

Special Section: SIGGRAPH Bowl



Co-Chairs

Tomas Porter *Pixar*
Pat Hanrahan *Princeton University*

Masters of Ceremony

Jim Blinn *California Institute of Technology*
Nick England *Sun Microsystems*
Rob Pike *AT&T Bell Labs*

Announcer

Flip Phillips

Test your knowledge about the history of computer graphics research and the SIGGRAPH conference by participating as a member of the "SIGGRAPH Bowl!"

A spinoff of the famous televised College Bowl, invited teams representing leading universities and graphics companies will test their knowledge of SIGGRAPH history.

Participants identify quotes from important SIGGRAPH papers, recognize rendered images and film show animations of past years, and answer trivia questions about events, trends, and personalities of past SIGGRAPH conferences.

Reproductions of slides appear on the same pages as the questions they correspond to. They should be read from top to bottom in each column.

The Warm-up

Flip Phillips <voice over>

Ladies and gentlemen, Mr. Jim Blinn and Mr. Nick England.

Nick England

I'm here because they needed somebody who really knew something about sleaze. Alright, a used car salesman - you've got a licensed used car salesman, here, folks. You understand about used car salesmen. Used car salesmen are a lot like computer graphics salesmen. Right? Well, there's some difference, I mean, used car salesmen know when they are lying to you. Right? I mean, part of SIGGRAPH is this big thing going on out there, people trying to sell each other all sorts of strange wonderful stuff. Right? And it looks like this. This is the new VRX Turbo GT-17. It looks great. What does it look like behind. It's all an illusion, folks. This is what's really running it. The hardware. Look at the brochures. They're supposed to picture you, the customer, in your natural habitat and environment. This is what your office looks like? No, this is what your office looks like. I mean, the least these people could do is to put together a brochure that is tasteful and somehow refined, but reflected things that were more like they really are. Like, I mean, we all have software productivity tools sitting right next to our workstations.

But there's a little bit of serious side to this, too. One of the things that we do in remembering past SIGGRAPHs and thinking about it, are a lot of ideas that come up, and a lot of ideas have just sat around dormant for a long time before the technology came along, we could do something about it, and something new would happen. There are SIGGRAPHs where you don't even know where to find the proceedings on. This is SIGGRAPH # 1 Proceedings. It wasn't published in the SIGGRAPH Proceedings that you all know and love, but it was there. We could have asked hard questions like: *Where was this published?* No one would know. But we didn't. We didn't ask questions like: *Where were some of the papers in SIGGRAPH published that only you got if you went to the SIGGRAPH conference?* There was... there used to be special handouts for papers that were getting published in CACM later. Right? And you didn't get those unless you were at the conference. And sometimes you didn't even give the papers. So, it's worthwhile to come to the conference. Right? There's also a serious side here. There's a lot of technology that goes on, like I said, and eventually, eventually something happens and lots of people can take advantage of it. This is a picture from 1976. It's of a head mounted display for somebody wandering around in a virtual reality. 1976. This was an interactive device, you could

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go around and grab things and model things and do stuff like that. And because Jim Clark had to stand there next to this great big huge matrix multiplier which was about 8 feet tall and everything, he decided that wasn't good enough. Right? And he went and he built chips that would do that, and Silicon Graphics was the result, and we all benefited an awful lot from peoples frustrations at not being able to put their ideas into something that everybody could use. So there's a lot of really good, positive stuff about it.

But, enough of this serious stuff. Right? We don't really want to get into that too much. But Jim got inspired too. Right? 1968. Ivan Sutherland, our father. (What's going on here? You tall people are all alike.) What is... We could have asked questions like: What inspired Turner Whitted to do this picture? Right? We all know this picture. What inspired this man to do that? Because this was his first attempt at a transparent surface, that's what inspired him. He had to do something else. This didn't work. This is back when we were in grad school. Right? Turner Whitted didn't do ray tracing when he was in grad school because he didn't have a computer that would run long enough to finish a picture. He and I had to repair this computer all the time. If you look in Turner's dissertation, he thanks the Electrical Engineering building for support of his work, because our lab was on the third floor. We didn't get any help from the rest of the department.

And there finally there's the art content. I mean, there are people who created great works of art. Like some of the covers here that my colleague has created.<applause>

Jim Blinn

Thank you Nick. Well, Nick opened up a few interesting issues. I wanted to help out this project by coming up with some questions to ask, and there are a few of them that I proposed that were not used. For various reasons. For example, *which SIGGRAPH has the largest number of papers published?* Does anybody know that? 1976. There were 63 papers published in SIGGRAPH in 1976. And the way that they got away with that, is because they had three parallel sessions, which they haven't done since then. If you actually plot the number of papers per SIGGRAPH, it kind of goes down and down, and now it's about 30 papers per SIGGRAPH. Well, we thought that would be a bit embarrassing, so we didn't put that in. *What is the first SIGGRAPH that all the papers that were presented at the conference were actually in the Proceedings?* That was 1981. It was like the eighth SIGGRAPH. Why is that? In the first SIGGRAPH, none of the papers were published, it was just abstracts, because nobody knew for sure if anybody was interested in seeing all these papers. In 1976 through 1980, SIGGRAPH went through and pulled out some of the papers to

publish in things like CACM or TOGS, and they didn't get into the Proceedings, and in fact, some of the papers, which will remain nameless, didn't get into CACM, either. But in 1975, the reason they weren't all there is because three people flaked out and didn't get their paper in on time. I won't tell you who those are. Another question I went through is: *How many teapots appear in the SIGGRAPH Proceedings of various years?* And part of the results of this — it was very disappointing. The first time a teapot appeared in a SIGGRAPH Proceedings is in 1982. And there were only two of those. Actually, one and a half. There was a fragment of a teapot, which would probably count. In 1987 next, there were 14 teapots and 8 spouts. But in 1989, of course, we really came through. There were 231 teapots in the 1989 Proceedings, and that's only because they put a teapot on every page of the catalog. Another question has always been a fascination to me, are questions relating to the length of Tom DeFanti's hair as of certain dates. When I first met Tom DeFanti, it was 1972 roughly, and it was down to his waist, and it slowly has crawled up his back. The problem is verifying the answers to a lot of these things. Because we can't exactly get Tom to admit to when he cut his hair at various lengths.

