

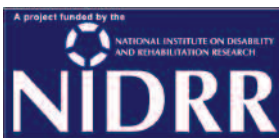
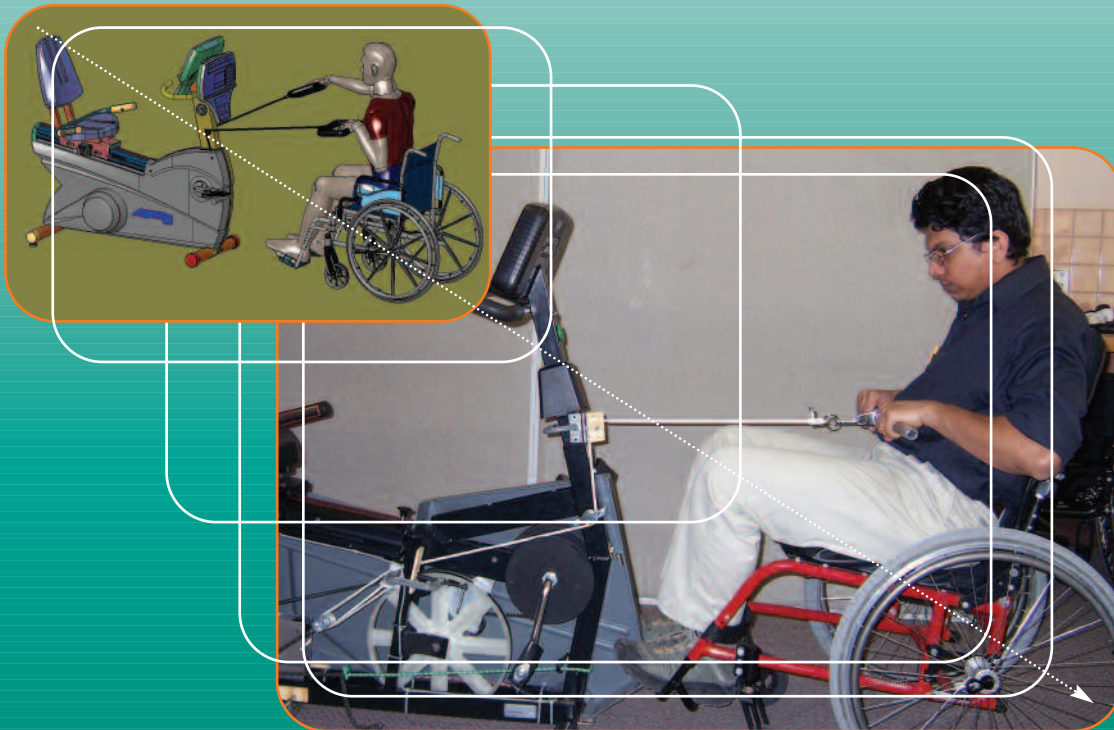


A REHABILITATION ENGINEERING RESEARCH CENTER

EXERCISE AND RECREATIONAL TECHNOLOGIES  
FOR PEOPLE WITH DISABILITIES:

# STATE OF THE SCIENCE

MAY 30 - 31, 2006 | HYATT REGENCY DENVER AT COLORADO CONVENTION CENTER



**UIC** Department of Mechanical  
UNIVERSITY OF ILLINOIS and Industrial Engineering  
AT CHICAGO COLLEGE OF ENGINEERING

**UIC** Department of Disability  
UNIVERSITY OF ILLINOIS and Human Development  
AT CHICAGO COLLEGE OF APPLIED HEALTH SCIENCES



FINAL PROGRAM

## OPENING REMARKS



**DAVID BRADDOCK, Ph.D.**

Executive Director, Coleman Institute for Cognitive Disabilities  
Associate Vice President, University of Colorado System



**CHARLOTTE (TOBY) TATE, Ph.D.**

Dean, College of Applied Health Sciences  
University of Illinois at Chicago



**TAMAR HELLER, Ph.D.**

Director, Rehabilitation Research Training Center on Aging with Developmental Disabilities  
Head, Department of Disability & Human Development  
University of Illinois at Chicago

