A Few Words from the Chair

Roger Enoka

Integrative physiology is the study of biological function. It involves linking observations from molecules and cells to the function and health of whole organisms. Founded in 2003, our popular program provides students with a fundamental education in science and health that can lead to a vast array of careers.

In a recent survey of CU Boulder academic programs, Integrative Physiology was recognized as a strong department with few national peers. It comprises an innovative undergraduate major that is taught by faculty who conduct research on significant public health issues. Most of our research focuses on two themes: aging and stress physiology.

The department currently comprises 10 staff, 37 faculty, 32 postdoctoral fellows, 60 graduate students, and 1350 undergraduate majors. We invite you to visit our website (http://www.colorado.edu/intphys), which is managed by Leif Saul, to learn about the accomplishments of the current members of the department. You may be interested in some of the video interviews with faculty and students that are posted on the website. Despite the success of the website, however, we decided to publish a newsletter in an attempt to maintain contact with our alumni. We want the newsletter to be a two-way interaction, however, by which we keep you informed about our activities and we invite you to contact Marsha Cook (marsha.cook@colorado.edu) with information you would like to share with other alumni via the newsletter.

Chair Roger Enoka and Associate Chair Robert Mazzeo

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What’s in a Name?

Dale Mood

A great deal! The department has had a number of names in my 39 years as a member of its faculty. I was hired by the Department of Men’s Physical Education and Recreation in 1970, which was located in Carlson Gymnasium. The Department of Women’s Physical Education and Dance was housed in Clare Small. The two departments merged in 1973. The dance faculty in the Women’s Department moved to theatre to become the Department of Theatre and Dance. Due to the decline in the demand for physical education teachers, the abolition of mandatory physical activity classes for students in the College of Arts and Sciences (1979), and the increasing interest in the physical therapy progression, the department changed its name in 1985 to the Department of Kinesiology. The recreation faculty moved to the Business School. The department almost immediately (1987) began to develop a proposal for a PhD program and this was eventually approved in 1996.

The curriculum and research interests of the faculty continued to evolve and in 2000 the name changed once again to the Department of Kinesiology and Applied Physiology in recognition of the increased emphasis on the physiological aspects of movement. Given this focus, Dean Speer of the College of Arts and Sciences began the process of transferring the nine physiology faculty in the Department of Evolutionary, Population, and Organismic Biology to our department. The result of this reorganization, which was completed in 2003, was the Department of Integrative Physiology. Over the course of my tenure at CU, the department has gone from a professional-degree program to one that offers a science-based liberal arts curriculum as the foundation for a host of career options. The Department of Integrative Physiology has emerged as one of the high-performing faculties in the College of Arts and Sciences.

College Professor of Distinction – Douglas Seals

Professor Douglas Seals (http://www.colorado.edu/intphys/faculty) of the Department of Integrative Physiology was awarded the honorific title “College Professor of Distinction” by the College of Arts and Sciences at the University of Colorado. The title is “reserved for scholars and artists of national and international distinction who are also recognized by their college peers as teachers and colleagues of exceptional talent.”

Professor Seals’ research focuses on how the cardiovascular system is influenced by aging and the strategies that can be used to delay or prevent arterial aging. The National Institute on Aging, which is one of the institutes in the National Institutes of Health (NIH), has awarded him several research grants to support his research. These awards included a 10-year research grant for exceptional merit. Other honors include Fellow status on three different councils of the American Heart Association, the 2005 Herbert H.
deVries Award for Distinguished Research in the Field of Aging, and a 2006 CU-Boulder Faculty Assembly Award for Research, Scholarly, and Creative Work.

He teaches two graduate courses: Professional Skills for the Research Scientist, and Physiology of Aging. Dr. Seals has mentored a number of junior faculty, postdoctoral fellows, graduate students (doctoral and masters), and undergraduate students. He also holds an adjunct appointment as professor in the Department of Medicine in the Divisions of Cardiology and Geriatric Medicine on the Health Sciences campus of the University of Colorado at Denver.

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**Alumni News**

**Curtis Stepan** (BA 1990) completed the major in kinesiology and began working at a physical therapy center in Boulder. Half his time was spent assisting patients with their rehabilitation programs and the other half of his time involved administrative duties. He obviously excelled in administration as he was hired in 1995 as the VP of Marketing and Finance for Arbor Occupational Medicine, which is a medical provider in Boulder that treats work-related injuries. To enhance his administrative skills, he completed a MS degree in business management in 1998. While at Arbor, he and a partner began Alpha Rehabilitation, which is a physical therapy center in Boulder. Over the next six years, Arbor and Alpha expanded to five locations and Curtis became CFO/COO for both companies. The two companies currently employ nine graduates of Kinesiology/Integrative Physiology.

