Banks of the Boneyard

the journal of the association for computing machinery, university of illinois student chapter.

Summer, 1994

Volume 12, Issue 8

QUAD DAY ISSUE!

INSIDE

ACM General Meeting

Thursday,
September 1, 1994
5:00 p.m.
1320 DCL

Free pizza and pop will be served after the meeting!

A Wealth of Resources

Interview by Doug Beeferman

Michael J. Haney has served as Adjunct Assistant Professor in the departments of computer science and electrical and computer engineering. He received baccalaureate degrees in physics and mathematics from M.I.T. in 1977, and he completed his Master's and Ph.D. work at UIUC in 1981 and 1985, respectively. He taught a number of ECE courses in the 1980s, but in this decade he's better known for his four consecutive academic years of teaching CS 281, Introduction To Hardware.

In the spring semester of 1994, Prof. Haney received ACM@UIUC's first annual Professor of the Year award, which was based on the results of a vote tallied over the Internet that was open to all UIUC computer science students. We spoke with Prof. Haney recently about opportunities for undergraduates in the CS department and beyond.

BANKS: How do you feel a new undergraduate in computer science should approach UIUC and the department?

MJH: The University offers of wealth of resources for you to use in your education; use them! Research groups in the CS Department, groups and courses in other departments, libraries, student organizations, professors, academic professionals, staff, and more. You have the opportunity to experience one of the finest computer science departments in this country! However, never make the mistake of thinking that everything you need for your education can be found in any one building.

BANKS: Many freshmen, and even upperclassmen, are scared by the sheer size of this institution. What's the best way to get a grip on this problem?

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Norbert's CS Frequently Asked Questions

Compiled by Alan Braverman

1. *Besides my CS core, what Social Science and Humanities classes do I have to take?*

Check that white book with the light blue picture on the front.

2. *What movies (or movie info) must I know "by heart" before I am awarded a Bachelor's Degree in CS?*

- The Star Wars trilogy
- 3/6 of the Star Trek movies (episodes of the original TV show may be substituted for Part IV: "Save the Whales")
- Throw a frisbee like a TRON program.

3. *What about a Masters' Degree?*

Know the entire "Wafer Thin Mint" scene, and perform it with a believable accent.

4. *Will I be tested on any technical journals before I'm awarded a degree?*

Yes, one or two Douglas Adams books, and a Dilbert collection.

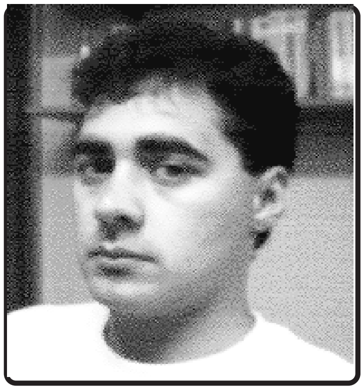
5. *What is the lethal blood-PEZ level for a CS major?*

You can find this info on the sparcs with the following command:

```
~braver/outgoing/quota -PEZ
```

From The Chair

by Alan Braverman



Welcome to the 1994-95 school year and to the Association for Computing Machinery! All University of Illinois students with an interest in computers are welcome to join ACM. Our current membership includes over 250 undergraduate and graduate students with majors ranging from computer science and engineering to biology to philosophy. ACM activities include everything from software programming and hardware-building to educational workshops and programming contests. Anyone interested in ACM may stop by our office during normal business hours at room 1225 DCL, the Digital Computer Lab at 1304 West Springfield Avenue.

The heart of ACM activity is distributed across eleven Special Interest Groups; together these SIGs represent virtually every field of computer use and abuse:

SigArch - computer architecture
SigArt - artificial intelligence
SigBio - biology and computing
SigCAS - computers and society
SigGraph - computer graphics
SigMicro - general microcomputing interests
SigMusic - computer-generated music
SigNet - computer networking
SigSoft - software development
SigUnix - the UNIX operating system
SigVR - virtual reality

Some sample SIG projects include SigGraph's 3D networked game called **DataRace**, SigVR's virtual reality helmet, SigNet's efficient distributed campus nameserver system, SigMicro's ever-popular C programming workshops, SigArch's and SigMicro's joint telescope tracking device, and SigMusic's synthesized concerts.