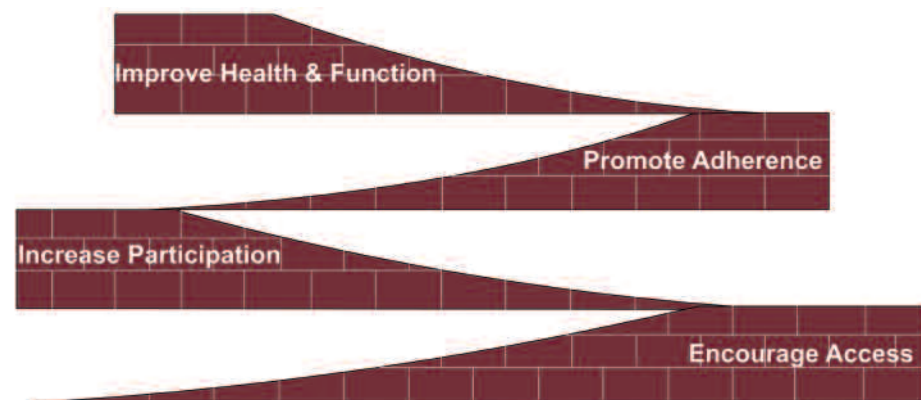


**JAMES WHITEHEAD**

Executive Vice President, American College of Sports Medicine

## TECHNOLOGY FOR A HEALTHY LIFESTYLE

RECTECH'S CONCEPTUAL  
MODEL FOR ENHANCING  
PHYSICAL ACTIVITY  
OPPORTUNITIES  
FOR PEOPLE WITH  
DISABILITIES



## RECTECH MISSION

The mission of RecTech is to discover ways to increase participation in and adherence to healthful exercise and active recreation for people with disabilities. Historically, people with disabilities have had substantially fewer opportunities to engage in such activities compared with the general population.

The resulting physical inactivity increases or exacerbates their risk of acquiring various physical and psychological secondary conditions. This first-ever State of the Science Conference in recreation technology and exercise physiology will examine the use of proven, emerging, and innovative technologies to provide greater access and participation in all areas of physical activity for people with disabilities. It brings together engineers, exercise physiologists, psychologists, manufacturers, inventors, other scientists and interested stakeholders in an effort to channel their collective talents toward articulating the current state of our science and begin to define an agenda for the future. I thank you for your willingness to participate and I look forward to your continuing contributions as we work together to enhance opportunities for people with disabilities.



**JAMES H. RIMMER, Ph.D.**  
RERC RECTECH DIRECTOR

# SCHEDULE AT A GLANCE

## TUESDAY, MAY 30, 2006

- 11:30 - 1:30 p.m. Registration
- 1:30 - 3:45 p.m. Opening Session
- 4:00 - 5:00 p.m. Breakout Sessions
- A. Virtual Exercise Environments
  - B. New Exercise Equipment - Engineering & Design
  - C. Measurement & Assessment Technology
- 5:30 - 7:30 p.m. Evening Reception & Keynote

## WEDNESDAY, MAY 31, 2006

- 7:30 - 8:00 a.m. Continental Breakfast
- 8:00 - 9:15 a.m. 1. ACSM Wolffe Lecture  
OR  
2. Inclusive Fitness Initiative
- 9:30 - 10:30 a.m. Breakout Sessions I
- A. Virtual Exercise Environments
  - B. New Exercise Equipment - Clinical Applications
  - C. Measurement & Assessment Technology
- 10:45 a.m. - 12:10 p.m. Breakout Sessions II
- A. New Exercise Equipment - Engineering & Design
  - B. Tele-exercise
  - C. Assessment and the Environment
- 12:15 - 1:30 p.m. Lunch and Keynote
- 1:45 p.m. - 3:00 p.m. Breakout Sessions III (Panels)
- A. Virtual Exercise Environments
  - B. New Exercise Equipment - Engineering & Design
  - C. e-Health Technology - Measurement to Application
- 3:15 - 4:30 p.m. Closing Session
- 4:30 - 6:00 p.m. RERC Rectech Advisory Panel Meeting

# ACCESSIBILITY

LOOK FOR ACCESSIBILITY DETAILS MARKED \* THROUGHOUT THIS PROGRAM

The following accessible hotel facilities are available:

- Audio/visual smoke detectors
- Closed captioned TV
- Connecting rooms
- Telephone alerting device
- Braille symbols in elevators
- Front door alerting device
- One Braille compendium
- Amplified telephone handsets
- Bathtub benches & grab rails
- Vibratory alarm clocks
- Wheelchair accessible sinks/vanities & towel racks
- Bus available with wheelchair lift
- Wheelchair accessible closet poles
- Public restrooms
- Fitness Center
- Front entrance
- Roll-in showers
- Front desk

## TRAVELER SERVICES FOR PEOPLE WITH DISABILITIES (CITY OF DENVER)

### ABLE HEALTHCARE SERVICES

<http://www.ablehealthcare.net/>

1450 S. Havana St. #304 Aurora, CO 80012

303-344-3364

*Scooter/wheelchair & hotel rollaway bed rentals (free delivery).*

### WHEELERS ACCESSIBLE VAN RENTALS

<http://www.wheelersvanrentals.com/>

7550 South Emerson Street Centennial, CO 80122

303-797-0999

*Wheelchair/scooter accessible vans with lowered floors and automated ramps and doors.*

*Wheelchairs/scooters available for rental. Delivery can be arranged.*

**ANY ACCESSIBILITY ISSUES SHOULD BE BROUGHT TO THE IMMEDIATE ATTENTION OF AN RERC STAFF MEMBER, REGISTRATION DESK STAFF, AND/OR DIRECTLY TO THE HOTEL STAFF.**

# GENERAL INFORMATION

## REGISTRATION AND INFORMATION SERVICES

Advance registration is available online until Friday, May 28th at [www.rectech.org/conference](http://www.rectech.org/conference). On-site registration and check-in will be available in the Mineral Hall Foyer on the 3rd floor of the Hyatt Regency Denver from 11:30 - 1:30 on Tuesday, May 30 and 7:30 - 9:30 a.m. on Wednesday, May 31. A registration form is located at the back of this program. Rectech staff will be available at the registration desk to answer questions and provide conference materials and other information.

