NATIONAL ENGINEERING FORUM

National Engineering Forum (NEF) Regional Dialogue: Engineering Thought Leadership
Knoxville, Tenn. at the Oak Ridge National Laboratory
April 18, 2013

Overarching Mission for Year One:

Lockheed Martin, the Council on Competitiveness, and the National Academy of Engineering launched the National Engineering Forum to address three engineering challenges in the United States: 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. A series of regional dialogues is creating grassroots networks of key influencers from academia, business, government, and the media. Sustained input from these groups will make an impact on the NEF agenda, helping turn findings into action. The regional dialogues will culminate in a national cornerstone event in Washington, D.C. in 2014.

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 appeals to students and engineering professionals.

Key themes from the Oak Ridge-Knoxville Dialogue:

The first NEF regional dialogue of 2013 – hosted at the Oak Ridge National Laboratory – drew nearly 150 people from Knoxville, Oak Ridge and around the country. This dialogue reinforced the role engineering and engineers play in underpinning long-term security, prosperity and competitiveness for the nation. This dialogue also identified opportunities for raising national attention to the critical importance of engineering. Particular focus was paid to: better communicating the power and potential of engineering; re-thinking industry-university-labor-national laboratory collaborations to create a more capable and competitive cadre of engineers and engineering-aware Americans; and linking engineering to solving global grand challenges as a way to encourage greater engagement from students and incumbent workers of all ages.

Key action items that emerged in the dialogue:

- Create excitement around over-the-horizon opportunities and changing American priorities. Focus on how engineering changes the world through contests and competitions that could produce global leadership and competitiveness for the United States (energy; big data; cyber security; genomics/biotechnology; etc.).
- Provide engineers with the most cutting-edge tools to empower them to deliver globally competitive products and services.
- Encourage and enable engineering students and engineers to think broadly, creatively, and in an interdisciplinary way about their education, jobs and career paths.
- Rethink traditional education pathways for students who want to study engineering but who attend liberal arts schools (e.g. "3-2" dual-degree programs). Provide educational opportunities tied to engineering – e.g., two-year engineering and technical degrees.
- Improve the links among companies, community colleges, universities, and national laboratories to create market-relevant internships, apprenticeships, co-ops and work experiences to entice, nurture and "capture" engineering talent.
- Leverage the "maker movement" and identify strategies, as well as develop and support activities, to encourage young Americans to "tinker." Work together to transform the negative cultural perceptions of manufacturing as "dirty, dumb, dangerous and disappearing" to "smart, safe, sustainable and surging."

Word Cloud created from discussions on April 18, 2013 at Oak Ridge National Laboratory.