

## FROM THE CHAIR

Alfred J. Lata, Co-Chair

In the past three years, there have been great and dramatic changes in computers, hardware, software, and computing activities, and we have been fortunate to have reaped (or look forward to reaping) the benefits of these changes.

There are faster CPUs, larger memories, larger capacity hard drives, as well as video-disk, CD-ROM, etc. The software revolution is led by multimedia and animation programs, the growth of object-oriented programming and the use of objects in our programs. The use of e-mail for personal communication and bulletin boards has grown tremendously both in number of users and volume of traffic. Applications of all of these factors have been incorporated into advances in Chemical education.

There still exists that broadening chasm between the haves and the have-nots in the use of computers in the teaching of Chemistry. Some are limited by lack of funds for the purchase of hardware and software. As prices come down, and the use of computers for teaching and learning is more broadly accepted and applied, hopefully this limitation will be removed.

But there is further limitation: the dissemination of information about what software is available and appropriate for instruction, and how it is used.

At the 12th Biennial ChemEd Conference in Davis in August of this year, the Committee on Computers in Chemical Education (CCCE) held an open meeting. Twenty five Conference attendees joined us to discuss the use of computers in chemistry instruction. A principal concern voiced at this

meeting was how people can learn what software is available and how information on available software suitable for use in chemistry can be most effectively disseminated.

In an effort to solve this information problem, I would hope that each of us individually will undertake to broadcast information about those programs we use and like (and dislike), and how we use them. Conferences, regional meetings, electronic bulletin boards, and THIS NEWSLETTER can be effective tools in this regard. Consider it your personal challenge to help your colleagues! How about submitting an article or just a paragraph or two describing software you use and how you or your students use it, the price and where to purchase it? Submissions should be sent to Brian Pankuch (see the inside front cover for details).

I would like to take this opportunity to recognize two of our colleagues Paul Cauchon of The Canterbury School (New Milford CT) has stepped down from CCCE. Paul has served CCCE as Chairman, and has participated as instructor in more of our workshops than anyone else. We appreciate and thank him for his work as one of the pioneers in Computers in Chem Ed.

Don Rosenthal, co-chair, will assume the individual responsibility this coming year. Don has organized and conducted workshops for CCCE, was editor of this Newsletter, and now serves as Consulting Editor. Those of us who have the opportunity to work with him know how effective and persuasive he can be. I thank him for his past efforts and accomplishments for CCCE, and look forward to his leadership.

## HOW TO CRASH HARD DISKS AND SYSTEM SOFTWARE WITHOUT REALLY TRYING.

Editor Brian Pankuch

(For people who may have to take care of their own Mac.)

Actually the idea was to minimize problems with hard disks. I've been thinking for some time that I need a more effective way of protecting my work than backing up to a diskette. I'm conscientious about backing up big projects, but I have a lot of small things I do often and don't have a special diskette to back up to. With over 200 M on my system, I'm just not going to back the whole thing up on diskettes, nor am I going to set up a filing system to find a specific diskette (out of 200 or more) for a small piece of work. The easiest solution seemed to be to get a 88 M removable Sysquest cartridge and drive, about \$500 for both. This would also give me a backup hard disk. Additional 88 M cartridges are about \$95, so you really have backup limited only by your pocketbook.

On the other hand I've been using computers for quite awhile and have never had a hard disk problem. I've heard of plenty, but I've got the best quality hard disks and have been lucky. Also I like a bargain and I got an outstanding mail offer from Symantec for their Norton Utilities and MORE, a presentation manager, for about 85% off the list price. Symantec combined the best of Norton and their own SUM II utilities to do preventive medicine on hard disks and to recover lost files on a crashed disk. Total price was \$95. This didn't give me the same protection as a spare hard disk, but it should lessen the chances of problems. If problems do occur I

have a way of recovering files. It is cheaper and probably easier than backing up 88 M often.

So I bought the Symantec software rather than the hardware. I set it up on my Quadra 700. Installation of Norton was easy. To use some of the utilities such as Disk Doctor was straight forward. The utility chugged through the hard disk and found a number of anomalies- some programmers amuse themselves by giving the date of completion of a program 1909 or 2040. Harmless but the Norton disk doctor fixed these and other anomalies.

Next day I decided to use Speed Disk, which optimizes the disk. Files on your disk are usually written to one physical area on the disk at first. As the file changes size the original space set aside may not be large enough. The part that doesn't fit is put into another physical location on the disk. After many repetitions your disk is fragmented. Parts of the same file are all over the disk. Reading the file from the disk will take longer since the reading head has to find each part. This also results in a lot of head movement with additional wear. Speed Disk will put files back into contiguous areas. It will also place files that don't change much in the beginning of the disk and the often modified files at the end where they can grow. This should save a lot of wear on the hard drive mechanism and put off eventual failure. My drive has an estimated mean time between failure of over 22 years, but only a 5 year warranty.

To use Speed Disk you have to run the utility from a disk other than the disk you are checking. Symantec thoughtfully supplied a boot disk for this purpose. I restart my Quadra with this disk, and it comes up in Speed Disk and tells me there is not enough

memory. The Quadra has 20 M of RAM and access to another 300 M of virtual memory! I can't get at the disk to check because it won't let me out of Speed Disk. So I try to restart and the entire system crashes. I try everything I can think of and finally replacing the entire system file lets me restart the computer. I run Disk Doctor and it says everything is great, I restart just to see if it will, and again the whole system crashes. After about 6 hours I learn more about disk utilities than I really want to know.