Let's try a different category of questions. *How many pixels can dance on the head of pin?* None, because that would be point sampling. *How many ray tracers does it take to screw in a light bulb?* Only one, but it takes him eight hours. Actually, questions about screwing in a light bulb always puzzled me, because there's not a lot of room in there. OK. *Why did the scan ray cross the bounding box?*

Nick England

I give up, Jim, why did the scan ray cross the bounding box?

Jim Blinn

Actually, I don't have a punch line for that one. I couldn't figure out anything particularly funny. So, you'll have to bear with me on that. Well, in attempting to get the audience in the right mood, we realized that a lot of game shows that you see on TV, everybody is wildly ecstatic in the audience and part of the reason for that is because they have these big "Applause" and "Cheer" signs on out there. Everything you see on TV, of course, is completely a hoax. So, we need to build up to that here. And so, part of my job in this business is to be the Audience Emotion Director. And so, I've made up a set of signs myself, that, I hope, you all being my friends out there, will make me look good by obeying carefully. For example, we have the Applause sign. Now, just to show that we're not completely serious about this, we want to give the contestants the opinion that, although we love and respect them, we're not gonna let them get away with anything. So, if we find them

doing something shady, we also have a "Boo" sign. Now, the logo that I put on the "Boo" sign, I thought of various subjects for that. I could have put a sign that said "NCGA". Or maybe a sign that had a right-handed coordinate system on it. But, to be more politically neutral about this, the "Boo" sign is the giant jaggy. This is great. You're getting into it. Now, we are trying to keep the thing moving out here, and in case the audience gets out of hand with its cheering and making noise, we need a sign to make everybody quiet down so we can get on to the next question. Now, what would be the logo for that? And I thought of various things. But, basically, the "Shut up" logo is the "blank screen". So, we need to rehearse this a little bit, so you can make sure you get it right. *<Audience boos, then cheers, then gets quiet for a while, then starts clapping and booing in rhythm.>*

The Show

Flip Phillips

Live! From Dallas, Texas is the 1990 SIGGRAPH Bowl! Brought to you by CAD-CRAM, high speed learning for Computer Aided Design, and Dr. Johnson's House of Computer Graphics Cliche, featuring fractals, glass balls, teapots, and checkerboard floors, servicing all your primitive cliche needs. Now, lets introduce our co-host. He's the author of 5 SIGGRAPH papers, designer of two computer generated images, and a guy who feels that flying logos still have a place in the film show. Welcome Tom Porter.

Tom Porter

Thank you. Welcome to SIGGRAPH Bowl. I'm very pleased to see the large audience. We've pulled this event together to figure out who among us has best absorbed this vast body of knowledge called SIGGRAPH. We have 9 teams, 27 eager and astute contestants, ready to go, representing universities, companies, even entire countries. We're going to put them on stage and ask them to identify pictures, authors, exhibitors, and to answer some really nerdy graphics questions. Let's see which of them takes home the SIGGRAPH Bowl trophy. And here, for the winners today, the 1990 rendition of the SIGGRAPH Bowl Trophy. *<applause>*

First, let me read the rules. There will be three preliminary games of three teams each; the sequence in which the teams play was chosen randomly before the show. Each game has one winner and that team will come back for the fourth and final game. The winner of the fourth game is the champion. Games will be approximately 15 minutes and each will end with this sound. (We don't have a sound.) The games will involve toss-up questions and bonus questions. Toss-up questions are worth 10 points; individual parts of bonus questions are worth 5 points each. Toss-up questions are open to all nine players and must be answered

individually. If a player answers a toss-up correctly, the team gets 10 points and the right to answer the next bonus question. If a player answers a toss-up question incorrectly, his team loses nothing but no player on the team may answer that toss-up question. Bonus questions are open to one team only, and players on that team may consult with one another; the team captain will answer the question. Of course, the decision of the judges is final. Judging the contest today is my Co-host, an assistant professor at Princeton, with six SIGGRAPH papers to his credit and a comprehensive knowledge of the entirety of computer graphics, let me introduce Dr. Pat Hanrahan. *<applause>*

All right, it's time to start the show. Flip Phillips, let's bring out the contestants.

Flip Phillips

All right, Tom. These teams will vie for stardom and valuable cash prizes in our first round. Let's meet team # 1. This contestant lives in a small apartment with one blue wall and one red one. Meet Michael Cohen. *<applause>* Player # 2 has a B.S. in Computer Science from Cornell and has recently purchased his masters degree. Meet Paul Wanuga. *<applause>* And our third contestant with the Cornell team hails from France, but he's learning to play baseball anyway. Meet François Sillion. *<applause>*

Ladies and gentlemen, welcome the team from Cornell. *<applause>*

Now, let's introduce team number two. Player number one is a homemaker from Encino, a psycho-physicist by night, and once he saw Elvis at Stuckeys in Ohio. Let's greet Len Wagner. *<applause>* This former HP Corporate Trivia Bowl Champion is an itinerant peddler who has published no SIGGRAPH papers, but is heavily acknowledged. Welcome Rick Speer. *<applause>* Rounding out the Ithaca team, this contestant also claims to have seen Elvis in a Stuckeys. In his past life, he's an insurance adjustor from Schenectady, and he recently wrote a solids modeller in awk. Let's greet Eric Haines. *<applause>*

Ladies and gentlemen, Team Ithaca.