Each SIG meets weekly in DCL to discuss and design current projects or plan upcoming events. New members are always welcome to join any SIG meeting or just listen in. Check out the SIG updates in this issue of the *Banks of the Boneyard* for more information on current projects, meeting times, and contacts.

The Association for Computing Machinery also holds monthly meetings, featuring guest speakers from the computer industry and academia. ACM general meetings are currently scheduled for the first Thursday of every month at 5:00 pm in 1320 DCL, the larger of the two first-floor lecture halls.

Feel free to stop by the ACM office any time or send e-mail to `acm@uiuc.edu` for more information or specific questions.

CORRESPONDENCE FROM ABROAD:

Getting Internet Access Off Campus

by Ed Burns

I'm writing this article in a PC lab at the Heinrich Heine Universität in Dusseldorf, Germany. Yet I can access my mail and even run Mosaic (if I feel like waiting long enough) as though I were at the CCSO site at Oregon Avenue. In the past year, I've had occasion to travel to quite a few places and have somehow managed to find net access in most of them. Most of these access points were at computer centers at local universities. Some were through a friend with a modem and a Delphi account; all, however, involved a good deal of luck. With that in mind, I've developed the following brief list of ways to get Internet access while traveling or on summer break. They're listed in order of decreasing chance of success:

1. Have a friend in the area who knows where the access is. (This worked at Arizona State University, University of North Carolina, D.C., U. Penn, San Francisco and Vienna).

2. Look up "University" in the phone book and call around asking for the location of a computer center affiliated with a school. If they ask, say you're a student. You *ARE*, after all, a student, though not necessarily at the school in question. If the center is open and if they have net access (as any university worthy of the word *university* should), you're in luck unless all of their PCs are password protected.

3. See the last issue of the Banks from last semester or talk to Ben Gross. This article, authored by the famous Ben Gross, is a meta-list of access providers, but this method usually assumes you have a capable machine.

4. Find the local ACM chapter and hit them up for access. We're all family here in ACM and we like to help out each other in any way possible. We have a list of chapters in the ACM office (somewhere). Such exotic locations such as Guam and American Samoa are included, should you ever decide to travel there.

5. Post to newsgroups such as `alt.bbs.internet` asking if others have had experience getting access from a particular location.

SIGArch

by Jonathan Stark

The Special Interest Group for Computer Architecture (SigArch) is a student organization for people interested in building and designing hardware.

Some of SigArch's projects include the **ACM Scrolling Sign**, which allows anyone in the world to send mail to the electronic billboard outside of the ACM Office; the control hardware for a computerized telescope; and the ongoing **Apropos Computational Engine (ACE)** project, which uses Field Programmable Gate Arrays (FPGA's) to quickly perform complex computations.

SigArch meets weekly to discuss and work on projects. No experience is required, and all are welcome to attend. If you are interested in one of SigArch's projects, have an idea for a new project, or just want to see what SigArch is all about, send email to `sigarch@uiuc.edu`, or call the ACM office to find out when the next meeting will be.

CONGRATULATIONS!

to Brygg Ullmer,

Senior in
Comp. Engineering/
Comp. Science,
and winner
of ACM@UIUC's
1993-94 $500
EDS scholarship

◀ 1— A Wealth of... Continued

MJH: Keep in mind that either you or your parents are paying tuition or taxes or both. This means that the University works for you! However, if you take my 37% teaching appointment, and divide that by the roughly 27,000 undergraduates currently enrolled here, that works out to about 71 seconds of my undivided attention, per student, per year. The moral behind this bit of statistical fiction is that:

i) there are a lot of people at the University who are *very* willing to help, but
ii) don't expect anyone to notice that you want/need help, until you ask.

