

# Charity L. Lane

## Curriculum Vitae

Phone: 813-503-7109

Email: charitylane09@gmail.com

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### Education

Ph.D.	Health and Human Performance	Concordia University Chicago, IL	2022
M.S.	Exercise and Nutrition Science	The University of Tampa, FL	2015
M.A.	Human Relations	University of Oklahoma, OK	2006
B.S.	Psychology	Old Dominion University, VA	2003

### Certifications (current)

Biomedical Research & RCR (CITI)

Certified Personal Trainer (ACTION)

Group Fitness Specialist (ACE)

Fitness Nutrition Specialist (ACE)

Adult First Aid/CPR/AED (American Red Cross)

Fundamentals of Project Planning and Management (UVA)

Project Management for Clinical Research Professionals – course (ACRP)

### Positions (current)

Vert Mooney Foundation (DBA U.S. Spine & Sport Foundation), San Diego, CA and Tampa, FL

2016-present Director of Program Development

2018-present Member, Board of Directors

Services: Co-Investigator overseeing the design, testing, and implementation of strategies improving physical function and quality of life in special populations.

BodyCarvers, Tampa, FL

2014-present Founder

Services: Provide a comprehensive approach to assist clients in achieving their fitness and wellness goals combining coaching, nutritional consulting, and emotional motivation.

Mojave Group, Tampa, FL

2013-present Business Development and Marketing Consultant

Services: Manage business development and marketing efforts for this federal IT focused firm.

### Relevant Positions (past)

Morsani College of Medicine, University of South Florida, Tampa, FL

School of Physical Therapy & Rehabilitation Science

Lincoln Endowed Chair & Center for Neuromusculoskeletal Research

2016-2018 Head of Operations

2015-2018 Project Manager and Lead Exercise Specialist

### Other Positions (past)

2012-2013 Director, Federal Sales 4G Communications, Tampa, FL

2011-2012 Senior Manager, Business Development, Technical and Project Engineering, Tampa, FL

2010-2011 Director of Marketing & Communications, ByLight Professional IT Services, Arlington, VA  
2007-2010 Business Development Coordinator, County Executives of America, Washington, DC

### **Teaching**

#### Student Mentorships

Co-Mentor, Doctor of Physical Therapy Capstone Project, University of South Florida, Fall 2016-2018.

#### Research Internships

Coordinator, Lincoln Endowed Chair Research Program, Center for Neuromusculoskeletal Research, School of Physical Therapy & Rehabilitation Sciences, Morsani College of Medicine, University of South Florida, 2017-2018.

#### Guest Lecturer

National University of Health Sciences

Ketogenesis, modified ketogenesis and low carbohydrate diets for obesity management and performance in First Responders. Sports Medicine Interns, Pinellas Park, FL, February, 2019.

National University of Health Sciences

Health considerations for management of LBP with first responders as an example: Obesity management, exercise and nutrition, prevention. Sports Medicine Interns, Pinellas Park, FL, February, 2020.

National University of Health Sciences

Health Considerations when working with physique athletes. Sports Medicine Interns, Pinellas Park, FL, March, 2021.

National University of Health Sciences

Health Considerations when working with physique athletes. Sports Medicine Interns, Pinellas Park, FL, May, 2021.

### **Research and Creative Activity**

#### **Research** (grants, contracts, donations, and other extramural support)

Role: Co-Investigator, Project Manager and Study Coordinator

Title: A comparison of the Firefighter Candidate Physical Ability Test (CPAT) to predesigned weight lifting exercises using electromyography (EMG) and Motion analysis.

Sponsor: Internally funded by the USF Lincoln Endowed Chair Research Program

Type: Internal - USF Foundation

Total Amount Funded: \$50,000

Project Period: March 2017- June 2017

Purpose: To compare the firefighter Candidate Physical Ability Test (CPAT) to a set of Olympic lifts (heavily focused on the posterior chain) and functional movements, in order to help shape a strength training regimen mimicking the use of muscle groups activated during the CPAT.

Role: Project Leader

Title: Critical assessment of management of low back pain in individuals with lower extremity amputation

Sponsor: Lincoln College Education and Research Fund

Type: Foundation (non-refereed - unrestricted research gift)

Total Amount Funded: \$50,000

Project Period: January 2016 - December 2017

Purpose: To critically assess the management of low back pain in individuals with lower extremity amputation in order to develop resources for healthcare providers and patients.