And now, our third team. Their first player was last seen in Salt Lake City, but he has left a trail from New York to the Golden Gate. Greet Cactus Jules Bloomenthal. *<applause>* The authorities have pursued our second contestant all the way from Texas to Ohio, where he's wanted for mousing a college student. Meet Frank Crow. *<applause>* And the third contestant was last seen in Chapel Hill and has also eluded the authorities from New York to the Netherlands; he is now believe to be holed up with the other two in their obscure hideout at Xerox PARC. Meet Andrew Glassner. *<applause>*

Ladies and gentlemen, Team Xerox.

That's our three teams. Now, lets meet our MC. Fresh from his paid appearance on Late

Night with David Letterman, he just bought a new suit. Let's give a big SIGGRAPH welcome to Mr. Rob Pike. <applause>

Rob Pike

I made a mess of my questions up here. I hope we have the right answers with them. What's this stuff? OK, lets go. Well, you all know the rules, so here they are again. I'll ask one toss-up question, the team that answers that question correctly will then get a chance to answer the bonus question. So, here's the toss-up question. Get your hands on your buzzers.

For 10 points, whose name is on this resume? This M.I.T. professor was on Ivan Sutherland's Ph.D. thesis committee. He later went to Utah. He has a patch and an award named after him. <buzzer> Xerox PARC?

Crow (Xerox): Coons.

Pike: Coons is correct. Stephen Coons. <applause> This bonus question is for Xerox PARC.

The Coons Award is given for outstanding creative contributions to computer graphics. For 5 points each, name the four Coons Award winners.

Crow : First, Ivan Sutherland. And there's Dave Evans. <Horn>

Pike: That's two correct. The other two are Pierre Bezier and Donald Greenberg. OK, next toss-up question. Hands on your buzzers.

I'm going to show you a clip from a SIGGRAPH film show animation. For 10 points, what company created this piece? <buzzer>

? (Cornell): Abel and Associates.

Pike: Cornell?

? (Cornell): Abel and Associates?

Pike: Abel and Associates. Good. <applause> A little hardware trouble here on the buzzers. OK, this bonus question is for Cornell.

Jim Blinn's classic 1978 article, "The Simulation of Wrinkled Surfaces" included 6 bumpy objects among the color images. For 5 points each, name 4 of them.

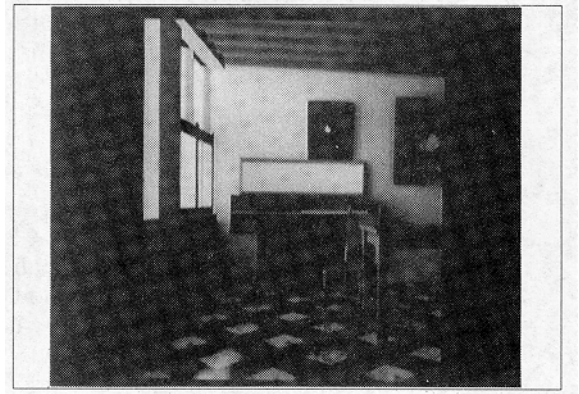
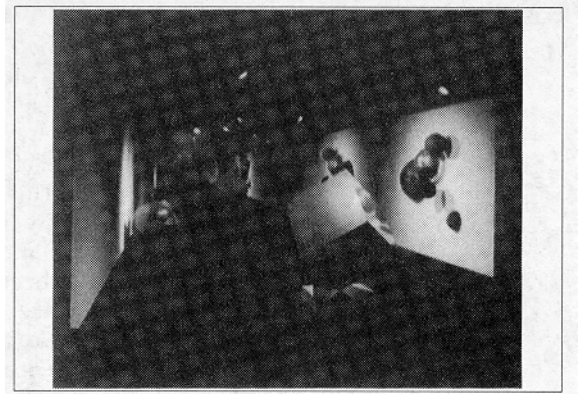
Wanuga (Cornell): An orange, a doughnut, a basketball. <Horn> <boos, instigated by Jim Blinn jumping up and down with the "Jaggie" sign to the audience>

Pike: A log, a strawberry, an orange, a sphere, a doughnut, and a red grid. OK.Toss-up question.

For 10 points, of Utah, Cornell, Ohio State, and Berkeley, which is the only university not represented... <Buzzer> Cornell?

Wanuga (Cornell): Utah.

Pike: Utah is not represented with a SIGGRAPH proceedings cover. OK <laughter> Another



bonus question. <otto voce voice: Is that right? That's correct. Laughter, boos> Take it easy out there. You'll have a chance to beat them up later.

I'll be showing you 4 cover images from graphics textbooks. For 5 points each, name the book or the author.

Wanuga : Roy Hall?

Pike: Roy Hall. "Color and Illumination in Computer Generated Imagery".

Wanuga: John Wallace?

Pike: No, that's Foley and van Dam. You should know that.

Wanuga: I thought John Wallace did that.

? (Cornell) He said the author, or the book. Oh!

