

# The Big 50: Celebrating 50 ACM SIGGRAPH Conferences

Conceived, compiled, and edited by:

David J. Kasik , Boeing (Retired), Sammamish, WA, 98075, USA

Mary C. Whitton , University of North Carolina at Chapel Hill (Retired), Chapel Hill, NC, 27514, USA

Chris R. Johnson , University of Utah, Salt Lake City, UT, 84112, USA

## INTRODUCTION

The ACM Special Interest Group on Computer Graphics and Interactive Techniques (SIGGRAPH) will hold its 50th Annual Conference on 6–10 August 2023. *IEEE Computer Graphics and Applications* (CG&A) is joining in the celebration with this special issue.

To say that this issue is different is an understatement. Previous CG&A special issues feature high-quality research papers that focus on a single topic. In this issue, we celebrate the 50 ACM SIGGRAPH Conferences across the breadth of their history. Fifty occurrences of anything—birthdays, wedding anniversaries—are cause for celebration. Companies justifiably think that being in business for 50 years is a big deal. And it is!

Just think: digital computing itself is less than 100 years old. The IEEE Computer Society is a 1971 reboot of the original IEEE Professional Group on Electronic Computers (1951). The Association for Computing Machinery (ACM) started in 1947, only 76 years ago.

IBM's Sam Matsa and Brown University's Andy Van Dam formed the ACM Special Interest Committee on Computer Graphics and Interactive Techniques (SIGGRAPH) in 1967 as an outgrowth of a highly successful professional seminar on interactive computer graphics. ACM SIGGRAPH traded its "C" for a "G" in 1969 and became the Special Interest Group on Computer Graphics and Interactive Techniques (SIGGRAPH).

The first ACM SIGGRAPH Conference was held on the University of Colorado campus in July 1974. By all accounts, it was a glorious week. A number of sessions were held outside at the request of some of the

600 attendees. Bob Schiffman (University of Colorado) and Jon Meads (Tektronix) were the organizers. The relaxed, collegial atmosphere of the conference, the annual summer dates, the fascination with the technology, and the PEOPLE led to astounding growth. The 25th Conference (1998) attracted over 48,000 attendees. Current attendance regularly exceeds 10,000, pandemic notwithstanding. ACM SIGGRAPH is still the largest ACM technical conference.

Of course, professional societies morph as the profession changes. Many start as a topic becomes "hot" and die when the glow fades. Computer graphics and interactive techniques have stayed hot even as focused interests like human-computer interaction, user interface software, virtual reality, and visualization have spun out their own conferences.

And the computer graphics field itself still sings a Siren's song and retains its attraction to pioneers and newcomers alike. For example, both Jon Meads and Andy Van Dam have attended recent conferences. For many attendees (both short-term and long-term), the ACM SIGGRAPH Conference is their version of summer camp.

When people who have attended an ACM SIGGRAPH Conference get together, one of the first things you hear is "Do you remember...?" Remembering, sharing, trading stories—we all do it. Therefore, we have created an archival record of some of those memories in this special issue. We collected over 200 stories from more than 120 young, old, and middle-aged people. Of necessity, each is short. The editors assembled and organized the accepted materials by year. Each author provided name, current e-mail address, and affiliation during the year of the memory. We also grouped memories about specific events together because multiple people shared a memory about the same event. It's great to contrast individual viewpoints.

While editing this issue, we came to realize that memory is like fine wine: Memories change and grow to have more value as they age. At the same time, we understand that there are other significant events that we, true ACM SIGGRAPH veterans, have missed or forgotten. We hope this issue will trigger memories and conversations beyond its pages.

The memories reinforce our underlying belief: the ACM SIGGRAPH community is the profession's fundamental, binding force. The technology is cool, fun, and beneficial. However, the people are what make computer graphics and interactive techniques as vital today as they were in 1974.

We believe you'll learn from reading this collection. Perhaps you'll recall other ACM SIGGRAPH events and realize how the community has impacted your life and changed your career.

Enjoy taking a 50-year journey through ACM SIGGRAPH conferences as you read these highly personal stories!

## THE 1970s

### 1974

#### Arriving at SIGGRAPH

It was 1974 and the first SIGGRAPH Conference was being held in Boulder, Colorado. It was summertime and a good opportunity for a bit of a motorcycle tour. I couldn't resist. Packed my gear on the back of my Honda 305 and left Portland, OR, for Boulder.

I arrived at the conference hotel just as a carload of conference attendees showed up from the airport. I pulled up beside them and, with my helmet still on and the sun visor covering my face, I started to say hello to them by name. The look on their faces was definitely one of "Who the #%#\* is this?" Couldn't have been a better way to arrive and provide the attitude and acceptance for future SIGGRAPH conferences.

*Jon Meads, co-chair SIGGRAPH '74  
meads@acm.org  
Tektronix*

#### First SIGGRAPH Experience

1974 SIGGRAPH, the first regularly scheduled SIGGRAPH conference, held at The University of Colorado, Boulder (I had been to several sporadic conferences on graphics for a few years before that):

We all stayed in college dormitories instead of luxury hotels and had assigned roommates. I don't remember

who my roommate was, but I remember he was one of the speakers. I was very impressed, because that was before I got to the point of presenting anything myself. I was just a face in the audience at the time.

One of the first papers of the conference was presented by Fred Parke from the University of Utah, showing his animation of a talking face reciting a poem of Emily Dickinson, followed by a film of a real person reciting it as comparison. Nowadays that comparison would be a lot closer.

This is the conference where I saw Alan Kay give his presentation demonstrating the Xerox paint program. I didn't know Alvy Ray Smith and Dick Shoup (the researchers who did Paint) at the time, but I was very impressed by the demonstration. I did something based on that the next year in Utah. Alan Kay was wearing shorts and a blue shirt and just hopped up and sat on top of the table in front of the room to give his talk. Things were a little less formal than they are today.

This is also when I met Ted Nelson, who was manually assembling the first editions of his Computer Lib book in his kitchen with his roommate Tom DeFanti.



Animated face by Fred Parke.

*Jim Blinn  
JimBlinn@comcast.net  
University of Utah*

#### Course at the First SIGGRAPH

1974—The first SIGGRAPH Conference:

As then SIGGRAPH vice chair, I organized an "Introduction to Computer Graphics" course for the day before the conference. It was held at the National Center for Atmospheric Research (NCAR). While my memory is fuzzy, I believe Carl Machover [RIP] was one of the speakers, probably on graphics hardware. Attendance was strong, with many folks

registering on-site. I recall taking somewhere around \$6k to \$7K back to Chapel Hill (I was then at UNC) to deposit into a bank account I had opened specifically for the workshop. After paying expenses, the balance was sent to ACM for credit to the SIGGRAPH account.

*Jim Foley*

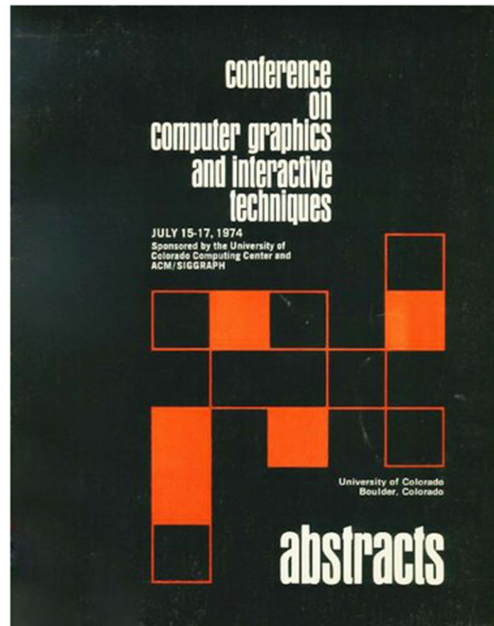
*james.foley@comcast.net*

*University of North Carolina at Chapel Hill*

### My First SIGGRAPH

My SIGGRAPH story goes way back. I attended the first four SIGGRAPH conferences as a graduate student (plus dozens since) and spoke at three of those four including the first at the University of Colorado. I remember they put us up in the dorms. My advisor at the University of Chicago was Bob Futrelle, and we had developed an interactive real-time graphics system for capturing motion from movies and video. It was a pen-based interface with icons, menus, and buttons and ran on a DEC GT44, my first “personal computer.” Bob and I presented our work on the second day of the conference. What I remember most was a special keynote session that evening. There were three talks: Kent Wilson from UCSD showed his animated visualization of LA air pollution, then Bob spoke on building interactive tools for regular users, and finally, Alan Kay (whom I worked with a decade later at Apple) and Dick Shoup showed a demo of their early Xerox Alto work. It blew my mind. I had only really worked with vector graphics up to that time. It was the first time I had seen a black-on-white-background bit-map display, first bitblt/rasterop drawing, first paint program (Dick’s “SuperPaint”), and really the first time I had ever seen interactive pixels. I’m not sure I’ve ever gotten over it.

Late that evening, the keynote group and maybe a half dozen others went out for a late-night dinner in a private room at a restaurant outside Boulder. I sat between Kent Wilson and Lou Katz, another early pioneer from Columbia University. Lou regaled me with stories. I remember Kent encouraging me to “fall in love with working hard.” Many of us had been funded by Howard Moraff, our Program Manager at the National Science Foundation (NSF) and a significant early computer graphics advocate. I remember at the end of the evening, we all signed the rather sizeable receipt saying, “Thank you, Howard!” and mailed it off to him. The story goes that the receipt lived on for months posted on an NSF bulletin board.



Program for SIGGRAPH '74. (Used with permission, University of Colorado.)

*Mike Potel*

*potel@wildcrest.com*

*University of Chicago*

### 1975

#### A Memorable Video

1975—SIGGRAPH Conference Number 2:

*La Faim (The Hunger)*, directed by Peter Foldes using animation software developed by Nestor Burtnyk and Marcell Wein, was the hit of the video show. A real classic—no words, just sketched images and a very emotional reminder of food inequities.

*Jim Foley*

*james.foley@comcast.net*

*University of North Carolina at Chapel Hill*

#### Inadvertent Advertising

In 1975, I went to my first SIGGRAPH at Bowling Green State University. The electronic theatre was new and exciting. We still talk about the entry *La Faim*. I remember how stark and striking it was. My mother, who was there with us to keep our toddler girls, and I thought it should be the “advertising film for Weight Watchers,” a popular weight loss program at the time.

*Marylou Foley*

*mlhfoley@comcast.net*

*Self employed*

In 1975, I was an undergraduate in Cornell's Architecture program. I was a mediocre designer, and after repeated gentle (and not so gentle) prods from my architecture professors, I was looking for a new career. I had worked for Don Greenberg on the movie *Cornell in Perspective* in 1972, and he was just starting his Program of Computer Graphics, so he invited me to join him and attend the 2nd SIGGRAPH conference, in Bowling Green, Ohio. I wasn't sure computer graphics would be an interesting career; being barely out of my teenage years, I was looking for something emotionally meaningful. I had met Ed Catmull a few months earlier at the New York Institute of Technology, and he tried to convince me that computers could tell stories and convey emotions. I was skeptical, but I went to the conference anyway. In addition to the technical papers, which I barely understood, there was an informal animation show run by Tom Defanti. One of the pieces was *Hunger (La Faim)*, a short animated film produced by the National Film Board of Canada. The computer scientists were Marcell Wein and Nestor Burtnyk, and the artist was Peter Foldes. It's a powerful story about hunger and gluttony, which went on to win many international awards. I was stunned by the film. I remember sitting in my seat and staring at the screen for a long time after the film ended, oblivious to the fact that everybody else had left the room. Computer graphics could indeed tell stories and convey emotions. Ed Catmull was right. That moment changed my life. I worked on computer animation for the next 10 years, mentored by Don, Ed, and Alvy Ray Smith. I eventually moved on to other topics, ending up in computational photography, where I build tools that help other people tell their stories.

Marc Levoy  
Stanford University  
and  
Adobe Inc.

## Animation Research

At an early SIGGRAPH conference, probably in Bowling Green, Nestor Burtnyk and I submitted the animated short film *Hunger/La Faim* to be shown as a film that was produced on a computer. The film won an Academy Awards nomination in 1974 without acknowledging the role of computer animation. It is now being shown as a computer animated film. The film was very well received because it presented a dramatic story. We were thrilled by the reception.

Marcell Wein  
marcelli@wein.ca  
National Research Council of Canada

For more information see:

P. Foldes, *Hunger*, <https://www.imdb.com/Hunger/tt0071636/>

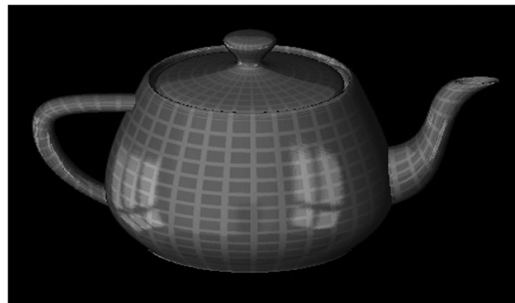
## 1976

### Teapots

The 1976 SIGGRAPH Conference, the third, happened during my stay as a summer employee at the New York Institute of Technology. We all piled into cars and drove down to Philadelphia. This is the year that I presented the first teapot paper, in which I wrote about my implementation of Martin Newell's idea on how to do reflections. The night before leaving for the conference I recorded a video of the teapot being rendered (Catmull's rendering algorithm was fun to watch in real time), because that year the conference had instituted an open VCR/Film night. Anyone with something to show could just bring it to the session. When my turn came, I hopped up on the stage, plugged in the cassette and narrated it live.

Even the technical sessions were pretty informal. I remember Ephraim Cohen gave his paper by just getting up and scribbling on the blackboard in the room rather than having any prepared slides.

This is the conference where I met Steve Levine, the chair of the next year's conference, who encouraged Martin Newell and me to put together a course on "how you do all that cool stuff that you guys do at Utah" for the next year in San Jose.



Teapot with texture and reflection.

Jim Blinn  
JimBlinn@comcast.net  
NYIT

For more information see:

J.F. Blinn and M.E. Newell. "Texture and reflection in computer generated images." <https://doi.org/10.1145/360349.360353>.

1976 & 1986

Evans & Sutherland (E&S), Pixar, and SIGGRAPH

Having a chance to work at two pioneering computer graphics companies was a life-changing experience. What most people may not remember is that both of these companies were financially strapped “startups,” long before the idea of a startup became mainstream. In spite of that, they both made amazing hardware, and SIGGRAPH was important for both companies.

*AND SIGGRAPH IS MY FAVORITE AUDIENCE BECAUSE I CAN COUNT ON THEM TO GET MY JOKES.*

JIM BLINN

Joining E&S in 1973, I had experience in 3-D graphics taking classes from Ivan Sutherland at the University of Utah. I had experience with real-time systems, which came in handy when I was hired to help write (with Steve McAllister) the graphics library and documentation for the E&S Picture System. Written in PDP-11 Assembly Language, it gave access to the power of the analog line drawing system that provided real-time graphics used for early architectural and molecular modeling applications and rudimentary simulations. It also gave me a chance to meet and work with lots of our customers directly, including many I would see at SIGGRAPH and remain friends with to this very day.

A follow-on Picture System 2 was lower cost and considerably more successful.

I attended SIGGRAPH ANSI Graphics Standards meetings, along with many others. The debates were raucous at times but rewarding and a great learning experience for me.

I joined Pixar in May 1986 to lead the software product efforts for the Pixar Image Computer, a bit-slice 2901-based 4-channel (R,G,B,A) raster system—far removed from the analog Picture Systems.

I remember well Pixar’s first 1986 SIGGRAPH when it introduced the Pixar Image Computer and, more memorably, the *Luxo Jr.* short film. Pixar’s booth was mobbed and set the stage for many SIGGRAPHs to come. SIGGRAPH helped make Pixar successful!

E&S, Pixar, and SIGGRAPH made an indelible mark on my life. They produced pioneering graphics products and, more importantly in retrospect, let

me make acquaintances and friendships that I’ve treasured.



(L) Page from a 1974 E&S Picture System Brochure; (R) the 1986 Pixar SIGGRAPH T-shirt.

Mickey Mantle  
 mickey@mmantle.com  
 Evans & Sutherland (E&S) and Pixar

For more information see:  
[https://en.wikipedia.org/wiki/Evans\\_%26\\_Sutherland](https://en.wikipedia.org/wiki/Evans_%26_Sutherland)  
<https://www.pixar.com/our-story-pixar>  
[https://en.wikipedia.org/wiki/Pixar\\_Image\\_Computer](https://en.wikipedia.org/wiki/Pixar_Image_Computer)

1976–1993

Appreciation

I must admit that one of my favorite recollections of the SIGGRAPH conferences is the positive reactions I have gotten for my films and videos. It’s nice being appreciated. And SIGGRAPH is my favorite audience because I can count on them to get my jokes.

Jim Blinn  
 JimBlinn@comcast.net  
 Jet Propulsion Laboratory and Caltech

1977

Meeting Turner Whitted

As I recall, at a SIGGRAPH conference I was sitting in a row of one of the sessions on the right side. Turner came up to me and stooped down to me to show an image—one of his early ray tracing images. I told him it was very impressive, and we started talking. I don’t remember the image, but Turner is an unforgettable person.

Ed Catmull  
 ed@catmull.net  
 NYIT

## Meeting Ed Catmull

As a graduate student, my first SIGGRAPH was in 1977. At the first session on the very first morning of the conference, a person I did not know sat down beside me. I stole a few peeks at his name tag and realized he was Ed Catmull. After recovering from the shock of sitting next to a celebrity, I worked up enough nerve to ask him some questions about the limitations of using subdivision and a z-buffer to render curved surfaces. After answering a few of my questions, he mentioned that Jim Blinn had implemented a new algorithm that had no such limitations. I responded "Oh, so have I" and pulled a photograph of a rendered transparent bottle from my notes. Ed looked at it and then looked across the room to Jim Blinn and motioned for him to join us. Jim walked over and looked at the photo. He and I started discussing our respective algorithms and came to conclusion that we had independently invented pretty much the same thing. This was all pure chance. Not a bad way to kick off a career, and more importantly, to begin friendships that last to this day.

*Turner Whitted*  
*jtw@twi.lab.com*  
*Grad Student-NC State University*

## Meeting Turner Whitted

1977 SIGGRAPH4 in San Jose:

Ed Catmull came over to me and said that he had just met someone who was working on the same curved surface rendering algorithm that I was, and I might like to talk to him. His name was Turner Whitted. We got into such an excited discussion at the back of the auditorium that somebody came around and told us to quiet down because they couldn't hear the speaker. I encouraged Turner to write up his algorithm for the next SIGGRAPH and we both presented our respective papers at the fifth SIGGRAPH in 1978. It was the beginning of a lifelong friendship.

*Jim Blinn*  
*JimBlinn@comcast.net*  
*Jet Propulsion Laboratory*

## First 3-D Rendering Course

Martin Newell and I presented a course on, as Steve Levine [RIP] requested, "how you do all that

cool stuff that you guys do at Utah." This was basically about 3-D modeling, rendering, and lighting. At one of the breaks, Andy van Dam came up and asked something like "When are you guys going to get to the interesting part?" I think he was looking for something more in the 2-D window management area, which was not what we did. Hope he eventually found what he was looking for. During Martin's talk, one of his slides got jammed in the projector and some "helpful" person from the audience came up to try to unjam it, turned the slide tray upside down to get at it, and dumped all his slides on the floor.

This is also the year that the evening film show died in the middle because the power went out.

*Jim Blinn*  
*JimBlinn@comcast.net*  
*Jet Propulsion Laboratory*

## SIGGRAPH's First T-Shirt

SIGGRAPH '77 Conference chair Steve Levine from Lawrence Livermore National Laboratory insisted on having conference T-shirts. However, the SIGGRAPH organization and conference were young and budgets small. We didn't have the funds to make T-shirts in advance and, even if we did, we didn't know if anyone would buy them. As Local Arrangements co-chair and designer of SIGGRAPH's first logo, I found a local T-shirt company willing to provide us with yellow T-shirts, which we would only pay for if we sold them. We used iron-on decals of the logo and a heat press machine on site. T-shirts proved to be a huge success and a "must have" at future conferences.

While you might think ironing decals onto T-shirts a laborious task, it was not. I would iron on decals late in the evenings in a hotel suite, where my fellow committee members and I would gather to relax and decompress after long days. Days were exhausting because SIGGRAPH '77 attracted 750 attendees, more than double the number of people who attended the previous year. We were understaffed and unprepared for the overwhelming turnout; in fact, we hired "temps" to assist with registration. Throughout the week, committee members helped in numerous ways. We all looked forward to evenings in the suite to unwind. I began each evening carefully processing T-shirts, positioning decals on the pocket area (left chest area) of the shirts, and ironing them. One evening, however,

as I was finishing the day's orders, my sleep-deprived, slap-happy friends encouraged me to make a few shirts with several decals positioned in a few immodest places on the front—which I leave to the reader's imagination—much to the amusement of all. Of course, the next day we thought the whole thing ridiculous. It was a memorable bonding experience among committee members.

Note that the logo was designed to illustrate the transformation taking place in the computer graphics industry as we moved from vector to raster displays and 2-D to 3-D imagery.



SIGGRAPH '77 chair Steve Levine in his conference T-shirt (enlarged in the second photo), while holding an outfit he modeled that day at the conference's first Fashion Show.

The show featured computer-designed fabrics.

*Maxine Brown*  
*maxine.d.brown@gmail.com*  
*Hewlett-Packard*

### Maxine Brown Selling SIGGRAPH T-Shirts

On the way to a session, I came upon a young woman selling T-shirts stacked on a card table. The T-shirts were plain solid yellow with a simple circle of black letters spelling out SIGGRAPH. Without thinking I blurted out, "For a conference on computer graphics, one would hope for a more creative T-shirt." She quietly responded, "Actually, I designed it, and you see each letter is done in a different type of rendering, starting on the bottom on the left side is line drawing, with each letter progressively more sophisticated—first 2-D lines, then closed regions, then 3-D block letters, then 3-D with hidden lines removed, finally 3-D with shading. On the right side there's more and more sophisticated raster shading with each letter." "Wow," I

reacted, more than a bit embarrassed, "That's fabulous! I'll buy one, and I'd be grateful if you would autograph it for me."

Here, 45 years later, is a photo of that T-shirt, with Maxine Brown's autograph.



SIGGRAPH 1977 T-shirt with autograph of its designer, Maxine Brown.

*Henry Fuchs*  
*fuchs@cs.unc.edu*  
*University of Texas at Dallas*

### Thrown Into the Pool!

1977—SIGGRAPH #4:

The proposed standard graphics subroutine package (today it would be called an API), the Core System, developed by SIGGRAPH's Graphics Standards Planning Committee in which I was heavily involved (along with Dan Bergeron, Andy van Dam, Peter Bono, Ingrid Carlbom, Jim Michener, Bert Herzog, and others) was revealed with presentations and a 117-page report companion to the conference proceedings. Andy van Dam was one of the strongest advocates for the standard and, in his inimitable style, had been prodding the rest of us toward completion. At the evening pool-side reception, some of those who had been prodded

in turn prodded the prodger into the pool, to the delight/amusement of many.

*Jim Foley*

*james.foley@comcast.net*

*George Washington University*

## The Birth of a Graphics Standard

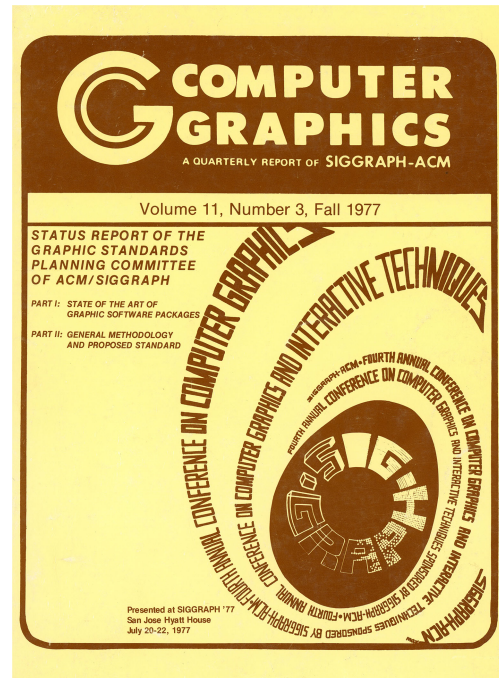
A favorite SIGGRAPH memory is from my very first conference—SIGGRAPH '77. This was the year when SIGGRAPH thought that computer graphics had matured enough to need a software standard. The Status Report of the Graphics Standards Planning Committee of ACM/SIGGRAPH was presented at the conference. I was in no small measure responsible for it. At the time, I was a graduate student who had never taken a graphics course. But to understand why this is a favorite memory, you must understand how I was drafted for this job.

I had joined Andy van Dam's research group at Brown University as a graduate student. One day in the fall of 1976 Andy said "I want you to come with me to a meeting about graphics standards. You'll sit in the back of the room and listen and learn. These people have given the subject a lot of thought, so don't speak." Raised in Europe, I understood "seen but not heard"!

A few weeks later Andy gave me a stack of papers and said: "These are draft notes by the participants at the standards meeting—let me know what you think." I read the notes and told Andy that this was not at all what had been agreed upon. Andy said, "Call them and tell them what you think." Before I knew it, I became de facto editor of the proposed graphics standards. My contributions to viewing transformations have survived, largely intact, for 45 years.

The proposed standard was positively received by SIGGRAPH '77, even though there were dissenters. For my part, I received accolades for my role, not only from the contributors of the proposed standard but also from the SIGGRAPH conference and executive committees.

What struck me about SIGGRAPH was that the attendees shared a tremendous enthusiasm for their field and seemed convinced that computer graphics was on a trajectory to enormous success. So, after a year of diversion with the SIGGRAPH standard's effort, I went back to Brown and picked a thesis topic with a new resolve to work in computer graphics.



Cover of the Status Report of the Graphics Standards Planning Committee of ACM/SIGGRAPH.

*Ingrid Carlbom*

*ibcarbom@gmail.com*

*Brown University*

For more information see:

R. D. Bergeron, J. D. Foley, P. R. Bono, I. Carlbom, T. Dreisbach, J. C. Michener, E. T. Sonderegger, and A. van Dam. "Status Report of the Graphics Standards Planning Committee of ACM/ SIGGRAPH." <https://doi.org/10.1145/988497.988498>.

## 1978

### Discussing Research Work With Jim Blinn

One of the greatest assets of the SIGGRAPH conference has been its democratization of participants across all sectors of the community: researchers, academics, practitioners, sponsors, artists, industry leaders, visionaries, and students. CG folks were always willing to share their new and exciting ideas with others, because, well, they were new and exciting! I remember SIGGRAPH 1978 in Atlanta, talking with Jim Blinn. There weren't any breakout rooms in the hotel venue then, so we found seats on a couple of chairs behind the registration desk. I told him about our



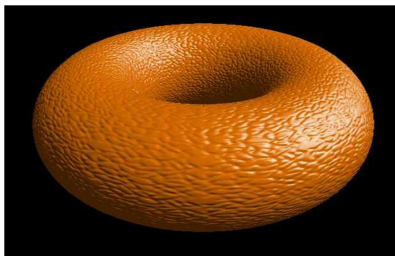
temporal antialiasing work, and, in turn, he described his new numerical algorithm for rendering potential fields (“blobby models”). Jim’s animations (and graphics techniques) were always an inspiration to the SIGGRAPH crowd. It was special to me at the time, as a young assistant professor, to have that one-on-one connection with him.

*Norman Badler*  
*NormBadler@gmail.com*  
*University of Pennsylvania*

### AV Crew to the Rescue

1978 in Atlanta. This is the year that SIGGRAPH was held concurrently with some sort of fashion show. The meeting hall that we were supposed to be in was preempted and they kicked us into a parking garage or something with very low ceilings. This meant that the screen for the projected slides would have to be very small. Therefore, the SIGGRAPH AV people went around and collected and made three or four duplicates of everybody’s slides. They then had several slide projectors around the room simultaneously so anyone in the audience could get a good view of at least one.

This was all because SIGGRAPH had not yet worked its way up to being a reliable venue for large groups and the conference hotels and conference centers didn’t yet trust us to actually satisfy the projected audience guarantees. (The previous year in San Jose had a similar problem with overbooking the hotel rooms.) This is also the year that I brought a roll of exposed film to the conference, hoping I’d be able to get it developed on site in time to give my talk on bump mapping. Fortunately, someone at the hotel found a service and I got my slides in time. The film development delay was a perennial problem for presentations before computers could just show images live on stage.



Leather donut.

*Jim Blinn*  
*JimBlinn@comcast.net*  
*Jet Propulsion Laboratory*

### Many Fabulous Hairdos

SIGGRAPH ’78 overlapped a Hairdressers’ Association conference in the same venue. We saw the most astonishing coiffures and dresses.

*Edward Britton*  
*brittoneg@gmail.com*  
*US Defense Dept.*

### Conference A/V in the 19-Inch TV Era

SIGGRAPH conference audio-visual support was not always world-class. SIGGRAPH ’78 was held at the Atlanta Hyatt Hotel, in a low-ceilinged underground “ballroom” with numerous floor-to-ceiling concrete posts, next to which a dozen or so 19-inch televisions were placed on carts. The paper we were presenting had a video we made demonstrating our new interactive technique on the monochrome vector displays of the time, which showed thin white lines moving on black video screens. During our talk, the two of us not speaking were running around desperately adjusting the TV sets to try to get the video to show enough to make our points.

