Two-Year College Education Committee Update

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The Two-Year College Education Committee is pleased to take this opportunity to honor the accomplishments and leadership of Dr. Karl Klee, who has served with extraordinary distinction as its long-time committee chair. Karl has decided to step down as chair. However, he will continue to serve as an active member of the TYC Education Committee. The Education Board appointed Bob Campbell as the new committee Chair.

Under the leadership of Dr. Klee, the Committee cemented its position as a strong advocate for the two-year college community. It is fulfilling its mission and charter through a variety of initiatives, serving a widespread constituency, establishing awareness and promoting partnerships, collaborating with a host of organizations and agencies, and above all forging personal relationships with a broad range of outstanding individuals committed to education. Throughout the years, Karl's unceasing attention to the Committee's work enabled these accomplishments to accumulate in an impressive fashion. We do not know the full extent of the hours and hours that Karl put in (undoubtedly because we were too afraid to ask!), but we are hopeful that Karl knows that our appreciation for his extraordinary work is boundless as well.

The Two-Year College Education Committee is currently engaged in a project that is exciting for several reasons. In close collaboration with the CC2001 Steering Committee, the TYC group is producing a volume that will provide guidelines for computing sciences programs in associate-degree granting institutions. Because this work is being closely coordinated with the forthcoming CC2001 report, it represents a significant partnership, and in many ways is a model for future curricula defining undertakings. By working in parallel, with joint membership and ongoing communication, the two groups are positioned to deliver landmark documents that address important matters of curriculum for their respective constituencies, while at the same time facilitating issues of articulation and transfer that are of particular significance to many institutions of higher education, especially in the United States. The TYC Education Committee is also very pleased that its volume (expected to be released for review and subsequent final publication shortly) will provide an appropriate update to the Computing Sciences report delivered to this community in 1993. The previous CS report was one of several volumes released in 1993, another being the Computer and Engineering Technology curriculum guidelines. These too are due for updating, and an opportunity is at hand for doing so.

Recently, the IEEE Computer Society established a two-year college committee. It has indicated that it wishes this group to be active participants in its forthcoming curriculum work. This provides an opportunity for additional collaboration and cooperation between ACM and the IEEE-CS, and affords us the chance to use the TYC CC2001 model process for updating the TYC Computer and Engineering Technology report. We will be eagerly pursuing this emerging opportunity.

Last year the TYC Education Committee delivered its *Guidelines for Associate-Degree Programs to Support Computing in a Networked Environment* (funded with an SDF grant). In many respects, we view this as an update to the 1993 Computer Support Services curriculum report. In conjunction with that 2000 report, the Committee secured an NSF ATE grant to provide a model for nation-wide implementation of new and revised associate-degree programs in networking. For the past 12 months, the Committee has pursued that activity, enlisting the support of corporations and professional organizations; conducting a national teleconference on networking curriculum content, pedagogy and methodology; distributing curricular guidelines and materials; and seeding and mentoring curricular activity at 16 institutions across the US. This activity has been successful in promulgating the ACM TYC guidelines, providing additional trained IT

workforce, and satisfying the goals of the NSF grant.

The TYC Education Committee has also been involved in recent discussions and workshops related to the role and nature of mathematics in computing curricula. This has been a topic of debate for some time, of course, but recently those ongoing discussions have taken on more deliberateness. Last fall the MAA and AMATYC jointly engaged in NSF-funded workshops to examine the mathematics associated with a variety of two-year college programs (including IT), a project in which members of the ACM TYC Education Committee participat-

ed. This field is one the Committee will continue to monitor and participate in as it formulates additional guidelines and reports.

The TYC Education Committee has recently updated its website, and encourages interested parties to visit <www.acmtyc.org>. The Committee welcomes inquiries and comments related to the two-year college environment. Uniquely positioned (especially in the US) between high schools and upper-division baccalaureate coursework, and serving a student body made up of individuals with very diverse goals, two-year colleges are exciting and important places of edu-

cation. The Two-Year College Education Committee enjoys its work, is pleased and excited to see a host of updated curriculum guidelines released and under development, and looks forward to fostering collaboration with ACM efforts related to both the high school setting and the university environment, across the breadth of computing curricula.

Please address questions concerning two-year college activities to:
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Nifty Assignments

Tetris on the Brain

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This column is a spin-off of the Nifty Assignments panel I chair at SIGCSE. The panel <cse.stanford.edu/nifty/> operates at a very practical level — showcasing favorite assignments to promote the sharing of assignment materials and discuss assignment ideas. In particular, each assignment has its own material such as a web page of handouts and starter files for interested instructors.

This column should operate in a similar vein — discussing assignment ideas or techniques and elaborating ideas that come out of the panel. For this issue, I'll look at the overlooked "brain" feature of the "tetris assign-

ment" presented at Nifty Assignments 2001 and explain why the brain may actually be the best part of the whole assignment.

Tetris OOP Modularity
Most of the work in the Tetris project is in the Piece and Board classes. The Piece and Board make a nice exercise in OOP modularity — dividing the overall tetris problem into classes with features such as modularity, encapsulation, and separate testing. The game playing AI is a relatively simple layer added on top of the core by the brain classes.

At SIGCSE, I emphasized tetris as a large OOP modularity assignment

since modularity is one of my favorite themes and the Piece and Board make a great example. The problem is that the Piece and Board classes are pretty challenging to write and debug, so it's not the sort of thing a course can adopt lightly.

Tetris Brain
In contrast, the brain is short and fun. The brain code is simple to write and great fun to watch and play with. It avoids the debugging trauma of getting, say, `Board.clearRows()` to work exactly right in all cases.

The brain strategy is pretty simple. There are only about 30 ways to play a particular piece in a board, so