

# The RISE Forum: Resilient Innovation through Sustainable Engineering

## Villanova University /College of Engineering / MS in Sustainable Engineering

### INTRODUCTION

RISE is the only leadership forum dedicated to advancing the field of corporate sustainability through the discipline of engineering. Our mission is to accelerate the identification and application of data-driven solutions that will help our members increase the sustainability of their respective organizations. Our goal is to help executives apply the principles of sustainable engineering to secure a competitive advantage in the marketplace by reducing costs, managing risk, fueling growth and enhancing reputation. RISE is both action-oriented—teaching companies how to apply innovative solutions—and rigorous—quantifying the risks and opportunities associated with a given solution. In short, we use the science of sustainable engineering to drive resilient innovation across the value chain.

### VILLANOVA'S SUSTAINABLE ENGINEERING PROGRAM

Villanova University's Master of Science in Sustainable Engineering (MSSE) is one of the only graduate engineering programs in the country training future technical leaders to apply a whole systems approach to problem-solving through a life cycle lens. Our program is defined by its interdisciplinary orientation—incorporating the disciplines of Chemical, Civil, Computer, Electrical, Environmental and Mechanical Engineering—and its highly applied research tracks: Energy, Watersheds, Environment, Materials and Infrastructure. Our students and faculty employ the STEEP Model (Social, Technology, Environmental, Economic and Political integrators) to fully assess the life cycle impacts of a given project, process or product. As engineers, we bring a deeper technical rigor to life cycle assessments and can quantify the long-term implications of various technological or operational alternatives. As such, sustainable engineering is *the* foundational discipline for transforming companies into resilient and restorative enterprises.

### THE RISE ADVANTAGE

In a relatively crowded field of academic sustainability consortiums, the RISE Forum is distinguished by its formal affiliation with a premier graduate program in sustainable engineering. Beyond a narrow focus on operational improvements, the RISE Forum seeks to train leaders to operationalize the methodologies of sustainable engineering and assess processes and products through a holistic, life cycle lens. The RISE Forum provides direct access to faculty and graduate students who possess the requisite technical rigor to examine “real world” problems from an integrated, whole systems perspective and evaluate various technologies or operational innovations towards the identification of a truly sustainable solution.

The RISE Forum provides a variety of mechanisms to help its members increase the resiliency of their organizations. In turn, RISE members will play an important role in shaping the MSSE curriculum to ensure that our graduates are fully prepared to address the full spectrum of sustainability issues confronting industry.

### *Annual Leadership Symposium*

Presentations and break-out sessions will address members' most critical sustainability issues and members will receive process-based tools and methodologies that can be implemented within their respective organizations. The symposium will highlight “next practices” for the sustainable enterprise as well as the latest research on topics of mutual interest. The symposium also provides members opportunities for cross-sector benchmarking and peer-to-peer networking.

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### *Consulting Projects*

Each year, members will be assigned a team of MSSE graduate students and a faculty mentor to complete a company-defined sustainability consulting project. These projects provide our students an invaluable opportunity to work on a “real world” company-defined problem statement, while our members receive an empirically-based report detailing the true life cycle impacts/benefits associated with various technological or operational solutions. Our faculty and students possess expertise in areas such as: Carbon Footprint Studies, Life Cycle and Material/Energy Assessments, Sustainable Supply Chain, Stakeholder Reporting and Metrics and Energy/Water Conservation. These consulting projects not only solve critical issues, they provide members opportunities to deepen their knowledgebase by working directly with faculty and students.

### *Annual Case Study Symposium*

Consulting teams present findings and recommendations to the members, providing opportunities for cross-sector knowledge transfer and information exchange. Research studies conducted by MSSE faculty and students (outside of the scope of RISE) will also be presented. This symposium will provide members the opportunity to network with and recruit graduate students for summer internships and fulltime employment. MSSE faculty will also propose a series of applied sustainable engineering projects and the members will select one or two projects (by majority vote) to be funded through a portion of membership fees. The findings from these thesis-level projects will have broad benefit to all members and will be presented at the subsequent Case Study Symposium.

### *Executive and Employee Education*

Members (and their employees) will receive free access to our online suite of six interactive learning modules that provide a comprehensive overview of the Sustainable Engineering discipline. Based upon member feedback, additional online modules will be made available (drawn from the MSSE curriculum) that address critical problems of organizational sustainability. Members will also have the opportunity to work directly with MSSE faculty to create a fully customized e-learning program for their employees and fellow executives. These customized programs will incorporate materials from MSSE’s core and technical courses as well as company-specific sustainability strategies. RISE members will receive a discounted rate to develop these customized executive and employee education programs.

### **RISE LEADERSHIP**

RISE is led by William Lorenz, retired co-founder, Environmental Resource Management (ERM), the world’s leading sustainability consultancy, Karl Schmidt, retired VP from J&J who led the company’s Global Supply Chain Risk Management program and developed its first Sustainability Program and Ross Lee, retired senior scientist from DuPont with seminal contributions to the fields of sustainable chemistry and materials. These leaders have applied their decades of private sector experience toward the creation of a truly novel and innovative Master of Science in Sustainable Engineering (MSSE) Program, which serves as the academic home for RISE.

For more information about Villanova University’s Master of Science in Sustainable Engineering, please visit [www.vusustainableengineering.com](http://www.vusustainableengineering.com).