If there is any aspect, of any topic, in any class, that you don't fully understand, just ask! The instructor *owes* you an explanation that you can understand. That is item (i) above. However, don't expect to have all knowledge neatly organized and handed to you in a three-ring binder; that is item (ii) above.

So just ask! Maybe you want to borrow a book from a professor because the library copy is checked out; maybe you want to get credit for working on a special project of your own; maybe you want to join a research group that is normally open just for graduate students. Just ask! The worst that can happen is that someone will say "no." The best that can happen depends on what you ask for...

BANKS: You mention "special" independent projects. How should a CS student who has a project idea — one that may or may not pertain to a class — pursue this option? For example, how should he or she find the right supervision for the project?

MJH: The key to finding a sponsor for an idea is to find someone who shares your interest in it. You may very likely find this person teaching a "special topics" class or honors section (CS 290 or CS 296) pertaining to the subject. If not, contact a professor or research group that is already doing something along the same lines. If your idea is interesting to them, they may be very interested in supporting you, with access to machines or software tools that you might not otherwise be able to use, especially if your project happens to be something that they want to do anyway.

Contact some of your own instructors if you're in need of ideas. While I was teaching CS 281, I kept a "wish list" of things that I wanted to look into, but did not have the time to do myself. When students asked, I would give them my wish list; over the years, several have turned into special projects. Another place to find ideas is the CS department's *Research Bulletin*, and analogous documents in other departments.

BANKS: How have students changed since you were an undergraduate? Do you notice any trends?

MJH: In many ways, students have not changed at all since 1977, when I started as a teaching assistant. Two categories of students came to office hours then, and they are the same two categories as now:

i) students who are having a lot of trouble with the material, and
ii) students that are having little or no trouble at all.

I enjoy helping the first category, and I enjoy "filling in the gaps" with the second. But I really wish that more of the "middle class" would come visit. I can tell from the exams that there are plenty of people who are just barely "getting it" — some of them will slip, and fall into the first category. Then I will see them. But by that time, it is usually pretty late in the semester. A word to all: don't wait until you are *sure* that you don't understand...

BANKS: So do you see any differences between then and now?

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SigMicro

By Jason Lindquist

Hey, kids! Welcome to the excitement, the pageantry that *is* SigMicro. The Special Interest Group for Microcomputers, is a friendly, diverse crowd of people who share an interest in personal computers. But that's not all! You don't have to be a hardcore programmer, used to spending days on end without sleep, to be a part of SigMicro. Instead, think of SigMicro as your Swiss Army Knife™ of personal computing. Through workshops, trips, tours, and projects, we learn all about what's in, what's out, what's hot, and what's not about personal computing, and we have boatloads of fun doing it. Our workshop topics have ranged from getting around Windows and reading electronic mail, to introductory programming for the Macintosh and Windows, to designing programs that run over the vast campus network and worldwide.

Don't mistake this to mean that our opportunities are limited to a handful of workshops during the year. We're a knowledgeable, resourceful group of people—if you've got a question about how to do something with a computer, whether it's using it as a doorstop or getting the latest weather report for Butte, Montana, there's probably someone in SigMicro who knows where to find out.

SigMicro also has organized many "hands-on" learning projects. One of our continuing projects is a computer-assisted telescope, in collaboration with the Astronomical Society. While much of the physical telescope is constructed, we are working on a Windows front-end for it that will allow one to type in the name of a star, whereupon the telescope will automagically locate and track the body across the night sky.

With the continuing explosive growth of the Internet and the releases of new operating systems for several platforms looming on the horizon, there will be a lot going on in SigMicro this year. Come to the first ACM general meeting to find out where and when our first meeting time will be! Questions, comments, project ideas, and suggestions are always welcome, either on the newsgroup `uiuc.org.acm.sigmicro`, by e-mail at `sigmicro@uiuc.edu`, or at the ACM office.