## CANCELLATIONS:

Cancellations must be in writing. Refunds will not be issued for no-shows. Please review the registration form at the rear of this program for further details.

## TARGET AUDIENCE

Research, rehabilitation, assessment, exercise, fitness, physical therapy, community health, health policy, engineering, assistive technology, disability, entrepreneurs, health care providers, robotics, sports and recreation.

## POSTER SESSION

A poster session will take place on Tuesday, May 30th, during the evening reception (5:30—6:00 p.m.). This poster session will feature the current projects in research and development of the graduate students of RERC Rectech. These posters will also be on display throughout the conference in the exercise equipment exhibit area.

## EXERCISE EQUIPMENT EXHIBIT AREA

Mineral Hall D will display exercise equipment featured during conference sessions. This area will be used specifically for presentations during Breakout Sessions, but will be open for general viewing during all other conference hours.



## NAME BADGES

Each registrant will receive a name badge at check-in. Badges are required for admittance into all RERC Rectech sessions as well as the Exhibit Hall for the ACSM annual meeting held at the Colorado Convention Center. RERC Rectech Staff and Associates will be denoted with a green stripe. Please see someone with the green strip if you have questions or need assistance.

## EVENING RECEPTION

Attendance to the evening reception, which includes appetizers, poster session, dinner and keynote speaker, is included in the registration fee. For those traveling with guests, additional tickets are available for \$20 and may be purchased at the registration desk. Please plan to purchase extra tickets as soon as possible so that we may plan for additional meals.

## CONFERENCE SITE

All conference sessions will take place in the Mineral Hall on the 3rd floor of the Hyatt Regency Denver. The only exception is for those opting to attend the ACSM Wolffe Lecture instead of the Inclusive Fitness Initiative Lecture on Wednesday at 8:00 a.m. The ACSM Wolffe Lecture will take place in the Lecture Hall at the Colorado Convention Center directly adjacent to the Hyatt.

## AMERICAN COLLEGE OF SPORTS MEDICINE ANNUAL MEETING

This conference is taking place in conjunction with the ACSM 53rd Annual Meeting, May 31-June 3. ACSM members will receive a 20% discount on registration for this conference if member I.D. is presented at registration. Attendees of the RERC Rectech conference are invited to visit the ACSM Exhibit Hall in the Colorado Convention Center, where a wide range of products and services supporting sports medicine, research, education, and services are represented. Exhibits open Wednesday evening and you may use your Rectech name badge to enter.

## LOCAL COPYING AND COMPUTER SERVICES

FedEx/Kinkos business center in hotel lobby. Open 7 a.m. - 7 p.m.

## CONFERENCE PROCEEDINGS

Printed proceedings will be mailed to registered attendees 6-8 weeks after the conference. Handouts of presentation material will be distributed to attendees onsite. \*If you require specific accommodations (large print, disk, Braille, interpreter, captioning, assistive listening device, etc.) that you did not specify on your registration, please alert conference staff as soon as possible.\*

## CONTINUING EDUCATION CREDITS (CEU)

RESNA CEUs will not be offered as previously suggested. A general Certificate of Completion form is available at the registration desk if you will be applying for continuing education credits in your respective field post-conference.

### HYATT REGENCY DENVER AT COLORADO CONVENTION CENTER

This brand new hotel, adjacent to the Colorado Convention Center, is only steps away from restaurants and shopping at the 16th Street Mall pedestrian promenade. The hotel includes an indoor lap pool, sauna, changing room, and sun deck as well as Altitude Restaurant, Strata Bar, Peaks Lounge, and Perks, a 24-hour coffee & gift shop. Rates are \$149 single/double. Rooms are available on first-come first-serve basis until full. \*ADA accessible rooms available on request. Page 3 lists accessible facilities within hotel.\*



### LOCAL ATTRACTIONS

The city of Denver has many local attractions including: 16th Street Mall pedestrian promenade, Denver Pavilions, Coors Field (home of Colorado Rockies), Six Flags, Larimer Square, and Red Rocks Amphitheatre. There are also many outdoor activities in and around Denver including skiing, river running, hiking, fishing, camping, horseback riding, sailing & mountain biking. For more information, visit [www.denver.org](http://www.denver.org) or 303-892-1112.