*Michael Pique*  
*pique@siggraph.org*  
*University of North Carolina at Chapel Hill*

For more information see:

E. G. Britton, J. S. Lipscomb, and M. E. Pique. “Making nested rotations convenient for the user.” <https://doi.org/10.1145/965139.807394>

### Ellipsoid Solids Dancer

To illustrate his technical paper on “A numeric utility displaying ellipsoid solids,” Don Herbison-Evans created an animation of a ballet dancer. The rendering technique was very good, and the animation was spectacular. We had all seen 3-D motion, but not truly beautiful 3-D motion like this. Somewhat to Herbison-Evans’ surprise, the enthusiastic crowd response demanded an encore showing of his film during the technical session and again on “film night.” As I recall, the frames were individually printed using a pen plotter and then captured on film a frame at a time. Herbison-Evans’ interest in dance was life-long: he was a competitive ballroom dancer for over 20 years.

*Nick England*  
*nick@3rdtech.com*  
*Ikonas Graphics Systems*

For more information see:

D. Herbison-Evans. "NUDES 2: A numeric utility displaying ellipsoid solids, version 2." <https://dl.acm.org/doi/10.1145/965139.807415>.  
<http://satd.com.au/don/pubs/biog.html>

## Getting Started

This was my first SIGGRAPH. It was the last time all attendees could stay in one hotel, and I think it was the first with an equipment show. [Editor's note: the first organized equipment show was in 1976. An informal show occurred in 1975.]

After collecting my proceedings and having dinner, I headed upstairs to read papers. Bob Holzman [RIP] asked me what I thought I was doing. I told him, and he said "Read that later. Right now, we'll go find people to play poker." Later I came to understand that the conference was about networking and Bob was getting me started on that.

*Julian Gomez*

*julianegomez42@gmail.com*

*Jet Propulsion Laboratory*

## Co-Presenting With Jim Blinn

Toward the end of the SIGGRAPH '77 Conference, Jim Blinn asked me if I intended to submit my curved surface algorithm to next year's SIGGRAPH. I said "I don't know. Are you going to submit yours?" He responded "yes," and I said "okay, so will I." Fast-forward one year to SIGGRAPH '78 in Atlanta. Late at night after arriving at my hotel on the day before the opening session I received a call from Jim asking if I wanted to do a joint presentation of our papers the next morning. I was reluctant since I had already rehearsed my talk. Nevertheless, we got together, merged our slide decks, and worked out a format for the talk. The next morning, we both went to the podium. I started off with an overview, Jim followed with the math details, I then presented the particulars of my method, Jim followed with the details of his method, and we jointly answered questions from the audience. That was my first SIGGRAPH presentation and it remains my favorite.

*Turner Whitted*

*jtw@twi.lab.com*

*Bell Labs*

For more information see:

T. Whitted. "A scan line algorithm for computer display of curved surfaces." <https://doi.org/10.1145/800248.807363>.

J. F. Blinn. "A scan line algorithm for displaying parametrically defined surfaces." <https://doi.org/10.1145/988437.988439>

## The Whitted–Blinn Saga, Continued

Turner and I submitted papers to SIGGRAPH '78 describing our different algorithms. They were both accepted and, along with a few others, were selected as good enough to be forwarded to *Communications of the ACM (CACM)* instead of being printed in the *SIGGRAPH Proceedings*. And the CACM reviewers rejected them. The reviews of my paper were rather savage. They didn't believe that I actually implemented the algorithm.

So Turner and I were going to try to merge the papers and re-submit to CACM. But every time I took out my paper and looked at the reviews I got so depressed that I put it aside again. Finally, Jeff Lane and Loren Carpenter came up with another algorithm and took the lead to merge all three papers. That paper was accepted and published in CACM. And we got CACM's first color cover.



L to R: Whitted glass and bottle; Lane-Carpenter teapot and cup and saucer; Blinn goblet. (Image courtesy of Turner Whitted; design by L. Schwartz; used with permission.)

*Jim Blinn*

*JimBlinn@comcast.net*

*Jet Propulsion Laboratory*

For more information see:

J. Lane, L. Carpenter, T. Whitted, and J. Blinn. "Scan line methods for displaying parametrically defined surfaces." <https://doi.org/10.1145/358808.358815>.

## First Ikonas Customer

When SIGGRAPH '78 in Atlanta ended, we met Chuck Csurí [RIP] from Ohio State University in the Lobby Bar at the Hyatt Hotel where the conference had been held. I think Chuck was with his new hire Marc Howard (from the same NC State Lab we had worked in) and grad student Wayne Carlson. The occasion was Chuck's delivery to us of a purchase order for five Ikonas 512 X 512 X 2 display memory boards and a kit for a chassis and backplane. It was Ikonas' first order from a paying customer.

In retrospect, we could have built the chassis for OSU in less time than it took Mary to write bug-free instructions so Marc could build it.

*Mary Whitton and Nick England  
mcwhitton@gmail.com, nick@3rdtech.com  
Ikonas Graphics Systems, Inc.*

For more information see:  
<https://www.graphics-history.org/ikonas/index.htm>

## 1979

### In Color!

My hotel room had a color TV. I happened to catch an episode of *Star Trek TOS* (The Original Series). It was a revelation that the series was in color. I grew up in a rural area with only a few TV channels and a black-and-white TV at home; this was the first time I've ever seen *Star Trek TOS* in color. Quite amazing! It wasn't until many years later that I learned what it meant to have a red shirt in a *Star Trek* episode.

*Julian Gomez  
julianegomez42@gmail.com  
Jet Propulsion Laboratory*

## videoCel—Computer Creations

With 31 SIGGRAPHs under my belt (1979, 1981–2010), I have been privileged to meet and work with many graphic pioneers in both industry and academia. Each summer I always looked forward to attending SIGGRAPH—the vendor exhibition, electronic theater, emerging technology demos, latest technical paper presentations, and courses. While many memories have faded, my first SIGGRAPH is unforgettable.

In 1975, while working at digital animation startup Computer Creations, I had the pleasure to meet Dr. Tom DeFanti and tour the Electronic Visualization Lab, UIC. Four years later, Dr. DeFanti invited me to submit our videoCel© digital animation demo reel to SIGGRAPH '79 and it was accepted.

The format of the first electronic theater was much less formal than today. Each of the seven accepted animations was introduced by their respective submitter.

I began our presentation with a brief overview of the Computer Creations' marketplace (producing animation for broadcast television commercials), our videoCel© software pipeline and hardware systems (DEC PDP-11/45, Comtal 512x486 color frame buffer, RGB-NTSC color encoder, Ampex HS-200 "Slo-Mo" disk recorder and Ampex AVR-1, a 2" Quad VTR). After my introductory remarks, I simply cued the media team to "roll the tape." It highlighted several of our recent television commercial successes.

Our demo reel ended with a 30-second commercial for United Airlines that featured Santa in his sleigh pulled by eight reindeer flying across a moonlight sky. Just before Santa passes off screen, he leans forward and gives the audience a "Ho, Ho, Ho!" and the scene ends with the caption "Merry Christmas from the friendly skies." Overlaid on the serene moonlight sky.

The SIGGRAPH audience responded with great enthusiasm and this videoCel© animation reel joined the six other presentations on SIGGRAPH Video Review #1 (1979). What a start to 31 conferences. Thank you, Tom.



A single frame from the United Airlines TV commercial that was copied from a Computer Creations brochure. (Image courtesy of Herman Towles; used with permission.)

*Herman Towles  
herman.towles@gmail.com  
Computer Creations, Inc.*

## Starting Strong

1979 Chicago, the first SIGGRAPH I attended. I was amazed at the splendor of advanced CG at the time. Moreover, Edwin Catmull, Alvy Ray Smith, Jim Blinn, Turner Whitted, and other pioneer researchers were young and full of vitality. I felt great potential for the

future of CG and SIGGRAPH. Since then, I have participated 45 times in a row.

*Yoichiro Kawaguchi*

*Professor Emeritus, University of Tokyo*

*yoichiro@kawaguchi.net*

## THE 1980s

### 1980

#### Back in Seattle

I lived in Seattle for about a year in the early 1960s—about the time of the Seattle World’s Fair. My dad had moved our family and me from the Chicago area to Seattle in 1962 after he joined the Boeing Company. In 1963, Boeing transferred my dad to New Orleans. But my short encounter with the water, the mountains, and the forests of the Pacific Northwest always left me longing to return.

One of the opportunities to return to the Pacific Northwest was the 7th SIGGRAPH Conference in 1980. It was my second SIGGRAPH conference—my first being the 6th SIGGRAPH Conference in Chicago. The events that stood out to me were the reception, a papers presentation, and a souvenir.

*The Reception:* We were taken by ferry from downtown Seattle to Blake Island and Tillicum Village. There amongst the trees were fire pits. And arrayed around the fire pits were frames that held whole salmon filets. Nearby was a covered eating area. I noticed Loren Carpenter and his family at one of the tables. With the number of attendees at current SIGGRAPH conferences, it is doubtful that a 1980-style reception could take place.

*The Papers Presentation:* I got my master’s degree from the University of Texas at Dallas in 1978. I took Computer Graphics classes with Henry Fuchs and fellow students Alain Fournier (UBC), Don Fussell (UT Austin), Bruce Naylor (Bell Labs), and Sam Uselton (NASA Ames). I always looked forward to going to the SIGGRAPH conferences to meet up with these people. In 1980, Alain Fournier was to present a paper at one of the sessions. Loren Carpenter was also presenting a paper at that same session. Alain went first. Loren followed with his paper on fractals. To end his talk, Loren ran his video *Vol Libre*—an aerial “trip” through fractal mountains while The Beatles “Flying” played. When that video made it to VHS tape, the music that accompanied the video had changed—licensing issue, perhaps.

*The Souvenir:* There were numerous exhibitors in the Seattle Center Coliseum. One of those exhibitors was Ikonas. I happened to notice that they were displaying a still image from Loren Carpenter’s *Vol Libre*. They printed off a copy of that image for me. I still have it.

*Comment:* I was glad when SIGGRAPH decided to hold the annual conference in Vancouver in 2011. So many of my favorite “shows” are filmed in and around Vancouver. I participated in the 2014 and 2018 SIGGRAPH Conferences in Vancouver. I had looked forward to attending the 2022 Conference in Vancouver in person, but it didn’t happen.

*Phil Alberton*

*philon1720@att.net*

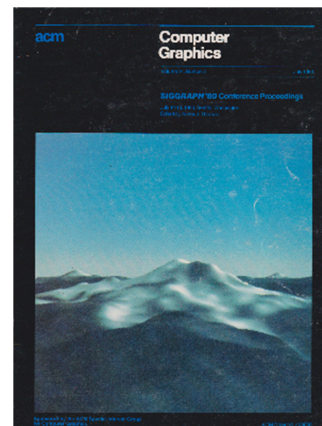
*Harris Data Communications*

#### Fun With Fractals

I had the privilege of working with Loren Carpenter while he was still at Boeing. Loren and I met via phone before I accepted a job in Seattle in 1977. The hiring manager wanted to convince me that Boeing had some good graphics people. Loren convinced me after we had talked for 2 minutes.

Fast-forward three years. Loren’s heart was to get into making movies, especially with George Lucas and Ed Catmull’s group at Industrial Light & Magic. Loren decided to make what became the first fractal film, *Vol Libre* (<https://vimeo.com/5810737>).

Loren asked to use our research group’s VAX outside of working hours. Management (Ed Edwards and I) agreed. Loren and his wife Rachel spent countless hours developing the film. They convinced Dicom (a company that manufactured and sold microfilm recorders) to produce the film. And SIGGRAPH accepted Loren’s paper on rendering fractal surfaces. SIGGRAPH published another of his images (a view of Mt. Rainier from the north with Mt. Adams and Mt. St. Helens in the distance) on the cover of the proceedings.



Loren Carpenter’s Mt. Rainier—Proceedings Cover 1980. (Image courtesy of Loren Carpenter; used with permission.)

I have two indelible memories of the session where Loren presented his work. First, remarkably there were two papers about fractals. Together, they created a real buzz, and the session was jam packed. Alain Fournier (University of Texas at Dallas) presented his paper first. He concluded by saying that he wanted to make a film featuring fractals. Loren stood up to give his paper and told the audience something like: "Alain said he wanted to make a fractal film. Well, I have." Second, Loren held his film until the end of his talk. He showed *Vol Libre* with its original Beatles' "Flying" soundtrack. Loren received the first and only standing ovation I've ever heard after a technical paper.

*Vol Libre* earned Loren an interview. He got the job, left Boeing, and has earned many well-deserved plaudits, including technical Academy Awards, the SIGGRAPH Achievement Award, and ACM Fellow.

*Dave Kasik*  
*dave.kasik@gmail.com*  
*Boeing*

For more information see:

L. C. Carpenter. "Computer rendering of fractal curves and surfaces." <https://doi.org/10.1145/965105.807478>.  
 Fournier and D. Fussell. "Stochastic modeling in computer graphics." <https://doi.org/10.1145/988447.988448>.  
 L. C. Carpenter. *Vol Libre*. <https://vimeo.com/5810737>.

## My Second Memorable Video

1980, the 7th SIGGRAPH. *Vol Libre* by Loren Carpenter using fractals to generate rugged mountain landscapes stole the video show and received a standing ovation.



Loren Carpenter's Fractal Mountains from *Vol Libre*. (Image courtesy of Loren Carpenter; used with permission.)

*Jim Foley*  
*james.foley@comcast.net*  
*George Washington University*

## Vol Libre Inspired Carla's Island

In the film show, I was impressed by Loren Carpenter's *Vol Libre* and also somewhat envious. That film and looking at reflections in the water during a boat ride across Puget Sound to a wonderful baked salmon dinner reception inspired me to start thinking about the film *Carla's Island*, which was shown at SIGGRAPH '81.

*Nelson Max*  
*max@cs.ucdavis.edu*  
*Lawrence Livermore National Laboratory*

For more information see:

N. Max. *Carla's Island*. <https://www.youtube.com/watch?v=AWkwLyEK5ew>.

## Salmon

Bob Holzman [RIP] had a project: photographing the backs of famous people. The papers reception was on an island, not in the city, so it took a while on a ferry to get there. On the boat, Bob had my girlfriend and me stand behind various people while he took the photos. The dinner was spectacular—fresh clam soup, salmon roasted over a fire. . . But the whereabouts of the photos are unknown.

*Julian Gomez*  
*julianegomez42@gmail.com*  
*Jet Propulsion Laboratory*

## Exhibition Setup

I was the 1980 Conference co-chair and Dave Kasik was the exhibits chair. We had been working on the conference for at least two years including bringing in the Kenworthy organization to provide the professional level of quality exhibits management we felt our exhibitors deserved. As I drove up to the Convention Center the weekend before the conference opened, I saw all the large trucks parked waiting to unload equipment for the exhibition. It hit me just what we had created!

*Bob Ellis*  
*bobel@ix.netcom.com*  
*Boeing*

## Exhibit Adventure

I ran the Exhibits in 1980 and quickly realized that my job commitments would not let me do the job as well as Maxine Brown had done it in 1979. So SIGGRAPH hired a professional exhibit management firm. I quickly learned that I knew less than nothing about running

an exhibit and deferred detailed questions to Hank Cronan and his assistant.

The team succeeded in selling all the space in the now defunct Seattle Coliseum. It was a tough venue and designed for exhibits, professional basketball, ice shows, concerts, etc.

The biggest problem was power. There were no power outlets in the floor (tough for power and ice to co-exist). All the power dropped from the ceiling.

We sold out the exhibit space on the main floor. There was enough demand that we also sold out the space on the concourses. It was a beautiful sight and site. At least until the show opened.

The first day opened at noon sharp. And the power failed. A quarter of the exhibits went dark. Took about 30 minutes to restore power. It was impossible to warn the staff at the Coliseum just what a current draw a large computer show would generate.

In spite of the failure, the show was a huge success and set the stage for bigger and bigger shows.



Show floor at SIGGRAPH '80.

*Dave Kasik*  
dave.kasik@gmail.com  
Boeing

### Military Speaker

This was one of the years that SIGGRAPH had conference dinners, each of which was focused on a particular topic. I went to the one on rendering.

After dinner people got up to make comments. One of them was somebody from the military who broadly and roundly castigated the entire SIGGRAPH community for not doing anything useful, which he specifically defined as making pictures of tanks and military vehicles and even military simulations.

Unsurprisingly this didn't go over too well. One of the more outspoken members of the SIGGRAPH community

later referred to this officer as Colonel Asshole (or maybe it was General Asshole). Shortly thereafter Lance Williams [RIP] got up and nullified the officer's speech, gently pointing out multiple holes. Lance was one of those rare people who could be comprehensive without denigrating any of the people involved, including the officer.

*Julian Gomez*  
julianegomez42@gmail.com  
Jet Propulsion Laboratory

### Allure

The first SIGGRAPH I went to was in Seattle, 1980. I was working at Comarc, a Geographic Information System (GIS) company in San Francisco, and graphics were a big deal. We were beta testing one of the first high-res raster terminals (which would lead to later starting Jupiter Systems). I was overwhelmed by the displays, the absolute electric feeling of the gathering—excitement poured out of people, everyone was grinning, laughing, or talking a mile a minute. No one wore a tie or jacket; most didn't have an unwrinkled shirt. I had been to many conferences for semiconductors and electronics, but this one had artists, many women, guys with white hair; most of the young men had beards. It was the most eclectic, chaotic, and exciting conference I had ever attended. Tiny by comparison to NCC and other mega shows and ten thousand percent more informative. It took me over a week to sort out what I had learned, what I had heard, and what I had seen. The needle had been injected and I was a hopeless SIGGRAPH junkie thereafter.

*Jon Peddie*  
jon@jonpeddie.com  
COMARC

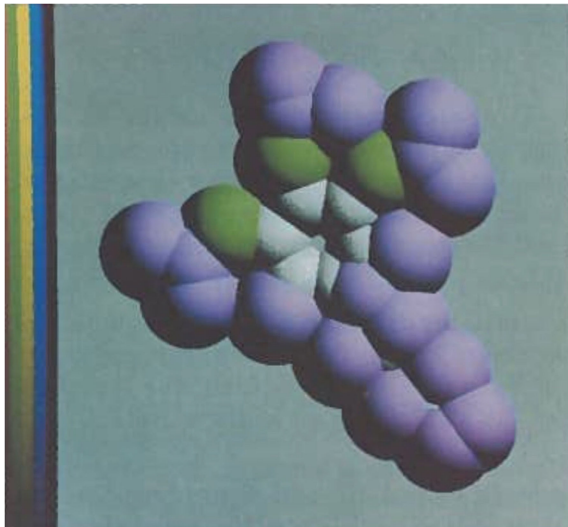
### 1980 & 1985

#### SIGGRAPH Audience Reactions: Applause and Guffaws

Of all the SIGGRAPH conferences I've attended since 1977, two audience reactions stand out: 1) spontaneous applause in 1980 and 2) widespread guffaws in 1985. At SIGGRAPH 1980, Turner Whitted was presenting his now-landmark ray tracing paper. At some point, he showed a video sequence of transparent, and reflecting, and refracting spheres orbiting above a checkerboard. The audience was silent, in awe. Then, he showed a building scene with a reflecting pool in front of the buildings, with the buildings reflected in the water. Then, he showed a pebble dropping into the water, and the spreading waves reflecting the wavy

images of the buildings. At that, the audience broke into spontaneous, sustained applause. A very hard audience, that SIGGRAPH audience, but one with heart.

In contrast, at SIGGRAPH 1985, UNC Ph.D. student Jeff Hultquist was presenting our paper on the Pixel-Planes 3 hardware graphics system and a collection of software algorithms. The results included rendered images from the functional simulator of the successor hardware, Pixel-Planes 4. Jeff showed renderings of UNC's Old Well with and without shadows citing expected rendering times of 13.8 milliseconds and 9 milliseconds. Then, he showed a shaded rendering with spheres of the antibiotic drug Trimethoprim that contained dozens of atoms. When he said that the expected time to render that image was 1.7 milliseconds, loud guffaws could be heard throughout the hall. At the next break, the team of authors gathered outside the hall. We had all heard the guffaws. Could we ever really build a full-scale Pixel-Planes 4, in how many years? The guffaws fired us all up. The following year (at SIGGRAPH '86), we returned with Pixel-Planes 4. It featured over 2000 custom-designed chips, the most of any university project to that time, running at speed.



Trimethoprim rendered on PixelPlanes 4 simulator using Z-buffer and unsorted data. Estimated rendering time on P<sub>x</sub>PI4 hardware was 1.7 msec. Image from the 1985 paper cited below.

Henry Fuchs  
 fuchs@cs.unc.edu  
 University of North Carolina at Chapel Hill

For more information see:  
<https://dl.acm.org/doi/abs/10.1145/325165.325205>

## 1980–1989

### Workstation Wars

1980s—multiple SIGGRAPH trade shows—the workstation wars, prior to powerful personal computers: A multitude of vendors—Digital Equipment Corporation, Hewlett Packard, IBM, Apollo, Sun Microsystems, Tektronix, SGI, Seiko and then later Stellar and Ardent—showed their equipment.

Jim Foley  
 james.foley@comcast.net  
 The George Washington University

## 1981

### Benoit Mandelbrot and David Em

I'll never forget Benoit Mandelbrot showing us and talking about his amazing fractals. I got to meet David Em and discuss his great work *Persepolis* in the Frame Buffer Show. And I spoke with Jim Blinn about his role in *Persepolis*. I remember being sponsored by the Long Beach Museum of Art to attend and cover The Computer Culture Art Show organized by Darcy Gergarg and J. J. Larrea and talking with the artists Copper Giloth, Zsuzsa Molnar, Frank Dietrich, and others about their work and my own BrainWave Drawings. It was an incredibly memorable experience.

Nina Sobell  
 nina@ninasobell.com  
 UCLA

## 1981–1982

### Online Frame Buffer Art Shows

This year was the first online frame buffer art show, which I put together. It's a longer story that's been told elsewhere.

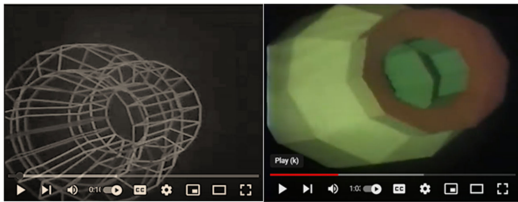
1982 was the second online frame buffer art show, which again I put together. In terms of exhaustion, it was pretty much a repeat of the previous year.

Julian Gomez  
 julianegomez42@gmail.com  
 Jet Propulsion Laboratory

### It Really is Rendered in Real Time

SIGGRAPH '81 Dallas—Ikonas Graphics Systems booth: We were demoing a real time shaded hidden-surface display of a 3-D object with about 200 polygons (a toroid we called the lug nut). Nothing except flight simulator systems had done that before. A guy came into the booth

who said he was a journalist and that he knew all about 3-D graphics. He insisted that we were just showing a movie loop because he had been assured what we were doing was impossible. I handed him the joystick and said "here, you rotate and scale it." He did so but still insisted it must be precomputed images. I told him that if we could store and replay all possible images in real time, then surely that was as good as computing the image on the fly. He never was convinced.



The lug nut; (L) antialiased lines, (R) Gouraud shading.

*Nick England, then president of Ikonas Graphics.  
nick@3rdtech.com  
Ikonas Graphics Systems*

For more information see:  
<https://youtube/KCq82OpVpSI?t=52>

## First SIGGRAPH Paper

I gave my first SIGGRAPH paper in 1981 and the session chair was my Ph.D. supervisor. He went through the standard introduction and at the end said that I was a new father: my daughter had been born three weeks earlier. I was already nervous about giving the paper and this certainly didn't help.

A year later we were headed to the film show with my daughter and several people pointed to us and said, "There she is." It took me awhile to realize that they remembered the introduction to my presentation from the previous year. This was a pleasant surprise. SIGGRAPH truly is a community.

*Mark Green  
mark.green@uoit.ca  
McMaster University*

## 1982

### My Technical Paper Experience

It was SIGGRAPH '82 in Boston. My paper that was based on my Ph.D. research with my Ohio State advisor Frank Crow was accepted for presentation.

As I prepared my presentation, several of my colleagues advised me to be prepared for tough

questions from the technically astute audience. In particular, they advised that I would surely get a probing question from Prof. David Rogers because of history and the nature of my topic.

It was my first time in front of an audience that large, with my own face projected in a 15-foot diagonal screen behind me. I think I did a good job explaining my material and giving appropriate attributions to research influences, and it came time for questions.

The first person at the microphone was none other than Prof. Rogers. He asked two questions that indeed made it feel a little like a dissertation defense. The questions were indeed appropriate and probing. His observations allowed me to tweak a few things before I actually did that defense. I'd like to think that my results were better because of this exchange.

*Wayne Carlson  
waynecarlson@icloud.com  
Student*

## Getting My First Advice From Ed Catmull

1982 was my first SIGGRAPH. We had just started Pacific Data Images (PDI) and I had just written our first renderer. Before PDI, while I was an engineer at HP's RF & Microwave Division, in Palo Alto. I was fortunate to be able to watch the Berkeley class on CG taught by Ed Catmull, Alvy Ray Smith, and Jim Blinn over a microwave link. (That was the first and only CG class I have taken in my life.) Ed stated clearly in his lecture that antialiasing should not be an afterthought.

When I joined PDI, I took on the responsibility for writing our first renderer. I took Ed's advice to heart. So, when I made it to the Boston SIGGRAPH, I was a fish out of water since I came from a different world. I had just completed my renderer and I had a few Polaroids of the first few images I created. At the conference hotel, I saw Ed walking down the hallway and I ran over to introduce myself. I'm not sure what he thought of me at that point, since he didn't know I watched his class. When I showed him the images, he was surprised that they were antialiased. That 20-30 minute encounter along with Ed's gracious and insightful advice started a friendship for life and gave me the confidence to build PDI and many of our tools.

Besides the renderer, I ended up writing our first desktop animation system, our first interactive lighting tool, our first compositor, our first facial



animation tool, and many others. Even though Ed and I later became competitors in the animation world, our conversation and friendship continued behind the facade of Hollywood and regularly at SIGGRAPH.



The first few pictures we created at PDI that I showed Ed.

Richard Chuang  
 richard.chuang@acmsiggraph.org  
 PDI

### Reception!

1982 featured one of the best receptions I've ever attended. The venue in Boston was great: the Boston Museum of Science. Seeing lightning in action with a Van der Graaf generator was terrific by itself. The food made it even more special. Apparently, the organizers were faced with a large conference surplus. Therefore, they decided to splurge on the reception. Having bowls of lobster and other types of seafood made for a gustatory delight. As well as gorging on lobster, I also got to see my first game at Fenway, a real thrill for this die-hard baseball fan.

Dave Kasik  
 dave.kasik@gmail.com  
 Boeing

### The Fun of Interactive Computer Graphics

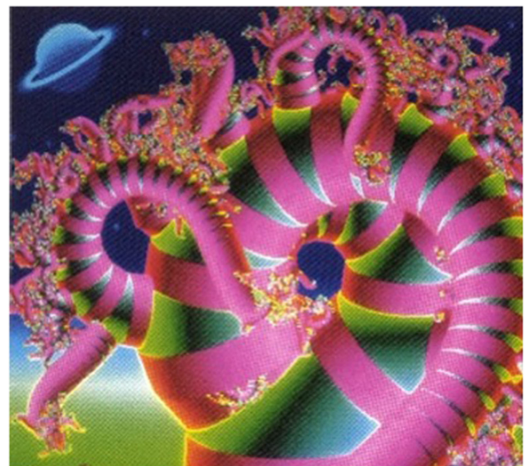
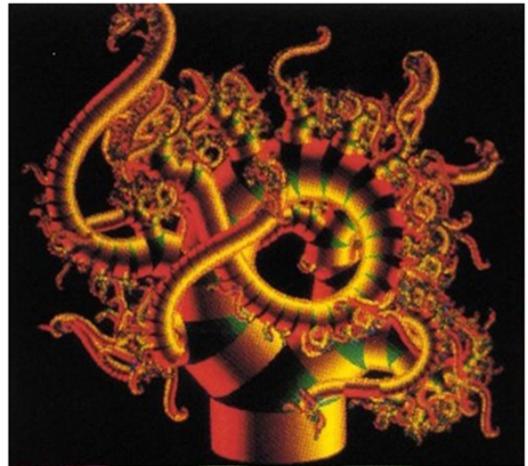
I believe it was 1982, when a new edition of Foley & van Dam's textbook *Fundamentals of Interactive Computer Graphics* appeared. Andy van Dam's students were slyly passing around a two- or three-page parody, "The Fun of Interactive Computer Graphics." I may or may not have a copy; someone who does should be sure it is scanned and put into this special issue. [Editor's note: sadly, this did not happen.]

Michael Pique  
 pique@siggraph.org  
 The Scripps Research Institute

### 1982-1983

#### Kampai With Pioneers

In Boston in 1982, I was able to present my technical paper on self-generating and self-organizing artwork, *Growth*, in an overcrowded, large hall. The memory of being surrounded by a large number of questioners as soon as I stepped off the stage is still vivid.



Images provided by the artist, Y. Kawaguchi.  
 (Used with permission.)

In 1983, I presented *Growth: Mysterious Galaxy* at the Electronic Theater. I heard that all the scenes of this work, the shocking organic expression of meta-balls by the ray tracing method, appeared in the dreams of those who saw it.

Yoichiro Kawaguchi  
 Professor Emeritus, University of Tokyo  
 yoichiro@kawaguchi.net

## 1982–1994

## The Magic of SIGGRAPH Innovations

As a graduate student from the early 1980s to the early 1990's, going to the SIGGRAPH technical paper sessions was always a magical and inspirational experience. The feeling of sitting in a cavernous, dark, and over-air-conditioned auditorium while watching never-before-seen graphics innovations being presented was awe-inspiring and thrilling. Seeing spectacular graphics effects for the first time was so exciting, a feeling I will never forget. I looked forward to going to SIGGRAPH every year and learning about the next great thing. Here is my list of the most memorable SIGGRAPH paper presentations from my grad student years.