Role: Project Leader and Lead Exercise Specialist

Title: Worksite exercise interventions for low back injury prevention in firefighters

Sponsor: US Department of Homeland Security, Federal Emergency Management Agency, Assistance to Firefighters Grant Program, FY 2013 Fire Prevention and Safety Grants (EMW-2013-FP-00723)

Type: Federal (refereed)

Total Amount Funded: total award including 5% match from Florida Chiropractic Foundation for Education and Research: \$1,332,106 (\$898,656 direct, \$433,450 indirect)

Project Period: August 1, 2014 - April 30, 2018

Purpose: To compare the effectiveness of 2 worksite exercise interventions relative to control on lost workdays, incidence of low back pain, physical function, quality of life, and costs related to low back injury and illness in firefighters.

Role: Head of Operations

Sponsors: Lincoln College Education and Research Fund; Florida Chiropractic Foundation for Education and Research

Title: Head of Operations support - Lincoln Chair Research Program

Type: Foundation (non-refereed - unrestricted research gift)

Total Amount Funded: \$100,000

Project Period: April 2016 - June 2018

Purpose: To conduct human subjects research that advanced the understanding of spinal biomechanics and chiropractic care.

Role: Project Leader

Title: Implementation of a fitness and injury prevention program for firefighters

Sponsor: City of St. Petersburg, FL (via U.S. Department of Homeland Security, Federal Emergency Management Agency, FY 2016 Assistance to Firefighters Grants

Type: City (non-refereed - contract)

Total Amount Funded (for contract): \$95,750

Project Period: January 2018 - November 2018

Purpose: To implement advanced peer fitness training certifications and equip station gyms.

Role: Co-Principal Investigator and Project Leader

Title: Implementation of a Regional Firefighter Wellness Initiative

Sponsor: US Department of Homeland Security, Federal Emergency Management Agency, Assistance to Firefighters Grant Program, FY 2017 Fire Prevention and Safety Grants (EMW-

2017-FP-00711)

Type: Federal (refereed)

Total Amount Funded: total project cost \$1,227,681 (federal share \$1,169,220; match \$58,461)

Project Period: September 14, 2018 - September 13, 2021

Purpose: To implement behavioral change interventions in firefighter participants, via on site and telehealth consultative and educational delivery mechanisms.

## **Publications**

### Book Chapters

1. Lane CL, Mayer JM. Chapter: Worksite exercise programs: Benefits and strategies. In APA Handbook of Sport and Exercise Psychology, Volume 2: Exercise Psychology. editors: Labbé E, Petruzzello S. American Psychological Association, Washington, 2019; 569-586.

### Articles (refereed)

1. Lane CL, Mayer JM. Medical report: Posterior chain exercises for prevention and treatment of low back pain. ACSM Health & Fitness Journal, 2017; Jul/Aug:46-8.
2. Lane CL, Hardwick D, Janus TP, Chen H, Lu Y, Mayer JM. Comparison of the firefighter Candidate Physical Ability Test to weight lifting exercises using electromyography. Work, 2019; vol. 62(3), 459-467.
3. Mayer, JM, Lane, CL, Brady, O, Henian, C, Yuanyuan, L, Johnson, BVB & Dagenais, S. Comparison of supervised and telehealth delivery of worksite exercise for prevention of low back pain in firefighters: A cluster randomized trial. Journal of Occupational and Environmental Medicine, 2020; vol. 62(10), e586-e592.
4. Lane CL, Melton B. Sleep improvement programs for occupational firefighters: A critically appraised topic. National Strength and Conditioning Association, TSAC Report, 2021, vol. 60, 26-28.
5. Lane CL, Brady O, Mayer JM. Comprehensive assessment of implementation factors related to worksite exercise in firefighters. Journal of Occupational and Environmental Medicine, 2022; vol. 64(1), e13-1e19.

### Articles (non-refereed)

1. Mayer JM, Lane CL. Can technology be used to enhance exercise outcomes? FCA Journal, 2016; January:20-1.
2. Lane CL, Mayer JM. Why you should properly train the posterior chain. FCA Journal, 2016; April:24-6.
3. Mayer JM, Lane CL. Lincoln College Endowed Chair in Chiropractic & Biomechanical Research - annual update 2016. FCA Journal, 2016; July:24-5.
4. Lane CL, Mayer JM. Firefighter wellness and fitness programs in the State of Florida. FCA Journal, 2016; October.

