We are now a few months into the fall 2014 semester and I am happy to report that the Department of Kinesiology is thriving. Following several years of unprecedented growth in the undergraduate major, we have added several new very talented tenure-track faculty, research faculty and lecturers in our department. With the new tenure track hires we have expanded our top tier research capacity and we have greatly enhanced our ability to meet the increased undergraduate teaching demands with our new lecturers. You can read about our new hires in this newsletter.

As many of you know last year we lost Dr. Priscilla Clarkson, one of our most well-known and respected faculty members. In honor of Dr. Clarkson, the Department of Kinesiology has established the Priscilla M. Clarkson Graduate Student Endowment Fund. We have set a goal to raise $100,000 and we are nearly halfway towards meeting this goal. In the meantime, we will be able to offer an annual award which will fund a Ph.D. student to help defray costs of doctoral dissertation research.

We have also established the Patty S. Freedson Undergraduate Student Endowment, through a very generous donation by Mr. Mike Motta. Mike is the founder and former President, CEO and Chairman of Plus One Health Management, Inc. which was acquired by Optum of the United Health Group in 2013. He is a member of the Dean's Advisory Board in our School of Public Health and Health Sciences. As a pioneer in the design and management of corporate wellness facilities, it is fitting that the annual award be given to a junior Kinesiology major seeking a career in health and fitness. We have a goal of raising $100,000 for this endowment fund which will offer undergraduate student scholarships annually.

I hope you enjoy catching up with the happenings in the Department of Kinesiology. We have lots of great news to report and we hope that you consider submitting newsworthy items to include in future newsletters. We would love to hear from you!

Patty S. Freedson, Ph.D.
Professor and Chair, Department of Kinesiology
Katherine Boyer

Professional Title: Assistant Professor

Education: B.Sc., Queen’s University, 2001; Ph.D., University of Calgary, 2006

Research Interests: Dr. Boyer’s primary research focus is lower extremity mechanics during locomotion and mechanisms for adaptations in ambulatory mechanics in aging, with overuse injury and in response to mechanical and pharmacological interventions. This research uses a stimulus response experimental model to probe interaction between gait mechanics, neuromuscular function, systemic biological marker and joint injury and degeneration. A related interest is the development of non-invasive interventions such as shoes or apparel to stimulate or support functional needs to enhance sports performance, minimize injury risk and/or reduce painful disease symptoms.

Julia Choi

Professional Title: Assistant Professor

Education: B.S., McGill University; Ph.D., Johns Hopkins School of Medicine

Research Interests: Walking poses a significant challenge for individuals with motor, sensory and cognitive deficits associated with neurological disorders. Dr. Choi’s research uses different experimental tools to expose subjects to novel and challenging walking environment, and examine how the nervous system plans and executes movements. Measurements of joint kinematics, forces and neuromuscular activity during walking provide data to study the interplay between biomechanical demands and neural control mechanisms. Her current studies address how somatosensory and visual information interacts with walking control at multiple levels of the central nervous system.

Mark Miller

Professional Title: Assistant Professor

Education: B.S., University of Colorado; M.S., University of Colorado; Ph.D., University of Vermont

Research Interests: Dr. Miller’s primary interest is investigating the effects of aging and exercise in human skeletal muscle at the whole body, tissue, single fiber and molecular levels. The goal is to understand how alterations at the molecular and single fiber levels affect whole muscle contraction in order to find potential countermeasures to prevent the age-related loss of muscle performance. The laboratory combines the use of advanced engineering methods to measure muscle function at the molecular and single fiber levels with imaging techniques to examine muscle structure from the myofibril to the tissue level, biochemical techniques to quantify proteins as well as techniques to analyze the whole body skeletal musclecontractile performance.
John Sirard

**Professional Title:** Assistant Professor

**Education:** B.S., University of Massachusetts Amherst, 1991; M.S., University of Massachusetts Amherst, 1997; Ph.D., University of South Carolina, 2003

**Research Interests:** The long-term goals of Dr. Sirard’s research program are to develop, test, and disseminate successful intervention programs that work at multiple levels of influence to increase youth physical activity and decrease screen media use, leading to long-term improvements in physical, social, and mental health. One facet of his research program is to better understand the social and physical environmental influences on youth physical activity and sedentary behavior. Another integral facet of his research program is to better understand how to quantify physical activity and sedentary behavior in youth. His lab uses accelerometers to objectively quantify frequency, intensity, and timing of physical activity and inactivity, but also relies on questionnaire data, when appropriate, to assess relevant contextual information.

