

CommunityMatters™

A Monthly Newsletter for the ABET Community

January 2007

Inside ABET

ABET Turns 75

2007 marks ABET's 75th anniversary. To celebrate its birthday, the organization will publish a retrospective book highlighting the many milestones of its more than seven decades of leadership and quality assurance in higher education. John Prados of the University of Tennessee at Knoxville, a past ABET President and a highly influential advocate for technical education, is the editor of the retrospective. On the executive committee of the publication are former ABET Presidents Jerrier Haddad and Stan Proctor, both now consultants; former ABET Board of Directors Treasurer Sam Wainwright of Barge, Waggoner, Sumner, and Cannon; and former Technology Accreditation Commission Chair and ABET Board member Larry Wolf of the Oregon Institute of Technology. The retrospective will be distributed to attendees of the 2007 ABET Annual Meeting in October and will be available for purchase in November.



A Look Back

It was 1932 when ABET was established as the Engineers Council for Professional Development (ECPD). ECPD was formed to fill the apparent need for a "joint program for upbuilding engineering as a profession," a need determined through surveys conducted by professional engineering societies in the 1920s. The ECPD's original focuses were in the following areas:

- ▶ Guidance — Supplying information to engineering students and potential students.
- ▶ Training — Developing plans for personal and professional development.
- ▶ Education — Appraising engineering curricula and maintaining a list of accredited curricula.

— continued on page 2

Volunteer Spotlight

Larry Kaye

Larry A. Kaye, Ph.D., P.E., has been involved with engineering accreditation for nearly 25 years. He became an ABET program evaluator for the American Institute of Chemical Engineers (AIChE) in 1982 and, since then, has served as either a program evaluator or team chair on 19 accreditation visits. He was a member of the Engineering Accreditation Commission (EAC) from 1994 to 2004 and served as the EAC's Chair for the 2002-2003 accreditation cycle.

In 2004, Larry was appointed to the ABET Board of Directors representing AIChE, and he was installed as a Board Representative to the Executive Committee for the 2006-2007 term at the Board's October meeting. Larry has been a member of several ABET task forces, including his current service on the Finance Committee. In addition, he is chairing the Board of Directors' Implementation Steering Team for the Partnership to Advance Volunteer Excellence, or PAVE.

"PAVE is the last part of our Participation Project," Larry said. "Numerous people have been involved in developing the new and improved systems for volunteer recruitment, selection, training, and evaluation. Implemen-

tation is the last step in the process, and it's crucial that we get it right so that it will be sustainable."

PAVE kicked off in the fall with a planning meeting that invited representatives from ABET's 28 member societies to discuss the proposed improvements that were developed as part of the Participation Project, share their experiences from pilot tests on the processes, and brainstorm about how each society can integrate these developments into their existing practices and cultures. The latest developments regarding PAVE are available at www.abet.org/pave.shtml.



In 2005, Larry Kaye was inducted as an ABET Fellow for his "dedication, leadership, and commitment to ABET that has resulted in continuous improvement and innovation in the accreditation process," partially in recognition of the role he played in the Participation Project and will continue to play during PAVE.

Larry has had a more than 30-year career with Exxon and is currently a Planning Advisor for ExxonMobil Research and Engineering Company in Fairfax, Virginia. He received his bachelor's degree in chemical engineering from New York University and his Ph.D. in chemical engineering from Yale University.

Look Ahead

Jan. 12-14 — Commission Executive Committee and Accreditation Council meetings, San Diego, CA

Jan. 13 — Faculty Workshop on Assessing Program Outcomes, Phoenix, AZ

Feb. 9 — Registration deadline for Feb. 24 Workshop on Assessing Program Outcomes, Baltimore, MD

InsideABET

— continued from page 1

- ▶ Recognition — Developing methods whereby individuals could achieve recognition by the profession and the general public.

Seven engineering societies founded the organization and contributed to its original direction and focus: The American Society of Civil Engineers (ASCE), the American Institute of Mining and Metallurgical Engineers (now the American Institute of Mining, Metallurgical, and Petroleum Engineers), the American Society of Mechanical Engineers (ASME), the American Institute of Electrical Engineers (now IEEE), the Society for the Promotion of Engineering Education (now the American Society for Engineering Education), the American Institute of Chemical Engineers (AIChE), and the National Council of State Boards of Engineering Examiners (now NCEES).

Within its first year of existence, ECPD had begun developing itself as an accreditation agency; in 1936, ECPD evaluated its first engineering degree programs. Ten years later, the council began evaluating engineering technology degree programs.

