



NATIONAL
ENGINEERING
FORUM

**National Engineering Forum (NEF) Regional Dialogue: Engineering Thought Leadership
Madison region hosted by Rockwell Automation and the University of Wisconsin-Madison
May 6, 2015**

Overarching Mission

In 2012, Lockheed Martin launched the National Engineering Forum, and in partnership with the Council on Competitiveness and the National Academy of Engineering share a common vision for transforming the way we perceive, experience, and prioritize engineering in this country. NEF is creating solutions for the challenges facing the U.S. engineering enterprise - the *capacity* of our technical talent to fill current and future jobs, our engineering workforce's *capability* to address 21st century challenges, and our nation's *competitiveness* on the world stage – the 3C's. A series of regional dialogues is creating a grassroots network of key influencers from academia, business, government, and the media. Sustained input from these groups will impact the NEF agenda, helping turn findings into action as the regional dialogues culminate in a national cornerstone event. The regional dialogues provide NEF with a nationwide survey of thought leaders, and enable a dynamic view of both the past and current state of engineering based on the expertise of those best positioned to help address the three engineering challenges. These sessions provide a platform for an engaging narrative that appeal to students and engineering professionals alike.

Key themes from the Madison regional dialogue

Leaders from industry, academia, and government participated in the NEF regional dialogue at the Wisconsin Institute for Discovery, hosted by Rockwell Automation and the University of Wisconsin-Madison. Keith Nosbusch, chairman and CEO at Rockwell Automation, provided the evening's keynote remarks, highlighting the engineering opportunities and challenges facing Wisconsin. Attendees identified the region's rich engineering and manufacturing history, anchored by globally competitive, American heritage companies employing multiple generations from Wisconsin families educated in a world-class university system. Yet, this community is being challenged. The perception of engineering and manufacturing has shifted as these careers struggle to be perceived as exciting and secure. The overextended university system cannot accommodate qualified young people who want to pursue engineering. Many aspiring students simply can't afford tuition. When manufacturing went global, it separated from engineering – creating a skills gap because there are fewer hands-on experiences. Moreover, employers are increasingly expecting engineers to think creatively, be strong communicators, and be team leaders right out of their undergraduate programs. Nonetheless, dialogue participants are confident that the American engineering enterprise remains flexible, robust, and reliable. This is evidenced by the solutions put forward at the Madison regional dialogue to address the shared challenges of capacity, capability, and competitiveness.

Recommendations that emerged in the dialogue

- Recruit from underrepresented groups and geographic regions to increase the potential supply of engineers.
- Increase the number of engineering-related toys for women and underrepresented communities such as the creation of an engineer American Girl doll.
- Connect young people – as early as possible – with the aspects of engineering that are relevant and exciting to their generation.
- Pair engineering with humanities to foster abstract thinking.
- Expand hands-on experiences, collaborative learning, and project-based learning in a “flipped” classroom