Stephanie Jones

**Professional Title:** Research Assistant Professor

**Education:** B.Sc., University of Guelph; M.S., University of Massachusetts Amherst; Ph.D., McGill University

**Area(s) of Specialization:** Postural Control, Multiple Sclerosis, Low Back Pain, Somatosensory

Jennifer Gordon

**Professional Title:** Lecturer

**Education:** B.S., Psychology, SUNY Oneonta; M.S., Sport Psychology, Georgia Southern University; Ph.D., Exercise Physiology, Springfield College

**Area(s) of Specialization:** Anatomy, Physiology

Thomas St. Laurent

**Professional Title:** Lecturer

**Education:** B.S., Exercise Science, James Madison University, 2003; M.S., Exercise Physiology, James Madison University, 2005

**Area(s) of Specialization:** Strength and Conditioning, Exercise Programming
The undergraduate major in Kinesiology continues to provide a strong preparation for pursuing opportunities in the allied health sciences. Student enrollment is currently around 745 with majors succeeding in a variety of advanced departmental, school, and University experiences. In addition to our highly demanding undergraduate curriculum, several new undergraduate courses provide opportunities for applied learning in health and fitness, and for direct engagement in various research efforts within the department. Our students continue to be accepted into premier Schools of Medicine, Physical and Occupational Therapy, and into Physician Assistant and Chiropractic Programs. Similarly, graduates seeking work succeed in securing employment in health and fitness positions in commercial, corporate, and clinical settings. Many of our students opt to pursue advanced academic degrees as they follow their interests in research.

Sincerely,

Frank Rife
Undergraduate Program Director

Integrative Experience Course Provides Students with Hands-On Learning

It all comes down to this moment for the students in Kinesiology 394IE. For months, they’ve studied, discussed, researched, and prepared, and now the moment is here. It’s time for “The Big Reveal.”

It begins simply enough for the 100+ upperclassmen in the class as co-instructors Eliza Frechette and Thomas St. Laurent present them with a single task: to work together in discussion groups to design and present a proposal for a health and wellness program that tackles a real world problem such as type 2 diabetes. The challenge, however, is in creating a proposal that could become a viable real-world product.

Frechette and St. Laurent conduct weekly lectures and bring in various guest speakers to introduce professional development concepts. Much of the class’s “dirty work,” however, falls on the shoulders of the teaching assistants who run the weekly discussion groups.

“In a lot of ways, the students run the course,” says Amy Whited, a graduate student teaching assistant who has helped teach the course multiple times. “They set the timetables and begin to feel empowered. We just give them that little push so they don’t need to be handheld anymore. The great thing about this class is there’s no single approach to solve these problems.”

Professors Joe Hamill and Barry Braun, along with Instructor Eliza Frechette, originally designed the course to meet the university’s integrative experience requirement. Since its initial conceptualization, the course has flourished under the department’s commitment to a team-building approach to classroom instruction.

“This class is not run and taught by one person, but rather by a teaching team,” says Frechette. “It requires an incredible amount of team work, flexibility, and creativity to put together a truly collaborative course. At the end of the day, our students benefit from the experiences and knowledge of the entire teaching team. Our students also see a group of nearly a dozen teachers and teaching assistants working together to form a cohesive and professional teaching team. It is a great experience for faculty and students alike.”
Over the course of the semester, the students will learn a variety of skills: applied learning and critical thinking; team dynamics; epidemiological research methods; learning about budgeting and how to create a business proposal. The focus on a health and wellness program design provides opportunities to interconnect disciplines. They learn to connect a kinesiology framework with wellness programming, to investigate nutrition and public health approaches, and factor in such real-world complications as facility management and accounting. The course also provides lessons in team dynamics and conflict resolution, time management and organization, research methodology, creativity and professionalism.

And along every step of the way, the teaching assistants acting as discussion group leaders are prodding, questioning, and coercing them to dig deeper.

“The whole process really elicits a ‘think on your toes’ methodology and adaptability,” states Jamil Halaby, a senior who serves as one of seven undergraduate teaching assistants for the course. “But they need to provide the research to support their approach.”

“Every facet of their program has to be justified,” adds Whited.