5. Lane CL, Mayer JM. Firefighter wellness and fitness programs in the State of Florida. Florida Fire Service Magazine, 2016; October:10-11.
6. Lane CL, Mayer JM. Current perspectives on exercise management of back pain in lower extremity amputees. FCA Journal, 2017; January:22-4.
7. Lane CL, Mayer JM. Matching exercise programs to job demands. FCA Journal, 2017; October.
8. Lane CL, Mayer JM. Chiropractic physicians as leaders in first responder wellness. FCA Journal, 2018; January.
9. Mayer JM, Andres A, Lane CL. Implementation of a regional firefighter wellness initiative during a global pandemic. Fire Engineering Magazine, 2021; vol. 174(9): 2-6.

#### Technical Reports

1. Mayer JM, Lane CL, Dagenais S, et al. Final performance report: Worksite exercise interventions for low back injury prevention in firefighters (EMW-2013-FP-00723); submitted to sponsor (FEMA, Department of Homeland Security) on October 30, 2018.

#### Other Scholarly Publications

1. Lane CL, Mayer JM. Firefighters' Guide to Health and Wellness, 2016.
2. Mayer JM, Santos N, Janus T, Brady O, Lane CL. Exercise Training Manual: Back and Core Exercises for Firefighters. 3rd Edition. University of South Florida, Tampa, FL, 2017;1-22.
3. Lane CL, Mayer JM. Web-Based Exercise Instructional Manual. Excellcior LLC, Tampa, FL, 2018.
4. Lane CL, Mayer JM. Tactical Athlete Exercise Manual. Excellcior LLC, Tampa, FL, 2019.
5. Lane CL, Mayer JM. Tactical Athletes' Guide to Wellness and Fitness. Excellcior LLC, Tampa, FL, 2019.
6. Mayer JM, Lane CL. Tactical Athlete Exercise Manual: Low Back Injury Prevention. US Spine & Sport Foundation, San Diego, CA, 2019.
7. D'Agostino D, Lane CL. KETO for Firefighters: Why is it Important? US Spine & Sport Foundation, San Diego, CA, 2021.

#### Software and Other Creative Activities

1. Lane CL, Mayer JM. Firefighter Functional Task Questionnaire. Tampa, FL, 2018.
2. Lane CL, Mayer JM. Tactical Athlete Exercise Habit Survey. Tampa, FL, 2019.

3. Mayer JM, Lane CL. First Responder Wellness Initiative educational series and resource guide. [www.firstresponderinitiative.com](http://www.firstresponderinitiative.com). San Diego, CA, 2019-2020.

## **Presentations**

### Plenary/Platform (invited)

1. Mayer JM, Lane CL. Risk management considerations for telehealth delivery of exercise. FCA Southeast Convention, Miami, FL, June 2016.
2. Mayer JM, Lane CL. Worksite exercise interventions for low back injury prevention in firefighters. FEMA Assistance to Firefighters Grants Research & Development Annual Meeting, San Antonio, TX, August 2016.
3. Lane CL, Mayer JM. First responder wellness and fitness programs: Practical applications and future directions. Firefighter Safety and Health Conference, Florida Fire Chiefs Association, Orlando, FL, December 2016.
4. Mayer JM, Lane CL. First responders as tactical athletes: Occupational health considerations. University of South Florida Occupational Medicine Residency Program, Tampa, FL, September 2017.
5. Mayer JM, Lane CL. Back injury prevention in firefighters: Optimizing fitness programs to match job demands. Firefighter Safety and Health Conference, Florida Fire Chiefs Association, December 2017.
6. Lane CL. Exercise Science Associations. North American Spine Society Evidence and Technology Spine Summit, Park City, UT, February 2019.
7. Lane CL. General Health Considerations for Nutritional Management: Obesity Management, Exercise and Nutrition, Prevention. North American Spine Society Evidence and Technology Spine Summit, Park City, UT, February 2019.
8. Mayer JM, Lane CL, Verna J. Firefighter Wellness Programs: Past, Present, & Future. Improving health & resiliency of those who protect us. San Bernardino County Fire Chiefs Association Monthly Meeting (virtual). January 2021.
9. Mayer JM, Verna JL, Lane CL. Implementation of a Firefighter Wellness Initiative during Record Wildfires and a Global Pandemic. American Chiropractic Colleges - Research Agenda Conference. San Diego, CA. March 2022 (accepted for presentation).

### Plenary/Platform (other)

1. Lane CL, Campbell B, D'Agostino D, Mayer JM. Sports Nutrition Expert Panel. University of South Florida, Tampa, FL, September 2016.
2. Lane CL, Diulus, C, Gherscovici E, Stout A, Tazuell R, Mayer JM. Nutrition considerations you need to know for spine disorders - CME Webinar. North American Spine Society, May 2018.

