

CURRICULUM VITAE

Updated as of November 30, 2020

Sean M. Collins, PT, ScD

Email: smcollins1@plymouth.edu

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

Education:

University of Massachusetts, Lowell, MA
September 1997 to May 2003
College of Engineering; 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:

New Hampshire, Office of Licensed Allied Health Professionals
Physical Therapist License Number: 2202 (ACTIVE)
Massachusetts, Board of Allied Health Professions
Physical Therapist, Licensed from 1995 - 2016 (INACTIVE)

Certifications:

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

Work Experience

Employment and Positions Held:

Academic Positions

2020 - present	Professor (Tenured) of Physical Therapy Health & Human Enrichment Cluster Plymouth State University, Plymouth, NH
2015 - 2020	Founding Chair & Program Director of Physical Therapy Professor (Tenured) Department of Physical Therapy Plymouth State University, Plymouth, NH
2015 - 2019	Adjunct Professor of Physical Therapy Department of Physical Therapy Samuel Merritt University, Oakland, CA PT717 Patient / Client Management: Cardiopulmonary
2016 - 2018	Adjunct Professor of Biomedical Engineering Biomedical Engineering Program University of Massachusetts Lowell BMBT5750 Quantitative Physiology
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

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 Initiated special sections on Social Determinants of Health and Applied Physiology
2015-2016	Acting Editor-in-Chief, Cardiopulmonary Physical Therapy Journal Volume 26, Issue 4; Volume 27, Issue 1
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:

2020 - Present	Member, American Statistical Association
2013 - Present	Member, American Physiological Society Teaching of Physiology Section
2012 - 2020	Member, Philosophy of Science Association
2005 - Present	Member, Human Factors & Ergonomics Society
1992 – Present	Member, American Physical Therapy Association

Peer Reviewed Publications:

- 2020 Shoemaker MJ. Heick J. Dias K. Lefevbre K. Collins SM. Physical Therapy for Patients with Chronic Heart Failure: A Clinical Practice Guideline. *Physical Therapy Journal*. 2020, 100(1): 14–43, <https://doi.org/10.1093/ptj/pzz127>
- 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*. 2017, 28(2):63-71.
- 2016 Zaidi SN. Collins SM. Orthostatic stress and area under the curve of photoplethysmography waveform. *Biomedical Physics and Engineering Express*. 2016, 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). 2016. <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: 10.2540/16501977-0658
- 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:

- 2019 Caprio K, Kase S, Sawka M, Wache P, Collins SM. Physical Therapy Diagnosis in Patients with Chronic Heart Failure: A Causal Network View. *Cardiopulmonary Physical Therapy Journal*: 2019, 30(1) (Online Abstracts)
- 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):

- 2019 Kendall EK, Collins SM, Pittman J, Halsnes J, Enright K. Postural Orthostatic Tachycardia Syndrome and Late Onset Ehlers-Danlos: A Case Example. APTA Combined Sections Meeting 2019. Washington DC.
- 2017 Collins SM, Legacy K. Causal models in physical therapy education and practice. Educational Leadership Conference. 2017. Baltimore Maryland.
- 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)

- 2019 Collins SM. Paz, J. Mechanical Ventilation, in *Acute Care Handbook for Physical Therapists*, 5th Edition, J Paz & M West (eds), Elsevier. 2019.
- 2019 Dias K. Collins SM. Cardiac System, in *Acute Care Handbook for Physical Therapists*, 5th Edition, J Paz & M West (eds), Elsevier. 2019.
- 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).

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, March 2005

Completed Funded Grant Activity:

	2015 -2019
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, Northern Arizona University, Flagstaff, Arizona)	
	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)	
	2011-2012
S51310000018240	\$14,900
Qinetiq, Inc (through from Department of Defense)	
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 Activities:

PhD / MS Degree Advising and Dissertation Committee

(Unless otherwise noted, at University of Massachusetts Lowell)

2019 - Present	Karin Steel, PhD in Physical Therapy (Committee Content Expert) Nova Southeastern University
2013 - 2017	Konrad Dias, PhD in Physical Therapy (Committee Content Expert) Nova Southeastern University
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 Snizek; 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:

