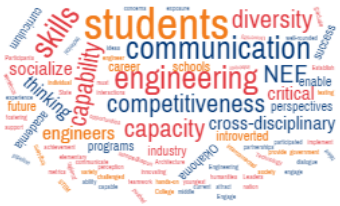
National Engineering Forum (NEF) Regional Dialogue: Engineering Thought Leadership
Stillwater region hosted by Oklahoma State University
February 2, 2016

Overarching Mission

In 2012, Lockheed Martin launched the National Engineering Forum in partnership with the Council on Competitiveness and the National Academy of Engineering to promote a common vision for transforming the way we perceive, experience, and prioritize engineering in the United States. NEF is identifying 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. 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 Stillwater regional dialogue

Leaders from industry, academia, and government participated in the NEF regional dialogue at Oklahoma State University's College of Engineering, Architecture and Technology. David Hager, CEO of Devon Energy, provided the evening's keynote remarks, highlighting the roles engineers and engineering innovation have played in the energy and manufacturing sectors, transforming local and global economies. He focused on the critical need to continue investing in engineering research and tools, as well as the engineers who will pioneer future advances. Dialogue participants returned to this theme in conversation, homing more specifically on ways to enable current and future engineers to develop soft skills and engage in diverse environments and interdisciplinary teams. Participants noted that the ability for engineers to work as part of a team and communicate effectively through a variety of media is more important than ever in our inter-connected society. And yet, undergraduate and graduate schools face challenges in attracting students with strong communication skills. Moreover, these schools are pushed to graduate students in four years with a well-rounded curriculum consisting of engineering fundamentals and humanities. The critical thinking abilities developed through exposure to new ideas and perspectives is what will keep America innovating.

Recommendations that emerged in the dialogue

- Engage students early and often in their academic careers, presenting engineering as a career path option.
- Develop an engineering curriculum fostering teamwork and group interactions to build communication and leadership skills.
- "Remove the mystery of engineering" and deepen the STEM talent pipeline through programs in elementary and middle schools that engage with our nation's youngest students.
- Adjust the success metrics away from individual testing and toward cross-disciplinary achievement.
- Establish partnerships between academia and industry to develop programs that provide undergraduate students with hands-on, technical experience before they enter the workforce.
- Support efforts to enable international students to remain in the United States after graduation, not only to retain their skills, but so they may serve as a positive example for others following them.