As the semester draws to a close, it’s time for The Big Reveal – the moment when the students unveil their projects to their peers, department faculty, and professionals in the field who have come to this class for just this moment. Though the final student presentations are exercises in program planning, their final products have to look and feel like real world business proposals. They must create brochures and pitch their ideas to the “board,” which is comprised of a panel of faculty members.

“Everyone enjoys the Big Reveal,” says Jamil. “We all have a lot of fun with it.”

The end results have been eye-opening. Mock program brochures for centers and programs with names like “Osteoaquatics,” “DiaBEAT-IT” and the “Healthy Beginnings Wellness Center” have the look and feel of promotional materials that could be found at the Y or in your doctor’s office. One recent alumna took her work to a medical school interview; she left the interview with an invitation to pitch her idea to a roomful of doctors.

In the end, the Integrative Experience class forms a “big picture” approach to education, and provides a bi-directional teaching paradigm for students, teaching assistants, and instructors alike: the students learn from the instructors, and the instructors learn from the students.
Undergraduate teamwork emphasized in Kinesiology Junior Writing class

K in 355 is a required course for all Kinesiology majors. Typically taken during the junior year, the class offers instruction on the principles of scientific writing and covers a variety of professional development topics. What Kinesiology students take away from the class, however, goes beyond these straightforward goals. They leave with a newfound appreciation for teamwork, group dynamics, and participatory learning.

Eliza Frechette re-designed the course with an emphasis on team-based instruction. While she delivers lectures to classes that can number up to 130 students on topics ranging from the sections of a research paper to how to write an effective cover letter, she supervises a trusted team of undergraduate teaching assistants to help her lead the discussion groups that comprise a considerable part of the course.

“They’re my underground network,” notes Frechette.

In the spring 2014 semester, Frechette mentored six undergraduate teaching assistants, each one leading a discussion group of as many as 25 students. During these weekly small-group discussions, the TA helps students formulate and flesh out research ideas, overcome stumbling blocks in the research process, provide feedback and editing tips, and provide instruction on how to make a research citation.

The course provides more than nuts-and-bolts instructions on the writing process, though. It is built on teamwork and group discussion, says Kayla Wegener, “The students work in teams from the start. They have to give group presentations at the end of the semester, and they have to figure out how to combine their different responsibilities into one comprehensive body of work.”

During the professional development part of the course, Frechette will encourage students to apply for jobs and internships they would want to have in real life. They develop cover letters and build resumes, and bring in staff from Career Services to offer tips and critiques. The students participate in mock interviews to sharpen their skills, and peers and instructors provide feedback.

The TA workload can be daunting. Though the undergraduate teaching assistants earn credit for the course, they often serve as the “front line” for student questions. They are the ones with the lines out the door when an assignment due date approaches and frequently stay well past office hours to help their fellow students. Why take on such a daunting assignment?

“I continued as a TA because it’s such a great experience,” says Matt Cronin, the close-knit group’s veteran now on his third stint as an assistant.

“We have such a great group. Everyone’s so helpful,” remarks Sarah Michelson.

Adds Kelsey Bennett, “We’re meeting all the time to exchange ideas and support each other.”

“It makes you a better writer, too,” notes Michelle Bradley.

“And you learn so much about a variety of research topics – without having to do the actual research,” adds Sarah with a laugh.

“It really gave me a tremendous respect for what our professors do,” states Jeff Skoog.

Plus, notes Kayla, they have a dynamic supervisor in Frechette. “Her classes are really hands-on. They are two-way conversations with lots of participation. You know you better be paying attention because she may call on you by name!”
Students in our nationally-ranked Kinesiology Graduate Program continue to pursue a wide range of research projects focusing on topics as diverse as community-based physical activity interventions and understanding the evolution of upright posture in human gait. With well over 5,000 person-visits per year by participants in these various research projects, Totman is a very busy place. Working closely with their faculty advisors and postdoctoral fellows, our graduate students design, execute, analyze and present their research at a multitude of national and international conferences each year, with wider dissemination of their results accomplished through publications in top-tier, peer-reviewed journals. And they manage all this while also mentoring undergraduate researchers and contributing to the teaching mission of the department! The awards our students receive each year testify to the caliber of their work. In the past year, doctoral students Cory Greever and Jocelyn Hafer each received a much-coveted Research Grant from the American College of Sports Medicine, and Amanda Hickey was recently awarded the 2014 Doctoral Student Award from the New England Chapter of the American College of Sports Medicine. Congratulations to these students, and all of our graduate trainees as they work to uphold the tradition of excellence in graduate research here.

