Laboratory focus
The Psychometrics-Informatics Laboratory (The pi Lab) integrates advanced psychometrics (measurement sciences) and evolving informatics (information technologies) to advance our understanding of participation and human health. The pi Lab is guided by the team science principle and is designed to serve as a centralized location for graduate students, faculty and clinical staff with unique and complementary expertise to learn and collaborate. Its multidisciplinary approach brings researchers, educators and clinicians together to collectively solve significant issues in biomedical research and public health. The pi Lab specifically focuses on the knowledge translation of measurement theory and data science methods to improve our understanding of participation and the impact of being actively engaged in family, work and community participation on health. The laboratory’s objective is to generate endless opportunities for education, research and practice to impact rehabilitation and participation sciences.

Contributions to rehabilitation science
Dr. Chang’s research focuses on the integration of methodology and technology to advance patient outcomes assessment and management across the continuum of care. He is contributing to a new discipline called “Clinical Infometrics” that is a synthesis of measurement sciences, predictive analytics, evidence-based medicine, and informatics to guide clinical decision making in real time and to improve symptom and disease management over time.

Questions explored in laboratory
2. Competent and compassionate health care providers:
   - Using adaptive learning technologies to deliver tailored training and education to improve clinical competencies in the delivery of high-quality care.
3. Computerized and cloud-based health information:
   - Building a data infrastructure to facilitate clinician–patient communications and real-time clinical decision support.
4. Coordinated and connected care:
   - Designing a clinically feasible process flow to improve care planning, patient activation and health outcomes.
5. Clinical Infometrics in action:
   - Integrating psychometrics-informatics to guide clinical decision making in real time and to improve symptom and disease management over time.

Representative publications
Chang CH. (2017). Patient-reported outcomes measurement and management with innovative methodologies and technologies. *Quality of Life Research*, 26, 491-499. PMID: 28258634