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Kinesiology Department Newsletter – Winter 2013

Message from the Chair

Greetings from the Kinesiology Department!

At the half-way point in my first term as department chair, I can report that time passes quickly, and I enjoy the constant challenge of being chair.

The department accomplished a great deal during 2011-12, including hiring a new faculty member, purchasing new equipment, and planning for the future.

[Read more of Professor Taylor's message](#)



Kinesiology News

Students Design and Present Adapted Dart Launcher



Four kinesiology seniors hit a bull's-eye with a dart launcher adapted for use by people with physical disabilities.

The device resulted from a partnership between the kinesiology and mechanical engineering departments. During the design process, kinesiology students considered the ergonomics of a potential device and users' physical capabilities.

"The entire point of adapting a physical game is to make it as similar to the actual game as possible," said Kevin Bezerra (B.S., Kinesiology, 2012), part of a team that presented the dart launcher at a state conference on adapted technology in February 2012. "They play with the same darts, the same board, the same points, and the same rules."

[Read more about the dart launcher](#)

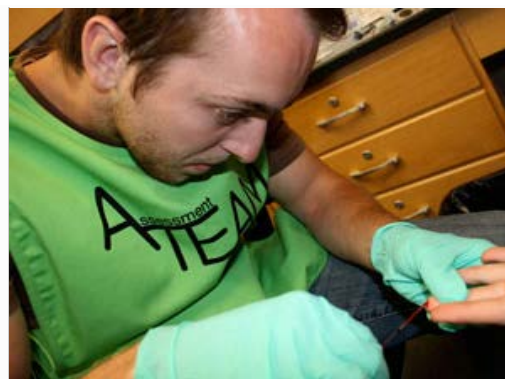
Student Perspective: Kinesiology Embodies Learn by Doing

By Kevin Bezerra (B.S., Kinesiology, 2012)

During my time at Cal Poly, I grew as a student, a professional and a person. During my final two years, I served as an assistant instructor with the Adapted Paddling Program. I helped other students learn how to kayak and how to adapt the kayaks for use by people with disabilities. The program also connected me with my local community by giving me the opportunity to work closely with those using the adapted kayaks.

While I initially joined the program as a lab for a kinesiology class, I fell in love with the activity and with helping people get involved. This experience has been unique, and I am grateful to Cal Poly for making it available. Seeing the power of Learn by Doing in action has changed my way of thinking and given me a passion for practical experience.

[Read more about Bezerra's experiences](#)



Student Perspective: Learn by Doing Opens Doors Beyond the Classroom

By Terry Hackney (B.S., Kinesiology, 2012)

When I first toured Cal Poly, I heard about Learn by Doing, but it sounded like just another sales pitch. It wasn't until I started taking classes that I realized how legitimate Learn by Doing really is. I've completed a lot of lab assignments, such as exploring campus in a wheelchair to better understand life as a person with disabilities and evaluating my classmates' cardiac health, but Learn by Doing permeates many other aspects of life at Cal Poly.

During my second year, I worked as the special events supervisor for the Associated Students Inc. (ASI), planning and implementing entertainment programs for the Cal Poly community. Working with other students, I honed my professional skills by managing an annual budget of more than \$50,000, conducting preliminary research and contract negotiations, formulating marketing plans, and executing and evaluating the final event.

[Read more about Hackney's work outside the classroom](#)



STRIDE Hosts Presentation on Physical Activity in Public Health

During fall quarter, Gregory Heath, Guerry professor of health and human performance and assistant provost for research and engagement at the University of Tennessee at Chattanooga, spoke to faculty and students on the importance of physical activity for public health. Heath's work has been published in *The Lancet*, an international medical journal.

Heath reported that 6-10 percent of the world's major non-communicable diseases are attributable to inactivity. Through exercise, approximately 75.3 million deaths per year could be prevented.

[Read more about Heath's presentation](#)

New Faculty Member Focuses on Public Health



The department is pleased to welcome our newest member, Heather Starnes, who joined the faculty in fall 2012. Starnes earned her doctorate in health and kinesiology from Purdue University. Her research focuses on physical activity and public health, especially as it relates to the built environment.

Starnes is already making a mark in the department. In fall 2012, students in her Introduction to Research Methods class developed individual research proposals, which they presented in a conference-style poster session.

