25 Leaders Transforming Manufacturing

June 7, 2022

By **Ilene Wolff**
Contributing Editor,
SME Media

In 2021, Smart Manufacturing started asking the leaders transforming manufacturing what effect the coronavirus pandemic has had on their business. Not only do the stories continue to amaze, we're also seeing some of the trickle down effects of COVID-19 emerge in their answers.

Two respondents said reshoring—bringing manufacturing back to the United States—is happening. One is electronics contract manufacturer Electro Soft Inc., whose customers are asking the Pittsburgh firm to produce more, and the other is at Amazon Web Services.

“The near shoring and re-shoring of manufacturing is real and a moment for companies to not just implement ‘the tried and true,’ but to change their business processes and technology stacks to be more nimble,” said Douglas Bellin, general manager, smart factory and Industry 4.0, AWS.

The primary reason for reversing offshoring is, of course, supply chain problems. And the catalyst for those issues is the pandemic, from which awe-inspiring stories continue to emerge.

For instance, the team at Oak Ridge National Laboratory’s Carbon Fiber Technology Facility figured out how to produce N-95 media for face masks, and then transferred that technology to an industrial partner that makes diesel filters. Their collaboration enabled production of over 3 million masks a day.

More than two years into the pandemic, corporations of all sizes, startups, public-private partnerships and universities alike have continued to churn out novel ideas and innovative products along with staples we depend on, creating opportunities for the leadership that’s demonstrated on the next pages to emerge.

Kira Barton, Ph.D.

Associate Professor, University of Michigan (U-M)

The lure of smart manufacturing (SM) for Barton was heightened by the industry weaknesses revealed during the pandemic. “The pandemic has provided an unprecedented example of the need for improved agility and intelligent decision making in the manufacturing sector, including the supply chain,” she said. “This has spurred additional research initiatives and funding opportunities within this domain, as well as strong industry collaborations.” Barton and her team at U-M created a requirements-driven digital twin (DT) framework that defines the specifications necessary to enable DT re-usability,

demonstration and implementation of this framework on various industrially relevant problems is our biggest accomplishment," she said. "We would like to continue to be leaders in this space." And the lure of SM? "Smart manufacturing brings together concepts from robotics, artificial intelligence and cyber-physical systems to harness information for more intelligent decision making within the manufacturing industry," Barton said. "This provides a unique opportunity to work across several domains on a societally important problem."