**Anna** (Mickey) **Taylor** (PhD 2003) and **Chet Moritz** (PhD 2003) live in Seattle and will become first-time parents in June. After CU Boulder, Mickey completed postdoctoral training in UCHSC in Denver and at the University of Washington in Seattle before enrolling in law school in 2006. As a law student, she interned for the climate program at the Center for Biological Diversity and co-edited a textbook on climate change law and policy. She will continue to work in nonprofit environmental law with the center after graduation. Chet completed postdoctoral training at CU Boulder (2003-2004) and at the University of Washington (2004-2008) and is currently a research assistant professor in the Department of Physiology and Biophysics at UW where he works on brain-computer interfaces and neuroprosthetics.

**Erin Chapman** (BA 2003) received a doctoral degree in physical therapy (DPT) from the University of Southern California. Subsequently, she completed a (Continued on p. 2)
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credentials clinical residency program and is a board certified specialist in orthopaedic physical therapy. She is currently an instructor of clinical physical therapy in the Division of Biokinesiology and Physical Therapy at USC and practices at USC Physical Therapy Associates at the University Park campus. She specializes in orthopaedic disorders, sports rehabilitation, and performance-related musician injuries. CU grads interested in physical therapy at USC are invited to contact Erin (echapman@usc.edu).

After being mentored in our Graduate Program by Doug Seals, Frank Dinello (PhD 2000) completed postdoctoral training at the Mayo Clinic in Rochester (2000-2003) before beginning as an assistant professor in the Department of Health and Exercise Science at Colorado State University. Frank teaches an undergraduate course in exercise physiology and a graduate course in cardiovascular physiology. His research on the control of the vascular system in aging humans is funded by the National Institutes of Health and his work is published in the top journals in his field. While a graduate student at CU, Frank met and married Devin Kutzscher (MS 1999) and they have two children (Tyler, 3.5 years and Alyssa, 9 months).

Georgia Frey

Georgia Frey (MS 1990) is currently a tenured associate professor at Indiana University in Bloomington in the Department of Kinesiology. Upon completing an MS at CU, Georgia received a PhD from Oregon State University that led to a six-year appointment as an assistant professor at Texas A&M University. Subsequently, she joined the faculty at Indiana University where she teaches and conducts research in the area of physiological responses to exercise in individuals with disabilities. She lives with her husband Carl, step-daughter Catlin, three dogs, two finches, a boa constrictor, and a troublesome parrot named Woody (whom she inherited from Bob Mazzeo).

Based on an interest in immunology that he developed while at CU, Jay Campisi (PhD

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2003) completed a postdoctoral fellowship in the Program of Immunology at Stanford University (2003-2007). A National Research Service Award from the National Institutes on Health provided support for his work at Stanford. He began as an assistant professor in the Department of Health Sciences at Merrimack College (North Andover, MA) in 2007, where he teaches undergraduate courses on human physiology and biology and conducts research on how biological factors (e.g., aging), and lifestyle behaviors (e.g., stress, physical activity, diet) modulate the immune system. He married Jennifer Casey (a CU alumnus with a BA double major in Spanish and Latin American Studies in 2000) and they live in Waltham, MA with their two children (Cyrus, 2 years and Helen, 7 months).

Kudos to Faculty and Students

Ken Wright and Jerry Stitzel have both been promoted to the rank of associate professor with tenure and Monika Fleshner was promoted to the rank of professor.

Senior Bela Mohapatra received CU’s Thomas Jefferson Award in recognition of her outstanding service to the community. Criteria for the award include “a strong concern for the advancement of higher education, a deeply seated sense of individual civic responsibility, and a profound commitment to the welfare and rights of the individual.” Her contributions to the community include student coordinator and HIV tester at the Wardenburg Student Health Center, volunteer at the Boulder Valley Women’s Health Clinic, volunteer at a camp for children with cancer, and participation in an alternative Spring Break program to assist with a hurricane relief program. In her spare time, she works as an undergraduate research assistant in Ken Wright’s Sleep and Chronobiology Lab.

Chris Lowry received the Faculty Early Career Development (CAREER) award from the National Science Foundation. The prestigious award is given to junior faculty engaged in outstanding research and in activities that integrate education with research. The award will support research to investigate how thermosensory systems that detect warmth affect brain serotonergic systems, physiology, and social behavior.

Jodi Lukkes was awarded a postdoctoral fellowship by the National Institute on Mental Health to study the effects of early-life stress on serotonergic systems and behavior.
Science Education Initiative

In 2006, physicist and Nobel Laureate Dr. Carl Weiman proposed a new education initiative to reform the way that science is taught at CU. Five departments were invited to participate in the program: Chemistry; Geology; Integrative Physiology; Molecular, Cellular and Developmental Biology; and Physics. The SEI program is managed in our department by three science teaching fellows (Françoise Benay, Kate Semsar, and Teresa Foley) and a faculty liaison (Bill Byrnes).