Sincerely,

Jane Kent
Graduate Program Director

Kinesiology doctoral candidates win awards from American College of Sports Medicine

Cory Greever and Jocelyn Hafer, doctoral candidates in the Department of Kinesiology, recently won research grants of $5,000 apiece from the American College of Sports Medicine (ACSM).

Hafer will use her funds, provided by the ACSM Foundation, for her study titled, “Physical activity: a mediator of muscle power, knee mechanics, and fatigue.”

“I was very surprised and excited that ACSM is supporting my biomechanics research,” says Hafer.

Her study aims to determine the effect of physical activity status on the relationship between knee mechanics and muscle function in older adults. Hafer will use novel techniques to investigate the potential for habitual physical activity to alter the age-related decline of muscle function and mechanical function during mobility activities. “Understanding the relationship between physical activity, gait mechanics, and muscle function is critical for providing an evidence-based rationale to expand the promotion of exercise to include the prevention of chronic musculoskeletal disease,” notes Hafer.

Greever won funding from the ACSM Carl V. Gisolfi Memorial Fund, which is “designated to encourage research in thermoregulation, exercise, and hydration,” according to the organization’s website. Greever will use the award for his doctoral study, which examines the effects of a culturally tailored physical activity and sleep program on objectively measured physical activity and sleep in Latina girls. Although Greever says that “Latinas suffer from disproportionately high rates of physical inactivity, sleep deprivation and obesity related disease,” such a study examining activity and sleep is not the norm in current scientific research.

“It’s an incredible honor to receive external funding from such a prestigious organization and use it to better our community,” says Greever.

From left: Cory Greever and Jocelyn Hafer.
Debold receives American Heart Association grant to study muscle function to advance treatment of heart failure

Associate Professor of Kinesiology Edward “Ned” Debold recently received a three-year, $198,000 grant from the American Heart Association to support studies to uncover the molecular mechanisms of skeletal muscle fatigue. The work will advance basic understanding of muscle function and should lead to new drug therapies for individuals with fatigue that greatly limits physical function and quality of life, including the 5.7 million Americans living with chronic heart failure.

In individuals with chronic heart failure, the function of skeletal muscle is also compromised and is much more susceptible to fatigue. “So for affected individuals the simplest tasks around the house become extremely arduous,” Dr. Debold says. “If we can reduce the fatigue, we could enable them to live independently longer and increase activity levels, which can improve their long-term prognosis.”

Muscle fatigue is like a car engine with a bad exhaust system, unable to get rid of waste products. By-products of metabolism build up inside the muscle cells and inhibit its ability to contract. “Our understanding of muscle fatigue is currently limited by our inability to directly observe this process at the molecular level,” he says. “This project will overcome this limitation by using the latest technologies to directly visualize and characterize the process of muscle fatigue at the single-molecule level.”

He and colleagues are experts in the use of a single molecule laser trap assay, which enables them to directly observe the nanoscale motions of myosin, the protein that makes muscles contract. Dr. Debold, who built the laser trap assay at UMass Amherst, says, “We’re one of only a handful of labs in the world who have an instrument capable of making these measurements. The techniques are new, so no one has addressed the mechanisms of muscle fatigue in quite this way. It should help us to figure out why a muscle stops working during fatigue.”

To do these experiments the lab initially isolates the 20-nanometer size muscle protein myosin from skeletal muscle tissue. They will then mimic the conditions of fatigue in a test tube and directly observe the impact on myosin’s ability to generate force and motion. They will test how and why the presence of metabolites acts to slow the velocity of contraction in fatigued muscles. A second aim is to understand how these same metabolites disrupt the regulation of muscle contraction, specifically why a separate set of muscle proteins, tropomyosin and troponin, become less sensitive to molecular trigger calcium.

Dr. Debold explains, “We believe this process is disrupted during fatigue and muscles become less sensitive to calcium, the ion released in muscle cells in response to stimulation from a nerve. This means that even though your brain is telling the muscle to contract strongly, you get less force because the muscle doesn’t respond as well to the signal from the brain.”

