



“Ada-WOW”

# Ada's Window On the World

# SIGAda

Sponsored by ACM SIGAda

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Volume 2, Issue 3

## WOW, What a Conference!

By Hal Hart (TRW), Ada-WOW Editor

If catching sleep 2 or 3 hours at a time is fun, this has been a great week for me! Seriously, I'm sorry to see it end, even though my body says otherwise. The dedication of the Ada-WOW staff reporters (*named on last page*) is gratifying, but I have to especially call out the fine contributions of the 2 students Mike Feldman recruited from GWU -- Erin Briska and Dan Larsen. They fit right in with regulars David, Ron, and me. Freshman Erin (who hasn't even taken any Ada yet) could teach us all a lesson in time management. These are two super students whom I hope we see at future Ada and other professional events!

This has been a memorable conference because of unique features such as the one-time all-invited-speakers format for the millennium, the fine APL venue instead of the usual boring hotel feel but a leetle far away too, and the advent of our entire proceedings (*and much more*) on CD and all-volunteer online registration. You will read in SIGAda Chair Ben Brosgol's report on SIGAda 2001 plans of our *return to normalcy* next year -- except the CD proceedings and new registration system are probably here to stay.

Finally I would like to **thank** our 7 corporate sponsors who contributed so much to what has truly been a successful SIGAda 2000 -- **Ada Core Technologies, DDC-I, OC Systems, Rational, Aonix** (*5 of the 7 Ada Resource Association members*), **TopGraph'X, and DCS (AdaSTAT)**. You and our other dozen exhibitors are valuable members of the Ada and SIGAda communities we all live in. Our conferences would be diminished without your participation.

Thanks to all-- staff, exhibitors, attendees... for making my week! -H<sup>2</sup>

## SIGAda Awards Ceremony at 1:30pm

By Hal Hart, SIGAda Past Chair

Please be sure to arrive on time for the closing plenary session (**featuring Tucker Taft**) this afternoon, as the **SIGAda Awards ceremony** postponed from yesterday morning will occur then. SIGAda presents two types of awards -- for Outstanding Contributions to the Ada Community, and the ACM SIGAda Distinguished Service Award. (*See winners on p.6.*)

## SIGAda 2001: a Return to the Heartland

By Ben Brosgol (Ada Core Technologies & SIGAda Chair)



No, we're not going back to Redondo Beach; that would have been "Hartland".

Plans are well underway for our next SIGAda conference, which will be held (pending ACM approval, of course) in the Minneapolis - St. Paul area during the week of 30 September 2001. Minneapolis is in some sense the site of Ada's conception; no, Lord Byron did not rise posthumously, but rather Jean Ichbiah while at CII-Honeywell-Bull in the late 1970s bid on the DoD's language design contract as a subcontractor to the Honeywell branch in Minneapolis. Ada old-timers may remember this bit of historical trivia, and also the fact that we had a successful summer meeting in the Twin Cities area in 1985.

We are returning to the Twin Cities with a refereed conference similar to those we've held in the past. The organizing committee is taking shape, with Paul Stachour as Conference Chair and John

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## Weather Forecast

Today (Partly Cloudy)

High: 10 C (50 F)

Low: 3 C (38 F)

Tomorrow (Overcast)

High: 11 C (51 F)

Low: 1 C (34 F)

McCormick as Program Chair. We hope that you picked up a copy of the Preliminary Call for Participation this week; if not, get thee to our web page [www.acm.org/sigada/conf/sigada2001](http://www.acm.org/sigada/conf/sigada2001) and check it out. We are soliciting technical articles, extended abstracts, and experience reports, as well as proposals for workshops, panels and tutorials, on any and all aspects of Ada technology. Stay tuned for further details at the conference web site; we hope to see you at SIGAda 2001 in the Twin Cities!



### Trivia Answers

#### (Questions on page 2 of yesterday's issue)

By Erin Briska (The George Washington University)

- (1) *Trick Question* -- "ISO" is *NOT* an acronym. "ISO" is a trademark for the International Organization for Standardization, and supposedly not an acronym in any language.
- (2) AdaEd, developed at NYU by Ada Core Technologies founders Robert Dewar, Ed Schonberg and others, was the first validated Ada translator. (*April 1983?*)
- (3) 1815 was the year of Ada's birth.
- (4) *Trick Question* – Ada's middle name is "Ada." Her first name was Augusta; Ada was her middle name.

