

# **UNIVERSITY OF LOUISIANA AT LAFAYETTE**

**STEP Committee**

**Technology Fee Application**

**Enhancing Instructional Skills of Fitness and Physical  
Activity Professionals Using Multimedia Technology**

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Title

**Ben Kern, Chuck Duncan, Connie Lavergne**

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Name of Submitter  
*(Faculty or Staff Only)*

**School of Kinesiology**

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Organization

**Title:** Enhancing Instructional Skills of Fitness and Physical Activity Professionals Using Multimedia Technology

**Date:** June 26, 2017

**Name (Contact Person):** Dr. Ben Kern, Dr. Chuck Duncan, Mrs. Connie Lavergne

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**Department/College/Org:** School of Kinesiology / College of Education

### **Abstract**

Effective instruction in fitness and physical activity settings is critical for developing participants' knowledge and skills for lifelong health. Fitness professionals, activity leaders, and physical educators work in challenging spaces and rely on strong instructional skills and technology to assist them. The purpose of this grant is to provide multimedia equipment that will provide future health & fitness professionals and physical educators the opportunity to develop and enhance their instructional capabilities and learn to use technology on the job. Multimedia technology, including touch-screen mobile devices, mobile audio/video, and mobile video recording/ editing improves the quality of group instruction in a variety of venues, including large open spaces where most fitness, activity, and physical education takes place. The requested equipment will be used to teach the more than 1,000 students from all sub-disciplines in Kinesiology, as well as numerous students in the College of Education the benefits of utilizing technology to assist instructional effectiveness. These instructional and technological skills will equip UL students to be leaders in their chosen fields. Additionally, this innovative approach will serve as exemplary practice in higher education instructional design which will be shared with university, industry, and education professionals at state and national conferences.

## **Purpose of grant and impact to student body as a whole**

Obesity related health care costs in the US are estimated to be nearly \$150 billion annually (Finkelstein, daCosta DiBonaventura, Burgess, & Hale, 2010). Sedentary behavior is identified as significantly contributing to the obesity crisis, and all Americans are urged to meet recommended amounts of daily physical activity (Centers for Disease Control & Prevention, n.d.). Quality health, fitness, activity, and physical education programs are considered ideal places for promoting lifetime physical activity due to their mainstream popularity and their influence on participants' activity levels (Kohl & Cook, 2013). The training of instructors and teachers to provide high quality instruction that engages all participants in physical activity while also teaching the knowledge and skills needed to be physically active on their own is important to addressing the obesity crisis (Barros, Silver, & Stein, 2009).

Health, fitness, activity, and physical education instruction occurs in large open spaces such as gymnasiums, exercise rooms, and outdoor areas. These areas present a challenge to instructors regarding their ability to communicate to participants. Mobile amplified sound systems with portable microphones allow instructors to communicate effectively while retaining the ability to move throughout the activity space; providing instruction and monitoring participant progress. Another important tool in developing effective instructional skills is by video recording the instructor's delivery and providing feedback about their effectiveness. Physically active environments are challenging for capturing both audio and video of instructors due to vast space and high noise levels. Mobile, audio supported, video recording equipment solves this issue by capturing both the instructor's voice and high-definition video of dynamic areas. Furthermore, best practice in teaching is to utilize tools for assessing progress toward learning goals. Touch screen mobile technologies such as iPads and tablets provide a unique opportunity for instructors to use online materials and applications for assessing student/participants' learning. In addition, iPads can be used in combination with audio/video equipment to enhance and compliment functionality. These technologies not only improve the effectiveness of future fitness and activity professionals, but also prepare them to lead others in their chosen fields.

The School of Kinesiology includes the sub-disciplines: Exercise science, Health & Physical Education, Health Promotion & Wellness, Athletic Training, and Sport Management. Students from each of these sub-disciplines are prepared for careers where fitness and activity instructional skills are a critical for successful job performance. Multiple required courses in the School of Kinesiology emphasize fitness and activity instruction in group and individual settings, and numerous students will benefit from utilizing the cutting-edge technology requested as part of this grant. With over 1,000 current Kinesiology students and approximately 200 graduating each semester the beneficial impact of this technology is large and far reaching, as UL graduates go onto careers that serve local, regional, and national populations.