1982, J. Blinn, "Light reflection functions for simulation of clouds and dusty surfaces." <https://doi.org/10.1145/800064.801255>

1982, J. Blinn, "A generalization of algebraic surface drawing." <https://doi.org/10.1145/357306.357310>.

1985, M. Girard and A. A. Maciejewski, "Computational modeling for the computer animation of legged figures." <https://doi.org/10.1145/325334.325244>.

1985, K. Perlin, "An image synthesizer." <https://doi.org/10.1145/325165.325247>.

1985, W. T. Reeves and R. Blau, "Approximate and probabilistic algorithms for shading and rendering structured particle systems." <https://doi.org/10.1145/325334.325250>.

1987, C. W. Reynolds, "Flocks, herds and schools: A distributed behavioral model." <https://doi.org/10.1145/37401.37406>

1987, D. Terzopoulos, J. Platt, A. H. Barr, and K. Fleischer, "Elastically deformable models." <https://doi.org/10.1145/37401.37427>.

1988, R. A. Drebin, L. Carpenter, and P. Hanrahan, "Volume rendering." <https://doi.org/10.1145/54852.378484>.

1988, A. Witkin and M. Kass, "Spacetime constraints." <https://doi.org/10.1145/54852.378507>.

1988, R. Barzel and A. H. Barr, "A modeling system based on dynamic constraints." <https://doi.org/10.1145/54852.378509>.

1988, D. Terzopoulos and K. Fleischer, "Modeling inelastic deformation: Viscoelasticity, plasticity, fracture." <https://doi.org/10.1145/54852.378522>.

1990, K. K. Sims, "Particle animation and rendering using data parallel computation." <https://doi.org/10.1145/97879.97923>.

1992, T. Beier and S. Neely, "Feature-based image metamorphosis." <https://doi.org/10.1145/133994.134003>.

1994, K. Sims, "Evolving virtual creatures." <https://doi.org/10.1145/192161.192167>.

1994, X. Tu and D. Terzopoulos, "Artificial fishes: Physics, locomotion, perception, behavior." <https://doi.org/10.1145/192161.192170>.

*David Breen*

*david@cs.drexel.edu*

*Rensselaer Polytechnic Institute*

## 1983

## Conference Growth Pains

I was SIGGRAPH '83 co-chair during a rapid growth period. Each year brought new challenges as the conference increased faster than we could plan. Detroit was no exception. We were particularly worried about course lunches, which were included in course registration. Could everyone get fed and back in time for afternoon course sessions?

Monday morning, things went fairly smoothly. The coffee break did not have major problems. I wandered over to the lunch area just after courses broke for lunch. It looked like a disaster zone. Attendees were in long lines waiting to get seats and food. It was our worst nightmare.

I stood wondering what I could do to speed things up. An attendee stopped next to me and scanned the scene. I could see that he saw what I saw—pandemonium—and perhaps a lack of planning by conference organizers (that would be me). He looked at me and then he looked down at my badge with a ribbon hanging off it emblazoned with "conference co-chair," which I was beginning to wish I had not worn. He looked back up at me and said "You're running this? Looks like it will be quite a long wait for lunch. I'll go upstairs and have a beer, then come back for food." He turned to go and added "Great conference!" Needless to say, this was a giant relief for me. The backlog did clear and everyone got lunch and most people were on time for afternoon courses.

Over the years, there have been major hiccups in the food service. But through it all, SIGGRAPH attendees have been very understanding. They roll with the situation and let things work themselves out because SIGGRAPH conferences are very much family gatherings: not everything goes as planned, but we are all in it together.

*Kellogg Booth*

*ksbooth@cs.ubc.ca*

*University of Waterloo*

## Conference Proceedings

Up until 1983, not every paper that was presented at the conference appeared in the proceedings. For the

first SIGGRAPH Conference in 1974, there were no proceedings *per se* because of budget concerns. Instead, most of the papers appeared in a sequence of issues of the Pergamon journal *Computer & Graphics*.

Not every paper that was presented appeared, and some papers had revised titles or author lists. After that, there was always a proceedings, which was distributed to conference attendees and to all SIGGRAPH members as a special issue of the *Computer Graphics Quarterly* newsletter. In many of the years, the program committee selected a few of the “best” papers for publication in a journal [originally this was 1983 *Communications of the ACM*, but later it was the *ACM Transactions on Graphics* (TOG)]. Those papers were presented at the conference and appeared in a printed supplement to the proceedings, so attendees had a hard copy. However, the papers were not sent to the members because they got only the papers in the proceedings. The reason this was done related to rules established by the ACM Publications Board that prohibited republication of papers that had already been widely disseminated. For many SIG conferences, the proceedings were only provided to attendees (usually a few hundred people), but SIGGRAPH conferences rather quickly had a larger number of attendees and—more importantly—the membership rose well above 10,000 people. So, the fact that the conference proceedings went to every member of ACM SIGGRAPH meant that papers in the proceedings were considered to have been widely disseminated and thus were not eligible for publication in ACM journals. In at least one case, there was a paper presented at the conference that never appeared in a journal.

My 1983 co-chair, John Beatty, and I decided we wanted all accepted papers to appear in the proceedings. This ran afoul of ACM Publications rules. We asked for an exception that was not granted. We replied that our conference would not select any “best” papers for publication in ACM TOG. We thought this was in the long-term interest of the conference and the research community. A number of TOG editorial board members requested that we relent because TOG was still building a backlog of articles and was relying on papers from our conference to fill its issues. This was a short-term problem that was expected to be resolved by the following year, so TOG was willing to go without papers from future conferences but really wanted papers from the 1983 Conference. We were swayed, but we also realized that if we gave in, there was no assurance the practice would not continue into the future. We felt we had leverage that we could use to make the change but giving up that

leverage might mean the change might not happen. Fortunately, we came up with a mutually agreeable solution. Papers could appear first in ACM TOG and the conference could reprint them in the proceedings. Everyone agreed this would not violate the Pubs Board policy on republication.

There was a timing problem. The next available TOG issue would come out well after the conference and we needed to print the proceedings prior to the conference so attendees got their copies when they picked up their registration materials. This too had a solution. TOG typeset the papers in journal format as they would eventually appear and then gave us the galleys, which were included in the SIGGRAPH '83 proceedings. So that's what we did. Starting in 1984, every paper accepted for the conference appeared in the proceedings, which is now recognized as journal-equivalent because of the rigorous reviewing process that SIGGRAPH employs.

There is a coda to this story. Recall that in 1974 there were no proceedings because of budget concerns (SIGGRAPH was a relatively new SIG and had not built up a fund balance). Printing costs would, therefore, be a risk. The 1983 conference budget included the full cost of printing the copies of the proceedings for attendees. This was more than for previous years because we were printing all the papers instead of leaving a few of them out because they were going to a journal. We had also added a cumulative index because SIGGRAPH '83 was the 10th conference. We thought this would be a contribution to the community because there was no ACM distribution list yet. This too increased page count and thus printing costs. What we had not factored in was the need for ACM SIGGRAPH (the organization) to print more than ten thousand additional copies for our members, far more than the conference printed. No one had budgeted for that. We were duly admonished for this oversight because even though we came in almost precisely on budget for the conference, we had added about \$100K to the organization's expenses for that year. Turned out that \$100K was a significant fraction of the conference surplus that was supposed to pay for other things. Live and learn.

*Kellogg Booth*  
*ksbooth@cs.ubc.ca*  
*University of Waterloo*

---

## Natural Phenomena

This year there was a panel on natural phenomena. Although Chuck Csuri was the formal organizer, he

made me actually organize it. I coined the term “natural phenomena” to describe the subject.

As an intern at Xerox PARC that summer, I was focused on creating a cloud simulation. In the few days before SIGGRAPH, I shot a movie and flew off to Detroit with a 16-mm negative knowing that I could get it processed in town. Unfortunately, when I got the print back from the lab, the graphics in the film were just light blue blobs.

*Julian Gomez*  
*julianegomez42@gmail.com*  
 Xerox PARC

## Initiation

I attended a lecture by Russell Kirsch at a local college and afterward walked up to ask Russell a question after which we had a long discussion. Russell and his wife Joan convinced me to drive with them the next day (really!) to “this conference he thought I would like.” He literally asked for my home address and picked me up there. I did not know either Russell or Joan, but I sat in the back seat of their car for four and a half hours listening to two fascinating, brilliant, and extraordinarily kind people. The time flew by.

Their friendship and the conference (SIGGRAPH '83) changed my life forever. I am extraordinarily grateful. The entire week was transformational for me. At the conference I met Steve Cunningham [RIP] and Judy Brown and the Education Committee formed. Everyone I met was terrific—inclusive, friendly, smart and, fortunately for me, many became lifelong friends.

*Barbara Mones*  
*monesie@gmail.com*  
 Montgomery College

For more information see:  
[https://en.wikipedia.org/wiki/Russell\\_Kirsch](https://en.wikipedia.org/wiki/Russell_Kirsch)

## Silicon Graphics Hotel Suite Intro

Back around 1981 when I was at Bell Labs, I was programming something called the “Computer Animation Processor.” It was a real-time hidden surface computer graphics machine that Bell Labs thought might be usable for multiperson games. My job was to produce a whole bunch of animation demos for this. This was serious computer hardware development. During the summer, a student from Stanford came to work with us. It turns out the summer student was Marc Hannah, who a couple of years later founded Silicon Graphics with his Ph.D. advisor Jim Clark.

Fast-forward to 1983 SIGGRAPH. My Bell Labs connection let me be fortunate enough to actually see the original Silicon Graphics IRIS workstation, which was shown in a hotel suite at the 1983 conference. Amusingly, I walked in on the SGI running a real-time version of Rubik’s cube on the display, which was very similar to the Rubik’s cube I had created on the Bell Labs Animation Processor. Rubik’s cube was still a fad back then. It was breathtaking to see a commercial machine that had that level of graphics power.

*Sandy Ressler*  
*sressler@acm.org*  
 Video Magic Labs

For more information see:  
<https://www.youtube.com/watch?v=98EyJG-xmu4>

## 1983–1988

### People + Technology + Good Food = SIGGRAPH

As a former conference co-chair and conference committee, CPC, and EC member, so many of my SIGGRAPH conference memories have to do with the food we offered at various SIGGRAPH course lunches (remember those?) and receptions.

I’ve heard the legends about the fabulous salmon bake at SIGGRAPH '80 in Seattle and the incredible seafood spread at SIGGRAPH '82 in Boston. But my first SIGGRAPH was in 1983, when I was an assistant to the co-chairs, Kelly Booth and John Beatty. I was also first introduced to Cindy Stark, meeting planner extraordinaire, in 1983. Cindy taught me that most receptions plan for 5–6 pieces per attendee—but this just wouldn’t work for hungry SIGGRAPH’ers. Event venues were also shocked when we ordered 15–20 pieces per person. And even THAT wasn’t enough! I’ll never forget watching students pull out pocketknives to carve (and eat) whole pineapples from the decorative centerpieces at the SIGGRAPH '83 reception!

And then there was the infamous SIGGRAPH '86 reception in Dallas, which, notably, WASN’T planned by Cindy. Food ran out almost immediately and it was the closest I’ve seen to a revolt at a SIGGRAPH conference! A lunchtime BBQ later in the week was held to make up for the foodless reception. I learned a huge professional lesson about never scrimping on food at any event.

Which may be why, as SIGGRAPH '88 co-chairs, Andy Goodrich and I decided that a pig pickin’ was the right way to go for one of our receptions. People still talk about pulling meat from a whole roasted pig at this very traditional southern event we held in Atlanta.

SIGGRAPH is as much about getting together with friends and colleagues as it is about technology. And, as with any get-together, food is a huge part of the equation. I doubt that we'll see unending seafood, salmon bakes, or a pig pickin' at SIGGRAPH again. But I'm so glad to have these delicious memories of the conference.

*Adele Newton  
adele\_newton@rogers.com  
University of Waterloo*

1984

### Flight of the Graphics Students

This anecdote isn't about the conference but about getting there. I arranged for several members of the Ohio State University Computer Graphics Research Group (CGRG) to fly from Columbus, OH, to Minneapolis in a small plane. The CGRG secretary was a licensed flight instructor and she arranged and commanded the flight.

One muggy summer day, four of us boarded a Cessna 172 at the Ohio State University airport and headed toward Minneapolis. Being the Midwest, thunderstorms started to form. We were soon completely surrounded by clouds. Lightning flashed around us. Kristi decided we had better land and wait it out. Air Traffic Control directed us to a very narrow strip in a cornfield somewhere in Illinois. Corn ahead of us, corn behind us, corn on all sides. We watched the action from inside the tiny terminal, which only took a couple of hours, and then, we were off to another SIGGRAPH week.

*Julian Gomez  
julianegomez42@gmail.com  
Ohio State University*

### Encounter in an Elevator

At SIGGRAPH '84 in Minneapolis, I got in an elevator and found myself face to face with Linda Ronstadt. Like most people, I was a big fan. I had been listening on repeat to her then-recent album of standards "What's New?"

I told her that I absolutely loved the new album. She smiled graciously and thanked me, happy to hear that her new musical direction was being enjoyed.

At that point, the guy she was with, who seemed very annoyed by our entire encounter, quickly hustled her out of the elevator.

Somebody then turned to me and said, "Do you know who that was?"

"You mean Linda Ronstadt?" I replied.

"No," they said, "I mean George Lucas."

For a moment, I wondered whether I would ever be allowed to work in this field again. But then I remembered, to my relief, that George Lucas had no idea who I was.

*Ken Perlin  
ken.perlin@gmail.com  
MAGI*

### George Lucas's CGI Baptism at SIGGRAPH

The most exciting night of my SIGGRAPH life was the one where we at Lucasfilm premiered *The Adventures of André & Wally B.* at the film show—and George Lucas himself had come along to see it. He had never paid attention to any content we produced, so this was a big deal to us. We were tremendously excited. George would finally see what we could do, and in front of several thousand elated SIGGRAPH fans. But he didn't want to be identified so we hatched an elaborate scheme to take him in a limo from a dinner (with Linda Ronstadt, his real reason for being in town), down into the underground parking lot under the stadium housing the film show, then up an elevator opening on a seating area. All this was done after the lights had gone down for the film show. The way was marked by guides using walkie-talkies and penlights. As we found our way, we could hear the spread of whispered rumors that George Lucas was in the crowd.

It was film night at SIGGRAPH. The audience was electric with excitement, as it usually is. The rumors added even more frisson. The film played. The audience went wild, as we knew it would. No explanations were necessary here. Thousands of screaming fans KNEW what had been accomplished. It didn't matter to them that one scene was incomplete (very few even remember it), with the foreground character rendered in wireframe. We'd simply run out of rendering time, but SIGGRAPH officials, realizing its significance, let us show the piece anyway.

George visited our party following the film show and said perfunctory things, with no comment about the piece itself. It was only years later that I learned he had hated the piece. It was incomplete! Its story wasn't very good! All true, of course, but we and SIGGRAPH could see beyond it... and judging by the second series of Star Wars films, the hook had set with George too.

*Alvy Ray Smith  
alvyray@gmail.com  
Lucasfilm Ltd*

## Memories of the Omnimax Film Project

In Detroit, in 1983, the possibility of creating an Omnimax film of computer-generated content had been announced for showing at SIGGRAPH '84. We all headed over to the Omni Theatre to experience Omnimax projection, many of us for the first time. We were cautioned about movement because the wrong movement in the film could cause motion sickness in the attendees. The Purdue CADLAB team returned from SIGGRAPH ready to create a film. We ray traced a train heading down the tracks, and then, we drop you into the inner workings of the train.

The train and scene were modeled using constructive solid geometry. Dave Plunkett and I worked on the ray tracing code. Nelson Max had come up with a modified version of the distortion equations so that the film could be projected in both Omnimax and IMAX theaters. Bill Charlesworth did the modeling and animation software. Rich Crawford did the mechanism analysis. The mechanism driving the train was really a washing machine agitator. Steve Van Frank and I handled the production logistics.

In 1983, Purdue got its new supercomputer, a Cyber 205. Through an arrangement with Control Data, the CADLAB had a large allocation of computer time. Therefore, we used the Cyber 205, which could do up to 400M FLOPS (floating point operations per second) to compute the film, *Night Train*. The film took 232 hours of compute time and qualified for Ned Greene's newly formed Teraflop Club for those that had used more than one teraflop of computing in a film. We were in excess of 8 teraflops.

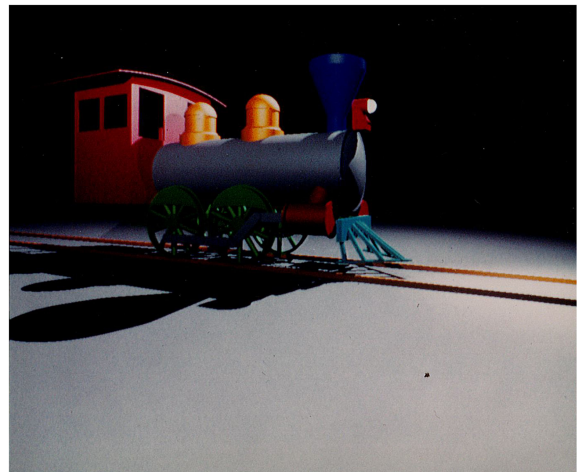
The project was transferred to film by Cal Kirchhof, who was up at Cray in Minneapolis. For this part of the project, everyone had to send two copies of their film on 9-track tapes. The idea here is that once the recording to film started, it had to remain continuous throughout the recording process (any stoppage of the recording process would cause a noticeable color shift in the film). The two copies assured that if a tape had an error a backup copy was immediately available.

Since the CDC machines were 60-bit, our rendering had one pixel per word. To generate the final tape images, we had to convert the frames into 8-bit streams. This was quite an endeavor. Dave Punkett and I headed to another CDC site that had three Cyber 175s and about 15 tape drives. We spent the night converting the tapes from one format to

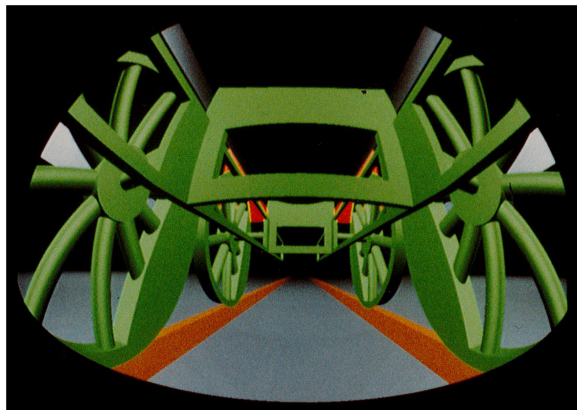
the other on two copies. I was able to keep all three machines and at least 12 tape drives in motion that night.

The film recording finished just in time at about 5:30 a.m. on the day of its screening. (I have a photo of the message taken by the hotel for Dick Mueller and Dick Weinberg.)

Other notable memories from that year's film show: The convention center was just newly renovated and SIGGRAPH donated the organ for the theatre. Garth Hudson of The Band came to christen the organ and played for the opening of the film show that night. That year George Lucas attended the show with Linda Ronstadt.



Engine from *Night Train* without Omnimax projection distortion.

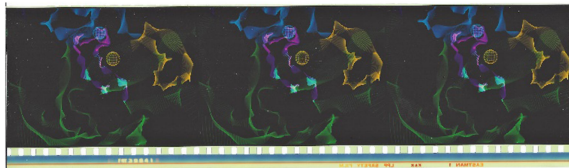


The Engine's Undercarriage with projection distortion.

Joe Cychosz  
 cychosz@siggraph.org  
 Purdue University CADLAB

## Molecules in the Large

Jim Lipscomb and I were both staff researchers at UNC Computer Science when we attended Omnimax film planning meetings at SIGGRAPH 1983. Even before we got home we had started planning to submit a fly-through of a molecule. While the computation was daunting, Jim's biggest concern was how we were ever going to break it to Dr. Brooks (our project principal investigator) that we wanted to make an Omnimax movie? RIP Fred Brooks.



Three frames of molecular modeling from the 1984 Omnimax film. Created by UNC-Chapel Hill and Duke University Biochemistry. (Used with permission.)

*Michael Pique*  
*mpique@icloud.com*  
*University of North Carolina at Chapel Hill*  
*Research Associate*

For more information see:

H. Fuchs, J. Goldfeather, J. P. Hultquist, S. Spack, J. D. Astin, F. P. Brooks, J. G. Eyles, and J. Poulton. "Fast spheres, shadows, textures, transparencies, and image enhancements in pixel-planes." <https://dl.acm.org/doi/abs/10.1145/325165.325205>

## A Diversity Milestone

While SIGGRAPH is still working hard to increase diversity in its community, there was an honest-to-goodness diversity milestone in 1984, the 11th Conference: For the first time ever at a SIGGRAPH conference, I had to stand in line to use the women's restroom.

*Mary Whitton*  
*mcwhitton@gmail.com*  
*Adage, Inc.*

## 1985

### The Hemicube

My very first public speaking event ever was presenting a SIGGRAPH paper in front of thousands of people at the Moscone Center in San Francisco. I was presenting our paper, "The Hemicube," on nonconvex scene

rendering using radiosity. After great trepidation, I peeled my tongue off the roof of my dry mouth and was able to somehow get through the presentation. The Cornell Box I had built the year before for Cindy Goral to introduce in her paper became a mainstay in CG lore. Something I had dreaded only 20 minutes earlier quickly became a goal to do again. I really must thank the SIGGRAPH community for giving me a professional passion for research.

*Michael Cohen*  
*mcohen99@gmail.com*  
*Cornell University*

For more information see:

<https://dl.acm.org/doi/10.1145/325165.325171>

## My First SIGGRAPH Reception

I will never forget the 1985 SIGGRAPH reception at the Golden Gate Park aquarium. It was our first time attending the full conference, so we had no idea what to expect and had eaten dinner ahead of time. At the end of the evening, waiters were walking around with huge trays overflowing with shrimp and other delicacies, almost begging people to help finish all the food. It was the most amazing dining event I'd ever been invited to in my life so far.

The next year (Dallas), we deliberately starved ourselves all day before the reception and then hung back from the initial long lines for food in blissful confidence of endless bounty. Suffice it to say that we soon learned to appreciate that every year is completely different. Over the next 25+ years of SIGGRAPH receptions, there were highlights and lowlights. But I never again had anything like that experience in San Francisco.

*Victoria Interrante*  
*interran@umn.edu*  
*UCLA (student) and Hughes Aircraft Corporation*  
*(part time)*

## At My Paper Presentation

I presented my very first SIGGRAPH technical paper at the 1985 Conference in San Francisco. In the paper, "An Image Synthesizer," I introduced two new ideas: fully programmable shaders and the noise function.

I was very young and very nervous. People seemed to really like my presentation, largely I think because the pictures looked good.

The realistic procedural textures I showed were perceptually inspired—essentially driven by artistic choice rather than by physics—and apparently there was some controversy about that approach.

Sure enough, at the Q&A, somebody who was very important in the field got up and asked, "But isn't this just fake?"

*OF COURSE IT'S FAKE. IT'S ALL FAKE.  
IT'S COMPUTER GRAPHICS!*

*KEN PERLIN*

I replied with the first thought that popped into my head. "Of course, it's fake. It's all fake. It's computer graphics!"

Years later I was very happy to see people still quoting that.



One of the "fake" images from my 1985 paper.

*Ken Perlin  
ken.perlin@gmail.com  
R/Greenberg Associates*

For more information see:  
K. Perlin. "An Image Synthesizer." <https://doi.org/10.1145/325165.325247>

## Bezier Receives Coons Award

Watching Pierre Bézier receive the Stephen Anson Coons Award was a very gratifying event because of my close personal and professional connections with both Bézier and Coons. They were both inspiring mentors to

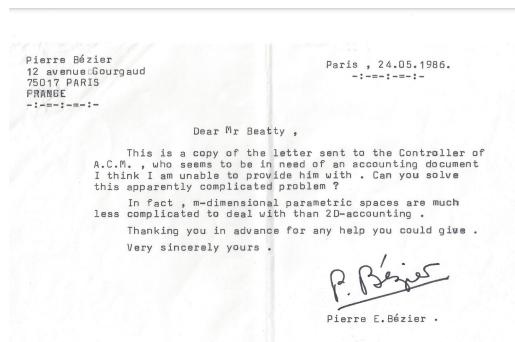
me and dear friends. The occasion simply warmed my heart. These were two of the leading research figures in my area of research. I also knew of the deep respect that Bézier and Coons held for each other.

*Rich Riesenfeld  
richard.riesenfeld@gmail.com  
University of Utah*

## Reimbursement Is Never Easy

Ten months after SIGGRAPH '85 at which he received the Steven Anson Coons award, Pierre Bézier was still trying to get his travel expenses reimbursed. He sent this note to conference co-chair John Beatty [RIP] asking for help and making this comment: "In fact,  $m$ -dimensional parametric spaces are much less complicated to deal with than 2-D accounting."

P.S. I have no recollection of why John Beatty gave this to me.



Letter from Pierre Bézier to John Beatty.

*Mary Whitton  
mcwhitton@gmail.com  
Adage Inc.*

## R-E-S-P-E-C-T

In 1985, I was elected chair of ACM SIGGRAPH. A few months later, I dutifully flew to St. Louis for an ACM conference where I was to attend a meeting of the SIG chairs and the SIG Board, the ACM governing body for all the SIGS. The morning of the meetings, I showed up a bit past the appointed time, so when I entered the room all the chairs at the table were filled and there were only a few chairs along the wall that were still empty. As I was scanning the room to figure out which of these chairs I would sit in, the SIG Board chair greeted me with "Hi Kelly, what are you looking for?" I said that I was looking for a place to sit. He replied "You're the chair of SIGGRAPH. You can sit anywhere you want!"



I later found out this was essentially true. The chairs of the various SIGs and the SIG Board members had a lot of respect for SIGGRAPH as a well-run organization that set a positive example for the other SIGs and for ACM as a whole. Even though I was the new kid on the block, I was already being afforded the treatment that my predecessors had earned through their hard work steering SIGGRAPH. I felt I had pretty big shoes to fill. It was wonderful to have that opportunity.

*Kellogg Booth*  
*ksbooth@cs.ubc.ca*  
*University of Waterloo*

### Closing the Exhibits

The Hewlett-Packard booth at the Exhibition had a superb sound system. Every day as the Exhibition closed, they played a recording of bagpipes playing “Amazing Grace.” Gave me goosebumps.

*Justin Heinecke*  
*heinecke@cs.unc.edu*  
*University of North Carolina at Chapel Hill*

### 1985–2002

#### Amazing Grace

The trade show was always a big draw and there was always too much to see. At the end of the day, it was necessary to move thousands of people out of the show. As the time drew near, the sound of bagpipes could be heard playing “Amazing Grace.” This would increase in volume until it became seriously painful and prevent any conversation. The hall would quickly empty with no effort by security.

*Dan Olsen*  
*olsen@sparxteq.com*  
*Brigham Young University*

### 1986

#### Luxo Jr.

Perhaps the moment it became clear to me (and to the thousands around me) that CG was going to be a great way to tell stories was when we saw PIXAR’s *Luxo Jr.* in the film show. A moment of pure delight: the story, the technical prowess of the physical animation, the beautiful lighting, and rendering.

*Michael Cohen*  
*mcohen99@gmail.com*  
*Cornell University*

For more information see:  
[https://en.wikipedia.org/wiki/Luxo\\_Jr.](https://en.wikipedia.org/wiki/Luxo_Jr)

### Pixel-Planes 4 Debut

Pixel-Planes 4 was the third experimental graphics hardware system that we built at UNC. It was the first full-scale one (meaning 512×512 pixels). A trigger for building this system was a talk that we had given the previous year, showing an image of an engine connecting rod and stating that once we built a completed prototype, it would be able to render this image in some few milliseconds. This statement was met with a loud guffaw. Like Michael Jordan being mocked by an opponent, that was all we needed to quickly resolve to build and demonstrate a full-scale prototype the following year.

We did this on a relative shoestring. The entire project, hardware and software alike, was built by a handful of faculty and staff in the computer science department and only a single graduate student, the gifted first-year student Trey Greer. Highlights included doing our own wafer-probing to identify the 2000 working custom chips we required and reverse-engineering the bus protocol of the processor board we used for the front-end (after being told it would “take to the year 2000” to figure it out ourselves).

Fast-forward to the summer of 1986. We loaded our machine into a rental van. Trey and I set off down the highway to Dallas and listened to “Stop Making Sense” at full blast. The trip went without mishap. We quickly got the prototype running in a small room in the convention center and gave demos to one and all.

...THE MOMENT IT BECAME CLEAR TO ME ... THAT CG WAS GOING TO BE A GREAT WAY TO TELL STORIES WAS WHEN WE SAW PIXAR’S LUXO, JR. ...  
 MICHAEL COHEN

Highlights there included one visitor who saw spheres being generated in real time and said, “I never thought I would see that in my lifetime.” A European visitor asked about the “manipulatum” (the joystick); I use that term to this day when asking my wife where the TV remote can be found. Perhaps best of all was a fellow engineer from a company with which we sometimes collaborated. He looked at the rear of the machine and the bank of eight 750-watt power supplies and double-aught welding cables and exclaimed “Holy sh\*t !!”

*John Eyles*  
*jge@cs.unc.edu*  
*University of North Carolina at Chapel Hill*

## Careful Where You Drive

As creator of an early computer graphics display (HP 1300A), SIGGRAPHS were always special. SIGGRAPH '86 (Dallas) is etched in my memory. The film competition room overflowed. A Luxor Lamp became animated, joined by *Luxo Jr.* The swinging lamplights and the dancing animation of the two objects were captivating. Folks crowded the podium afterward. I don't recall whether it was Alvy Ray Smith, John Lasseter, or Ed Catmull who said, "If you want to see some cool stuff, let's go to our Pixar booth on the conference floor."

