Economic competitiveness relies on a highly educated workforce, investments in long-term research and development, and incentives to promote industrial, government, and university partnerships. This formula for American success begins with K-12 education in science, technology, engineering, and mathematics, creating a pipeline of talent to develop technological innovation. Your support of university-based engineering research and education provides a crucial building block toward these goals.

- Higher education buffers unemployment: in this recession, employment has dropped much less steeply among college-educated workers than among other workers.
- Universities contribute to economic development by actively moving research discoveries into the community and marketplace. University-based research sparks small business spin-offs as well as entire new industries.
- Economists have estimated that half of the GDP growth since WWII is attributable to technological innovation. With a shrinking manufacturing base, the United States needs to develop technologically advanced, higher-quality products.

• Thank you for:
  o Your support of university-based basic science and engineering research, and public-private partnerships to drive technology transfer.
  o Commitment to improving K-12 math, science, and engineering education.

• Public research universities play a critical role in the United States:
  o Contribute substantially to their local, regional, and state economies
  o Enroll over five million students annually, including over one million graduate students
  o Grant over 85% of research university bachelor degrees and 70% of graduate degrees

• Engineers will provide solutions for our nation’s grand challenge:
  o Infrastructure renewal
  o Climate change
  o Energy independence
  o Defense technologies
  o Biomedical technology

• University research is strengthened by:
  o Adoption of the President's innovation-focused initiatives.
  o Support of NSF, DOE, NIST, and NASA collaboration with universities and their corporate partners, and DOD basic (6.1) and applied (6.2) research.
Two outstanding Colleges of Engineering contribute daily to STEM workforce development and economic development.

Total enrollment between the ISU and UI Colleges of Engineering is 7,710. Total research expenditures between the two schools of $114,230,715. (2009 American Society for Engineering Education data).

- Engineering graduates bolster Iowa’s workforce:
  - Nearly 70% of ISU students graduating in agricultural and biosystems engineering remain in Iowa.
  - About 1,000 employers, a majority Iowa-based, use the ISU online recruiting system each week.
  - Approximately half of UI engineering graduates remain in Iowa for their jobs or further education.
  - UI College of Engineering offers a CareerConnection program for Engineering Alumni that alerts engineers throughout the country about open career positions with Iowa employers.

- Student connections with industry spark careers:
  - More than 200 employers and 6,500 interviews through career fairs and web-based interviewing.
  - Students earn more than $10 million a year in paid co-ops, internships.
  - Students participate in innovative design projects on industrially defined projects.

- Close ties to corporations, many with regional influence:
  - ADM
  - Caterpillar
  - Clipper Windpower
  - Emerson Process Management
  - Genencor
  - John Deere
  - Pella Corporation
  - Rock Island Arsenal
  - Rockwell Collins
  - Whirlpool Corporation

- Growing number of tech start-ups from our research projects:
  - ISU: Two Iowa State faculty members in the Virtual Reality Applications Center developed technology that turns flat medical scans into vibrant 3-D images that can be shifted, adjusted, zoomed and replayed at will. The technology, which has been featured on national television and in international media, is being marketed and sold by a startup company called BodyViz.com (www.bodyviz.com).
  - UI: Santos Human, Inc. (www.santoshumaninc.com) grew out of the Virtual Soldier Research program at The University of Iowa’s College of Engineering made possible by federal research funding from the Department of Defense. Santos Human, Inc. conducts human factors studies for real-world military, manufacturing, sports and other domains. Santos acts intelligently and autonomously to safely and effectively understand human performance under rigorous, stressful conditions.

- The two universities conduct K-12 outreach activities to build interest among the young in the engineering profession: FIRST LEGO League, First Tech Challenge, Project Lead the Way, Engineering is Elementary, and Toying with Technology.