

# CommunityMatters™

A Monthly Newsletter for the ABET Community

May 2007

## Inside ABET

### 2007 Annual Meeting to Focus on Future of Technological Education

ABET has announced the theme for its 2007 Annual Meeting — *The Global Workforce: The Future of Technological Education*. This event will take place at the Hyatt Regency Resort & Casino in Lake Tahoe, NV, on Thursday, November 1, and Friday, November 2.

The 2007 Annual Meeting will consist of four sessions that, collectively, will provide a broad overview of how technical education will look in 25 years. The sessions will explore views about the challenges that institutions expect to face in educating the next generation of students, the implications that emerging educational approaches may have on quality assurance, and the market's likely needs regarding the mobility of the future technical workforce. The meeting will conclude with an examination of best practices that institutions are currently employing to prepare their technical graduates to enter the ever-changing, increasingly global marketplace.

The following topics are likely to be touched upon over the course of the meeting:

- ▶ What the future looks like for technological education and the global workforce
- ▶ Alternative educational delivery methods
- ▶ The rise of custom products, services, and educational sequences for technical students
- ▶ The body of knowledge for recent graduates versus mid-level professionals
- ▶ Issues surrounding shortages and surpluses within the technical labor force
- ▶ The practice of outsourcing
- ▶ Implications of developments within the emerging global economy for educational quality assurance

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## Volunteer Spotlight

### Phil Borrowman

Phillip E. Borrowman, P.E., S.E., is Senior Vice President with Hanson Professional Services, Inc., an enterprise he joined in 1974. His career has given him the opportunity to oversee many of the company's structural engineering, civil, and transportation engineering projects, open its Seattle office, and serve as the director of its western division. Currently, he manages responsibility for Hanson's office in Kansas City, Missouri.

Over the past 22 years, Phil has become heavily involved in ABET, beginning with his service as an evaluator of civil engineering and architectural engineering programs for the American Society of Civil Engineers (ASCE). He was a member of the Engineering Accreditation Commission from 1997 to 2002, and he served as the ABET Board Liaison to the Computing Accreditation Commission from 2003 to 2005. Currently, Phil is in the first year of his second three-year term as an ASCE representative on the ABET Board of Directors.

In addition to these activities, Phil has had the unique experience of becoming a team member for international substantial equivalency evaluations and traveling abroad to help evaluate foreign technical programs and guide them in their quality assurance processes.



With three substantial equivalency visits under his belt, including one as a team chair, Phil was appointed to ABET's International Activities Council (INTAC) and has served as its Chair since January 2006. Under his leadership, INTAC assumed the duties from the International Accreditation Task Group for developing an implementation plan that the

four ABET commissions will use to begin international accreditation. The development of that plan has been challenging.

"ABET's capacity must be expanded to meet the needs of international programs without adversely affecting accreditation activities domestically," Phil said.

"However, I am certain that the ABET member societies and the four accreditation commissions will adapt well to their new role on the international stage and use this opportunity to assure educational quality for an even larger population of technical students entering the global workforce."

The ABET Board of Directors received the international accreditation implementation plan at its March meeting, and the plan is moving forward. Priority for international accreditation visits will be given to programs that ABET has already deemed substantially equivalent and will coincide with their next scheduled on-campus reviews.

## Look Ahead

May 19-20 — Program Evaluator Training, Nashville, TN

June 1 — Registration deadline for June 24 Faculty Workshop on Assessing Program Outcomes, Honolulu, HI

June 9-10 — Program Evaluator Training, Denver, CO

# InsideABET

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- ▶ International mobility of technical professionals
- ▶ Issues surrounding licensure and certification for technical professionals
- ▶ The rise of international accrediting unions

All members of the ABET community are invited to attend the 2007 ABET Annual Meeting. Please look for further details about the event and registration information in upcoming issues of *CommunityMatters*.

## ABET Board Approves Renumbered Criteria for Second Reading

At the March meeting of the ABET Board of Directors, a motion was passed to allow a second reading of the renumbered general criteria of the Applied Science, Computing, Engineering, and Technology Accreditation Commissions to be published for public comment.

These proposed versions standardize the titles of each criterion and make slight changes to the order in which the criteria are listed. The result is that the format for the general criteria is now uniform across all four of ABET's accreditation commissions. For example, Criterion 1 for the general criteria for each of the commissions is "Students," Criterion 2 is "Program Educational Objectives," Criterion 3 is "Program Outcomes," and so forth. There have been no substantial changes to the wording of the criteria themselves.

ABET's Accreditation Council, which is comprised of the leadership of all four commissions, has proposed the renumbered criteria as part of its goal to align ABET's accreditation processes and procedures. The self studies and accreditation procedure documents are

being changed to reflect the new criteria, and these will be available on July 1. The renumbered criteria will present a more consistent approach to accreditation for the programs that ABET accredits and should also make dual and simultaneous campus visits that cross commissions easier for all involved.