By its 15th year, ECPD had accredited 580 undergraduate engineering curricula at 133 institutions. Its 1947 report “ECPD: A Challenge” notes that plans to accredit graduate curricula in the U.S. and the undergraduate curricula of 11 programs in Canada were interrupted by World War II. While the organization never did carry out the accreditation of Canadian curricula, it did accredit a master’s program curricula in 1955. The program, however, considered a “first-degree” program by its institution, was accredited as a “first-degree” program by ECPD. It was not until nearly 20 years later that evaluation criteria for advanced-level programs were developed.

Producing guidance and training publications was a large part of ECPD operations. The council produced dozens of books,

pamphlets, brochures, and even a couple of movies. Here are just a few of the many titles: “Reading List for Junior Engineers” (1945); “Speaking Can Be Easy... for Engineers Too” (1950); “WOMENGINEER” (1974); and “Minorities in Engineering” (1974).

In 1980, ECPD was renamed the Accreditation Board for Engineering and Technology (ABET) to more accurately describe its emphasis on accreditation. Three years later, ABET created the Related Accreditation Commission, now known as the Applied Science Accreditation Commission (ASAC).

In response to the anticipated boom in computer science education, ABET helped establish the Computing Sciences Accreditation Board (now CSAB) in 1985. CSAB is now one of ABET’s largest member societies with more than 250 accredited programs.

In 2005, ABET formally changed its name from the “Accreditation Board for Engineering and Technology” to ABET, Inc. This allows the organization to continue its activities under the name that represents leadership and quality in accreditation for the public while reflecting its broadening into additional areas of technical education.

ABET’s international activities, now a thriving area of the organization, initially launched in 1979 when ECPD signed its first mutual recognition agreement with the Canadian Engineering Accreditation Board. By 1989, ABET was a consultant to both fledgling and established international accreditation boards, a “substantial equivalence” evaluator of international programs, and a founding member of the multinational Washington Accord.

Currently, ABET accredits some 2,700 programs at more than 550 colleges and universities nationwide. Each year, over 1,500 volunteers from its now 28 member societies actively contribute to ABET’s goals of leadership and quality assurance in applied science,

computing, engineering, and technology education, serving as program evaluators, committee and council members, commissioners, and Board representatives.

Did You Know?

- ▶ The “Faith of the Engineer” was first presented to the ECPD by its Committee on Principles of Engineering Ethics at the council’s 11th annual meeting, where it was approved unanimously.
- ▶ The first “Canon of Ethics for Engineers” was developed by ECPD in 1946. It was adopted by the National Society of Professional Engineers the same year.
- ▶ Between 1946 and 1965, ECPD only evaluated two-year engineering technology programs. The first four-year program was evaluated in 1966.
- ▶ The explicit requirement of design in engineering curricula was not introduced until 1974.
- ▶ ECPD/ABET has only had two executive directors. Prior to the mid-1970s, the organization was administered by rotating member societies.
- ▶ ECPD/ABET was headquartered in New York until 1993 when ABET moved to Baltimore. Its original home was in the Engineering Societies Building, which Andrew Carnegie provided to the major engineering societies of the day in 1906. In 1960, ECPD and five of its founding societies moved to the United Engineering Center at 345 East 47th Street in NYC.

Look for More ABET History Throughout 2007

Thank you to the volunteers, societies, programs, and schools that have contributed to 75 years of leadership and quality assurance.

ABETOnline

- ▶ Download the 2007-2008 accreditation criteria and *Policy and Procedure Manual* at www.abet.org/forms.shtml.
- ▶ Find out about upcoming ABET events at www.abet.org/events.shtml.
- ▶ New to accreditation? Start here: www.abet.org/new_program.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.

Editor: Gloria Rogers, Associate Executive Director of Professional Services

Writers: Liz Glazer, Communications Manager

Keryl Cryer, Communications Specialist

Questions or comments: eglazer@abet.org

CommunityMatters is online: www.abet.org/newsletter.shtml

Copyright© 2007 by ABET, Inc.® Printed in the United States of America. All rights reserved.

Assessment101

Assessment Tips with Gloria Rogers, Ph.D.

When Is Enough Enough?

Will the focus on outcomes — which are designed to

understand, document, and improve student learning — collapse under its own weight? Data collection activities must be examined in light of good program assessment practice, efficiency, and reasonableness, and we must ask ourselves the question “When is enough enough?” This question can be answered through a self-examination of current processes related to program assessment and data collection. The following questions can help guide the process:

1) Why? Is there a clear vision of why specific data are being collected? If you have not defined each of your outcomes into a few measurable performance criteria¹ that clearly identify the most important indicators of student achievement for your outcomes, then you probably don’t have a focused data collection process. This is probably **the** most significant pitfall for programs. Just as one cannot ‘cover’ every possible topic related to a specific course, it is also not possible to focus on every possible concept related to each outcome in program assessment. Without clearly defined outcomes, there can never be enough data because there is no focus.