Pike OK, take it easy. This is the third question. <boos>

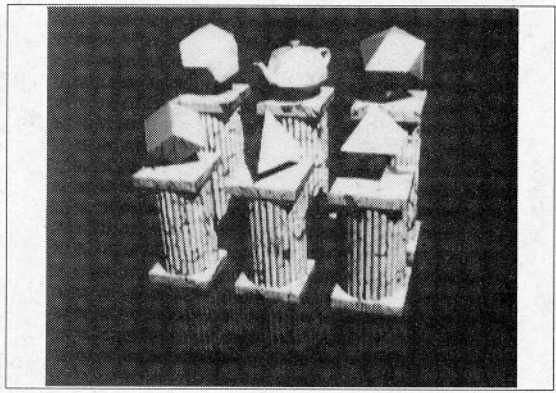
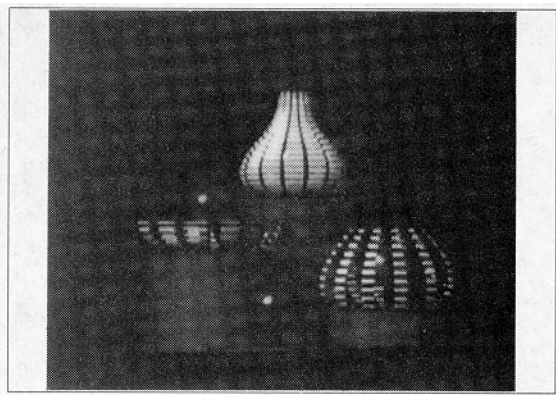
Wanuga: Barsky "Splines and Surfaces".

Pike: Yeah, close enough. "... for use in computer graphics and geometric modelling", by Bartels, Beatty, Barsky, and all the other B's. <Laughter>

Wanuga: Andy Glassner.

Pike: Andrew Glassner. Three out of four ain't bad. <Laughter> OK. Toss-up question <Cheers>

Who wrote the 1987 paper with a series of figures of



an arm, a swing, a ...<buzzer> Cornell, again.

Wanuga: Paul Isaacs ...

Cohen (Cornell): ...and Mike Cohen.

Pike: And Mike Cohen, you got it. *(Cheers)*
Ithaca and Xerox PARC are having trouble here.
OK, this bonus question

Dr. Hanrahan: Excuse me, excuse me. The wrong player answered the question. Illegal answer.

Pike: Is that true, judges? *<boos>* I'll leave the scoring up to the ...

Dr. Hanrahan: OK, we'll let 'em have it.
<applause>

Pike: All right, go on with the bonus? OK, bonus question.

I will give you a characteristic of a display device. For 5 points each, you name the technology of the device. It flashes green to erase the screen.

Wanuga: Refresh tube.

Pike: Refresh tube, no it's a storage tube. OK, part B.

It flickers if the display is too complex.

Wanuga: *<Horn>* Vector display.

Pike: Vector display, that's right. Okay.

It works better outdoors.

Wanuga: LCD.

Pike: LCD.

It's flat, hot and orange.

Wanuga: Plasma.

Pike: Good work. Okay, plasma panel. So that's three out of four. *<applause>* These guys look a little young to be getting these questions. Okay, toss-up question, watch who answers, guys.

Name the company that demonstrated the Wizard 5000 and Wizard 7200 in 1980.

Speer (Ithaca): Megatek.

Pike: Ithaca?

Speer: Megatek.

Pike: Megatek, okay this bonus question is for Ithaca.

At one SIGGRAPH, there was an effort to keep a certain SIGGRAPH contributor from going to Japan. For 5 points each, who is the person?

Speer: *<Horn>* Nelson Max.

Pike: Nelson Max is wrong. *<boos, fueled by Jim Blinn and the Jaggie sign>* I'm going to ask you the other questions, now that you can probably guess that it was Jim Blinn.

Who initiated the idea to save him?

Speer: *<Horn>* We don't know.

Pike: We don't know? *<boos>* Tom DeFanti.

What rock star held a placard outside the film and video show?

Speer: Todd Rundgren.

Pike: Todd Rundgren.

And what did the button say?

Speer: Keep Jim in the USA.

Pike: Good. Two out of four, not bad for a guess. *<applause>* Okay, toss-up question.

I'm going to show you a clip from a SIGGRAPH film show animation. For 10 points, what is the title of this piece? <buzzer> Xerox PARC

Glassner (Xerox): It's from Ohio State!

Pike: What is the title?

<silence> <laughter> <boos>

Pike: Okay, anyone else? *<Horn>* Nope, it is Snoot and Mutley. Here's a toss-up question. Hands off your buzzers for a moment. Okay.

This mountain climber has published SIGGRAPH papers from 1975 through 1990. His interest in topology led to some of the first shaded surface animations, including a demonstration of turning a sphere inside out. <buzzer> Xerox PARC

? (Xerox): Nelson Max

Pike: Nelson Max. <applause>

We asked a question earlier today of fifty SIGGRAPH attendees with technical badges, for 5 points each, what where the three most popular answers to the question: Discover magazine once wrote an article about Jim Blinn, entitled "The King of Computer Graphics." If that is true who is the second most famous person in computer graphics?

Crow (Xerox): <Horn> Ivan Sutherland

Pike: Time's up. No answer.

Crow: Ivan Sutherland.

Pike: Time's up.

Dr. Hanrahan: He said it.

Pike: When you're time is up, give me the answer. I know I blew it on the first question. <boos> <boos> I'm just a meat puppet, don't expect me to make judgments.

Flip Phillips: He said it before the buzzer.

Pike: I don't think my mike is on.

Dr. Hanrahan: He said it before the buzzer, he said Ivan Sutherland.

Pike: He said Ivan Sutherland? Well, then he gets 5 points. <applause> Keep going down the list, anymore?

Crow: Any more whats?

Pike: Any more people? I know the question is badly worded, but I didn't write it, okay? Any more people who are the most popular on this list of four?

