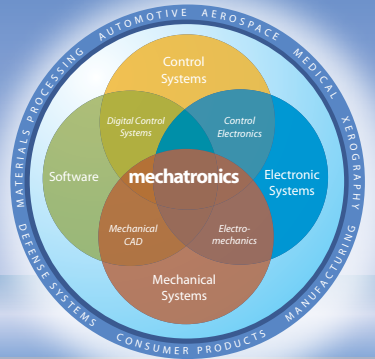


# MECHATRONICS IN DESIGN

FRESH IDEAS ON INTEGRATING MECHANICAL SYSTEMS,  
ELECTRONICS, CONTROL SYSTEMS AND SOFTWARE IN DESIGN



## Technologists and Engineers

Bridging the gap between education and practice with mechatronics-centered training.

A trip to Hershey, PA in July evokes thoughts of chocolate sweets and roller coasters. For Fred Stolfi, mechatronics professor at Columbia University, and me, the two-day visit was a journey into the future of U.S. automation, which may mean the future of domestic manufacturing. The Hershey Co.'s compelling vision is to empower its entire workforce from the plant floor to the engineering design room. Continuous personal growth, life-long learning and advancement are expected for all. It is all starting now at Hershey by enabling their existing maintenance personnel to evolve into technologists with a blended skill set through a certificate-driven, innovative, mechatronics technology program.

What is the difference between a technologist and an engineer? Are there attributes in each that are deficient in the other? Is there a chasm between the two in practice, education and advancement opportunity? Is there a potential synergy which is not being exploited in both practice and education? These are some of the questions that came to our minds as we toured Hershey's technology center and plant, and saw raw milk coming in and Hershey products rolling out 24/7 in incredible quantities. A meeting with

and a vision of what U.S. manufacturing must become.

In general, the distinction between an engineer and a technologist emanates primarily from differences in their education. Engineering programs are geared toward the development of conceptual and design skills, while engineering technology programs are oriented toward the application of designs. It is the balance between theory and practice that gives physical insight and understanding, a balance between the world of the engineer and the world of the technologist.

How is The Hershey Co. implementing this vision? To accomplish the first step of elevating their current maintenance personnel, Hershey has partnered with Reading Area Community College (RACC). At the new Schmidt Training and Technology Center there, under the direction of John De Vere and Bonnie Spayd, a Mechatronics Engineering Technology Program has been created with industry experts acting as the guides while the students are engaged in self-paced discovery learning, earning three certificates along the way, eventually leading to an accredited two-year associate's degree.

Challenges are met and problems are solved by changing culture — attitude and behavior — and instilling ownership. The Hershey Co. recognizes this and is meeting the challenge head-on. They are empowering their existing maintenance workforce by providing a college-credit curriculum within the framework of Hershey's continuous education program. This transformation will allow upward mobility and career progression within the company that was previously unattainable or invisible. Hershey's vision should spur a national discussion about the melding of the worlds of the technologist and engineer, the worlds of the implementer and conceptualist, in both practice and education. We need attributes of both in everyone.



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Joe Wagner, controls engineering manager at Hershey and our host, along with the VPs of manufacturing, engineering and global operations, brought us to an understanding of the present technological situation and their transformative vision for the future. This vision is one in which their entire workforce shares ownership of the processes and products, communicates effectively with insight and understanding, sees opportunities throughout the company along many different career paths, and values each other's contributions to problem solving and innovation. It is a vision that cannot be bought or outsourced — it is local, a major culture change,

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