### Workshop on the Software Engineering Body of Knowledge and Licensing of Software Engineers

By S. Ron Oliver (The Oliver Academy)

In May of 1999 ACM Council decided that it would not support licensing of software engineers. In May of 2000 ACM Council decided to discontinue ACM participation in a joint effort with IEEE to develop a Software Engineering Body of Knowledge (SWEBOK). It may well be the case that both of these actions will have a profound negative impact on many ACM members. Moreover, the spirit of these actions, and the manner in which they were taken, appear to be in explicit violation of our ACM Code of Ethics.

The State of Texas has already adopted a law providing for the licensing of software engineers. It is inevitable that most states, and eventually all of them, will adopt similar laws. If we (computing professionals) do not actively participate in defining the nature of those laws and how they are implemented, we will be the victims of the unknowing.

By deciding not to support licensing of software engineers ACM Council blatantly took a position that ACM, as a society, will not accept the professional responsibility of being the driving force

behind licensing efforts. This will make it difficult for ACM members to accept the professional responsibility of working on the licensing issue, as our Code of Ethics implies we should.

Wednesday evening more than 15 conference attendees met to review and discuss these actions by ACM Council. Two members of the National Society of Professional Engineers met with us to help us understand how licensing of engineers in other disciplines works.

After a lively discussion (very lively at times), we voted on three issues: 0. To make a statement of the principles, including our own code of ethics, behind our subsequent actions. 1. We request ACM Council to reconsider its decision to withdraw from the SWEBOK project. 2. We feel ACM serves its members better by being involved in activities associated with the potential licensing of software engineers. All three issues passed unanimously, one with 2 abstentions. These issues will be taken up by the SIGAda Executive Committee for consideration as actions to officially take.

(See related article in Wednesday's Ada-WOW by Paul Stachour about the Software Engineering Body of Knowledge.)

### Further Exhibits Touring

By Dan Larsen & Erin Briska (The George Washington University)

On the second (and last) day of exhibits, we completed visiting and talking to all exhibitors beyond those Erin reported yesterday.

#### OC Systems

OC Systems provides a whole suite of production software. Names that sound familiar may be Power Ada and Aprobe. They provide tools such as a point and shoot debugger and source code browsers. Their compiles support simultaneous compilation. Aprobe is a whitebox testing tool that allows the tester to modify the executable in any way that they choose. For more information, point your browser to <http://www.ocsystems.com>

#### AGIL

Adaptable Graphical and Interface Library is a tool that provides a device and graphic system independent, extensible, distributable environment to support rapid creation of real time embedded applications in C++ and Ada95. Point your browser to <http://www.dscorp.com>

#### Avilar/AdaSoft

Avilar Technologies provides an eLearning solution, WebMentor that is currently being used to power corporate, government, and academic eLearning websites. If you skip as much class as I do, pointing your browser to <http://www.avilar.com> might not be a bad to spend the morning (or, in my case, the afternoon).

#### Green Hills Software

Green Hills Software provides compilers for Ada, C, C++, and Fortran. It enables seamless development of application programs in any combination of these languages. Contact [www.ghs.com](http://www.ghs.com) for more information.

#### Irvine Compiler Corp

Irvine Compiler Corporation provides Ada tools that are used by the Army, Air Force, Navy, and Commercial aviation for embedded, real time and Native Ada applications. Checkout <http://www.irvine.com>

#### McCabe and Associates

McCabe produces a whole host of fascinating GUI testing tools. Detailed, color-coded structure charts provide a key point of visual communication between QA managers and developers. Contact [www.mccabe.com](http://www.mccabe.com)



Exhibit Hall Closes

**OIS**

Objective Interface Systems provides developers with advanced real-time connectivity software development tools for use in products throughout the telecommunications, data communications, and aerospace/defense as well as other assorted applications. Check <http://www.ois.com> for more info.

