@ TEACHERS COLLEGE

What is Movement Sciences?

Movement offers a unique perspective to examine how we prioritize and process information to control the body. By examining the interplay between functional goals, attention, sensory and proprioceptive feedback as influences on the predictive movements of postural control, we are studying how the central nervous system makes decisions. Understanding how information is used in unconscious decision-making could provide valuable insights into a wide range of topics from educational methods to physical rehabilitation to robotics and beyond.

-Maia Janowitz

Movement Sciences is an area of study that provides opportunities to understand mechanisms underlying movements, including how one can initiate movement, acquire new movement skill, maintain and improve performance level and health, and prevent decline or disappearance of skill and healthy life.

-Benjapol Benjapalakorn

Movement science for me is the art that studies the magnificence of how the human body reacts and interacts in the physical world. Those who are passionate enough dedicate themselves to understand how movement and exercise can change our health, performance, well-being and ultimately our lives.

-Norberto Quiles

Movement sciences serves as a medium to probe into the brain through which we learn how amazingly the brain is functioning and how little we know about its mechanisms. Learning about neural mechanisms which underlie neurological diseases helps clinicians and researchers to apply potential interventions to relevant populations and subsequently to improve their quality of life.

-Hsing-Ching Kuo

Meet Our New Department Chair

Dr. Stephen Silverman is a Professor of Education and Chair of the Department of Biobehavioral Sciences. Professor Silverman’s research focuses on teaching and learning in physical education and on the methods for conducting research in field settings. He has made well over 150 presentations to international, national, and regional groups and has published over 100 chapters and papers, including more than 80 refereed research articles. Recently, he was named the 2011 AAHPERD Alliance Scholar and a Fellow of AERA.

Point of Interest

Steve Silverman was selected to give the prestigious Alliance Scholar Lecture at the American Alliance for Health, Physical Education, Recreation and Dance National Convention in San Diego on March 31st 2011.

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Cerebral Palsy Research Changes Lives

The Center for Cerebral Palsy Research was founded in 1996 and is committed to understanding the mechanisms underlying the symptoms of cerebral palsy and developing evidence-based treatment approaches targeting these symptoms. The Center is a non-profit organization located at Teachers College, Columbia University, a leading institution of Education, Health and Psychology. Our Center is committed to improving the lives of children with cerebral palsy through research. These include both speech and motor disorders associated with CP.

Impaired hand function is one of the most disabling symptoms of hemiplegic cerebral palsy, affecting self-care activities such as feeding, dressing, and grooming. We have been studying the mechanisms underlying the impaired hand function in cerebral palsy since 1991. Based on this knowledge, we developed and began studying the efficacy of intensive rehabilitation techniques in 1997 and more than 125 children have participated. Presently we are testing the efficacy of two cutting-edge interventions, Constraint-Induced Therapy (CIT) and Hand-Arm Bimanual Intensive Therapy (HABIT), on involved hand and arm function in children with hemiplegia. We are hopeful that these interventions will improve hand function in children with hemiplegia. Participation is free and will help aid our understanding of the optimal ingredients and dosage of successful rehabilitation with the hope that this information will improve rehabilitation services for all children with cerebral palsy.

Did you know?

More than 125 children have participated in the Center for Cerebral Palsy’s Intervention Camps.

PARTICIPATION IS FREE
BUT SPACE IS LIMITED!

Email: cpresearch@tc.columbia.edu

GET IN ON THE ACTION!

Now recruiting participants for a variety of projects to learn about the mechanisms underlying impaired hand function in cerebral palsy, brain plasticity and rehabilitation. We will have a constraint-induced movement therapy or bimanual training (HABIT) day camp for children age 7-16, June 27 - July 15, 2011.

Doctoral Student in the Spotlight

Applied Exercise Physiology Student: Amerigo Rossuello

In January, Amerigo was hired as full-time faculty at Bronx Community College, in the department of Health & Physical Education. He teaches Human Nutrition and Walk, Jog and Weight Training classes with the goal of helping students develop the tools to live more healthful lives, and be able to impart useful fitness knowledge to family and friends. As part of the Communities IMPACT Diabetes Center Legacy Grant, Amerigo has also been developing 12 weeks of exercise and didactic programming to increase physical activity and decrease cardiovascular risk factors among underserved Bronx cancer survivors. Classes for the first of six cohorts will began on March 10th 2011.
**Tackling Parkinson’s Disease**