The approach is based on a “backward design model” that involves establishing a set of learning goals that represents the knowledge and skills to be developed in a course. Based on this framework, the goals are achieved by the faculty working backwards to construct active learning opportunities and design appropriate exams.

The first task undertaken by the SEI staff and faculty was to convert the one-semester course on human physiology to a two-semester sequence that provides a more substantial foundation in physiology for the majors. To ensure that the learned goals and exams are aligned, the SEI staff work with faculty to develop class activities (e.g., assignments, in-class questions, group activities) that are based on common student misconceptions. A popular strategy is the use of “clicker questions,” which involves an instructor posing a multiple choice question during the class and giving the students time to arrive at an answer that is registered on the instructor’s computer with the use of a remote control device. Seventeen of the faculty in our department use clicker questions as it can be an effective strategy to keep the students engaged in the class.

With the foundation courses (Human Physiology I and II) established, the SEI staff are now working with the faculty to integrate these learning goals into the upper division core courses (biomechanics, cell physiology, endocrinology, exercise physiology, immunology, and neurophysiology) and to develop active learning environments in these courses. Most importantly, the SEI staff are quantifying the changes in student learning with these new approaches and will publish the results in academic journals.

Arrivals and Departures

Assistant professor Alaa Ahmed joined the department in August 2008. She has a BS in mechanical engineering, a PhD in biomedical engineering (University of Michigan), and completed postdoctoral training at the University of Cambridge in the UK. She investigates biomechanical and sensorimotor processes underlying the control of human movement in uncertain or unstable environments.

Professor Robert Lynch retired in August 2008 after 15.5 years at CU. His research examined how the biological clock, operating in the hypothalamus of the brain, interprets seasonal changes in day length and how this timer then controls the pineal gland and its hormone (melatonin) to alter reproduction in mice and hamsters. He taught the core undergraduate course on human physiology and a popular elective course on brain and behavior.

Instructor Larry Greene resigned his position in December 2008 so that he could move to Florida and take care of his aging parents. Larry was a writing instructor in the department for 15.5 yrs. His major teaching responsibilities were Scientific Writing in Integrative Physiology (IPHY 3700) and Writing for the Research Scientist (IPHY 5830).
Graduating Students

The following students were recognized with graduate degrees or bachelor degrees with distinction at our graduation ceremony on May 8, 2009:

**PhD**

Teresa E. Foley
Christopher M. Jung

Adam R. Marmon
Jennifer A. Wilking

**MS**

Alexander D. Black
Ashley L. Bolden
Tina M. Burke
Shannon R. Domarski

Jamie N. Justice
Jashashree Mohapatra
Michaela Reger
Jason L. Rengo

Paul V. Strong
Robert S. Thompson

**BA/MS**

Sara C. Bessman
Chase A. Dukes

Kelly A. Klein
Molly J. Russell

**BA with Distinction**

Kenton Lee Asche
Christopher P. Athanasopoulos
Austin Michael Badeau
Christopher Floyd Bantock
Sara Catherine Bessman
Mark William Bowers
Zakeih Chaker
Ryan Leonard Freedle
Emily Jane Frydendall

Kayla June Harding
Jessica Katherine Kennedy
Ihsan Burak Larsen
Upasana Bela Mohapatra
Sarah Kathleen Nolfsinger
Benjamin Joseph Ryan
Christine Sue Sidelko
Jacob Cody Steinbaugh
Christopher Luke Stockburger

Margaret Noel Tillquist
Lauren Elizabeth Vetter
Natalie Jean Wanner
Andra Lea Wilkinson
Rena Chuan Zuo

Graduating students in Macky Auditorium

Zakeih Chaker receiving award from Dr. David Sherwood

Dean Todd Gleeson
Many Thanks

The faculty and students greatly appreciate recent donations to the CU Foundation on behalf of Integrative Physiology by:

Byrnes, William
Enoka, Roger

Willemyns, Daniel
Wylie, James and Katherine

To learn about the many ways you can make a gift, contact:

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Director of Development
University of Colorado Foundation
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We Want to Hear from You

Please let us know if your address has changed or if you have any news for us to include in the next newsletter. Send an e-mail to marsha.cook@colorado.edu, or mail this form.

Name ______________________________________________________
E-mail address ________________________________________________
Mailing address _______________________________________________

CU degree(s) and date(s)__________________________
Major professor ____________________________________________
Recent degree(s) from other school(s) and date(s)

Present position, employer, location

Awards, honors, fellowships, publications

Other information, alumni news

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