Crow: Ed Catmull, Alvy Ray Smith, Steve Coons.

Pike: Nah, believe it or not, Ivan Sutherland, Turner Whitted, John Lasseter and a whole bunch of others. Oh there's an Alvy in here. Pardon me, there's an Alvy. They got two, they got two of them. [Editors Note: They got credit for one; Alvy was not a correct answer.] Okay, toss-up question.

Who wrote the only SIGGRAPH paper ever to include a picture of a plaster cast of tree bark.? <buzzer> Is that Xerox PARC, yes. Move your horn there.

Crow: My horn? Oh that horn.

Pike: Okay, Xerox PARC

Crow: That was Jules Bloomenthal.

Pike: Jules Bloomenthal. This bonus question is for Xerox PARC.

We all have shelves of books on graphics and related topics. I will give you the author names for a number of reference books, for 5 points each, you give me the title or subject matter. Jim Gettys, Bob Schieffler, and Ron Newman.

<Silence> <Horn>

Pike: Time's up. Okay, X-Window System.

Number two, Franco Preparata and Mike Shamos.

? (Xerox): Computational Geometry.

Pike: Captain please.

Crow: Oh yes, computational geometry.

Pike: Computational geometry. Rosenfeld and Kak.

Crow: Oh, Rosenfeld. Picture processing and image whatever it is.

Pike: Digital picture processing, right. Wysecki and Stiles.

Crow: Color composition and reproduction.

Pike: Color science. Well, I'll give you that one. <applause> Okay.

Name the company whose description in the 1987 SIGGRAPH program was blank, except for a North Carolina address and a note saying 'See Sun Microsystems'. <buzzer> Xerox PARC.

Crow: Trancept.

Pike: Trancept. Okay. <applause, in response to Nick England waving the audience "Teapot" sign> This is for Xerox PARC.

I'll give you the titles of some famous thesis papers from University of Utah. For 5 points each, name the author. Illumination for Computer Generated Imagery.

Crow: Bui-Tuong Phong.

Pike: Bui-Tuong Phong. *A Real Time Visible Display Algorithm.*

Crow: James Watkins, Watkins whatever his name is.

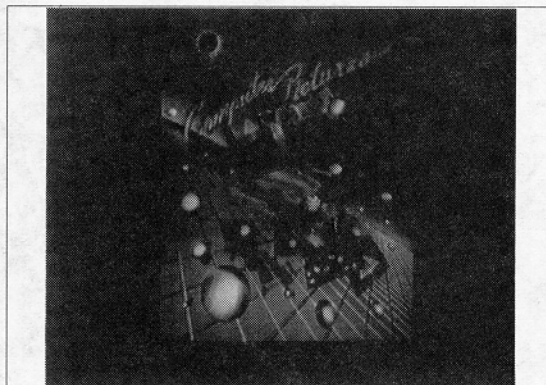
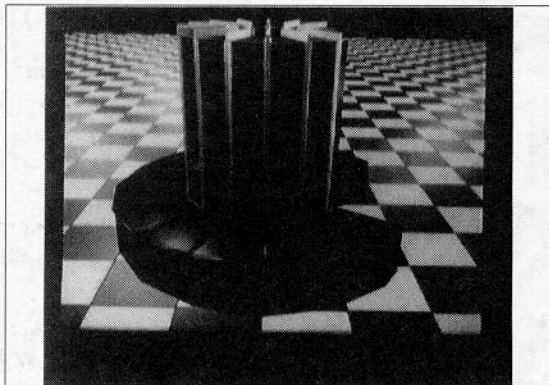
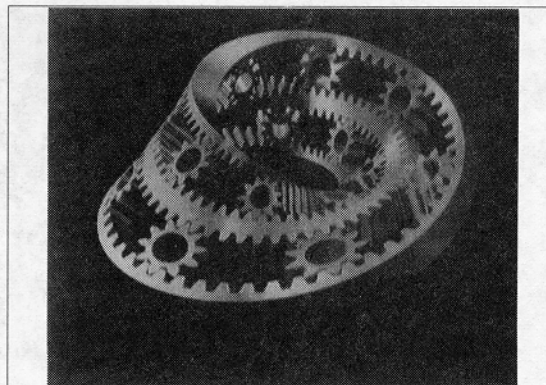
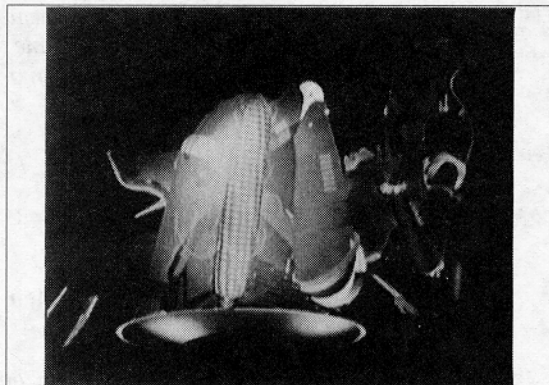
Pike: Gary Watkins. *Computer Generated Animation of Faces.*

Crow: Fred Parke.

Pike: Fred Parke. *The Utilization of Procedure Models in Digital Image Synthesis.*

Crow: Martin Newell.

Pike: Martin Newell. Four of four. <applause> Okay, so far we have Xerox PARC with 95, Team



Ithaca with 20 and Cornell with 70 points.

Now I'm going to show you a clip from a SIGGRAPH film show animation. For 10 points, what is the title of this piece?

? (Ithaca): Technological Threat.

Pike: Technological Threat. <applause>

I'm going to show you four slides. For 5 points each, which commercial animation company created the image?

Speer (Ithaca): NYIT.

