CURRICULUM VITAE
October 4, 2018

Sean M. Collins, PT, ScD

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Home Addresses:
143 Eastern Ave, Apt 201
Manchester, NH 03104

Current Institutional Affiliation:
Professor & Program Director
Department of Physical Therapy
Plymouth State University

Education:

University of Massachusetts, Lowell, MA
September 1997 to May 2003
Department of Work Environment; Ergonomics & Epidemiology
Dissertation: Job Strain & Electrocardiograph Assessed Pathophysiologic Correlates
Advisor: Robert Karasek, PhD
Doctorate of Science: May 2003

University of Massachusetts, Lowell, MA
September 1992 to October 1994
Physical Therapy
Master of Science: October 1994

University of Massachusetts, Lowell, MA
September 1988 to May 1992
Exercise Physiology
Bachelor of Science: May 1992

Licensure Information:

State of New Hampshire, Office of Licensed Allied Health Professionals
Physical Therapist License Number: 2202 (ACTIVE)

Certifications:

American Board of Physical Therapy Specialists
Cardiovascular and Pulmonary Clinical Specialist
May 2001 – May 2011

Work Experience

Employment and Positions Held:

Academic Positions

2015 - Present Program Director of Physical Therapy
Professor (Tenured)
Department of Physical Therapy
Plymouth State University, Plymouth, NH

2018 Adjunct Professor
Biomedical Engineering Program
University of Massachusetts Lowell
BMBT5750 Quantitative Physiology

2015 – Present Adjunct Professor
Department of Physical Therapy
Samuel Merritt University, Oakland, CA
PT717 Patient / Client Management: Cardiopulmonary

2006 – 2015 Associate Professor of Physical Therapy & Biomedical Engineering (Tenured)
Department Chair from 2008 – 2013
Department of Physical Therapy
University of Massachusetts, Lowell, MA

1999 - 2006 Assistant Professor of Physical Therapy (Tenure Track)
Department of Physical Therapy
University of Massachusetts, Lowell, MA

1998 - 1999 Instructor of Physical Therapy (Tenure Track)
Department of Physical Therapy
University of Massachusetts, Lowell, MA

1996 - 1998 Adjunct Professor of Physical Therapy (Part Time)
Department of Physical Therapy
University of Massachusetts, Lowell, MA

Clinical Practice

2005 – 2012 Collins Physical Therapy, PT Services and Consulting
2001 - 2003 Clinical Specialist, Cardiopulmonary Rehabilitation Unit, Spaulding Rehabilitation Hospital, Boston MA
2000 – 2001 Physical Therapist, Lowell General Hospital, Lowell MA
1998 – 2000 Physical Therapist, Healthsouth Rehabilitation, Salem, NH
1996 – 1998 Physical Therapist & Rehabilitation Supervisor
Holy Family Medical Center, Methuen, MA
1994 – 1996 Physical Therapist, Massachusetts General Hospital

Editorial / Peer Reviewer

2017 - Present Editor-in-Chief, Cardiopulmonary Physical Therapy Journal
Starting with Volume 28
2015-2016 Acting Editor-in-Chief, Cardiopulmonary Physical Therapy Journal
Volume 26, Issue 4; Volume 27, Issue 1
2011 – Present Reviewer, Bio-Complexity
2010 – Present Reviewer, International Journal of Occupational Medicine
2008 – 2016 Associate Editor, Cardiopulmonary Physical Therapy Journal
2003 – 2008 Reviewer, Cardiopulmonary Physical Therapy Journal
2006 – 2015 Reviewer, Hypertension
2014 – 2015 Associate Editor of CVP Tests & Measures, PT Now
2014 – 2015 Reviewer, Computers in Biology and Medicine
2011 – 2014 Reviewer, Safety and Health at Work

Membership in Scientific/Professional Organizations:

2012 – Present Member, American Physiological Society
1992 – Present Member, American Physical Therapy Association
Cardiovascular and Pulmonary Section

Peer Reviewed Publications:

2018 Collins SM. Synthesis: Causal Models, Causal Knowledge. *Cardiopulmonary Physical Therapy Journal.* 29(4).
2017 Daley D. Miller M. Collins SM. Vital Signs Prior to Pre-Employment and Functional Testing: An observational study. *Cardiopulmonary Physical Therapy Journal.* 28(2):63-71.
2016 Zaidi SN. Collins SM. Orthostatic stress and area under the curve of photoplethysmography waveform. *Biomedical Physics and Engineering Express*. 2 045006 http://iopscience.iop.org/2057-1976/2/4/045006
2016 Zaidi, S., & Collins, S.M. Orthostatic Stress Induced Changes in Heart Rate Variability , Pulse Transit Time and QRS Duration. *Journal of Bioengineering & Biomedical Science*, *6*(3). http://doi.org/10.4172/2155-9538.1000194
2015 Wu Y. Hallbourg K. Collins SM. Changes of general fitness and muscle properties following police cadet training. *J Phys Ther Sci. 2015 Sep; 27(9): 2783–2786.*
2015 Collins SM. Dias K. Heart Failure: Stability, Decompensation and Readmission. *Cardiopulmonary Physical Therapy Journal.* 2016; 26: 58-72.
2014 Medina-Mirapeix F, DelBano-Aledo ME , Escolar-Reina P, Montilla-Herrador J, Collins SM. Relevant patient perceptions and experiences for evaluating quality of interaction with physiotherapists during outpatient rehabilitation: a qualitative study. *Physiotherapy, 100(2014)73-79*
2013 Medina-Mirapeix F, Oliveira-Sousa S, Sobral-Ferreira M, DelBano-Aledo ME , Escolar-Reina P, Montilla-Herrador J, Collins SM. How the rehabilitation environment influences patient perception of service quality: a qualitative study. *Archives of Physical Medicine & Rehabilitation,* 94(6)2013, 1112 – 1117.
2012 Hernandez-Gaytan SI, Rothenberg SJ, Landsbergis P, Cedillo-Becerril L, DeLeon G, Collins SM. Job strain and heart rate variability in resident