In a later phase of the project, Dr. Debold and his colleagues will partner with pharmaceutical companies to begin to translate their new knowledge about muscle fatigue by testing several drugs that target the contractile proteins to enhance their function under fatigue like conditions. This represents a crucial first step in the translation of this knowledge from the lab bench to the patient’s bedside.

This is a highly collaborative project that also involves labs at Penn State Medical Center where Dr. Chris Tengo, an expert in myosin structure and function, will analyze the impact of the fatiguing metabolites on the internal motions in the myosin molecule. In addition, Dr. Jonathan Davis at Ohio State University, an expert in muscle regulatory protein structure and function, will help the Debold lab identify the structures and processes in troponin that cause muscle to be less responsive to activation during fatigue.

Kinesiology faculty, postdocs and students share research findings at World Congress of Biomechanics

A large contingent of UMass Amherst Kinesiology faculty, postdoctoral researchers, graduate students, and alumni presented their research findings at the 7th World Congress of Biomechanics (WCB) held on July 6-11, 2014, in Boston, MA. Held once every four years, this event attracted nearly 5,000 researchers from various disciplines including bioengineering, biology, biophysics, mathematics, computer science, chemistry and various clinical specialties. Applications ranged from basic biomechanics and biology to medical devices and the latest motion capture technologies.

According to Associate Professor Brian Umberger, “The WCB is the single largest biomechanics conference and is the only setting where all sub-disciplines within the field of biomechanics gather in a single venue. The strong showing from the Department of Kinesiology at this major international event speaks volumes about the strength of our research and graduate programs in biomechanics.”

Among the department group presenting at the World Congress were:

- Professor Joseph Hamill delivered a talk titled “Does Changing Footfall Patterns Reduce Running Related Injuries?”, based on a paper co-authored with Ross Miller, Julia Freedman Silvernail, and Allison Gruber.
- Associate Professor Graham Caldwell presented “Age Related Changes in Muscle Mechanical Properties”, based on a paper co-authored with C.J. Hasson and Ross Miller.
- Assistant Professor Katherine Boyer presented “Changes in Knee Joint Mechanics in Response to OA Pain and its Treatment”. She also discussed “Age and Gender Effects on Movement Coordination Variability in Running”, based on a paper co-authored with Julia Freedman Silvernail, Scott Strycharz, and Joseph Hamill, in a second podium presentation.
- Postdoctoral research fellow Allison Gruber lectured on “The Motor System Response to Change in Foot-Ground Interface with Forefoot Running”, based on a paper co-authored with Joseph Hamill and Katherine
Boyer. She delivered a second podium presentation on “Foot Posture in Human Running: Energetics, Muscle Actions, and Ground Reaction Forces”, based on a paper co-authored with Katherine Boyer, Tim Derrick, Brian Umberger, and Joseph Hamill. • Alumnus Ross Miller delivered a talk titled “Optimal Footfall Patterns for Cost Minimization in Running” based on a paper co-authored with Joseph Hamill. Visiting scholar Brittney Muir spoke on the topic of “Age-Related Changes in Foot Placement Variability when Approaching and Stepping Over an Obstacle”, based on a paper co-authored with Richard van Emmerik.

In addition to the slate of lectures, numerous researchers from the department, including graduate students, postdoctoral researchers, and faculty members, participated in the conference’s poster presentation sessions. A full program listing may be obtained by visiting the WCB website at: http://wcb2014.com/event-info/technicalprogram/

Braun named Department Head at Colorado State

Professor Barry Braun has left the UMass Amherst Kinesiology Department to head the Department of Health and Exercise Science at Colorado State University (CSU). Braun began his new position on Aug. 15. “Barry Braun is an award-winning teacher, mentor and scholar with outstanding academic credentials and experiences,” CSU College of Health and Human Sciences Dean Jeff McCubbin said. “We are fortunate to recruit him and look forward to his leadership for the next phase of the Department of Health and Exercise Science. This is an exciting new hire for our college.”

Braun joined the UMass Amherst faculty in 2000 as an assistant professor. He was promoted to associate professor in 2006. He also served as associate dean for undergraduate affairs in the School of Public Health and Health Sciences (SPHHS) from 2008-09.

He received the Distinguished Teaching Award in 2007 and the SPHHS Outstanding Teaching Award in 2003. He has also been the recipient of Lilly, Davis and General Education teaching fellowships.