**TNI**

Hailing across the big lake from the country of France, one of TNI's success stories is STOOD. STOOD is the best solution to take advantage of Object-Oriented technology for Real-Time and high quality software developments. If you can't visit their offices, take a look at <http://www.tni.fr>

**Paul Morris Personnel**

Paul Morris Personnel are technology headhunters. They take pride in serving the Ada community for the past 10+ years. If you're looking for another job, look at <http://www.bigraise.com>

**Stage Harbor Software**

Bard Crawford writes the LearnAda book series. His books are targeted to the programmer with prior experience. His books include small, working example programs designed to illustrate the use of specific features. For a book worth keeping by the john, look at <http://www.LearnAda.com> for ordering information.



### Interview with John McCormick, Ada Educator

By Dan Larsen (The George Washington University)

As a student, the most interesting aspect of Ada is the role it plays in education. From my classmates, I hear a lot about how Ada is outdated and has neither a future nor a place in education. During Dr. Feldman's talk this afternoon about Ada in education, he mentioned that at the University of Northern Iowa they recently switched over to using Ada as their introductory language. I was able to talk to the Chairman of the Department of Computer Science at Northern Iowa, Dr. John McCormick

and ask him a few questions about why the switched from C++ to Ada.

**WOW:** How did you decide that C++ was not serving your needs well? Are they the similar problems that are inherent to C?

**Dr. McCormick:** Those and then some. Specifically, the error messages that are given are not helpful. Loop constructs don't have an exit statement. Parameter passing is also difficult to teach. Call by reference and call by value aren't the easiest concepts to teach CS 1 students. Also, the order of passing parameters is important, because sometimes inverted parameters won't be obvious. Each problem in and of itself isn't that bad, but combined, they are. I like to refer to it as death by a thousand paper cuts.

**WOW:** I'm sure we can all think of problems with the status quo at our respective universities. Why did you choose to move?

**Dr. McCormick:** Upper division professors were complaining that our students couldn't program. Also, current students felt ill prepared for the workforce.

**WOW:** For our background, what was your language sequence before you switched languages?

[Ed's note: I asked him that because if the students felt ill prepared, I was curious how many languages they were taught. At GW, we have Ada, C, Java, and Assembly. Although C is no longer taught as a standalone course, it is taught during OS and Compilers. On a completely tangential note, I've found that a solid CS 1 course is necessary to successfully complete school as well as succeed in the workforce.]

**Dr. McCormick:** We used C++ primarily. We taught a little C in the OS class, and the optional AI class used Lisp.

**WOW:** What solutions did you look at when you decided there was a problem?

**Dr. McCormick:** We could stay with C++ and not use objects; we could switch to Ada. We didn't look at Java much because at the time it was very new and not established. The solution to change was primarily political. I had developed some books and curriculum at my former school, SUNY-Plattsburg. Some

professors thought that I was just trying to sell my books. We eventually chose Ada after a very close vote.

**WOW:** Since you switched to Ada in 1997, what changes have you noticed? Were they for the better?

**Dr. McCormick:** We've tripled the number of completed assignments. Our dropout rate dropped from 40% to 25%. The retention of women in our program went up.

I really enjoyed my interview with Dr. McCormick. As a student, and paying \$\$\$ for my education, I like to know why we do what we do. Interviewing Dr. McCormick was really a pleasure and confirmed what I already new about why we at GW use Ada as our CS 1 & 2 language. Dr. Feldman reports that during "exit interviews" seniors say that they are glad they learned Ada as a first language.

### Quotes of the Day

Said the CEO to the CIO, "There's a woman down in IT named Melissa that keeps sending me 'I love you' emails."

— Chris Horn, Iona

There is no reason why anyone would want a computer in his or her home.

— Chairman of DEC, 1977

I won't speak of the future. People don't know the future. Most of what is presented as the future is really the present.

— Manuel Castells

Engineers have been imbued with a "trained incapacity for thinking about and dealing with human affairs.

— Robert Merton, Session 4.1

Every program has at least one bug and can be shortened by at least one instruction. By induction, then, every program can be reduced to one instruction that doesn't work.

— Unknown

## SIGAda's All-Volunteer Online Registration System – Was It Worth It?

By Clyde Roby (SIGAda 2000  
Proceedings Editor & Registration  
System Web Programmer)

As a continuation of the SIGAda 2000 Committee's conscious efforts to reduce costs, this year, SIGAda 2000 began using an online registration system developed by volunteers.