physicians within a general hospital. *American Journal of Industrial Medicine*. Early Release. *doi 10.1002/ajim.22098*.

2012 Burnell, A., Young BA and Collins SM. (2011) Vertebral morphometrics in *Varanus*. Bulletin de la Societe Geologique de France, March 2012, v. 183, p. 151-158.

2012 Burnell, A., Young BA, and Collins SM (2011) On the Postpulmonary septum of Varanus salvator and its implications for Mosasaurine ventilation and physiology. March 2012, v. 183, p. 159-169.

2011 Medina-Mirapeix F, Navarro EN, Escolar-Reina P, Montilla-Herrador J, Valera-Garrido F, Collins SM. Mobility activities measurement for outpatient rehabilitation settings. *Archives of Physical Medicine & Rehabilitation, 92(4): 632-639 doi:10.1016/j.apmr.2010.11.025 .*

2011 Medina-Mirapeix F, Oliveira-Sousa S, Sobral-Ferreira M, DelBano-Aledo ME , Escolar-Reina P, Montilla-Herrador J, Collins SM. Continuity of Rehabilitation Services in Post-Acute Care from the Ambulatory Outpatient's Perspective: A qualitative study. *Journal of Rehabilitation Medicine. 43(1):58-63 doi: 10.2340/16501977-0638*

2010 Karasek R, Collins SM, Clays E, Bortkiewicz A, Ferrario M. Description of a Large-Scale Study Design to Assess Work-Stress-Disease Associations for CV Disease. *International Journal of Occupational Medicine & Environmental Health,*23(3): 293-312 *doi: 10.2478/v10001-010-0035-2 .*

2010 Collins SM, Karasek R. Reduced Vagal Cardiac Control Variance in Exhausted and High Strain Job Subjects. *International Journal of Occupational Medicine & Environmental Health,* 2010; 23(3):1–15; DOI 10.2478/v10001-010-0029-0

2009 Medina F, Escolar-Reina P, Gascon-Canovas JJ, Montilla-Herrador J, Jimeno-Serrano FJ, Collins SM. Predictive factors of adherence to frequency and duration components in home exercise programs for neck and low back pain: an observational study. *BMC Musculoskeletal Disorders 2009; 10:155, doi:10.1186/1471-2474-10-155*

2009 Escolar-Reina P, Medina F, Meseguer AB, Gascon-Canovas JJ, Montilla-Herrador J, Valera-Garrido JF, Collins SM. Self-Management of chronic neck and low back pain and relevance of information provided during clinical encounters: an observational study. *Archives of Physical Medicine & Rehabilitation 2009; 90: 1734-1739.*

2009 Collins SM. Occupational Factors, Fatigue and Cardiovascular Disease. *Cardiopulmonary Physical Therapy Journal. 2009, 20(2):28-31.*

2009 Medina F, Escolar-Reina P, Montilla-Herrador J, Collins SM. Personal characteristics influencing patient's adherence to home exercise during chronic pain: A qualitative study. *Journal of Rehabilitation Medicine*, *2009; 41: 347-352.*

2009 Coppola SM, Collins SM. Is physical therapy more beneficial than unsupervised home exercise in treatment of post surgical knee disorders? A systematic review. *The Knee, 2009; 16(3) 171-175.*

2008 Cahalin LP, Matsuo Y, Collins SM, Matsuya A, Caro F. Educational and Professional Issues in Physical Therapy – An International Perspective. *Physiotherapy Theory and Practice, 2008; 24(5):344-359.*

2008 Dai JM, Collins SM, Hu F, Fua H. Comparison of Job Stress Models in Predicting Job Burnout in Shanghai Employees. *Journal of Occupational and Environmental Medicine.2008;50(7):785-790.*

2006 Medina F, Meseguer AB, Montilla-Herrador J, Collins SM, Saturno-Hernandez PJ. Reliability and validity of patient's reports for physical therapy quality assessment: An empirical analysis regarding the use of exercises for neck pain in Spain. *Journal of Rehabilitation Medicine,* 2006; 38: 354-359.

