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THE SMART MANUFACTURING INSTITUTE

SMART MANUFACTURING *awards*

June 7, 2022

Jim Davis

Vice Provost IT, Office of Advanced Research Computing

UCLA



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2005

Foundations of
Integrated and
Automated
Technologies

**Jim
Porter**
Dupont

Texas Wisconsin
California Control
Consortium

**Tom
Edgar**
UT-Austin

Computer Aids
in Chemical
Engineering

**Tom
Edgar &
Jim Davis**

Honeywell
Abnormal Situation
Management
Consortium

**Jim
Davis**
OSU/UCLA

National
Science
Foundation

**Maria Burka &
Bruce Hamilton**
NSF

2006

Zero Incident Zero
Emissions Smart Plant
Operations

Jim Porter, Dupont , Jerry Gipson,
Dow, Kevin Harris ASM, Don Clark,
Invensys

2006 NSF CI Workshop



Smart (predictive,
preventive and proactive),
Zero incident, Zero
Emissions Manufacturing
Jim Davis, Tom Edgar

**2007 NSF Engineering
Virtual Organization**



2007

Smart Manufacturing

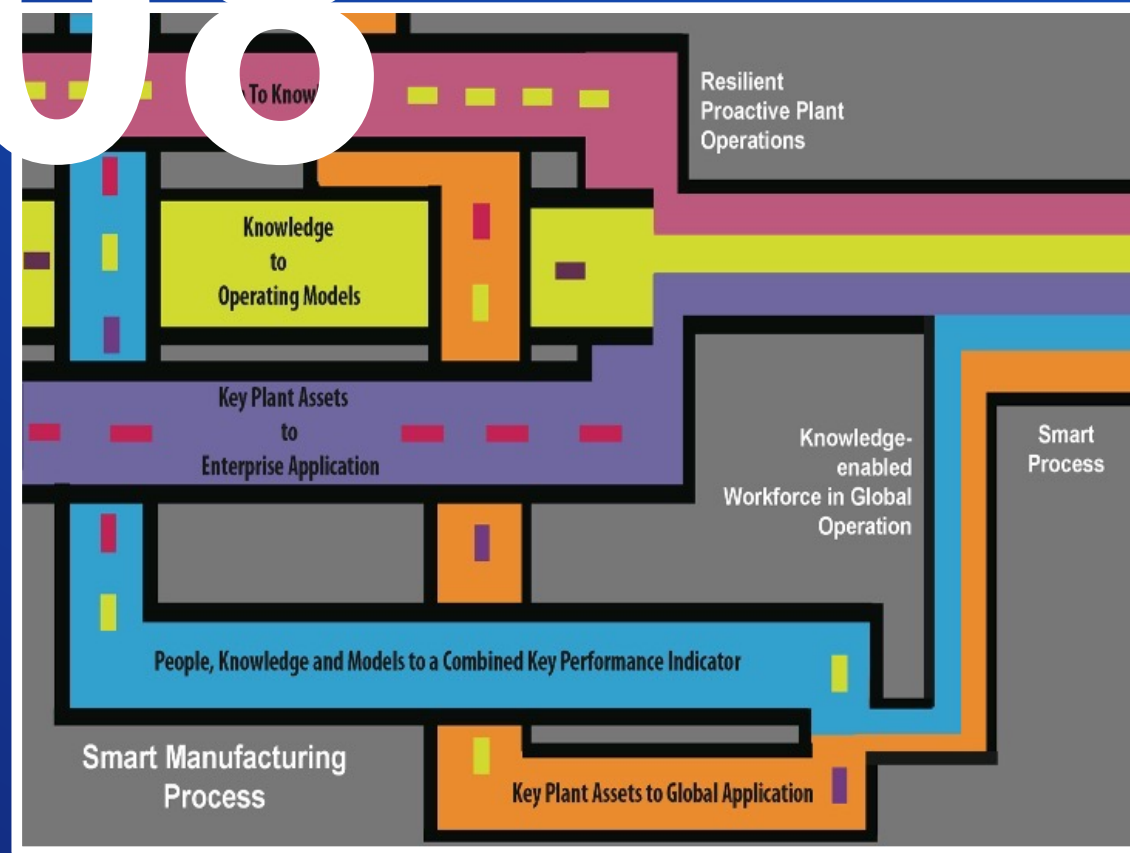


2008

Jim Porter
Dupont

Tom Edgar
UT Austin