The renumbered criteria are available for review at [www.abet.org/forms.shtml](http://www.abet.org/forms.shtml) and are expected to go into effect for the 2008-2009 accreditation cycle. Feedback about the renumbered criteria should be directed to ABET's Associate Executive Director for Accreditation, Dr. Daniel Hodge, at [dhodge@abet.org](mailto:dhodge@abet.org).

## More ABET History — Behind the Grinter and Fellow of ABET Awards

ABET, Inc., currently gives two awards for individuals who have provided notable service and leadership as a volunteer with the organization:

### ▶ Linton E. Grinter Distinguished Service Award

In 1972, ABET's predecessor, the Engineers' Council for Professional Development (ECPD), bestowed the first Distinguished Service Award on **Linton E. Grinter** and decided that henceforth the award would be called the Linton E. Grinter Distinguished Service Award. Grinter had chaired the committees that produced the 1945 *Manual of Graduate Study in Engineering*; the groundbreaking 1955 *Report of the*



*Committee on Evaluation of Engineering Education*, now known as the "Grinter Report," which outlined specific objectives for both the technical and humanities areas of study necessary for future engineers; and the 1972 *Report on Engineering Technology Education*. His powerful insight inspired many of the advancements and improvements developed by the ECPD of yesteryear and by the ABET of today.

Recipients of the Linton E. Grinter Distinguished Service Award, ABET's highest honor, are those ABET volunteers who follow in Grinter's footsteps and who surpass even the highest service expectations of the organization. To date, 30 individuals have been honored with the Grinter Award. Recent recipients include Leslie F. Benmark, who was the first female ABET President (1990-1991); John W. Prados, who served as 1991-1992 ABET President and who is leading the efforts to publish a retrospective book to commemorate the organization's 75<sup>th</sup> anniversary; and current ABET President-Elect L.S. "Skip" Fletcher.

### ▶ Fellow of ABET Award

The Fellow of ABET award was begun in 1988 to honor an initial group of 44, composed of former presidents and accreditation commission chairs. Today, the award recognizes individuals who have given sustained quality service to the ABET-related professions, in general, and to education in the ABET disciplines, in particular, through the activities of ABET. As of fall 2006, 117 past or present volunteers have been inducted as ABET Fellows for their contributions to specific projects or to overall ABET activities.

And still more ABET history to come in future issues of *CommunityMatters*!



## ABETOnline

- ▶ Sign up for ABET's E-NEWS alerts at [www.abet.org/sign\\_up.shtml](http://www.abet.org/sign_up.shtml).
- ▶ Review the report from the March meeting of the ABET Board of Directors: [www.abet.org/board\\_report.shtml](http://www.abet.org/board_report.shtml).
- ▶ Apply for this summer's IDEAL at [www.abet.org/ideal.shtml](http://www.abet.org/ideal.shtml).

## CommunityMatters™

*CommunityMatters* is a monthly publication of ABET, Inc., produced for and distributed to more than 3,000 stakeholders, including ABET-accredited programs; ABET commission, Board, and council members; ABET member societies; and program evaluators.

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# Assessment101

## Assessment Tips with Gloria Rogers, Ph.D.

### Continuous Quality Improvement and Program Assessment of Student Learning

ABET's accreditation criteria have been developed on the philosophy of continuous quality improvement.

The Engineering Accreditation Commission has prefaced the criteria with this statement:

"These criteria are intended to assure quality and to foster the systematic pursuit of improvement in the quality of engineering education that satisfies the needs of constituencies in a dynamic and competitive environment."<sup>1</sup>

In an article about the implementation of continuous quality improvement (CQI) principles in education, the following statement is made:

"The principles of CQI rest on an underlying philosophy of quality, which leads an organization to systematically analyze its systems for variance, make decisions based on fact, consciously define the organization's internal and external customers, and actively seek input from both. It drives out fear by encouraging organization members to risk making mistakes in order to learn more about the system."<sup>2</sup>

A CQI process involves a clear understanding of mission (who you are, what you do, who you serve), constituents (those who have a stake in the quality of the 'product'), objectives (what one is trying to achieve), outcomes (what is being produced to meet the objective), processes (internal practices to achieve the outcome), facts (data collection), evaluation (interpretation of facts), and action (feedback to improve processes).

What does this have to do with program assessment of student learning? Questions have been raised about the need to have direct measures of student learning, the need for development of performance criteria (defining outcomes), the need to use rubrics, how much data need to be collected, etc. These questions are often prefaced by, "The criteria don't say anything about \_\_\_\_\_ (fill in the blank)." The implication is that if the criteria are silent on a specific aspect of CQI, then it isn't necessary to do.

