GREETINGS FROM THE CHAIR

As the 2010-2011 academic year draws to a close, it is a good time to reflect on our accomplishments of the past twelve months. It has been both a very good and a challenging year for the Department of Kinesiology. We are proud of our top-tier ranking by the National Research Council, a highly regarded non-federal agency that advises the nation on science, engineering, and medicine. Our doctoral program was also recognized as one of the top five programs in the nation by the National Academy of Kinesiology, an organization dedicated to education and the advancement of science in the field of kinesiology (see related story on page 2).

Here are some highlights of our accomplishments. Our faculty published more than 60 papers in peer-reviewed journals and successfully competed for more than $1.9 million dollars in grants and contracts. Rivaling our extraordinary research productivity has been a surge in undergraduate majors, now standing at more than 700 students. In response, we have been able to hire two new instructors, who are helping to address our pressing instructional needs, and we continue to explore new ways to accommodate our growing numbers while maintaining high-quality teaching and learning in the classroom. We also offer a variety of undergraduate online classes that provide direct revenue to the department for equipment for teaching and research labs, graduate student travel to conferences, and support for our junior faculty.

Our graduate students received highly competitive graduate fellowship scholarships from the Graduate School and student-initiated grants from the American College of Sports Medicine and other professional organizations. One of our senior undergraduate honors students received a 21st Century Leader Award from the University, having been selected as one of 11 honorees from among 4,300 graduating seniors. One of our faculty members, Dr. Barry Braun, was selected as a Spotlight Scholar for the upcoming year, in honor of his outstanding contributions to research, teaching, and service. There are numerous other examples of noteworthy accomplishments in our department and I invite you to read about them in the following pages and at umass.edu/sphhs/kinesiology/. Although our growth and success are positive for our department and the campus, they also present some significant challenges in terms of space, resources, and teaching capacity. The most immediate challenge is how to provide much-needed facilities to support our teaching and research missions. We have reached a point at which the best solution to this pressing problem is to renovate and expand our current facilities. Dr. Jane Kent-Braun led a research and facilities planning team in preparing two expansion and renovation grant proposals totaling $20 million dollars that was favorably reviewed by the National Institutes of Health. Although it was not funded, we now have a tangible plan to address our pressing facilities needs. Of course, this plan needs significant financial support to make it a reality. If we can raise $10 million, the University will match these funds to expand and renovate our facilities. I invite your comments and suggestions as to how we might move forward to attain this goal!

To our alumni, please stay in touch and keep us informed about where you are and what you are doing. We look forward to hearing from you!

Patty Freedson, PhD
DOCTORAL PROGRAM EARN NATIONAL RANKINGS

The Kinesiology Department has earned a top ranking in two different studies released last fall. The National Research Council (NRC) findings, which provide a range rather than a specific numeric ranking, rated the department as high as first, second, or third nationally. The National Academy of Kinesiology (NAK, formerly the American Academy of Kinesiology and Physical Education) reaffirmed the Kinesiology Department's place as a top-tier program nationally with a number 5 overall ranking.

The two studies took different approaches in evaluating the programs, but both reached the same conclusion—the Kinesiology program at UMass Amherst is among the best in the nation. The NRC used data collected over a one-year period in 2006 and used two different methodologies to compile its range of rankings. The NAK study, on the other hand, examined data collected over a five-year period from 2005 to 2009 to determine its overall scores. The new ranking from NAK is consistent with findings from its previous study, conducted using data from 2000 to 2004, confirming the Kinesiology Department's status as a top-tier program for over a decade.

Department Chair Patty Freedson attributes the high marks in both studies to several factors, most notably an engaged, research-oriented faculty. "We have a tremendously productive faculty who consistently publish in high-quality, peer-reviewed journals. The faculty has been very successful in terms of receiving external funds from federal agencies, private foundations, and corporations," she says.

