Welcome to the second column of SEEd, whose purpose is to provide current and useful information and opinions to SEN readers regarding education in the discipline of software engineering. I assume by now that you have completed your first SEEd assignment 1—browse over the draft SEEK, Software Engineering Education Knowledge for undergraduate programs in SE [7]. If you have conscientiously completed this assignment, you will have observed that it is now the second draft of the SEEK, and most likely by the time you read this, the final draft.

With regards to software engineering education, a lot has been and will be happening. In summary:

- **IEEE Software** – The Sept/Oct 2002 issue “Educating Software Professionals” focusing on the training, education and professional development of software professionals generated interested in this area, leading to the addition of a new section “Education and Training” to be edited by Don Bagert. Look for this in future issues of IEEE Software.

- **CCSE** – A report on the activities and progress of the Computing Curricula for Software Engineering [8] is the main focus of the rest of this article. Please read on.


- **FASE** – The Forum for Advancing Software Engineering Education will be back on line shortly. In the mean time, please check out its home page [4].

- **CSEET 2003** – Conference on Software Engineering Education and Training [1] March 20-22 in Madrid, Spain (SIGSOFT is a cooperating sponsor) is the annual conference addressing issues related to SE education. In addition to the conference program, there will be meetings of the directors of software engineering programs world wide, and the CCSE steering committee.

- **FIE 2003** – Frontiers in Education conference [5], an IEEE sponsored conference November 5-8 in Boulder, Colorado, will have a section dedicated to software engineering education.

**Quote of the Month?** “Web designers are called programmers, programmers are called engineers, and engineers are called architects, and architects don’t seem to ever get called,” comment by Alan Cooper, a software industry veteran, at the VSLive show in San Francisco [3]. He was discussing the problems of software project management and said that software programmers are frequently mishabled as software engineers, the difference being that engineers find solutions while programmers 2 implement them.

**Why is SE education important for the practitioner?** So, you have a job in the real world as a software practitioner. Why would the current activities in SE education be remotely interesting to you? Two reasons I can think of: a) the future directions of your discipline – the software industry – will be influenced by these activities, and now is your opportunity to impact these activities, and b) you can contribute to the education of current and future software engineers.

Even though the goals of the corporate and academic worlds may not be identical, it is very important for the two to work together in the education of software engineers to help strengthen our discipline. *How can you help to shape the future?* This can be through interest in current educational trends and activities, including: helping with the professional development and mentoring of junior professionals mentoring students of all ages; serving on advisory boards of local schools and colleges; providing and advising real projects for students; using your expertise to help define and evaluate local, national or international SE curriculum development efforts (eg, CCSE); providing internship and coop opportunities; sponsoring science, mathematics and software competitions; working with local youth groups; and giving presentations and teaching at local schools and colleges.

**Computing Curricula Software Engineering (CCSE)** is part of a joint IEEE Computer Society and ACM effort to develop guidelines for undergraduate curricula for computing programs and the CCSE focuses on the discipline of Software Engineering [8]. The CCSE volume development process has proceeded in two distinct, overlapping stages: specify the core knowledge and prepare curriculum guidelines. The core knowledge for an undergraduate software engineering curriculum was identified with the help of numerous volunteers. A workshop in June 2002 analyzed and refined the core knowledge areas identified. This was followed by an internal review by internationally known software engineering experts. The resulting document, called the SEEK (Software Engineering Education Knowledge), has undergone two rounds of public review and will lay the foundation of the CCSE volume [7].

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1 Bet you didn’t realize SEEd is really a course in disguise (:-

2 Can someone clarify the distinctions between a programmer (formally coder), a software developer, and a software engineer?
OK, so now that one has specified the core knowledge, how does that help academic programs develop undergraduate software engineering curricula? This is the tricky part – providing guidance without over-prescribing. This is the task of the Pedagogy Focus Groups, co-chaired by Tim Lethbridge (University of Ottawa, Canada) and Mordechai Ben-Menachem, Ben-Gurion University, Israel. The Pedagogy Chapter of the CCSE volume consists, as of March 2003, of the following sections:

- Principles of Software Engineering Curriculum Design and Delivery
- Proposed Curricula - with curriculum models and sample courses outlining what parts of SEEK each course covers
- International adaptation
- Classes of Skills and Problems - that students should master, in addition to learning the knowledge in SEEK
- Adaptation to alternative educational environments - such as 2-year colleges

A preliminary draft of this Pedagogy Chapter will be available for public review in late March 2003. See [8] for the most recent updates. Additional review cycles will follow.

The current timetable calls for the first draft of the entire CCSE Volume to be released in the May/June time frame, including revisions of the Pedagogy Chapter. You are encouraged to check the CSSE web site [8] in June/July 2003 for recent updates and to provide input and critique the CCSE Volume.

History of the growth of BSSE programs: I was hoping to include a graph illustrating the growth of undergraduate software engineering programs worldwide and in the US over the past 5-10 years. However, I could not figure out how to use the graphing software …. **JOKING**. Please look forward to this in my next column, when I get accurate data for input to the graphing software that I will have figured out by then. I think you will be impressed by the rapid growth of and interest in BSSE programs.

Honor Robert L. Glass (personal note) – Almost everyone who is a practicing or research software developer/engineer knows the name Robert L. Glass [6]. At ICSE 2003, Bob will be honored for his contributions as editor of the Journal of Systems and Software, and I hope some of you will (have) attend(ed).

I first met Bob about three years ago when I moved to Indiana. Recognized his name immediately, but took me a while to clarify the context. Since then we have become good friends. Bob has been involved with the software industry for many years in many capacities. This background coupled with his unique ability to view things from numerous perspectives often yields insights many of us would otherwise overlook. Bob is excellent at conveying these insights and keeping us informed and honest - by always questioning our views and opinions. Congratulations Bob, a well deserved honor. Don’t forget, I pay for the next birthday celebration dinner. Pete

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References

[3] www.infoworld.com/article/03/03/02/12/HNproject_1.html