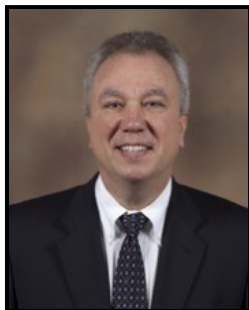




Events

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Other - Coastal Faculty Position in Civil & Environmental Engineering

On the Coastal Dynamics of Global Climate Change**Scott C. Hagen, University of Central Florida**Digital Media Center Theatre
March 14, 2014 - 01:30 pm**Abstract:**

Global climate change has and will continue to impact both human and ecological habitats, with particular resonance at the coastal / land margins. Increased extreme precipitation events, relative sea level rise, hurricane storm surge, etc., will manifest with short and long-term effects to barrier islands, shorelines, beaches, estuarine waters, submerged aquatic vegetation beds, sand and mud flats, oyster reefs, and tidal and freshwater wetlands. How we choose to study these complex processes, the adaptation tools that we develop, and ultimately the management decisions we make will determine our ability to sustain both the natural and built coastal environments. Interdisciplinary teams are crucial in order to achieve resilient solutions.

In this presentation, dynamic assessments of the impacts of global climate change in general and relative sea level rise in particular will be demonstrated through innovative integrated numerical models representing tide, wind wave, surge, overland, bay, and ecological processes. The models are applied to regions including the east coast of the United States and the northern Gulf of Mexico to simulate hydrodynamic properties including rainfall runoff, overland sediment transport, waves, tides, and surge, and to project impacts to coastal wetlands and estuaries. This complex orchestration is enhanced by an applications-based approach involving local, regional, and national resource and infrastructure managers.

Speaker's Bio:

Scott Hagen received his Ph.D. in Civil Engineering from the University of Notre Dame in May of 1998. In 2012 he was promoted to Professor at the University of Central Florida, has a P.E. with the State of Florida, is a Diplomate of both Coastal and Water Resources Engineering, and was named a Fellow of ASCE in 2013. Dr. Hagen is a member of the Board of Governors for the ASCE/Coasts, Oceans, Ports and Rivers Institute and served as Chair of the Coastal & Estuarine Hydroscience committee. In 2012 he chaired and hosted the 10th International Conference on Hydroscience & Engineering where he was awarded the Outstanding Achievement Award for Advancement of the State-of-the-Art.

Dr. Hagen has established a well-funded research program in coastal hydroscience in a traditional engineering department. The primary focus is on massively parallel, high performance computational modeling of ocean, coastal, and inland astronomic and meteorological (i.e., wind and pressure variations) tides and flows. His team is developing geospatial data fusion techniques that use high-resolution satellite imagery to assess and improve coastal and estuarine models. His recent efforts expand into transport and biological modeling, particularly with respect to the coastal dynamics of sea level rise. Also important is his contribution to pedagogical research, environmental education and outreach.

Scott is conducting scientific research that is applied through engineering to benefit society. For example, he leads a team that includes UCF graduate students working in conjunction with industry and government counterparts to develop coastal inundation models in direct support of FEMA flood plain mapping for the Florida panhandle and the Alabama coastal areas and participates on the FEMA team covering the east Florida / Georgia coasts. Output from the models that his team has and are developing will ultimately determine FEMA digital flood insurance rate maps, which will play a substantial role in defining how these coastal regions will be further developed. His present focus on the coastal dynamics of sea level rise is aiding coastal planners around the State of Florida and in the northern gulf.