S.I.G. Graph

by Ryan Grant

SigGraph *does* computer graphics. From artistic expressions and animations, to virtual worldbuilding, to games visualizing cyberspace, and even to hard-core graphics toolbuilding—we do it all. In addition to these sorts of projects we offer movie nights and interesting speakers. If this weren't enough, there are also workshops on graphics packages and graphics programming. If you can't decide which of these to attend, come to them all!

This year we will have several projects underway:

EOH animation: Does next February's Engineering Open House sound far away? It's not. Last year we pulled together a thirty second animation, and this year we want to top it, with an emphasis on detail. Robotek and Anime fans will love the current proposal. Bring your ideas and your rendering software, because we don't take VT100!

Virtual Campus: This project aims to create a highly detailed, interactive model of the UIUC campus on powerful SGI workstations. The model will be used by various campus groups, and an incomplete version is already up and running. Help us capture some more of the analog world around us and incorporate it into the project.

DataRace: A game originally conceived from a cyberpunk theme, DataRace throws the user into an abstract three-dimensional visualization of a multi-player virtual network. DataRace combines elements of real-time graphics programming, server design, interface usability, and multi-user distributed environments into one very interesting experiment.

Graphics Software Tools: Rendering software for the infobahn! A raytracing program and associated conversion

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The Banks of the Boneyard

The **Banks of the Boneyard** is a student publication of the Association for Computing Machinery and does not necessarily represent, in whole or in part, the views of the University of Illinois, its faculty or students, the Department of Computer Science, or the National Association for Computing Machinery.

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For more information, try:
`ph acm return all`
or visit our home page at
`http://www.acm.uiuc.edu/`

Partially paid for by S.O.R.F. and the Department of Computer Science

NEW!

S I G B i o

by Joseph L. Lasky III

The Special Interest Group for applications of computers to biology will begin meeting again this Fall. If this area interests you, or if you're interested in finding out what some of the applications are, please email either Joseph Lasky at `jlasky@ux4.cso.uiuc.edu` or Arwin Levinson at `alevinson@ux4.cso.uiuc.edu` as soon as possible so that we can add you to our mailing list!

SIGSoft

by Alan Braverman

The Special Interest Group for Software Development is a team of undergraduate and graduate students who enjoy computer programming. We program primarily in C and C++, on platforms including the IBM PC compatible family, the Apple Macintosh, and Unix running X. Current projects include games and utilities, and we are always open to new project ideas.

Some of our more exciting happenings include **Arena**, a Macintosh networked car battle game; **Morpheus**, an X Window System image morpher; and **Oscope**, an oscilloscope simulator for Physics 107 students.

SigSoft meets every Wednesday night at 6pm at the ACM office, 1225 DCL.
Contact us via e-mail at `sigsoft@uiuc.edu` or check out our Web site through NCSA Mosaic at `http://www.acm.uiuc.edu/sigsoft/`.

SIGNet

by Jason Wessel

If you are interested in networking of any kind, SigNet is the place to be. At SigNet, we deal with many types of networking beyond the so-called "Information Superhighway". Networking is the art of creating a means of passing something from one place to another; through our projects we've attempted to pass things as diverse as ethernet packets, frisbees, voices, and even lobsters.

Over the past year SigNet has started five projects, given two workshops, and taken a field trip to see the central part of the campus network (better known as *node1* or *the bunker*). The workshops covered how networking hardware works and how to write some networking programs. With the incredible success of the past workshops, one can only imagine how good they will be this year.
As far as finished projects go, SigNet has produced **SkyView** (electronic weather gauges) and **Joel's Hierarchical Subject Index** (a cool way to net surf). These and other ACM projects can be found though the World Wide Web at the URL `http://www.acm.uiuc.edu/ontheweb.html`

For more information on SigNet meeting times and places for this year, feel free to email `signet@uiuc.edu`.