### TRANSPORTATION FROM/TO DENVER INTERNATIONAL AIRPORT

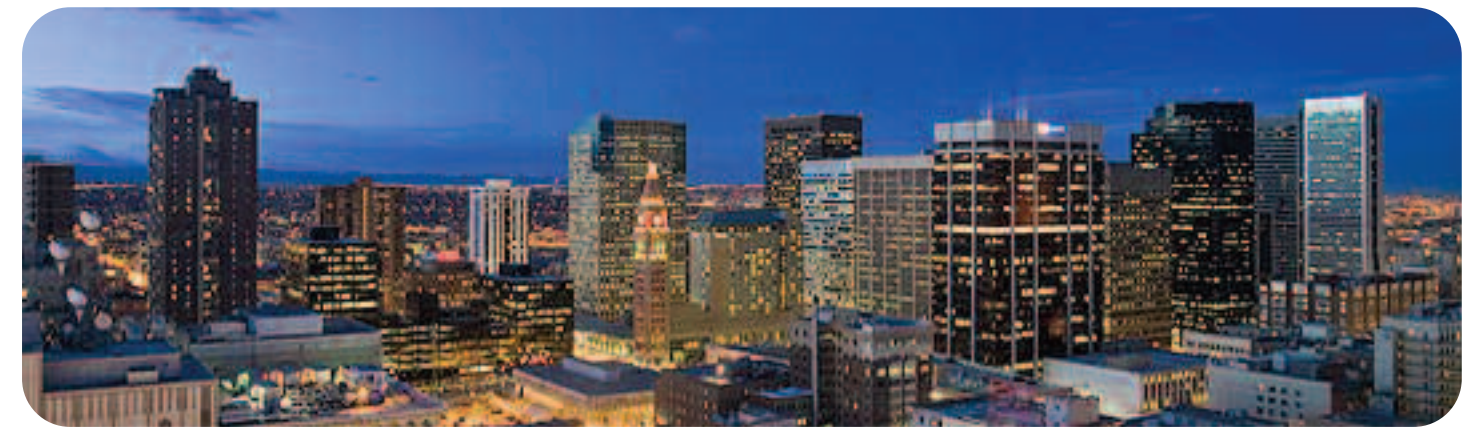
Super Shuttle Airport Shuttle runs every 15 minutes with pickup on Level 5 (Ground Transportation) at Denver International Airport, and at the Hotel Driveway. Cost is \$19 per person one way for Hyatt guests. Reservations are not required between the hours of 5am and 5pm. \*If you require a lift or ramp, please make a reservation as soon as possible by calling 800-525-3177 or 303-370-1300 or you may contact Mobility Plus by Yellow Cab directly at 303-344-3364.\*

### HOTEL PARKING

Overnight Valet \$24 (Minimum Valet Charge \$14)  
Overnight Self Park \$20  
Hourly Self-Park: 1st hour \$5; each additional hour \$2

### TIME ZONE

Denver observes Mountain Time in May.



While in Denver, also take advantage of attending the ACSM 53rd Annual Meeting May 31-June 3. A must-attend event for scientists, educators, clinicians, as well as trainers, therapists and students in the exercise science & sports medicine fields. For more information visit: [www.acsm.org/meetings/annualmeeting.htm](http://www.acsm.org/meetings/annualmeeting.htm) or call 317-637-9200 x135. CEC and CME opportunities available.



**Denver 2006**  
**53rd Annual Meeting**  
**May 31-June 3, 2006**  
**AMERICAN COLLEGE**  
**of SPORTS MEDICINE**  
ACSM: Advancing Health Through Science, Education and Medicine.

# DETAILED SCHEDULE

## TUESDAY, MAY 30, 2006

- 11:30 - 1:30 p.m. **Registration/Check-in**  
**Location:** Mineral Hall Foyer
- 1:30 – 3:45 p.m. **Opening Session**  
**Location:** Mineral Hall Rooms A-C  
**Presiding:** James Rimmer, University of Illinois at Chicago  
Director, RERC Rectech
- 1:30 – 2:30 p.m. **Welcoming Address**  
David Braddock, University of Colorado System  
Tamar Heller, University of Illinois at Chicago  
Charlotte (Toby) Tate, University of Illinois at Chicago  
James Whitehead, American College of Sports Medicine
- 2:30 – 3:45 p.m. **Current State of the Science**
- 2:30 - 3:00 p.m. "Recreation Technology, Opening up a World of Opportunity"  
Rory Cooper, University of Pittsburgh
- 3:10 - 3:40 p.m. "Universal Design Guidelines for Fitness Equipment"  
Peter Axelson, Beneficial Designs  
Patti Longmuir, PEL Consulting
- 3:45 – 4:00 p.m. **Break**
- 4:00 – 5:00 p.m. **Breakout Sessions** (choose 1)
- A. Virtual Exercise Environments**  
**Location:** Mineral Hall E  
**Presiding:** Jane Mulligan, University of Colorado - Boulder
- 4:00 – 4:25 p.m.  
"3-D Immersive Virtual Environments for CSAFE Compliant Exercise Equipment: Software & Hardware Equipment Prototype"  
Pat Banerjee, University of Illinois at Chicago
- 4:30 – 4:55 p.m.  
"Developing Virtual Reality Systems for People with Physical & Developmental Disabilities"  
Charles Bergen, Vtree, Inc.