The CSU Department of Health and Exercise Science has 1,449 undergraduates, 26 master’s students and 13 Ph.D. students enrolled. It is the second most popular undergraduate major at Colorado State.

Choi participates in Science Communication Fellows program

Julia Choi, Assistant Professor of Kinesiology, recently participated in the Science Communication Fellows program at The Discovery Museums in Acton, MA. The program, funded by a National Sciences Foundation grant, brings together scientists and the public for face-to-face interactions to help non-scientists gain a greater appreciation and understanding of science, technology, engineering and math.

The fellowship includes 10 hours of professional development workshops at the museums where fellows learn strategies for public outreach, as well as opportunities where participants share their work with the public.

Choi’s hands-on activity used motion capture to explain how the human brain adapts movements. She joined nine scientists in the program from colleges and universities across the state, including Brandeis University & Harvard University, as well as colleagues from UMass Amherst and UMass Boston.

Kinesiology faculty recognized for one of the top 25 articles of 2012 on ScienceDirect

Associate Professors of Kinesiology Graham Caldwell and Brian Umberger are co-authors of an article recently recognized by science journal website ScienceDirect as one of the top 25 papers published in the Journal of Biomechanics in 2012. The article, titled “Limitations to maximum sprinting speed imposed by muscle mechanical properties”, examines the effect of muscle mechanics on sprinting speed. It appeared in the April 2012 issue of the Journal of Biomechanics, widely considered to be the top journal in the field of biomechanics.

The article was co-authored with alumnus Ross Miller, Ph.D. ’11. Caldwell served as faculty mentor for Miller, now an Associate Professor of Kinesiology at the University of Maryland, and whose doctoral dissertation research formed the basis of the publication.

Umberger named NCSRR OpenSim Fellow

Brian Umberger, Associate Professor of Kinesiology, has been named an inaugural OpenSim Fellow of the National Center for Simulation in Rehabilitation Research (NCSRR). The NCSRR fellows program recognizes individuals with a deep expertise in biomechanical modeling and computer simulation and a strong commitment to the OpenSim modeling and simulation community. The NCSRR is a National Institutes of Health Medical Rehabilitation Research Center based at Stanford University that develops state-of-the-art computer modeling and simulation tools for clinical and other applications. The primary application developed by NCSRR is OpenSim, which is the leading open-source software system for creating models and developing simulations of human and animal movement.

Umberger’s research combines empirical data with advanced modeling and simulation techniques to study the biomechanics and energetics of human locomotion. He has used these techniques to better understand how the metabolic cost of movement is influenced by the way muscles function to produce movement. His research has focused on normal and pathological gait in adults and children, but also includes comparative work on the evolution of human bipedal locomotion. Current research, which is partially funded by the NCSRR, is focused on developing biomechanical models to better understand the locomotor adaptations made by lower limb amputees.
Nicholas Otis, ’14, a dual degree honor’s student in Nutrition and Kinesiology, and a member of the UMass Amherst track team, was one of three UMass students who received the Salute to Service Student Scholarship on November 20, 2013 at a special event hosted by the UMass Amherst Alumni Association in Boston. Nick Otis was nominated for his leadership in the Departments of Kinesiology and Nutrition, Athletics, and for his work in public service and civic engagement, both in the U.S. and in Tanzania.

As the Salute to Service webpage explains, “The Salute to Service Scholarship Fund has been established to honor and support the talents and aspirations of select recipients in pursuing and realizing their public service goals.”

Otis’ professors and mentors at UMass Amherst expressed delight that he was selected for this prestigious award. Dr. Frank Rife, Associate Professor and Undergraduate Program Director in the Department of Kinesiology, stated that Nick “has participated in student development organizations both domestic and foreign. And in all cases he has done what it takes to learn languages, cultures and other aspects of successful engagement which earned him some of the highest praise from those he served. He has learned how to make a difference!”

Dr. Clement Seldin, Professor Emeritus, Department of Teacher Education & Curriculum Studies in the College of Education, noted that “Nick’s vita reveals many academic and athletic awards; research experience in the Departments of Nutrition and Kinesiology at UMass Amherst as well as in Tanzania; impressive leadership experience at the university as student ambassador, advisor, board member; active involvement in food bank and rehabilitation department at the local hospital; high school coaching; intern teacher at Steppingstone Academy in Boston; and athletic talent in Track and Field as a sprint and mid-distance runner. Nick quickly emerged a class leader, respected by his fellow students for his inquiry and his rich character. While some students lead classes with dynamism and sheer vocal strength, Nick was different. He led because of his beliefs, the way in which he articulated them and the inclusive manner in which he related to other students in class.”