## **Requested items & justification**

**Mobile Audio** – The proposal includes a mobile public announcing (PA) loudspeaker that is battery powered and Bluetooth capable, as well as a portable headset microphone capable of long-range connection to the system. This equipment will allow instructors to provide audible communication in large open spaces such as gymnasiums, exercise rooms, and outdoor spaces. Instruction is more difficult and much less effective without amplified audio for voice. In addition to assisting in voice projection, the PA system works in conjunction with mobile audio included in iPads and other mobile devices. Using music to promote enjoyment, self-expression, and rhythmic skills is considered best practice in fitness and physical activity settings. Without quality audio equipment, the teaching of best practices is limited.

**Mobile Recording** – Also included is mobile video recording and audio recording equipment. To be able to support high quality instruction, instructors are recorded while performing teaching sessions. The video equipment must be capable of capturing wide space with high quality and have the ability to record dynamic video. In addition, the audio recording system must be capable of recording the instructor's voice while dampening the surrounding noise. Without this specialized equipment, video feedback is of minimal value.

**Touch-screen Mobile Devices** – The proposal includes four iPads for use in Kinesiology classes and other appropriate applications. The number of uses for touch-screen mobile devices for improving instruction in any content area is large and continually growing. In Kinesiology, there are multiple applications that allow instructors to efficiently manage participant data, including assessments. These apps are easily used on iPad and because of their portability, can be integrated with audio/video recording equipment. In addition, the iPads can be used to edit/cut video using editing apps that are standard on iPad or can be downloaded. Furthermore, as applications are created, there are potentially more uses for the iPads that have not yet been realized.

### **Projected lifetime of enhancement**

The touch-screen mobile devices (iPads) and mobile audio and video recording/editing hardware will improve the quality of instructional capabilities of fitness and physical activity professionals for a minimum of five years. After five years, most of the components will need upgrade or replacement, as is the case with computer and media hardware.

### **Person(s) responsible for:**

- i. **Implementation:** Dr. Kern, Dr. Duncan, and Mrs. Lavergne (School of Kinesiology) will be responsible for implementing the equipment. Other faculty will be encouraged to use the equipment in their classrooms, and Kern, Duncan, and Lavergne will provide assistance and training to those requesting to use the equipment in their classrooms.
- ii. **Installation:** Little installation is required to use the equipment, however, the vendor (Lafayette Music Company) from which the equipment will be purchased will provide a brief training on how to connect and begin using.
- iii. **Maintenance:** Maintenance of the equipment will be performed periodically by Dr. Kern as needed. Protective carrying cases are requested as part of the proposal in order to maintain proper working condition of the equipment.
- iv. **Operation:** At minimum, four faculty members in the School of Kinesiology (Kern, Duncan, Lavergne, and faculty member to be hired in 2017-2018) will utilize the equipment on a daily basis. Other faculty interested in using the equipment will be encouraged to utilize the equipment.
- v. **Training (with qualifications):** All faculty members are trained to provide high quality instruction to students intending to become fitness, physical activity, physical education instructors. Dr. Kern will train the Kinesiology faculty on the efficacious use of the equipment, and each faculty member will stay current with best practices in utilizing technology in educational settings.
- vi. **Qualifications**

**Dr. Ben Kern** is a former high school physical education teacher, and collegiate strength & conditioning coordinator. He holds a bachelor's degree in Kinesiology, master's in Exercise Science, and doctorate in Kinesiology with emphasis in physical education pedagogy. He teaches future fitness and physical

activity professionals in Kinesiology skill & technique courses and prepares future physical education teachers in health/PE methods and teacher internships. He constantly seeks innovative strategies for promoting lifelong physical activity and integrates technology to improve students' experiences whenever possible. He has taught courses in online and hybrid format, as well as courses on the use of instructional technology in Kinesiology. He has also presented on technology assisted instruction at multiple professional development conferences and seminars.

**Dr. Chuck Duncan** has been a professor in the School of Kinesiology since 2000. During that time he has worked directly with LPSS schools through in-service workshops and as a Professional Development School Liaison at J.W. Faulk Elementary school. He has taught students at the high school, elementary and early childhood levels. Currently he teaches Health & Physical Education Teacher Certification courses for Kinesiology, Elementary Classroom and Early Childhood Classroom pre-service teachers. "Hands on" teaching experiences in schools and best teaching practices (including use of technology) are emphasized in his courses for future teachers. He has presented and published articles nationally and internationally.

