

## **SMLC Winner of Smart Manufacturing Institute Funding**

*Tom Edgar and Jim Davis*

In 2008, to facilitate the coordinated development of smart, zero-incident, zero-emission manufacturing, an Engineering Virtual Organization (EVO) was established with a core group of engineers from industry, academia, and government, led by co-PIs Jim Davis (UCLA) and Tom Edgar (UT-Austin). Launch of the EVO—which ultimately became the Smart Manufacturing Leadership Coalition (SMLC)—involved the process systems engineering community at large; the FIATECH industry consortium, with 65 companies and universities; the ASM (Abnormal Situation Management) consortium, comprised of 14 companies and universities; and the CACHE corporation, which includes 21 university and seven industry trustees, along with 150 member chemical engineering departments worldwide. Working as a virtual organization, this community pursued a common objective of initiating and sustaining the development of a coordinated national research and development agenda and technical “roadmap” for smart, zero-incident, zero-emission manufacturing. By defining the end vision and constructing the roadmap, research and development activities to close the gaps between the future and current states were identified (see <https://www.smartmanufacturingcoalition.org/>).

The germination of this EVO was an NSF-sponsored workshop, “Cyberinfrastructure (CI) in Chemical and Biological Process Systems: Impact and Directions,” held Sept. 25-26, 2006, where industry and academic experts collectively identified smart manufacturing as a grand-challenge problem of national importance. With an unusually strong collaboration between academia and key industry groups, this EVO was designed to build the critical-mass consensus to spur additional future government and industry funding for the coordinated national agendas needed to address this national grand-challenge problem.

The smart manufacturing effort has been a long journey with a happy ending. On June 20, 2016, President Obama announced that “SMLC will lead the new Smart Manufacturing Innovation Institute, in partnership with the Department of Energy. The winning coalition, headquartered in Los Angeles, California brings together a consortium of nearly 200 partners from across academia, industry, and

non-profits—hailing from more than thirty states—to spur advances in smart sensors and digital process controls that can radically improve the efficiency of U.S. advanced manufacturing.”

As reported in the White House Press Release (<https://www.whitehouse.gov/the-press-office/2016/06/20/fact-sheet-president-obama-announces-winner-new-smart-manufacturing>), the Clean Energy Smart Manufacturing Innovation Institute (CESMII) will be headquartered in Los Angeles, CA and will launch five regional manufacturing centers across the United States, each focused on local technology transfer and workforce development. UCLA will lead the California regional center, in partnership with the city of Los Angeles, harnessing the ability to tap the largest manufacturing base in the United States. Texas A&M University, University of Texas, and Tulane University will lead the Gulf Coast center—a region anchored in the chemical, oil and gas sectors—and Rensselaer Polytechnic Institute (RPI) will lead the Northeast center, where glass, ceramic and microelectronic manufacturing has a strong presence. Pacific Northwest National Laboratory will lead a hub in the Northwest and NC State will spearhead a regional hub for the Southeast.

The Smart Manufacturing Innovation Institute is the ninth institute awarded to-date by President Obama. The Institute will “focus on innovations like smart sensors that can dramatically reduce energy expenses in advanced manufacturing, making our manufacturing sector strong today and positioning the United States to lead the manufacturing of tomorrow, helping sustain the resurgence of U.S. manufacturing currently underway.”

For more details, read a [fact sheet](#) or view a [video](#).