Dr. Tara McIsaac is an Assistant Professor of Movement Sciences & Education. Dr. McIsaac is interested in the principles involved in movement skill acquisition that are applicable to individuals with movement disorders and people recovering from neurological injury. Significant research has informed us of optimal training techniques to enhance motor learning in healthy individuals. However, much less is understood about the unique requirements in learning or re-learning movements after neurological injury such as stroke, or in individuals living with neurodegenerative disorders such as Parkinson disease. Her research focuses on factors of attention and instruction that impact the learning of everyday more complex ‘dual-task’ movement skills like driving a car or walking while carrying a cup of coffee. To explore these issues we use neurophysiological measurements of muscle activity (EMG), movement patterns (kinematics) and forces (kinetics). This information will help in developing new approaches to therapeutic interventions for people with movement disorders and injury.

**Doctoral Student in the Spotlight**

Applied Exercise Physiology Student: Shirit Rosenberg

Shirit is presently working on her doctoral proposal. Her specific interests are in cardiovascular diseases, physical activity, and physical function. Currently, she is teaching BBSR 4090, a course in Physical Fitness, Exercise, and Relaxation. This spring semester will be her third semester teaching this course. She is also concurrently working at Columbia University Medical Center as a research assistant in Pediatric Neurology. The project is an exercise study with patients with spinal muscular atrophy (SMA) type III. Shirit is a co-investigator of a study evaluation of left ventricular assist device (LVAD) patients and muscle strength and physiology before and after LVAD placements.

**THE VICE PRESIDENT’S STUDENT RESEARCH IN DIVERSITY GRANT AWARDS FOR 2011-2012**

**Amerigo Rossuello**

(WINNER)

**Proposal Title:** The Efficacy of a Comprehensive Exercise Intervention on Urban Endometrial Cancer Survivors: A Feasibility Study.

**Faculty Sponsor:** Dr. Carol Ewing Garber, Associate Professor, Movement Sciences and Education

While structured exercise programs have been shown to improve the quality of life for breast cancer survivors, little is known about how to implement and sustain exercise behavior modification in underserved populations. This research will be the first interventional exercise study for endometrial cancer survivors and will investigate the efficacy of a 12-week exercise intervention with a diverse urban sample of this population. Study results will build on current knowledge regarding the facilitators of and barriers to exercise adherence among underserved urban cancer survivors. The methodology will be relevant to urban community health centers in their efforts to enhance long-term exercise adherence among underserved populations, leading to improved quality of life and reduced rates of debilitating and deadly diseases such as diabetes and cardiovascular disease.

**Did You Know?**

Many of our students have jobs teaching other students from young children to working professionals.

Amerigo Rossuello
Making a Difference

Mary Gillis, a doctoral student in Applied Physiology, participated in the New York Daily News Diet Hotline. The purpose of the hotline was to help readers get in shape by offering free fitness advice from health experts throughout the city. The hotline ran for one week where readers from across the country were able to call into the Daily News offices and talk with different health professionals on the panel.

When asked about the experience, Mary said: “It felt great to be a part of the event representing the Applied Physiology field. I know that callers were grateful for the perspective I was able to offer them. My hope is that next year more of my doctoral colleagues will join me in participating in this great event.”

Teaching Student Teachers

By: Jennifer Rasmussen

“Physical Education is the only class offered that affects how we feel, every day, for the rest of our lives.” I heard this at a conference I attended years ago and I continue to try and weave this philosophy into my lessons frequently when working with my students and pre-service teachers. As physical educators, our job is not just teaching sport skills ~ it’s about educating the whole child and doing it in a way that allows them to feel safe both physically and emotionally. We need to value what we teach, stay current in our field and take pride in what we do. I love working in the field with my student teachers. Their experiences bring me back to my practitioner days; the joy, the anticipation, the frustration, the excitement of the teaching and learning process. I try and instill the importance of ‘reflective teaching’ in my students. Reflective teaching is good teaching when coupled with detailed planning and meaningful content. My goal as a supervisor is help guide our student teachers through the teaching process by helping them to understand that what we teach and how we teach is impacting the attitudes of our students toward physical activity on a daily basis. If we want our youth to seek physical activity outside the four walls of our gymnasiums, then we need to create an exciting and meaningful environment for learning within our physical education classes. Physical education, after all, is ultimately the platform for discovering the benefits of lifetime health and fitness at an early age.