2006 Diaz KJ, Collins SM, Cahalin LP. Physical Therapy Implications in the Management of Patients with Defibrillators and Pacemakers. *Cardiopulmonary Physical Therapy Journal,* 2006; 17(2) 56-61.

2005 Collins SM, Cahalin LP. Acute care physical therapy in patients with pacemakers. *Acute Care Perspectives*. 2005; 14(5):9-14.

2005 Collins SM, Cahalin LP. Acute care physical therapy in patients with congestive heart failure. *Acute Care Perspectives*. 2005; 14(5): 15-20.

2005 Collins SM, Karasek RA, Costas K. Autonomic Nervous System Indices of Cardiovascular Disease Risk. *American Journal of Industrial Medicine*, 2005; 48:182-193.

2004 Hillegass E, Brooks G, Collins SM. Integrating Cardiovascular and Pulmonary Concerns in the Management of Complex Patients across Practice Settings: The Practice, the Evidence and Reimbursement. *Cardiopulmonary Physical Therapy Journal*, 2004; 15(2) 19-24.

2003 R Nikolova, Collins SM. Effect of Workload and Stress on Operator Functional State. *NATO Science Series: Life and Behavioral Sciences*, 2003; 355: 303-312.

2001 Collins SM. Emerging methods for the physiological assessment of occupational stress. *Work: A Journal of Prevention, Assessment and Rehabilitation*, 2001; 17(3) 209-220.

Published Abstracts of Peer Reviewed Presentations:

2017 Dias K, Collins SM, Mooney B, Hogan B, Grado B; Regenold E, Boeckmann R. An Investigation of Energy Expenditure for Six Routine Physical Therapy Activities in Healthy College Aged Individuals. *Cardiopulmonary Physical Therapy Journal: 27(1), p118-119.*

2014 Collins SM. Dynamic Inference in Cardiopulmonary PT Practice *Cardiopulmonary Physical Therapy Journal: 25(4), p118-119.*

2009 Dias KJ, Collins SM. A Systematic Evaluation of Endurance Impairments: The Reversible and Irreversible Components. *Cardiopulmonary Physical Therapy Journal, 2009: 20 (4) 41.*

2007 Diaz KJ, Collins SM, Amos K, Smiddy J, Martchink P. Blood Pressure and RPE in Upper vs. Lower Extremity Exercise. *Cardiopulmonary Physical Therapy Journal,* 2006; 17(4) 38.

2006 Collins SM, Karasek R. Vagal Responses to Work and Rest Day Strain: Possible Cardiac Disease Risk Mechanisms. *European Journal of Cardiovascular Prevention and Rehabilitation*, 2006; 13(Supplement 1) S51.

2006 Collins SM, Cahalin LP. Should we be considering Job Strain when evaluating our patients with cardiac disease? *Cardiopulmonary Physical Therapy Journal*, 2005; 16(4) 35.

2006 Coyne A, Cila T, Hutchinson K, Collins SM, Cahalin L. Comparative Case Studies of Mitral Valve Prolapse. *Cardiopulmonary Physical Therapy Journal*, 2005; 16(4) 34-35.

2004 Collins SM, Dias KJ, Cahalin LP. Discrimination between NYHA Functional Classes for CHF: Does the Six Minute Walk Test add a dimension of function? *Cardiopulmonary Physical Therapy Journal*, 2004; 15(4): 35-36.

2004 Collins SM, Dias KJ, Cahalin LP. Pacer Settings and Exercise Tolerance in Heart Failure: A Case Presentation. *Cardiopulmonary Physical Therapy Journal*, 2004; 15(4): 36.

2004 Cahalin LP, Collins SM, Dec GW, Semigran MJ. A meta-analysis of the effects of inspiratory muscle training in heart failure. *European Journal of Cardiovascular Prevention and Rehabilitation*, 2004; 11(1): 62.

2004 Cahalin LP, Collins SM, Dec GW, Semigran MJ. A meta-analysis of the effects of exercise training on functional abilities and quality of life in heart failure. *European Journal of Cardiovascular Prevention and Rehabilitation*, 2004; 11(1): 66.

2004 Cahalin LP, Collins SM, Dec GW, Semigran MJ. Characteristics, gender differences, and reference equations for the six-minute walk test in heart failure. *European Journal of Cardiovascular Prevention and Rehabilitation*, 2004; 11(1): 47.

2004 Collins SM, Karasek RA, Costas K. Job Strain and Autonomic Indices of Cardiovascular Disease Risk. *International Journal of Behavioral Medicine*, 2004; 11 Supplement: 74-75.

2004 Collins SM, Karasek RA. Within Subject Cardiac Vagal Responses to Work and Rest Day Stressors. *International Journal of Behavioral Medicine*, 2004; 11 Supplement: 162.

2004 Collins SM, Karasek R. Mood Assessment and Job Strain. *International Journal of Behavioral Medicine*, 2004; 11 Supplement: 168.

2004 Karasek R, Collins SM. Cardiovascular Control Capacity: Approximate Entropy of HR and HFP. *International Journal of Behavioral Medicine*, 2004; 11 Supplement: 313.