Dr. Frank Rife, Associate Professor and Undergraduate Program Director in the Department of Kinesiology, stated that Nick “has participated in student development organizations both domestic and foreign. And in all cases he has done what it takes to learn languages, cultures and other aspects of successful engagement which earned him some of the highest praise from those he served. He has learned how to make a difference!”
Alexa Sikalis, '14, was awarded the UMass Fall Scholar-Athlete Award for 2013 during a ceremony on campus. Sikalis, a midfielder on the university’s field hockey team, won the award from the UMass Athletic Department in honor of her academic and athletic achievements. The award recognizes junior and senior athletes who have excelled in their sport with a cumulative GPA of 3.0 and above.

"Lex obviously had a standout year on the field, and her GPA is really outstanding so I think it was an easy decision. Her preparation and approach to excelling in the classroom is really exemplary, and she is very driven to do the best she can in whatever she is doing," says Carla Tagliente, UMass Field Hockey Head Coach. Sikalis was also recently named to the National Field Hockey Coaches Association All-American team and finished second in the NCAA Division I field hockey.

"I could not even express how happy I was when I found out I was going to receive this award. This was a true accomplishment as I have put a lot of hard work and dedication into both schoolwork and field hockey," said Sikalis.

"Lex has had a tremendous career with the field hockey program. Her skills are at a level on par with the very best players in the country. This season she played one of the most difficult and most demanding positions for us and she really thrived. She is relentless and driven and has the ability to change a game – when you combine all three of those things you have a special player on your hands,” adds Coach Tagliente.

Alexa Sikalis (left) and Kara McCormick (right)

Alexander Borges & Kara McCormick, '14, were selected to receive CYBEX undergraduate research grants to help fund the completion of their honors thesis projects. The grants are the first awarded under a new agreement between the Department of Kinesiology and CYBEX International, a Massachusetts-based exercise equipment manufacturer, and include both financial remuneration for research costs and a small stipend.

Borges will conduct the study “Arc Trainer Accuracy and Consumer Monitor Validation Study” in the Physical Activity and Health Laboratory under the supervision of faculty advisor Dr. Patty Freedson. His project will evaluate the accuracy of the Arc Trainer in estimating energy expenditure, which has been difficult to achieve due to the cross trainer’s unique “Reverse Arc” motion. Borges will compare the Arc Trainer’s energy expenditure output with that of a criterion measure called indirect calorimetry to gauge its accuracy and, if proven inaccurate, to generate equations that will provide a more accurate estimate of Arc Trainer energy expenditure.

"I was very excited to receive this award,” says Borges. “This grant will allow us to purchase more heart rate monitoring equipment and activity monitors, as well as to provide compensation to subjects. Subject compensation is important as it makes scheduling a large number of subjects during the semester easier.”

McCormick’s study, “Effects of a 12-week exercise intervention on self-efficacy, fatigue and quality of life in breast cancer survivors”, will be conducted in Dr. Barry Braun’s Energy Metabolism Laboratory.

"Kara is unique in melding a strong curiosity about human physiology with a firm commitment to solving key public health issues,” states Dr. Braun. “Her honors thesis is emblematic of that dual interest in underlying mechanism and real-world application.”

McCormick will work with doctoral student Richard Viskochil in examining the effects of exercise to ameliorate cancer-related fatigue, which is a common side-effect among cancer survivors and can persist for months to years after treatment. The effects of this fatigue can be very debilitating both physically and mentally, preventing many survivors from returning to active everyday living. McCormick expects that with exercise training their self-efficacy, or confidence in ability to achieve goals, will increase and as a result their fatigue will begin to diminish.

“I am delighted to have been chosen for the award, and am thankful that I have been given the opportunity to expand my research with the grant,” says McCormick. “The grant will help with necessary research tools to discover more about cancer related fatigue. The symptoms make it very different from fatigue; therefore it must be treated with alternative methods. I also plan to attend a conference in hopes of gaining more knowledge about current research on breast cancer and survivorship.”

The department will award another set of CYBEX research grants during fall 2014.