My problems were first, the Speed Disk program didn't have enough memory set aside for itself, my Quadra had plenty, but programs aren't smart enough to go grab some. You change allotted memory by selecting the utility, then selecting Get Info from the file menu (Command I). When the Get Info window opens change the 600 K allotted to at least 1000 K. I changed mine to 14,000 K since I have a lot of memory — the more memory set aside the faster Speed Disk will optimize your hard disk (it can take hours). You can't change the allotted memory on the boot disk while you are using it because you can't get at the file. You also can't change this setting while you're using the program (this is true for all programs). Make the change while this diskette is not the startup disk.

The second problem is more general. Most of us use many utility programs (INITs) — clocks, calculators, etc., on the screen. I get a lot, and I test a lot. These utilities can change the System software that runs the computer. They frequently take over the same parts of memory. If not well designed they wipe out part of the system memory when they collide. After taking out many of these INITs that I no longer needed, and replacing and updat-

ing the system, everything works fine.

As an experiment, I ran Speed Disk on a Mac IIX running System 6.07 — it did exactly the same thing. The SAM virus utility (also made by Symantec) was causing the problem.

Speed Disk ran fine on both machines after removing the problem INITs. This all happened on a weekend so Symantec telephone help was not available. I called even though I had Speed Disk working. As a general preventative Symantec suggested prefixing the Norton file name with a 'z' so it loads last and lessens the chances of problems with other utilities.

**M**ORE I've only started to use MORE, but as I mentioned previously the balloon help under the Mac System 7 makes exploring a lot easier and more interesting. Even in a well-designed program exploring is sometimes quite complicated. I find using balloon help much faster than trying to look through the 5 books (2 books and 3 booklets to be more precise) included with MORE. Also if I do need to look up additional detail in the reference manual, balloon help gives me the name of what I'm looking at. This is an enormous time saver in a complicated program.

**T**his has little to do with chemistry, but tax preparation packages can be time savers. I used MacInTax two years ago and found it very helpful. All the tax forms come up on the screen with help available, and act like spreadsheets. If you add or subtract something, all amounts affected are updated. If you're 3 or 4 forms deep this can save a lot of drudgery. When it works you can automatically move names of banks, charities,

and other categories to next years form. Last year ChipSoft, a DOS oriented company, took over MacInTax. The new program was so bad I had to return it. Considering I didn't return Norton Utilities that's bad. I hope this year will be better. Less time for taxes may give you more time for students.

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**Wanted!** by Larry M. Julien

Names of books to be reviewed. These can be titles of books that you have read or seen that are of interest. These books will be reviewed and published in the Newsletter.

Please send your suggestions to me at one of the following addresses.

Larry M. Julien  
Chemistry Department  
Michigan Technological University  
Houghton, MI. 49931

or by electronic mail at

lmjulien@mtu.edu

Editor: I assume Larry will also be pleased to receive actual book reviews by readers.

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**COMPUTER CONFERENCE ON APPLICATIONS OF TECHNOLOGY IN TEACHING CHEMISTRY JUNE 14 THROUGH AUGUST 20, 1993.**

by Don Rosenthal Co-Chair

The ACS Division of Chemical Education's Committee on Computers in Chemical Education is sponsoring a computer conference on "Applications of Technology in Teaching Chemistry." We hope that papers will be sub-

mitted on the use of computers, video, audio, films and other technologies which are used in teaching chemistry. The "meeting" will consist of several sessions each containing five papers.

This is the first computer conference held by the Division of Chemical Education and is viewed as an experiment. Participants and authors of papers will be asked to evaluate the "meeting" at the end of the conference. Thomas C. O'Haver, of the University of Maryland will manage the meeting and prepare a report summarizing the conference and the evaluations. It is expected that some of the papers, discussion and evaluation will be published in book form. It is hoped that computer conferencing will become a permanent part of the Division's program.

#### CALL FOR PAPERS

Authors must have access to Bitnet or Internet. The title of the paper and an abstract of not more than 150 words should be sent to Thomas C. O'Haver(TO2@UMAIL.UMD.EDU) via electronic mail before February 1, 1993. The full paper must be submitted by May 1, 1993. Assistance on handling graphics will be available through the conference manager. Authors will be sent instructions either prior to or after submission of an abstract. Submit your request to TO2@UMAIL.UMD.EDU. Presenting a paper does not preclude publication; in fact we encourage subsequent publication.

#### REGISTRATION

There will be no registration fee. However, everyone who registers must make a commitment to participate in the conference. All participants must have access to either Bitnet or

Internet and become familiar with electronic mail prior to the meeting.

Registrants will have an opportunity to practice prior to the conference. Assistance will be available through Thomas O'Haver. You will register by sending the following message to LISTSERV@UMDD.UMD.EDU : SUBSCRIBE CHEMCONF-L <your name> before June 1, 1993. The titles and abstracts will be available to registrants on March 1. Those wishing not to participate can notify LISTSERV by April 1.

Those having a terminal or work station and the necessary communication software can receive assistance in obtaining a link to Bitnet or Internet by writing Dr. Thomas C. O'Haver, Department of Chemistry, University of Maryland, College Park MD 20742 (Phone: 301-405-1831).

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**THE COMMITTEE ON COMPUTERS IN CHEMICAL EDUCATION WHAT IT IS AND WHO ITS MEMBERS ARE** The PURPOSE of this Committee is to promote and publicize computing usage in chemical education. by Don Rosenthal Co-Chair

The PURPOSE of this Committee is to promote and publicize computing usage in chemical education.

#### COMMITTEE ACTIVITIES

The Committee:

Sponsors and Helps to Organize Symposia and Other Sessions at National and regional ACS Meetings Organizes National Computer Workshops

Publishes the COMPUTERS IN