2003 Collins SM. A Theoretical Perspective of Adaptive Bioenergetics and Its Clinical Relevance. *Cardiopulmonary Physical Therapy Journal*, 2003; 14(4): 28.

2003 Hernandez E, Collins SM, Cahalin LP. Ventilatory Muscle Strength and Chest Wall Excursion in Healthy Men and Women: A Pilot Study. *Cardiopulmonary Physical Therapy Journal*, 2003; 14(4): 24-25.

Peer Reviewed Scientific and Professional Presentations (not previously cited):

2016 Mooney B, Hogan B, Grado A, Regenold E, Boeckmann R. Collins SM. Dias KJ. *An Investigation of Energy Expenditure for Six Routine Physical Therapy Activities in Healthy College Aged Individuals*. Missouri Physical Therapy Association Spring Conference. Poster Presentation. March 15, 2016.

2014 Fokin K, McConnell D, Collins SM. Maximal Oxygen Consumption and Repeated Sprint Ability in NCAA Division I Men's Ice Hockey Players. *New England College of Sports Medicine Regional Conference. Providence, RI. November 2014.*

2014 Daly D, Miller M, Collins SM. Vital Signs Prior to Pre-Employment Testing. *2nd Annual Functional Capacity Evaluation Research Meeting. Toronto, Canada. October 2, 2014.*

2011 Collins SM. Multi-Scale Modeling of Heart Rate Variability in High Strain and Exhausted Subjects. *International Holter and Non-Invasive Electrocardiology Conference. Moscow. April 26-29, 2011.*

2010 Karasek R, Collins SM. Prevention-Only Treatable Disease (P-O.T.D)? A high level etiologic implication of the Stress-Disequilibrium (S.D.) theory. *International Conference on Occupational Health: Work Organization & Psychosocial Factors. Amsterdam. June 14-17, 2010.*

2005 Medina-Mirapeix F, Collins SM. Fisiotererpia Basada En El Evidencia En El Esguince Cervical. *National Conference of Fisioterepia*, Spain, Fisioterepia Espanol, October 2005.

2005 Cahalin LP, Collins SM. Clinical Utility of a Standard Anaroid Sphygmomanometer to Measure Inspiratory Muscle Strength. *Annual Conference and Exposition of the APTA*, Boston, MA. June 8-11, 2005.

2005 Collins SM, Karasek RA. Evidence of Reduced Vagal Cardiac Control Variability in Exhausted Subjects and High Strain Job Subjects. *Fourth International Conference on Work Environment and Cardiovascular Disease*. Los Angeles, CA. March 9-11, 2005.

2005 Collins SM, Karasek RA. Within Subject Cardiac Reactivity to Work & Rest Day Strain*. Fourth ICOH on Work Environment and Cardiovascular Disease*. Los Angeles, CA. March 9-11, 2005.

2005 Karasek RA, Collins SM. A Test of the Stress-Disequilibrium Model's Structural Hypothesis: Depletion of Heart Rate Variability Control Capacity (HFPApEn) Demonstrated During Work/Rest Day Stress. *Fourth International Conference on Work Environment and Cardiovascular Disease*. Los Angeles, CA. March 9-11, 2005.

2004 Hillegass E, Brooks G, Collins SM. *Management of the Complex Patient from Acute Care to Rehab or Home,* Cardiovascular and Pulmonary Section, APTA, Combined Sections Meeting Educational Programming. Nashville, TN, February 2004

2002 Collins SM, Karasek RA, Costas, K. Job Strain and Heart Rate Variability. *Third ICOH on Work Environment and Cardiovascular Disease*. Duesseldorf, Germany, March 2002.

2000 Collins SM. Power spectral analysis of heart rate variability: An assessment tool for physiological research. *Northern New England APTA Conference and Exposition Meeting*. Portland, ME, October 2000.

2000 Collins SM. Sarcopenia as a confounder in the relationship between disease specific impairments and disability. *Northern New England APTA Conference and Exposition Meeting*. Portland, ME, October 2000.

1998 Collins SM. The Demand / Control Model for Analyzing Stress Related Coronary Heart Disease. *New England American College of Sports Medicine and New England Health, Racquet & Sports club Association Conference.* Providence, RI 1998.

Book Chapters (repeat multiple editions)

2014 Collins SM. Paz, J. Mechanical Ventilation, in *Acute Care Handbook for Physical Therapists*, 4th Edition, J Paz & M West (eds), Elsevier. *2014.*

2014 Collins SM. Dias K. Cardiac System, in *Acute Care Handbook for Physical Therapists*, 4th Edition, J Paz & M West (eds), Elsevier. *2014.*

2009 Collins SM. Mechanical Ventilation, in *Acute Care Handbook for Physical Therapists*, 3rd Edition, J Paz & M West (eds), Butterworth & Heinemann. *2009.*

2009 Collins SM. Cardiac System, in *Acute Care Handbook for Physical Therapists*, 3rd Edition, J Paz & M West (eds), Butterworth & Heinemann. *2009.*

2004 Collins SM, Cocanour B. Anatomy of the Cardiovascular System in *Cardiovascular and Pulmonary Physical Therapy*, W DeTurk & L Cahalin (editors), McGraw Hill