- B. New Exercise Equipment Engineering & Design**  
**Location:** Mineral Hall Room F  
**Presiding:** Cathy Bodine, Assistive Technology Partners

4:00 – 4:25 p.m.  
"Design of the GameCycle Exercise Device: Initial Development"- Shirley Fitzgerald, University of Pittsburgh

4:30 – 4:55 p.m.  
"Modification Kits for Retrofitting Exercise Equipment"  
Michael Scott, University of Illinois at Chicago

- C. Measurement & Assessment Technology**  
**Location:** Mineral Hall Room G  
**Presiding:** Jennifer Rowland, University of Illinois at Chicago

4:00 – 4:25 p.m.  
"Surveys, Odometers, Global Positioning Devices: Challenges & Solutions to Measuring Physical Activity & Participation in Full-time Wheelchair Users"  
Charles Levy, University of Florida

4:30 – 4:55 p.m.  
"Measurement & Analysis of Long-term Ambulatory Activity in People with Physical Disability"  
Kim Coleman, Cyma

- 5:00 – 5:30 p.m. **Break**
- 5:30 – 7:00 p.m. **Reception & Keynote**  
**Presiding:** William Schiller, University of Illinois at Chicago
- 5:30 – 6:00 p.m. Appetizer Reception/Poster Session  
**Location:** Mineral Hall Foyer
- 6:00 – 6:30 p.m. **Keynote Address**  
**Location:** Mineral Hall Rooms A-C  
"Assistive Interactive Human-Centered Robotics"  
Maja Mataric', University of Southern California
- 6:30 – 7:30 p.m. **Dinner**  
**Location:** Mineral Hall Rooms A-C

## WEDNESDAY, MAY 31, 2006

7:30 – 8:00 a.m.

### Continental Breakfast

Location: Mineral Hall Foyer

8:00 - 9:15 a.m.

### Wolffe Lecture or IFI Symposium



#### ACSM Joseph B. Wolffe Memorial Lecture:

Location: Lecture Hall - Colorado Convention Center

"Physical Activity and Public Health: from Karvonen, Morris, and Paffenbarger to Behavioral and Environmental Interventions."

Steven N. Blair, P.E.D.

OR



#### Inclusive Fitness Initiative Symposium

Location: Mineral Hall A-C

Presiding: Amy Rauworth, University of Illinois of Chicago

"Embracing Inclusive Design - Current Accessibility Standards and Equipment Development in the UK Fitness Industry"  
Dawn Hughes, IFI Researcher

"Fit for Inclusion? - The Impact of the Inclusive Fitness Initiative on the Fitness Equipment Market in the UK"

Sue Catton, IFI National Director

9:30 - 10:30 a.m.

#### Breakout Sessions I (choose 1)

##### A. Virtual Exercise Environments

Location: Mineral Hall E

Presiding: Pat Banerjee, University of Illinois - Chicago

"A Multisensory Treadmill-Based Locomotion Interface"

John Hollerbach, University of Utah

##### B. New Exercise Equipment - Clinical Applications

Location: Mineral Hall F

Presiding: Michael Scott, University of Illinois at Chicago

"An Investigation of Energy Expenditure During Isometric Video Game Play Using the Kilowatt Isometric Game Controller"

Daniel Drury, Gettysburg College

#### C. Measurement & Assessment Technology

Location: Mineral Hall G

Presiding: Edward Wang, University of Illinois of Chicago  
"Problems, Challenges, and Possible Technology

Solutions in Assessing Physical Activity of Individuals with Disabilities."

Weimo Zhu, University of Illinois Urbana-Champaign

10:30 – 10:45 a.m.

#### Break

10:45 a.m. – 12:10 p.m.

#### Breakout Sessions II

##### Panel Discussions (choose 1)

##### A. New Exercise Equipment - Engineering & Design

Location: Mineral Hall E

Moderator: Catherine Leigh Graham, University of South Carolina School of Medicine