**Mrs. Connie Lavergne** is a former Judo coach of a nationally recognized program and has been a Kinesiology faculty member at UL for 34 years. She is highly skilled in utilizing instructional technology and teaches courses on utilizing technology in health and physical education, physical activity teaching methodology, and theory & techniques in coaching. Mrs. Lavergne is certified in online instruction, design, and review, and served as the Kinesiology Technology Coordinator for two years. Mrs. Lavergne is focused on providing her students with knowledge and skills to deliver high quality instruction based on current best practices under the kinesiology umbrella of professions, and has presented extensively at regional and national organizations.

## **Timeline**

### **Year 1:**

1. Order and install multimedia equipment.
2. Receive training from vendor on proper use and maintenance of equipment.
3. Utilize equipment in multiple classes, affecting approximately 300 students each semester (600 in the first year)
4. Presentation at Louisiana Association for Health, Physical Education, Recreation, and Dance with current and recently graduated students on utilizing multimedia in physical education. Presentation at National Strength & Conditioning Association, Louisiana state clinic on multimedia enhanced assessment in fitness settings.

### **Year 2:**

1. Develop a coordinated plan for and manual of operations for effective utilization of multimedia technology in Kinesiology.
2. Train Kinesiology faculty members (not grant proposers) on utilizing multimedia in instruction
3. Utilize equipment in all School of Kinesiology classes in which group or individual health, fitness, and activity instruction is a course learning outcome (approximately 500-600 students per semester; over 1,000 students yearly)
4. Presentation at Society of Health and Physical Educators America national conference.

**Previous funded STEP proposals:**

**Duncan, C.** (Fall 2009), “Flip Camera Technology for Education.” Funded Amount: \$2639.00.

**Lyman, S. & Duncan, C.** (Spring 2003) “Polar Heart Rate Monitors for KNES Computer Lab.” Funded Amount: \$1800.

**Lavergne, C.** (2010, Jan), Kinesiology Computer STEP Lab. Funded Amount: \$5,653.00

**Lavergne, C.** (2008, Jan), Kinesiology Computer STEP Lab. Funded Amount: \$8,910.00

**Lavergne, C.** (2007, Jan), Kinesiology Computer STEP Lab. Funded Amount: \$7,652.00

**Lavergne, C., Doré, T., Raggio, M., & Lyman, S.** (2006, Jan), Kinesiology Computer STEP Lab. Funded Amount: \$54,917.00

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## Budget Proposal

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| 1.                  | <b>Equipment</b>   | <u>Mobile Audio</u><br>\$1,280.00 (Mobile audio – PA loudspeaker)<br>\$449.00 (Wireless headset microphone)<br><br><u>Mobile recording</u><br>\$350.00 (Mobile HD video recorder – dynamic video capture)<br>\$429.00 (Mobile lapel microphone & audio recording mixer)<br><br><u>Touch-screen mobile device</u><br>\$2,800.00 (4 – Apple iPad 128GB) |
| 2.                  | <b>Maintenance</b> | \$140.00 (Gator hard cover case for audio equipment)<br>\$120.00 (Gator hard cover case for input/output mixer)<br>\$25.00 (Speaker stand, carrying bag)<br>\$150.00 (3 - Otter Box hard protective case for iPad)  |
| 3.                  | <b>Other</b>       | \$50.00 (Aluminum tripod)<br>\$50.00 (iPad tripod mount adapter)<br>\$100.00 (Connection cables for all audio, video, recording equip.)   |
| <hr/> <b>TOTAL:</b> |                    | <b>\$5,953.00</b>   |

## References

- Barros, R. M., Silver, E. J., & Stein, R. E. (2009). School recess and group classroom behavior. *Pediatrics*, *123*(2), 431-436.
- Centers for Disease Control and Prevention (n.d.). *Overweight & Obesity*. U.S. Department of Health & Human Services, HHS/Open, USA.gov. Available from <https://www.cdc.gov/obesity/adult/causes.html>. Accessed May 5, 2017.
- Finkelstein, E. A., daCosta DiBonaventura, M., Burgess, S. M., & Hale, B. C. (2010). The costs of obesity in the workplace. *Journal of Occupational and Environmental Medicine*, *52*(10), 971-976.
- Kohl III, H. W., & Cook, H. D. (Eds.). (2013). *Educating the student body: Taking physical activity and physical education to school*. Washington, DC: National Academies Press.