Pike: Digital Productions. That was the wrong one, the slides are now out of synch. <boos> Let's go, let's try again. Okay, start again. We know the answer to this one, so let's go to this one.

Speer: Robert Abel and Associates.

Pike: Bob Abel.

Speer: Digital Productions.

Pike: Information International. We did Digital Productions already.

Speer: Cranston/Csuri.

Pike: Cranston/Csuri. Two out of four. Okay toss-up question.

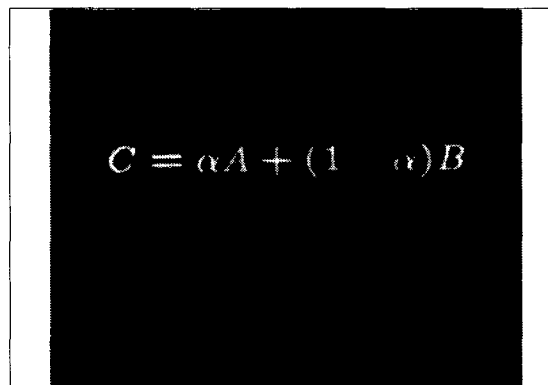
Who concluded his 1978 article with "This is the one way you can control the amount of sex and

violence on your TV set."? The paper introduced the first programming language to possibly make Super-8 movies, access government databases, and control electric train sets. The writer holds the record for the most continuous years of service on the SIGGRAPH Executive Committee.

Speer: Tom DeFanti

Pike: Tom DeFanti. Wait for me to address you. <applause> Somebody confused me here. Probably me. Okay, oh more slides.

I'll show you slides of four formulas. For 5 points each, name them.



Speer: Alpha blending.

Pike: Not good enough. Take it? Okay, take it. Lucky [censored]. <boos>

$$I = C_L(\hat{L} \cdot \hat{R})^s$$

$$F = \frac{\cos \theta_i \cos \theta_j}{r_{ij}^2} dA_j$$

$$F = \frac{1}{2} \left[\frac{\sin^2(\phi - \theta)}{\sin^2(\phi + \theta)} + \frac{\tan^2(\phi - \theta)}{\tan^2(\phi + \theta)} \right]$$

Speer: <Horn> Lambert shading.

Pike: Phong shading.

Speer: The Fresnel function.

Pike: The Fresnel reflection.

Speer: Radiosity form factor.

Pike: Radiosity form factor. Okay. Toss up.

This person designed the no-jaggies international symbol, with the stair... <buzzer>

Glassner (Xerox): Who was ...

Pike: Xerox PARC.

Glassner: Craig Reynolds.

Pike: Craig Reynolds. <applause> Okay Xerox PARC.

Over the years there have been some great demos on the trade show floor. For 5 points each, name the company that had people lining up to put on a virtual reality Cyberspace demo in 1989.

Crow: VPL.

Pike: Autodesk.

Crow: They were using VPL.

Pike: The wording was very careful on that question.

Name the company that used Al Barr's Superquadrics on their frame buffers in the early '80s.

Crow: Ramtek.

Pike: Raster Tech. *Name the company that presented a magnified view of the Chernobyl nuclear reactor shortly after the accident.*

Crow: Pixar.

Pike: Pixar. That's it. The score so far, Xerox PARC with 110, Team Ithaca 70, Cornell 70. Or is it Cornell 70, Team Ithaca 70.

Toss-up question: name the 1980 exhibitor with the single user workstation featuring a one-bit, 768 by 1024 display. <buzzer> Ithaca

Speer: Apollo.

Pike: No. <buzzer> Cornell.

Sillion (Cornell): Silicon Graphics

Pike: No, you can read the ...<buzzer> Do you want me to read the rest of the question? <Horn> That's okay, answer it.

Glassner: AT&T

Pike: No, Three Rivers. <Inaudible argument.> <Horn> <boos> It costs money to get a suit, I mean respect.

Okay, I'm going to show you a clip from a SIGGRAPH film show animation. For 10 points, what company created it? <buzzer> I saw the light on Team Cornell.

Sillion (Cornell): Sogitech

Pike: Sogitech. <applause>

I'm going to be showing you four slides. For 5 points each, which commercial animation company created the image?

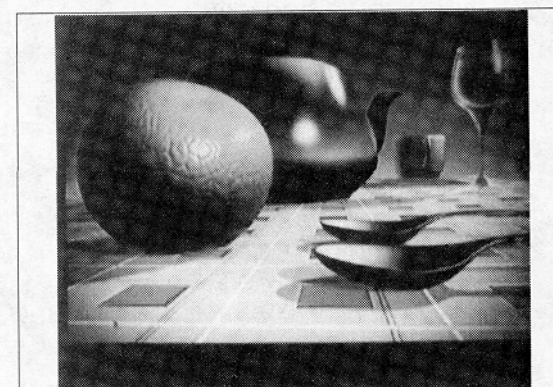
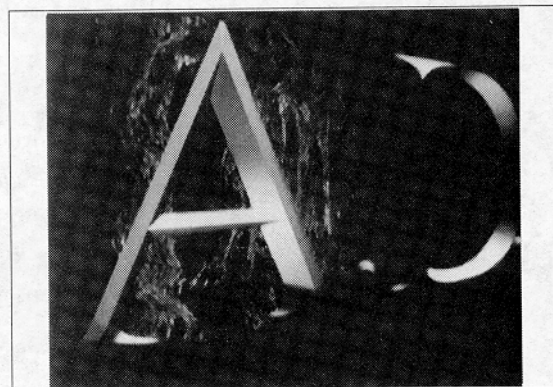
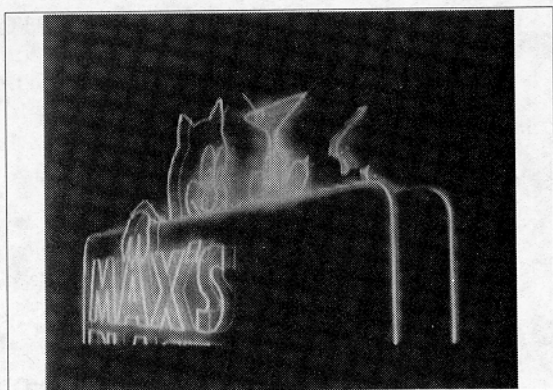
Wanuga (Cornell): <Horn> Abel.

