

*Program*

# ***Green Engineering: Defining the Principles***

Sandestin Resort  
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**May 18-22, 2003**

***Co-Sponsors: AIChE, ASME, and SAE***

## **Conference Chairs**

***Martin Abraham***  
University of Toledo

***William H. Sanders III***  
U.S. EPA

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**Sunday, May 18, 2003**

4:00 pm – 6:00 pm	Registration/Check-in
5:30 pm – 6:00 pm	Welcome Reception
6:00 pm – 7:30 pm	Dinner
7:30 pm – 7:45 pm	Introductions
7:45 pm – 8:30 pm	<b>Keynote Presentation</b> <i>IMPROVING THE ENVIRONMENT, VIA IMPROVED PRODUCTIVITY IN THE USE OF MATERIALS, ENERGY, AND CARBON</i> Dr. Arnulf Gruebler, International Institute for Applied Systems Analysis
8:30 pm – 9:30 pm	Reception

**Monday, May 19, 2003**

7:30 am – 8:30 am Breakfast

**Session I - Drivers**

8:30 am – 9:15 am *KERMIT'S LAMENT: IT'S NOT EASY BEING GREEN*  
P. Arne Vesilind, R. L. Rooke Professor of Engineering, Bucknell University

9:15 am – 10:00 am *ARE GREEN DESIGN AND ENGINEERING PRINCIPLES NEEDED?*  
Walter W. Olson, University of Toledo

10:00 am – 10:30 am Coffee Break

10:30 am – 11:15 am *ENVIRONMENTAL SUSTAINABILITY – WHY?*  
Peter Melhus, Bay Area Alliance for Sustainable Development

11:15 am – 12:00 pm *SUSTAINABLE DEVELOPMENT*  
Henry J. Hatch, US Army Corps of Engineers (ret)

12:00 noon **Introduction to focus group discussions**

12:15 – 1:30 pm Lunch

1:30 pm – 4:00 pm *ad hoc* sessions/free time for recreation

4:30 pm – 5:30 pm **Poster Session I** (with coffee)

5:30 pm **Panel Discussion**  
**Presentation of group reports**

6:00 pm – 7:15 pm Dinner

7:15 pm – 7:45 pm *DRIVERS FOR ENVIRONMENTAL PERFORMANCE IN INDUSTRY*  
Nele Zechel, Brandenburg University of Technology at Cottbus

7:45 pm – 8:15 pm *A DISCUSSION OF THE FIRST PRINCIPLES FOR GREEN ENGINEERING*  
Wally Peters, University of South Carolina

8:15 pm – 8:45 pm *DRIVERS, INHIBITORS, PARADIGM SHIFTS, AND ENABLERS FOR SUSTAINABILITY OF THE BUILT ENVIRONMENT*  
Jorge Vanegas, Georgia Institute of Technology

8:45 pm Social Hour

**Tuesday, May 20, 2003**

7:30 am – 8:30 am Breakfast

**Session II – Metrics and Tools**

8:30 am – 9:15 am *MUSE-ING ABOUT GREEN ENGINEERING*  
Delcie Durham, National Science Foundation

9:15 am – 10:00 am *MEASURING GREEN MANUFACTURING PROGRESS*  
Tim Gutowski, Massachusetts Institute of Technology

10:00 am – 10:30 am Coffee Break

10:30 am – 11:15 am *COMPUTER-AIDED TOOLS FOR ENVIRONMENTALLY-CONSCIOUS  
CHEMICAL PROCESS ANALYSIS*  
David R. Shonnard, Michigan Technological University

11:15 am – 12:00 noon *USING THE U.S. EPA'S TRACI FOR GREEN ENGINEERING*  
Jane Bare, U.S. EPA

12:00 noon **Introduction to focus group discussions**

12:15 – 1:30 pm Lunch

1:30 pm – 4:30 pm *ad hoc* sessions/free time for recreation

4:30 pm – 5:30 pm **Poster Session II** (with coffee)

5:30 pm – 6:00 pm **Panel Discussion**  
**Presentation of group reports**

6:00 pm – 7:15 pm Dinner

7:15 pm – 7:45 pm *ENVIRONMENTALLY COMPATIBLE PRODUCT DESIGN: HOW IT WORKS  
WITH THE SIEMENS STANDARD SN 36350*  
Ferdinand Quella, Siemens AG

7:45 pm – 8:15 pm *ECONOMIC, SAFETY, OPERATIONAL, HEALTH AND ENVIRONMENTAL  
PERFORMANCE ESTIMATION DURING CHEMICAL PROCESS SYNTHESIS*  
Robert M. Counce, The University of Tennessee

8:15 pm – 8:45 pm *APPROACHES AND TOOLS FOR GREEN ENGINEERING*  
Nhan Nguyen, U.S. EPA

8:45 pm Social Hour

**Wednesday, May 21, 2003**

7:30 am – 8:30 am Breakfast

**Session III – Connecting Process to Product**

8:30 am – 9:15 am *DESIGN THROUGH THE TWELVE PRINCIPLES OF GREEN ENGINEERING*  
Paul Anastas, Office of Science and Technology Policy

9:15 am – 10:00 am *GREEN ENGINEERING TEACHINGS FROM INDUSTRIAL POLLUTION  
PREVENTION PROGRAMS*  
Kenneth Mulholland, Kenneth Mulholland and Associates

10:00 am – 10:30 am Coffee Break

10:30 am – 11:00 am *GREEN ENGINEERING: A CORPORATE RESPONSIBILITY*  
Barry Marten, Siemens VDO

11:00 am – 11:30 am *LESSON LEARNED: INTEGRATING ENVIRONMENTAL ASPECTS INTO  
PRODUCT DESIGN AND DEVELOPMENT*  
Konrad Saur, Five Winds International

11:30 am – 12:00 noon *INTEGRATING GREEN CHEMISTRY AND ENGINEERING INTO BUSINESS  
OPERATIONS*  
Lauren G. Heine, Zero Waste Alliance

12:00 noon **Introduction to focus group discussions**

12:15 PM – 1:30 pm Lunch

1:30 pm – 5:00 pm *ad hoc* sessions/free time for recreation

5:00 pm – 6:00 pm **Panel Discussion**  
**Presentation of group reports**

6:00 pm – 7:00 pm Dinner

7:00 pm – 7:30 pm *CHEMICAL REACTION ENGINEERING, THE ENVIRONMENT, POLLUTION  
PREVENTION AND SUSTAINABLE DEVELOPMENT*  
Mike Dudukovic, Washington University

7:30 pm – 8:00 pm *ENVIRONMENTAL IMPACTS OF RESIDENTIAL GREEN BUILDING &  
CHALLENGES FOR ENGINEERS*  
William Sanders, U.S. EPA

8:00 pm – 8:30 pm *CUSTOMER BEHAVIOR AND GREEN PRODUCTS*  
Sibel Bulay Koyluoglu, Ford

9:00 pm Social Hour

**Thursday, May 22, 2003**

7:30 am – 8:30 am                      Breakfast

**Session IV – Writing the Principles**

8:30 am                                      *PRESENTATION OF DRAFT PRINCIPLES*  
Martin Abraham and Barb Karn

9:00 am                                      Breakout Sessions

10:00 am – 10:30 am                      Coffee Break

10:30 am – 11:30 am                      **Panel Discussion**  
**Presentation of group reports**

11:30 am – 12:15 pm                      *WRAP-UP AND NEXT STEPS*  
Martin Abraham

12:15 pm – 1:30 pm                      Lunch