Anon, a group of 20 trooped onto a darkened floor about 11:00 p.m. Soon a rotating image of a pelvis loomed on the large screen above our heads. We all gaped at the rendering, shading, and other new computer-graphics enhancements. The 3-D shaded, colored pelvis, reconstructed from MRI slices was awesome—then, a man in the crowd said, "Oh, my, look at those calcium deposits!"

Huh, what? Nearly all of us were incredulous—"What is it you are seeing?" An MD, he recognized the anomaly. None of the rest of us knew what we were seeing. Thirty years later, I described this "rotating pelvis" to Larry Smarr, who said he was among the stunned 20 that night. Two weeks after SIGGRAPH, the Pixar folks took their software to Johns Hopkins and received a hero's welcome.

Fortified with libation and excitement from the dazzling film and floor, I found my car to drive to my daughter's home in nearby Plano. Past midnight, there were few cars on the road. I puzzled about a roadway to my right, just as I saw a sweep of headlights bearing straight at me. Amazingly and fortuitously, there was a short turnout. Screeching tires, and headlights stopped 20 feet from my car. I had somehow gotten on the wrong side of the freeway—any other spot, I found the next day, and I'd have been fully in the path of oncoming traffic.

Shaken, when I got to my daughter's home, I wrote out my first will. Memorable night!

*Charles House*  
*housec1839@gmail.com*  
*Hewlett-Packard*

## Conference Newbie

My first SIGGRAPH conference experience was in 1986, when I was awarded an ACM/SIGGRAPH Education Committee Educators Grant. Not only was I a

conference newbie, but I had been teaching computer graphics and computer science for just three years. To say I was "blown away" would be an understatement.

What do I remember? Stepping out of the Dallas airport terminal and being blasted by dry, 105-degree heat; seeing an exhibition space that covered at least a full football field; listening to speakers detail the newest and best in computer graphics and animation; charging my mental batteries; visiting the ranch where the "Dallas" exteriors were shot for an evening reception; meeting people who would become lifelong colleagues and friends.

---

*ATTENDING A SIGGRAPH  
 CONFERENCE IS NOT THE SAME AS  
 ATTENDING TYPICAL INDUSTRY  
 CONFERENCES OR CONVENTIONS:  
 EACH YEAR IS MORE LIKE COMING  
 HOME TO FAMILY.*

*WILLIAM JOEL*

---

Over the years, I have attended almost every conference since. I remember the changes that occurred over time: How, in the "early" days, animation platforms (e.g., Lightwave, SoftImage) would leapfrog over each other every few years and become the "had-to-have" animation application; the introduction of the RenderMan teapot, which I tried to collect as many as I could over the years; watching as early research in simulating human motion procedurally eventually showed its limitations and was usurped by motion capture; seeing the evolution of nonphotorealistic animation and rendering (NPAR) and its influence on 2-D applications as well as 3-D animation.

But what I take away from my 36-year connection with SIGGRAPH is that I had found a "family" that spoke the same language I did. My personal interests have always been eclectic. They span the arts, computer science, and such. Through SIGGRAPH, I have met many, many folks with similar backgrounds and interests and have engaged in an uncountable number of fantastic discussions.

Attending a SIGGRAPH conference is not the same as attending typical industry conferences or conventions: Attending a SIGGRAPH conference each year is more like coming home to family.

*William Joel*  
*wjoel@optonline.net*  
*Marist College*

## I Threw a Party

At SIGGRAPH '86 in Dallas, I arrived at my hotel to find that all the rooms were already taken. Rather than send me away, they upgraded me to a fancy suite at no extra charge.

So, I decided to do what anyone would do in that situation. I threw a big party. Lots and lots of people showed up, and the party lasted most of the night. Once the big luminaries like Jim Blinn decided to drop by, everyone else followed.

Many years later a man approached me at another SIGGRAPH conference. "Do you remember," he asked, "that party you threw in Dallas in 1986?"

"Yes," I said, wondering where this was going.

"I met my wife at that party," he said. "After all these years we are still together. I just wanted to thank you."

*Ken Perlin*

*ken.perlin@gmail.com*

*R/Greenberg Associates*

## 1987

### A Pioneering Film Show

I was in my early twenties when I was approved to become the next volunteer chair of the International "SIGGRAPH '87 Film and Video Show." I pitched to the Conference Committee that I wanted to do the first fully automated show. A lofty goal, yet this show did succeed. It ended up having 19,500 in attendance over three nights in the Anaheim Arena. Fifty-four entries were judged and accepted into this show. Fully automating a show containing four different types of projectors and multiple audio formats (including magnetic tape and the first digital octaphonic audio) was daunting. I used time-code-striping on the master 1" videotape to drive all the different projectors used that night. The 35-mm film projectors would get their cue five seconds ahead to get the projector rolling up to speed and open the douser to project film. I filled the Arena's ceiling with images from animating 6-inch-slides. I used Frank Serafine original composed music, added a "Fast Forward Retrospect," used a digital octaphonic audio introduction with octaphonic surround sound, and created a custom ray-traced opening logo sequence.

This CG showcase for the most contemporary computer graphics included presenters James Blinn and John Lassiter. Craig Reynolds and Philippe Bergeron's film was *Stanley and Stella* based on Craig's paper for "flocking and herding." I also co-chaired the first "Computer Animation Festival" in 1995 in the Los Angeles Convention Center. I managed the "On the Threshold

of a Dream Show," which used film, video, and live performances at Cal Tech's Beckman Auditorium in November 1983. This show was also known as the first "Electronic Theater," which inspired SIGGRAPH to use the same name for the international SIGGRAPH shows that have occurred annually ever since.

Volunteering can allow for experimentation that would not be allowed in any nine-to-five job.



14th Annual Conference  
1987 SIGGRAPH  
**ACM SIGGRAPH '87 FILM AND VIDEO SHOW**  
**Joan Collins, Chair**  
Anaheim Arena, setting up the AV Kitchen

SIGGRAPH '87 Film and Video Show, chair, Joan Collins; the Anaheim Arena setting up the AV Kitchen.

*Joan Collins*

*jcollins001313@gmail.com*

*Robert Abel*

### Papers at SIGGRAPH '87

It was the very first paper session of SIGGRAPH '87, the conference at which I was the papers chair. At the start, I was focused on technical issues—were the slides showing well, was the sound working? Soon, however, I was able to relax and enjoy the content. It was a fantastic session: Keith Waters presented physically based

models for facial animation. Craig Reynolds demonstrated the first CG-generated flocks and herds. John Lasseter used the newly created *Luxo Jr.* to demonstrate the traditional animation principles used to create memorable characters and stories. This last paper had been debated by the committee because it was not research in the classic sense. But those of us who felt its message important eventually prevailed. This was just the first of many excellent technical papers sessions. I watched each and every one with a feeling of pride that our committee had created such an excellent program—technically strong and diverse in content.

A memory like this includes many other memories, especially about people. It takes a lot of people and a lot of work to create a conference. Working (and playing) together builds friendships as well. The full list is long. Jim Thomas has a special place. He took a chance on me as a relatively inexperienced candidate for the responsibility of papers chair and I am forever grateful. This was the start of many collaborations and I have many memorable Jim stories.

The committee took advantage of the conference being adjacent to Disneyland to have fun together in the park, including creating silly hats for the technical committee chairs (Sarah Bly, Mike Bailey, and me). I still have mine somewhere. It was my first opportunity to work with Cindy Stark and her team at Smith Bucklin—more memories and more friends. Finally, there were the parties in the committee suite. I remember many, many memorable conversations at these gatherings, fueled by the committee's signature blend of Remy Martin and Gran Marnier.

Maureen Stone

maureen.stone@gmail.com

Xerox PARC

For more information see:

M. Stone (editor). "SIGGRAPH '87: Proceedings of the 14th Annual Conference on Computer Graphics and Interactive Techniques." <https://dl.acm.org/doi/proceedings/10.1145/37401>

## There's Always Room for Jell-O

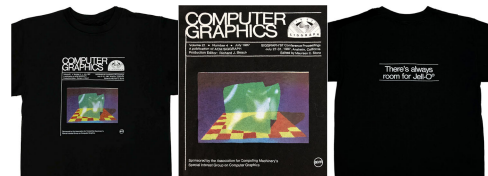
Once papers are selected at Papers Committee meetings, they are assigned to sessions with a Papers Committee member chairing each session. At the 1987 meeting, this process was running well until we got to a particular paper which prompted almost every committee member to raise their hand and beg to have it assigned to their session. I kept quiet and avoided the turmoil, but had the paper assigned to my session anyway.

At the conference in Anaheim, I was nervously trying to keep a straight face as I introduced Paul Heckbert to present *Ray Tracing Jell-O Brand Gelatin*.

Paul's presentation was straight-faced with a thorough explanation even though we had limited him to half the normal 20 minute time. The concluding result of the paper was the famous Jello equation,  $J = 0$ . That equation remains stuck in my head.

At the end of the session a highly respected graphics researcher came up to the podium with a quizzical look on their face and asked: "It is a joke, is it not?"

Years later when a group of graphics experts got together to select papers to include in the 1998 book *Seminal Graphics: Pioneering Efforts That Shaped the Field*, one of the jury members commented, "There's always room for Jell-O." That was all it took to ensure the Jell-O paper was included.



The rare Jell-O T-shirt features a spoof of the conference proceedings cover.

Turner Whitted

jtwt@twilab.com

Numerical Design Ltd.

## 1988

### Into the Abyss

SIGGRAPH '88 was my first. With a couple other grad students, I drove down to Atlanta, and we got all set up as student volunteers. We worked a lot of hours that week, mostly guarding doors, so we didn't see a ton of content. Even so, the conference was overwhelming. The highlight, however, was the Electronic Theatre. It was in the Omni, a huge concert venue attached to CNN Center. We were all watching the show, when the next clip up was the water worm sequence from the movie *The Abyss* that wouldn't come out until 1989. The place got silent, none of the hundreds or thousands of people there made a peep. When the sequence ended (and they played the entire sequence), the place erupted in cheers and applause. It gave me chills then and still does when I think about it.

Lou Harrison

lou@ncsu.edu

North Carolina State

### Pool Pardy

My second SIGGRAPH conference—1988 in Atlanta. I attended a party—the PDI/Pixar "Pool Pardy"—held in

a hotel ballroom. Of course, there were beach balls. Of course, they were being thrown around.

At some point, someone in charge gets the attention of the partygoers, holds up a piece of one of the glass chandeliers, and tells us we all need to stop throwing around the beach balls or we'll have to leave.



SIGGRAPH '88 "PDI Pixar Pool Party" beach ball.

*Stephen Spencer*  
 stephenspencer@gmail.com  
 The Ohio State University

1988–1994

**In Memory of F. Kenton Musgrave**

For most of us of a certain age, Ken Musgrave will always be part of the fabric of SIGGRAPH. He often styled himself as an artist despite his frequent technical papers synthesizing landscapes with ever increasing realism. In 1990, we were both invited to give talks at Memorial University in Newfoundland. He brought his fractal imagery fresh from the SIGGRAPH art show. I showed implicit modeling movies from the electronic theatre. After our talks, David Parnas and Edsger Dijkstra, the other guest speakers, stood up united (for the only time ever) in their agreement that computer graphics was a complete waste of computer time! Especially, as espoused by Musgrave and Wyvill. Imagine, Ken and I, backs to the wall, facing the vitriolic onslaught by these famous gentlemen of software engineering.

The following summer, Ken visited Calgary and we gave him a sightseeing tour of the badlands and later Jasper National Park. "I want to see

bears, elk, and moose. All those Canadian animals," Ken requested. Of course, we couldn't promise seeing wildlife. To our surprise, we saw every possible species of Canadian animal. Grizzly bears, moose, elk, beaver, the rarely seen cougar, and lynx. Ken took it all in his stride, convinced this was an everyday occurrence. That night, we heard wolves howling. "See, I told you," said Ken.

Later that year at SIGGRAPH, the good-hearted Ken had attracted a group of followers at the SIGGRAPH papers reception. My brother Geoff and I look somewhat alike even though he is older and wears a straggly beard. Standing at the edge of the crowd, we swapped badges. A few minutes passed. Ken, who did not know Geoff, caught sight of him wearing my badge. With a classic double take, Ken interrupted his discourse with the remark: "Brian, how did you get so ugly?"

Of course, everybody roared with laughter. Ken could really take a joke and was soon laughing along with everybody else, including Brian and Geoff. Sadly, Ken passed away in 2018 at age 63. He is missed.



Ken Musgrave with my children and an old friend in Alberta's Badlands.

*Brian Wyvill*  
 bwyvill@uvic.ca  
 University of Calgary

## 1988 &amp; 1998

## Jaw-Dropping Memories at the Film and Video Show

For years it wasn't called the Computer Animation Festival or the Electronic Theater; it was the SIGGRAPH Film and Video Show. In the early pioneering days, every entry seemed to solve a crucial technical piece of the rendering puzzle. Two moments stand out for me where an audible gasp rose in unison from the crowd. We knew, collectively, that we had just experienced something magical that would forever change what could be accomplished using a computer to make images.

The first was at SIGGRAPH in 1988. Until Karl Sims' *Particle Dreams*, CGI objects were hard-edged, and you had to keyframe each of them individually. Now, a computer was controlling tens of thousands of objects, each moving along its own path and working together to form something that wasn't solid at all—an incredible flowing CGI waterfall! It was only five years later that, I was making particle fireworks and contrails for Douglas Trumbull's Luxor shows. A few years after that, I used particles at ILM to animate thousands of scarab beetles for *The Mummy* and dust and rock chips for the Rock Monster from *Galaxy Quest*. Karl's waterfall had given me a glimpse into my own future!

Then, in 1998, Paul Debevec premiered *Rendering with Natural Light*. Again, there was an audible, stunned gasp from the crowd. As a group, we saw breathtakingly photorealistic lighting that Paul and his team achieved by reverse-engineering how natural light works. We knew that lighting in CGI would never be the same again. Today, lighting is routinely captured on movie sets so CGI can be lit almost automatically with high dynamic range imagery. Of course, Paul pioneered so many other advances in modeling, lighting, and rendering. But I still remember the goosebumps I got watching *Rendering with Natural Light* at SIGGRAPH's Film and Video Show in 1998.

Edward Kramer

ed.kramer.cgi@gmail.com

Crawford Design/EFX, Industrial Light & Magic

## 1988–2022

## Getting Involved

Thirty-five conferences, thousands of miles traveled, thousands of hours spent. Animations viewed; parties attended. New products to be tested, products

yet to be introduced, and additional products which will probably never be. Meeting and talking with the people who created this field. Being able to see them again and again, especially at the yearly Pioneer's reception. The community reappears annually in Brigadoon-like fashion, always teaching me something new and introduces me to someone I've not met before. I have good friends I would never have met had I not attended and volunteered to work at SIGGRAPH conferences.

Specific memories: SIGGRAPH '91 was the first venue I spoke at with a ballroom-sized audience and wondering if I was in the right place. (Steve Cunningham assured me I was.) I submitted some work to the annual curated Education Committee sponsored Faculty Submitted Student Work exhibit. The next thing I knew was that Colleen Case convinced me to become involved with the committee and introduced me to the organization beyond the conference. Marc Barr convinced me to volunteer for the conference (twice) and it was time spent that I will never, ever regret. More friends made volunteering for the organization and conference. But one of my favorite activities every year since 2008 (and I remember them all) is the annual dinner with my past students attending the conference and the current ones who come to SIGGRAPH as student volunteers.

Glenn Goldman

glenn.goldman@njit.edu

New Jersey Institute of Technology

## 1989

## Ladies and Gentlemen, Dr. Jim Blinn

Did you know that Jim Blinn played trombone on Rock and Roll Hall of Famer, Todd Rundgren's song "Want of a Nail" off of his *Nearly Human* LP? Todd used to attend SIGGRAPH in the late 1980s/early 1990s. For SIGGRAPH '89 in Boston, he conveniently booked a gig at a club by the convention center which I attended with a friend. Promoting his *Nearly Human* LP at that time, he played "Want of a Nail" as an encore. Being a Todd fan, I knew quite well of the guest appearance of Jim Blinn on the album. So, I turned to my friend, and just as the words "wouldn't it be cool if..." came out of my mouth, Todd gets on stage announcing, "We have a special guest to join us on stage today, Dr. Jim Blinn." I got to see two of my heroes: one musical, one graphics, share the stage that night. A SIGGRAPH to remember.



Blinn on trombone.

*Joe Geigel*  
*Joe.Geigel@rit.edu*  
*Harris Semiconductor*

### Pizza and Visual Effects

I was an undergraduate at my first SIGGRAPH in Boston. I sat down at a small, crowded pizza place near the convention center to have a slice and a gentlemen asked if he could share my table. It turned out he had just finished work on an *Indiana Jones* movie and explained to me that his shot was one of the first “morphs” ever done at ILM. That brief conversation was a key part of my journey to a career in animation and visual effects.

*Nathan Loofbourrow*  
*njloof@fastmail.com*  
*Carnegie Mellon University*

### My First SIGGRAPH

I have been a 3-D graphics enthusiast since age 14 when I saw Flight Simulator 1.0 running on an Apple II. I started programming Apple II’s in 6502 assembly language. I wrote 3-D math routines and then moved to Macintosh computers doing spline rendering and visualization of scoliosis as a medical student.

In 1989, I saw an article on the Silicon Graphics Personal IRIS in MIPS magazine and was immediately enthralled! This was my dream machine that could do 3-D graphics in hardware! I read somewhere that it was to be demonstrated at this event called SIGGRAPH in Boston. As it turned out, I was going to Boston anyway to meet friends. Serendipitously, the brother of the friend I was staying with was working for Stellar Computers and built the texture mapping engine in the Stellar Graphics Supercomputer.

Stellar was demonstrating the behemoth at SIGGRAPH. I got an exhibits pass and went! I never looked back! I was so in love with the show it was my “vacation week” every year from the monotony of practicing medicine. Here, I met the visionaries, the enthusiasts, the world-changers who were leading the graphics revolution and this was my new “home away from home.” The conference was the highlight of my year, my “Christmas in the Summer”! Now that I have some money, I am able to execute my ideas in hardware and software with my various startups and we will change the world of graphics in amazing ways yet to be revealed!

*Atif Zafar*  
*Atif@Pixilica.com*  
*Medical student in Buffalo, NY*

For more information see:  
<http://www.sgidepot.co.uk/pcw9-90pi4d25.html>

### Tray Racing

Jim Kajiya had a conference paper titled “Rendering Fur with Three Dimensional Textures.” The word “fur” was misprinted as “fun” and yielded “Rendering Fun with Three...” Enrique Godreau coined the term Tray Racing, a play on the words “ray tracing.”

In the spirit of “rendering fun,” there was a Sheraton hallway that had carpeted stairs. We found some unused rectangular service trays. They were large enough to sit on and thus Tray Racing was born. We would slide down the carpeted stairs and race one another. I remember Andrew Glassner riding one of the trays.

*Joe Cychosz*  
*cychosz@siggraph.org*  
*Control Data/Purdue CADLAB*

For more information see:  
 J. T. Kajiya and T. L. Kay. “Rendering fur with three dimensional textures.” <https://doi.org/10.1145/74334.74361>

### 1989–2019

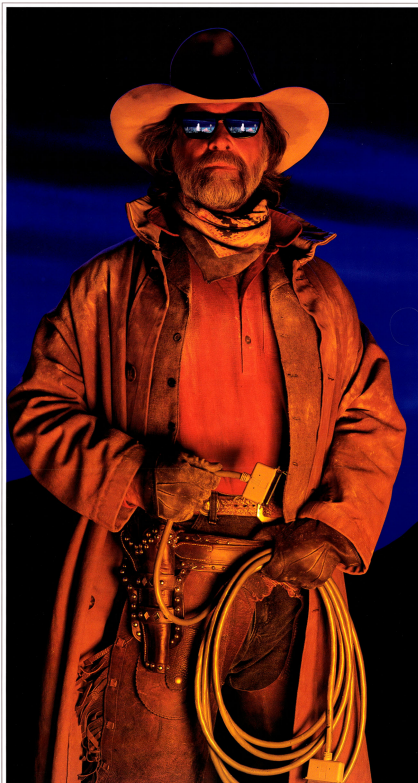
#### SIGGRAPH Collectibles

It is the collectibles—the posters, the pins, the mugs, the T-shirts and on and on—that reinvigorate my memories of SIGGRAPH conferences past.

*The Posters and the Pins:* One of the locations that I go to shortly after first arriving at the convention center and after registering for the conference is the booth promoting the next year’s conference. Once there, I can pick up a pin and a poster—it’s more likely a handful of pins and posters. I’m excited to see what

designs they “cooked up” that year. Some of the poster images were so stunning that I had them framed—in particular, the SIGGRAPH ‘92 “Chicago” poster. But the poster that I treasure the most is one for the 17th SIGGRAPH Conference in Dallas in 1990. It was a small vertical poster with the image of a cowboy in a duster, with shades reflecting the downtown Dallas skyline and a bandana around his neck. In his gloved hands he held what appeared to be a Centronics printer cable. The title at the top of the poster was “THE PIONEERS RETURN TO DALLAS.” I had it framed in a dark brown rough sawn frame. Now that the SIGGRAPH is back to doing in-person, have the pins and posters returned?

THE PIONEERS  
RETURN TO DALLAS



SIGGRAPH 1990  
17TH INTERNATIONAL CONFERENCE ON COMPUTER GRAPHICS  
AND INTERACTIVE TECHNIQUES



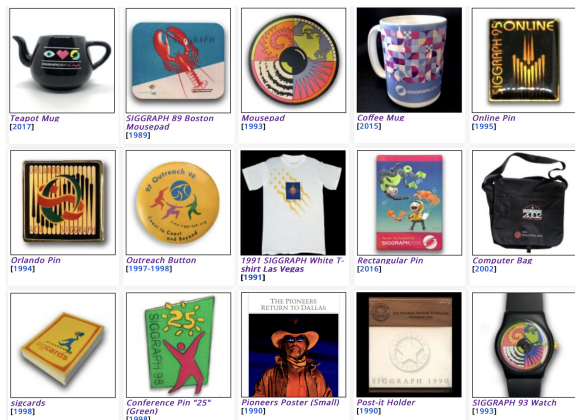
SIGGRAPH 1990 conference poster.

are awesome. I usually purchased extras to send to relatives and friends. The mug designs of recent years have been rather plain. We can do better. I’ve run out of shelf space for my mug collection.

*The T-shirts:* I usually purchased the current year’s conference T-shirt as well as the next year’s conference T-shirt. If I liked the design, I would purchase a second T-shirt—one for when I play racquetball and one for all other activities. I wasn’t too keen on the “dark” shirts. One of them—I think from one of the New Orleans’ conferences—has self-destructed.

*Miscellaneous:* One year there was a computer graphics deck of cards collectible featuring the pioneers of computer graphics. Another year there was a SIGGRAPH foam Frisbee. The SIGGRAPH ‘90 Conference in Dallas had a notepad with an “etched” wooden base. I have a small collection of SIGGRAPH shoulder bags. It has only been in the last decade that I have decided to take the time and stand in line to get one of the RenderMan Walking Teapots.

*Comments:* I hope that there is someone out there who has archived and documented all the posters, pins, mugs, T-shirts, etc., for the SIGGRAPH conferences and told the stories behind the art and design that went into each year’s collectibles. Not too many conferences ago, I saw that someone had scheduled a SIGGRAPH pin collector’s swap meet. Though I didn’t bring my pin collection, some were willing to donate their extras that I knew I didn’t have in my collection. I have file boxes full of SIGGRAPH collectibles that I haven’t looked at in years. Editor’s Note: See ACM SIGGRAPH’s online archive at [history.siggraph.org](http://history.siggraph.org)



Collectibles from the online archive.

*The Mugs:* The SIGGRAPH conference mugs come in all different materials, sizes, and shapes. Sometimes the designs are very simple—sometimes, the designs

Phil Alberton  
[philon1720@att.net](mailto:philon1720@att.net)  
Andrew Corporation



1989–2019

### SIGGRAPH Celebrities

Shortly after arriving at the convention center, I would keep my eyes peeled looking for certain people. Did they make it to this year's conference? For most of my early SIGGRAPH conferences, I looked for my fellow graduate students from the University of Texas at Dallas (UTD)—Alain Fournier, Sam Uselton, Don Fussell, Bruce Naylor—and Henry Fuchs, who taught Computer Graphics courses at UTD before moving on to UNC Chapel Hill. Our small group would usually get together for lunch on Thursdays during SIGGRAPH conference week. They were like celebrities to me. Our Thursday lunches covered a wide spectrum of topics—it wasn't all Computer Graphics and Interactive Techniques.

Having attended SIGGRAPH conferences since 1979, I've lost track of how many generations of new graduates and technologists from around the world that I've met.

There was always Jim Blinn. A celebrity? Have you seen Jim Blinn yet? Each year the string of ribbons he wore grew longer and longer. In some years, the ribbons would drag along the floor.

There were always the well-known and not so well-known keynote speakers. I'm rather certain that at one SIGGRAPH conference, on the Exhibit Floor, that I saw Todd Rundgren. Yes, Todd "I Saw the Light" Rundgren. He was wearing a long coat. Can anyone verify this?

*Phil Alberton*

*philon1720@att.net*

*The Realtime Group*

1989–2002

### Unofficial Ribbons

Ribbon chains streaming off badges had been growing longer every year. I decided there needed to be a chance for EVERYBODY to have a ribbon. There needed to be a good mathematical basis for them; however, one rooted in linear algebra, the basic math for computer graphics. I started a three-year sequence with red, green, and blue ribbons that formed a basis vector for the CRT primaries. The captions on the ribbons, instead of being some kind of official term, were simply  $RIBBON_i$ ,  $RIBBON_j$ ,  $RIBBON...$  Together, they formed a basis vector for a three space.

The ribbons proved to be pretty popular. So, in 1992, I continued with more and more insouciant phrases every year. In the mid-1990s, Steve Phillipson joined me in coming up with each year's design. The program kept going until the early aughts.



Ribbons (undated).

*Julian Gomez*

*julianegomez42@gmail.com*

*MacroMind*

## THE 1990s

1990

### Water Pistols and Panels

In 1990 and "The Pioneers Return to Dallas." Lots of us had been up partying all night Thursday night, unwilling to go to sleep and miss even a minute of SIGGRAPH. One of the things we had been doing involved chasing each other around the hallways and ballrooms of the hotel while shooting water pistols at each other. This also took the form of stalking each other throughout the night, appearing out of nowhere while one person or another was talking and dousing them with water. And one of those people was Donna Cox. Donna had to speak at a Panel the next morning. But Donna, great SIGGRAPH person she is, wasn't willing to sacrifice a party with her friends for some sleep and stayed up all night with us.

And in the SIGGRAPH spirit of never-ending party, many of the rest of us who had been up all night with her decided we'd pay Donna's Panel a little visit—water pistols loaded and ready. We all sat in the front row. When it was Donna's turn to speak, we all unveiled our water pistols and started aiming them at her—out of sight of the others in the auditorium but very visible to sleep-deprived

and bleary-eyed Donna. But we didn't just shoot at her right away. We tormented her by *not* immediately shooting at her. She had to endure our grinning, water pistol-waving threats and became the first SIGGRAPH speaker to be threatened to be doused with water on stage. To Donna's great credit (though no surprise to anyone who knows her), she rose above it and gave a great talk. As the panel ended, we all descended upon her and *then* soaked her silly. We all laughed hysterically.

*Bruce McDiffett*  
siggraph@evilgenius.com

1991

### One Million Polygons a Second!

The first SIGGRAPH I attended was in 1991 and I was mesmerized. I remember the team from UNC showing off the Pixel-Planes 5 graphics engine and giving attendees a button saying that they had witnessed "A million polygons a second!" The demo showed a terrain flyover which indeed was amazing.

In our booth at Emerging Technologies, we showed a VR experience (co-developed with the University of Washington and Boeing) that ran on a VPL head-mounted display and fridge sized Silicon Graphics Reality engine. For most people who tried, it was their first VR experience. Even though the graphics were cartoon like, it was mesmerizing.

Other ETech demos included a version of Myron Kruger's video place, Eric Howlett's LEEP optics, and a variety of other innovations. I remember falling in love with the technology and deciding then and there to continue in AR and VR research. Over 30 years later I've never looked back and still enjoy seeing those moments of magic on the SIGGRAPH show floor.

*Mark Billinghurst*  
mark.billinghurst@gmail.com  
University of Washington

### A Fascinating Proposal

In 1991, we brought Pixel-Planes 5, the second of our experimental graphics prototypes built at UNC, to SIGGRAPH '91 in Las Vegas. We also brought an experimental prototype of a head-tracking system, based on an overhead array of LEDs that worked much like celestial navigation. It was a full virtual-reality environment, where we gave demos to many people in the exhibition hall.

One day, there was buzz that an important visitor wanted a demo. He turned out to be the brother of the owner of one of the major casino/hotel complexes. After

his demo, he said that he'd like to take us out to dinner. Perhaps eight of us took him up on the offer. We went to a fancy restaurant and then to one of the big spectacle shows. During this outing, our host explained to us that it was his intention to drive home the point that they were willing to spend huge effort and treasure to create attractions for the companies' casinos.

This was a prelude to his asking us if we'd be interested in building a VR system for their casino. Funding would be virtually unlimited or at least far beyond what we received from our funding agencies. He mentioned that the theatre we'd just attended had cost \$20+ million. We said we were flattered and would consider this fascinating proposal.

Back in Chapel Hill, we pondered things and decided that, although DARPA and the NSF might be disappointed if we failed to meet our project goals, the casino owners might be less understanding. We wrote back and politely declined. Our host wrote us a most gracious reply. He thanked us for our time, apologizing if we'd felt that he'd trivialized our life's work by wanting to use it for entertainment purposes.