Scott Hopson, Power-Plate North America

Sabri Cetinkunt, University of Illinois at Chicago

Shirley Fitzgerald, University of Pittsburgh

Christopher Stanford, TrekEase

##### B. Tele-exercise

Location: Mineral Hall F

Moderator: Dorothy Nary, Research and Training Center on Independent Living

David Brienza, University of Pittsburgh

Jenny Kiratli, Veterans Administration Palo Alto

Jack Winters, Marquette University

##### C. Assessment and the Environment

Location: Mineral Hall G

Moderator: Margaret L. Campbell, NIDRR

Patti Longmuir, PEL Consulting & Beneficial Designs

Peter Axelson, Beneficial Designs

Jon Sanford, Georgia Institute of Technology

William Schiller, University of Illinois at Chicago

## WEDNESDAY, MAY 31, 2006 CONTINUED

- 12:15 – 1:30 p.m. **Lunch & Keynote Address**  
**Location:** Mineral Hall A-C  
**Presiding:** Judith Goldberg, Initiative for Women with Disabilities
- 12:15 – 12:45 p.m. **Lunch**
- 12:45 – 1:30 p.m. **Keynote Address**  
"Universal Design & the Development of Accessible Recreation Products"  
Dianne Goodwin, BlueSky Designs
- 1:30 – 1:45 p.m. **Break**
- 1:45 – 3:00 p.m. **Breakout Sessions III**  
**Panel Sessions (choose 1)**
- A. Virtual Environments**  
**Location:** Mineral Hall E  
**Moderator:** William Worek, University of Illinois at Chicago  
Jane Mulligan, University of Colorado at Boulder  
Cristian Luciano, University of Illinois at Chicago  
Leslie McLachlan, Assistive Technology Partners  
Laura Meyer, Assistive Technology Partners
- B. New Exercise Equipment - Engineering & Design**  
**Location:** Mineral Hall F  
**Moderator:** Cathy Bodine, Assistive Technology Partners  
Andrew Houghton, The Cube LLC  
Elizabeth Omiatek, Marquette University  
David Brown, Northwestern University  
Hal Honeyman, Project Mobility
- C. e-Health Technology: Measurement to Application**  
**Location:** Mineral Hall G  
**Moderator:** June Isaacson-Kailes, Disability Policy Consultant  
Barth Riley, University of Illinois at Chicago  
Kim Coleman, Cyma  
William Schiller, University of Illinois at Chicago

3:00 – 3:15 p.m.

**Break**

3:15 – 4:30 p.m.

**Closing Session**

**Location:** Mineral Hall A-C

Presider: Jenny Kiratli, Veterans Administration Palo Alto

3:15 - 4:00 p.m.

"Machines that Care: Building Empathy into Assistive Devices"

Timothy Bickmore, Northeastern University

4:00 - 4:30 p.m.

"Future Needs and Directions"

David R. Gater, University of Michigan

4:30—6:00 p.m.

**RERC Rectech Advisory Panel Meeting & Reception**

**Location:** TBA

## RECTECH SPONSORS



Rectech is a Rehabilitation Engineering Research Center funded by the National Institute on Disability and Rehabilitation Research and Co-funded by the Coleman Institute for Cognitive Disabilities at the University of Colorado. Other conference sponsors and contributors: College of Applied Health Sciences and the Department of Mechanical and Industrial Engineering at the University of Illinois at Chicago, and the American College of Sports Medicine.

### RERC PRIMARY PARTNERS

- Assistive Technology Partners & Department of Physical Medicine & Rehabilitation, University of Colorado HealthSciences Center
- College of Engineering & Applied Sciences, University of Colorado at Boulder
- Veteran's Affairs Palo Alto Health Care System
- Rehabilitation Institute of Chicago
- Life Fitness

## FACULTY

**PETER W. AXELSON, MSME, ATP, RET,** is the founder and director of Research and Development at Beneficial Designs, Inc., a Nevadabased company that works toward universal access through research, design, and education. He oversees all activities including rehabilitation research and development, recreation technology design, contract design, and legal consulting. Mr. Axelson is currently working on Universal Design Standards for Fitness Equipment.

**P. PAT BANERJEE, Ph.D.,** is a professor in the Mechanical and Industrial Engineering Department at the University of Illinois at Chicago. His research involves 3-dimensional immersive collaborative virtual reality modeling and standardization for exercise equipment, and virtual reality software, interface, and hardware equipment design.

**CHARLES BERGEN** is the Senior Software Designer for Vtree, Inc. in Bensalem, Pennsylvania. He has been involved with advanced software system designs for the past 28 years and has dedicated the last 5 years exclusively to developing systems for people with physical and developmental disabilities.

**TIMOTHY BICKMORE, Ph.D.,** is an Assistant Professor in the College of Computer & Information Science at Northeastern University in Boston, Massachusetts. His area of research involves the development and evaluation of computer animated agents that emulate face-to-face interactions for the purpose of effecting health education and behavior change interventions.

**DAVID BRADDOCK, Ph.D.,** is the Executive Director of the Coleman Institute for Cognitive Disabilities and the Associate Vice President of the University of Colorado System. He is the founding chair of the University of Illinois at Chicago's Department of Disability and Human Development and of its research institute, the Institute on Disability and Human Development. Dr. Braddock's research interests include the comparative study of disability services in the American states, the history of social and public policy toward disability in the U.S., the deinstitutionalization and community living of persons with developmental disabilities in Illinois and nationally, and health promotion and disease prevention for persons with developmental disabilities.

**DAVID M. BRIENZA, Ph.D.,** is Director of the Rehabilitation Engineering Research Center on Telerehabilitation and an Associate Professor in the Department of Rehabilitation Science & Technology at the University of Pittsburgh in Pennsylvania. His research areas include wheelchair seat cushions, pressure sore prevention, soft tissue biomechanics, telerehabilitation technology and wheelchair technology.

**DAVID A. BROWN, PT, Ph.D.,** is an Assistant Professor in the Department of Physical Therapy & Human Movement Sciences at the Feinberg School of Medicine at Northwestern University in Chicago, Illinois. His research focuses on neuromechanical bases for locomotor control in post-stroke hemiplegia and also locomotor performance evaluation tools & exercise interventions for people with disabilities.

