Development and Application of Spatial Models for Human-Environmental Systems to Address Social and or Environmental Challenges

Sponsored by: Spatial Analysis and Modeling Specialty Group, Hazards, Risks, and Disaster Specialty Group, Protected Areas Specialty Group

Session description

This session welcomes studies focusing on the development, application, and deployment of spatial models that aim at addressing environmental challenges. Spatial associations are a common feature of the processes that shape human-environmental systems (Schlüter et al., 2023), highlighting the need for developing and employing spatial models appropriately to build theories and find solutions to complex real-world problems. Spatial models and spatial thinking could be the link to transform scientific findings into actionable practices and promote actionable and translational research. We invite abstracts centering on social and or environmental paradigms and associated human-environmental interactions, applying approaches such as spatial statistical models, integrative data-driven and theory-driven models, optimization models, causal models, and spatio-temporal models, and case studies of the deployment of these spatial models into decision making processes.

Relevant research topics include but are not limited to:
- Uncertainty in spatial modeling
- Causal inference in spatial modeling
- Accounting for scale in spatial modeling
- Reproducibility and replicability in geospatial analysis
- Capturing and explaining spatial effects in geospatial analysis
- Spatio-temporal modeling of social-environmental problems
- Application and deployment of spatial modeling for specific case studies involving topical issues such as hazards, conservation, ecology, sustainability, human health, planning, among others
- Linking spatial models with knowledge discovery and improving decision making processes

To participate in this session, please submit your abstract to AAG 2024 and send your PIN to any of the organizers by **November, 16th**, 2023.

Organizers:

Wenxin Yang (wyang80@asu.edu)

Joseph Karanja (jkaranj1@asu.edu)

Ziqi Li (ziqi.li@fsu.edu)

Reference:

Schlüter, M., Brelsford, C., Ferraro, P.J., Orach, K., Qiu, M., Smith, M.D., 2023. Unraveling complex causal processes that affect sustainability requires more integration between empirical and modeling approaches. Proc. Natl. Acad. Sci. 120, e2215676120. https://doi.org/10.1073/pnas.2215676120