

# Manufacturing Innovation – The Sustainable Development Advantage

Facilitator: William Stough, Sustainable Research Group,  
in collaboration with Aquinas College's Center for Sustainability



## User Group Description

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Customers, investors and other corporate stakeholders are increasing their demands for “green or environmentally sustainable” products and services from Original Equipment Manufacturers (OEMs). If you are an OEM or one of their suppliers, you can expect increased pressure for green attributes in your products. This User Group will provide members a roadmap to help identify and develop innovative products and processes through knowledge of emerging sustainable manufacturing technologies and techniques.

*The Sustainable Manufacturing User Group will help you answer hard questions that your customers may never have asked of you before, like:*

- What is an environmentally safe product?
- What is the carbon-footprint of your product?
- What is the energy intensity of your product?
- Does your product contain substances that are harmful to human or ecosystem health?
- Do you know the material efficiency of your process?
- Does your company have a formal social responsibility program in place?

The User Group will focus on helping your company increase profits and reduce environmental impact through understanding of and use of tools that encourage sustainable business practices. Training modules will include the following concepts: How to incorporate sustainable business practices; when and how to use bio-materials; how to use the 12 principles of green chemistry to identify safer materials; how bio-industrial technology can work for your products; why life cycle analysis will be a major driver of product and process design in the next ten years; and why there are thousand dollar bills laying all over your shop waiting to be picked up and deposited to your bottom-line.

## User Group Output/Benefits

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Each company will use the user group format to develop strategic information and tools to increase their company's financial performance by learning how to invest in emerging sustainable business practices. Each participant will create their own sustainability baseline profile of existing conditions, design a set of common sustainable manufacturing metrics to evaluate their performance and conduct an assessment of potential sustainable manufacturing opportunities. Our goal is for each company to find a way to save at least twice the amount of money they invested in the user group.

# Sustainable Manufacturing User Group

## Targeted Participants

Participants will include representatives from Original Equipment Manufacturers, Tier One, Two and Three Suppliers of OEMs, representatives from independent designers and other OEM service companies that are interested in world-class sustainable manufacturing recognition and for offering environmentally preferable products in the marketplace.

## User Group Format

*Number of sessions:* 10

*Length of session:* 3-4 hours

*Frequency of sessions:* Approximately Once a month (*no meetings in July or December*)

*Minimum number of participating companies:* Five

*Faculty:* William Stough, Clinton Boyd, PhD, SRG; Richard Fleming, Continuous Improvement Associates; Deborah Stekete, PhD, Matt Tueth, PhD, Aquinas College's Center for Sustainability

## User Group Curriculum

The primary subject matter and proposed activities for each session are (**tentative**):

### Introduction

*Session One:* Developing a Sustainable Business Vision

*Session Two:* An Environmental Systems Approach to Manufacturing

*Session Three:* Lean and Green Value-Stream Mapping

### Energy and Materials

*Session Four:* Green Chemistry and Engineering & the Coming Bio-based Economy

*Session Five:* What You Need to Know About Bio-Industrial Technology; and  
Next Generation Environmental Technologies

### Human Ecosystem Health

*Session Six:* Understanding Risk, Hazard and Exposure; and Chemical Assessment Tools

*Session Seven:* Climate Change and Decarbonization

### Corporate Social Responsibility

*Session Eight:* Stakeholder Engagement, Ethical Treatment, Policies and Procedures

### Corporate Performance

*Session Nine:* Sustainable Manufacturing Metrics

*Session Ten:* Corporate Sustainability Reporting

## Registration Fee

**\$2,650 each.** Up to three members from a company may participate.