[Read more about Starnes](#)

New Equipment Enhances Research Capabilities

The department gained a refrigerated centrifuge and a -80 degree Celsius freezer in the last year. With this equipment, students can immediately refrigerate and separate blood draws. This procedure is a necessary step in Suzanne Phelan's study of how to help low-income mothers return to their pre-pregnancy weight after giving birth. The equipment will also help in studying hormones.

"This is the best equipment you can get," said Todd Hagobian, whose students used the centrifuge and freezer in an appetite regulation study.

Alumni News

Many Thanks to Our Generous Donors

Private support from our alumni, parents, friends, as well as from private businesses and other agencies are key to enabling our department to continue to provide exceptional Learn by Doing projects and opportunities for today's students. Click on the link below to see the list of those who gave to the Kinesiology Department in 2011-12.

[Read more about the people and companies that support the Kinesiology Department](#)

Alumna Conducts Research and Development for Cycling Industry

Christie O'Hara (M.S., Kinesiology, 2011) has returned to the biomechanics lab to collect data for her ongoing research. After graduation, O'Hara found employment immediately with a major cycling component manufacturer in Spain. She now travels to various international professional cycling and triathlon events, markets products, and conducts research and development.

[Read more about O'Hara's research](#)

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California Polytechnic State University
San Luis Obispo, CA 93407
J. Kevin Taylor, Ph.D.
Kinesiology Department Chair
805.756.2545
kinesiology@calpoly.edu



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Message From the Chair

Greetings from the Kinesiology Department!

At the half-way point in my first term as department chair, I can report that time passes quickly, and I enjoy the constant challenge of being chair.

The department accomplished a great deal during 2011-12:

- We hired a new faculty member, Heather Starnes, who is a wonderful addition.
- We purchased new equipment that is already being used for teaching and research, including an Ariel Computerized Exercise System (ACES) for use in biomechanics classes and faculty research. Thank you to Ariel Dynamics for a much-appreciated discount on this important piece of equipment.
- We began work on a five-year development plan for the department based on the positive evaluation we received during the program review process.

Last year was a banner year for our STRIDE (Science through Translational Research In Diet and Exercise) research team who brought in more than \$6 million in research funding and completed data collection on more than 2,000 Cal Poly students for the FLASH college health study. Working with STRIDE, our students have the opportunity to apply what they're learning in their academic coursework to real-world problems in the community.

Recently the founding director of STRIDE, Professor Ann McDermott, moved back to the East Coast. We wish Ann much success and happiness and are grateful for the remarkable legacy she left behind.

Professor Aydin Nazmi from the Food Science and Nutrition Department will succeed Ann as STRIDE's interim director. Aydin will work with our collaborators across the university to develop an advisory board, establish a comprehensive strategic plan, and begin to build an endowment for STRIDE.

In addition to my duties as department chair, I continue to run the "Activity for All" program. Through labs, community-based learning, and multi-disciplinary senior projects, my students and I provide and promote physical activity for people with disabilities. Our ongoing collaboration with the College of Engineering continues to thrive, allowing students from multiple disciplines to transform projects from a concept on paper into a piece of equipment that puts a smile on someone's face. This work is funded by a grant from the National Science Foundation.

As alumni, your college days might be over, but your education is still in full swing. Learn by Doing is more than our motto at Cal Poly — it's a strategy for building your career and enriching your life, and we hope it brings you a wonderful 2013.

If you know kinesiology graduates interested in receiving future newsletters, they can update their contact information online.

Thank you for your support of the department and Cal Poly, and keep in touch!

Cheers,
Kevin Taylor



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Students Design and Present Adapted Dart Launcher

By *Addie Dyer, journalism student*

Four kinesiology seniors hit a bull's-eye with a dart launcher adapted for use by people with physical disabilities.

The device resulted from a partnership between the kinesiology and mechanical engineering departments. During the design process, kinesiology students considered the ergonomics of a potential device and users' physical capabilities.

"The entire point of adapting a physical game is to make it as similar to the actual game as possible," said Kevin Bezerra (B.S., Kinesiology, 2012), part of a team that presented the dart launcher at a state conference on adapted technology in February 2012. "They play with the same darts, the same board, the same points, and the same rules."

The adapted dart launcher uses an air pump and an adjustable handle to perform the movement of throwing the dart, but the player must still provide the skill.

"We look for activities in which someone with profound physical disabilities could participate tacitly and cognitively and in which all players would be on an even playing field except for the differences in physical abilities," said Kevin Taylor, chair of the Kinesiology Department.