With recent grants from the National Institutes of Health, the National Science Foundation, the American Heart Association, the American Diabetes Association, the National Multiple Sclerosis Society, and the Robert Wood Johnson Foundation, it is clear that the department's emphasis on grant productivity is paying off. The faculty, Freedson notes, is strong across the board.

"It's not just one or two faculty members doing this," says Freedson. "It's all of them. And that's what I see as being the major difference between our program and many others."

The department's strengths, as noted in both the NRC and NAK evaluations, are not limited to research productivity. The program also earned strong marks for its student support. "Every single graduate student in our program, from Master's to PhD students, receives funding from teaching assistantships, or research assistantships from grants," Freedson explains.

Marjorie Aelion, dean of the School of Public Health and Health Sciences, notes that the department is strong on levels that cannot be found in the NRC and NAK reports. "What the data do not measure are the intangible qualities that make Kinesiology an excellent department." She adds: "Kinesiology has created an environment of mutual respect and collegiality among its faculty, staff, and students. The undergraduate program has grown at a fast rate, and is currently three times larger than any other department in the School of Public Health and Health Sciences. Kinesiology faculty members are research-active, carry out international caliber research, and are committed to their undergraduate and graduate students."

Freedson attributes the growing popularity of the Kinesiology major to several factors. "It's an excellent major for students interested in medicine, physical therapy, and occupational therapy, or those who wish to become chiropractors or physician's assistants. Anyone interested in a career in the healthcare fields will benefit. I think another reason, as you see in the media almost every day, is that the need for and health benefits of exercise are evident in every walk of life. There's a big focus on preventive medicine, of which physical activity and exercise play a large part," she says.

The Kinesiology Department continues to excel nationally despite rapid growth in the field that has resulted in increased investment in and development of competing kinesiology programs across the country. In addition to research and teaching excellence, the department also is seeking and building partnerships with top-tier corporations (see related story on CYBEX International, page 3).

As Freedson notes, "If we consider that an important goal of the department is to improve our ranking, to move from a top-five to a top-three program, then obviously investments in the department need to be made. These evaluations from the NRC and NAK show we are one of the top kinesiology programs in the country and that we are extremely competitive with our peer institutions. I'm hopeful that these kinds of objective assessments will result in an increased commitment to our program, not only to help keep us in the upper tier but also to help us continue to rise in the rankings."

Given the department's track record, its commitment to research productivity, and the strength of its faculty and students, continued investment in the department by the University and its corporate partners will help to ensure that the Department of Kinesiology remains a top-tier program in the future.
NEW INTEGRATIVE TEACHING LAB A HIT IN CORE LAB COURSES

I
t’s great news that the Kinesiology major is ever more popular. The challenge comes in accommodating the extra students, and especially in finding room to teach the lab sections of senior-level core lab courses: Motor Control, Biomechanics, and Exercise Physiology.

To meet this pressing need and improve students’ hands-on learning experiences, Department Chair Patty Freedson set about identifying suitable space for a dedicated teaching lab in the basement of Totman.

Once the space was found, investment by the dean and the chair and help from several faculty members led to the painting and equipping of the area with new Biopac Lab Systems to run experiments in motor control, biomechanics, and exercise physiology. Six work stations have been set up, each for use by two to four students. With five lab sections for each of the three core lab courses, this Integrative Teaching Lab is now a busy place.

Both undergraduates and their graduate Teaching Assistants attest to great improvement in the lab experiences afforded by this dedicated space. Grad TA Jacob Deblois reports: “This lab now offers a great opportunity for students to have more direct involvement with the experiments we perform in these courses.” The department plans eventual new facilities for teaching and research labs but in the meantime this upgrade gets an immediate thumbs-up.

DEPARTMENT CELEBRATES PARTNERSHIP WITH CYBEX

The Department of Kinesiology and Cybex International, Inc., formed a new research and education partnership this spring. As part of the agreement, CYBEX provided $120,000 worth of state-of-the-art equipment for use in the department’s Body Shop Fitness Center, located in the Totman Building. This equipment includes 10 new cardio and 12 new resistance training machines, and Body Shop users have had great things to say about this new equipment.

