

From Homes to Systems: Re-engineering Environments for Caregiving, Aging, and Equity

Population aging is increasingly shaped by the environments in which older adults live, receive care, and navigate services. While environmental gerontology has traditionally emphasised age-friendly design and community accessibility, less attention has been paid to how built, social, digital, and policy environments interact as dynamic systems that enable — or constrain — caregiving and care coordination. This talk advances a systems-oriented framework that reconceptualises aging in place as a function of environmental connectivity rather than location alone.

Drawing on Dr. Boucher's health systems research within the U.S. Veterans Health Administration, the presentation integrates three empirical domains: (1) community health worker (CHW) models that bridge clinical care and community environments; (2) housing and service coordination for older adults experiencing homelessness or life after prison; and (3) caregiver engagement infrastructure within Learning Health Systems. Across these cases, findings demonstrate that fragmentation across environmental domains — rather than deficits in any single domain — drives poor outcomes, including unmet social needs, avoidable acute care utilisation, and caregiver strain.

Guided by implementation science frameworks the talk presents a unifying “care ecosystem” model in which outcomes are determined by the strength of linkages between home, community, and health system environments. Particular emphasis is placed on caregiving as a form of distributed infrastructure that remains under-recognised in policy and system design.

The presentation then translates these insights to dense urban contexts such as Hong Kong, where vertical living, constrained housing, and rapid demographic aging create unique challenges for aging in place. It outlines five design principles for environmental gerontology in high-density settings: (1) designing for networks rather than sites of care; (2) formal recognition and support of family caregivers; (3) investment in community-based navigation roles; (4) integration of housing and health services; and (5) development of digital systems that enable continuous learning and coordination.

By bridging empirical evidence with implementation frameworks and global applicability, this talk contributes a forward-looking vision of environmental gerontology as a field centred not only on place, but on system integration, caregiving capacity, and adaptive infrastructure. It offers actionable policy and practice strategies for building environments that support longer, healthier, and more equitable lives for aging populations.