Outcomes from CIP/ETD Forum, February 3, 2009 – CIEC, Orlando, FL

Ideas that are similar inside each category are marked with * or **.

Tasks that business and industry can undertake:

1. Education can help companies define and further understand and document exactly what each of their employees do – this is important for transitions. 1-3, 2-4's

4. Industry can help university's focus on education, not just research.* 1-1, 3-2's, 2-3's, 2-4's

24. Engage business and industry in lobbying to college presidents what exactly it is that they need.* 1-1, 1-2, 1-3, 1-5

25. Provide JIT training and education programs when industry asks for help. 1-1, 1-5

32. Look at ways to increase the pay in the engineering professions.

40. Work to establish industry rankings of engineering/ET programs that are based on quality of the readiness of graduates to make immediate impact in their careers rather than on other prestige factors of the institution.

Marketing/branding initiatives:

12. Bring all ET disciplines together as a national group and initiate a professional marketing and branding study. 1-1, 2-4's, 1-5

23. Better define exactly what ET is in a language that young people can relate to. 1-1, 3-2's, 3-3's, 1-4

27. Market ET and engineering to parents – not just the kids. 2-2's, 1-3

28. Gear the ET message directly to the audience. 2-3's

33. Demonstrate to young people how much of a difference they can make in the world as an engineering or ET graduate. 3-1's, 2-3's

34. Get kids excited about math and science early in their K-12 studies by using real world examples. 2-1's, 2-2's, 2-3's, 1-4, 2-5's

39. Expand and advertise what is going on in PLTW. 1-5

41. Help start a new TV series that is based on engineering.

42. Saturate U-tube with engineering and ET examples. 1-5

Partnership to undertake with our professional societies:

2. The ABET outcomes approach (a-k) has been very positive and well accepted by industry.
6. Bring Professional societies and ABET into discussion. 3-2's, 7-3's, 3-4's, 4-5's
10. Don't try to solve this problem just like engineers solve traditional problems.
21. Ask the NAE to do a study on the impact of ET in the workplace. 3-4's, 1-5

Initiatives that ETD/ETC can undertake:

5. Begin to formulate a "Body of Knowledge" (BOK) for the ET profession.** 1-1, 3-2's, 2-3's, 3-4's, 1-5
7. Recruit the ASEE Dean's Council to be a partner in this movement. 1-1, 1-4
8. Do a follow-up response to the recent article in the Chronicle.
9. Lobby to US government about changing their hiring practices for ET graduates. 4-1's, 1-3, 1-4
17. Establish "national ET/industry relationships" rather than institution specific.* 1-2
18. Resolve "perception" issues with ET to differentiate what we do from engineering and other related programs. 1-2, 2-3's, 1-4
20. Take advantage of being the "T" in STEM (i.e. STEM is prominent in many national movements in the professional societies, grants, and K-12 programs). 1-2, 1-3, 2-4's, 1-5
30. Seek to further develop a description of the "capabilities" of our ET and engineering graduates.** 1-1, 2-3's
37. Begin to define what ET should look like in 10 years.**
38. Bring all the stakeholders together to make a relevant national plan that everyone is on board with and engaged in implementing.* 1-1, 1-2, 1-4, 1-5
44. Don't just talk about surviving – talk about how we are going to move ahead and flourish with respect to ET's uniqueness.

Initiatives that our programs or academic institutions can undertake:

3. Programs should develop leadership councils rather than advisory councils to help begin to champion the changes that need to be made. *

11. Teach ET grads how to follow a process.

13. Look at a "common core" or "common first year" with engineering or related programs or a common first year and then diverge later in the curriculum. 1-2, 2-3's, 2-5's

14. Institutions need to present themselves as "go to" agencies for their industry partners. 1-3, 1-5

15. Look out ahead ten years towards more IT applications, increased data availability, internet applications, innovation, accelerated rates of change and fold into curriculum.

16. Dissolve current discipline boundaries and teach more of a "philosophy of problem solving." 1-2, 1-4, 1-5

19. Take advantage of ET's ability to adapt to change easier than engineering may be able to (i.e. become the first responders to business and industry needs). 1-3, 1-4

22. Look at additional global initiatives with ET type programs in China, India, etc. 1-2, 1-4, 3-5's

26. Partner 2-year and 4-year programs in teams together on student projects. 1-4

29. Take a closer look at the "pedagogy" of our ET programs – can it be enhanced? 1-5

31. ET should sharpen its focus to nontraditional areas of the pipeline (i.e. Hispanic student, females, and other underrepresented groups). 1-2, 1-5

35. Get teachers excited about math and science and have them introduce it early in their K-12 classrooms by using real world examples. 1-2

36. Get education faculty to excite teachers about understanding the possibilities of adding math and science examples early in their K-12 classrooms by using real world examples.

43. Sell yourself more thoroughly to your home institution.

45. Work more closely with other engineering departments and stay active with your established industry partners. *

Additional ideas from 2009 ETLI at Penn State University – October 24, 2009

Panel 1 Outcomes

1-1. Have national ET community work with US Department of Personnel Management on classification of ET graduates 6-1's, 6-2's, 3-5's

1-2. Perform a national study of exactly what ET graduates do and the titles they receive in business and industry 1-1, 1-2, 3-4's, 3-5's

1-3. Update ET curricula to add entrepreneurial student skills 3-1's, 1-2, 1-3, 2-4's

1-4. Align ET grad skill sets with SME & NAM skill requirements 1-1, 1-3, 1-4, 1-5

1-5. Build more cross-disciplinary work into national ET curricula 1-2, 1-3, 1-4, 1-5

1-6. Benchmark international models for ET programs of study none

1-7. Broad current ET forum activities to get a wider input of business and industry perspectives 2-1's, 2-3's

1-8. Look internally at our academic institutions to determine if there are ways we can organize our ET programs differently to enhance effectiveness 1-4, 1-5

Panel 2 Outcomes

2-1. Focus the ET nomenclature more on the career of our graduates rather than on the programs of study 8-1's, 3-2's, 1-4

2-2. Look into how the scholarship of applications and engagement can distinguish ET faculty from engineering and science 1-1, 1-2, 1-4

2-3. Coordinate Et and Engineering programs where they coexist and repackage the knowledge base included in each

2-4. Take another national look at bifurcating as engineering science and applied engineering 3-1's, 1-4

2-5. Reread and reconsider L.E. Grinter's ideas

2-6. Better define how engineering applies to *discovery of knowledge* and ET applies to *implementation of technology* 1-1, 2-4's, 3-5's

2-7. Keep ET's focus on practitioner faculty and continue to work hard at supporting their professional development 1-2, 2-3's, 2-5's

2-8. Work to develop PhD programs in ET 1-3

2-9. Better highlight existing ET scholarship 1-1, 1-3

Panel 3 Outcomes

3-1. Conduct a national campaign to get more 2-year ET programs ABET accredited 1-1, 2-4's, 1-5

3-2. Support ABET's effort to introduce separate criteria for 2-year ET programs

3-3. Increase collaboration and communication among 2-year and 4-year ET programs 2-3's

3-4. Help ET capitalize on Dual enrollment programs nationally 1-3, 1-4

3-5. Attempt to better articulate between 2-year and 4-year programs and think about adopting additional 2+2 program arrangements 1-3

3-6. Work more closely with industry to provide exactly what they need 1-1

3-7. Focus on **quality** in all phases of ET education 1-1

3-8. Work to make ET programs more nimble 1-2, 1-3

3-9. Energize and enhance *feeder programs* 1-1