

Summary of Question 4

Question 4: Graduate education, particularly the masters degree has received little or no attention with respect to curricula content except for great depth and currency of courses, what changes are necessary?

- a) The master degree is becoming compelling for students (2006, 68,000 BS, 33,000 MS and 7200 PhD), Why?
- b) Should we link the masters degree more closely with the BS degree and professional practice, with more relevance for industry and government?
- c) US citizens now make up less than 30% of the PhD graduates, why, and what can or should be done?

Note that the flip charts were left at the conference so there may be additional points that these charts show. In general, there was no overwhelming reforms suggested that need to occur relative to the graduate education model we currently have. Below is a summary, however, of consistent messages.

Those that participated indicated a wide range of masters programs:

- many of the masters programs were market driven, which depended heavily on whether the university is located in an urban or non-urban area and how much industry was present in the area. The general consensus was that schools enjoyed the flexibility of setting up the range of degree programs possible.

- two tracks of masters programs were broadly indicated with one being a terminal degree masters and the other being a step just before the doctoral degree.

- many schools indicated having an integrated BS/MS program in which the time required to the degree is nominally five years. These programs allowed for both thesis and non-thesis options.

- some masters degree program were emphasizing softer skills such as entrepreneurship, project management, public policy, and applications.

- many programs gave students the options of choosing their own classes for the most part. Other programs that had specialized masters degrees, i.e., in robotics, energy, etc, had very distinct course requirements.

Regarding the doctoral degree, most of the conversations revolved around students not understanding their opportunities in industry and government agencies after they finished their degree. Many believe that the only career path is academia. Some distinct recommendations that were given were:

- expand and promote undergraduate research opportunities for ME students;

- clearly articulate to our students at all levels (K-Graduate) the value of having a PhD in terms of their role in improving the quality of life and impacting the society;

- identify and articulate career opportunities in government agencies and industry for those having doctoral degrees. This information needs to be communicated to guidance counselors, students at all levels, and faculty advisors.

- promote the stature of doctoral candidates at their own institution such that they are treated more as professionals;

- promote the stature of having a PhD in society so the general public understands the stature relative to medical doctors and lawyers.