A ribbon-cutting ceremony was held on March 10 to commemorate the opening of the newly refurbished facility. Art Hicks, president of CYBEX, along with Paul Juris ’86G, executive director of the Cybex Institute for Exercise Science, joined Kinesiology Department Chair Patty Freedson, and School of Public Health and Health Sciences Dean C. Marjorie Aelion at the ceremony. Sabine Holub, wife of UMass Amherst Chancellor Robert C. Holub and a department benefactor well known among Body Shop staff for opening the center at five a.m. every day, regaled the audience with tales of the importance of such a facility, and then cut the ribbon to re-open the fitness center.

“We are extremely excited to be partnering with the UMass Department of Kinesiology, one of the finest programs in the world, to advance research into and understanding of exercise science,” said Hicks. “CYBEX is committed to providing the safest and most effective exercise equipment possible. This research partnership will help us achieve that goal and achieve the best possible results for the users of our equipment. No other fitness equipment manufacturer puts these sorts of resources into research.”

The Kinesiology Department has been working with Juris to pursue lines of scientific inquiry in exercise physiology, biomechanics, and motor control. As part of the new agreement with CYBEX, the department will also provide feedback on equipment design and effectiveness and evaluate prototypes in product development.

“As the executive director of the Cybex Institute for Exercise Science and an alumnus of the Department of Kinesiology, I am thrilled to have helped establish this partnership between two world-class institutions,” Juris said. “We are looking forward to working with students and faculty in our collaborative research efforts, to develop new health and fitness solutions for our communities, and to provide valued information to health and fitness professionals.”

The Kinesiology Department’s faculty and student researchers will reap immediate benefits from the research partnership with CYBEX. Freedson calls the partnership “critically important because it allows faculty and students to pursue highly relevant research about exercise, and to communicate this information to the scientific community and to CYBEX. The insights gained will inform further investigation and will help CYBEX tailor its machines to more specific exercise outcomes.”

Among the research studies directed by Kinesiology faculty are:

- A new biomechanics project led by Graham Caldwell and Brian Umberger.
- Prototype testing of CYBEX’s Bravo Functional Trainer.
- A training study using the Bravo Functional Trainer, led by Dr. Tobin Silver, director of the Body Shop.

The agreement will also enhance the Body Shop’s role as a teaching center for undergraduate students interested in pursuing health, fitness, and wellness careers. “The equipment helps in multiple ways,” explains Silver. “It helps students learn about the fitness industry and how the human element is taken into consideration when designing equipment. Also, students are able to use the equipment to provide supervised fitness assessments and program design, free to the community. This is great because the student gets practice designing programs and the community members get help as they make the journey towards a healthy life.”

CYBEX will also provide student internships and publish student “white papers” on fitness-related topics on their company website. Overall, this new agreement is truly a “win-win” partnership for CYBEX and the Kinesiology Department.
POST-DOCTORAL FELLOWS PURSUE WIDE-RANGING RESEARCH TOPICS

The number of Post-Doctoral Fellows in the Kinesiology Department is at an all-time high of seven, training with six faculty members. Julia Freedman and Joseph O’Halloran work with Dr. Joe Hamill in the Biomechanics Lab, Anita Christie works with Dr. Jane Kent-Braun in the Muscle Physiology Lab, Stephanie Jones works with Dr. Richard van Emmerik in the Motor Control Lab, Dinesh John works with Dr. Patty Freedson in the Physical Activity and Health Lab, Stephanie Moeckel-Cole works with Dr. Priscilla Clarkson in the Muscle Biology and Imaging Lab, and Leng-Feng Lee works with Dr. Brian Umberger in the Locomotion Research Group.

All members of the group have been actively involved in research within their respective labs, and over the past year have submitted manuscripts for publication, presented research papers at national and international conferences, and mentored undergraduate and graduate Kinesiology students. Diversity is the key word in characterizing the post-doc group in terms of their backgrounds, research interests, and future goals.

