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## Editorial

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**Biographical notes:** Isabel L. Nunes received her PhD in Industrial Engineering from the Universidade Nova de Lisboa, Portugal. She is an Assistant Professor of Industrial Engineering at the Faculdade de Ciências e Tecnologia-UNL. She is a member of the Research and Development Unit in Mechanical and Industrial Engineering (UNIDEMI). Her main research interests include development of artificial intelligence models using fuzzy set theory for ergonomics, health and safety at work, emergency management and production systems. She has published several scientific papers and book chapters, is a patent owner, and has been a member of several scientific conference committees. She has coordinated and participated in several research projects both national and international. At her home university, she supervises PhD and MSc theses in industrial and management engineering and occupational safety.

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It was a pleasure to serve as guest editor of this special issue of *International Journal of Human Factors and Ergonomics* that focuses on 'human factors and ergonomics in emergency management'. This issue is dedicated to people all over the world who have suffered the consequences of a natural or man-made disaster.

Emergency management is a complex decision-making process with the objective of creating a framework within which communities reduce exposure to hazards, and organise themselves to respond to disasters and recover from them. It is a relatively new discipline which has a high degree of uncertainty. The timeliness of response in times of crisis impacts collaboration options, highlighting the importance of a systems approach. The interdisciplinary science of human factors and ergonomics, being concerned with people and their successful interaction with all forms of technology, must be applied in every phase and action of the emergency management cycle. Emergency management would profit from the benefits of the application of a human-centred philosophy to the design and operation of its vast activities and technical systems. Human factors and ergonomics should be used in order to ameliorate preparedness and to prevent death and injury from disaster occurring in the future.

This special issue of *IJHFE* offers an array of articles that provide an interesting overview across different examples concerning human factors and ergonomics in emergency management presented by different expert authors.

The first research article authored by Santos and collaborators presents a study concerning the identification of performance obstacles regarding the use of medical devices in medical emergencies. The study was performed in a hospital, semi-structured

interviews with surgeons and exploratory observations in the emergency and operating rooms were performed. The results demonstrate that data collection through observation yields rich insights that are relevant to the literature on human factors, and to the applied field of user-centred design.

The article from Horberry and colleagues presents three related research studies in mining emergency management, highlighting the contribution that human factors and ergonomics are making to this field. They investigate the challenges associated with the collection and management of information during underground coal mining emergencies from a human-centred perspective; the decision making deficiencies in incident management teams as well as the organisational issues related to mining control rooms during emergencies.

Curnin and Owen investigate the perceived information requirements of senior strategic level emergency management personnel and how they obtain this information. The findings indicate that the most influential are person communication and use of specialised application software.

Since effective traffic incident management is a fundamental factor in road safety and congestion control, Cattermole and collaborators investigated issues related with the physical environment of the outer cordon at traffic incidents in the area of Brisbane, Australia. Interviews with the operators involved in incident management highlighted issues regarding the safety of responders at traffic incidents.

Golightly and collaborators introduce a paper on disruption management processes during emergencies on the railways. In this article the authors describe the results obtained from an analysis of incident logs, recorded during major rail incidents, to enable assessment of the organisational activities involved, and to improve understanding of regular patterns in management and resolution of major incidents. The analysis found that much effort goes into coordination of multiple actors and diagnosing both the cause and scale of the disrupting factors, as would be expected. The results also have implications for decision-support for emergency management.

I hope this special issue will bring up to *IJHFE* readers the determination to pursue research in the human factors and ergonomics area in order to ameliorate the whole cycle of emergency management.

I would like to thank Dr. Denis Coelho for the invitation to be a guest editor and many thanks to Dr. Pamela McCauley-Bush for being co-guest editor of this special issue. I would also like to thank the article authors and other persons who helped and encouraged me to make this special issue a reality.

Cheers!