

Revised Program

NSF ERC for Connected Eldercare Planning Workshop

June 15, 2022

Massachusetts Institute of Technology

- 7:45 am Registration Desk Opens, Room 3-370
Luggage storage available, Room 3-346
- 8:00 am Breakfast – Room 3-350
- 8:30 am Welcome, Evelyn Wang, Head, Department of Mechanical Engineering, MIT
Anantha Chandrakasan, Dean, School of Engineering, MIT (Remote)
- 8:45 am NSF ERC Planning Project Report, Harry Asada, PI, ERC Planning Project, MIT
9 months of planning project activities; Scope, objectives, and vision;
Organization and governance; Pilot projects for exemplifying convergent
research; Ecosystem, value proposition, and business model; DEI, Workforce
development
- 9:30 am Keynote talk
Dina Katabi, MIT EECS, Computer Science and Artificial Intelligence Lab
“From Wearables to Invisible: Monitoring Health Using AI and Radio Signals”
- 10:00 am Coffee break
- 10:15 am Pilot project short presentations
- 10:15 Neville Hogan (MIT) and Maria Yang (MIT) in collaboration with SRH*
“Semi-Active Wearable Body Support System for Enhanced Balancing”
- 10:30 Allison Okamura (Stanford) and Mike Bankowski (Prosperous Home Health) in
collaboration with Stanford Center on Longevity, Stanford School of Medicine,
and Human Performance Lab
“Physically Assistive Soft Robots for Healthy Aging”
- 10:45 Toni Miles (Morehouse School of Medicine), Jun Ueda, Waiman Meinhold, Clint
Zeagler, Kala Jordan (Georgia Tech), in collaboration with Murata Electronics
North America, AG Rhodes in Atlanta, and Georgia Tech HomeLab
“Privacy-preserving Wearable Temperature Monitoring and Infection Detection
in Adult Aggregate Living (Nursing Homes and Assisted Living) with
Homomorphic Encryption”
- 11:00 Kaitlyn Becker (MIT), Kathy Piela (SRH), and Harry Asada (MIT)
“Soft Robotics for In-Touch Telehealth”
- 11:15 Peter Wayne (Brigham & Women’s Hospital), Paolo Bonato (SRH) and Hirofumi
Itagaki (MIT-NSK)

“Increasing Access to Tai Chi Balance Training for Frail Older Adults Using a Tele-Robotic Platform”

- 11:30 Julie Keysor (MGH-IHP), Matthew Mooney (Dephy), and Paolo Bonato (SRH)
“*ExoBoot* Bilateral Orthoses for Osteoarthritis Strength Training for People with Knee OA: A Proof of Concept and Feasibility Study”
- 11:45 Doug Johnson, Mike Bankowski (Lite Run) and Paolo Bonato (SRH)
“LiteRun: A Novel Technology for Mobility Assistance and At-Home Eldercare”
- 12:00 noon Lunch break – Room 3-108
Boxed lunches are available in a newly renovated room 3-108 overlooking the Killian Court. The lunch break is continued to breakout sessions for discussing pilot projects. Seven tables are designated to the seven pilot projects. Members of each project are expected to sit together. Participants are encouraged to join the discussion at each table.
- 12:45 pm Breakout sessions for discussing the proposed pilot projects – Room 3-108
Continuation from the lunch break; Online participants will join the discussion at each table via zoom; Each project team is requested to make a brief presentation summarizing the discussion at 3:15 pm. Summary slides for presentation must be sent to Cormac at croneill@mit.edu by 3:00 pm.
- Needs assessment, technology, impact, and collaboration plan
- 1:30 pm Back to Plenary Sessions – Room 3-370
Workforce development, John Liu, MIT
- 1:45 pm Diversity, Equity, and Inclusion (DEI), Jun Ueda, Georgia Tech
- 2:00 pm Ecosystem and stakeholder value proposition, Paolo Bonato, SRH
- 2:15 pm Move to Room 1-007 for demos
Connected Eldercare Live Laboratory Demonstration
MIT d’Arbeloff Lab, Room 1-007
Networked with SRH and Georgia Tech for tele-eldercare demonstrations
- Tele Tai Chi with a buddy robot remotely supervised by a physical therapist
- Handle Anywhere: a bathroom assistance robot remotely operated from SRH
- Smart pants with an embedded harness for body support
- Active straps; A high-torque compliant actuator, and more
- 3:15 pm Back to Room 3-370, Refreshments served at 3-370
Breakout session reports, General discussion, Action items
- 4:05 pm Closing Remarks, Pierre Lermusiaux, Associate Head in Research, Department of Mechanical Engineering, MIT
- 4:15 pm Adjourn

* SRH = Spaulding Rehabilitation Hospital