Recognizing the importance of this training experience, Department Chair Patty Freedson provided support for monthly meetings—naturally involving food—that gave the post-doc group much-appreciated additional mentoring and career advice from a variety of Pioneer Valley academics. The group identified topics and goals for the academic year and met with Kinesiology Department faculty to gain insight on academic life (Dr. Jane Kent-Braun) and making the transition from a post-doc to a faculty position (Dr. Sarah Witkowski). Dr. Kate Queeney, chair of Smith College’s Chemistry Department, was the guest at a lunch meeting to discuss academic life at a small liberal arts college. The group also met with staff of the Research Development office on campus for suggestions about searching and applying for postdoctoral funding.

The department anticipates exciting developments in the academic careers of these individuals as well as the vital expansion of post-doc numbers as the department continues to grow its research program.

KINESIOLOGY STUDENTS PRESENT AT STATE-WIDE UNDERGRADUATE RESEARCH CONFERENCE

The Kinesiology Department was very well represented at the 17th annual Massachusetts Statewide Undergraduate Research Conference, which was hosted by UMass Amherst’s Commonwealth Honors College and Dean Priscilla Clarkson on April 22. Research topics were varied, illustrating the type of experiences our undergraduates receive in the department’s laboratories and in the field. These undergraduates were ably mentored by the graduate students and their advisers. Congratulations to all:

- **Danielle Aspinwall**, The Accuracy of Omron Pedometers at Slow Walking Speeds
- **Jessica Fay**, Central Nervous System Mechanisms for Age-Related Loss of Muscle Power
- **Kathleen Franklin**, Sex Differences in Glucose and Insulin Concentration Consequent to Increased Sitting Time
- **Jennifer Kodela**, Microarray Analysis of High and Low Creatine Kinase Responders to Eccentric Exercise-Induced Muscle Damage
- **Ariel Newman**, Step Count Accuracy of the GT1M Accelerometer at Slow Walking Speeds
- **Christina Machaby**, A Case Comparison Study of Energy Expenditure During Activities of Daily Living in Multiple Sclerosis and a Matched Control
- **Abbie Marrone**, A Case Comparison Study of Energy Expenditure During Activities of Daily Living in Multiple Sclerosis and a Matched Control
- **Marianna Mavilia**, Does a Decrease in Daily Sitting Time Enhance Exercise Training Effects on Measures of Obesity?
- **Joy Nightingale**, Metformin May Blunt Some Effects of Exercise to Reduce Risk Factors for the Metabolic Syndrome
- **Amelia Nodell**, Effect of Enjoyment on Energy Expenditure during Self-paced Exercise
- **Teresa O’Brien**, Daily Pattern of Physical Activity in Healthy Older Adults
- **Corianne Oliver**, Suppression of Appetite after Exercise: Role of Elevated Body Temperature
- **Emily Seery**, Physical Activity, Sleep Quality and Symptomatic Fatigue in Young and Older Adults
- **Tylar Suckau**, The Movement and Activity in Physical Space (MAPS) Score in Older Adults: A Case Comparison Study
- **Rebecca Thibault**, Step Count Accuracy of the GT3X Accelerometer at Slow Walking Speeds

These presentations highlight just a small portion of the outstanding work that our undergraduates do in the course of their studies, carried out in addition to their full course loads.

