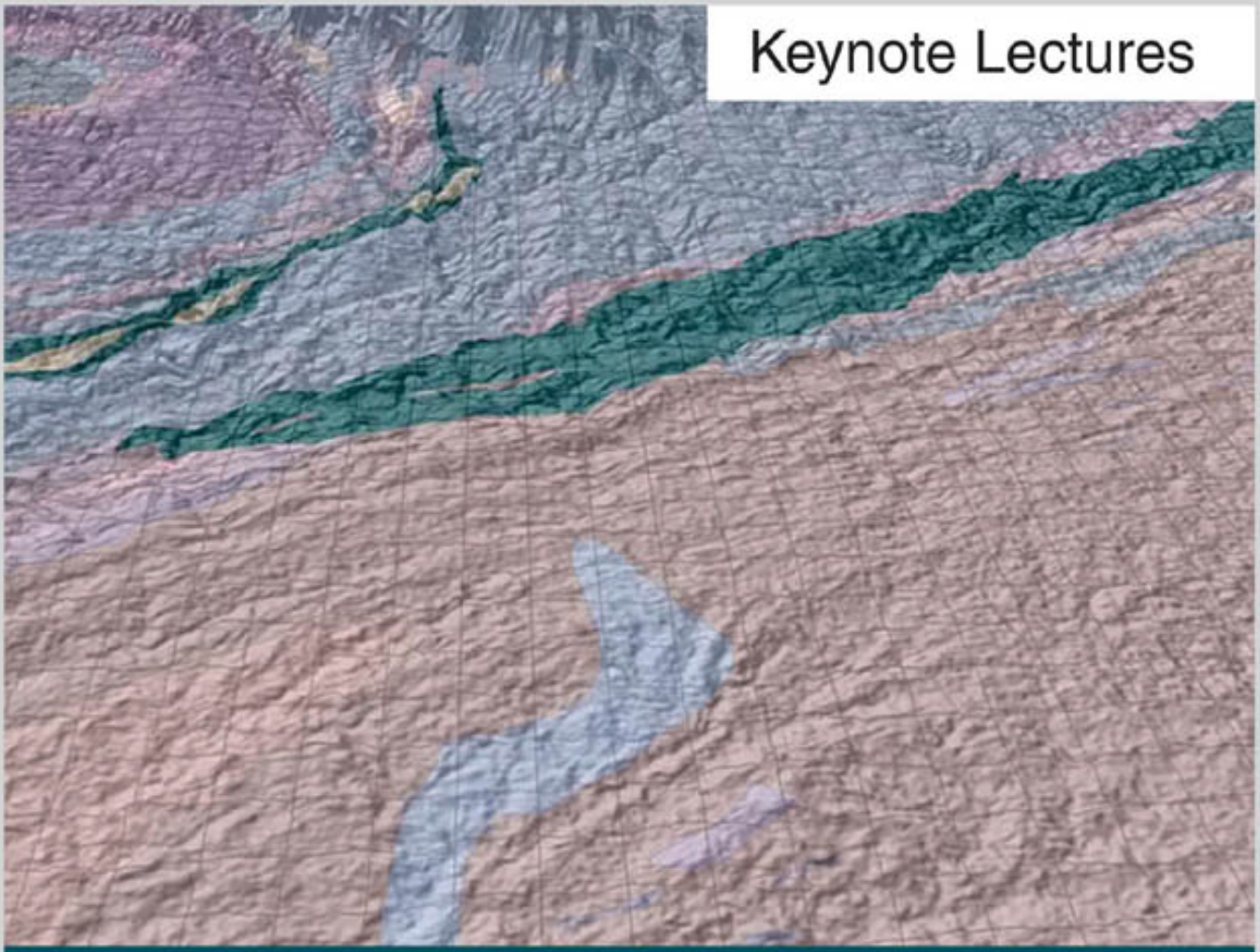
Geotechnical Special Publication No. 235

Geo-Congress 2014

Keynote Lectures



Geo-Characterization and Modeling for Sustainability

EDITED BY

Anand J. Puppala, Ph.D., P.E., D.GE
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GEO-CONGRESS 2014

KEYNOTE LECTURES

GEO-CHARACTERIZATION AND MODELING FOR SUSTAINABILITY

PROCEEDINGS OF THE 2014 CONGRESS

February 23-26, 2014
Atlanta, Georgia

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EDITED BY
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Preface

The 2014 Geo-Congress conference, titled "Geo-Characterization and Modeling for Sustainability," was held February 23-26, 2014, in Atlanta, Georgia. The proceedings of the 2014 Geo-Congress are included in two Geotechnical Special Publications, GSP 234, *Geo-Congress 2014 Technical Papers,* and GSP 235, *Geo-Congress 2014 Keynote Lectures.*

The 2014 Geo-Congress conference was organized by the Geo-Institute's technical committee on Engineering Geology and Site Characterization (EG&SC) and the Committee on Sustainability in Geotechnical Engineering. The latter committee introduced a unique theme to the conference related to sustainability in geotechnical engineering, focusing on crucial aspects such as sustainable modeling, design and construction approaches, and other topics. This particular conference provided a great opportunity for the geotechnical engineering community to exchange knowledge and experience regarding more efficient and sustainable geotechnical design and construction practices.

This Geotechnical Special Publication 235 includes eight keynote papers presented at the Geo-Congress. These keynote lectures were chosen to align with the Geo-Congress theme, and set the tone for subsequent sessions. The editors specifically chose keynote authors and speakers who are working on what were perceived to be cutting-edge aspects of three areas of sustainability-related geotechnical topics. The first set of papers deal with advanced methods for site characterization, with a particular emphasis on more efficient and spatially representative methods. These include the work of Profs. Roman Hryciw and Dennis Hiltunen on seismic wave methods, Prof. Rodrigo Salgado's paper on advanced methods of cone penetration resistance interpretation for strength and stiffness characterization, and Prof. Sandra Houston's work on investigations of unsaturated soils. The second set of papers is grouped under the theme of geotechnical responses to environmental and climatic events. Prof. Sibel Pamukcu's paper reports on geosensing methods and instruments to develop sustainable responses to subsurface environmental hazards, and Prof. Youssef Hashash provides a geotechnical perspective on the aftermath of Superstorm Sandy in 2012. Finally, a third set of papers presents important aspects of infrastructure development in an era of sustainable design and construction methods and changing operational environment. Mr. William Wallace provides a comprehensive framework for sustainable and resilient project design and delivery, and Dr. Mark Cassidy presents a comprehensive review of offshore geotechnics and its role in energy development. We believe that all of the keynote papers will serve as important references and milestones for fast-moving aspects of the geotechnical discipline.

All keynote papers were peer-reviewed by at least two reviewers, and the papers were revised based on suggestions from the reviewers. The undersigned editors, on behalf of the conference organizers and the Geo-Institute at-large, would like to express their sincere appreciation to the reviewers for their diligent efforts. They also wish to extend their gratitude to Ms. Helen Cook of the Geo-Institute staff for her outstanding efforts and dedication in managing the logistics for paper submissions and conference planning process in general. Finally, the editors would like to thank the esteemed authors for their valuable contributions to the 2014 Geo-Congress Proceedings and the conference technical program.

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