program trainees for fulfillment of MSCI degree
Washington University Institute of Clinical and Translational Sciences

TL1 Graduate Trainees

Irene Tran, 06/01/10 – 05/31/11

Title: *Nutrition and Physical Education Intervention to Promote Health and Wellness in St. Louis Public Schools*

Carling Butler, 07/01/11-05/31/13

Title: *Physical activity for campus employees: a worksite wellness program*

Jaquelyn Castillo, 07/01/11-05/31/13

Title: *Pedometer-determined in-school physical activity in urban elementary children.*

- 2013: Apprenticeship Mentor for: Tiffany C. Dill, MPH; OTD Candidate
Program in Occupational Therapy
Washington University School of Medicine in St. Louis
- Undergraduate Students and/or Post-baccalaureate students: mentorship of community-based teaching and learning course (Biol 265 02), independent studies or public health internships.

Abbreviations:

- Saint Louis Public Schools (SLPS)
- Washington University School of Medicine in St. Louis (WU)
- Spring (sp) and Fall (f) to designate semester

| Name | Course | Semester | Date(s) | Community Site |
|------------------|--------------------------------|----------|---------------|---|
| Wu, M. | Biol 265 02 | sp | 2009 | SLPS High School (Gateway) |
| Zhao, N. | Biol 265 02 | sp | 2009 | SLPS High School (Gateway) |
| Chong, L. | Biol 265 02 | sp | 2010 | SLPS High School (Gateway) |
| Gn, C. | Biol 265 02 | sp | 2010 | Afterschool program (Cote Brilliante) |
| Guhl, E. | Biol 265 02 | sp | 2010 | Afterschool program (Cote Brilliante) |
| Atkins, M. | Biol 265 02 | f | 2010, sp 2011 | The Learning Tree Intergenerational Center |
| Bagchi D. | Biol 265 02 | f | 2010, sp 2011 | The Learning Tree Intergenerational Center |
| Choe, A. | Biol 265 02 | f | 2010, sp 2011 | SLPS middle/junior high school (McKinley) |
| Ibe, J. | summer career internship, 2011 | | | The Learning Tree Intergenerational Center |
| | Bio 265 02 | f | 2011 | The Learning Tree Intergenerational Center |
| Agrawal, A. | Biol 265 02 | f | 2011 | Afterschool program (Cote Brilliante) |
| Orionzi, B. | Biol 265 02 | f | 2011 | Afterschool program (Cote Brilliante) |
| Pazanisamy, A. | Biol 265 02 | f | 2011, sp 2012 | SLPS High School (Central VPA) |
| Ramachandran, J. | Biol 265 02 | f | 2011 | Afterschool program (Cote Brilliante) |
| Strutz, P. | Biol 265 02 | f | 2011, sp 2012 | SLPS High School (Central VPA) |
| Satyanarayan, S. | Biol 265 02 | f | 2011, sp 2012 | Gateway Elementary School-SLPS |
| Veltrop, S. | Biol 265 02 | f | 2011, sp 2012 | Gateway Greening and The Learning Tree Intergenerational Center |
| Zhao, B. | Biol 265 02 | f | 2011 | The Learning Tree Intergenerational Center |

| | | | |
|-----------------------|---|----------------------|---|
| Azad, T. | Biol 265 02 | sp 2012 | Mullanphy Elementary-SLPS |
| Feng, A. | Biol 265 02 | sp 2012, f 2012 | The Learning Tree Intergenerational Center |
| Coll, M. | Biol 265 02 | f 2012 | Mullanphy Elementary-SLPS |
| Gambrah-Sampaney, C.; | Biol 265 02 | f 2012, sp 2013 | SLPS High School (Central VPA) |
| Phuong, L. | Biol 265 02 | f 2012, sp 2013 | SLPS High School (Central VPA) |
| Madara, P. | Biol 265 02 | sp 2013 | AIM for Fitness (SLPS/WU project) |
| Miller, R. | Anthropology internship | sp 2014 | AIM for Fitness (SLPS/WU project) |
| Joykutty, A. | Biol 500 | f 2014 | AIM for Fitness (SLPS/WU project) |
| Branche, K. | Anthropology internship | f 2014, sp 2015 | AIM for Fitness (SLPS/WU project) |
| Wesevich, A. | MPH/Anthropology internship | sp 2015 | AIM for Fitness (SLPS/WU) |
| Herrmann, D. | U29 Bio 400 01 | sp 2015 | AIM for Fitness (SLPS/WU) |
| Keelara, R. | Insternship with The City of St. Louis | Department of Health | summer 2015 |
| Stokes, C. | Health Surveillance, The Obesity Plan-The city of St. Louis | Department of Health | Anthropology-Medicine & Society Program internship |
| Youmans, N. | Health Surveillance, The Obesity Plan-The city of St. Louis | Department of Health | summer-fall 2015 |
| Shirali, R. | Health Surveillance, The Obesity Plan-The city of St. Louis | Department of Health | Internship Public Health |
| | Health Surveillance, The Obesity Plan-The city of St. Louis | Department of Health | summer-fall 2015 |
| | Health Surveillance, The Obesity Plan-The city of St. Louis | Department of Health | Master thesis, Math-statistics, Danforth |
| | Health Surveillance, The Obesity Plan-The city of St. Louis | Department of Health | f 2015 and sp 2016 |
| | Health Surveillance, The Obesity Plan-The city of St. Louis | Department of Health | Health Surveillance, The Obesity Plan-The city of St. Louis |

Invited Speaker

- 2010: *“Skeletal Muscle and Imaging: Implications for Rehabilitation”*
 Alumni Day Symposium
 Program in Physical Therapy, Washington University School of Medicine in St. Louis
- 2011: *“Cardiovascular Risk Factors Among Urban School-aged Children”*
 Professional Development Day for Physical Education Teachers and Nurses,
 Saint Louis Public Schools
- 2011: Panel Member, Champions of Social Impact, Leaders Series
 Washington University in St. Louis
- 2013: *“Fitness and Health Promotion in Schools”*
 Professional Development for Physical Education Teachers,
 Saint Louis Public Schools
- 2013: *“Physical Activity & Cardiometabolic Risk Among Youth in Urban Public Schools”*
 Alumni Day Symposium
 Program in Physical Therapy, Washington University School of Medicine

Instructor and Course Feedback

Available per request

Lay Literature

2011: The Learning Tree Cookbook, developed as part of St. Louis Community/University Health Research Partnerships funded project. The Learning Tree Intergenerational Center staff and

families provided recipes for which nutrient analysis of original and modified versions (modified for improved nutritional benefit) were collected and published in a colorful book. Photographs and modified recipes provided information about gardening activities, fresh produce from the garden, and the health value of making small dietary modifications.

COMMUNITY SERVICE CONTRIBUTIONS

Participation in local committees

- 2009-2016: Health and Wellness Committee, Saint Louis Public Schools
2010 Interim Chair; Physical Activity and Physical Education committee
- 2014-2018: City of St. Louis Department of Health, *Healthy Eating, Active Living Partnership*:
Member
- 2015: ADA 25 STL (Americans With Disabilities Act): 25th anniversary celebration in
collaboration with the Starkloff Disability Institute and the Missouri History
Museum

Media activities

- KSDK TV Interview (Washington University and Gateway Greening), filmed at Cote
Brilliante Elementary School – November 18, 2010 as part of St. Louis
Community/University Health Research Partnerships funded project.

Other

X HONORARY: Recognizing Excellence in Leadership, Faculty Leader of the Month
Washington University in St. Louis, Danforth campus