We thank you all for using this online registration system and hope that it was an enjoyable experience. If you have any suggestions for improvements, please let us know.

The original, much simpler, Conference Registration System has been used at IDA; that system has no payment capabilities. Beginning with that simple system, I developed the much more sophisticated and complex SIGAda 2000 Registration System, which contains many more distinct web pages to accommodate the additional needs of a full conference and tutorials with payments.

After you entered your personal and demographics information, you were then requested to select the tutorial(s) you would attend and then your preferences for the sessions of the two conference tracks at this year's SIGAda Conference. This helped the SIGAda 2000 Committee to assign room and other resources better.

Automatic calculation of your Conference and Tutorial fees were done by the system followed by a confirmation of that information. Then you were asked if you would like to purchase additional proceedings CD-ROMs and/or additional tickets to this year's gala (this was later dropped as all additional tickets became free).

You then saw a confirmation page showing all the information you had entered to make sure everything was correct. This was followed by a payment page, which you could print out, and mail into SIGAda 2000's Registration Chairman, Thomas A. Panfil, with your registration payment.

An email confirmation was immediately sent to you for your own records and to

Tom for informational purposes. Simultaneously, a record of your registration information was added to the SIGAda 2000 registration database. A daily sweep of that information was sent to Tom as a small spreadsheet at the end of each day. Tom then added that information into his "back-end" Access database, kept only on his own personal computer system.

Special codes allowed complimentary registrants to register without having to worry about payments. This was an additional change especially for the SIGAda 2000 Registration System.

For paying registrants, as payments came in, Tom updated the online database with the fact that each paid and method of payment (no credit card information was kept in the online database or on Tom's system). Along the way, SIGAda 2000 Committee members could easily gather statistical information from the online database. As mentioned earlier, this helped the Committee to allocate rooms based upon your Tutorial selections and Conference session preferences. It also helped determine any last minute changes of resources (like number of shuttles) that the Conference needed.

### More Irish Proverbs Pertaining to the Ancient Software Engineers

**Regarding well-defined and well-separated components:**

*An rud nach mbaineann duit ná bain dó.*

Don't interfere with [any] thing that doesn't concern you.

**Regarding Microsoft:**

*Sileann do chara agus do namhaid nach bhfaighidh tú bás choice.*

[Both] your friend and your enemy think you will never die.



Next year, we plan to update this system with suggestions that some of you have made already. If you have more suggestions, please send them to Clyde Roby at [ClydeRoby@ACM.Org](mailto:ClydeRoby@ACM.Org). These

will be incorporated into next year's version. As ACM updates its computer resources, we hope to implement this system using AdaCGI.

At times during the last few weeks before the conference, ACM's computer resources were somewhat strained and things slowed down a little bit. However, we were able to continue with only a couple of hours downtime during those occurrences.

Again, thank you for using the online SIGAda 2000 Registration System.

## Tutorial MA2: Developing Ada Applications for the Java Platform

A review by Paul Stachour

I attended the ACT tutorial on JGNAT, an Ada compiler designed and built under the GPL. JGNAT provides the ability to run both Ada and Java programs in the JVM. This allows programmers to use the reliability and functionality of Ada, and the large numbers of APIs, such as User-Interfaces, being developed for Java. JGNAT tools can create Ada specifications from Java class files, thus allowing Ada programmers to easily use the Java APIs, once they learn to manipulate the Java objects, via reference than the Ada composite record. We also learned about the inherent incompleteness of the Java Tasking model, and how this can impact the semantics of Ada programs.

Java has criticized for the slowness of execution. We saw an example of decimal arithmetic, programmed both using the Java BigDecimal API, and the Ada fixed type. Both were compiled to the Java VM, and run. I was surprised to see that the Java program was about 800 times slower (8950 milliseconds vs. 11 milliseconds for 10\_000? iterations). This looks like an interesting example for Ada people to go to our local computing groups enamored with Java and demonstrate some of the Ada advantages over Java.

## A Student's Take on SIGAda 2000

By Dan Larsen (*The George Washington University*)

My editor (*that's you, Hal*) really needed some filler and asked me to write a "SIGAda 07D0" from the student's perspective. After spending late night opining with Dr. Oliver (*Ron*) over many beers (*actually, I kept my mouth shut, and drank the beer; Dr. O drank the rum and did the talking*) I've come away from my first conference with some understanding about how dead Ada really isn't.