"We chose to present the dart launcher because we wanted to encourage physical activity, promote inclusion, and create the least restrictive environment for individuals with profound disabilities," said Kelly Leggoe, one of the student presenters. "We wanted to educate individuals on our product, to let them know what technology is available, and get their feedback on it."

The audience seemed interested in the dart launcher for both recreational and professional use, according to Leggoe. "One member of the audience was a physical education teacher. He was really intrigued by the launcher and said that he could think of at least eight different students of his that would love to use it," she said.

The development of the dart launcher was funded by a National Science Foundation grant. Under the terms of the grant, the device must be given to the client for whom it was built, in this case the Friday Club, a collaboration between kinesiology students and Special Olympians, and the Special Olympics.

"Things like the launcher really do make a difference in the disabled community, which is a part of our world that most people often forget to include," Leggoe said. "What I find most amazing about the launcher is that it really does increase people's self-esteem, self-worth and self-efficacy."

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Student Perspective: Kinesiology Embodies Learn by Doing

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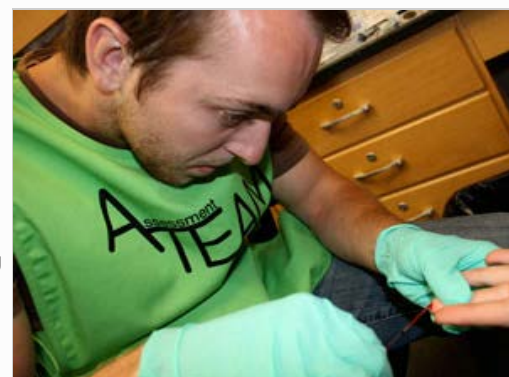
My senior project grew out of my interest in the adapted paddling program. For the project, I served as part of the leadership team for a STRIDE (Science through Translational Research in Diet and Exercise) program called "Activity for All." Together with students from the College of Engineering, I worked on a number of different projects that focused on enhancing independence and levels of physical activity for people with disabilities in the local community.

For one project, we adapted a tandem kayak to allow someone with quadriplegia to pilot the boat on their own with the use of a sip and puff mechanism. For another project, we built a "strider" that allowed a young boy to stand and walk under his own power. We also developed a unilateral kayaking device that allows a person with hemiplegia (total or partial paralysis of one side of the body) or an amputation to kayak using only one arm. These projects gave me priceless, hands-on learning experiences that cemented my belief in Learn by Doing.

In addition to working with adapted physical activity programs, I gained valuable research experience by working with clients in a professional health environment during the FLASH College Health Study. I worked specifically with the Heart Health Team, collecting blood samples and analyzing those samples for indicators such as cholesterol, glucose levels and triglycerides. This knowledge has been invaluable to my education and professional growth.

These programs have proven to me that I chose the ideal field. I will always be grateful to the Kinesiology Department for following the Learn by Doing model.

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California Polytechnic State University
San Luis Obispo, CA 93407
J. Kevin Taylor, Ph.D.
Kinesiology Department Chair
805.756.2545
kinesiology@calpoly.edu



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During my second year, I worked as the special events supervisor for the Associated Students Inc. (ASI), planning and implementing entertainment programs for the Cal Poly community. Working with other students, I honed my professional skills by managing an annual budget of more than \$50,000, conducting preliminary research and contract negotiations, formulating marketing plans, and executing and evaluating the final event.

Students from the Orfalea College of Business executed the marketing plans and worked with graphic design majors from the College of Liberal Arts to produce marketing materials. It was quite an honor to receive a call from a band's agent in New York or Los Angeles thanking us for being such a great group of people to work with and hear her surprise when she found out that the entire event was put on by students.

My experiences at Cal Poly have taught me not only the skills I need to be an effective kinesiology professional, but also life lessons such as how to interact with people from different backgrounds and schools of thought, how to manage time and stress effectively, and most importantly, how to think — how to stare a problem in the face, figure out a solution, and put it into action.

My time at Cal Poly has opened many doors. I have the option to pursue a master's degree in exercise physiology, continue to build my experience as an emergency medical technician, or work in a corporate wellness setting. My long-term goal is to become a physician specializing in emergency medicine, orthopedics or cardiology.

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Heath reported that 6-10 percent of the world's major non-communicable diseases are attributable to inactivity. Through exercise, approximately 75.3 million deaths per year could be prevented.

