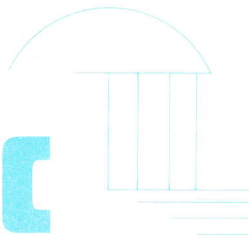


UNCCC



Computation Center
University of North Carolina
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newsletter

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UNCCC 25TH ANNIVERSARY CELEBRATION

The UNC Computation Center celebrated its 25th Anniversary in August with a series of presentations and vendor demonstrations on computers.

Presentations

The first presentation, "The Future of Computing in Education and Research," was given jointly by Dr. William H. Graves, Associate Dean of General Education and Professor of Mathematics at UNC-CH, and by Dr. William J. Thompson, Professor of Physics at UNC-CH. Dr. Thompson's presentation on the use of computers in academic research, "Computing in Academic Research: the Next Five Years," is reprinted in this Newsletter. Dr Graves then presented a review of the progress faculty and students have made in the area of Computer Aided Instruction (CAI). For more information on this project, see the article "Computer Literacy and the Graves Project," in this Newsletter. Three examples of CAI developed at UNC-CH were then demonstrated and described by Dr. Margret Hazen, Director of Courseware Development for the College of Arts and Sciences.

Mark Levoy, a graduate student in computer science at UNC-CH, provided the second presentation on computer animation. Mr. Levoy, who designed the computer animation system used by Hanna Barbera, used both films and slides to show how computers have changed the world of animation. With Fred Flintstone and the SMURFS dancing across the screen, Mark Levoy's presentation was both informative and amusing.

The effects of computers on office automation was the focus of the third session. This was given by Ken Peet, IBM Senior Marketing Administrator, National Support Center for General and Office Systems, Dallas, Texas.

The last presentation was given by James W. (Bill) Hanson, who was the Director of the Center from 1963 to 1968. Mr. Hanson discussed how computers have changed over the last 25 years.

Vendor Demonstrations

As part of the celebration, we held a computer fair in the Great Hall of the Student Union. This proved to be a success both for the vendors as well as to the many people who came to the free demonstrations. The following vendors displayed their equipment:

- IBM demonstrated six varieties of PCs, including a PC/AT and a 3270 PC/G, their new graphics system. IBM also demonstrated their system 36 minicomputer and a small graphics printer.
- Digital Equipment Corporation (DEC) installed a VAX 730 in the Great Hall for the 25th Anniversary celebration and demonstrated a wide variety of software including their office automation system called "ALL-IN-ONE." They also demonstrated their Rainbow microcomputer.
- The Apple exhibit included a LISA workstation as well as a Macintosh and APPLE IIc microcomputer.
- Prime demonstrated their Medusa graphics system on their PW 200 minicomputer.
- XEROX brought a video exhibit on their 2700 laser printer and demonstrated a color ink-jet printer which can be used with microcomputers.

- Texas Instruments demonstrated their microcomputer systems and various software.
- Masscomp had a booth and a variety of literature on their color-graphics super microcomputer.
- There was a demonstration of an NBI 6400 office automation system using an IBM PC as well as an NBI PC, and several word processing terminals.
- NCR demonstrated a complete word processing system.

Planning for "Second Annual Computer Fair"

The entire 25th celebration was so successful, we are considering having a "Second Annual Computer Fair" next fall. We would appreciate your comments and suggestions for next year. Contact Sally Muller, UNC Computation Center, 304 NCNB Plaza, 962-9107.

COMPUTERS IN ACADEMIC RESEARCH: THE NEXT FIVE YEARS

William J. Thompson, Professor of Physics
University of North Carolina at Chapel Hill

The peculiar needs for computers in academic research are summarized below, stressing how upward mobility of computer capabilities from personal workstations to supercomputers will become increasingly important in the next five years. Information gathering by computers will increase, as will preparing and disseminating information; compuscripts will displace manuscripts. Also, computer and communication systems will need to be better integrated. Challenges for computers in academic research are issued with emphasis placed on goals and strategies, rather than on means and implementation, although the necessary technology is already available.

If computer capabilities double about every five years, then as much change will occur in the next five years as occurred between the first and the twenty-fifth years at UNCCC. Any attempt to peer beyond five years is therefore futile.

The Peculiar Needs for Computers in Academic Research

Academic research projects are usually open-ended, since research delves into the unknown and uncovers the unexpected. Therefore, as researchers, we can seldom anticipate how much or how little computing power we will need in a given research project. For example, one of my research students and I recently reduced the need for computer power by showing that some published time-consuming numerical integrations could be expressed exactly by simple algebraic formulas. On the other hand, we are currently moving the major part of the computing in a Ph.D. research project from a DEC VAX 11/780 to the FPS-164 attached processor at Triangle Universities Computation Center (TUCC) to reduce the computing time from five hours to one hour.

Another peculiarity of academic research is that a product or profit is seldom made. Thus, the costs of computing are hard to justify objectively or to control by reference to the end results. Therefore, it is difficult for researchers to estimate and to justify to their benefactors (institutional administrators or granting agencies) the costs of computing.

Also, academic researchers are seldom dedicated computer users. Their use of computing facilities is intermingled with other research processes, such as problem formulation, experi-