- 2018 Pain: A matter of the heart, New Hampshire American Physical Therapy Association, April 2018
- 2018 Cardiopulmonary Workshops, Plymouth State University DPT Program
- 2017 Advanced Differential Diagnosis, New Hampshire Associate of Rehabilitation Administrators, April 1, 2017
- 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 - 2018	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	Invited Participant , <i>Development of Evidence-Based Documents and GRADE Methodology Workshop</i> at the American Physical Therapy 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

2019 – Present	Plymouth State University, AAUP Executive Committee – Member At Large
2016 – Present	Institutional Review Board, Plymouth State University
2019 – 2020	Plymouth State University, Academic Unit Council
2018 – 2019	Provost Council
2018 – 2019	Health & Human Enrichment Cluster, Co-Leader
2018 – 2019	Co-Leader, Health & Human Enrichment Cluster
2015 – 2018	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 Leadership Team, University of Massachusetts Lowell
2008 – 2010	Master Planning Committee – Campus, 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

2018 – 2019	Faculty Search Committee, DPT Program Plymouth State University
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
2003	Lorin E. Kerr Award, for Excellence in Ergonomics Research University of Massachusetts Lowell, Department of Work Environment

Continuing Education Attended (Last 5 Years):

MedBridge

Musculoskeletal Radiology and Imaging (4 Hours), 07/27/2020
Evidence-Based Examination of the Hip (6.5 Hours), 07/07/20
Evidence-Based Examination and Treatment of the Pelvis (2.75 Hours), 07/07/20
Dysfunctional Breathing (1.75 Hours), 11/16/19
Evidence-Based Examination of the Knee and Thigh (6.5 Hours), 11/15/19
Orthopedic Clinical Examination, Diagnosis and Treatment (3.25 Hours), 11/10/19
Conservative Management of the ACL Deficient Knee (1.5 Hours)
Wound Care Basic Training Part 1: Examination (2 Hours), 03/12/19
Wound Care Basic Training Part 2: Treatment (2 Hours), 03/12/19

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)
2018 – New Orleans, LA; 2016 – Anaheim, California; 2015 – Indianapolis, Indiana

APTA Education Section – Educational Leadership Conference

2015 – Baltimore, MD; 2017 - Columbus, OH

Continuing Education Courses – Pepperdine University

Formal Systems – A Logical Approach to Discrete Math (online) – April – June 2020

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

2020

Anatomy: Musculoskeletal and Integumentary Systems – University of Michigan
Anatomy: Cardiovascular, Respiratory and Urinary Systems – University of Michigan

2017

Introduction to Programming the Internet of Things (IoT), University of California Irvine
 Arduino Programming
 Arduino Interfacing
 Raspberry Pi / Python Programming
 Raspberry Pi Interfacing and Networking

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

CITI Research Training Human Research Curriculum Certified

Since 2007 with recertification in 2010, 2013, 2016, 2019

Teaching

Current Teaching Responsibilities in the Entry-level Physical Therapy Program:

Summer, Term 1

PTH6110 Clinical & Functional Anatomy (course instructor & coordinator since 2017)

PTH6111 Clinical Physiology (course instructor & coordinator since 2017)

PTH6116 Integrated Clinical I (logic, probability & inference) (since 2020)

Fall, Term 2

PTH6124 Critical Inquiry I: Causation and inference (Since 2017)

PTH 8324 Capstone I (Since 2019)

Spring, Term 6

PTH8235 Patient/Client Management V (cardiopulmonary & complex medical)(Since 2018)

PTH 8334 Capstone II (Since 2020)

Adjunct Teaching

2015 - 2019 PT117 Patient / Client Management V: Cardiopulmonary; DPT
Samuel Merritt University

2011-2018 Quantitative Physiology; BMBT5740 Biomedical Engineering
UMass Lowell

Teaching History

1996-2015 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

2020 - Anatomy & Physiology I (Plymouth State University)

2015 - 2017 Physiology of Exercise (Plymouth State University)

2008 - 2014 Exercise Prescription & Programming

2003 - 2014 Directed Study in Health Promotion

2012 Kinesiology Lab (Fall semester)

2012 Pharmacology (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 I with Lab

1999 - 2006 Independent Study in Exercise Physiology

1998 - 2003 Kinesiology with Lab