*John Eyles*  
jge@cs.unc.edu  
University of North Carolina at Chapel Hill

### Two Inspiring Experiences

The first graphics conference I attended was SIGGRAPH 1991 in Las Vegas. It was super-inspiring! There were only 40 technical papers (so easy to skim through!). But they covered such a variety of topics. Two experiences really stood out for me. One was the presentation by Karl Sims on "Artificial Evolution for Computer Graphics"—it showed a magical exploration of procedurally generated images. I distinctly recall the "extinct image" whose rich procedural formula had been forever lost—and the obvious parallel with species extinction.

The other experience was Loren Carpenter's interactive audience participation experience prior to the Electronic Theater. We all held reflective paddles and essentially acted as a "hive mind" to control a Pong game. Nowadays, we are all Internet-connected. Yet, there are still few occasions when large groups act collaboratively in real time.

*Hugues Hoppe*  
hhoppe@gmail.com  
University of Washington

For more information see:  
<https://vimeo.com/78043173> starting at 1:15  
<http://www.cinematrix.com/games.html>

### Interactivity at Electronic Theater

I'll never forget walking into the Electronic Theater in 1991 and being given a little stick with different colored reflectors on either side: red and green. What the heck is this for? Soon a map of the theater was shown on the screen, with dots in each seat position: red or green. It didn't take long for us to all realize that we could hold our stick in the air and change the color of the dot at our seat. Interesting! Of course, it didn't stop there. . . progressing to a game like Pong with the audience split into two teams (green, move paddle up; red, down) and ultimately to a flight simulator (left side of room controls left/right, right side controls up/down).

It was so much fun and extremely impressive technology. I think this system was shown off again in the Electronic Theater a few more times during the 1990s. It was always a crowd-pleaser. But I'll never forget that first time. I got to be part of a huge crowd of people all playing together and cheering "LEFT!!! LEFT!!! UP!!." It was magical!

Mark DeLoura

[mdeloura@satori.org](mailto:mdeloura@satori.org)

University of Washington's Human Interface Technology Lab

### Life in the Fast Lane—Viva Las Vegas

SIGGRAPH '91—my first SIGGRAPH—was an unusual venue by itself just because it took place in Las Vegas. Just a short drive from Salt Lake City with my fast new sports car, I assumed. Sure enough, I got pulled over for speeding. Aargh! Despite this rude start, the conference itself and exhibition turned out to be spectacular as one expects from SIGGRAPH. I was impressed by one of the first HDTV projectors and movies (played from analog video tape from Japan). The Electronic Theater showed some realistic animation effects. Among others, "Virtually Yours" showed skin aging in warp time—scary thought!

The location was definitely *different*. After the first few days, it seemed to have dawned on local staff that we were not their typical clientele. The vast majority seemed oddly disinterested in gambling—who was going to pay for the excellent but deeply discounted restaurants and hotels? Maybe out of empathy (NOT!!), I risked a quarter in a slot machine—and lost!!!! It was a clear sign for me to stop such risky behavior. I took it a little slower on the drive home—lesson learned.

Beat Bruderlin

[bdb@3dinteractive.de](mailto:bdb@3dinteractive.de)

University of Utah

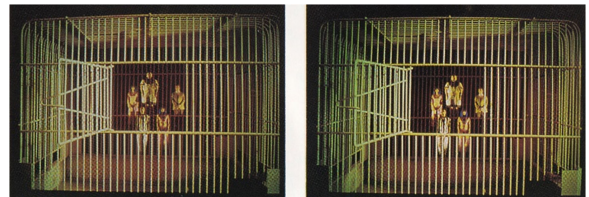
For more information see:

<https://history.siggraph.org/animation-video-pod/virtually-yours-by-elson/>

### A Flood of Amazement

I was a student volunteer at the SIGGRAPH 1991 Conference and after my shift was over, someone came into the room I was in and asked if anyone wanted to go to the dress rehearsal of a performance. Sure, why not? We had to drive through the city of Las Vegas to get to the location where "George Coate's Invisible Site" performance would take place. Wearing 3-D glasses, the audience witnessed one of the most amazing theatrical performances ever staged. People on the stage appeared to be caged and floating in air within reach of each and every audience member.

There were multiple interwoven stories with special 3-D effects created via slide projectors, lighting, projectors, and multiple invisible levels on the stage where the performers stood. One story was about a person trying to get back all the data that had been collected about them. The other story was about a person who viewed the world via a VR headset, thus indicating that everything we, the audience, were witnessing was nothing more than an illusion as seen through the headset. I was so amazed at this dress rehearsal that I went to all their performances throughout the week. On the final evening of the performance, it started to rain. Not just a drizzle, but a complete deluge. The streets started to flood and became rivers of brown water. By the time we got back to the hotel, the desert environment looked like a swamp. They say that adrenaline-charged experiences are the most memorable. I will never forget the amazing performances by both nature and the George Coates Performance Troupe.



Stereo vision image of the performers caged in midair.

Bonnie Mitchell

[bonniem@bgsu.edu](mailto:bonniem@bgsu.edu)

University of Oregon

### Las Vegas Water Park Reception—Awesome!

My favorite conference event ever was the 1991 SIGGRAPH reception at a water park. So much fun to be outdoors cooling off in the water and plunging down those slides with professional colleagues!

David Laidlaw

[laidlaw.david@gmail.com](mailto:laidlaw.david@gmail.com)

Caltech

## Do Not Forget Your Suit!

Don't forget to bring your suit to the SIGGRAPH conference! Americans are too formal at receptions! This was the advice of a colleague in my department before leaving for the United States.

The year was 1991, SIGGRAPH Conference in Las Vegas! My first international trip! My first SIGGRAPH!

Despite my poor English, I was welcomed by a fantastic community. Everyone advised me: don't miss the reception, it will be a lot of fun. Then, the day of the reception arrives, I anxiously leave the congress early, go to the hotel, put on my suit, fix my tie... I take a taxi and arrive at the address "Wet & Wild." I thought the name was weird, so I arrived at the place and found a huge line of geeks with towels and bathing suits and only me in a dress suit! I couldn't locate the entrance to the reception, just those geeks and towels. It took me a while to understand that reception was at Wet & Wild! Luckily, there was a small shop selling bathing suits and towels nearby. So, I put the dress suit in the bag and that day understood the SIGGRAPH spirit.



Yes, I didn't chicken out.

Marcelo Zuffo  
mkzuffo@usp.br  
Universidade de São Paulo

## Tomorrow's Realities Gallery (TRG)

At the TRG at SIGGRAPH '91, my research group demoed our first networked virtual environment, NPSNET-1. We had an amazing number of visitors come through, including one DARPA program manager. That DARPA PM looked at our demo and said, "I should be funding you!" And when we got home, he sent us \$1.4M/year for the next three years!

Michael Zyda  
mikezyda@gmail.com  
Naval Postgraduate School

## 1992

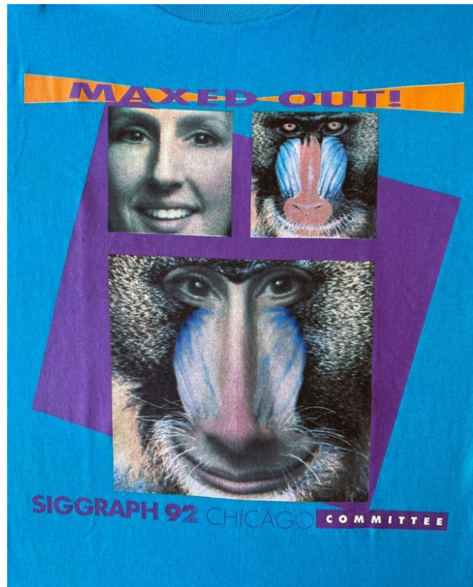
### Morphing Into a Mandrill

The onset of the Persian Gulf War in 1991 brought about a significant drop in world travel that lasted several years. Months before SIGGRAPH '92, we saw declining revenue for exhibition space and feared international attendee registration would also be impacted. As SIGGRAPH '92 chair, I worked with the conference committee to greatly reduce our budget without noticeably impacting quality and worked with our public relations team to more widely promote the conference in the Chicagoland area. We existed on adrenaline for months. It paid off and we ended up attracting a record-breaking 34,000 attendees. We knew when the conference ended that we'd be "Max'ed Out!" As a play on my name, Maxine (or Max for short), we made committee T-shirts that said "Max'ed Out!" with an image of my face morphed into a mandrill.

I framed the T-shirt. It hung in my office at the Electronic Visualization Laboratory, University of Illinois Chicago, for over 25 years. A few years ago, I was shocked to discover that our young students had no clue that both the mandrill and the teapot were icons of computer graphics.

I want to use this article as an educational opportunity. In the 1960s and early 1970s, computer screens were only capable of drawing lines ("vector" displays). In the mid-1970s, companies started to make computer screens based on color television technology ("raster" displays). Comtal, a pioneer in manufacturing raster displays, put a mandrill's face on its screens to show potential buyers the system's image quality for both color and resolution. As more companies developed raster displays, they used variations of the mandrill's face. The ubiquity prompted Lawrence Livermore National Laboratory to create a

standardized digital file of a mandrill face for manufacturers to use so consumers could better evaluate their systems.



"Maxed Out!" SIGGRAPH '92 Committee T-shirt. Created by Mary Rasmussen, professor emeritus of University of Illinois. Software by Mary Rasmussen and Robert Grzeszczuk. Art direction by Maxine Brown.

*Maxine Brown*  
*maxine.d.brown@gmail.com*  
*University of Illinois Chicago*

## The Wow Factor

In 1992, I was a student volunteer assigned to help Judith Mayer with her world-wide collaborative project called the Rosetta Stone in the Telematic Group Projects section of the conference. There were specific times during the week that we would have collaborative art-making sessions with people in Chicago, San Jose, Toronto, Florida, Tokyo, and Paris. While we delighted in the fact that we could create images together, our scribbles and attempts at making interesting collaborative art were projected on a large, tiled video wall nearby. In between performances, I had to watch the booth while a screen saver of a person mowing grass moved across the tiled video wall. Sometimes we put up a screen saver of abstract dancing lines. Between our performances, people would gather around the video wall in awe of the projected imagery. They watched it for long periods of time with an expression of "wow" on their faces. They

would come up to me and ask how we did it. Repeatedly, I would have to tell them it was only the screen saver.

*Bonnie Mitchell*  
*bonniem@bgsu.edu*  
*Syracuse University*

For more information:  
<https://history.siggraph.org/artwork/judith-mayer-rosetta-stone/>

## Becoming the CAVE Woman

My best memory of SIGGRAPH is the second day of the 1992 exhibits where we showed the CAVE VR system for the first time. The first day, attendees did not know what the CAVE was, so people were just trickling into the booth. As the day went on, the CAVE became "the" thing to see.

When I came to get the CAVE ready the next morning, I saw a huge crowd waiting for the doors to open. I remember wondering why all those people were queuing and that I should try to get away from the CAVE to go see it. It never crossed my mind that these people were queuing to see my work!!! When the doors opened, there was literally a stampede across the show floor toward the CAVE. We had some scary moments trying to control the enthusiastic crowd because we could only accommodate 15 people in the CAVE, and we had over a hundred people trying to get in all at once.

The wonderful SIGGRAPH attendees self-organized into a line and we deployed a ticket system in an attempt to control the crowd. However, the crowd continued getting larger and larger; people waited as long as 4 hours for a 3-minute experience in the CAVE. The anticipation and wait to see the CAVE became part of the experience.

This is one of my most amazing and rewarding professional memories. For eight months, I worked hard to create the CAVE and its software framework. I had the honor of working with top scientists on the first CAVE applications and with the awesome team of the Electronic Visualization Lab to make this project a reality. I was so wrapped up in getting ready for SIGGRAPH that I never thought about what I was actually doing. It was groundbreaking work that was emerging day by day. I was a first-year Ph.D. student and I got instant fame. By day three, my name and face were everywhere around the world. People were even asking me for an autograph! It was an overwhelming experience that defined my professional life for years to come. Still today, many people call me "CAVE Woman."



People waiting to get in the CAVE at SIGGRAPH 1992.

Carolina Cruz-Neira  
 carolina@acm.org  
 University of Illinois at Chicago

For more information see:

C. Cruz-Neira, D. J. Sandin, and T. A. DeFanti. "A. Surround-screen projection-based virtual reality: the design and implementation of the CAVE." <https://doi.org/10.1145/166117.166134>

C. Cruz-Neira, D. Sandin, T. A. DeFanti, R. V. Kenyon, and J. C. Hart. "The CAVE: audio visual experience automatic virtual environment." <https://doi.org/10.1145/129888.129892>

## The First High-Speed Network and the CAVE

In 1992, as part of the exhibits, a 45-Mb/s network was patched across the country from Chicago to UC San Diego to illustrate how scientists and artists could collaborate using 3-D graphics, sound, and video. This was a first for both SIGGRAPH and McCormick Place (where SIGGRAPH'92 was held). The effort, called "Showcase," was strongly supported by NSF and DARPA. The CAVE virtual reality projection system was first exhibited as part of Showcase as well, and it was very popular. These firsts led to what is now 30 years of innovation in high-performance networked computing, storage, visualization, and virtual reality.

Thomas DeFanti  
 tdefanti@ucsd.edu  
 University of Illinois at Chicago

## The SIGGRAPH Death Van

For SIGGRAPH '92, a group of students from the George Washington University decided to drive a rented van (rather than fly) from Washington, D.C., to Chicago. Our department was nice enough to pick up

the tab for the rental. Our advisor at the time had a small concern about us all being on the same ride. I mean, if something catastrophic happened on the journey, it would wipe out all members of the Graphics Lab. Because of that concern, we termed the van the "GWU SIGGRAPH DEATH VAN" and indicated such on the side of the van with masking tape. Not only did we have to drive the 700 miles from D.C. to Chicago in a vehicle labeled "Death Van," but we also got to drive all around downtown Chicago because our hotel was not within walking distance of the Convention Center. As the story goes, upon hearing about the van, Dr. Jim Blinn himself even expressed interest in a ride in the Death Van. Certainly, made my SIGGRAPH.



Students standing in front of the GWU SIGGRAPH Death Van.

Joe Geigel  
 Joe.Geigel@rit.edu  
 George Washington University (student)

## Figure to Field

Ken O'Connell and I worked on *Figure to Field*, an animated film produced for the 1992 Electronic Theater. It took two years to complete. Sylvie Rueff was the Electronic Theater Chair who encouraged us to pursue the project. Over a hundred students from around a dozen schools all over the world worked concurrently on their part and had no exposure to what the other schools were doing.

No one saw the completed work until it was edited shortly before the screening at SIGGRAPH. Each of the schools was assigned a "mosaic" (European schools understood the designs as mosaics and American schools were told they were quilt designs) and a Muybridge photo of a human in motion. Each school was given two images and told to animate from "Figure" to "Field" or from "Field" to "Figure." The final work shifted from one to the other seamlessly.

I did the final edit. Ken created a booklet with everyone's affiliation. All students received credit

together with wonderful descriptions of each school and “behind the scenes” information.

It was a wonderful sense of international community very early on!

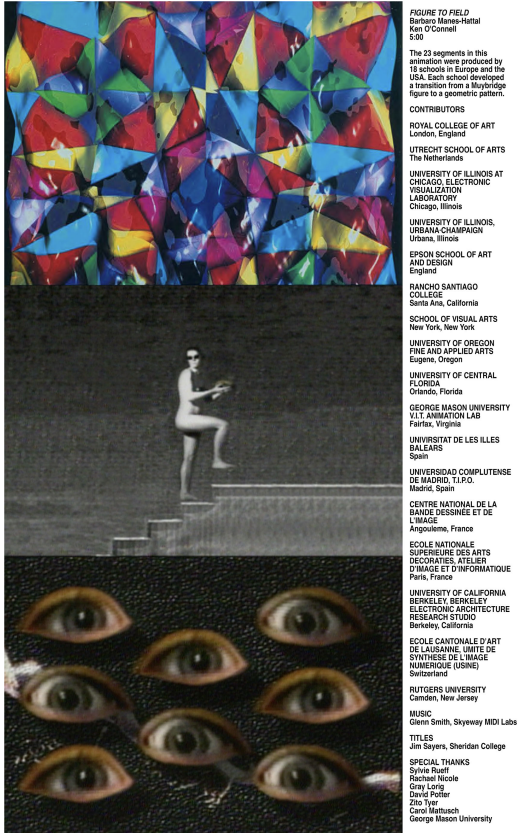


Figure to Field book sample.

Barbara Mones  
monesie@gmail.com  
George Mason University

1993

Fortune Telling at the ILM Party

SIGGRAPH '93 was the first SIGGRAPH I attended. I had a lot of friends who wound up working with David Salesin at the University of Washington. While I hadn't had an opportunity to do research with David, I somehow wound up at SIGGRAPH that year with a bunch of his grad students. I can't recall if I was a student volunteer. We somehow got invited to an ILM party where there was a fortune teller with a snake. I don't remember much from that party other than it was probably the craziest party I had seen to date.

Other things I remember from that trip included mostly swimming in the pool at the hotel, Hotel Poker

(with Per Christensen, Hughes Hoppe, and Debbie Berman), and apparently eating lunch on the drive strip someplace in Anaheim (no idea why).

I'm also not sure why we put a chili pepper on a note to David Salesin on the note wall.



The snake and me.



Hotel poker.

Lauren Bricker  
bricker@cs.washington.edu  
University of Washington

Meeting People Behind the Pixels

My first SIGGRAPH conference was 1989. There are so many wonderful experiences and friendships that it is hard to choose just one. This is a funny memory.

I was a student volunteer (SV). I believe it was 1993 in Anaheim [it could have occurred in Chicago (1992) or Orlando (1994)]. My SV assignment was to shadow a conference committee member and do whatever she needed. One day I was put on the door checking badges. The instructions were to only allow those with a certain badge type into the room. A person tried to enter with a different badge. As instructed, I informed him that I

could not let him in. When I glanced at the name on his badge, I realized it was Jack Bresenham. This was someone whose algorithm I had learned and coded in school. How exciting! Clearly, he was supposed to be allowed in, but his badge didn't match my instructions.

Luckily, the person I was shadowing came back and confirmed that "contributor" badges were also good and we all had a laugh. He was the organizer/presenter of the session! He could not have been nicer about the delay of being stopped at the door. I think/hope he found it funny.

Jack was the first of the many luminaries of the CG world that I met in person or volunteered with through ACM SIGGRAPH. It is one of the most wonderful things about the SIGGRAPH conference and the ACM SIGGRAPH organization that all the powerhouse people behind the pixels are around accessible and so friendly, generous with their time and expertise. Being involved has been the single most important factor in my career growth and professional network.

*Jenny Dana*

*jenwdana@acmsiggraph.org*

*Syracuse University Grad Student*

For more information see:

<https://history.siggraph.org/learning/real-virtuality-moderated-by/>

### Young Students See a Pioneer

This occurred at SIGGRAPH '93 (the 20th Conference held in Anaheim, CA). We were on a shuttle bus between the hotel and the conference site when we heard and saw some young people nodding their heads toward a man sitting at the back of the bus. The students were all whispering at the same time—until someone said out loud, "Yes, you are right. I bet you recognized the name on his name-badge is the same as the person who developed Bresenham's line and circle algorithm in 1962." The students burst out laughing, and the man just smiled and nodded. As bystanders, we realized these students' astonishment when they saw a real pioneer's name-badge and realized that the pioneer was riding the bus!

*Marceli Wein*

*marceli@wein.ca*

*National Research Council of Canada*

### Art and Design Show, Alice Kaprow 1993

Alice Kaprow's show featuring objects representing good industrial design wasn't your typical SIGGRAPH Art Show Exhibit. It was filled with, for instance,

household appliances. Under the floor were a series of pressure sensitive switches that, to the best of my memory, turned the appliances and lights on and off as you walked on them. The item I remember most is the mixer—the beaters rather startlingly started whirring around loudly when it was activated. Reflecting from 30 years later, this show, perhaps uniquely from our art shows, joined the two foci of our conferences: computer graphics, an enabler of product design, and interactive techniques, promoting good user interfaces.

*Mary Whitton*

*mcwhitton@gmail.com*

*Sun Microsystems*

### 1994

#### My First and Most Memorable SIGGRAPH

1994 was my first SIGGRAPH and it was held in Orlando, FL. Everything was new to me. It was also my first trip to the U.S. The SGI booth at the exhibition was huge. I was able to shake hands with the then CEO, Ed McKracken. Ninety-nine percent of the computers in booths were SGI workstations.

The most memorable party was held at Typhoon Lagoon. A kit was provided including a baseball cap that I still keep, a CD, and swimming pants! Food was free.

The Animation Tricks course by John Lasseter was memorable.

Other SIGGRAPHS have been great too and I have great memories of many. But that first one was truly special.

*Jordi Alonso*

*jordi@cine3d.com*

*Centre Calassanç/ESCAC School of Cinema of Catalonia*

#### Disney World After Midnight Party

In 1994, my friend Carmi and I rented Disney World from midnight until morning and let everyone attending SIGGRAPH come in for free. Surf guitar legend Dick Dale played. People danced and partied and joyfully played with each other all night. It took a long time to get it to happen, and Carmi and I spent most of that conference working out the thousands of last-minute details instead of actually attending anything. Seeing people so amazed as they walked in and so happy while they were there was worth everything. My great and eternal regret was Disney World didn't tell me they were going to clear the park at 4–5 a.m. While I was finally taking my one moment to enjoy the party by riding the



Tower of Terror, everyone was escorted out. I left the ride to find a park not full of SIGGRAPH friends and revelers but totally empty. I'm submitting this memory nearly 30 years later to say to everyone what I had so wanted to say that night but never had the chance: thank you for coming, thank you for being my friends, I love you all, and thank you for making SIGGRAPH the best thing ever.

*Bruce McDiffett*  
siggraph@evilgenius.com

### Party On

1994 SIGGRAPH's 21st Conference. In Orlando. My favorite party was the one put on by the duo of Bruce and Carmi. They rented out the entire Disney-MGM studios park for us to go and cavort around at one o'clock in the morning. And they hired Dick Dale (and several Deltones) to perform the music.

*Jim Blinn*  
JimBlinn@comcast.net  
Caltech

### A Gracious, Generous Gesture

I made my first paper presentation at SIGGRAPH in 1994. It was for the paper "Predicting the Drape of Woven Cloth Using Interacting Particles," which was based on my Ph.D. thesis. After my talk, there was a line of people at the front of the stage who wanted to ask me questions about my paper. It wasn't a very long line, but some of the questions led to lengthy discussions. As the questions were eventually answered, the last person in line came forward. It was Demetri Terzopoulos, someone whose SIGGRAPH work I had admired and was inspired by for a number of years. I had never met him before this moment. Demetri had waited patiently at the end of the line just to tell me how much he appreciated and was impressed by my work. Taking the time to personally compliment my presentation was such a gracious and generous gesture, one that I still appreciate to this day. I think there is a lesson to be learned here about how we can support each other as we all try to create the exciting, new technologies of tomorrow. I certainly have tried to pay forward this kind, considerate, and meaningful deed.

*David Breen*  
david@cs.drexel.edu  
Rensselaer Polytechnic Institute

### Is It Real? Or Is It. . .

I have been involved in 3-D computer graphics since 1972. Attended SIGGRAPH since 1977. But a vivid AHA! moment was the first time I couldn't tell CGI from real imagery. During Dennis Muren's talk on *Jurassic Park*, I couldn't tell when the car going over the cliff switched from real to CGI.

*Nick England*  
nick@3rdtech.com  
University of North Carolina at Chapel Hill

### The Blue Teapot

In January 1971, I lectured at the University of Utah and handled the real blue teapot—the first object realistically rendered in a photograph-like image. We had fun comparing the photograph of the teapot with the computer realization—we could always tell the computer image was too perfect. A year earlier, I had contributed the idea of eliminating Mach Bands at polygon edges by smoothing the second derivative. The annual meeting 1994 was featuring the Blue Teapot. It was also shown in middle of the first *Toy Story* movie.



First realistically rendered object in computer graphics.

*Richard Land*  
dickzland@gmail.com  
Harvard University

## Disney World Welcome

I remember the 1994 ACM SIGGRAPH party at Disney-MGM Studios in Orlando. SIGGRAPH took over the park for the evening. It was a beautiful summer experience to enjoy the venue in a leisurely way. The best part was the greeting at the entrance by crowds of Disney cast members dressed in 1950s attire. They were seeking our autographs. It was exciting and nostalgic at the same time and made for a great event for all. When I go to "Hollywood Studios" (its new name), going through the entrance with my family brings back the emotions of 1994 despite today's enormous number of tourists.

*Michael Macedonia  
mike.macedonia@gmail.com  
Naval Postgraduate School*

For more information see:

<https://neomodern.medium.com/the-first-carmis-party-7864a7f1d8c4>

## Screaming Fans

In 1994, one of the receptions was held at Universal Studios. The entire place had been rented out just for SIGGRAPH. When the bus arrived to drop us off, there was a red carpet to the entrance cordoned off with red velvet ropes. On the other side of the ropes were dozens of people yelling and screaming with excitement to see us. I thought to myself, there's no way these people are here to see us... they must think we're somebody famous not just a bunch of conference attendees. Even so, it was kind of exciting and certainly a lot of fun to talk about as we wandered around the park. I found out later that "screaming fans" was just an option that you could add on when renting the park, like adding fries to your order at McDonald's.

*James O'Brien  
job@berkeley.edu  
Georgia Tech*

## The Best Way to Make Change Is to Volunteer

In 1994, I was elected as a director-at-large on the SIGGRAPH Executive Committee (EC). I had recently graduated with an MFA in computer art and had been a SIGGRAPH student volunteer

twice. The EC was looking for "young blood" and surprisingly I was surprisingly elected even though I was relatively unknown. My first experience on the EC was at the Town Hall meeting at the conference. I sat on the stage in front of an audience of hundreds of people. The business meeting began with reports from the chair, etc., but was interrupted by angry SIGGRAPH artists with complaints. They kept saying "You need to do this or that" and it was directed at the EC. The entire EC members turned to me and said, "Bonnie, you are an artist, can you address their concerns?" I said, "Ahhh... who me?" Although I was not aware of the issues they cited, I sympathized with many of their concerns. I responded that SIGGRAPH was a volunteer organization and many of the demands they were making were valid. We needed volunteers to help make those changes and I invited them to volunteer.

It was that experience that convinced me that the best way to make change is to volunteer to do it. I wanted information about other schools, so I volunteered to create the SIGGRAPH Education Directory in the 1990s. I started the SIGGRAPH Membership booth and ran it for six years because I wanted attendees to know SIGGRAPH was more than just the conference. I wanted to see the SIGGRAPH Art Show grow so I volunteered to chair it in 2006. I started the SIGGRAPH Digital Arts Community SPARKS (Short Presentations of Art and Research for the Kindred Spirit) series because the conference art shows had become very small (only nine works shown in 2022) and I wanted to give the community of SIGGRAPH artists a venue to share their work.

The spirit of volunteerism is strong in the SIGGRAPH community because I believe we are all seeking positive change and we know the best way to see it happen is to volunteer to do it.

*Bonnie Mitchell  
bonniem@bgsu.edu  
Syracuse University*

## 1994 & 2001

### Dick Dale

I first saw legendary surf guitar player Dick Dale play at SIGGRAPH in Orlando, 1994. It was at the Bruce and Carmi Party. The Bruce and Carmi parties were also legendary. Sometimes they were large and sometimes in just a ballroom. That year the party was at Hollywood Studio Disney World, Thursday night 12:00 a.m. to 5:30 a.m.

Dick Dale took the stage at 2:30 a.m. after Catherine Wheel opened. Also of note that night, the rides Tower of Terror and Rock 'n' Roller Coaster were operating for the party. That night the Tower of Terror broke. I remember the park personal trying to explain to the head engineer for the park at 3 a.m. that there were 1000 people in line waiting for the ride.

Dick Dale returned to SIGGRAPH in LA 2001 to play at the Bruce and Carmi Party. This time in a Hyatt ballroom till 5 a.m.



Dick Dale at SIGGRAPH '94.

Joe Cychosz  
 cychosz@siggraph.org  
 Purdue University CADLAB

## 1994 & 1995

### The Banana Shader and Block Moves

There are many favorite memories I could choose. This one is watching a course in 1995 at Los Angeles SIGGRAPH put on by Tony Apodaca of Pixar. He talked about creating the Listerine Commercials, the early problems encountered in rendering, and the resulting "blow ups." During his talk, he explained his process of writing a shader for a banana. He went through the way he observed the construction of the banana and how it darkened on the edges and how he would go about writing the shader to mimic this.

Another favorite was from 1994 in Orlando. Actually, there are two. One was the party at ESPN sports complex. The other was a talk or course that demonstrated how to give domino-sized blocks movement goals and the comical way in which they explained the technique. I believe it was done with Connection

Machines. Sadly, I can't remember the individual's name.

David Steffen  
 davidsteffen@mac.com

## 1994 or 1998

### Who Am I?

There was a SIGGRAPH Trivia Bowl one year. Frank Crow was on one team. The MC asked, "Name any author of a paper called (something-or-other)." (Sadly, I can't recall the exact title.) There was a substantial pause. Finally, the other team hit their buzzer and said "Uh...Frank Crow?" It turned out that they were correct.

John Hughes  
 john\_hughes@brown.edu  
 Brown University

## 1995

### An Impromptu Ask Me Anything (AMA)

It was not the first time I met Fred Brooks, but it is the one that has stayed in my mind for many years. I'm almost certain it was 1995. Definitely at SIGGRAPH, probably the evening reception. I was a grad student and attended the conference with a bunch of Randy Pausch's students. Fred sat down with us on the floor in the hallway outside the main room and struck up an hour-long casual impromptu chat about graphics, academia, software careers ... anything and everything that we wanted to know but would never have had the courage to walk up to someone so senior and ask. There wasn't the slightest sense that we were inconveniencing him or keeping him away from more important conversations. He made us feel that our group of students was, for him, the real purpose of the entire evening.