Jim Davis
UCLA



Denise Swink
Formerly DOE

Jerry Gipson
Dow

John Bernaden
Rockwell

Peggy Hewitt
ASM

Neal Elliot
ACEEE

2009



Denise Swink
Julie Tran
UCLA

Jim Wetzel
General Mills

Pete Sharpe
Emerson

Larry Megan
Baldwin Richardson

Mike Sarli
Exxon Mobil

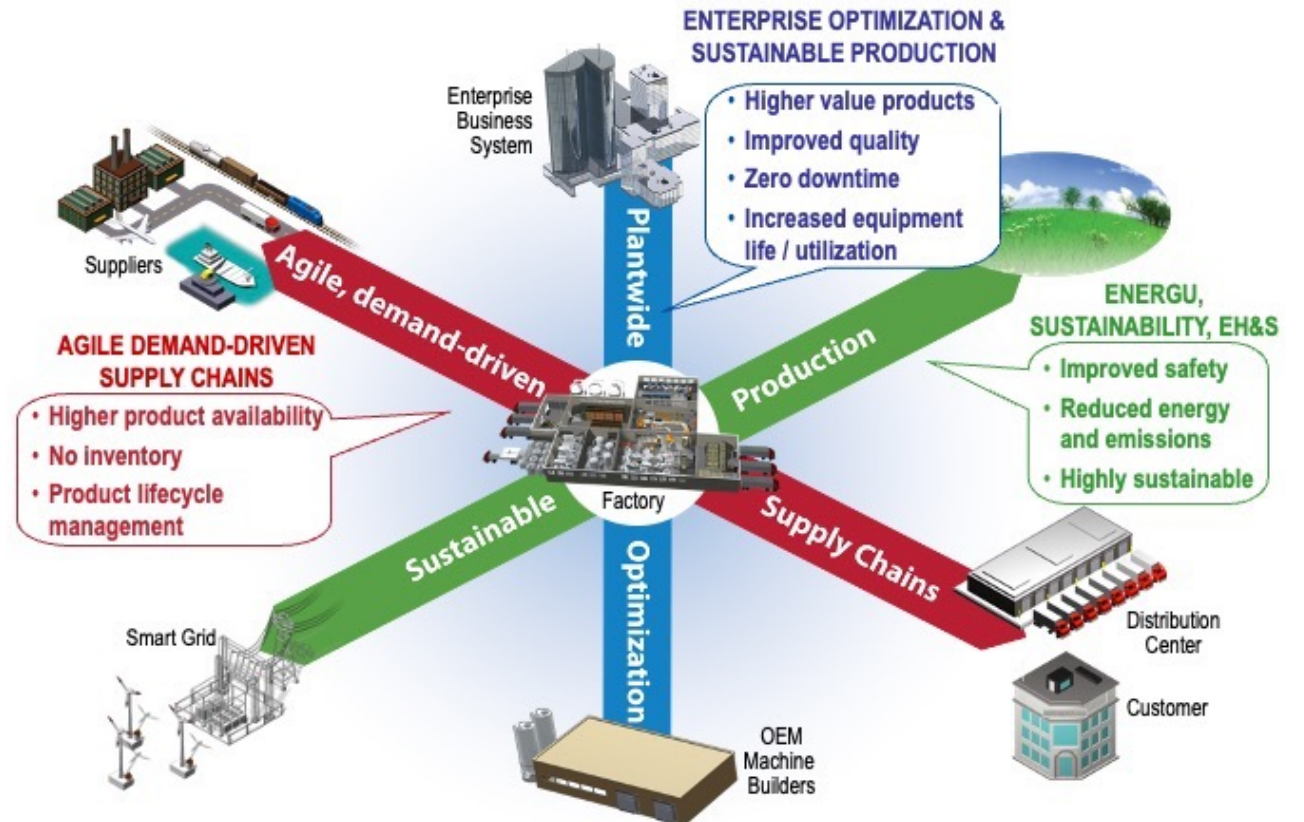
Dean Bartles
General Dynamics

2010

Sujeet Chand
Rockwell Automation

First SM
Rendition

Optimized Plant & Supply Network: Meaningful Uses / Benefits



2011

Ten Priority Actions for Smart Manufacturing in 2010

Industrial Community Modeling and Simulation Platforms for Smart Manufacturing

1. Create community platforms (networks, software) for the virtual plant enterprise
2. Develop next generation toolbox of software and computing architectures for manufacturing decision-making
3. Integrate human factors and decisions into plant optimization software and user interfaces
4. Expand availability of energy decision tools (energy dashboards, automated data feedback systems, energy 'apps' for mobile devices) for multiple industries and diverse skill levels