2002 Collins SM. Mechanical Ventilation, in *Acute Care Handbook for Physical Therapists*, 2nd Edition, J Paz & M West (eds), Butterworth & Heinemann (2002)

2002 Collins SM. Cardiac System, in *Acute Care Handbook for Physical Therapists*, 2nd Edition, J Paz & M West (eds), Butterworth & Heinemann (2002)

1998 Collins SM . Cardiac System, in *Acute Care Handbook for Physical Therapists*, J Paz & M West (eds), Butterworth & Heinemann. *1998.*

1998 Collins SM . Mechanical Ventilation, in *Acute Care Handbook for Physical Therapists*, J Paz & M West (eds), Butterworth & Heinemann. *1998.*

Non-Peer Reviewed Publications:

Letters to the Editor in Peer Reviewed Journals

2016 Collins, SM. On "Toward systems science in rehabilitation." Jette AM. *Phys Ther.*2016;96:270–271.

2007 Collins SM, Landsbergis P, Warren N, LaMontagne AD. Stopping Stress at its Origins: Working Conditions. Hypertension 49:e33.

2005 Collins SM. Complex System Approaches: Could They Enhance the Relevance of Clinical Research? Physical Therapy 85:1393-1394 (2005).

1997 Collins SM. Strength or Endurance? Physical Therapy 77:1763-1765 (1997).

Blog

2015 - Present Cause, Models & Inference in Physical Therapy: Developing Knowledge Based Practice
https://knowledgebasedpractice.wordpress.com

Non-Peer Reviewed Presentations:

2006 Collins SM, Karasek RA. *How does the mind injure the body: a biopsychosocial perspective of cardiovascular health*, Invited presentation to European Association of Cardiovascular Prevention and Rehabilitation, EuroPrevent 2006, Athens, Greece, May 2006

2005 Collins SM. *Psychosocial Factors & Cardiovascular Changes*, *Occupational and Environmental Health: Diesel, Particles, and Cardiovascular Health*, Invited Presentation at Fourth International Commission on Occupational Health Conference on Work Environment and Cardiovascular Disease, Los Angeles, CA, March 2005

2005 Karasek RA, Collins SM. *The Stress-Disequilibrium Theory of Chronic Disease Development: Low Social Control and Physiological De-regulation,* Invited Presentation at Fourth International Commission on Occupational Health Conference on Work Environment and Cardiovascular Disease, Los Angeles, CA, March2005

Current Funded Grant Activity:

2015 -2018

Cardiovascular & Pulmonary Section (APTA) $5,000

American Physical Therapy Association (APTA) $10,000

Heart Failure Clinical Practice Guideline Development

Approved by section and APTA to develop a clinical practice guideline for physical therapist intervention in patients with chronic (compensated) heart failure.

Role: Co-PI(Co-PI: John Heick, AT Still University, Arizona)

Completed Funded Grant Activity:

2013-2016

Cardiovascular & Pulmonary Section, Home Care Section (APTA) $17,000

Exercise Training and Frontloading of Visits in Home Care for patients with Heart Failure – A Randomized Controlled Trial

Test the effectiveness of front-loading visits (more visits during the first 2 weeks) in patients with heart failure. My role as Co-Investigator is in the theoretical foundation, empirical methods, and data analysis; data is being collected at 3 locations throughout the US (Texas, St Louis, Arkansas).

Role: Co-Investigator (PI: Dias, Konrad; Nova Southeastern University & Maryville University)

2013

Merrimack Valley VNA $13,733

Care Path Development for Home Health Rehabilitation in Cardiopulmonary Conditions

Document the general model of existing practices for rehabilitation of patients with chronic cardiopulmonary conditions (specifically chronic heart failure (CHF) and chronic obstructive pulmonary disease (COPD). The final deliverable was educational programming to enable Home Health VNA rehabilitation staff to adopt and implement a recommended best practice Care Pathway.

Role: PI

2013

QinetiQ, Inc; Department of Defense $24,900

Laboratory Testing for a Remote Physiological Monitoring System

This was a subcontract flow through originating from the Department of Defense, US Army Research Office and through QinetiQ North America, Technical Services Group. This was phase two of a project (S51310000018240) to extend algorithms for human performance modeling of fatigue based on heart rate dynamics.

Role: Co-Investigator (Sub-contract PI)

S51310000018240 2011-2012

Qinetiq, Inc (through from Department of Defense) $14,900

Laboratory Testing of a Remote Physiological Fatigue Monitoring System

This was a subcontract flow through originating from the Department of Defense, US Army Research Office and through QinetiQ North America, Technical Services Group.

Role: Co-Investigator (Sub-contract PI)

Work Well Systems, Inc 10/31/08 – 04/30/09

Prediction of Metabolic Demand & Functional Capacity $10,000

To establish the conceptual basis and several practical approaches for predicting and/or measuring: 1. metabolic demands of occupational tasks; 2. metabolic capacities of workers; and 3. an index of the metabolic demand / metabolic capacity balance that can be used to make recommendations regarding risk of fatigue.

