



ABET

Why is SME a “Member Society” of ABET, Inc.?

C. Dale Elifrits, Ph.D., RM-SME, R.G.
Director of Pre-Engineering, Northern Kentucky University
(Prof. Emeritus, Geological Engineering, MS&T)

This begs the question of what is ABET, Inc.? ABET, Inc., is the non-governmental organization that “accredits over 3,100 applied science, computing, engineering, and technology programs at more than 660 institutions in 23 nations. ABET is recognized as the worldwide leader in assuring quality and stimulating innovation in applied science, computing, engineering, and engineering technology education. ABET serves the public globally through the promotion and advancement of education in applied science, computing, engineering, and engineering technology.” (<http://www.abet.org>)

What is an ABET, Inc. Member Society? “Each of ABET's members has responsibility for an academic discipline within applied science, computing, engineering, or engineering technology at the postsecondary level. Members also participate in ABET leadership, including voting members of the ABET Board of Directors and as Accreditation Commissioners.” (see: <http://www.abet.org/about-member-societies/>) SME has responsibility for geological engineering, geophysical engineering, mining engineering, and shares responsibility for environmental engineering and mineral processing/mineral engineering with other professional societies. For the accreditation visit cycle of 2012-13, SME has been asked to provide this same service for the discipline of geology as the Applied Science Accreditation Commission of ABET, Inc. has been asked, for the first time, to evaluate a geology program.

SME, as one of 31 Member Societies, seeks to find highly qualified professionals in the above listed fields who will dedicate time and effort – usually a few days – to become trained as Program Evaluators for these disciplines. Qualifications are that the person hold the appropriate degree(s) in the field of interest, have experience in the work and/or research in the area, and be able to demonstrate ethical conduct as documented by reference letters. A willingness to volunteer for the training, update training, and the campus visits is essential.

The program evaluator training includes “homework” from the ABET, Inc., Internet site culminating in a two-day and a face-to-face training program held in Baltimore, MD, presented by ABET, Inc. volunteers. ABET, Inc. will reimburse most of the trainees’ “out of pocket” costs. These trainees are also required to attend the SME Annual ABET Update and Refresher training held at each SME Annual Meeting. This update session also covers the program-specific criteria for geological engineering and mining engineering degree programs. Once these training sessions are successfully completed, the trainees are prepared for their observer visit to a degree program at a regular ABET, Inc. campus visit. The cost of the observation visit is reimbursed by SME Foundation funds to the extent possible. Assuming successful performance at all stages of the training, the trainee is then ready to make a degree program accreditation campus visit as a team member. The time needed to complete a campus visit is variable. However, evaluation of the pre-visit data and preparation of the pre-visit documentation typically consumes 20 to 40 hours between August and the campus visit during September, October or November. The actual campus visit typically uses three to four days depending upon travel situations and locations of the programs to be visited. The program evaluator’s effort is usually completed with fulfillment of the campus visit responsibilities at the end of the campus visit.

Currently, SME has 25 program evaluators who are up-to-date in their training and available to make degree program visits. Additionally the four SME program evaluators who serve as Engineering Accreditation Commission (EAC) members and as SME’s ABET, Inc. Board member and Alternate Board member are trained program evaluators, but due, to their ABET positions, are not eligible to make program visits. This group of program evaluators serves (fall 2011 data) 14 accredited mining engineering degree programs, 13 accredited geological engineering degree programs, three accredited geophysical engineering degree programs and a few other similarly named degree programs, e.g., geo-environmental engineering, mining and mineral engineering. And, now one geology program!

With all of this background, back to the original title question: Why is SME a Member Society of ABET, Inc. First, from a legal standpoint, each of the 66 jurisdictions in the United States that licenses engineers and grants the title of “Professional Engineer” or “Licensed Engineer” has the requirement that a candidate for such licensure must have graduated from an ABET, Inc. accredited engineering degree program. Second, from a quality standpoint, through this process of our professional society being directly involved in the evaluation of degree programs that educate and graduate entry-level

engineers in the disciplines germane to the life of SME, we possess the opportunity to influence, and to a considerable extent, control the components of the educational experiences of these engineering degree program graduates. Third, as a Member Society, SME through its representatives to various ABET groups, has the opportunity and responsibility of engaging in the evolution of engineering and applied science educational standards and degree programs along with the other 30 member societies. Through our two Commissioners (one for mining engineering and one for geological engineering) on the EAC and our one Director on the Board of Directors of ABET, Inc., SME has the opportunity to provide input to decisions about higher education in the technical areas and about policies that influence these educational works. SME committees, the Council of Education and Accreditation and Rahn Award Committee, Accreditation and Curricular Issues Committee, and the ABET Program Evaluator Selection Committee, are the “work horse” groups in SME that manage all of the ABET efforts of the society. The annual Educator’s Forum is one of many venues where these committees seek and gather information from the professions and industries that SME serves through its education efforts. All of the SME members who have served in ABET-related positions during the past 25 years can attest that the input of SME has been and is being heard and followed.

SME has been respected by its fellow societies as shown by collaborative efforts with American Society of Civil Engineers (ASCE) to participate in the evaluation of environmental engineering degree programs and by collaborative efforts with The Minerals, Metals, and Materials Society (TMS) in the evaluation of mineral processing and mineral engineering degree programs. This past January, SME’s collaborative efforts and the known and recognized high quality of our trained program evaluators became apparent when the first geology B.S. degree program to request ABET accreditation requested that SME provide the program evaluators for its first visit. As is the ABET requirement, a new program/first visit must be completed by two trained program evaluators.

Geology degree programs across the U.S. are considering methods of qualification of their degree programs to satisfy state boards of licensure/registration for geologists. This particular degree program is the first to elect to use ABET’s Applied Science Accreditation Commission (ASAC) to confirm its quality. As the future unfolds, many of us in SME education committees and in ABET work realize that the evaluation of applied geology degree programs and possibly engineering geology degree programs may be a new venue for SME. If this is the case, a new group of program evaluators

drawn from our members who are geologists will be needed – SME can and will meet this need with the support and help of its membership and help of the SME Foundation Trustees to support the expanded effort.

In summary, SME is an very active professional society engaged in the regular work of engineering education and quality assurance of the educational programs that graduate engineers, and now geologists, who serve our industries and hence the public. This work is accomplished by a cadre of dedicated member volunteers. This cadre is always seeking to have more volunteers to carry the work load and to enjoy the satisfaction of making these critical contributions to the future of the professions and industries that SME supports, serves, and leads.

Sources: Anthony K.M. Staley and John L. Uhrig, editors, Exploring Opportunities: Careers in the Minerals Industry, 2008, Society for Mining, Metallurgy and Exploration, Inc., page 16.

<http://www.abet.org/>

<http://www.abet.org/about-member-societies/>

Council of Education and Accreditation and Rahn Award Committee

Accreditation & Curricular Issues Committee

SME-AIME Representatives to ABET & Visitors Selection Committee

Student Member Affairs Committee

ABET currently accredits some 3100 programs at more than 660 colleges and universities nationwide. Over 2,200 dedicated volunteers participate annually in ABET activities.