Preface

Events occur daily that challenge the security, health and sustainable growth of our planet, and often find the international community unprepared for the catastrophic outcomes. These events involve the interaction of complex processes such as climate change, energy security and reliability, terrorism, nuclear proliferation, natural and man-made disasters, and social, political, and economic vulnerabilities. If we are to help the international community to meet the challenges that emerge from these events, we must develop novel methods for predictive analysis that can support a concerted decision-making effort by relevant actors to anticipate and counter strategic surprise.

There is now increased awareness among scientists, subject-matter experts, analysts, and decision makers alike that a combined understanding of interacting physical and human factors is essential in addressing strategic surprise proactively. By focusing on technosocial predictive analytics, this symposium endeavors to further this insight through the exploration of new methods for anticipatory analytical thinking that implement a multiperspective approach to predictive modeling through the integration of human and physical models, leveraging knowledge from both the social and natural sciences, and utilize disciplines capable of supporting the modeling tasks by enhancing cognitive access, and facilitating the achievement of knowledge inputs.

More specifically, this symposium brings together scientists and government agency representatives to discuss this emerging field of inquiry through presentations, posters and panels which address three areas of primary interest: technosocial modeling, knowledge inputs, and cognitive enhancement.

The *technosocial modeling* area targets the development, implementation, and evaluation of new multiperspective methods and algorithms for predictive modeling.

The *knowledge inputs* area deals with capabilities that support the modeling task through the acquisition, vetting and dissemination of expert knowledge and evidence.

The *cognitive enhancement area* focuses on the use of visual analytics and enhanced cognition techniques to empower the user in the modeling task, promote inferential transparency, and support collaborative / competitive decision-making.

We hope that the symposium will foster interactions and partnerships leading to the creation of a new community of interest capable of delivering enduring outcomes by pioneering a new interdisciplinary paradigm of scientific research in proactive critical thinking.

Antonio Sanfilippo
Richland: February 10, 2009.