

The Engineer of 2020:

The National Academy of Engineering's
Vision of Engineering in the New
Century and How Engineering
Education Should Adapt to and Lead
the Change

The Context

- Dramatic expansion of knowledge
 - Medical breakthroughs
 - New energy devices
 - New materials
 - Remarkable light sources
 - Next generation computers

The Context

- Huge challenges
 - Deteriorating infrastructure
 - Environmental issues
 - Providing housing, water, and health for a rapidly growing population

The Context

- Societal and geopolitical
 - Rapid population growth, particularly in less developed countries
 - Growing diversity globally
 - An economy strongly influenced by the global marketplace
 - A growing need for interdisciplinary and system-based approaches

ENGR of 2020 Attributes

- Well grounded in **mathematics** and **science**
- An **expanded view of design** through a solid grounding in the **humanities, social sciences, and economics**
- An informed understanding of the **creative process**
- An ability to work in an **interdisciplinary** environment, including professionals from **science, social science, and business**

ENGR of 2020 Attributes (cont.)

- **Leadership qualities** that will allow them to serve as positive influences in the making of **public policy**
- A profession that effectively recruits, nurtures, and welcomes **underrepresented groups** to its ranks
- Leaders in the use of wise, informed, and economical **sustainable development**
- Prepared to **adapt to changes** in **global** forces and trends and to **ethically** assist the world in creating a balance in the standard of living for developing and developed countries alike

Questions:

- What are your biggest worries about the future?
 - Terrorism
 - Energy crisis
 - Global climate change
 - Overpopulation
 - Economic decline
 - Personal/Family concerns
 - Etc.
- Are you a techno-optimist or a techno-pessimist? Why?

