



School of Graduate Studies and Research

Invites faculty, staff, and students to attend

Faculty Research Colloquium



Dr. ROBERT ARTHUR

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School of Arts and Sciences

“GIS Modeling of Sea-Level Rise in Ras Al Khaimah, UAE: Al Hamra Development, a Pilot Project”

3:30-4:30 PM, Wednesday, September 30, 2015
Conference Room - Building D

Abstract

As new information is received, predictions of sea-level rise resulting from global warming continue to be revised upward. Measurements indicate that sea-level rise is continuing at, or close to the worst case forecasts (Kellet et al. 2014). Coastal areas are coming under increasing risk from inundation and flooding as storms are predicted to increase in frequency and severity adding to the risk of inundation by higher sea levels. Stakeholders, government agencies, developers and land owners, require accurate, up to date information to protect coastal areas. Geographic Information Systems (GIS) along with accurate remote sensing technologies such as LiDAR provides the best means for delivering this information. Using these technologies, this paper predicts the risk posed to a large multi-use development in the emirate of Ras Al Khaimah, UAE. This development, Al Hamra Village, is situated on the coast of the Arabian Gulf. Al Hamra is common to other developments in Ras Al Khaimah in its physical relationship to the Gulf and, for this reason, has been used as a pilot project. The resulting GIS model shows that Al Hamra is indeed at risk from predicted flood events. How this information can be used as a planning tool for numerous strategies is discussed.

About the Speaker

Dr. Arthur received his MSc and PhD from the University of Calgary, in Alberta, Canada. The focus of his Masters' thesis was using GIS (Geographic Information Systems) as a decision support system for the placement of photo-radar cameras. His dissertation delved deeper into the phenomenon of speeding, especially the temporal dimension. He has continued to contribute to the area of traffic safety research and engaged in several studies at the city of Al Ain while teaching at UAEU. Recently he has submitted another article on the subject exploring the social aspects of speeding and their influences upon individual drivers. While at the American University of Ras Al Khaimah he has embarked on a new area of research, using LiDAR data to model the effects of Sea Level Rise on the RAK coastline. Dr. Arthur has taught at Universities in Canada, the US, Fiji and the UAE.