At the time, I'm not sure any of us realized what a generous gift that hour was. Looking back, it was clear. I wish I could tell him how much I appreciated it. [Editor's note: Dr. Brooks passed away in November 2022. He is missed.]

Ari Blenkhorn  
 ari@acm.org  
 University of Virginia

### Courses and Food at the Ready

I was fortunate to be able to serve as the courses chair for SIGGRAPH '95 in Los Angeles, which was the largest ever with about 40,000 attendees. There were

several milestones that I was honored to be involved in, including the introduction of CD-ROM distribution of conference content, and print on-demand using the Xerox DocuTech system for printed materials such as the conference Course Notes. Steve Jobs gave the keynote. He talked about *Toy Story*, which was under development at Pixar.

A series of practical jokes began among the staff and committee volunteers. The pranks helped us reduce the stress of conference week. For example: at every session presentation, multiple 8-foot tables were set up outside the venue for breaks with fruit, snacks, coffee, and soft drinks. After a full day, I returned to my hotel room to find that a fully stocked break table had been set up by a joker in my room. It remained there for the rest of the conference. Despite having to climb over it to get to bed, at least I had a selection of snacks whenever I wanted.

*Wayne Carlson*

*waynecarlson@icloud.com*

*The Ohio State University*

## Steve Jobs Congratulations

I am a very early member and a great fan of ACM SIGGRAPH. If I remember correctly, my first participation at the SIGGRAPH annual conference and exhibition was in 1975 in Ohio. Since 2009, I am Professor Emeritus at the Technische Universität Darmstadt, Germany. I hardly missed any of the annual SIGGRAPH conferences between 1975 and 2009. I always enjoyed each conference because of its outstanding technical-scientific program, its trend-setting impact, and the great opportunities to meet and network with the world's best experts in computer graphics.

I was also the Director of the Fraunhofer Institute for Computer Graphics (IGD). With this networking in mind, I also very much enjoyed organizing several IGD receptions and get-togethers at the SIGGRAPH events. This was always a stimulus that motivated us and influenced our future research work.

Being a participant in so many SIGGRAPH conferences, I have a lot of memories. One that stands out occurred at SIGGRAPH 1995 in Los Angeles. I was honored with the very prestigious SIGGRAPH Steven Coons Award. After the award ceremony, when I was leaving the podium, Steve Jobs, who was the following keynote speaker, was himself coming up to the podium. As we crossed paths, he took the time to congratulate me for having received this important award.

I can, therefore, claim that Steve Jobs, one of the world greatest and most important IT pioneers and influencers, was the first person congratulating me personally for receiving the Steve Coons Award. This

was a great, unforgettable event for me. I must thank SIGGRAPH for it!

*José L. Encarnação*

*jl\_encarnacao@t-online.de*

*Technische Universität Darmstadt and Fraunhofer Gesellschaft, Germany*

## The Newt Gingrich April Fool's Caper

An April Fool's exercise, led by Quorum's Tom Reike with assistants Mike Weil (Hall Erickson's manager of the Exhibits) and me, S95's exhibits chair. We concocted a wholly fictitious visit by Newt Gingrich to tour the exhibits just before they opened to attendees. The hoax was complete with fake e-mail evidence with notes from Washington.

To make it seem more real, we initiated a make-believe argument complete with ALL CAPS disagreements among our crew of co-conspirators. The conference committee, including Smith-Bucklin's Cindy Stark, Betsy Johnsmiller, conference co-chair Brian Herzog, and others were of course cc'd on our public exchanges. They discussed how we'd handle Gingrich, the timing details, and the disagreements among us.

As April approached and the pace and tone of the e-mails accelerated, we started to get worried queries both about the details and about the fake internal argument. One or two actually asked "C'mon, is this for real? Is this some kind of April Fool thing?"—these concerned us greatly, but we managed around them.

All this reached a crescendo March 31; we exchanged many final conspiratorial e-mails to get the timing right and issued the "April Fool—Gotcha" e-mails late morning of the 1st.

Threatening e-mails to our crew started about 45 minutes later—"WE WILL GET YOU—Just Wait Until You Get to The Conference!!" We were all wearing our flak jackets by then though.

In the end, the conference crew was laughing with us—what a superb caper and one of my favorite SIGGRAPH memories.

*John Dill*

*cybersailorjcd@gmail.com*

*Simon Fraser University*

## A Cry for Help

It was SIGGRAPH '95, first time in LA, and there was a special session called "Ask Dr. SIGGRAPH" where Dan Coffey (Dr. Science) answered audience questions about graphics. After an unusually long, geeky, and clearly planted question, Dr. SIGGRAPH gave the

following coy reply: “That’s not a question, that’s a cry for help. You think that these people are your friends, but they’re not. They wish you ill, and so do I.” I have never laughed so hard at a SIGGRAPH event.

*Joe Geigel*

*Joe.Geigel@rit.edu*

*Pittsburgh Supercomputing Center*

## Setting My Professional Path

Presenting a course at SIGGRAPH ’95 in Los Angeles changed my life. The course presented advanced techniques for mapping digital content onto hemispheric dome screens. It featured an introduction that encouraged the computer graphics community to develop spherical rendering algorithms, alerted the VR community to digital domes as group immersive environments, and introduced the concept of multiprojector edge-blending to cover dome screens.

My first SIGGRAPH was Las Vegas in 1991, right after I accepted an engineering position at a planetarium in Cocoa, Florida. I quickly realized the potential of mapping pixels onto dome screens to create immersive environments. I vowed to bring together the SIGGRAPH and dome theater communities.

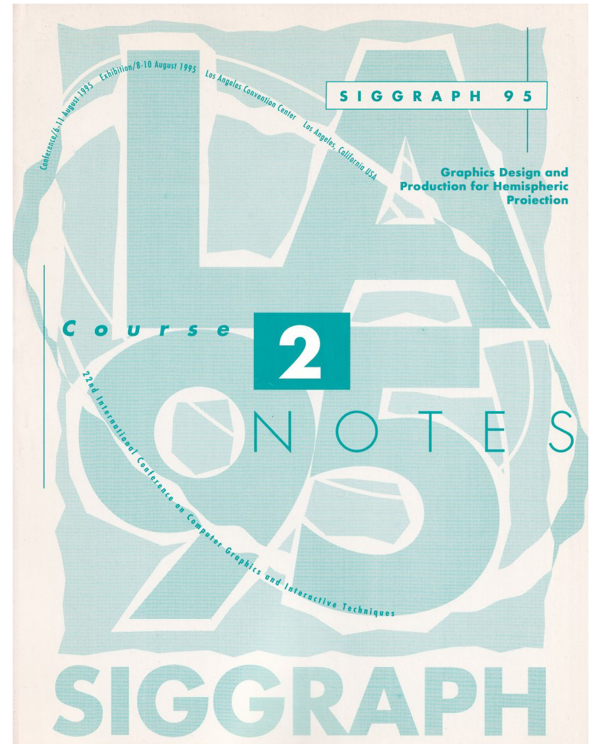
You see, I was a 30ish engineer, and my career was young. I had presented papers at some small conferences, but SIGGRAPH was a major conference showcasing the latest technologies, including VR and the CAVE with real-time CG, digital animation art, and a Cyber Fashion Show.

SIGGRAPH ’95 turned out to be the largest conference to date with 40,100 attendees! My flight, lodging and fees were paid by SIGGRAPH. I stood on stage in a 1000-capacity ballroom with my face and slides projected on large video screens behind me. It was a powerful experience that built confidence, connections, and experience.

It also landed me a job! A planetarium manufacturer executive in attendance asked if he could fly me to Pennsylvania for a job interview. I accepted and went on to design, program, and install prestigious dome theaters around the world.

As a volunteer, I went on to produce a SIGGRAPH panel on VR in 1996, edit a Special Issue of Computer Graphics in 1997, and present two more courses on dome projection/production, including the world’s first full dome showcase in 2003 at the Rubin H. Fleet Science Center in San Diego.

SIGGRAPH changed my life by launching my career. I have since given back by chairing and contributing to the LA Chapter since 2016.



SIGGRAPH ’95 Course: Graphics Design and Production for Hemispheric Projection.

*Ed Lantz*

*ed@vortexdomes.com*

*Astronaut Memorial Planetarium, Cocoa, FL*

For more information see:

<https://history.siggraph.org/person/ed-lantz/>

E. Lantz. “Future directions in visual display systems.”

<https://dl.acm.org/doi/abs/10.1145/271283.271301>

<https://history.siggraph.org/learning/computer-graphics-for-large-scale-immersive-theaters-by-lantz-beining-emmart-stern-thompson-et-al>

## A New Friend and Professional Connection

During the Courses Reception, I filled my plate with prodigious amounts of food and then started to look for a place to sit. I found an empty seat by two gentlemen about my same age. I asked them if the seat was available. They invited me to join them. I introduced myself and that I worked for NASA. They both at the same time said, “Way cool.” They introduced themselves and that they worked for ILM. I then commented, “Way cool.” We talked about our jobs and why we were attending the conference. We were three of the last people to leave

the reception. The conversations were so intense and educational for all three of us. We did not want to leave.

During the next four conferences, I ended up meeting one of the two again at the same reception. In 1999, I was standing in line at one of the buffet tables and turned around. There was my old friend. We both laughed and finally traded contact information. He invited me to speak at ILM and I invited him to the Kennedy Space Center to tour our operations. Our teams and each one of us have learned a great deal from one another. Even though our operations are different, we have learned our production flows are much the same. Two different industries and yet the same common practices.

We still keep in touch. Even though there is no longer a Courses Reception, we make time to meet up and catch up at each conference. A friend for life is one of the benefits of SIGGRAPH.

*Brad Lawrence*

*brad.a.lawrence@nasa.gov*

NASA

## 1996

### SIGGRAPH Means People

One of my biggest thrills as chair of our 1996 New Orleans Conference was to say “thank you” to a contributor, volunteer, staff member, attendee, or host city member for something important to them that made a difference for us all. These events succeed because a lot of caring and generous people make things happen together. Celebrating the connections with “thank you” is a crowning moment for me that has yet to find an upper bound. It makes us whole.



Greetings from SIGGRAPH '96!

*John Fujii*

*fujii@siggraph.org*

*Hewlett-Packard Company*

### LEGO at SIGGRAPH '96

LEGO attended SIGGRAPH in force this year for the first time. We built a VR New Orleans out of VR LEGO bricks and were exhibiting in the VR Village Section of SIGGRAPH. For the exhibition, we had people put on the VR rig and play with virtual LEGO.

*Julian Gomez*

*julianegomez42@gmail.com*

LEGO

### A 25-Year VR Journey

At SIGGRAPH '96 in New Orleans, I was a student and witnessed a VR demo that I still consider one of the best VR applications of all times: The LEGO version of MultiGen Paradigm's SmartScene, a world building application of snapping together LEGOs, whether individual blocks or entire city blocks of LEGOs. As with many VR experiences, this can't be described with words. It was a sort of spiritual experience of seeing the possibilities of what the future would be. I decided VR was what I was going to devote my life and career to.

Nearly 15 years later (in 2010), I was interviewing with a small company, Digital ArtForms. I realized the person I was interviewing with, Paul Mlyniec, led that SmartScene team. I quickly accepted the job that led to a journey of working with some amazing companies, technologies, and people.

Years later, Paul formed a team that largely consisted of people from SmartScene. I felt extremely fortunate and grateful to now be part of that group. With funding from HTC and in partnership with Sixense, we recreated many of the same concepts with the VR modeling and 3-D printing application MakeVR, one of the most engaging VR applications I've had the opportunity to work on.

Just last month I was at a conference where I caught up with one of those team members, Steve Hansted (now at HaptX). Steve was the guy behind the headset back in 1996. We joked about him inspiring my career and some of the good and bad demos we've given over the years. There will certainly be more good than bad. I look forward to seeing how the technology and people will evolve over the next 20 years.

*Jason Jerald*

*jason@nextgeninteractions.com*

*Student at Washington State University*

For more information see:

SmartScene: <https://www.youtube.com/watch?v=q4XmprH1S0s>

Digital ArtForms: <http://digitalartforms.com>

MakeVR: [https://store.steampowered.com/app/569180/MakeVR\\_Pro](https://store.steampowered.com/app/569180/MakeVR_Pro)

## Digital Bayou

As the exhibition designer for the SIGGRAPH '96 Digital Bayou in New Orleans, it was our charge to create a memorable experience that immersed the attendee in a bleeding edge computer graphics technology lab housed unexpectedly in a Louisiana bayou. We couldn't pull this off using the exhibition contractor's usual "pipe and drape," not to mention the predictably glaring lighting to which one is subjected in convention halls.

We had to secure some exhibit backdrop material for the computer graphics exhibitors that conjured up the image of being in a bayou. Sadly, we didn't have the budget to buy enough supplies to fill the 30,000 square-foot convention hall. We needed to find material that had been used and could be acquired for cheap.

So, I went searching for authentic bayou materials that could create the themed environment. A California boy, I was not in my element driving down to the bayou in a rental truck, and I clearly did not have a Cajun accent. I ventured onto random fishing docks, dodging alligators, and negotiating deals for crab traps, shrimp nets, and soggy wooden boxes that had held varieties of bayou wildlife.

After a long, muggy hot day of deal-making, I was proud of myself. I had filled the truck up while not exceeding my budget. Upon arrival at the exhibit contractor's warehouse, they greeted me with surprise as I proudly told them about my day. As we opened the back doors of the truck, the smell knocked us off our feet. My face turned white.

Had I just demonstrated that I was a clueless designer who was wasting their time? How could the contractor possibly take this into their warehouse, and remove the smell?

After some patient negotiations, we worked through these challenges and installed the authentic bayou material highlighted by theatrical lighting that created a compelling backdrop and immersed attendees in the bayou environment, creating the most compelling exhibition at SIGGRAPH to date.



Photo of the SIGGRAPH '96 Emerging Technologies Digital Bayou exhibit.

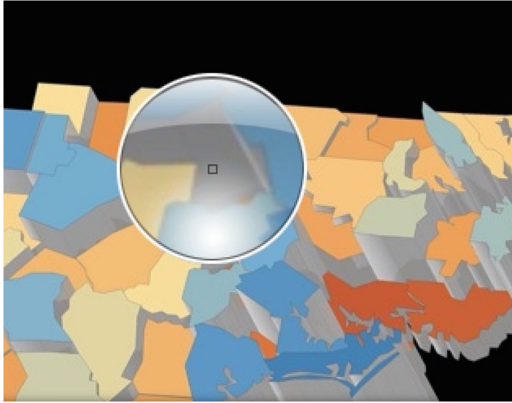
Jeff Mayer  
[jeff.mayer.com@gmail.com](mailto:jeff.mayer.com@gmail.com)  
 Gensler

## Cartographic Visualization Birds of a Feather

I founded the ACM SIGGRAPH Cartographic Visualization Project in 1996. At the time, I was working as a visualization researcher for Lockheed Martin at the United States Environmental Protection Agency (U.S. EPA). In those days, 3-D visualization and animation operated very independently from the geographic information systems (GIS) community.

With the encouragement of Judy Brown, I wrote a proposal to the SIGGRAPH Executive Committee about creating a Special Project on Cartographic (Carto) Visualization. The Carto project would have a Birds-of-a-Feather (BOF) meeting each year at the annual SIGGRAPH conference. The BOF would bring together practitioners working on the concept of geographic visualization. My proposal was accepted and the first BOF was held at SIGGRAPH '96.

Over the years, there have been presentations by the International Cartographic Association, the Web 3D Consortium, the Open Geospatial Consortium, the Google Earth team, Cesium, ESRI, and many more. After 25 years or more, the ACM SIGGRAPH Cartographic (Carto) Visualization BOF continues to meet at the annual SIGGRAPH conference. Special thanks to Patrick Cozzi (Cesium), Don Brutzman (Web 3D Consortium), Nicholas Polys (Web 3D Consortium), and Tamrat Belayneh (ESRI) for the continued contributions to the Carto BOF over the years. It is my pleasure to continue to foster geospatial visualization methods in the SIGGRAPH community.



Detail of Geographic Boundaries as it appears in a Web Browser; image by Theresa-Marie Rhyne. (Used with permission.)

*Theresa-Marie Rhyne*  
*theresamarierhyne@gmail.com*  
*Lockheed Martin*

For more information see:  
[https://s2022.siggraph.org/presentation/?id=bof\\_101&sess=sess155](https://s2022.siggraph.org/presentation/?id=bof_101&sess=sess155)

## 1997

### How to Receive the Coons Award

SIGGRAPH 1997 was the BIG ONE for the Foley family! Daughter Heather joined us from Moscow. Both Heather and daughter Jennifer accompanied us on a deluxe Amtrak train trip from Denver to Oakland. Only one problem: Heather's suitcase didn't arrive from Moscow. It contained not only clothes but also fresh caviar. The errant bag caught up with us during a brief stop at a Salt Lake City train station, thanks to help from a friend at Delta at New York's JFK. We proceeded to share the caviar with the Amtrak crew.

We flew from Oakland to LA and arrived at the conference hotel in LA, only to discover that they did NOT have the suite we requested. In fact, we didn't even have a room! Turns out it was our fault because the reservation had listed an earlier arrival date. The hotel considered us to be "no shows" and canceled everything. Fortunately, Scott Owen rescued us before I was able to reach out to some women I had met in my Leadership America program the previous year. At least we were able to get two rooms.

Then, the big moment. Jim received the Coons Award! He was nervous. In typical Jim fashion, we knew he had it by the time he got to the second line of his speech. The talk went well. Our daughters were proud and loved getting to meet so many famous people with names they

had often heard, to ride around to various parties in a limo, and to get to the head of lines to try new equipment in the Exhibit Hall. And they loved the attention from many young male graduate students until they realized that these guys just wanted to meet their dad. They later said they now understood how daughters of movie stars and rock stars must feel: "used." They quickly developed their own signal for dumping guys and just moving on.

*Marylou Foley*  
*mlhfoley@comcast.net*  
*Self-employed*

### Exhibition

1997 was my first SIGGRAPH and I had never seen anything like it. I believe there were close to 50,000 people in attendance. The Exhibit Hall was absolutely amazing. There were so many vendors with elaborate productions and stage shows. I remember one from DEC that was two stories tall and had flag wavers walking around on the top floor. I got so much swag that year, I had to mail it home in two suitcases.

*Joseph LaViola*  
*jjl@cs.ucf.edu*  
*Brown University*

### 13 Coauthors!

At the beginning of the paper presentation for "Design Galleries," I was thoroughly impressed when all 13 coauthors appeared on stage. It made an impression on me 1) that all 13 were present, 2) that you could work in such a big team, and 3) that you could be successful with so many people contributing! I liked the paper then. Little did I know how influential this paper was going to be 10–15 years later for my own research. Impressive all around!

*Torsten Möller*  
*torsten.moeller@univie.ac.at*  
*Ohio State University*

For more information see:  
[https://vcglab.org/gvi-files/SIG97\\_0.pdf](https://vcglab.org/gvi-files/SIG97_0.pdf)

### The Biggest

My most memorable SIGGRAPH was 1997 in the Los Angeles Convention Center (LACC). The two things that really stood out were the semihysteria that was surrounding the field at that time and the sheer size of the event. I say hysteria because 3-D effects in movies were taking off. Everyone wanted to get involved. On my last two taxi rides from LAX to downtown LA, the



drivers asked if I knew anything about Maya and Soft-image and how they could get trained in them. During our Computer Animation Festival publicity tour, the people all wanted to ask Judith Crow (who was a Digital Effects Supervisor for the movie *Titanic*) how to get into the industry instead of asking us about the animations. I remember Judith telling me that a lot of people were going to be disappointed since there were only a finite number of movies that could be made every year. She was correct.

SIGGRAPH '97 was by far the largest SIGGRAPH conference we have had. At the time, there was a building where the basketball arena is currently located. We used this building for registration and installed sand beach volleyball courts. Every possible square foot in the LACC was stuffed with exhibits and we even used part of the parking/storage areas (we sold 185,000 square feet of space). We had about 50,000 attendees (almost three times the attendance of S2019 in LA) with people booked into hotels all over the LA area. We brought the LACC into the digital age because they had no internet wiring until our GraphicsNet team wired the conference center. It was a great year!

Scott Owen  
 sowen@gsu.edu  
 Georgia State University

### Bitten by the Electric Garden

The first time I attended the SIGGRAPH conference was in 1997. I was still a Ph.D. student in London. In the summer of 1997, I was a visiting scholar at the University of North Carolina at Chapel Hill, hosted by Dr. Fred Brooks. He graciously invited me to join him and his team for the conference. I was super-hyped for the event. My dream came true—it was like attending the Oscars Ceremony, except this one was in computer graphics.

Part of my job was to support the UNC booth, where the team showed several demos in The Electric Garden. It was love at first sight—The Electric Garden became my absolute favorite part of SIGGRAPH. I could walk around for hours and still see something new. The raw energy of innovation, still slightly unrefined prototypes, but great ideas nevertheless—it never got boring. I also remember Dr. Henry Fuchs' elderly parents visiting our booth and trying several demos themselves. They were animated and inquisitive, using stereoscopic glasses and discovering new worlds for the first time. They were chatty and exhilarated by what they had just experienced. As I saw them and the many other people who came through our booth, all I could think was: I want to be in the presence of this joy for the rest of my life.



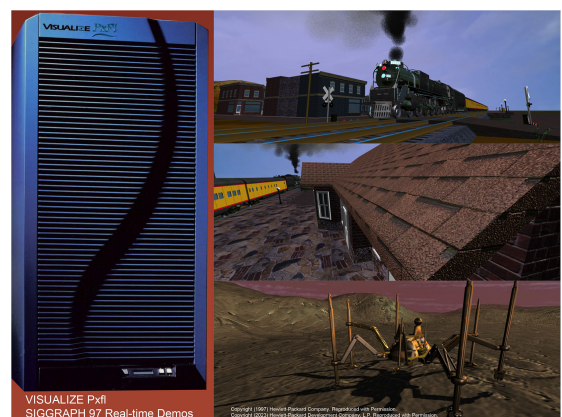
Henry Fuchs (L) shows his father UNC's Electric Garden Booth.

Amela Sadagic  
 asadagic@nps.edu  
 University College London

### Exhibitor Challenges—PixelFlow Graphics

In 1997, Hewlett-Packard Co. and the CS Department at the University of North Carolina at Chapel Hill completed the joint development of the PixelFlow (PxFl) Scalable Graphics system that was showcased at SIGGRAPH '97.

Because it implemented an image-composition architecture, PxFl performance scaled linearly with the number of daisy-chained, rendering nodes. To highlight the scalability, HP's goal was to demo a 36-node system capable of rendering 50M triangles/second at SIGGRAPH. This large system was power hungry and required supplemental air-conditioning, so the plan was to create a mini "machine room" in a booth closet for portable A/C units and the PxFl system.



PixelFlow marketing images 1997. The moving, smoking locomotive was rendered in real time. (© 1997 Hewlett-Packard Company. Reproduced with permission. © 2023 Hewlett-Packard Development Company, L.P. Reproduced with permission.)

Once we arrived at the LA Convention Center and finally worked out issues with teamsters (\$\$) on delivery of our crates to the booth, PxFI was uncrated, assembled, and testing started. We had a functioning system and soon determined that we had cooling issues in the warm exhibit hall. The mixture of cooled air from our A/C units and ambient air were too hot. The hardware team then decided to make two changes—restrict the PxFI input air to cooled air from the portable A/C units and to push the hot PxFI exhaust air up and out of our machine room. After we took an LA shopping trip for cardboard, duct tape, and floor fans, we constructed input and output plenums. This “Apollo 13” style solution was pretty ugly, but it worked!

Everyone tells you it is not humid in CA. In August 1997 it was. Our next issue was dealing with all the condensate water from the A/C units. We had no floor drain in the booth, so the next shopping trip was to procure five-gallon buckets to collect the water. As buckets filled, they were carried to the men’s room and water poured down the toilet. This bucket brigade continued all week, just more discreetly during exhibit hours.

In the end, the PixelFlow introduction was a huge success and generated lots of show buzz while setting a new real-time graphics performance record of 50M “industrial-strength” triangles per second.

*Herman Towles*

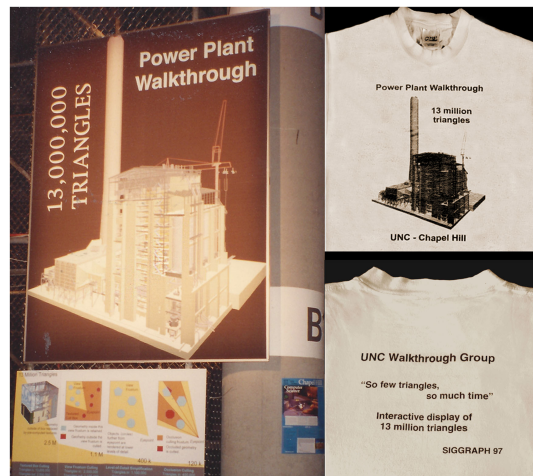
*herman.towles@gmail.com*

*Hewlett-Packard Co.*

## UNC Power Plant Walkthrough

UNC’s 1997 Electric Garden exhibit featured an interactive walkthrough of a then-remarkable 13,000,000 triangle model. An image of the model was to be the centerpiece graphic in our booth and appear on our T-shirt. I was the booth boss and having run out of time in NC, we arrived in LA with no idea how we were going to mount and hang our roughly 6-foot × 8-foot image of the Power Plant that was comprised of four foam core panels. Three of our crew who weren’t involved in getting applications running wanted to visit aircraft museums in Chino, CA, an hour away. I knew they were clever engineers, and, with great trust, I told them, “You can go as long as you come back with a solution for hanging the Power Plant.” Long enough later that I was beginning to worry, in they came with long pieces of aluminum channel, paint stirring paddles, and rolls of duct tape. The channel was just the right depth to slide on the foam core snugly. Paint paddles and duct tape on the backside held the four image panels together along the seams and at the center. Problem solved. The piece still hangs in the CS building at UNC.

We also had a computing problem. At UNC, we ran the walkthrough demo on a very large SGI with lots of memory. We were running on a trade-show loaner machine from SGI at the Electric Garden booth. The trade-show support team from SGI couldn’t loan us as much memory as we needed. Here’s a big, public thank to SGI manager, former Ikonas employee and friend, Michael Jones [RIP]. He pulled memory boards out of a research machine in his SGI laboratory and brought them to LA in a carry-on suitcase in order to loan them to UNC. As a result, our demo ran interactively. Michael’s parting preshow comment to me was, “Mary, please don’t break them.”



The 6-foot × 8-foot Power Plant poster and T-shirt graphics.

*Mary Whitton*

*mcwhitton@gmail.com*

*University of North Carolina at Chapel Hill*

## Chianti

Los Angeles 1997. We had just published the book *Introduction to Implicit Surfaces* and Mike Morgan hosted a dinner for the year’s authors. The Italian restaurant had a fine wine list and I asked the waiter to recommend a Chianti.

“You are fortunate,” he said, pointing at the list. “This one is the finest Chianti made and this a close second.”

“No,” said our second waiter, “this is best and that second.”

Mike ordered one of each. After dinner, I carried the unfinished bottles to the dessert party, also hosted by Morgan Kaufmann. Serving at the bar were two Italian gentlemen. I asked them to pour us a couple of glasses from the bottles I was carrying. I added that they were from Mike Morgan and that the bartenders could keep them in case any other guests wanted to try them.

“Sir,” said the first, “you have good taste. This is the finest Chianti of them all, and that, possibly, second.”

“No, indeed,” said his companion, “That is the best one and this second.”

The wine was pretty good.

*Geoff Wyvill*

*geoff@otago.ac.nz*

*University of Otago*

## 1997–2003

### Technical Papers Deadline and Time Zones

Following the papers committee meeting one year, back in the days when we submitted papers by FedEx, some Europeans observed that because of DHL’s taking some time to get things to the U.S., they had to submit their papers about 30 hours before Americans had to. To the Europeans, this seemed unfair. Perhaps, we could give them an extra day?

There was some discussion of this back and forth. Eventually, Michael Cohen took the floor and said roughly this: “As many of you know, I’ve been working in this area for a while. I’ve had some decent success doing research in computer graphics, some success in vision, some in computational photography. I’ve learned how to manage a research group and we get things done. But there’s one skill I’ve got that’s better than any of those others, that’s almost superhuman in its excellence: I can predict, to the MINUTE, how long a graphics project will take. It turns out that the answer is that the project will be done exactly 5 minutes before the FedEx truck arrives for pickup on the day of the SIGGRAPH deadline.” And that more or less ended the discussion.

*John Hughes*

*john\_hughes@brown.edu*

*Brown University*

## 1998

### SIGGRAPH Bowl III

The SIGGRAPH Bowl III was held at the 1998 SIGGRAPH in Orlando. It was a hotly contested battle that came down to Team Seattle (Michael Cohen, Andrew Glassner, and David Salesin) and Team Utah (Robert McDermott, Peter Shirley, and Peter-Pike Sloan). Toward the end of the bowl, there was a question about rendering for which the correct answer was “the Shirley-Tuchman algorithm.” When Pete Shirley buzzed in, we thought Utah was going to win. But Pete answered the question incorrectly and Team Seattle walked away with the coveted Luxo Lamp given as the prize trophy. It was a classic moment!

*Chris Johnson*

*crj@sci.utah.edu*

*University of Utah*

## My Introduction to AR—the Global Groove!

At one of my first SIGGRAPHS, I remember seeing a poster session for ATR Kyoto with Rodney Berry and Ivan Poupyrev talking about their project, Augmented Groove. It was my first experience with the Groove. The Groove let you do live music mixes from markers. I fell so in love with the entire genre that I’ve been an augmented reality artist ever since.