As a student, I had a feeling that the technical parts of the conference would probably be way over my head. Surprisingly, the content was pretty balanced and not too technical. It was neat seeing the productivity tools that the various vendors had to show. Contrary to my classmates' popular belief, I saw living proof that Ada is still alive and kicking. Actually, Lady Ada isn't; but that's a different story as we all found out Tuesday night.

Towards the end of the conference, this was starting to feel like a Boy Scout Jamboree – nobody showers, everybody wears mismatched clothes, and there aren't too many women around. There's one exception – we had no beer at the Jamborees.

I'm completing my fifth semester at George Washington and have managed to avoid all of Dr. Feldman's required classes. Unfortunately, I figured I would suffer with my fellow students and volunteer to take a real-time systems course from him next semester. At this conference, I saw all kinds of fun stuff that Ada can do. One of Dr. Feldman's friends from the University of Northern Iowa (I heard his friend wrote a better book) has purchased a number of Lego robots for his students. I'd like to see Dr. Feldman get some of them for our students, but my begging for them won't do much good. I'm appealing to you all (his respected colleagues) to send him a deluge of email encouraging him to invest in the "Fun with Ada toys" such as model railroads, model cars, blimps, robot hands, road warrior robots, interactive games, etc that will capture the interest

of novice and experienced programmers. You can contact him at [mfeldman@seas.gwu.edu](mailto:mfeldman@seas.gwu.edu) but DO NOT tell him I sent you.

Overall, I really did enjoy my first conference. It was both an educational and entertaining experience, even for a rookie.



## Limerick of the Day "Empirical Studies & Software Development"

By Dewayne Perry

When asked about things all empirical  
The authors will natter on most lyrical:  
We look for the normal  
in what's often informal  
Despite that it looks quite hysterical.

## Message from the SIGAda Chair: Final Thoughts on SIGAda 2000



By Ben Brosgol (*Ada Core Technologies & SIGAda Chair*)

This year's conference was an intentional "one-time" experiment, with a program comprising an Ada technology update from invited speakers, rather than our traditional collection of refereed papers. Although as SIGAda chair I am not exactly the most impartial of observers, I want to express my pleasure with how the conference has unfolded, and to extend my thanks to the many volunteers who made it happen.

My memories of this conference will exist at two levels. The more obvious one is the technical: various papers and presentations covering new developments in our industry. But to some extent the more important one is at a personal level, seeing the dedicated work that went on behind the scenes. Here's a somewhat random sampling-

- Rush Kester encouraging us to hold the meeting at JHU/APL, and then following through with energy and enthusiasm as local arrangements chair

- Franco Gasperoni and Currie Colket huddling over a bar in Potsdam at the Ada Europe Conference, trying to compose a coherent technical program
- David Harrison coping calmly with last-minute comments on each iteration of the publicity and keeping the website in synch
- Rush, Franco and Currie handling three major program shuffles (one known in advance, the others spontaneous) after the "final" program had been frozen
- Hal Hart doing the job of four mortals (Exhibits Chair, Treasurer, Ada-WOW editor, Awards Committee Chair)
- Clyde Roby setting up a web-based registration system, and Tom Panfil overseeing the registration process, thus saving us the considerable expense of hiring a registration contractor
- Mike Feldman's student volunteers from GWU, Erin Briska and Dan Larsen, serving as AdaWOW reporters

Although the financial outcome of the conference is to some extent less important than other elements, I am happy to report that for the second consecutive year we are realizing a surplus. That will help make our friends at ACM HQ breathe easier.

Technology is produced by people. If the excitement and enthusiasm shown by this conference's volunteers is any reflection of the Ada industry in general, then Ada's future will be bright indeed.