Role: PI

UML Proposal #07060204 01/15/07 – 05/31/07

Planning Systems, Inc. $14,000

Physiological Fatigue Monitoring System During Physical Activity
The purpose of this study was to test the validity of physiological measurements, position and activity recordings obtained by a garment based physiological monitoring system during physical activity.
Role: PI

UML Proposal #06-333 05/09/06 – 08/31/06
Foster – Miller Engineering, Inc. $12,500
Physiological Fatigue Monitoring System During Physical Activity
The purpose of this study was to test the validity of physiological measurements, position and activity recordings obtained by a garment physiological monitoring system during physical activity.
Role: PI

Project T06001108020007 07/01/05 – 06/30/07
Interdisciplinary Award – UMass Lowell Provost's Office $20,000
Disabilities Research Interdisciplinary Grant
The purpose of this project was to develop an interdisciplinary program for the prevention and treatment of disability with consideration to the interactions between personal attributes, clinical features, socioeconomic & working conditions.
Role: Director

International Joint Research Program 11/01/05 – 10/31/06
Pfizer Health Research Foundation $5000
International Survey of Cardiopulmonary Physical Therapy Practice & Education
The purpose of this research was to investigate practice patterns of cardiopulmonary physical therapy education internationally and to investigate the role that future physical therapists are being trained in cardiovascular and pulmonary health.
Role: Co – PI

Other Scholarly Products:

PhD / MS Degree Advising and Dissertation Committee

2008 – 2016	Naveed Zaidi, PhD in Biomedical Engineering (Advisor)
2013 – 2015	Britt Kostraba, PhD in Biomedical Engineering (Committee)
2012 - 2014	Vanessa Doulmas, PhD in Biomedical Engineering (Committee)
2010 - 2012	Jill Zeminiak, PhD in Biomedical Engineering (Committee)
2009 – 2010	Joshi Krishna, MS in Biomedical Engineering (Advisor)
2006 – 2007	Pranav Parikh, MS in Biomedical Engineering (Advisor)
2005 - 2007	Jeremy Bowman, MS in Biomedical Engineering (Advisor)
2005-2006	BongKyoo Choi, ScD in Work Environment (Committee)

Doctorate in Physical Therapy Research Project Advising (2003 - 2014)

2014 Elizabeth Carr, Kate Johnston, Brenton Kubic; *Impact of Exercise on the Functional Walk Distance (6 Minute Walk) in Patients with Chronic Heart Failure: A Systematic Review*
2014 Joy Seymour, Sarah Sullivan, Abigail White; *Influence of Anaerobic Threshold in Patients with Chronic Heart Failure: A Systematic Review*
2014 Danielle Bradley, Trevor Danton, Sean Jordan, Corey Peterson; *Examples of Prevention Only Treatable Diseases: A Guided Review*
2013 Courtney Brown, Rachel DeBlois, Timothy Desrochers; *Daily Metabolic Demands and Impact of Chronic Heart Failure Functional Impairments: Theoretical Development*
2013 Thomas Biggart; *Relationship between Bench Press and Push ups in Police Academy Cadets*
2012 Thomas Sniezek; *Pulse Transit Time Variability in Supine & Standing*
2012 Kim Como; *Ventilatory Response to Graded Exercise*
2012 Marielle Jensen-Battaglia; *Control as a Definition of Disability*
2010 Alana Runge; *Measuring Disability in Patients with Chronic Heart Failure: Are we missing the environment?*
2010 Kyle Coffey, Eric Reger, Megan Williams; *Transitional changes in chest wall motion from rest to exercise in patients with COPD: review and clinical implications.*
2009 Grant Patee, Shawn Regan, Kenneth Stokes; *Heart rate variability responses to soft tissue and joint mobilization to the thoracic spine.*
Co-Advisor with Dr. Connie Seymour
2008 Ryan Hurley, Sean Allen; *Influence of Autonomic State on Heart Rate Turbulence*
2007 Anne Walsh; *Methodological Considerations for Interpretation of Heart Rate Variability as a Prognostic Index Following Myocardial Infarction*
2007 Amy Benoit, Justin Chapman & Nikki Latta; *Stress, Burnout and Physiological Adaptations: Environmental and Individual Factors in Students*;
Co-Advisor with Dr. Barbara Cocanour
2006 Catherine Eria & Kathleen Rennie; *Effect of Inspiratory Muscle Training in Patients with Chronic Obstructive Pulmonary Disease: A Meta Analysis*
2004 Joseph Coughlin, Jennifer Wangia & Cynthia Whelan; *Inter rater Reliability and Validity of Maximal Inspiratory Pressure Measurement with a Magnehelic Gauge: A Simulation Study*
2003 Julie Attardo, Michelle Hoffman, Erica Keefe & Stephen Poulin; *Novel Approach for the Six-Minute Walk Test: A Simulation Study*

Continuing Education Workshops Organized:

2015 Electrocardiograph Interpretation
APTA of Massachusetts, Cardiopulmonary SIG, March 2015
2014 Home Health Cardiopulmonary Rehabilitation Care Pathway Introduction
Home Health VNA, Lawrence Massachusetts, May 2014
2013 Home Health Rehabilitation: Chronic Cardiopulmonary Conditions, a year in review;
Home Health VNA, Lawrence Massachusetts, May 2013
2012 Chronic Heart Failure: What, why and how to monitor in the home
Home Health VNA, Lawrence Massachusetts. September 2012

2009 *Chronic Heart Failure: Unified Physiological & Clinical Perspectives for Clinical Decisions.* Home Health Rehab Managers, Massachusetts

2009 *Job Stress and Heart Rate Variability Workshop,* a pre-conference workshop at the Fifth ICOH Work Environment and Cardiac Disease, Poland, September 27, 2009.

