

Career-Long Learning

Background

The concept of career-long learning (CLL) in engineering has been discussed, promoted and endorsed at various levels of commitment and enthusiasm for at least four decades. One finds nearly universal agreement on its importance amongst industry, academe, government, professional societies and the engineering community. However, the practice of career-long learning in engineering has too often not kept pace with the noble goals of the concept. Although many CLL opportunities currently exist individually in academe and industry-sponsored training, their relevance and interconnectedness to the success of the individual careers of engineers can be difficult to sort through.

Compounding this difficulty are the adjustments engineers must now make to the revolutionary changes in technology, the global economic approach to business and workforce makeup, and the dramatic shifts in priorities that have occurred in this decade. It is now abundantly clear that success in the engineering profession demands a life-long commitment to learning. But the many voices singing the CLL opportunity and need song are still not heard as a choir when the engineer tries to plan his or her future.

Addressing this important area of career-long learning in engineering falls under the larger umbrella of activities taken on by a relatively new organization called the Industry-University-Government Roundtable for Enhancing Engineering Education. Founded in 1995, IUGREEE's objectives are to (1) articulate and draw attention to critical issues that will affect engineering education as perceived from an evolving industry perspective, (2) develop action agendas to accomplish needed reform in engineering education, (3) facilitate implementation of these agendas through existing organizations and mechanisms. To accomplish this, IUGREEE has set up four action teams, one of which is the Career-Long Learning action team.

IUGREEE is industry focused and has taken on the challenge of developing a strong, unified unwavering and strategically focused industry message to academe, government, professional societies, etc. on the needed changes in engineering education. Yet it is doing this in a cooperative, working-together atmosphere.

Action Team in Career-Long Learning

As part of IUGREEE, the Action Team in Career-Long Learning (henceforth called the "CLL Team") has the objective of identifying and defining the continuing educational needs of engineers from the time they leave the university to begin their formal work until they retire from

the profession. This includes industry training programs, industry-university partnerships, formal advanced-degree programs, informal short courses and workshops, distance learning through video, professional society conferences, re-training engineers for new career paths, etc. In short the whole spectrum of learning opportunity.

CLL Team Vision

The CLL Vision: A broad cross-section of industry advising and working collaboratively with universities, government and professional societies to provide effective, career-long learning opportunities that prepare a diverse engineering workforce for the challenges it will face in the 21st century.

This vision encompasses several main parts:

- High quality learning environments are available anywhere, anytime and anyway;
- Practicing engineers are sufficiently enlightened to make appropriate career-long learning decisions;
- Companies, independent of size and across entire leadership, realize the strategic necessity of career-long learning for its engineers and actively support the endeavor;
- Universities and professional societies, working in cooperation with industry and accepting its recommendations, are committed to providing career-long learning opportunities relevant to the articulated needs.

This will produce engineering practitioners and educators actively engaged in the kind of career-long learning that sustains their professional productivity, relevance and advancement in an environment of global economies and social accountability. Individual engineers, employers of engineers and engineering educators will have clearly-articulated career-growth plans, partnering relationships and metrics that support life-long learning for enhanced knowledge and skills, increased productivity, and professional advancement throughout their careers.

CLL Team Mission

The CLL Mission: To formulate and articulate industry needs in a manner that proactively influences industry culture, university culture and educational programs, including curriculum content and teaching methodology, to ensure the continued effectiveness of engineering practice in the 21st century.

CLL Team Objectives

- Solicit participation from industry to clearly identify and articulate their view of the CLL needs and requirements for the engineers in their industrial segment. Synthesize this benchmark data into a plan that addresses the needs of and is useable by practicing engineers.

- Widely publicize this benchmark data in the form of “best practices” in CLL and the industry-university alliances needed to keep them current.
- Solicit and encourage greatly increased industrial participation in the CLL educational process by (1) formulating and conducting industrial training programs that address both the company’s and the engineer’s needs, (2) encouraging engineers to formulate and carry out CLL plans for their career, (3) actively participating on college and department-level advisory committees, serving as ABET evaluators and on government funding review panels, (4) helping to develop faculty and industrial-practitioners through exchange programs.
- Solicit and encourage greatly increased university and professional society participation in the CLL educational process in a manner that allows them to not only actively adopt the industrial recommendations but also work with industry to implement them.
- Solicit and encourage greatly increased participation in CLL by the individual engineers.

CLL Team Organization and Interrelationships

Working under the overall guidance of the IUGREEE Council and Policy Steering Team, and the “Vision of Engineering Practice 2010”, the CLL Action Team operates in the same way and according to the same principles as the IUGREEE does in general. To meet the team short-term objectives listed above, the CLL Team is currently divided into three sub-committees:

1. The Vision and Mission sub-committee - deals with formulating and articulating the vision and mission of the CLL Team
2. Fact finding sub-committee - deals with gathering, evaluating and synthesizing relevant and benchmarking CLL information from industry, technical societies, educational entities, government agencies.
3. Communication sub-committee - deals with identifying and implementing the most effective means for communicating the information from the fact-finding committee to the CLL Team, the industry/university/government parties, professional societies and individual working engineers.