◀ 4—SigGraph... Continued

and modeling programs are lined up for this year's diversions from classwork. The raytracing method produces super-realistic images, and the modeling software will design the scenes to work with it.

If any of this sounds interesting, stop by and meet us; we welcome anyone interested in computer graphics. Just come to our Friday meetings at 4:30 in 1102 DCL. Until then, you'll find more details on SigGraph and associated projects, plans, and developments, in our World Wide Web pages at `http://www.acm.uiuc.edu/siggraph/`, or by emailing `siggraph@uiuc.edu`.

SigArt

by Mike Kreger

SigArt strives to combine the studies of psychology and computer science (with a little bit of biology) in pursuing one of computer science's holy grails: artificial intelligence. Group members range in experience from jaded neural net programmers to those who have only fantasized about intelligent machines (and hey, who hasn't?) SigArt's weekly meetings range in topics from the likelihood of HAL's construction to current trends in AI research. Past projects have included adaptive programs that "learn" how to play Fortress, a chess-like game, and a neural-network real-time speech recognition system that interprets spoken commands for Windows on a PC. In the future we hope to discuss the basics of neural nets and to investigate the intelligence-like properties of genetic algorithms (GAs), all the while inventing some nifty new acronyms. We always welcome new members. For more information on meeting times and places, or to suggest a more descriptive group name, send mail to `sigart@uiuc.edu`.

Official ACM SigList

Coordinator:	Kai Mantsch	mantsch@uiuc.edu
SigArch:	Jonathan Stark	sigarch@uiuc.edu
SigArt:	Mike Kreger	sigart@uiuc.edu
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	Arwin Levinson	alevinso@uiuc.edu
SigCAS:	Ben Gross	sigcas@uiuc.edu
SigGraph:	Ryan Grant	siggraph@uiuc.edu
SigMicro:	Jason Lindquist	sigmicro@uiuc.edu
SigMusic:	Cory Johannsen	sigmusic@uiuc.edu
SigNet:	Jason Wessel	signet@uiuc.edu
SigSoft:	Alan Braverman	sigsoft@uiuc.edu
SigUNIX:	Joe Gross	sigunix@uiuc.edu
SigVR:	A.C. Patel	sigvr@uiuc.edu

SigCAS

by Ben Gross

SigCAS, the Special Interest Group for Computers and Society, meets to discuss the ethical and philosophical implications of computing, and more broadly the impact of computers upon society. Past and future topics of discussion include:

- Privacy, and the collection of personal information into electronic databases
- Current and future restrictions on cryptography
- The Clipper chip proposal
- The need for a computer ethics class at the University
- Who is liable for bad software?
- What are the risks of total dependency on computers?
- The value of information
- The University's use of Social Security numbers
- Repetitive motion injuries (e.g. carpal tunnel syndrome) caused by extended computer use
- The chilling effects of the "publicness" of computer-mediated communication
- Workplace privacy
- The possible formation of a local CPSR (Computer Professionals for Social Responsibility) chapter

For more information on SigCAS, visit the SigCAS home page on the World Wide Web at `http://www.acm.uiuc.edu/sigcas/`, or send email to `sigcas@uiuc.edu`.

ACM Calendar

Quad Day
Wednesday, August 24
All Day on the Quad!

ACM Movie Night
Wednesday, August 24
7:00 p.m 1320 DCL

UIUC Computing Wisdom Workshop
Thursday, August 25
7:00 p.m. 1320 DCL

ACM General Meeting
Thursday, September 1
5:00 p.m. 1320 DCL

3— A Wealth of... Continued

MJH: If anything has changed, I think that students today are a more "conscious consumer" than they were. Maybe it is just the vocal minority, but I increasingly hear requests for "how will this course be graded?" Or "what is my class standing today?" And frequently "do I really need this textbook?"