# Some Final Scenes from SIGAda 2000



**SIGAda Outstanding Ada Community Contributions Award Winners: Erhard Ploedereder, Joyce Tokar, & Randy Brukaradt**



**David Harrison (left) is Awarded 2000's ACM SIGAda Distinguish Service Award by Awards Committee Co-Chair Hal Hart**



**Top Graph'X Gives Their Vendor Presentation**



**ACT Cast for Our Tuesday Evening Gala**



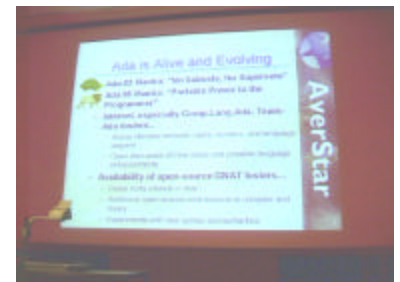
**Robert Leif Answers a Question**



**Closing Keynote Speaker Tucker Taft**



**SIGAda Vice Chair for Meetings & Conferences Currie Colket Served as SIGAda 2000 Conference Chair**



**Tucker Proclaims that "Ada is Alive and Evolving!"**

## CNET.COM Polls the 1990's "Decade in Computing"

CNET.COM did the surveys and reported the results that have been the 4 short series running in past Ada-WOWs and concluding today. Read all this and more yourself by visiting CNET art URL <http://www.cnet.com>; hit "Digital Culture..." under Tech Trends, and then "The Decade in Computing" (~10th on the interesting list of special reports there). This is a 4-partner — Visionaries, Products, Trends, Success Stories — from which I extracted these series. CNET very fairly also lists many "Who Paved the Way" for each of the Top 10. Other interesting reports there include "A Brief History of Computing!" -H<sup>2</sup>

### The Top Two! 10 Visionaries of the 90's

CNET's picks as the top two idea men who most impacted computing in the 90's and likely well into the next century:

2. **William H. Gates III: "The despot"?** *Cofounder and chairman of Microsoft* You may not like him or his company's strong-arm tactics. You may gripe about his lack of originality, or point out the flaws in Microsoft's most popular products. So what? Bill Gates is unquestionably one of the most powerful, important, and influential forces in technology in the 1990s. We're not just talking about his sudden ubiquity in pop culture. The simple fact is that many of the decade's major advances in computing have been spurred by Microsoft...or in reaction to Microsoft.

1. **Tim Berners-Lee: The true webmaster** — *he created the World Wide Web!* PalmPilots, cheap PCs, and Tamagotchis notwithstanding, the single most important contribution to computing in the 1990s was the World Wide Web. The Web — a way of organizing information on the Internet that mimics neural connections — has revolutionized the way we access information, the way we communicate with one another, the way we research and buy products. It's like the invention of the printing press, the telephone, and the 24-hour store rolled into one. And it all came about through the vision of Tim Berners-Lee.

### 10 Success Stories of the 90's — The Companies

The final two of the Top 10 companies deemed by CNET to have made the 90's the high-tech success story it was.

- **3Com:** The little acquisition that could.
- **RealNetworks:** Music to the Web's ears.

### Unsung Heroes of Computing

And the final two (3 were printed in yesterday's Ada-WOW) *long-ago* visionaries whose legacies span the centuries (according to CNET). The Top 10 Visionaries to the left stood on their shoulders, whether they realized it or not:

- **Vannevar Bush (1890-1974):**  
Patron saint of infoglut management, hypermedia, and the Web.
- **Douglas Engelbart (1925-):**  
Patron saint of point and click and the GUI.

### Ada's Window on the World Staff

#### Editor-In-Chief

Hal Hart (*TRW*)

#### Reporters:

**Erin Briska**

(*The George Washington Univ.*)

**Ben Brosgol**

(*Ada Core Technologies*)

**David Harrison**

(*Logicon*)

**Dan Larson**

(*The George Washington Univ.*)

**John McCormick**

(*Univ. N. Iowa*)

**Ron Oliver**

(*The Oliver Academy*)

**Clyde Roby (IDA)**

**Paul Stachour**

### 10 Trends from the 90's — Will They Shape the Future?

And, the final two of ten 90's trends CNET predicts to influence the 21st century:

- **"Download Derby"** Universal Net access changes software distribution as we know it.
- **"Technology Backlash"** Web- and Y2K-inspired hysteria fuel high-tech paranoia.



**SIGAda 2000 Conference Currie Colket Brings Down the Gavel and Passes the Torch to SIGAda 2001 and Paul Stachour's Crew in Minnesota**

# SIGAda<sup>2000</sup>

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