2007 *Customization of Rehabilitation for Medically Complex Patients,* for Home Health Rehab Managers, Inc at Caritas Norwood Hospital, Norwood, Massachusetts, March 2007.

2006 *Job Stress, Chronic Disease and Heart Rate Variability: Measuring a New Pathway of Work-related Chronic Disease Risk,* a Nordic Advanced Training Institute (NIVA) workshop at the National Institute of Occupational Health (AMI) in Copenhagen, Denmark, June 6-7, 2006.

2006 *Current Practice and Innovative Perspectives in Medical Complexity based on Pulmonary Conditions: Making Advanced Decisions*, Professional Health & Education Seminars
Wyndham Andover Hotel, Andover, MA January 28, 2006.

2006 *Current Practice and Innovative Perspectives in Medical Complexity based on Cardiac Conditions: Making Advanced Decisions*, Professional Health & Education Seminars
Crowne Plaza Hotel, Nashua, New Hampshire, January 14, 2006.

2005 *Current Practice and Innovative Perspectives in Medical Complexity based on Pulmonary Conditions: Making Basic Decisions*, Professional Health & Education Seminars
Crowne Plaza Hotel, Hartford, CT, April 29, 2006; Wyndham Andover Hotel, November 5, 2005.

2005 *Current Practice and Innovative Perspectives in Medical Complexity based on Cardiac Conditions: Making Basic Decisions*, Professional Health & Education Seminars
Crowne Plaza Hotel, Hartford, CT, April 30, 2006; Crowne Plaza Hotel, Nashua NH, October 22, 2005.

2005 *Rehabilitation for the Medically Complex Patient*, Genesis Health Care, Inc Eight – 2 day presentations at Genesis Health Care facilities in Massachusetts, New Hampshire, Connecticut, Pennsylvania, Ohio, North Carolina, Virginia, Florida between January 2004 and August 2005

Consultative and Advisory Positions Held:

2006 – Present Research Affiliate
Center for the Promotion of Health in the New England Workplace
University of Massachusetts Lowell

2014 - 2015 Associate Editor, and Editorial Board
PT Now (Cardiovascular Tests and Measures)

2010 and Physical Therapy **Invited Participant**, *Development of Evidence-Based Documents GRADE Methodology Workshop* at the American Association to develop a framework and process for evidence based documents. Alexandria, Virginia, November 2010

Service to the University/College/School on Committees/Councils/Commissions:

College or University Level

2016 – Present	Institutional Review Board, Plymouth State University
2015 – Present	Council of Chairs, Plymouth State University
2016 – 2017	Chair, Council of Chairs, Plymouth State University
2016 – 2017	Graduate Policy & Bylaws Committee, Plymouth State University
2015 – 2017	Strategic Cluster Steering Committee, Plymouth State University
2015 – 2017	Search Committees, Plymouth State University
	Athletic Trainer Faculty, Health & Human Performance
	Exercise Physiology Faculty, Health & Human Performance
	Digital Projects Librarian, Lamson Library and Learning Commons
2015 – 2017	College of Education, Health & Human Services Council
	Plymouth State University
2008 – 2013	School of Health & Environment Leadership Team
	Bi-Weekly meetings for College policy, procedure, assessment
	University of Massachusetts Lowell
2008 – 2010	Master Planning Committee – Campus Wide
	University of Massachusetts Lowell
2008 – 2009	South Campus Space Committee
	University of Massachusetts Lowell
2009	School of Health & Environment, Dean Search Committee
	University of Massachusetts Lowell
2008	Vice Provost for Undergraduate Education, Search Committee
	University of Massachusetts Lowell
2007 –2008	Director, General Education Committee
	University of Massachusetts Lowell
	Included writing a section for NEASC Accreditation
2006 – 2008	Member, Undergraduate Policy Committee
	University of Massachusetts Lowell
2003 – 2008	Senator, Faculty Senate
	University of Massachusetts Lowell
2006 – 2007	Member, General Education Committee
	University of Massachusetts Lowell

Department Level

2016 – 2017	Chair, Faculty Search Committee
	Plymouth State University
2014 – 2015	DPT Student Advisor, University of Massachusetts Lowell

