

Linbeck Distinguished Lecture Series

in Earthquake Engineering: Challenges of the New Millennium

*Bringing together practitioners and researchers to tackle the challenges
of protecting our nation's infrastructure against seismic hazards*

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Geospatial Modeling for the Earthquake Response of Lifelines and Buildings

**Friday, September 21, 2001
4PM - C100 Hesburgh Center Auditorium
Reception to follow the lecture**

Professor O'Rourke will provide an overview of seismic hazards and the use of geospatial modeling to protect communities at risk from earthquakes. His presentation will focus on the performance of lifelines and residential buildings. Lifelines include electric power, gas and liquid fuel, water supply, telecommunication, transportation, and waste conveyance and treatment systems. Taken collectively, they represent the distinguishing characteristic of a modern society, and are essential for emergency response and community recovery after natural disasters. Professor O'Rourke will explore the use of geospatial data management and analysis to evaluate lifeline and building performance. Earthquake engineering, as well as civil infrastructure practice, has been profoundly influenced by the application of geographical information systems (GIS). Professor O'Rourke will examine the use of GIS in seismic zonation and system response studies. Using GIS data from the Northridge earthquake, he will evaluate relationships among water supply and residential building damage, geotechnical conditions, and various seismic parameters. Professor O'Rourke will also discuss recent advances in GIS analysis for evaluating the indirect economic consequences of lifeline losses that are incurred during natural disasters.