3. Lane CL, Brown, K, Mayer JM. Firefighter Wellness Initiative - Webinar: Functional Fitness for Injury Prevention. US Spine & Sport Foundation, San Diego, CA, 2021.
4. Lane CL (moderator), D'Agostino D, Mayer JM. Firefighter Wellness Initiative - Webinar: Ketogenic & Low Carbohydrate Nutrition. US Spine & Sport Foundation, San Diego, CA, 2021.
5. Lane CL (host), Ikede A, Hansen L, Mayer JM. Firefighter Wellness Initiative - Webinar: Fatigue Countermeasures and Sleep's Impact on Performance and Reaction Times in Firefighters. US Spine & Sport Foundation, San Diego, CA, 2021.

Plenary/Platform (refereed - with concurrent published abstract)

1. Lane CL, Janus, TJ, Brady, O'Dane, Mayer, JM. Factors Influencing Firefighters' Perceptions of Worksite Exercise. American College of Sports Medicine Annual Meeting, Minneapolis, MN, May 2018.

Poster (refereed - with concurrent published abstract)

1. Lane CL, Mayer JM. Considerations for telehealth delivery of therapeutic exercise by federal health professionals. Society of Federal Health Professionals - AMSUS Annual Meeting, National Harbor, MD, November 2016.
2. Mayer JM, Lane CL, Highsmith MJ. Current perspectives in management of low back pain in lower extremity amputees. Society of Federal Health Professionals - AMSUS Annual Meeting, National Harbor, MD, November 2016.
3. Lane CL, Mayer JM. Factors impacting adherence to worksite exercise programs in firefighters. Art and Science of Health Promotion Conference. Colorado Springs, CO, March 2017.
4. Mayer JM, Lane CL. Departmental variations in wellness, fitness, and occupational injury characteristics of firefighters. American Occupational Health Conference, American College of Occupational and Environmental Medicine, Denver, CO, April 2017.
5. Lane CL, Mayer JM. Departmental variations in wellness and fitness characteristics of firefighters. American College of Sports Medicine Annual Meeting. Denver, CO, May 2017.
6. Lane CL, Brady O, Mayer JM. Prevention strategies for low back pain in the military: A systematic review. Society of Federal Health Professionals - AMSUS Annual Meeting, National Harbor, MD, November 2017.
7. Lane CL, Mayer JM. Comparison of Core Muscle Activity During Occupational Tasks and Weightlifting Exercises in Firefighters. Art and Science of Health Promotion Conference. San Diego, CA, March 2018.

8. Lane CL, Mayer JM. Relationship between injuries, fitness, and dietary habits in firefighters. Art and Science of Health Promotion Conference. San Diego, CA, March 2018.
9. Mayer JM, Brady O, Lane CL. Worksite interventions for prevention of occupational low back pain: A systematic review. American Occupational Health Conference, American College of Occupational and Environmental Medicine, New Orleans, LA, April 2018.
10. Lane CL, Brady O, Janus T, Mayer JM. Factors influencing firefighters' perceptions of worksite exercise. American College of Sports Medicine Annual Meeting, Minneapolis, MN, June 2018.
11. Lane CL, Mayer JM. Worksite exercise adherence in firefighters: Findings during a global pandemic and record wildfire season. American College of Sports Medicine Annual Meeting and World Congress, San Diego, CA, May 2022 (accepted for presentation).

Poster (other)

1. Oawster M, Whelchel J, Gartman G, Lane CL, Santos N, Janus T, Mayer JM. Relationship between dietary habits and anthropometric, injury, and fitness characteristics of firefighters. USF Health Research Day, Tampa, FL, February 2018.

**Scientific Task Forces, Guideline Committees, and Related Scholarly Activities**

- 2017-2018      Research Committee Member, School of Physical Therapy & Rehabilitation Sciences, University of South Florida, Tampa, FL.
- 2017-2020      Nutrition Considerations Program Development Committee: North American Spine Society.

**Professional Service**

- 2011-2016      Young AFCEAN, AFCEA Pelican Chapter, Tampa, FL
- 2012-2014      Vice President (Founding Board), Women In Defense Tampa Bay, Tampa, FL
- 2015              Intern Manager, Performance Compound, Tampa, FL
- 2016-present   Board of Directors, Vert Mooney Research Foundation, San Diego, CA

**Professional Memberships (active)**

- Association of Clinical Research Professionals (ACRP)
- American College of Sports Medicine (ACSM)
- Florida Chiropractic Association (FCA)
- National Strength and Conditioning Association (NSCA)