2012 – 2014	Chair, Faculty Search Committee (2 Searches) University of Massachusetts Lowell
2008 – 2015	DPT Curriculum Committee University of Massachusetts Lowell
2008 – 2015	Exercise Physiology Curriculum Committee University of Massachusetts Lowell
2010 – 2011	Faculty Search Committee University of Massachusetts Lowell
2008 - 2009	Chair, Faculty Search Committee University of Massachusetts Lowell
2006 – 2008	Chair, Exercise Physiology Curriculum Committee University of Massachusetts Lowell
2003 – 2008	Research Coordinator University of Massachusetts Lowell
1998 – 2006	Member, Exercise Physiology Curriculum Committee University of Massachusetts Lowell

Honors and Awards

2018	**Linda Crane Lecture Award**: Presented at Combined Sections Meeting February 2018 Lecture: Synthesis: Causal Models, Causal Knowledge Awarded to acknowledge an individual who has made outstanding and enduring contributions to the practice of physical therapy as exemplified in the professional career of Linda Crane
2012	**Dufault Lecture** (Invited) University of Massachusetts Medical Center Fatigue: A symptom of morbidity, a sign of life
2010	**Teaching Award**, Department of Physical Therapy & Exercise Physiology University of Massachusetts Lowell
2008	**Teaching Excellence Award, UMass Student Government Association** University of Massachusetts Lowell
2006	**Teaching Excellence Award, UMass Student Government Association** University of Massachusetts Lowell
2005	**Third Place Recognition for Scientific Communication,** National Conference of Fisioterepia, Madrid, Spain
2004	**Teaching Award**, Department of Physical Therapy & Exercise Physiology University of Massachusetts Lowell
2004	**Teaching Excellence Award, UMass Student Government Association** University of Massachusetts Lowell

Continuing Education Attended:

APTA Learning Center
Innovative Curricular Models for Physical Therapy Education (Online Course), May 2016

CAPTE Developing Program and Self Study Workshop, Baltimore, MD, Sept – Oct 2015

Combined Sections Meetings Attended (Cardiopulmonary Platform and Poster Sessions)
2016 – Anaheim, California
2015 – Indianapolis, Indiana
2011 – New Orleans, Louisiana

APTA Education Section – Educational Leadership Conference
2015 – Baltimore, MD

Continuing Education Courses - University of Massachusetts Lowell
Discrete Structures (Computational Mathematics) – January – May 2013

Continuing Education Courses – Coursera Online
Courses offered through the Coursera Platform from faculty at respective institutions

2016
Johns Hopkins Bloomberg School of Public Health (Data Science Specialization)
Statistical Inference, Verified Certificate
Regression Models, Verified Certificate
Reproducible Research, Verified Certificate

2015
Introduction to Mathematical Philosophy, Ludwig-Maximilians-Universität
Statement of Accomplishment

Johns Hopkins Bloomberg School of Public Health (Data Science Specialization)
Exploratory Data Analysis with R, Verified Certificate
Getting & Cleaning Data with R, Verified Certificate

2014
Johns Hopkins Bloomberg School of Public Health (Data Science Specialization)
Data Scientist Toolbox, Verified Certificate
R Programming, Verified Certificate

Genes and the Human Condition, University of Maryland, Statement of Accomplishment

CITI Research Training Human Research Curriculum Certified
Since 2007 with recertification in 2010, 2013, 2016

Current Teaching Responsibilities in the Entry-level Physical Therapy Program (in sequence, by quarter or semester):

Summer, Term 1

PTH6110 Clinical & Functional Anatomy
PTH6111 Clinical Physiology

Fall, Term 2
PTH6124 Critical Inquiry I: Causation and inference
PTH6122 Dynamic Systems I

Spring, Term 3
PTH6133 Dynamic Systems II: Environmental interactions

Spring, Term 6
PTH8235 Patient / Client Management V

Graduate Adjunct Teaching

2011-Present Quantitative Physiology; BMBT5740 Biomedical Engineering UMass Lowell
2015 – Present PT117 Patient / Client Management: Cardiopulmonary; DPT Samuel Merritt University

Past Teaching

1998-2015 Cardiopulmonary Physical Therapy with Lab; 34.612, 34.614; DPT
2011-2015 Medical / Surgical: Pathology; 34.609; DPT
2010-2015 Physiological Dynamics; 38.501; PhD in Biomedical Engineering
2009-2015 Research Methods in Physical Therapy; 34.616; DPT
2006 Research Methods in Physical Therapy; 34.616; DPT
2006-2015 Biomedical Engineering Integrative Physiology Lab Experience; IB550
2006 Models & Measurements of Disability; 34.510; Graduate level elective

Undergraduate
2008 – 2014 Exercise Prescription & Programming
2003 – 2014 Directed Study in Health Promotion
2012 Kinesiology Lab (Fall semester)
2012 Pharmacology (Summer session)
2011 Exercise Physiology (Summer Session)
2010 Anatomy & Physiology II with lab (Middlesex Community College)
2010 Anatomy & Physiology I with lab (Middlesex Community College)
2006 – 2011 Advanced Study in Exercise Physiology (Summer Session)
2008 – 2010 Senior Seminar in Exercise Physiology
1998 – 2009 Exercise Physiology with Lab; (Summer Session)
2003 – 2008 Exercise Physiology I with Lab
1999 – 2006 Independent Study in Exercise Physiology
1998 – 2003 Kinesiology with Lab