BANKS: To what do you attribute this new "consumerism"?

MJH: Students want to get their money's worth; this is good. But don't fall into the trap of getting the "best deal" at the expense of losing out on your education. Students are also slowly becoming more aware of "the market." This is vitally important, but too few students are sensitive to this yet. Where will you go when you graduate? A job in industry? Or graduate school? And if you choose graduate school, then what? When I was a student, the choice was simple:

i) if I am tired of school my senior year, I will get a job and earn the quick money;
ii) if I can hold out for 2 years of grad school, I will get a Masters and the big money;
iii) if I can go all the way and get a Ph.D., then I can stay in academia for life!

None of the above is true today! Jobs are *not* out there just waiting for you to graduate! And academic positions are becoming ever more scarce. Some call it "downsizing;" to me, it's fewer opportunities.

BANKS: Do you feel that an advanced degree is worthwhile these days for those who intend to go into industry?

MJH: While a Ph.D. commands a large(r) salary in industry, fewer and fewer companies are willing to lay out that kind of money. To a lesser extent, this is true of the Master's degree as well. However, don't let me scare you away from an advanced degree. But whatever you do, make it an informed choice! If you think that you will want to go on for a Master's, or a Ph.D., then go *job* interviewing your Senior year. See for yourself what the market is like in your area of interest. And ask the interviewer whether they think you would be more valuable to their company if you had a Master's degree. Some companies, like DEC and AT&T, will actually **pay** you to go to grad school!

BANKS: Any more hints or warnings?

The bottom line is to plan for the future. You don't need to "decide," and you can always change your plan. But be aware of what direction you want to go, and how you plan to get there. That can lead to "strategic" summer job choices, or working with research groups, or taking classes in other departments, or whatever. But don't wait until senior year.

ACM Up All Night Crew (partial listing)

Chair	Alan Braverman	acm@uiuc.edu
Vice-Chair	Ed Burns	e-burns@uiuc.edu
Secretary	Amy Ryan	eighmi@uiuc.edu
Treasurer	Norbert Burger	nburger@uiuc.edu
Social Chair	Jeff Thompson	jwthomp@uiuc.edu
Membership	Jeremiah Johnson	jjohnso4@uiuc.edu

acm

student chapter
university of
illinois urbana-
champaign

membership form

membership form

name:

campus address:

campus phone:

home address:

home phone:

electronic mail:

curriculum:

UNIVERSITY STATUS

- ☐ freshman
- ☐ sophomore
- ☐ junior
- ☐ senior
- ☐ m.a. / m.s.
- ☐ ph.D.
- ☐ faculty / staff
- ☐ postdoc
- ☐ alumni
- ☐ other

special interest groups

acm's special interest groups (SIGs) focus on particular aspects of using computers and the computing community.

(circle some that you're interested in!)

sigarch	architecture
sigart	artificial intellegence
sigbio	biocomputing
sigcas	computers and society
siggraph	graphics
sigmicro	microcomputers
sigmusic	music
signet	networking
sigsoft	software development
sigunix	unix programming
sigvr	virtual reality

MEMBERSHIP TYPES

return form with check or money order payable to the ACM at UIUC

- ☐ $40 for eight semesters
  membership begins and ends sept 1
- ☐ $22 for four semesters
  membership begins and ends sept 1
- ☐ $12 for two semesters
  membership begins and ends sept 1 or jan 1
- ☐ $14 for two semesters
  off campus newsletter subscription mailing begins and ends sept 1

ACM NATIONAL MEMBER

- ☐ yes — #
- ☐ no
- ☐ currently applying

hold it!

if you're interested in helping with any of these acm activities, please circle them

WE NEED YOUR HELP!

engineering council

engineering open house

newsletter staff

publicity staff

1. staple check or money order to inside of this application
2. return to acm office at 1225 DCL during regular office hours or at our first general meeting

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