Michaela Butler, '14, was named a recipient of the Winter Scholar-Athlete Award for 2013-2014 by the UMass Amherst Athletics Department. The award recognizes junior and senior athletes who have excelled in their sport with a cumulative GPA of 3.0 and above. Butler is a top member of the Women’s Diving team.
On June 17-19, 2013, the Department of Kinesiology hosted the 3rd International Conference on Ambulatory Monitoring of Physical Activity and Movement (ICAMPAM) on the UMass Amherst campus. ICAMPAM provided an international forum for researchers, clinicians, technologists and users to explore the latest advances and view the newest technologies in the field of ambulatory and sleep monitoring. It also offered industry partners the opportunity to introduce their products to an audience of users and discuss future developments.

The 2013 conference themes were physical activity, sedentary behavior, and sleep measurement, and topics included behavior and health outcomes; data processing, statistics, computational methods; validation and calibration; engineering and tool development; and clinical applications.

Conference organizers assembled an extraordinary group of keynote and invited speakers including UMass faculty John Staudenmayer from the Department of Mathematics and Statistics and Rebecca Spencer from the Psychology Department. James McClain and Rick Troiano from the National Cancer Institute hosted a special session on developing shared database resources in ambulatory monitoring research.

“Hosting this large international conference on our campus is timely, given the recent approval of the Massachusetts Life Sciences Center investment in the new UMass Amherst Center for Personalized Health Monitoring,” points out Patty Freedson, Professor and Chair of the Department of Kinesiology and the conference’s local organizing committee co-chair. “Personal physical activity and sleep monitoring research will be only one area of focus of the Center. We will also develop and manufacture a wide array of biosensors and test nanotechnology-based on-body devices. This center will include faculty and industry partners who will develop and evaluate the next generation of wearable devices to evaluate health-related markers which will have a large impact on economic development in western Massachusetts.”

Industry sponsors for ICAMPAM 2013 included ActiGraph, PAL Technologies, McRoberts, GENEActiv, CamNtech, BodyMedia, and CareFusion. The American College of Sports Medicine and the School of Public Health and Health Sciences provided additional support.
Paul Litchfield, M.S., ‘86 Wins 2013 Award for Significant Contributions from UMass SPHHS

Paul Litchfield, a 1986 graduate of the master’s degree program in Exercise Science, received the 2013 Award for Significant Contributions from the UMass Amherst School of Public Health and Health Sciences (SPHHS) at the School’s 4th Annual Fall Celebration held in October 2013.

Department Chair Patty Freedson introduced Mr. Litchfield, who was recognized as one of the most influential product creation experts working in the athletic footwear, performance apparel, and sporting goods industry today. He currently holds over 160 granted patents and patents applications pending, and has been long regarded as one of the leading innovators in the field.

Mr. Litchfield began his career at Reebok in 1985, where he held roles in product creation and product marketing and where he began the Advanced Concepts Team. He and his team have been responsible for numerous production innovations over the years, including The Energy Return System; The PUMP; DMX Moving Air; and Insta-Flate. He also co-developed the Reebok Injection EVA business.

In 1998 Mr. Litchfield became Head of the Puma Global Footwear Division, where he was responsible for product marketing, design and development for Puma’s global product line. In 2000, Mr. Litchfield returned to Reebok as the Vice President of Reebok’s Advanced Concepts Group. His responsibilities for new technology creation include baseball, ice hockey and lacrosse apparel and equipment. With the recent launch of CHECKLIGHT, a sports and activity impact indicator for the head, he and his team have made significant strides in the field of wearable electronics and safety equipment.
We are very grateful for the many generous gifts directed to the Department of Kinesiology over the years. The generous support from our donors has also enabled us to provide numerous scholarships, student travel grants and other support for our students’ work.

If you would like to donate to the Department of Kinesiology, please mail checks payable to the University of Massachusetts to: Development Office, 102 Arnold House, 715 North Pleasant St, University of Massachusetts, Amherst, MA 01003, or visit www.umass.edu/development

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The Department of Kinesiology has welcomed several new staff:

Louise Houlden joined the department as Office Manager during the 2013-2014 academic year.

Rebecca Thibault, B.S., '11, became undergraduate advisor for the department during the 2011-2012 academic year.

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The Department of Kinesiology is looking to collect your news and share it with our alumni network. Let us know about:

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