According to Heath's research, adults need a minimum of 150 minutes of exercise per week to see gains in coronary and cardiovascular health. Adolescents need an hour a day. Seventy-five minutes of the week's physical activity should be vigorous.

"It's important to remember the quality of physical activity versus the quantity," Heath said.

Heath stressed the importance of active transportation — riding a bike or walking — as a method of incorporating physical activity into a lifestyle. Wider sidewalks, street beautification, and connectivity between neighborhoods, stores and other destination points are strategies that cities, including San Luis Obispo, increasingly use to encourage people to be active.

College is a good time to put healthy habits in place, according to Heath. "I think every college student should strive for building a habit early on so that when you graduate, you can continue that," he said.

STRIDE works to help students and community members establish the type of healthy, active lifestyles suggested by Heath's research. Health Ambassadors share the benefits of regular physical activity and a healthy diet, and the Assessment Team provides cardiovascular and diabetes risk assessment services, partnering with hospitals and public health agencies at area health fairs.

STRIDE is also part of the Healthy Communities Workgroup, a subset of the Healthy Eating Active Living, San Luis Obispo (HEAL- SLO) coalition that works with County Planning and Building to review proposed projects for their potential impact on health.

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J. Kevin Taylor, Ph.D.
Kinesiology Department Chair
805.756.2545
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New Faculty Member Focuses on Public Health

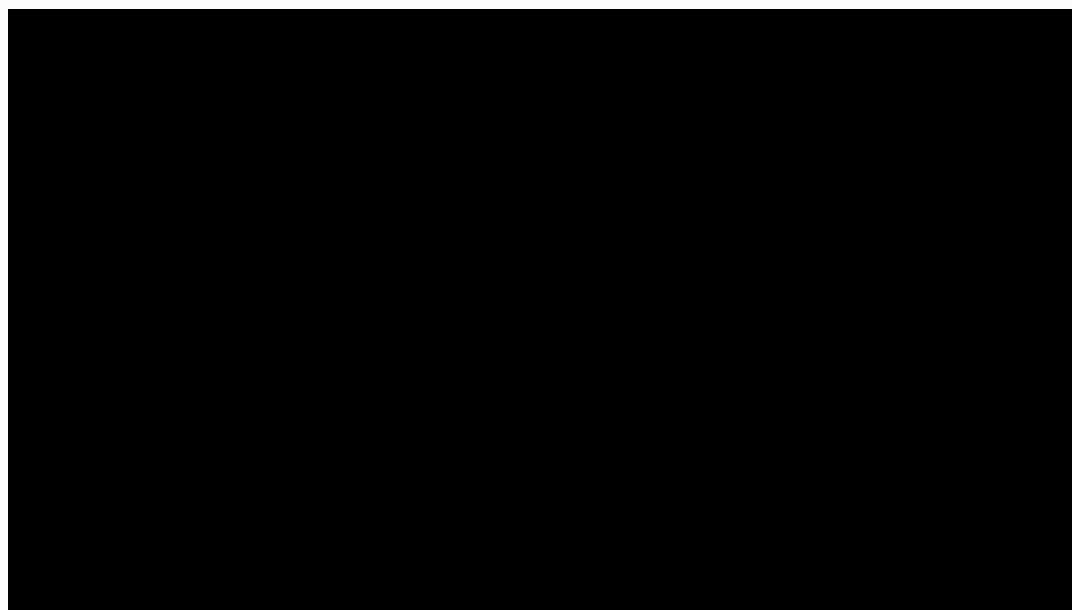


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"Evidence for the effects of the built environment on health behaviors could lead local leaders and residents to increase their support for creating and sustaining healthy community environments," Starnes said.

Starnes is already making a mark in the department. In fall 2012, students in her Introduction to Research Methods class developed individual research proposals, which they presented in a conference-style poster session.

Students proposed a variety of projects, including studies of the effects of daily physical activity on cognitive function in elementary school students and effects of aerobic exercise as a treatment for general anxiety disorder. The video below shows the students presenting their research proposals to their peers and faculty in the Kinesiology Department.



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We sincerely appreciate your support.

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[O'Hara's thesis on chain ring types](#) was published in the International Journal of Sport Science and Engineering in 2012, and she continues to explore how elliptical chain rings affect cycling performance.

The department is fortunate to have O'Hara back for a limited time this academic year. Current undergraduate students will continue the line of inquiry she began with plans to present their results at future conferences.

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