*Patrick Lichty*

*patrick.lichty@winona.edu*

*Contemporary artist*

For more information see:

<https://www.academia.edu/27721084/>

[The\\_Aesthetics\\_of\\_Liminality\\_Augmentation\\_as\\_an\\_Art\\_Form](#)

## 1998–2018

### Meeting Up

There is nothing better than to meet up with former colleagues and students. The technical and entertainment components of the conferences really just provide the background (and some good starters for technical discussions).

*Jorg Peters*

*jorg.peters@gmail.com*

*various*

## 1999

### Coons Award

SIGGRAPH ’99. This was the year I was honored to receive the Steven A. Coons Award. This award was doubly meaningful to me because it was the last year that Bert Herzog was the chairman of the awards committee. I had known Bert back from the early 1970s when he was a professor at the University of Michigan, and I was a graduate student. I had been doing graphics research in a different department from him and never took his computer graphics course. We had interacted some since we had similar graphics hardware to work with. Bert also gave summer courses for members of the industrial design industry. He invited me to attend (for free) in the summer of 1971 (or 1972?). Coons was one of the speakers and talked about his surface modeling techniques. That was my first exposure to Coons patches (similar to Bezier patches). Coons patches changed my life as my later publications show. Coons himself was a magical speaker. I am delighted that I got

the chance to learn from him and later get the award in his name. Thank you, Bert, and thank you Steve. May you both rest in peace.

*Jim Blinn*

*JimBlinn@comcast.net*

*Microsoft*

For more information see:

<https://history.siggraph.org/award/siggraph-1999-steven-anson-coons-award-blinn/>

## 1999–2000

### The Promise of Computational Biology

While working daily at the Millennium Hotel as part of a University of Washington team, I snuck out to attend papers that looked hopeful. Thankfully, I attended a paper presentation by Przemyslaw Prusinkiewicz that took the humble work I was doing with L-Systems and the Genetic Algorithm into a sense of much possibility. Dr. P. lit up my brain like very few have over a privileged career of access to many wonderful minds. Interest in other related papers and discussions at SIGGRAPH grew from that mind seed. I'm very thankful for Dr. P. and his students over the years and for SIGGRAPH for introducing me in such splendid fashion.

*Bruce Campbell*

*bdc105@gmail.com*

*University of Washington*

## THE AUGHTS

### 2000

#### Mayhem at the Exposition

I started teaching computer graphics in 1982 when my department had no one else to teach it. SIGGRAPH conferences were crucial to my learning a new field. One of the things I looked forward to at SIGGRAPH conferences was all the "goodies" that were given out on the exhibition floor. That was until I became a giver rather than a receiver.

During the 1990s and early 2000s, Silicon Graphics Inc. (SGI) was always a key part of every SIGGRAPH conference. I was one of the early users of OpenGL. Around 1997, I started co-teaching an OpenGL course at SIGGRAPH, usually with someone from SGI. In 1997, the first edition of my OpenGL textbook was released and quickly became a standard text in the field. SGI, of course, was thrilled.

In 2000, SGI and I decided to give away 200 copies of the book on the exhibition floor at SIGGRAPH. The event was a mad house. I arrived at the SGI booth only to see it engulfed by hundreds of attendees wanting a copy.

OpenGL creator Kurt Akeley and I gave out books as fast as others from SGI could open the cartons. When the crowd saw we were down to the last box and realized there would be no more books, it became even crazier. It's only a slight exaggeration that, as I remember, Kurt and I barely escaped unharmed. But what I remember the most was the feeling that I had become a member of this great SIGGRAPH community.

*Edward Angel*

*angel@cs.unm.edu*

*University of New Mexico*

### It Is the People

Above and beyond all of the great experiences, ideas, and inspirations that I have gained from SIGGRAPH are the wonderful people I got to meet and work with.

Sadly, sometimes these folks pass on too soon.



Jackie White [RIP] and me at the reception for S2000 in New Orleans.

*Marc Barr*

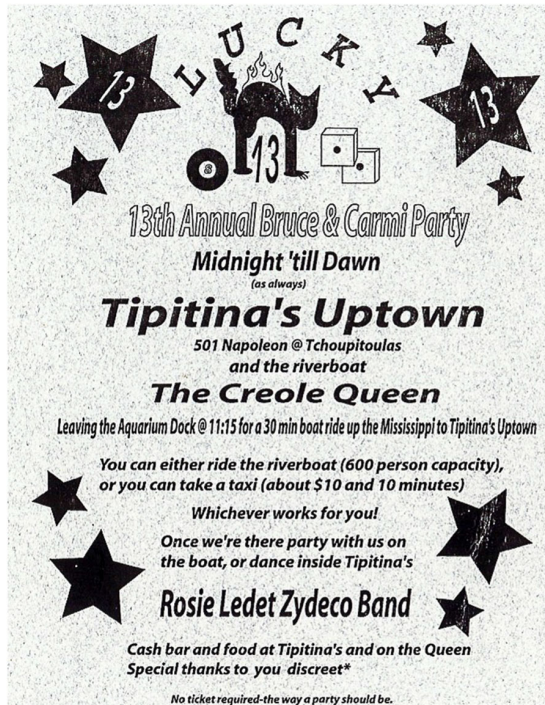
*barrmarcj1@gmail.com*

*Middle Tennessee State University*

### Steaming Up the Mississippi in Moonlight

Another Bruce and Carmi year. They rented a riverboat, an actual steam-powered paddling riverboat. It

left at midnight one evening, churning its way up the Mississippi River under a full moon. It was a classic, stereotypical, archetypical nighttime journey along the Mississippi with lots and lots of moonlight. More than one person looked for a raft with two people and a small hutch. The boat stopped somewhere upstream. We took a mysterious trek through a lumberyard over to Tipitina's, a concert venue which was already booming when we got there.



Party invitation.

Julian Gomez  
julianegomez42@gmail.com  
Sun Microsystems

## Pencils!

I was courses chair that year. One of the courses we offered was Drawing on the Right Side of the Brain by Betty Edwards, based on her best-selling book. She requested paper and pencils so the students could sketch during class. Since the book is well known, attendance was high. I don't remember how many, but the course was held in the largest room so there must have been many hundreds of students. We ordered hundreds of pencils and thought we were ready to go.

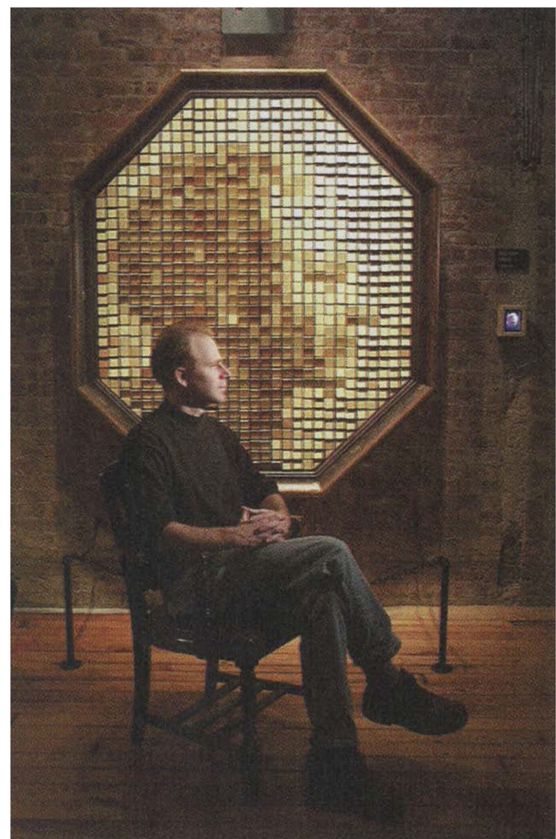
Unfortunately, on the morning of the class, we discovered that the pencils didn't come sharpened! The scramble to sharpen pencils would have been comical if we hadn't been so worried that we couldn't get them

sharpened before Edwards needed the supplies. We commandeered every sharpener in the conference office and went out to buy a few more. All of us, including student volunteers, were sharpening pencils and we managed to finish enough to get by. What a morning!

Anselmo Lastra  
lastra@unc.edu  
University of North Carolina at Chapel Hill

## All-Time Art Show Favorite

The interactive art piece, *Wooden Mirror*, by Daniel Rozin is the epitome of what the pieces in the SIGGRAPH Art Show can be: it is lovely to look at, it is lovely to hear the wooden tiles click as they rotate, it is clever, and it is easy to see and understand the use of computer graphics and imaging in the piece. *Wooden Mirror* is my all-time favorite piece from a SIGGRAPH Art Show.



Artist and one of his *Wooden Mirror* pieces. (© 1999 Daniel Rozin. Image courtesy bitforms gallery and NYU ITP. Image used with permission of Daniel Rozin.)

Mary Whitton  
mcwhitton@gmail.com  
University of North Carolina at Chapel Hill

## Friends Forever

The year was 1999. I went at the appointed time to be interviewed by SIGGRAPH 2000 chair Jackie White. If I was accepted, she would be my boss for the next two years. I applied for the international chair position and got it. I had been a member of SIGGRAPH for almost a decade, and I felt it was time to give back by serving the community. Organizing an event like SIGGRAPH is amazing but also very challenging. I knew practically no one on the committee before the interview. I was welcomed by an incredible team, who passionately dedicated themselves to organizing a fantastic event in New Orleans. I still remember our volunteer activities lecturing graphics in vulnerable schools on the outskirts of the city of New Orleans. Passion guided us.



SIGGRAPH 2000 Committee.

Marcelo Zuffo  
mkzuffo@usp.br  
Universidade de São Paulo

## 2001

### Digital Domain Party

My friend Bruce and I decided to go to the Digital Domain party. Since we were in LA, Bruce had his car. We arrived at the party, which was in some warehouse. We parked on the street. I stepped out of the car into a pile of glass. We noticed glass was everywhere and apparently every car parked along the street had had its passenger window broken out. So, we rolled down the driver and passenger windows of Bruce's car and headed into the party. Iggy Pop was playing. When we returned the car was untouched.

Joe Cychosz  
cychosz@siggraph.org  
Purdue University

## An Emerging Technologies Tale

At SIGGRAPH's Emerging Technologies Pavilion in 2001, my research team in the VR Lab at the Naval Research Laboratory (NRL) and Steve Feiner (Columbia University) combined our mobile AR systems with InterSense's IS-200 tracking technology and large ceiling-mounted fiducials to demonstrate wide area tracking for mobile AR. This included effective switching between different tracking technologies based on availability. When users were outside the regions covered by the IS-1200, tracking was accomplished through a combination of inertial head-and-body orientation trackers and a coarse position tracker based on a constellation of infrared transmitters. As users moved between areas where different tracking technologies were in effect, the user interface adapted to use the best one available.

The demo was successful and well received. However, one of my staff members, unknown to me, had inserted some cute bunnies into the demo. A newspaper thought this newsworthy. Word got back to the NRL publicity office. They proposed further exposure. I did not think our sponsors would be enamored by our expending research funds on cute bunnies and had to put forth some effort to kill the story.

It's a lot more amusing now than it was 20+ years ago!  
Lawrence Rosenblum  
ljrosen@verizon.net  
Naval Research Laboratory

## 2002

### Riverwalk

SIGGRAPH 2002 in San Antonio was a lovely conference. Instead of walking to/from the Convention Center along a busy street, it was a nice quiet stroll along the San Antonio Riverwalk. A wonderful way to start and end the conference day. Those who attended SIGGRAPH 2002 really enjoyed it!

Scott Owen  
sowen@gsu.edu  
Georgia State University

## My First SIGGRAPH This Century

I was a fresh Ph.D. and the opportunity to meet other people and work with the International Resources and Education Committees was

FANTASTIC. Kudos to Dena Eber, Marcelo Zuffo, and Colleen Case, who introduced me to the SIGGRAPH way of doing stuff.

*Joaquim Jorge*  
*jorgej@acm.org*  
*University of Lisboa*

### Igniting Curiosity!

I attended SIGGRAPH 2002 while in high school at the encouragement of a relative who is a SIGGRAPH lifer and knew me. SIGGRAPH was a blast: it was my first time in Texas, my first time reading scientific papers to follow my curiosity, and my first time meeting the authors of software I used and loved. It was an all-around positive experience that nurtured me for years to come. I even still have the coarse-knit blanket I bought to keep warm in the (thankfully) heavily air-conditioned presentation halls. Thanks to all who were there for making a great and lasting impression!

*Michael Stone*  
*michael.r.stone@gmail.com*

## 2003

### Art & Spontaneity

I had been going to SIGGRAPH since 1999 and had helped to organize a course on multisensory perception and graphics for two years. I thought that the combination of creative arts and technical capabilities at SIGGRAPH could use a bit of cognitive science. The course was well-received although I did not have much connection with the creative arts side. My spouse Linda, an accomplished classical musician, accompanied me to the 2003 Conference. She met one of the artists doing an interactive installation in which people would lie down in metal hammocks. While lying down, they were rotated and elevated by a rather interesting contraption. Must say, the relationship to computer graphics was a bit hard to discern. In a discussion with the artist, it came out that Linda had brought her bassoon (she always brought her bassoon) with her. She was immediately added to the installation. For the rest of the week, I would swing by to see her moving about with her horn and “bassoon” people as they were moved around by the apparatus in real time.

For me, this captured some of the magic of my early SIGGRAPHS—the juxtaposition of spontaneous creativity, unusual interactive techniques, and technical mastery.



Linda playing bassoon in art show.

*Brian Fisher*  
*Bfisher@sfu.ca*  
*University of British Columbia*

### Seven Foot Nude

We had received some complaints from attendees about mature art appearing in public places that children could access. As 2003 Conference chair, it fell on me to adjudicate any issues. I had talked to my art chair, Michael Wright [RIP], about it. We clearly decided that any adult themes would be kept in an “advised” area. (Because of budget issues that year, all art was going to be displayed in the hallways.) As I arrived for a preconference committee meeting and ascended in the elevator, I encountered a seven-foot full frontal nude artwork at the top that could be seen not only from the entrance lobby but also from three blocks down the street! I entered the meeting feeling the pressure between freedom of expression and sequestering mature art.

How would Michael, an accomplished artist, take it? As I entered the meeting room, Michael sat in the front ostensibly working on his venue. I greeted everyone and then asked Michael if I could talk to him. “What about?” he asked. “A private matter about an art display,” I replied. (I didn’t want a long, emotional, public discussion on artistic freedom versus public sensitivities.) “Why can’t we talk about it with the committee?” Then, someone else chipped in, “Yeah, what’s the issue?” I guess I had this uncomfortable, non-plussed look because the whole committee burst out laughing. It was a setup, a prank! We later found a suitable location for the nude.

*Alyn Rockwood*  
*alynrock@gmail.com*  
*Colorado School of Mines*

## A Long Journey, But Worth It

In 2003, I was on the Art Gallery Committee when Michael Wright was the art show chair. He had a brilliant idea—display the artwork throughout the convention center instead of hiding it away in a room. This way, the entire SIGGRAPH audience would be exposed to the artworks instead of just those who chose to enter the gallery. For us committee members, hanging 228 works of art in the long hallways of the newly remodeled San Diego Convention Center was a challenge. It was one of the largest art shows in SIGGRAPH's history and it stretched, what seemed like, a half a mile down the corridor.

By the time the conference began, we could barely walk, our feet hurt so bad, but we had a great week anyway. When tear-down happened at the end of the conference, the intent was to pack all the artwork up quickly and go to the committee dinner and then the wrap-up party. At midnight, we were still not done. We missed the dinner and party and still had work to do the next day. I don't think I ever have worked so hard in my life but it was worth it. Michael Wright was an amazing guy to work for and he never acted stressed regardless of how challenging the situation was. Sadly, Michael Wright passed away in 2022 and the SIGGRAPH community will miss his never-ending optimism and positive attitude.



Michael Wright and works from SIGGRAPH 2003 Art Gallery.

Bonnie Mitchell  
bonniem@bgsu.edu  
University of Oregon

## Fast Forward

I enjoyed many parties (big surprise parties at exotic locations) and get togethers and met cool folks and friends. The most amazing memories are related to SIGGRAPH Paper Fast Forwards (FFs), which were introduced around 2003. These were held over a 2- to 3-hour session on Sunday evening before the technical paper presentations started on the Monday morning.

Over the years, FFs became the coolest events. Each author would use his/her 2-minute slot (or less) to be really cool and rather atypical in terms of presenting their work. Some of them would dress funny, others would recite poems. Some would put on short drama or skit. Many times, the attendees would talk more about the "cool FF presentation" rather than the technical idea behind the paper.

Dinesh Manocha  
dmanocha@umd.edu  
University of North Carolina at Chapel Hill

## Utah Alumni and Friends Party

At SIGGRAPH 2003 in San Diego, I hosted a party organized by Utah alumni Amy and Bruce Gooch at Dick's Last Resort. We had more than 100 Utah alumni and friends attend the party. I remember that Henry Fuchs brought his charming mother to the party. Bill Lorensen [RIP] remembered that Henry was the chair of the session when he presented his famous Marching Cubes paper at SIGGRAPH '87. Bill was the last guest standing at 1:00 a.m. when the bar closed and said he knew of an all-night bar down the road we could go to. I must admit that I could not keep up with Bill's energy level.

Chris Johnson  
crj@sci.utah.edu  
University of Utah

## 2004

### Learning to Draw

I produced a number of IMAGES T-shirts over several years at the SIGGRAPH exhibits. Only this one from 2004 survived the pandemic. It must have been one of the later (and better) of my attempts at drawing! IMAGES was a fun exhibit I enjoyed doing. The staff seemed to remember me each year and let me participate in one of the later sessions. In this way, I did not need to take a seat from a student or other full conference registered attendee.



My 2004 T-shirt.

Marylou Foley  
mlhfoley@comcast.net  
Self

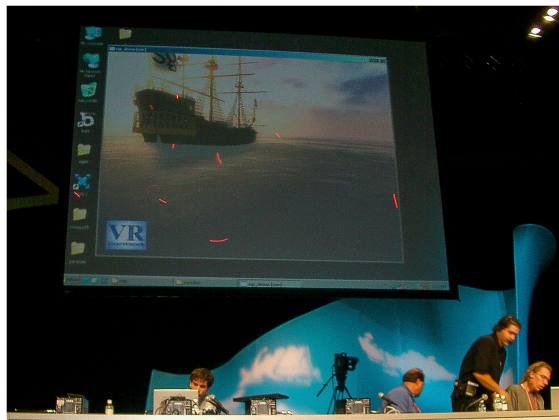


### “Demo or Die” at Real-Time Live!

I remember attending my first SIGGRAPH in 2004 to present my real-time ocean rendering demo in the Demo or Die event (later rebranded as Real-Time Live!). At the time, it wasn't as big an event as it is today. Still, one or two thousand people were in silence waiting for me to start talking and demoing the tech. My English has never been great. At the time, it was definitely inadequate to make the audience understand what I wanted to say. I was nervous. This was my first trip to the U.S., and I wasn't going to let this opportunity to show people my work pass.

The room was dark; I could only see the first row. That helped. So, I started mumbling words in unintelligible English and somehow spent the next 5 minutes talking and demoing different weather conditions and what not as I proceeded to show my real-time OpenGL-shader heavy demo.

Thankfully, an image is worth a thousand words. People liked the demo regardless of what I was saying. They cheered, clapped, and made me feel proud and happy. So much so, that I have come back to SIGGRAPH almost every single year after and presented Real-Time Live! content multiple times.



That's me there presenting during my Demo or Die (Real-Time Live!) event in 2004.

*Inigo Quilez*  
*iquilezles@hotmail.com*  
*VRcontext*

### Real Time 3DX: Demo or Die

In 2004, Len Daly and I put together an event following the VRML and Web3D tradition of “Demo or Die” showcases. The event consisted of a sequence of 3-minute live demos. After each demo, the

audience would vote by shining a laser pointer at the screen. The laser pointer dots were counted using software developed by students of Carolina Cruz-Neira at Iowa State University. The video link below is an edited version of highlights of the event. My favorite part is when one of the demos displays a full body image of a human. For some reason, the vote caused all the laser pointers to light up the crotch. A good time was had by all ;-).



One of the live demos showing a full body human with laser pointers.

*Sandy Ressler*  
*sressler@acm.org*  
*National Institute of Standards and Technology*

For more information see:

<https://www.youtube.com/watch?v=Vadr69U59SQ>

## 2005

### Re-Emerging Research on Ray Tracing

I started my research on ray tracing in the fall of 2005. We thought that hardware advances could enable new interest in ray tracing or even its eventual application to movie production. We aimed to submit our work on ray tracing for deformable models to SIGGRAPH 2006. But we had to submit it to another conference (IEEE Symposium on Interactive Ray Tracing) because the submission deadline for SIGGRAPH was too tight. Later, we found out that another research team had a similar idea, which would be published at SIGGRAPH 2006. While our team was a bit late, I attended SIGGRAPH 2006 with great anticipation to see whether our belief that ray tracing could be a truly useful tool was reasonable. I still remember the moment I entered the technical paper session on

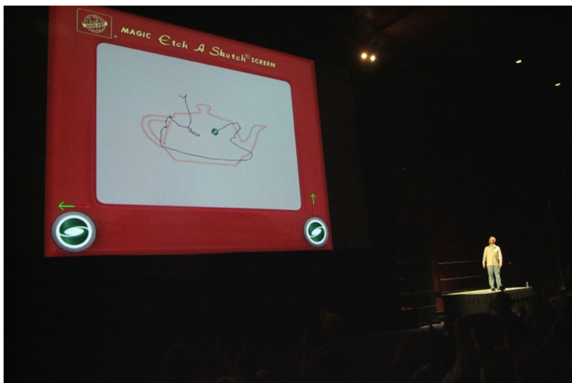
Sampling and Ray Tracing. I left the session with a pleasant feeling because I found that my belief was not wrong. Furthermore, future conferences showed me that ray tracing has been significantly researched and even adopted in many companies.

*Sung-eui Yoon*  
*sungeui@kaist.edu*  
*University of North Carolina at Chapel Hill*

## 2006

### World's Biggest Etch-a-Sketch

The 2006 Computer Animation Festival Electronic Theater preshow ... the world's largest interactive "Etch-A-Sketch" officially endorsed by the Ohio Art Company and submitted to the Guinness Book of World Records. Each audience member (3000+ people!) had a paint stir stick to hold up. The stick had either a green side or a red side. Red turned a knob left; green right. The left side of the audience turned the left knob, the right side, the right knob. Progressively, more challenging shapes were presented to trace. There was much wild laughter and applause. The brainchild of, design of, and produced by Terrence Masson the CAF chair. Loren and Rachel Carpenter designed the Cinematrix system that provided the interactive environment.



CAF chair Terrence Masson directing 3000 attendees to trace a teapot.

*Terrence Masson*  
*terrence.masson@gmail.com*  
*Self-employed*

For more information see:  
<https://newatlas.com/worlds-record-etch-a-sketch-unveiled-at-siggraph-2006/5945/>  
<https://www.geekzone.co.nz/content.asp?contentid=6521>

### Another First

I have been a member of ACM SIGGRAPH since 1978. In 1980, I created and taught the first computer graphics course offered at my university. Even so, my initial research area was artificial intelligence. Therefore, my very first time attending a SIGGRAPH conference was in 2006 in my hometown of Boston. I was blown away by the experience!

All the venues were memorable: Etech, Guerilla Studio, the Exhibition, Electronically Mediated Performances, the Teapot Exhibit. But there were some experiences in the Art Gallery that were especially extraordinary. I marveled at Sheehan's Magic Mirror and Kodama's Morpho Tower Spiral Swirl kinetic sculpture. And the retrospective exhibition on Charles Csuri's works was stunning.

The capstone experience was the Electronic Theater show and, even more memorable, the preshow! Everyone was handed a foam paddle when entering, with a green patch on one side and red on the other. The audience collectively played Pong and drew a teapot (or attempted to) on a giant Etch-a-Sketch screen by holding up either the red side or the green side of the paddle. It was fun and exciting!

This transformed my academic life. I transitioned from AI to virtual environments and interaction design. In addition, I presented a slideshow about my experience to my students in the Clarkson Student Chapter of the ACM. As a result, they decided to start a student chapter of ACM SIGGRAPH. I have attended every SIGGRAPH conference since 2006, made many connections and friends at them, and am a member of two ACM SIGGRAPH standing committees: Digital Arts and History. Currently, I am co-director of the ACM SIGGRAPH History Archive with Bonnie Mitchell (who was the art gallery chair for S2006 as I later discovered). I am currently working with Bonnie on the 50th conference celebration in 2023.

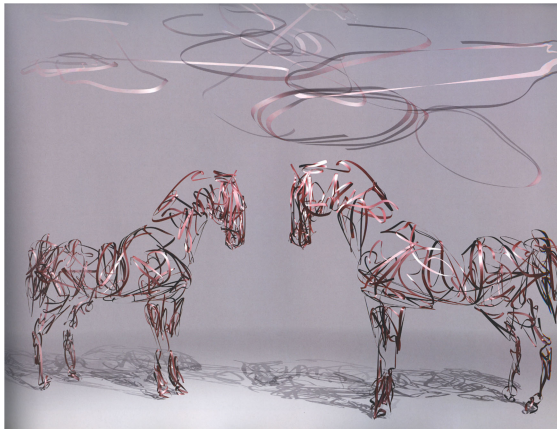
*Janice Searleman*  
*jetsza@gmail.com*  
*Clarkson University*

For more information see:  
<https://history.siggraph.org/conference/siggraph-2006-33rd-annual-conference-on-computer-graphics-and-interactive-techniques/>

### Charles Csuri Retrospective

The Bonnie Mitchell-organized retrospective of Csuri's work was magical. It not only brought Chuck

back to SIGGRAPH in person, but it also brought together many of Chuck's iconic images—from the hummingbirds plotted one frame at a time on a pen plotter to the series of paintings using his "ribbon" technique/brush. When we visited Chuck at Ohio State in 1998, he told us that the ribbon primitive was inspired by watching his granddaughter use her crayons to draw using great swirly loops. Chuck [RIP] was a customer, colleague, and friend.



*Horse Play* by Chuck Csuri. (© 1990 Charles Csuri. Image courtesy CsuriVision Ltd. Used with permission.)

Mary Whitton and Nick England  
 mcwhitton@gmail.com, nick@3rdtech.com  
 University of North Carolina at Chapel Hill

For more information see:  
[https://digitalartarchive.siggraph.org/wp-content/uploads/2006/03/charles\\_a\\_csuri\\_beyond\\_boundaries.pdf](https://digitalartarchive.siggraph.org/wp-content/uploads/2006/03/charles_a_csuri_beyond_boundaries.pdf)

## 2009

### New Orleans Outside the Convention Center

With a few free hours one day, I decided to ride the St. Charles streetcar to the end of the line. Rather than extol it here, I'll simply say to check a New Orleans tourism website to see why this is such an experience. They're not exaggerating. It's very picturesque. It even goes by a house that I could swear was the setting shot for the 1960's *Addams Family* TV series. Following the streetcar ride, I visited the World War II Museum. It was an afternoon well spent on outside subjects.

Julian Gomez  
 julianegomez42@gmail.com

## THE TEENS AND BEYOND

### 2010

#### Richard Dreyfuss: Inventor

A friend of a friend knew that Richard Dreyfuss (the main actor from *Jaws*) wanted to attend SIGGRAPH while it was in LA. She asked a couple of the University of Illinois Student Chapter members to guide him around the conference for a day. My friend Madelin and I met him at registration where we watched him write down his occupation as "inventor."

While most of the conference was distracted by a talk Dick Van Dyke was giving, we took Richard through the Art Gallery, the exhibit floor, and Posters. He was most blown away by Emerging Tech. I distinctly remember him interrogating every single exhibitor with very out-of-left-field questions. At one point, he was literally crawling around on his hands and knees to play a light-up musical instrument being presented that year. We ended the day with some Mexican food at El Cholo where everyone at the restaurant kept looking at us. Sorry, I was too embarrassed to try taking a photo!

AJ Christensen  
 achrist3@siggraph.org  
 National Center for Supercomputing Applications

### 2011

#### The Longest and Best Date Ask Ever

The year is 2010. I'm in LA visiting my soon-to-be ex's relatives. Turns out Stephen Spencer, a friend from my running group in Seattle, was at SIGGRAPH in LA. During a Google chat session, he asks if I want to attend the Electronic Theater if I can get to LA. As much as I wanted to, I couldn't make it. So, he says "That's ok, we can go next year when SIGGRAPH is in Vancouver."

Now I'm not even dating this guy. We were just friends. My head immediately starts spinning with "How will this work?" and "Would I get my own hotel room or is he thinking we'd share?"

Suffice to say, Stephen and I start dating. A year later, we decide we'll not only go to Vancouver together, but we'll also *bike* there from Seattle. We train for just that and bike from Seattle to Vancouver shortly before his conference committee meetings.

And yes, we shared a hotel room.  
 And we're still together today.



Stephen Spencer and Lauren Bricker after a self-supported ride from Seattle to Vancouver for SIGGRAPH 2011.

*Lauren Bricker*  
*bricker@cs.washington.edu*  
*Lakeside School, Seattle, WA*

### Bicycling to the Conference

It's two days and about 170 miles from Seattle to Vancouver by bicycle. How do I know? We rode there! Headwinds in the Skagit Valley, the beauty of Chuckanut Drive, being reminded to sign one's passport at the border crossing, the never-ending Vancouver suburbs, and that dreadful hill near Simon Fraser University... and we made it. We did it again three years later.

*Stephen Spencer*  
*stephenspencer@gmail.com*  
*University of Washington*

### Impressions of My First Conference

I accompanied my longtime SIGGRAPH enthusiast and husband to my first conference. It was my first fantastic, rich exposure to computer graphics. Between the computer area where one could experiment with new artistic programs (I still have the piece I created) to the introduction of the surface value of a teapot to the familiar names of corporations on the exhibit floor, I was sold on this adult summer camp experience!