Our students win awards in a wide variety of venues. This spring **Rebecca Thibault** received one of the ten 2010-2011 Gerald F. Scanlon Awards for Outstanding Student Employee given by the University. Third-year Kinesiology undergraduate student **Hannah Stoops** was one of five students from the School of Public Health and Health Sciences to win a William F. Field Alumni Scholars Award. Kinesiology undergraduate students **Trent Ainsworth** and **Shiyi Zan** both won American Kinesiology Association Undergraduate Scholar Awards, which recognize national-caliber contributions in leadership and academic achievement. Trent was also the recipient of a University of Massachusetts Amherst 21st Century Leader Award, presented at commencement.
Kinesiology faculty continue to be recognized both here on campus and in national and international venues for their outstanding contributions to the field of Kinesiology. A sampling of their recent accomplishments includes:

- **Brian Umberger**, School of Public Health and Health Sciences 2010 Outstanding Teacher Award
- **Sofiya Alhassan**, National Institutes of Health K01 Award for Career Development and 2011 Robert Wood Johnson Award
- **Richard Van Emmerik** was elected a Fellow of the National Academy of Kinesiology.
- **Barry Braun**, UMass Amherst Spotlight Scholar Award for Spring 2011
- **Erin Snook**, UMass Amherst Family Research Scholar for 2011-2012
- **Jane Kent-Braun**, UMass Amherst Microsoft IMPACT Fellow for Blended Learning, 2011-2012
- **Joe Hamill** and **Patty Freedson** continue to represent the department as keynote speakers at major conferences around the world.

Following the excellent example set by our faculty, our master's and doctoral students also garner a tremendous number of honors and awards each year. Following are a few recent examples from this top-notch group of individuals:

- **Ross Miller** won the prestigious American Society of Biomechanics 2010 Pre-Doctoral Young Investigator Award.
- **Steven Malin** was awarded the 2011 Michael Pollock Graduate Student Award from the American College of Sport Medicine.
- **Rob Hyldahl** and **Julianna Eve** received 1st and 3rd place Research Poster Awards at the 2011 School of Public Health and Health Sciences 14th Annual Research Day.
- **Kirsten Granados** and **Jessica Fay** won highly sought after University Fellowships to support their graduate studies in 2011-2012.
- **Ling Xin** received a travel grant to attend the 2011 Mary Frances Picciano NIH Dietary Supplement Research Practicum at the National Institutes of Health.
- **Michael Busa** received a travel grant from the International Society of Biomechanics to attend the 2011 meeting in Belgium.
- **Kate Lyden** and **Rich Viskochil** were awarded 2011 Doctoral Student Research Grants by the American College of Sports Medicine Foundation.
- **Chris Palmer** received funding from the Department of Defense for his research on the effects of load on soldier performance and survivability.
- **Post-doctoral Fellow and UMass alum Anita Christie** will begin a tenure-track faculty position in the Department of Human Physiology at the University of Oregon in fall 2011.
- **Manneh Ghazarians** and **Steven Malin** received both the American Kinesiology Association Master's and Doctoral Scholar Awards for 2011.
- **Allison Gruber** won a 2011 ACSM Biomechanics Interest Group Research Award.
Tell us briefly who you are:

My name is David Fine, and I graduated from UMass in 2009 with a B.S. in Kinesiology and a minor in Biology.

What is your most memorable moment at UMass?

I’ll always remember the experience I had working as an intern with the UMass Athletic Training department. Standing with the football team on the sidelines at Alumni Stadium against Boston College and being able to contribute to the team with my training responsibilities was definitely a very memorable day for me as a sports fan, UMass student, and intern.

Briefly describe your professional career:

I currently work as an Orthotics Technician for American Prosthetics in Braintree, Mass. My job consists of fabricating custom orthotic devices for a very wide range of patients, from kids with cerebral palsy to geriatric stroke patients. I’m able to assist in patient care and be involved in prosthetic fabrication. While most of my time is spent with orthotics, the exposure to patient care and prosthetics has been an excellent base for a potential career as a prosthetics practitioner, or Prosthetist.

How did the Kinesiology Department help you prepare for your career?

It helped by exposing me to so many of the various aspects of the public health field. On a regular basis, and among other things, principles of anatomy, biomechanics, psychology and neurology are taken into consideration in the fabrication process and/or during patient visits. While my work experience has been invaluable, I would not have been able to even get started or advance in the field of Orthotics and Prosthetics without the exposure and education I received through the Kinesiology program.

