



**Fire Protection Engineering Department**  
**2017 Howard W. Emmons Distinguished Lecture**

Thursday, April 27, 2017

5:00 pm

Room 50P1226 – 50 Prescott Street, Gateway II

Followed by a reception in the FPE Café

*\*\*\* Please RSVP to [scanning@wpi.edu](mailto:scanning@wpi.edu) \*\*\**

**Challenges in Fire Safety in a Society facing a  
Rapidly Aging Population**

**Professor Ai Sekizawa**

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*Abstract:*

Physical fitness and mobility inevitably deteriorate as people age, and it becomes easier to be injured during any kind of accident, not only fires. As the population continues to age, it is natural that the trend of increasing numbers of deaths will continue as far as the population of elderly people increases. The problem may be also influenced by factors such as deterioration of mutual assistance from family members and communities, as the low birth rate, aging population, and the trend away from multigenerational households continue.

However, the risk of death due to fire among elderly people has been decreasing according to the trend in recent years in Japan contrary to our expectation. Although the increased health of elderly people in recent years is one important explanation, it is not the only one to explain the above fact. The increased safety of appliances for cooking and heating, and the increased safety and quality of housing environments also certainly has had an effect. It is also important to improve the health and living environment for elderly people. Reducing fire risks, even a little, and thereby providing a safe and comfortable life in residential homes in which the majority of elderly people live, is something that everyone wants. This lecture will explore the changing nature of fire risks associated with the rapidly aging population in Japan, with potential insights for other countries facing a similar situation in the future.

*Bio:*

Professor Ai Sekizawa graduated from Kyoto University with a Master of Architectural Engineering in 1974 and a Doctor of Engineering Degree from Kyoto University in 1979. When he was a doctoral student at Kyoto University, he moved to the National Research Institute of Fire and Disaster (NRIFD), Ministry of Home Affairs, Japan, in 1976. Professor Sekizawa worked at NRIFD for 27 years, rising to the level of Vice President. During his career in NRIFD, his main research themes were fire risk analysis, especially on residential fires, and evacuation safety, as well as the study of optimum operation of fire brigades against multiple post-earthquake fires. Professor Sekizawa moved to the University of Tokyo as a professor in 2003, and then he became Professor at the Graduate School of Global Fire Science and Technology, Tokyo University of Science in 2010. He has been recently engaged in various research topics such as fire safety of vulnerable population in a rapidly aging society, elevator evacuation in a high-rise building, harmonization of fire safety and preservation of historic structures, and also post-earthquake fire problems. He is a globally recognized expert in these areas, serving on several Japanese and international committees.

During the period 1986-1987, Professor Sekizawa was a Visiting Scientist at the Center for Fire Research at the National Bureau of Standards (NBS), which is now the National Institute of Standards and Technology (NIST), where he worked with Mr. Richard Bukowski on the development of a fire risk assessment method. In 1992, he was the recipient of "The Harry C. Bigglestone Award" of *Fire Technology*, the official journal of the NFPA, for his joint paper with Dr. John Hall entitled "Fire Risk Analysis: General Conceptual Framework for Describing Models." This work greatly contributed to the enhancement of a common understanding and sharing of the concept and terminology regarding fire risk analysis among fire researchers and fire protection engineers. In 1992, he also received the Award of Japan Association for Fire Science and Engineering. He received the Peter Lund Award in 2011 and the prestigious Arthur B. Guise Medal in 2014 from the Society of Fire Protection Engineers (SFPE).

Professor Ai Sekizawa has served on the SFPE Board of Directors, President of the SFPE Japan Chapter, and President of the Japan Association for Fire Science and Engineering, the representative academy society on fire safety science in Japan (2008 and 2009). He has been Vice President of the International Association of Fire Safety Science (IAFSS) since 2005.

Background on the Howard W. Emmons Lecture Series:

*A professor of Mechanical Engineering at Harvard University for forty years, Professor Emmons was an early pioneer in the fields of fire research and fire safety science in the United States. He re-created furnished rooms in his laboratory and observed them burning. He developed mathematical models for predicting fire spread, and later the Harvard Computer Fire Code. He chaired the National Academy of Science's Committee on Fire Research, and helped bring about the passage of the National Fire Research and Safety Act of 1968. He chaired and participated in many other boards and committees related to fire safety. With grants from the National Science Foundation, and working with Factory Mutual Research and Engineering Corp., Emmons directed Harvard's Home Fire Project.*

*Professor Emmons was a key supporter of the establishment of the graduate program in Fire Protection Engineering program at WPI in 1979, the first such program in the country. He continued to be a supporter of FPE until he passed away. The Howard W. Emmons Distinguished Lecture series was established to bring other such globally recognized leaders in fire research and education to deliver lectures to the WPI community on their work.*