Reaching Out to Enhance Stairway Usability and Safety: Collaborations and other interactions among professionals in ergonomics, public health, and building standards/codes/regulations, from several countries

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1. Principal Themes of Workshop
Missteps and falls, ergonomics in design, macroergonomics, safety and health, aging: focused on stairways.

2. Objectives
The workshop is responsive to both the Congress motto, “Reaching Out” and the invitation, from the IEA Slips, Trips and Falls Committee, for proposals “to bring together researchers and practitioners from different fall prevention backgrounds. . . to share perspectives and experience.” This workshop specifically contributes to this objective by focusing on overdue attention given in recent decades to stairway-related falls and improvements to standards and codes with the involvement of not only ergonomists, but public health professionals, standards and codes developers, plus design and construction professionals. Recently such cross-disciplinary efforts have been most prominent in Canada and Australia, but, in recent decades, the US and UK have contributed significantly. Depending on participant backgrounds, the take-away information is improved understanding of how standards and codes are developed, adopted and enforced in various countries and how evidence from ergonomics, public health, and other fields can be best applied to such processes to improve stairway usability and safety. The latter objectives are becoming more difficult to achieve given worldwide changes in demographics including aging, obesity and fitness generally in the entire population as well as with increasingly distracted walking in all contexts. Ultimately, two chief objectives are to set out what can be done with stairways to (1) make them more ‘forgiving’ of human inadequacies to reduce missteps, falls and injuries, plus (2) encourage fitness-raising use of stairways to complement other health goals.

3. Content
Case studies—in “reaching out”—are briefly described from Canadian and Australian contexts where relatively intensive collaboration occurred when home stairway-related improvements (drawing on ergonomic insights), applied in nationally used building codes, were debated and subjected to public review. For this several workshop presenters, beyond the Congress participants listed above, are invited from public health research and practice as well as from code-development and regulatory bodies in Australia. Source organizations for these content insights include Monash University (e.g., Injury Research Institute), the Public Health Association of Australia, and the Victorian Building Authority. Complementing this Australian focus is a brief account of recent success in Canada where, in September 2014, a two-hour webinar—on home stair step dimensions—helped to stimulate interest and unprecedented, large participation, in a national public review process involving public health, ergonomics researchers, and others not previously so involved. Other successes and near misses or failures are also noted to help address what works and what does not.

4. Conclusions
Clearly, and related to the IEA Congress theme, it is timely to reach out to other professionals, especially those working on public health issues and related built environment standards and codes, especially those addressing home safety and usability. Australia and Canada (prominently among other countries) have
addressed, with varying success, how ergonomic improvements can be implemented in contexts involving complex relationships among national and regional bodies. It is timely to address how internationally-based evidence from ergonomics—including macroergonomics—and other sciences can best be applied to such complex systems of environmental controls. Finally, to underline the urgency of such efforts, home stairways, in the USA and Canada are associated with hourly societal cost of stair-related injuries currently on the order of 14 million US dollars per hour and this economic burden does not consider the usability benefits and costs of stairways for which societal costs are also comparably large, especially with aging populations.

**Suggested Readings and Web Resources**


**Web Resources**