**SUE CATTON** is the National Director of the Inclusive Fitness Initiative in the United Kingdom. She led the initial research to provide the evidence and need for the IFI, secured the funding, and now directs this project stimulating the delivery of inclusive fitness services throughout facilities in England.

**SABRI CETINKUNT, Ph.D.,** is a Professor in the Department of Mechanical and Industrial Engineering at the University of Illinois at Chicago and the Director of the Manufacturing Research Center and Mechatronics Lab. His research interests include mechatronics, control systems, automation and robotics, and instrumentation.

**KIM COLEMAN** is the President and CEO of Cyma, Inc., a company that developed, manufactures, supplies, and supports the StepWatch 3 Activity Monitor (SAM3). The SAM3 is available for field measurement of long-term ambulatory activity across various gait speeds and movement patterns employed by people with physical disabilities.

**RORY A. COOPER, Ph.D.,** is President of RESNA, and a member of the RESNA/ANSI and ISO Wheelchair Standards Committee. He currently serves as Chair on the National Advisory Board on Medical Rehabilitation Research, National Institute of Child Health & Human Development, and as a member of the U.S. Secretary of Veterans Affairs Prosthetics and Special Disability Programs Advisory Committee. Dr. Cooper is also a Distinguished Professor in the Department of Rehabilitation Science & Technology and the Human Engineering Research Laboratories at the University of Pittsburgh in Pennsylvania.

**DANIEL G. DRURY, Ph.D.,** is an Associate Professor & Chair of the Department of Health & Exercise Sciences at Gettysburg College in Gettysburg, Pennsylvania. His research has focused primarily on neuromuscular function with an emphasis on testing new fitness products.

**SHIRLEY FITZGERALD, Ph.D.,** is an Assistant Professor in the Department of Rehabilitation Science & Technology at the University of Pittsburgh. She is also the Associate Director of Research in the Human Engineering Research Laboratories, VA Pittsburgh Healthcare System. She has been involved in clinical trials on exercise devices such as Gamecycle as well as examining the psychosocial impact of exercise participation in individuals who use wheelchairs.

**DAVID R. GATER, JR., MD, Ph.D.**, is Director of Spinal Cord Injury Medicine and an Assistant Professor in the Department of Physical Medicine & Rehabilitation at the University of Michigan in Ann Arbor. He is also a Research Associate in the Veterans Administration Ann Arbor Healthcare System where he is director of spinal cord injury research.

**DIANNE GOODWIN, MEBME, ATP** is the Founder and Director of Research & Development for BlueSky Designs, Inc., a company that develops accessible recreation products. She is an entrepreneur, rehabilitation engineer, inventor, and former recreation leader and naturalist. BlueSky Designs' most recent accessible recreation research involves developing watercraft transfer technology.

**TAMAR HELLER, Ph.D.**, is a Professor and Head of the Department of Disability & Human Development at the University of Illinois at Chicago. She also directs the Institute on Disability & Human Development, the Rehabilitation Research & Training Center on Aging with Development Disabilities, and supports interventions for people with disabilities and their families.

**JOHN M. HOLLERBACH, Ph.D.**, is a Professor in the School of Computing, Research Professor in Mechanical Engineering, and Director of Robotics Track at the University of Utah in Salt Lake City. He is also editor of the International Journal of Robotics Research and focuses on robotics, virtual environments, & human motor control. Current active projects include locomotion interfaces & virtual prototyping.

**HAL HONEYMAN** is the Founder and Executive Director of Project Mobility: Cycles for Life, Inc. in Illinois, a non-profit corporation involved with bicycles and bicycle adaptations for people with disabilities as a sport, business, and recreation.

**SCOTT HOPSON** is Director of Research, Education & Training for Power-Plate North America. He develops and implements the application of Whole Body Vibration in various arenas, including applied health, sports medicine, rehabilitation, and sports performance.

**ANDREW HOUGHTON** is a small business owner that currently works with The Cube, LLC, a partnership created to develop a total body recumbent to meet the needs of individuals with disabilities.

**DAWN HUGHES** is the Equipment Researcher for the Inclusive Fitness Initiative in the United Kingdom. In supporting the commercial fitness industry to achieve accessible design, Dawn has led research into user requirements, supplier needs and conflict resolution.

**B. JENNY KIRATLI, Ph.D.** is Director of Clinical Research at the Veterans Affairs Palo Alto Health Care System Spinal Cord Injury Center. Current projects include telehealth approaches to improve home-exercise compliance, multidisciplinary intervention for cardiac risk reduction, nutritional epidemiology in SCI, and assessment of long-term skeletal response to paralysis/paresis after SCI and stroke.

**CHARLES E. LEVY, MD**, is Chief of Physical Medicine & Rehabilitation in the North Florida/South Georgia Veterans Health System and is also Associate Professor in the Department of Occupational Therapy in the College of Public Health & Health Professions at the University of Florida in Gainesville. His work includes the impact of power assist wheelchairs on quality of life and the measurement of activity and participation for persons using wheelchairs.

**PATTI LONGMUIR** is a Research and Education Consultant for PEL Consulting and Beneficial Designs Inc. For the past ten years, her work has focused on access to outdoor natural environments and to fitness facilities and programs.

