ABET ENGINEERING CRITERIA 2000:
INTERACTIONS WITH WOMEN IN ENGINEERING PROGRAMS

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Each engineering program seeking ABET EC 2000 accreditation must prepare their faculty, curriculum, and students in the way best suited to their program. For most programs, some level of change in faculty behavior is required for the potential benefits of curricular design and improvement processes required in an ABET self-study, to be realized. To some degree, the people involved in administering and delivering Women in Engineering programs have been working to change various behaviors. Thus, the experience of these WIE change agents can potentially be useful to the programs undergoing change. Furthermore, are in contact and represent one of the important constituencies of the programs.

The change from the Topics-Based Criteria for ABET engineering accreditation, which have been used during the 1990s, to the EC 2000 Criteria [see http://www.abet.org/eac/eac.htm] was motivated by many factors. Some of these included the desire to make the effort and energy expended in preparing for an accreditation review more useful and beneficial to the program, and to enable more flexibility for programs to become responsive to the needs and demands of their constituents and environment. Even with these purposes in mind, many faculty members still look upon the exercise of preparing for an accreditation review as one of assembling documentation required to “pass” the review process. Often there was a general apathy among the faculty members toward the ABET process. This attitude reflected a perception that the ABET review process added little value to the program, except for final accreditation approval. So, at least some programs developed the philosophy that the minimum effort necessary for successful accreditation should be spent. The intent of ABET EC 2000 is to have the accreditation process encourage program improvement. Comprehensive program improvement clearly requires generalized and continuing faculty interest and participation.

For visualizing the processes expected for the ABET EC 2000 criteria, figure 1 helps. In this figure examples of reasons why the people in WIE can and should contribute to the ABET effort are highlighted.
In the process of responding to the ABET EC 2000 requirements, there are many possible interactions for the people involved in WIE programs. The composition of these teams can vary greatly in numbers and constituent representation. As a result, the difficulty of meeting ABET's requirements is growing on the teams and that appropriate rewards and recognitions are provided for the team members.

The Lead Team is charged to decide the approach for the preparation process and to initiate and facilitate the process. The team will be responsible for interfacing with other constituent groups involved in the program, and they will ensure communication within the team. The leadership team is usually not very large, and at least one member will provide the evaluation of the process effectiveness for the systems being designed. The leadership team is usually small, and at least one member participates annually. The leadership team is usually small, usually two or more faculty members participate depending on program size and time available. At least one member must be a good change agent. The team can vary greatly in the number of members and constituent representation.

The Lead Team is the driving force behind the program and will refer to champions and change agents. In this sense, we are referring to a champion as someone who has a great deal of commitment and accountability for the team and its charge. Our definition of a change agent is someone who will focus on maintaining momentum and focus and will reduce resistance to activities. The change agent should ensure cognitive commitment is growing on the teams and that appropriate rewards and recognitions are provided for the team members.
should assure that the process is strongly coupled with college level efforts and assure strong interaction with all program constituencies. The people in WIE programs can aid this team, especially in change agent roles, interfaces to the college, and interfaces to the constituencies.

2) The Objective Team is charged to develop the mission statement and program objectives for the undergraduate program. This team will assure, after review and adoption, high visibility for the objectives. This team will be responsible for regular evaluation of the program objectives and the program's success in meeting these objectives. The success in meeting objectives should be evaluated at a minimum of once per year, and the objectives should be reviewed at least every other year. The objectives team should have champions from the faculty and industry/alumni representation who are perceived as visionary leaders by the faculty; there should be student representation; other important constituents should be carefully considered; and a change agent might be desirable. The WIE program personnel have experience in defining measurable objectives and as a constituency interface.

3) The Outcomes Team is charged to develop the outcomes for the undergraduate program and the expectations for these outcomes. (Often baseline values for specific outcomes may need to be assessed before desired values can be generated). The outcomes team will assure that faculty members delivering the curriculum support the outcomes. This team will assure appropriate publication of the desired outcomes occurs, and they will evaluate the outcomes at least annually. The outcomes team should have champions from the faculty and who are perceived as leaders in student development by the faculty; there should be interaction with industry/alumni representatives; there should be interaction with student representatives; there should be consideration of other important constituents; and, there should be a change agent. The WIE program personnel have experience setting and evaluating such outcomes and providing important interfaces to some of the constituencies.

4) The Curriculum Team is charged to design the curriculum that will ensure and enhance the success of the program in meeting its objectives and outcomes. This team will determine the points in the curriculum where assessments should occur for objectives and outcomes. This team will be asked to evaluate the curriculum based upon the assessment data available as well as upon the evaluations from the Objectives and Outcomes Teams. The curriculum team generally is the same as curriculum committees composed of primarily faculty members, but they must have a commitment to linking objectives and outcomes to the curriculum. The WIE program may have the least potential links to this type of team. Certainly some WIE program personnel are experienced in curriculum development and others are experienced in graduating from an engineering curriculum.

5) The Assessment Team is charged to plan and conduct the actual assessments for the program objectives and outcomes. This team will assure that each semester
(or quarter) appropriate data is gathered, and processed into meaningful information for the other teams' evaluations. This team will evaluate and update the assessment plan at least once per year. The assessment team must have people trained in good assessment strategies and techniques, and they must be both motivators and doers to assure that appropriate data is gathered and processed. WIE program personnel may be important in this team's operation, population, or initiation.

Specific concern for many WIE personnel is either: "why should I, or why will they let me, get involved in the ABET cycles?" Some people have a full load of responsibilities and do not need to add one more. However, I would argue that any group who wants another group of people to change their behavior, has to be willing to change their own. Otherwise, they will not be influential with the group to change. If it is mystifying that so many faculty members or students can be so unaware of the women's issues that surround them, then it is similarly mystifying that someone can work in a college of engineering and not be informed and contributory to accreditation issues for the programs. Thus, in answer to the question about why should WIE program personnel get involved, then we contend that it is their obligation as change agents involved in a college of engineering to be engaged in this potentially significant change surrounding accreditation. For some programs the interaction may provide a valuable opportunity to become 'less marginal' to the college activities.

Probably, a harder question to answer is why will 'they' let me be involved in the processes concerning ABET EC 2000. Clearly the circumstances surrounding the WIE program has much to do with any response that can be given here. However, some suggestions are:

- Show an interest in understanding the efforts and strategies for meeting ABET EC 2000 criteria at your institution.
- Use your network with people at other institutions to gather some information for your own institution.
- Offer your expertise in facilitating, training, or developing assessment and evaluation strategies.
- Offer your interfaces with alumni and industry personnel in order to aid in having broad-based constituency interactions.

In conclusion, the members of the WIE program have skills and experience which can help programs come up to speed with ABET EC 2000. In addition, this is an important time for women and other constituencies to have more involvement in establishing and evaluating the engineering curricula. WIE program personnel can not afford to be disengaged and uninformed about these efforts. So, even without explicit invitation, they should strive to be involved and contribute to this important change in engineering.