Pike: No, Pacific Data.

Wanuga: Cranston-Csuri.

Pike: No, Digital Effects.

Wanuga: Abel, no, I don't know, sorry. <Horn>



No Idea.

Pike: Triple-I. <boos>

? (Cornell): Hey, we're a university!

Pike: Okay, we have two minutes to go and Xerox PARC is still in the lead.

SIGGRAPH Bowl

I'm going to show you a clip from a SIGGRAPH film show animation. Oh, I already did that. Who wrote in 1986, "A renderers work is never done?"
<buzzer> Xerox PARC

Glassner : Henry Fuchs.

Pike: Yes, Larry Bergman, Henry Fuchs, Eric Grant, Susan Spach, "Image Rendering By Adaptive Refinement" <applause>

Over the years the Thursday night technical reception has been held in some nice locations. For 5 points each, Xerox PARC, name the site of the 1985 reception in San Francisco.

Crow : Academy of Sciences .. the Science Museum.

Pike: California Academy of Science. *The 1982 and 1989 reception in Boston.*

Crow: Boston Museum of Science.

Pike: Boston Museum of Science. *The 1986 reception in Dallas.*

Crow: Southfork. <boos>

Pike: No, it's Infomart.

The 1980 dinner in Seattle that we all remember.

Crow: It was out on an island in the bay.

Pike: Good, okay one minute to go. Toss-up question.

Name the magazine that first took booth space at SIGGRAPH 80. There is the only monthly magazine devoted exclusively to computer ... <buzzer> Xerox PARC

Bloomenthal (Xerox): I think that is CG&A.

Pike: No, Computer Graphics World. Oh I blew it. <boos> Try another toss-up question. Last question, last question.

These two worked jointly on five papers in the last five years, though their first contributions were images on the back of the 1981 Proceedings, and at the 1982 art show and 1985 film show entry entitled "A Visitor on a Foggy Night." Who are they?
<buzzer> Cornell

Sillion: From Hiroshima University, Nishita and Nakamae.

Pike: That's right. Well, it's a shot in the dark here, but ...

We asked the question early today of fifty SIGGRAPH attendees with technical badges, for 5 points each, what were the four most popular answers to the question: Which university has made

the most important contributions to computer graphics? <laughter>

Wanuga: Cornell, Cornell, Cornell, Cornell. <boos> Cornell, Utah, Cal Tech, North Carolina.

Pike: The list is Utah, OSU, MIT and Cornell. So you got some of them. Okay, so Xerox PARC goes on to the alpha round and let's change the teams. <applause>

Flip Phillips

Now begins round two brought to you by the randomly created companies. Integraphon, turning today into tomorrow, tomorrow and Computron Manufacturing you're primary source of systemized organizational contingency systems products.

So, now let's meet the contestants for round number two. Over the past year this contestant has been single-handedly responsible for more than ninety percent of the traffic on Comp.graphics, welcome Paul Haeberli. Our next contestant is a former PBA bowling pro and an E&S refugee, let's welcome Alyn Rockwood. Playing third base and batting cleanup, this contestant has developed the world's first RS232 controllable blender, he is not from Germany, let's welcome Rolph <inaudible>. Welcome team SGI.

Now on team number two, our first contestant is a frustrated non-graphics hacker now paying rent, welcome Robert Skinner. Contestant number two secretly received her master's degree in Arc Welding from night classes at Santa Cruz Community College, meet Jane Wilhelm. And our third contestant is the world's oldest living graduate student, meet Ned Greene. Welcome team UC Santa Cruz.

Now to meet our third team. This wacky Canadian is the only Saskatoonian currently in residence at Pixar, the man who loves noise, let's welcome Darwyn Peachey. Player two is an ex-Pixar employee, who owns one of the largest tie-dye and Birkenstock collections in the free world, let's meet Paul Heckbert. And finally, he's from Minnesota, where he has been named an honorary Canadian, he's currently looking for venture capital to open his computer graphics company on Waikiki Beach, welcome Tony "Renderman" Apodaca. Welcome team Pixar/Berkeley. Take it away.

Pike: Microphone? There we go. The score is cleared, everybody's set. Here's your first toss-up question.

For 10 points, I'm going to show you a clip from a SIGGRAPH film show animation. For 10 points, what is the title? <buzzer> Pixar

Apodaca (Pixar): The Compleat Angler.

Pike: The Compleat Angler. Speak into the

microphone. <heckler> <boos> What did I do? What did he do? [Editor's Note: Kelly Booth pointed out after the show that Turner Whitted's film was unnamed when submitted to SIGGRAPH.] <applause> Well, applaud, what the heck. OK, this bonus question is for Pixar/Berkeley.

The three papers presented in the paper session in 1984 entitled Ray Tracing 1 included three generalizations of the notion of tracing a solitary ray. For 5 points each, name the three generalizations.

Heckbert (Pixar): Cone tracing, by Amanatides; beam tracing by Heckbert and Hanrahan; and distributed ray tracing by Cook and the other guys.

