

FOUR NEW PROFESSORSHIPS IN HEALTH SCIENCES AND TECHNOLOGY AT ETH ZURICH, SWITZERLAND

The preservation of health and quality of life is a challenge for society and especially for the health care system, given the demographic development, a progressively aging population and an increasing proportion of obese individuals. Preventing age- and weight-related diseases, developing effective therapies and technological help, and training of competent students requires a systematic and multidisciplinary approach.

ETH Zurich therefore decided to form a new department of "Health Sciences and Technology" (D-HEST; www.hest.ethz.ch), which brings together scientists and engineers in food, nutrition, exercise, neuroscience, and medical technology. D-HEST, which will be established 1 January 2012, invites applications for four new professorships in:

1. Movement Biomechanics
2. Neural Control of Movement
3. Exercise Physiology
4. Energy Homeostasis

Candidates should demonstrate an exceptional potential to develop an innovative and collaborative research program at the interfaces of movement sciences and sport, molecular health sciences, neurosciences, nutritional biology, biomechanics, rehabilitation technology, physiology, and medicine.

Professor of Movement Biomechanics

The successful candidate is expected to establish an interdisciplinary research program focused on movement biomechanics in the aging musculoskeletal system.

Possible research areas focus on: multi-scale simulation techniques from organ to cells; imaging of tissue deformations; mechanobiological adaptation; virtual physiology of the healthy and pathological musculoskeletal system; or computational modeling and evaluation through movement measurements. Beside a formal education in mechanical engineering or closely related disciplines, the candidate should have a proven track record in the development of computational models for biomechanical problems on the organ/tissue/cellular/molecular level, incorporating experimental aspects of movement analysis.

Professor of Neural Control of Movement

The successful candidate is expected to establish an interdisciplinary research group focused on neural control of movement in the normal or disabled population from young up to old age. Possible research areas focus on: neuronal macro- and microcircuit structure and function, the role of nerve fiber growth in the adult brain under conditions of learning and repair, the analysis of the interaction of large populations of neurons in the sensory/motor networks on the various levels of the nervous system, mechanisms that cause central and peripheral fatigue, neuroimaging and human-machine interaction for the investigation of motor control and neuroplasticity or biofeedback for movement learning and neurorehabilitation. The candidate should have a proven track record in successful research on human and animal experimentation from the system to the cellular level, using most advanced technology.

Professor of Exercise Physiology

The successful candidate is expected to establish an interdisciplinary research group focused on muscular function at the crossroad of various research areas such as biomechanics, biochemistry, bioenergetics, cardiovascular and respiratory physiology, neuroscience, endocrinology, metabolic homeostasis, and physics. While the primary focus is on the human organism, a systemic and synthetic approach through comparative studies integrating animal and mathematical models is of great importance. Specific research topics may vary but the research should follow a systemic, integrative approach, comprising all levels of scientific analysis, from the molecular through the cellular to the whole body. Beside a formal education in physiology, biology or a closely related discipline, the candidate should have a proven track record in molecular and cellular techniques.

Professor of Energy Homeostasis

The successful candidate is expected to establish an interdisciplinary research group focused on energy homeostasis at large. Possible research topics may include integrative aspects such as understanding how the status of an organism with respect to physical activity, nutrition, and age impacts cellular and molecular processes of energy homeostasis. Beside a formal education in physiology, biology or a closely related discipline, the candidate should have a proven track record in solving problems on the organ/tissue/cellular/molecular level.

Additional prerequisites for all four positions are a strong motivation and an undisputable commitment to undergraduate and graduate student education. The professorships will be embedded in the Department's undergraduate and graduate program in Health Sciences and Technology. The professors will be expected to teach both undergraduate (in German or English) and graduate level courses (in English).

Each professorship comes with several salary lines for academic and technical assistants, start-up funds and annual allocations to establish a world-class research program. Access to excellent animal facilities and several technology platforms of ETH and the University of Zurich (Functional Genomics Centre, Imaging, Mass spectrometry, etc.) is ensured. Additional information on the individual profiles can be found here: http://www.facultyaffairs.ethz.ch/facultypositions/index_EN

Please apply online at www.facultyaffairs.ethz.ch.

Your application should include your curriculum vitae and a list of refereed publications. The letter of application should be addressed to the President of ETH Zurich, Prof. Dr. Ralph Eichler. The closing date for applications is **June 30, 2011**. With a view towards increasing the number of women in leading academic positions, ETH Zurich specifically encourages women to apply.