Call for Papers

Spatial Risk Analysis

Special Issue in *Risk Analysis*

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Call for Papers:

Risk and decision analysts, as well as policy makers, are often faced with problems having spatial characteristics. Where to bury nuclear waste? Where to build up flood defenses? Where to prioritize clean-up operations after disasters? How to assess the chance of finding a missing aircraft over a wide area? How best to present geographical uncertainty to emergency managers who need to take urgent decisions? (MacEachren et al. 2005)

Spatial variability is increasingly recognized as a key component in health, safety, and environmental exposure and risk assessment (e.g. Keller et al. 2014, Zagmutt et al., 2015, Zhou et al., 2014). In addition, there is a broad literature on spatial decision support in the environmental domain. A subset of this growing research field deals with risk (Malczewski, 2006), but, arguably, without a proper risk -analytic framework. Presentation of spatial and geographical uncertainty is also of key importance, with many open challenges (MacEachren et al. 2005).

The time is thus ripe to explore how to conceptualize spatial risk analysis frameworks to better support assessment of both vulnerabilities and multidimensional impacts. We therefore invite papers for a special issue of *Risk Analysis* to provide impetus in this direction. Submissions should emphasize current cutting-edge research and serve as point of reference for risk analysis researchers, as well as practitioners in fields such as Health, Environmental Protection, Emergency Management, and Logistics.

Key areas of focus for the Special Issue include:

1. Models for understanding and improving decisions involving spatially distributed risks (probability distributions of multidimensional outcome distributions over a certain area and over time). Utility (or Loss) functions for spatial outcomes.
2. Effective communication and presentation of spatial and geographical uncertainties about exposures, vulnerabilities, risks, and impacts, including behavioral aspects, cartographic conventions and the use of interactive displays.
3. Expert judgement probability elicitation and validation for spatial risk analysis.
4. Aggregation of multidimensional risk impacts for a certain geography.
5. Appraisal of spatial heterogeneity and heterogeneous vulnerability assessment frameworks for spatial risk analysis.

6. Spatio-temporal logics for interrogating GIS to support risk analyses and underpin decision support systems

Paper Submission:

Submitted articles must not have been previously published or currently submitted for journal publication elsewhere. As an author, you are responsible for understanding and adhering to our submission guidelines. You can access them at: http://sra.org/sra-journal, or http://manuscriptcentral.com/riskanalysis.

Please indicate in your cover letter that the paper is intended for the Spatial Risk Analysis special series.

Each paper will go through a rigorous review process.

Important Dates:

Submission Deadline: **September 30, 2016**

First-Round Reviews (target): **December 1, 2016**

Special Issue Published: **Fall 2017**

References:

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MacEachren A. M.,Robinson, A., Hopper, S., Gardner, S., Murray, R., Gahegan, M., & Hetzler, E.. 2005. Visualizing geospatial information uncertainty: what we know and what we need to know. **Cartography and Geographic Information Science** 32(3), 139-160.

Malczewski J. 2006. GIS-based multicriteria decision analysis: a survey of the literature. **International Journal of Geographical Information Science**. 20 (7), 703–726

Zagmutt F.J., Schoenbaum M.A., Hill A.E. 2015. The Impact of Population, Contact, and Spatial Heterogeneity on Epidemic Model Predictions.**Risk Analysis**. DOI: 10.1111/risa.12482

Zhou Y., Li N., Wu W., Wu J., Shi P. 2014. Local Spatial and Temporal Factors Influencing Population and Societal Vulnerability to Natural Disasters. **Risk Analysis**, 34 (4), 614–639