Resilient Enterprise Symposium will focus on supply chain resilience

The Center for Resilience will co-sponsor a symposium at The Ohio State University (OSU) on October 14, 2005, from 8:30 AM to 2:30 PM, titled: “Towards a Resilient Global Supply Chain.” Speakers from both industry and academia will discuss the key challenges involved in sustaining and improving supply chain resilience.

Drivers of resilience include a variety of enterprise characteristics such as foresight, adaptability, agility, safety, security, strategic alliances, stakeholder relationships, and resource efficiency.

To organize this event, the Center for Resilience has teamed with two established centers of excellence that are part of OSU’s Fisher College of Business – The Global Supply Chain Forum and the Center for Excellence in Manufacturing Management.

Featured speakers for the symposium are:

- Nick LaHowchic, Chief Executive Officer of Limited Logistics Services and Executive Vice President of Limited Brands, speaking about “Enterprise Navigation in an Age of Turbulence”
- Professor Yosi Sheffi, Director of the Center for Transportation & Logistics at the Massachusetts Institute of Technology and author of the new book, “The Resilient Enterprise: Overcoming Vulnerability for Competitive Advantage”

The symposium will also include a panel discussion with panelists from General Motors, Dow Chemical, Eli Lilly and Novartis. The full agenda is posted at: http://fisher.osu.edu/supplements/10/465/Resilience.pdf.

The registration fee of $50 includes the cost of the luncheon, and all registrants will receive a copy of Prof. Sheffi’s new book.

According to symposium chair Dr. Joseph Fiksel, “This gathering provides an unprecedented opportunity to explore how emerging resilience concepts affect critical issues in enterprise risk management and long-term sustainability. We are excited to host this event at Ohio State.”

To register and pay for the symposium or request additional information, please contact Jackie McClure at 614-292-3199 from 8 AM to 1 PM Mon. to Thurs., or mailto:mcclure.92@osu.edu.

Lessons on resilience learned from NASA’s recent experience

Professor Dave Woods, a well-known expert on cognitive systems engineering, believes that NASA’s problems with the space shuttle are symptomatic of a lack of resilience in organizational decision-making. In a chapter of the just published book, “Organization at the Limit: NASA and the Columbia Disaster” (Blackwell 2005), he argues that the factors that afflicted NASA’s program reflect generic vulnerabilities that have contributed to other failures and tragedies across many complex industrial settings. Woods was a consultant to the Columbia accident investigation board and testified to Congress on safety reforms at NASA.

NASA failed to balance safety risks with intense pressure to complete the mission. This matches a classic pattern—a drift toward failure as defenses erode in the face of production pressure. Many
organizations have fragmented decision-making processes and do not see the big picture until a failure actually occurs. As new evidence becomes available, they are often unable to revise their assessments of risks and countermeasures. Any system that cannot bend will eventually break.

Woods believes that organizations need to use new measures that capture changes in the resilience or brittleness of their own practices and decision processes to detect when they are beginning to drift toward failure. Thus, a critical role for a safety group within a large organization is to monitor the organization itself—to measure the risk that the organization is operating nearer to safety boundaries than it realizes. This type of thinking is being applied in a variety of settings, ranging from aviation safety to hospital patient safety.

Woods and his colleagues are proponents of the emerging field of Resilience Engineering and Management, and use the insights from research on resilience to provide practical systems engineering tools for managing risk proactively. Their hope is that organizations will learn to combine high performance with system safety by continuously adapting their decision models to changing conditions and new observations.

For more information, please visit the Cognitive Systems Engineering Laboratory website at http://csel.eng.ohio-state.edu/.

OSU team receives NSF award to assess alternative fuels

The U.S. National Science Foundation (NSF) in Washington, DC has announced the award of a five-year, $1.5 million grant to a multidisciplinary OSU team led by Dr. Bhavik Bakshi, Co-Director of the Center for Resilience. The award is part of NSF’s biocomplexity program, which supports research on the interface between human, industrial, and ecological systems.

According to Bakshi, the program is developing a unique statistical framework for assessing the true impacts of emerging technologies. It considers the full life cycle impacts at multiple scales, from an individual facility to the global economy. This framework will be used to study alternate fuels including gasoline, ethanol, biodiesel and hydrogen, and to understand the transitional effects of switching between fuels.

“Transportation provides an essential service in modern societies but also has hidden social and environmental impacts, including energy use and emissions,” says Bakshi. “Sensible selection among alternate fuels requires an understanding of their full implications – for example, using bio-based fuels may imply the use of agricultural pesticides. This is a challenging task due to the complexity of the supply chains, the many alternative raw materials and production pathways, uncertainties in data and models, interactions with economic factors, and the effect of social preferences.”

Bakshi, a chemical engineer who conducts research in industrial ecology, assembled an unusually diverse team to attack this problem. The Ohio State co-principal investigators on the project are Prem Goel, a statistician, Tim Haab, a developmental economist, and Michele Morrone, an environmental sociologist. The results of their research will assist decision makers in evaluating the impact of industrial activities on the economy and ecosystems, and the effect of government policies on industry. It will also be applied in other countries via a number of international collaborators.

At the same time, the program will support policy design and educational capacity-building on college campuses. New material will be developed for K-12 teacher education, along with software tools for technical and non-technical users. The team also will create a campus-wide graduate sustainability minor at OSU, and will help graduate students in other countries learn the latest methods for assessing the biocomplexity aspects of materials use.

To learn more about this work, contact Dr. Bakshi at 614-292-4904 or mailto:bakshi.2@osu.edu.