

Biomechanics Priorities Conference – Personal Statement (Requejo)

The next step in building bridges across the domains of biomechanics and human movement science is to integrate the spectrum of cross-disciplinary investigations from technological to neurobehavioral to population processes to public policy while embracing the psycho-social contexts of all human movement research activities. This strategy is vital for this field to contribute to the challenges for the next millennium in the areas of health and function and community participation.

As technology is rapidly being integrated into most aspects of life and changing the nature of work and play, the form and scope of personal communication, education, and health care delivery has transformed. For those millions of Americans living with disabilities, preserving health and meaningful function throughout the lifespan is a critical component for maintaining employment and living independently in the community. Advancements in computer technologies and information systems have the potential to enhance the participation and community living and health and function and employment outcomes for individuals aging with disability as it may augment their ability and capacity to perform a variety of tasks that has traditionally presented a barrier to work and daily living. As such, it is recommended that the discipline must look beyond merely utilizing technology for measuring human movement performance, but focusing on leveraging technologies to affect functional performance in a meaningful way. The discipline must also take the next step in translating the technology from the laboratory and clinical into the home and community settings.

Today's healthcare environment places greater emphasis on out-patient services with ever-decreasing inpatient lengths of stay. With the current length of stay, increasing medical costs, and reduction in benefits, the rehabilitation specialist must have evidence-based clinical decision-making skills and resources to provide the best service to the patient. It is recommended that the discipline take lead in the utilization of modern computing and informatics techniques to develop an infrastructure that that can be used as an evidence-based data collection portal for documenting critical biomechanical information of the patient's outcomes as needed for evidence-based clinical practice and third party payer justifications.

It is well known that the probability for acquired disability increases with age. Accordingly, the number of middle aged and older adults living with disabilities will grow significantly as the United States (U.S.) population ages rapidly. For those middle-aged and older adults who are living with life-long and long-term disabilities acquired at birth or at an early age as well as those who acquire their disabilities for the first time later on in life, preserving health and meaningful function throughout the lifespan is a critical component for living independently in the community. As persons with disabilities age, progressive declines in health and medical status can challenge the adaptive resources required to maintain functional independence and quality of life. To effectively address these problems requires attention to the full spectrum of healthy living including the social, economic, physical and mental well-being of this population. It is recommended that the discipline must contribute to strengthening training and education in chronic illness and disability management in curricula for health care professionals, including education on the specific topics of secondary conditions and aging with disability.