



## National Engineering Forum (NEF) Regional Dialogue: Engineering Thought Leadership Orlando region hosted by the University of Central Florida

November 9, 2015

### 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.

### Key themes from the Orlando regional dialogue

Ninety-one leaders from industry, academia (including students), non-profits, the media, and government participated in the NEF regional dialogue at the University of Central Florida (UCF), hosted by UCF president John C. Hitt, and featuring a keynote by Limbitless Solutions executive director and UCF mechanical engineering Ph.D. candidate Albert Manero II. They highlighted the engineering opportunities in Orlando and the greater Florida region: fast-growing, popular and increasingly diverse education systems; dynamic industries attractive to next-generation engineering leaders (robotics, design, gaming, aerospace, etc.). Yet, critical "infrastructure" issues challenge the community in attracting and retaining world-class engineers in Central Florida. First, inconsistency in state-level programs to fund and support the engineering and innovation ecosystem inhibits greater growth, such as the inability to issue bonds to finance new university facilities. Second, as in many U.S. regions, day-to-day infrastructure issues like stressed highways/road systems are becoming detractors for potential engineering employees. One type of engineering and innovation infrastructure that is growing – but could use much more support – is the "bridging spaces" linking engineers with business students and leaders to turbo-charge business development and entrepreneurship.

### Recommendations that emerged from the dialogue

- Skew Pell Grant and student loan support toward engineering studies.
- Recruit future engineers from underrepresented groups and regions – and start STEM engagement before high school, focusing on the dimensions of engineering relevant to younger generations through "hybrid classes," more and more extensive private sector-driven mentorships, internships and demonstration projects.
- Align university curriculum to multi- and transdisciplinary opportunities, and focus state and federal funding efforts and peer review to reward/provide grants to multi-disciplinary initiatives.
- Connect industry and universities to initiate "junior design projects" and develop more relevant senior design projects that map to the real world – in terms of timing (longer than 2 months); scope to include concrete experiences around manufacturing processes, sustainability, etc.
- Pair engineering with humanities to foster options in universities, aligning core classes to engineering.
- Support efforts to keep the best and brightest U.S.-educated students in the United States after graduation.