What do you think the future holds in store for graduates in the field of Kinesiology?

With an aging and increasingly diabetic population, I believe Certified Prosthetists will continue to have very strong job security.

Is there anything else that you would like us to know about you?

I plan to apply to prosthetic practitioner programs, which are either a six-month long certificate program, or a two-year Master’s program. After graduate school, I would be required to serve a one-year residency before becoming eligible to sit for the practitioner's certification exam. I would highly recommend the field of Orthotics and Prosthetics to anyone who enjoys an extremely rewarding job that combines hands-on work with patient care.
FACULTY PROFILE:
Elizabeth (Eliza) Frechette, Instructor

When did you start here at UMass Amherst?
January, 2011.

What drew you to this position?
The department has a great reputation. I love being able to spend so much time working with students (both teaching and advising). The interview process really sold me on the people in the department.

What is your academic/work background?
In general, I specialize in Exercise Science and Sport Studies. More specifically, I work with minority populations in sport, gender and sexuality in sport, physical conditioning, stress management and wellness, exercise physiology, and coaching and leadership in sport. I received my M.S. in Exercise and Sport Studies from Smith College in 2010 and my B.A. in Psychology from Mount Holyoke College in 2000.

On the personal side, what are your favorite activities related to health and wellness?
Some of my favorites are rugby, deep breathing and progressive muscle relaxation, and hiking, but especially activities with my son.

NEW ADMINISTRATIVE STAFF

This past year, we welcomed Darlene Bartos and Charlene Galica to the Kinesiology Department. Both Darlene and Charlene bring years of on-campus administrative experience to their positions as Office Associates. Along with Office Manager Florrie Blackbird, their contributions to the smooth running of our ever-growing department are invaluable!

UPDATE ON THE UNDERGRADUATE STUDIES PROGRAM

The undergraduate major in Kinesiology continues to provide a strong preparation for pursuing opportunities in the allied health sciences. Student enrollment has grown from 303 in 2005 to approximately 750 in 2011, 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 Therapy, 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.

Dr. Frank Rife, Undergraduate Program Director
UPDATE ON THE GRADUATE PROGRAM

Our graduate program in Kinesiology is well established and highly recognized, with an excellent regional, national, and international reputation. The graduate faculty present an interdisciplinary approach to the study of human physical activity, investigating the mechanical, neurological, biochemical, physiological, genetic, and behavioral aspects of human movement. We offer both M.S. and Ph.D. degrees, with a strong emphasis on research training. Incoming students enter our graduate program with a diverse range of backgrounds, holding degrees in kinesiology, biology, engineering, physical therapy, or arts and sciences from universities throughout the United States and countries such as Brazil, Canada, China, Denmark, and the Netherlands. Such diversity encourages breadth in critical thinking and enhances the training of all our graduate students. This formula for success has worked well, as our graduate program has the highest ranking on campus for student satisfaction, and both the National Research Council and the National Academy of Kinesiology rank our doctoral program as one of the very best in the nation (see related story, page 2).

Dr. Graham Caldwell, Graduate Program Director

IN MEMORIAM

The department was deeply saddened to lose two of its members this spring.

William Werner, a much-beloved senior, died March 19. A celebration of his life with his family and members of the department was held on campus the week before graduation, and the University awarded Will his Bachelor of Science degree posthumously. Will had a big impact on the students, faculty, and staff of this department, and he will be remembered always.

Professor Walter Kroll, a founding member of the Exercise Science (now Kinesiology) Department, died May 1 after a brief illness. He was 80. Joining the department in 1967, Dr. Kroll went on to have a tremendous influence on generations of students and faculty in exercise science, both here at UMass Amherst and at academic institutions around the world. A pioneer and leader in motor control and skill acquisition, he was also well versed in almost every area of the field. While his legacy will live on, we will miss his challenges to dogma here in the classrooms and laboratories of the Totman Building.