**CRISTIAN J. LUCIANO** is a Ph.D. student in the Electronic Visualization Laboratory in the Departments of Mechanical Engineering and Computer Science at the University of Illinois at Chicago.

**MAJA J. MATARIC, Ph.D.** is a Professor of Computer Science in the Department & Neuroscience Program at the University of Southern California in Los Angeles. She is also the Founding Director of the USC Center for Robotics & Embedded Systems and Director of the USC Robotics Research Lab. Dr. Mataric's work focuses on developing hands-off non-contact intelligent robotics approaches capable of aiding in rehabilitation, aging, special education, and skill training.

**LESLIE MCLACHLAN, MSPT**, is a faculty instructor & Assistive Technology Specialist with Assistive Technology Partners at the University of Colorado at Denver and Health Sciences Center. She specializes in wheelchair seating and adaptive equipment.

**JANE MULLIGAN, Ph.D.**, is an Assistant Research Professor in the Department of Computer Science at the University of Colorado at Boulder. Her research includes stereo vision, modeling & prediction from depth sequences, telepresence, experimental analysis of robotic tasks, autonomous navigation, robotic manipulation, and integration of computational vision and manipulation.

**LAURA MEYER, MSOTR** is an instructor with Assistive Technology Partners at the University of Colorado at Denver and Health Sciences Center. Her research interests include the effects of virtual reality on exercise and exercise adherence among people with disabilities.

**ELIZABETH OMIATEK** is a graduate student at the RERC on Accessible Medical Instrumentation at Marquette University. Her current research involves accessibility in medical instrumentation & ergometers.

**BARTH RILEY, Ph.D.**, is a Research Assistant Professor in the Department of Disability & Human Development at the University of Illinois at Chicago. His research involves the use of Rasch measurement models & computerized adaptive testing methods to develop efficient and precise measures of health outcomes in people with disabilities.

**JAMES H. RIMMER, Ph.D.**, is a Professor in the Dept. of Disability & Human Development at the University of Illinois at Chicago. He is director of two federally funded centers, the National Center on Physical Activity & Disability and the RERC on Recreational Technology. For 25 years, Dr. Rimmer has been developing & directing health promotion programs for people with disabilities.

**JON A. SANFORD, Ph.D.**, is a Senior Research Scientist at the Georgia Institute of Technology and Director of the Rehabilitation Engineering Research Center on Wheeled Mobility, CATEA in Atlanta. His expertise is in environmental accessibility, safety, & universal design.

**WILLIAM J. SCHILLER, Ph.D.**, is the Associate Director for Technology at the RERC Rectech at the University of Illinois at Chicago. He is an Instructional Psychologist and his work at Rectech includes remote assessment of fitness environments and the impact of the convergence phenomenon in telerehabilitation and tele-exercise.

**MICHAEL SCOTT, Ph.D.**, is an Assistant Professor in Mechanical and Industrial Engineering and Director of the Engineering Design & Decision Lab at the University of Illinois at Chicago. Dr. Scott works with the RERC on Recreational Technologies developing technologies to improve access to exercise equipment for people with disabilities.

**CHRISTOPHER STANFORD, P.E.**, is an engineer with TrekEase Corporation in Austin, Texas, and is currently developing an aerobic stationary exerciser (treadmill) for people who use wheelchairs.

**CHARLOTTE (TOBY) TATE, Ph.D., FACSM** is the Dean of the College of Applied Health Sciences at the University of Illinois at Chicago and former President of the American College of Sports Medicine.

**JAMES R. WHITEHEAD**, is the Executive Vice President of the American College of Sports Medicine in Indianapolis, Indiana.

**JACK WINTERS, Ph.D.**, is a Professor in the Dept. of Biomedical Engineering at Marquette University in Milwaukee, Wisconsin, & Director of the RERC on Accessible Medical Instrumentation. His work also involves neurorehabilitation, telerehabilitation, movement biomechanics, and muscle tissue adaptation with exercise.

**WEIMO ZHU, Ph.D.**, is an Associate Professor in the Department of Kinesiology and Community Health at the University of Illinois at Urbana-Champaign. His areas of interest are in measurement and evaluation in kinesiology and wheelchairs.

## DIRECTIONS AND MAP

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I-25 South; exit Colfax Avenue (exit #210a) Drive East (left) to Welton Street and turn left on Welton St. Proceed 3.5 blocks and turn left onto 15th Street. Take immediate left into circle drive.

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**CANCELLATIONS** with full refunds will be accepted if sent in writing & postmarked by April 30, 2006. Requests postmarked after April 30, 2005 will incur a \$50 fee. Refunds will not be made for cancellations after May 10, 2006. Substitutions in lieu of cancellations are welcome.

For questions after the conclusion of the conference, please email [conference@rectech.org](mailto:conference@rectech.org) or call 312-355-1400.

### CONFERENCE SITE AND HOTEL ACCOMODATIONS:

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University of Illinois at Chicago  
1640 West Roosevelt Road, Suite 709  
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