I was especially enthralled with the language of the conference and shared new terms and adjectives with my husband for their definition. Since my first conference, I have attended several more and appreciate the details and time that folks dedicate to this professional organization. SIGGRAPH attracts young and experienced folks from all over the globe.



SIGGRAPH Inspiration.

*Jan Levine*  
*jel810@gmail.com*  
*Self-employed*

### 2012

#### Betting on SIGGRAPH

As the new chancellor of a small digital arts college in 2012, I found myself in a curious situation. An animation projects course had produced two successive short films and provided students with valuable practicum experience. The director, who had Hollywood roots, was a fine intrapreneur. A phenomenally high percentage of the students had been hired by major studios upon graduation—the best metric imaginable. Every major Hollywood animated film had a “rigger” from our college. Our last two student-produced films had been screened at 54 festivals and won a dozen major awards. Eighty percent of our press copy and a third of our new student enrollees were connected to this legacy.

The director sought \$20,000 to attend SIGGRAPH with three students to describe their work results. While only 0.3% of our total budget, it was 8% of the small marketing budget. The administrative staff did not see sufficient value in this with comments like: “How many prospective students attend SIGGRAPH?;”

“No other faculty member gets such a budget,” and “It’s not in the budget, so we cannot do it.”

We could not find \$20,000 for something outside the norm, even though it was without question—from the director’s perspective—the most important single event of the year. What bothered me was not that the staff was resistant, it was that I also balked. Weeks later, I realized that I—one of the leading protagonists for intrapreneurs in the world who was writing a book on how to be an intrapreneur and how to manage intrapreneurs—flunked the test in my own domain.

Realizing this, “we found the money.” Three students, the director, and I attended SIGGRAPH 2012. They were awed. Moreover, they rubbed shoulders with “the greats” (whom their director knew personally). They got to attend “real developer sessions” for Nvidia and Imagination Tech. They flocked to the Pixar and Industrial Light and Magic booths. And back home, they were ambassadors par excellence. It was worth the bet!

*Charles House*  
housec1839@gmail.com  
Cogswell Polytechnic College

For more information see:  
<https://www.youtube.com/watch?v=nbxqK8ePE14>

## An Impressive Impression

My story actually has nothing to do with my professional day-to-day work (aerospace and defense use of visualization). At SIGGRAPH 2012, I was exposed to the intricate work Pixar was doing, this time on *Wall-E*. It was the first time I had seen Pixar processes in person.

The person I was talking about was Roger Deakins, the famed cinematographer. He helped develop some scenes in *Wall-E* that made the movie into a masterpiece. It successfully married the art of computer graphics, dear and close to me, with the art of classic, film-based cinematography, my outside-of-work passion. The fact that it was possible to blend between analog and digital space was an eye opener and got me much closer to understanding how these two worlds will eventually blend. Oh, and I had the opportunity to briefly chat with Roger in the corridors after he spoke. It confirmed one more time that most of the speakers at SIGGRAPH are down-to-earth, approachable, and more than willing to share. Not to mention that I made my cinematographer-in-Hollywood cousin jealous for life. ;-)

*Vladimir Karakusevic*  
vladk66@gmail.com  
Green LLC

For more information see:  
[https://en.wikipedia.org/wiki/Roger\\_Deakins](https://en.wikipedia.org/wiki/Roger_Deakins)

## 2013–2014

### SIGGRAPH, My Mentor, and My Path to College

As a high school student who was quickly approaching college, I was wary of the decision I’d have to make about my future. It all seemed so overwhelming until my SIGGRAPH mentor took it upon himself to tackle some potential interests of mine. He not only made sure I attended panels highlighting the creation of my favorite franchises, such as Marvel and Uncharted, but also ensured I engaged with talks concerning real world applications of school material I was passionate about. I also appreciated that he would set up lunches for me to meet some of his friends, who happened to be in the fields I was considering exploring. Just as SIGGRAPH’s Emerging Technologies Exhibits made me excited for the future, my mentor and those who put together SIGGRAPH made me excited for my own future and all the ways in which I could take it.

*Mark Gonzalez*  
g.markme@yahoo.com  
Student

## 2014

### Birdly

*Birdly* was my all-time favorite E-Tech experience. The experience of flying was absolute fun and amazing.



Birdly Flying with Don Greenberg.

*Joe Cychosz*  
cychosz@siggraph.org  
Purdue University

For more information see:  
<https://birdlyvr.com/>

### One Special Attendee

SIGGRAPH is for me all about people and technology. At SIGGRAPH 2014, we were able to bring those two elements together in a most rewarding way. We

learned about Paulo Henrique Machado, a polio survivor in São Paulo, Brazil, who'd been confined to a hospital bed his entire life. He taught himself to be an animator, which undoubtedly makes him part of the SIGGRAPH community. With the help of a fantastic team of student volunteers and a dedicated, passionate project manager, we were able to arrange for Paulo to attend SIGGRAPH 2014 virtually by using a telepresence robot from Double Robotics. He remotely navigated the conference attending courses, interacting with speakers and attendees, and was even rumored to have danced by Vancouver's Digital Orca.

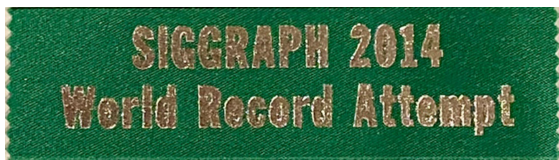
Dave Shreiner  
shreiner@siggraph.org  
SIGGRAPH 2014 conference chair

For more information see:

<https://blog.siggraph.org/2014/08/brazilian-paulo-henrique-machado-attends-siggraph-2014-via-telepresence.html/>  
<https://cacm.acm.org/news/177756-brazilian-animator-visits-vancouver-siggraph-technology-conference-via-robot/>

### One for the Record Books. . . or Not

SIGGRAPH has always been about advancing technology, particularly that of displays, rendering, and visuals. At SIGGRAPH 2014, we tried to break the record for the largest display made of individual devices: mobile phones and tablets. The idea was to distribute a sequence of images across the devices of about 1500 participants. Much to the chagrin of the SIGGRAPH organizing committee, they were unceremoniously drafted to help uniquely identify every seat in the main hall by affixing a sticky note under each chair. At show time each participant entered the ID found under their seat and then waited for the rendering to begin.



SIGGRAPH 2014 World Record Attempt ribbon.

Under the watchful eye of an extremely overwhelmed yet intrepid Royal Canadian Mounted Police officer who was officiating the event for the *Guinness Book of World Records*, the event began with thousands of web requests flooding an inappropriately configured web server (too many open sockets). The server failed and doomed the effort. Even though SIGGRAPH didn't win the day, the

event was celebrated in the best of SIGGRAPH traditions—with a commemorative badge ribbon!

Dave Shreiner  
shreiner@siggraph.org  
SIGGRAPH 2014 conference chair

For more information see:

<https://blog.siggraph.org/2014/08/siggraph-2014-prepares-for-world-record-attempt.html/>

### One Envelope, a Lifetime of Friendship

This is a memory I will never forget that happened when I was a team leader for Student Volunteers in 2014 for SIGGRAPH Asia Shenzhen, which was my first time at SIGGRAPH Asia. As a team leader, we got reimbursed for our flight ticket and received a small stipend. On the last day, we all went for karaoke. As I took a break to rush to the bathroom, I accidentally dropped my stipend money. Not even five minutes after I realized it, I returned to the bathroom. The money was gone. I was quite sad that my carelessness had caused trouble. There was nothing I could do but cut my losses. The other team leaders were encouraging. Little did I know, they all chipped in some of their own money later that day and gave me another envelope to replace it. I was speechless. Even though I'd only met some of these folks for a short while, they would do that for me. It was an unforgettable moment and for me, a lifetime of friendship.



Karaoke at SIGGRAPH Asia Shenzhen 2014.

Ginger (Marisa) Tontaveetong  
tontaveetong@gmail.com

2015

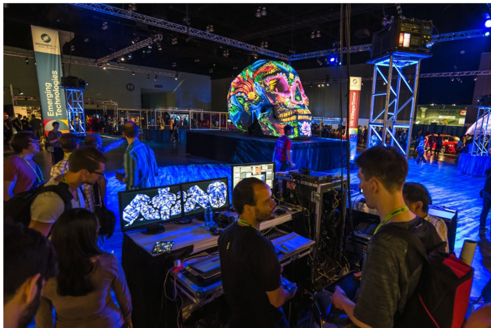
Walking on Site

I had the honor of being chair of the 2015 Conference.

I remember walking into the LA Convention Center the Thursday prior to the beginning of the conference and being awestruck seeing the contractors, who had already been onsite for days, assembling this gigantic skull, which was going to be at the crossroads of a number of our venues.

After years of planning, thousands of hours of volunteer efforts, drama, politics, other assorted panics, and a good number of laughs, everything was really coming together.

My thoughts were “Thank you to everyone who made this possible.”



The Skull at the Crossroads.

Marc Barr  
 barrmarcj1@gmail.com  
 Middle Tennessee State University

2017

You Never Know

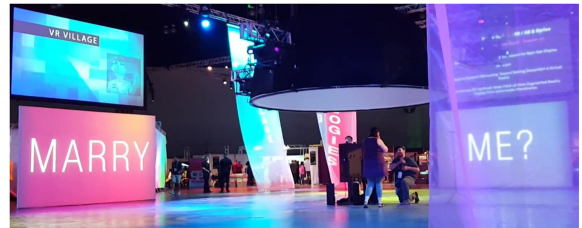
I was invited to sit in the VIP section of the S2017 Electronic Theater. I sat next to Jim Blinn and struck up a conversation. Jim asked me if I knew the gal who produced the SIGGRAPH Video Reviews as he was looking for copies of some of his work. Much to his amazement, I was that gal!

Dana Plepys  
 dplepys@siggraph.org  
 University of Illinois Chicago / Electronic Visualization Laboratory

Secret Marriage Proposal in VR Village!

Valentina and Ethan Miller (of NightKitchen Interactive and Drexel University Philadelphia) got engaged at the SIGGRAPH 2017 Conference in the center of the VR Village. Ethan surprised Val with a 3-D printed ring and a custom-designed motion graphics video (formatted for all five

screens and dome projection... and rendered the night before). Some of us had to keep this a secret for WEEKS!



Ethan on one knee in front of Val.

Natasha Warshawsky  
 nwarshawsky@pcad.edu

Perspective

Each year for almost 30 years, I would come to SIGGRAPH to get an understanding of where the industry I lived in (not computer graphics, per se) was headed. I worked in the field of software for design and engineering—the CAD industry. At SIGGRAPH, I could see where boundaries were being pushed, new developments in hardware that would eventually impact my industry, and new technologies that had the potential for significant impact. And all of that could be accomplished by walking the floor at SIGGRAPH. Some technology had immediate impact and I’d see shifts in my field shortly thereafter. Others had a great deal of interest (and still do) but never made an impact. And others, often in the areas of research and art, did not have practical implications for decades to come.

Brad Holtz  
 bradholtz@gmail.com  
 Cyon Research Corporation

2018

The Fifth Season

SIGGRAPH returned to Vancouver in 2018. Because it was in Vancouver, John Dill and I decided to organize a harbor tour for about 30 attendees. We succeeded in chartering a boat, choosing a dinner, and providing pirate-themed party favors. It was great seeing some cruisers with forehead-mounted black mustaches.

Remarkably, all the cruisers arrived on time and we cast off at the appointed hour. As we pulled under the Lion’s Gate bridge on our way to False Creek, we encountered unexpected fog or cloudiness or something. Pretty weird at 5:00 p.m. Sunset wasn’t supposed to happen until 9:00.

A cloud of smoke from forest fires to the east had descended on our cruise and Vancouver. It obscured views of the local mountains and the glory of Vancouver.

The smoke didn't change the camaraderie and conversations we all enjoyed. It did cause me to add a fifth season: spring, summer, fall, winter, and smoke.

HE ASKED WHAT WE WERE DOING IN VANCOUVER. I REPLIED THAT WE WERE ATTENDING SIGGRAPH. HE TOOK A QUICK GLANCE AND REPLIED, "AREN'T YOU A LITTLE OLD FOR THAT?"  
DAVE KASIK

The smoke lingered through the rest of the conference and finally cleared when my wife and I departed on Saturday. Turns out the previous days' smoke hadn't impaired the U.S. boarder patrol agent's vision. He asked what we were doing in Vancouver. I replied that we were attending SIGGRAPH. He took a quick glance and replied, "Aren't you a little old for that?"



Obscuring smoke.

Dave Kasik  
dave.kasik@gmail.com  
Boeing-Retired

### VR@50: Reception Honoring Ivan Sutherland

Henry Fuchs organized a wonderful panel celebrating Ivan Sutherland's 1968 head-mounted 3-D display system. The panel featured Bob Sproull, Chuck Seitz, Fred Brooks, Quintin Foster, Henry Fuchs, and Ivan Sutherland. Hanspeter Pfister and I helped Henry organize and sponsor the evening reception honoring Ivan. It was a magical event. Ed Catmull, Alan Kay, and John Warnock joined over Zoom with Henri Gouraud, Martin Newell, Jim Blinn, and others joining Henry Fuchs and Ivan Sutherland on the stage. In the audience was a who's

who of computer graphics, including Andy Van Dam, Alvy Ray Smith, Don Greenberg, Pat Hanrahan, Turner Whitted, Jim Foley, Michael Cohen, and many others.



Clockwise: Reception audience, John Warnock, Alan Kay, and Ed Catmull.



Left to right: Ali Fakarzadeh, Quintin Foster, Martin Newell, Jim Blinn, Ivan Sutherland, Bob Sproull, Henri Gouraud, Henry Fuchs, and Chuck Seitz.



Ivan Sutherland with the Utah Teapot.

Chris Johnson  
crj@sci.utah.edu  
University of Utah

For more information see:  
<https://www.cs.utah.edu/soc-co-sponsors-vr50-siggraph-event-honoring-ivan-sutherland/>



2019

### Outreach and Engagement

In 2018, Tony Baylis and the ACM SIGGRAPH Diversity, Equity and Accessibility Committee held their second summit at the SIGGRAPH conference. The summit enabled participants and members to convene on topics relevant to cultural, social, and gender-based outreach, providing a platform to many individuals who are under-represented in our communities. For a lot of us, this was the first time that we saw ourselves—explicitly and intentionally—reflected in the graphics community.

After watching a presentation about encouraging gender diversity in computer graphics and interactive techniques, I ran into a college student in the hallway who was attending as a volunteer. They turned around when they recognized me from the committee. With a smile, she said something to the effect of “this is my first time here, and it was so welcoming to see these issues being discussed.” I know that for myself and for many others, that feeling was central to continuing to pursue a career in this industry. Being able to persevere and stay positive in light of adversity relies on moments like that.

*Daniel Pillis*  
pillis@media.mit.edu  
MIT Media Lab

2020

### Pioneers Reception

At the SIGGRAPH 2020 Virtual Pioneers Reception, I remember when Richard Chuang, Nelson Max, and I talked about techno-vernacular creativity and techno-perceptual expansion. It was a highly casual conversation about technology creating the vocabulary with which we make things and how technology expands human perception or what we believe is possible (e.g., computer graphics, movies, television, and video games).



Richard Chuang, Nelson Max, and Matthew Conti at the SIGGRAPH 2020 Pioneers Reception.

*Matthew Conti*  
conti.artist@gmail.com

2021

### Silicon Graphics Legacy

The first time SIGGRAPH had the “Retrospective” program (history), which comprised several panels, a commemoration event, and a keynote. Everything was online due to COVID-19 restrictions. Even so, it opened the door to invite people from around the world. One of the panels was about the history of Silicon Graphics Inc. We were proud to host Mr. Jim Clark (James Henry Clark, 1944), who was the brain and soul of SGI. However, when we started the panel, he was not around; we noticed there was a communication problem and were expecting the worst. Still, when it was time for Mr. Clark to speak, he had just joined the call and his presence fitted naturally with the panel’s conversation.

This panel taught us a lot. It was a joint effort with the Computer History Museum (CHM). One of the astonishing things we learned was that the current CHM is located at the old Silicon Graphics headquarters. The CHM building itself is the largest artifact the museum has about the history of computing. In this case, the artifact is housing the company that brought “the silicon to Silicon Valley.”

*Andres Burbano*  
burbano@gmail.com  
University of Barcelona

For more information see:

<https://www.youtube.com/watch?v=oIUMii1wdE>

2021–2022

### Electronic Theater Impressions

The Electronic Theater (ET) is THE event of the SIGGRAPH conference each year. It can be loud. It can be raucous. It is participatory. It is dynamic. It is where we humans and technology all gather each year to share our passion for pushing our senses to the edge. It begins with the primitive rhythms of house music or spacey progressive rock anthems. Sometimes there is audience participation. Remember Loren and Rachel Carpenter’s red and green paddles and an audience-wide game of Pong? Sometimes there is a solo performance like the year that Jaron Lanier performed. Then, we are all welcomed to this year’s show. In some years, the video that introduces the show could have won the Best of Show Award. Some years the intro is simple.

I think that most of the videos in the ET fit into these categories: 1) Scientific Simulations (like 2022’s “Living Worlds: City Regreening”), 2) Parables (like 2021’s “I Am

A Pebble” or “Migrants”), 3) Grotesques (severed hands falling like rain or a walking half-man sliced vertically as if by a microtome), 4) Comic Relief [like 2021’s “The Source of the Mountains” or 2022’s “The Soloists” (which could qualify as a Parable as well)], 5) Music Videos, 6) Promotional Videos (pulling back the curtain on “how it was done”), and 7) Game Promos.

I am somewhat partial to Parables, Comic Relief, and Promotional Videos. The ET loses a lot when it is only virtual and not a live experience.

*Phil Alberton*

*philon1720@att.net*

*Blue Wave Systems*

## 2022

### Kindness

One recent memory was at last year’s 2022 Conference when the Diversity, Equity, and Inclusion (DEI) Committee members who were in attendance were taking a group photo to send to Tony Baylis who could not be there. We were around the corner from the SIGGRAPH Village. We had just finished snapping the shot when an attendee approached our group.

He knew we belonged to DEI and shared a little about some of his own challenges connected to his neurodiversity. He wanted to know if we could give him advice on how he could engage more deeply in the computer graphics industry. He was struggling a little bit and seemed to mostly be looking for signs of hope that he might have a place in this community.

What I will never forget is how much kindness and genuine acceptance, warmth, and care everyone in the group showed this gentleman. He seemed very happy as he eventually continued on his way.

I was thinking that maybe it was because, well, we represent the DEI Committee and it’s kind of our role to be accepting. As I think back, I note that we are pretty typical of most in the SIGGRAPH community. I am proud to know every one of these generous people and to be able to volunteer alongside them and my friends and colleagues on the Education Committee. So many who participate in the conference and other activities throughout the year are excellent at what they do. What most impresses me is who so many SIGGRAPH members and pioneers are deep down and how much they care about others and including them in the conversation.

I am personally grateful to have been the recipient of this kindness. My hope is to be able to pass it on in a meaningful way to others.



DEI in Vancouver Alain, Sarah, Alex, John, Kader, and Natalie.

*John Cays*

*cays@njit.edu*

*New Jersey Institute of Technology*

### Advancing Technology

I visited SIGGRAPH because I knew and understood that technology is always evolving and growing just as my business does. SIGGRAPH and SIGGRAPH Asia create focus to advance and further technology.



Virtual Production with Will Fan.

*Will Fan*

*will@emobily.com*

*eMobily*

## 1988–2022

### For the Sake of Sake

In 1988, Yoichiro Kawaguchi’s CG show and sake party started. 2022 marked the 36th consecutive celebration. It is my great pleasure that the Sake barrel opening ceremony has become a regular event where participants can interact with each other.

Fortunately, I received two great honors: 2010 Distinguished Artist Award Lifetime Achievement and 2018 Academy Award. I am full of gratitude to SIGGRAPH.

*Yoichiro Kawaguchi*

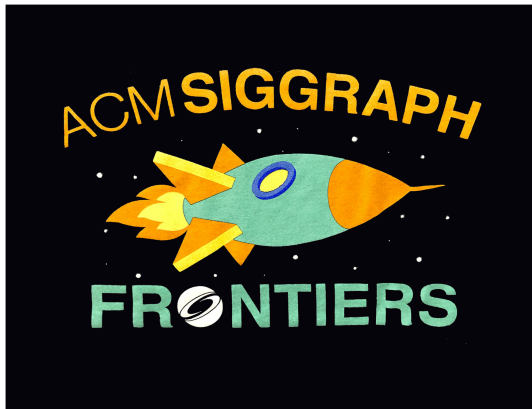
*Professor Emeritus, University of Tokyo*

*yoichiro@kawaguchi.net*

2073

## Conclusion

As editors, we hope you've enjoyed reading memories from the first 49 ACM SIGGRAPH conferences. Though we are no longer making pictures on the walls of caves, these memories remind us that those of us working in computer graphics (and attending SIGGRAPH conferences) are engaged in the same ongoing, deeply human endeavor of guiding, informing, and communicating with others through images. People working in our field today touch the lives of nearly everyone. We produce and improve visual content with computer graphics and interactive techniques that others, even those who don't use or even like computers, consume.



Since we are not science fiction authors or futurists, we will not predict how computer graphics and interactive techniques will progress with the advent of new technologies. However, we feel confident that the SIGGRAPH conference will continue for another 50 years because visual communication will always remain at the heart of human endeavor. When those years have passed, we hope the 2073 participants will be eager to read memories from the first 100 conferences.

*Dave Kasik, Mary Whitton, and Chris Johnson*  
Co-editors

## ACKNOWLEDGMENTS

This special issue has been a true team effort. The CG&A Board (Torsten Möller, André Stork, Pak Chung Wong, Mike Potel) has been supportive since day one. Pak, the associate editor-in-chief of special issues, understood and supported how our proposed issue differed from the norm. All board members provided invaluable guidance. David Ebert, Computer Society second vice president for publications, helped clear the way for this different type of content. Charlotte Zott (one of Dr. Möller's staff) assisted gathering the needed author releases. Cover art

designed by Francesca Samsel and Bruce Campbell, the CG&A Board members specializing in art. Special thanks to Bonnie Mitchell for her artistic sensibilities and skillful manipulation of images throughout. All images are property of the author unless otherwise noted.

The IEEE staff made the issue highly readable and accessible. Kim Sperka, Eileen McGuinness, and Robin Baldwin continue their editorial excellence. As co-editors of the CG&A Visual Computing: Origins department, we appreciate IEEE and CG&A's commitment to capturing stories like these and the more detailed histories that appear in our department's articles. We all believe that we document the past to help us learn for the future.

Our spousal review team read early, middle, and late versions. They provided feedback on the concept, organization, and content. Jan Levine (Kasik), Nick England (Whitton), and Kate Coles (Johnson) are our wonderful collaborators and critics both professionally and in life.

**DAVID J. KASIK** is a Boeing senior technical fellow (retired), Sammamish, WA, 98075, USA. He has stayed active with consulting and professional activities. His primary research interests involve highly interactive systems for complex 3-D data, interaction methods, lessons to be learned from history (hence this Special Issue), and how to ease technology transfer. Kasik received his master's degree in computer science from the University of Colorado, Boulder, CO, USA. He is a co-editor of the IEEE CG&A Department on Visual Computing: Origins. He is an ACM fellow and an IEEE distinguished scientist. He is the corresponding author of this article. Contact him at [dave.kasik@gmail.com](mailto:dave.kasik@gmail.com).

**MARY C. WHITTON** is research professor (retired) at the University of North Carolina at Chapel Hill, Chapel Hill, NC, 27514, USA. Her research interests include understanding how the interaction of technology and human perception influence the effectiveness of mixed reality systems and applications. She is also active documenting the early history of computer graphics. Whitton received M.S. degrees in counseling and computer engineering from North Carolina State University, Raleigh, NC, USA. She is a co-editor of the IEEE CG&A Department on Visual Computing: Origins. She is a life senior member of IEEE Computer Society. Contact her at [mcwhitton@gmail.com](mailto:mcwhitton@gmail.com).

**CHRIS R. JOHNSON** is a distinguished professor of computer science and the founding director of the Scientific Computing and Imaging (SCI) Institute, University of Utah, Salt Lake City, UT, 84112, USA. His research focuses on visual computing. He is a co-editor of the IEEE CG&A Department on Visual Computing: Origins. He is a fellow of AAAS, AIMBE, IEEE, and SIAM. Contact him at [crj@sci.utah.edu](mailto:crj@sci.utah.edu).

## CONTRIBUTORS

**A**

Alberston, Phil  
Alonso, Jordi  
Angel, Edward

**B**

Badler, Norman  
Barr, Marc  
Billinghurst, Mark  
Blenkhorn, Ari  
Blinn, Jim  
Booth, Kellogg  
Breen, David  
Bricker, Lauren  
Britton, Edward  
Brown, Maxine  
Bruderlin, Beat  
Burbano, Andres

**C**

Campbell, Bruce  
Carlbom, Ingrid  
Carlson, Wayne  
Catmull, Ed  
Cays, John  
Christensen, AJ  
Chuang, Richard  
Cohen, Michael  
Collins, Joan  
Conti, Matthew  
Cruz-Neira, Carolina  
Cychosz, Joe

**D**

Dana, Jenny  
DeFanti, Thomas  
DeLoura, Mark  
Dill, John

**E**

Ellis, Bob  
Encarnação, José L.  
England, Nick  
Eyles, John

**F**

Fan, Will  
Fisher, Brian  
Foley, Jim  
Foley, Marylou  
Fuchs, Henry  
Fujii, John

**G**

Geigel, Joe  
Goldman, Glenn  
Gomez, Julian  
Gonzalez, Mark  
Green, Mark

**H**

Harrison, Lou  
Heinecke, Justin  
Holtz, Brad  
Hoppe, Hugues

House, Chuck  
Hughes, John

**I**

Interrante, Victoria

**J**

Jerald, Jason  
Joel, William  
Johnson, Chris  
Jorge, Joaquim

**K**

Karakusevic, Vladimir  
Kasik, Dave  
Kawaguchi, Yoichiro  
Kramer, Edward

**L**

Laidlaw, David  
Land, Richard  
Lantz, Ed  
Lastra, Anselmo  
LaViola, Joseph  
Lawrence, Brad  
Levine, Jan  
Lichty, Patrick  
Loofbourrow, Nathan

**M**

Macedonia, Michael  
Manocha, Dinesh  
Mantle, Mickey  
Masson, Terrence  
Max, Nelson  
Mayer, Jeff  
McDiffett, Bruce  
Meads, Jon  
Mitchell, Bonnie  
Möller, Torsten  
Mones, Barbara

**N**

Newton, Adele

**O**

O'Brien, James  
Olsen, Dan  
Owen, Scott

**P**

Peddie, Jon  
Perlin, Ken  
Peters, Jorg  
Pillis, Daniel  
Pique, Michael  
Plepys, Dana  
Potel, Mike

**Q**

Quilez, Inigo

**R**

Ressler, Sandy  
Rhyne, Theresa-Marie  
Riesenfeld, Rich  
Rockwood, Alyn  
Rosenblum, Lawrence

**S**

Sadagic, Amela  
Searleman, Janice  
Shreiner, Dave  
Smith, Alvy Ray  
Sobell, Nina  
Spencer, Stephen  
Steffen, David  
Stone, Michael  
Stone, Maureen

**T**

Tontaveetong, Ginger (Marisa)  
Towles, Herman

**W**

Warshawsky, Natasha  
Wein, Marceli  
Whitted, Turner  
Whitton, Mary  
Wyvill, Brian  
Wyvill, Geoff

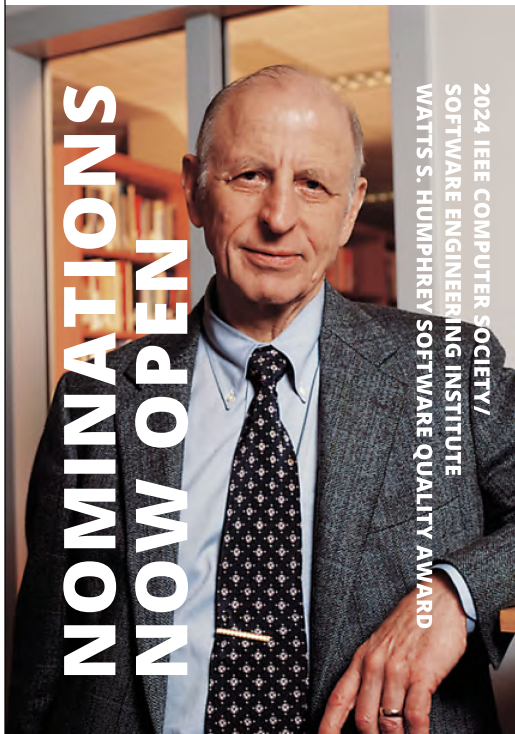
**Y**

Yoon, Sung-eui

**Z**

Zafar, Atif  
Zuffo, Marcelo  
Zyda, Michael

Carnegie Mellon University  
Software Engineering Institute



Since 1994, the SEI and the Institute of Electrical and Electronics Engineers (IEEE) Computer Society have cosponsored the Watts S. Humphrey Software Quality Award, which recognizes outstanding achievements in improving an organization's ability to create and evolve high-quality software-dependent systems.

Humphrey Award nominees must have demonstrated an exceptional degree of **significant**, **measured**, **sustained**, and **shared** productivity improvement.

**TO NOMINATE YOURSELF OR A COLLEAGUE, GO TO**  
[computer.org/volunteering/awards/humphrey-software-quality](https://computer.org/volunteering/awards/humphrey-software-quality)

*Nominations due by September 1, 2023.*

**FOR MORE INFORMATION**

[resources.sei.cmu.edu/news-events/events/watts](https://resources.sei.cmu.edu/news-events/events/watts)