Affordable Industrial Data Collection and Management Systems

5. Establish consistent, efficient data methods for all industries (data protocols and interfaces, communication standards)
6. Develop robust data collection frameworks (sensors/ data fusion, machine and user interfaces, data recording and retrieval tools)

Enterprise-wide Integration: Business Systems, Manufacturing Plants, and Suppliers

7. Optimize supply chain performance through common reporting and rating methods (dashboard reports, metrics, common data architecture and language)
8. Develop open platform software and hardware to integrate and transfer data between small and medium enterprises (SMEs) and original equipment manufacturers (OEMs) (data sharing systems and standards, common reference architectures)
9. Integrate product and manufacturing process models (software, networks, virtual and real-time simulations, data transfer systems)

Education and Training in Smart Manufacturing

10. Enhance education and training to build workforce for smart manufacturing (training modules, curricula, design standards, learner interfaces)

DOE 2011, 2013 - 2017

Industrial Manufacturing Innovation

**Steam Methane
Reformer Furnace**
Port Arthur, TX | Larry Megan

**General Dynamics
Metals Fabrication**
Scranton, PA | Dean Bartles

Bob Graybill
Nimbis

Prakashan Korambath
UCLA

Mark Besser
Savigent

NIST
2012 – 2015

**First SM
Platform
Rendition**

Howard Harary
NIST

Sudarsan Rachuri
NIST/DOE

The National Discussions

Sridhar Kota
OSTP

PPP

SMLC 501c6

- Dean Bartles
Chair
- Denise CEO

Michelle Pastel
Corning
Haresh Malkani
Alcoa

DOE Nov NOI

Clean Energy
Manufacturing
Innovation
Institutes
on Smart
Manufacturing

Ken Creasy, Board
John Dyck, CEO
Haresh Malkani, CTO
Howard Goldberg, COO
Sudarsan Rachuri, DOE
Bill Prymak, DOE
CESMII SMICs & Team

2011

2012

2013

2014

Smart
Manufacturing

Obama
AMP 1.0

AMP 1.0 (NNMIs)
Advanced Sensing
Measurement
Process Control
(ASMP)

SMLC Corporate
Workshops

AMP 2.0

AMP 2.0
Smart Manufacturing
Advanced Sensing
Control Platform
Modeling (ASCPM)

National Initiative
New Expectations

AMP 2.0

8 Years



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MANUFACTURING
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SMART MANUFACTURING
15TH ANNIVERSARY
RECOGNITION



SMART MANUFACTURING

15 YEAR ANNIVERSARY



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Dean Bartles

John Bernaden

Mark Besser

Maria Burka

Sujeet Chand

Jim Davis

Tom Edgar

Neal Elliot

Jerry Gipson

Bob Graybill

Bruce Hamilton

Howard Harary

Peggy Hewitt

Prakashan Korambath

Sridhar Kota

Haresh Malkani

Larry Megan

Michelle Pastel

Jim Porter

Sudarsan Rachuri

Mike Sarli

Pete Sharpe

Denise Swink

Julie Tran

Jim Wetzel

The background is a gradient of blue shades. In the top-left and bottom-right corners, there are several overlapping triangles in various shades of blue and green. In the bottom-right corner, there is a small white gear icon.

John Dyck

CEO, CESMII



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2022

2022

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INNOVATION AWARD



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JOE CUIFFI

EDUCATION & WORKFORCE DEVELOPMENT

 digital foundry
AT NEW KENSINGTON

2022

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JASON IMPSON

SMART MANUFACTURING INNOVATION



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HENRY WEBER

SMART MANUFACTURING INNOVATION

GW PROCESS OPTIMIZATION

2022

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ALAN GANZ

SMART MANUFACTURING INNOVATION

GW PROCESS OPTIMIZATION

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SARAH BURLINGAME

SMART MANUFACTURING INNOVATION

TDO

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MARK MCGINLEY

ENERGY PRODUCTIVITY INNOVATION

UNIVERSITY OF
LOUISVILLE

2022

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JUAN TABARES

ENERGY PRODUCTIVITY INNOVATION



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ANANTH SESHAN

SM TECHNOLOGY INNOVATION



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PETE SHARPE

SM TECHNOLOGY THOUGHT LEADER



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RPI SMIC

SM INNOVATION CENTER GROWTH



Rensselaer

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TOWARD ZERO

SM INNOVATION CENTER GROWTH

Toward Zero™

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JACKIE GAROFANO

PROJECT LEADERSHIP



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JIM WETZEL

SMART MANUFACTURING VISIONARY



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MICHELLE PASTEL

SMART MANUFACTURING VISIONARY

CORNING

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KEN CREASY

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Johnson & Johnson

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DOUG LAWSON

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