

Lincoln Chair Chiropractic Research Program: ANNUAL UPDATE

July 1, 2015 through June 30, 2016

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THE RESEARCH PROGRAM OF THE LINCOLN COLLEGE ENDOWED CHAIR IN CHIROPRACTIC & BIOMECHANICAL RESEARCH OF THE UNIVERSITY OF SOUTH FLORIDA is currently in its ninth year of operations, and remains the only endowed chiropractic research program at a college of medicine within the United States.

The research program of the Lincoln College Endowed Chair in Chiropractic & Biomechanical Research of the University of South Florida is currently in its ninth year of operations, and remains the only endowed chiropractic research program at a college of medicine within the United States. As mentioned in previous annual updates, this unique arrangement provides an unmatched opportunity to foster interprofessional research partnerships and serves as an excellent platform from which to conduct chiropractic research. The program's major achievements from July 1, 2015 through June 30, 2016 are highlighted below.

We expanded the program's leadership team. In December 2015, Charity L. Lane, MS, MA, CPT, FNS joined our team bringing a highly complementary skill set to the program. She has unparalleled combined expertise in wellness, fitness, federal contracting, and research, and is a nationally ranked bodybuilder. She has quickly grown into an instrumental role for program and now serves as its Project Leader. Her addition to the leadership team has opened new doors for program growth and is critical to

help rapidly transform the program into one that will be groundbreaking. See our website (<http://health.usf.edu/medicine/lincolnchair/index.htm>) for her biographical sketch.

We started data collection for the FEMA-funded grant, "Worksite exercise interventions for low back injury prevention in firefighters."

In August 2014, we received a \$1.322 million federal research grant from FEMA, US Department of Homeland Security, including a 5% extramural match from existing funds donated by the Florida Chiropractic Foundation for Education and Research (FCF). This grant¹, the third in a series of grants funded by FEMA to our group^{2,3}, represents FEMA's largest ever single commitment of funding for low back injury prevention research. Firefighters from four fire departments in Florida, including Hillsborough County Fire Rescue, St. Petersburg Fire & Rescue, Tampa Fire Rescue, and Temple Terrace Fire Department, are participating in the grant.

We laid the framework for expanding our First Responder Wellness Initiatives. Our intent is

to provide first responders with a framework to live by that will keep them healthy, prevent injury, and prolong their careers. We are adamant about giving back to our firefighters, military personnel, and other first responders who selflessly protect our nation and communities. Our current FEMA grant will lay the groundwork for widespread implementation of back injury prevention programs and provide useful information for our planned comprehensive First Responder Wellness Initiatives. We will present at the Florida Firefighter Safety and Health conference later this year on the topic of first responder wellness and fitness programs⁴. Stay tuned for the inevitable growth of these initiatives.

We completed work on the DOD-funded grant, "Reduction of risk for low back injury in theater of operations." This research grant demonstrated that a high intensity progressive resistance exercise program for the lumbar extensors is effective for improving back muscular capacity in US Army Soldiers. Our peer-reviewed manuscript was accepted for publication in Military Medicine based on findings of this grant⁵.

We initiated the project, "Critical assessment of management of low back pain in individuals with lower extremity amputation."

Through a donation from the Lincoln College Education and Research Fund (LCERF), we started this new line of work aimed at critically assessing the management of low back pain (LBP) in individuals with lower extremity amputation in order to develop resources for healthcare providers and patients⁶. This project will address major gaps in knowledge exist related to managing LBP in individuals with lower extremity amputation through an interprofessional team from our group, the U.S. Department of Veterans Affairs, and National University of Health Sciences.

We are building on our Telehealth Initiative.

Earlier this year, we released an article in the Florida Chiropractic Association (FCA) journal titled, "Can technology be used to enhance exercise outcomes?"⁷, and presented at the FCA Southeast Convention on "Risk Management considerations for telehealth delivery of exercise"⁸. We will also present on this topic at the 2016 FCA National and Southwest Conventions, and at several other interprofessional conferences over the next year. We will add more practical information at each presentation, so look for our growing line of work on this initiative. We also produced the "Firefighters' Guide to Health and Wellness" as a resource for first responders to gain information

on proper nutrition, meal preparation, exercise, and physical activity⁹. In addition, we completed pilot testing of the web-based, telehealth system for firefighter back exercises¹⁰. This system, which was developed by our group and partially funded by LCERF, is incorporated into our current FEMA grant.

We released an article in the FCA Journal titled, "Why you should train the posterior chain"¹¹.

A major focus of our research work is developing, testing, and implementing exercise training models for a healthy posterior chain. We believe that appropriately addressing the proper form and exercise training of the posterior chain is vital for injury prevention, rehabilitation, and performance in many facets of daily life. Look for more information to be released from our program on methods to develop and maintain a healthy posterior chain.

The Future

Through the generous donations and partnership of the FCA, FCF, and LCERF, we will expand the Lincoln Chair Chiropractic Research Program to new heights. We intend to accomplish great things for our first responder communities through research, program implementation, and community outreach. We believe efforts in these areas will have important implications for expanding the influence of the Chiropractic profession into new areas of health and

wellness. Thank you for your support and your on-going dedication to the Chiropractic profession. ◀FCA

Dr. Mayer is the Lincoln College Endowed Chair in Biomechanical and Chiropractic Research, and a tenured faculty member in the College of Medicine of University of South Florida. He is the principal investigator and co-principal investigator on federally-funded, injury prevention research projects. He is instructor for the Health Promotion and Wellness, Critical Injury 3, and Primary Care Clerkship – Low Back Pain graduate courses at the USF College of Medicine. He serves as a manuscript reviewer for several scientific journals and advisory board member for various health and research organizations. He is also an honorary member of the Florida Chiropractic Association.



Charity L. Lane, MS, CPT, FNS is the Coordinator of Exercise Interventions at the University of South Florida in support of the FEMA-funded research study - "Low back injury prevention in firefighters." She is founder of BodyCarvers, an online and in person training company providing a whole person wellness approach. Charity holds a Masters in Exercise and Nutrition Science from the University of Tampa, and is a Certified Personal Trainer (CPT) and Fitness Nutrition Specialist (FNS). She has over 10 years of experience in the fitness industry and expertise working with professional athletes, fitness competitors, and the general population, and is actively engaged in the fitness industry and research at the local and national levels.



References

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¹¹Lane CL, Mayer JM. *Why you should properly train the posterior chain*. *FCA Journal*, 2016; April:24-6.