

# COE Environmental & Renewable Energy Systems

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# Strategy for Activating Partnerships: Challenges for Universities

- A balance between research & teaching
- Research is more like ecological system than a linear system
- Effective linkages for tech transfer
- Transnational university in the world (globalization)
- Maintaining strength in established areas while encouraging high risk
- Balance btw multidisciplinary & individual studies
- Attracting talented young people to careers in science & math

# Strategy for Activating Partnerships: Principles

- Scholarship of discovery, integration, application and teaching shapes modern society
- Scholarly activity of individual faculty is fundamental to generation of new knowledge but collaboration among faculty is needed and increasingly essential
- Research & outreach across the university are integral components of mission
- Fundamental research & research in strategic areas are both essential for new knowledge to meet needs of society

## Strategy for Activating Partnerships: Principles (cont.)

- Effective integration of research, teaching outreach is central to university mission
- Fundamental advanced in knowledge are increasingly dependent on collaboration among disciplines, and
- Research & outreach efforts must address global opportunities & challenges

# Strategy for Activating Partnerships: What does Industry Want from Partnership

- First class employees(graduates)
- Leveraged funding from the government & other corporations
- Improved knowledge creation & transfer
- Access to the newest technologies
- Reduced product-process development time & cost

# Strategy for Activating Partnerships: What does Industry Want from Partnership (cont.)

- Reduced education & training costs
- Attract new cost-effective resources to real-time issues, and
- Proprietary access to results

# Strategy for Activating Partnerships: What does University Want from Partnership

- Ability to do world-class research (cutting edge)
- Quality publications
- Participation in high-technology areas
- An environment (both intellectual & facilities) attractive to first-rate students & faculty
- Adequate funding

# Strategy for Activating Partnerships: What does University Want from Partnership (cont.)

- See the transfer of research into useful products
- Graduates hired
- Industrial feedback on graduates & curriculum, and
- Sabbatical and consulting opportunities

# Strategy for Activating Partnerships: Concept of Partnership

- Groups of scientists & engineers work together w/o regard to affiliation (problem oriented)
- Set goals- essential to develop shared goals
- Establish directions-group mutually agree on directions of research & efforts of individual team members
- Agree on distribution of effort among individuals regardless of affiliation

# Strategy for Activating Partnerships: Model for Membership in Consortium

- True partnerships (industry-government-university)
- Joint setting of research agenda
- Sharing of information
- Flexibility
- Inclusion of both large and small companies
- Support "real" costs of research

# Strategy for Activating Partnerships: Strategy for Future

Anaerobic digestion

Biomass

- Ethanol
- Biodiesel

Industrial Biotechnology

Others?