However, in a CQI process, there are certain requirements for a robust CQI system that assure quality. For example, each outcome must be defined in measurable terms (performance criteria<sup>3</sup>). Processes (e.g., curriculum, co-curriculum) need to be examined and aligned to understand how they contribute to the desired outcome. Data should be efficiently and systematically collected to see if the performance criteria that define the outcome are being met.

A robust CQI system requires the data collection process to be based on fact (direct measures of student performance), not supposition or opinion (e.g., self-reported, anecdotal data). Rubrics are appropriate for many of the data collection methods but are not required in all situations to have a good process. Rubrics help to define different levels of student performance and help to insure consistency across multiple raters.<sup>4</sup> The amount of data collected depends on the nature of the program and should be consistent with good data collection practice.

The *old* approach to accreditation was dependent on a 'check list' to determine the quality of educational programs. The movement of the accreditation criteria to a CQI approach demands that programs take a critical look at the processes they have in place to produce the type of graduates that their constituents require. To ignore the principles of CQI in the process is to wink at the intent of the criteria and substitute one check list for another.

Is it easy to make this cultural shift? No. However, many of the 'false starts' that programs are experiencing are because there is a lack of understanding of how the CQI process should play out in educational programs or the mixed messages that are being received from well-intended colleagues about "what ABET wants." The ABET community needs to be reminded why the changes to a CQI-based criteria were made and stay true to the fundamental principles of quality.

- 1 *Criteria for Accrediting Engineering Programs*. Baltimore: ABET, 2006.
- 2 Wolverton, Mimi. *A New Alliance: Continuous Quality and Classroom Effectiveness*. San Francisco: Jossey-Bass, 1994. (ERIC ED392368)
- 3 Specific, measurable statements identifying the performance(s) required to meet the outcome; confirmable through evidence.
- 4 Access Gloria Rogers' many articles about rubrics at [www.abet.org/assessment.shtml#Assessmentrubrics](http://www.abet.org/assessment.shtml#Assessmentrubrics).

# YourCorner

## Board of Directors

Have you reviewed the latest edition of *Viewpoints*, either the hard copy version that was mailed to you or at [www.abet.org/dual.shtml](http://www.abet.org/dual.shtml)? This report provides a history of the dual-level accreditation debate and arguments for and against lifting the prohibition on it. If you have any thoughts on this matter, provide your feedback to ABET's Past President Richard Seagrave at [seagrave@iastate.edu](mailto:seagrave@iastate.edu).

## Commissioners

Just a reminder that photos for the next *Commission Directory* are due on Friday, May 11! All new commissioners and any returning commissioners who wish to update their current photos should e-mail their pictures to ABET's Communications Specialist, Keryl Cryer, at [kcryer@abet.org](mailto:kcryer@abet.org). The photos can be either color or black-and-white, but they should be portrait-style and must be at least 1 inch x 1 inch at 300 dpi. Low-resolution images taken from websites will **not** be accepted.

## Institutions

You've asked, and we've answered: "Accredited by ABET" logos are now available. Visit [www.abet.org/promote.shtml](http://www.abet.org/promote.shtml) to download the logos and companion style guide. Each ABET commission has its own logo that you can use on your program's website and



in your marketing materials. The logos are provided in both color and black-and-white and in both print- and web-ready

formats. We'd like to know what you think of the new logos. Please send comments to ABET's Communications Manager, Liz Glazer, at [eglazer@abet.org](mailto:eglazer@abet.org).

## Member Societies

It's not too late to provide the names of candidates who would like to participate in June's program evaluator training session. Please forward the names of first-time trainees to Stephanie Engelhardt at [sengelhardt@abet.org](mailto:sengelhardt@abet.org).

# Member Societies

ABET is a federation of 28 professional and technical societies representing the fields of applied science, computing, engineering, and technology:

American Academy of Environmental Engineers	Health Physics Society
American Congress on Surveying and Mapping	IEEE, Inc.
American Industrial Hygiene Association	Institute of Industrial Engineers, Inc.
American Institute of Aeronautics and Astronautics, Inc.	ISA
American Institute of Chemical Engineers	Materials Research Society
American Nuclear Society	National Council of Examiners for Engineering and Surveying
American Society of Agricultural and Biological Engineers	National Institute of Ceramic Engineers
American Society of Civil Engineers	National Society of Professional Engineers
American Society for Engineering Education	Society of Automotive Engineers
American Society of Heating, Refrigerating, and Air-Conditioning Engineers, Inc.	Society of Manufacturing Engineers
American Society of Safety Engineers	Society for Mining, Metallurgy, and Exploration, Inc.
ASME	Society of Naval Architects and Marine Engineers
Biomedical Engineering Society	Society of Petroleum Engineers
CSAB, Inc.	The Minerals, Metals, and Materials Society



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