



A MESSAGE FROM THE CHAIR

Authors of the US National Science Foundation's 2004 *Science and Engineering Indicators* (<http://www.nsf.gov/sbe/srs/seind04/start.htm>) identified two major trends of significant concern. Over the long term, the number of jobs requiring science and technology training continues to climb, whereas the number of US citizens with training in these fields is steadily declining.

The US has the highest percentage of noncitizen PhD graduates in the world. In the US, more than 50% of PhD graduates are noncitizens; the ratio is slightly less than 50% in the UK, approximately 40% in France, and only 12% in Germany. Over the past decade, more Chinese citizens studying in the US have earned PhDs than those studying in China (despite the fact that the Chinese government funds less than 10% of the Chinese students studying in the US). Each of the trends hold to a lesser degree for MS and then BS degrees.

Why is this a concern? Although some noncitizens will remain in the country where they studied, many more will return to their country of origin, where they have dramatically more economic and technical opportunities. Countries such as India and China have a rapidly growing technical economy (that is, demand) and an improving standard of living. This leaves fewer US and European residents to meet a demand growing at an average of nearly 5% per year.

Since the compilation of the NSF report, world affairs have compounded concerns in the US. Visas are much more difficult to acquire for students coming from Asia. Educational and employment opportunities in Asia are rapidly improving, offering less and less incentive to study in the US. World opinion has diverted some Asian students to study in the UK or France rather than the US. Although top European and North American universities report growth, universities that depend largely on students from Asia report a significant decline in applicants and enrollment.

The NSF report observes that even if changes in science and engineering education were manifest now, there is a 10- to 20-year lag before these students complete PhD work and are ready to enter the workforce. Unfortunately, there are few signs, even now, of an upturn in science and engineering education among US citizens. The situation is slightly stronger in Europe, thanks to significant and prioritized government efforts.

Each of these trends means that US-based science and engineering employment will increasingly depend on an older workforce. Few older employees can or will return to full-time study at a university. Without ongoing investment in technology education, older workers will quickly find that their skills are no longer competitive in the world market. In a global economy based on free trade, no one with outdated skills is assured a market share; they must win it on the competitive playing field.

These trends reinforce the value of a continuing education capability such as the IEEE and the Design Automation Technical Council offer. Conferences, journals, and other venues that the IEEE and the DATC offer meet the schedule needs of older workers who have the drive to stay employed in the evolving world economy. However, it is up to each individual to take the time and energy to use the educational resources available from the IEEE and the DATC. Do you have what it takes to remain on the leading edge?

John Willis
DATC Chair

A MESSAGE FROM THE PAST CHAIR

The time is fast approaching for a replacement for the chair elect. I am responsible to lead a nomination committee, so I have deemed it to be the DATC Executive Committee. I have received only two names as possible nominees, and because I chose one of them, I am extending the process in hopes of building a larger list of possible nominees. If you feel you are qualified and would like consideration in the nominee selection process, send me a short biography. If you feel one of your colleagues is qualified, please feel free to submit his or her name. The DATC Executive Committee will review all names. Once the committee selects the nominees, it will hold an election where members will vote on the new chair elect. Nominees must, of course, be members of the IEEE and the DATC.

Joe Damore
DATC Past Chair

CALENDAR

6TH INTERNATIONAL CONFERENCE ON VERIFICATION, MODEL CHECKING AND ABSTRACT INTERPRETATION (VMCAI 2005)

Paris, France
17-20 January 2005
<http://www.polytechnique.fr/vmcai05>

1ST WORLD CONGRESS AND SCHOOL ON UNIVERSAL LOGIC (UNILOG 2005)

Montreux, Switzerland
26 March-3 April 2005
<http://www.uni-log.org>

IADIS INTERNATIONAL CONFERENCE ON E-COMMERCE (EC 2004)

Lisbon, Portugal
14-16 December 2004
<http://www.iadis.org/ec2004>

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