2) How many? There are two primary “How many?” questions. The first is “How many students do we need to assess to be confident of our findings?” Understanding and using good sampling techniques can greatly reduce the amount of data you need to collect. Effectiveness and efficiency are the keys to the “How many?” question.

The second question is “How many performance criteria are needed to define a given outcome?” There is no rule about the number of performance criteria needed to ‘adequately’ define an outcome. However, it is important to remember that performance criteria serve as ‘high-level’ indicators of achievement of the outcomes. Prioritize the most important criteria related to the outcome and begin with a few. Generally, it is a good idea to start with no more than four.

3) How often? Data do not need to be collected from every student on every outcome during every year. It is important to pace yourself and strategize for efficiency without sacrificing quality. Do data need to be gathered from every class or activity in which students demonstrate the criteria? Do they need to be collected every year? How many data are enough? The answer to these questions will vary with the size of the program and the analysis of the data previously collected.

If data suggests that students are not at a level of proficiency appropriate for graduates of the program for a specific outcome, measurements may be taken more often. Consider developing a three-year plan for data collection. A three-year plan will provide two cycles of refinement on each outcome prior to any given ABET visit (assuming a six-year cycle). Do not try to do everything all at once. Concentrate on a few student learning outcomes a year (depending on the program’s total number of outcomes) and plan to complete the cycle of all learning outcomes within the three-year cycle.

4) How used? How are the data you are collecting going to be used? The answer to this question should drive the data collection process. Far too often, this question is asked after data has been amassed, resulting in too much assessment and not enough evaluation. This is not only inefficient but also wasteful of faculty time and institutional resources. If learning outcomes have not been defined (measurable performance criteria), then it is probably true that more data are being collected than are useful. Target the data collection processes so that the meaning of results is maximized and the workload for faculty is minimized.

Assessment has taken a bad rap primarily because, in many cases, it is not being done effectively or efficiently, and the results do not adequately inform the teaching and learning process. It is time to step back and reevaluate what is being done, identify ways to focus assessment efforts, bring common sense into the process, and reduce the stress that both faculty and administrators experience. Faculty in ABET-related programs understand the importance of performance specifications and designing products/processes within given constraints. It is time to take what is known and apply the same concepts to this sometimes perplexing open-ended problem.

YourCorner

Board of Directors

As per the report of the Participation Project Advisory Committee, accepted by the Board of Directors at its fall meeting, ABET President Bill Clark, Board Representative to the Executive Committee Larry Kaye, and members of the ABET staff have been moving forward on recommendations for the Partnership to Advance Volunteer Excellence (PAVE). A steering committee is currently being formed to monitor the implementation. More information on the members of the committee and its charge will be forthcoming.

Commissioners

All of the 2007-2008 accreditation criteria have now been posted at www.abet.org/forms.shtml. New this year is a separate link to the criteria document that will open directly to the “proposed changes” section.

Institutions

Requests for Evaluation (RFE) are due to ABET headquarters by January 31. The RFE form and the fee schedule for 2007-2008 are available at www.abet.org/request.shtml.

Member Societies

Each commission’s Executive Committee will vote on the nominations that your society submitted in December when they meet in San Diego this month. Thank you for your patience and cooperation in getting those nominations to ABET headquarters while the office was experiencing technical problems!

Also, if any of your representatives on the ABET Board of Directors is nearing the end of his or her three-year term, keep an eye out for a letter requesting appointments to fill the position(s) being vacated. You should receive it this month.

Program Evaluators

Do you have a colleague who you think would make a great program evaluator? There is now a wealth of information on ABET’s website for potential volunteers. Share it with your colleagues and help ABET continue to attract a highly competent and diverse pool of PEVs. Visit www.abet.org/volunteer.shtml.

¹ Performance criteria define your learning outcomes in such a way as to make them measurable, answering the question “How will you know it when you see it?” For an example of measurable performance criteria, see www.engrng.pitt.edu/~ec2000.

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 Mechanical Engineers	Society for Mining, Metallurgy, and Exploration, Inc.
American Society of Safety Engineers	Society of Naval Architects and Marine Engineers
Biomedical Engineering Society	Society of Petroleum Engineers
CSAB, Inc.	The Minerals, Metals, and Materials Society



111 Market Place, Suite 1050
Baltimore, MD 21202-4012

NON-PROFIT ORG.
U.S. POSTAGE
PAID
BALTIMORE, MD
PERMIT No. 5196