Pike: OK, next toss-up question.

Who led off SIGGRAPH 1979 with a paper whose only key words were computer graphics, compensation... <buzzer> Pixar/Berkeley.

Peachey (Pixar): Ed Catmull.

Pike: Ed Catmull, "A Tutorial on Compensation Tables". <applause> OK, Pixar/Berkeley.

38 companies exhibited at SIGGRAPH 77. For 5 points each, name any four of those companies that exhibited 12 later years later at SIGGRAPH 89. <Laughter>

Heckbert: Hewlett-Packard, Tektronix, Evans and Sutherland, <Horn>

Pike: Last answer?

Heckbert: Apollo.

Pike: Three out of four. CELCO, DEC, Evans & Sutherland, Hewlett-Packard, Megatek, Ramtek, Summagraphics, and Tektronix. So, Pixar/Berkeley springs into the lead. <applause> Next toss-up question:

Which of the following products was never reviewed or discussed in a SIGGRAPH paper by the principal engineer: Sun workstation, SGI geometry engine, Adobe PostScript, and Ampex ADO ?. <buzzer> Pixar Berkeley.

Heckbert: ADO.

Pike: Ampex ADO. <applause>

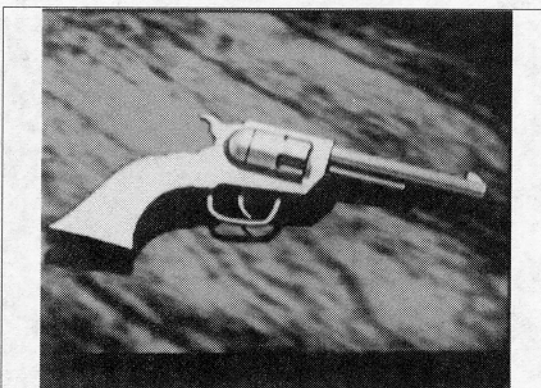
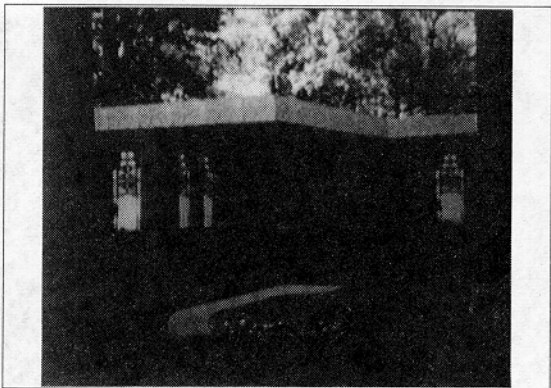
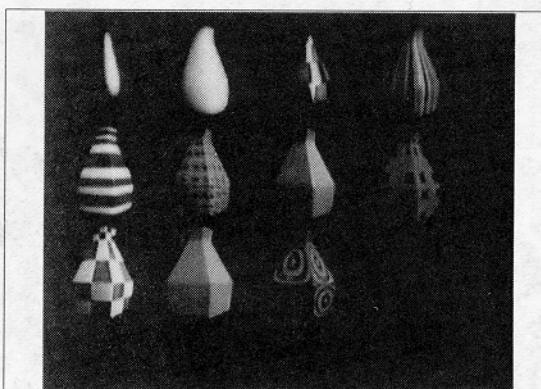
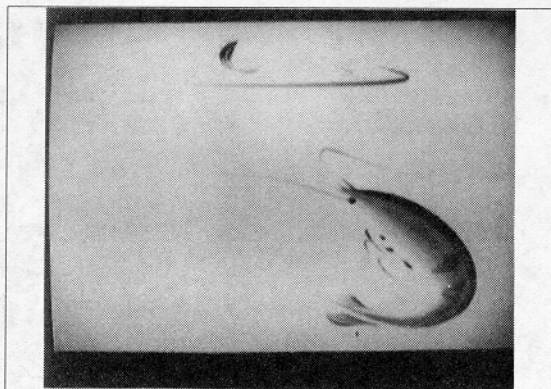
I'll be showing you four slides from the SIGGRAPH Technical slide set. For 5 points each, Pixar/Berkeley, which university was this image created at?

Heckbert: MIT.

Pike: MIT, Steve Strassman.

Heckbert: Cornell.

Pike: Cornell.



Heckbert: Berkeley.

Pike: Berkeley. <Laughter>

Heckbert: North Dakota State? <laughter>

Pike: Good guess. Utah. <applause> OK, come on, you other two teams, let's get on here.

Name the Woodland Hills, California manufacturer of caligraphic terminals that exhibited until 1981.
<buzzer> Yes, UC Santa Cruz.

Skinner (Santa Cruz): Vector Graphics.

Pike: No.

Skinner: Vector General. <Horn>

Pike: Strategy blunder there, OK. Move on to the next toss-up. <boos>

I'm gonna show you a clip from a SIGGRAPH film show animation. For 10 points, what is the name of this character running for president of the synthetic actors guild? <buzzer> Pixar/Berkeley.

Heckbert: Sextone.

Pike: Lester Sextone. <applause> OK, this bonus question is for Pixar/Berkeley.

There are a bunch of rendering papers in the 1989 Proceedings. For 5 points each, name the top three SIGGRAPH papers most referenced by papers in the 1989 Proceedings. <Laughter>

Heckbert: Turner Whitted, CACM. Cindy Goral,

1984. And Rob Cook, Distributed Ray-Tracing.

Pike: Rob Cook, Distributed Ray-Tracing [7 references]. The other two were Michael Cohen and Donald Greenberg's Hemi-Cube paper[9] and Cohen, Chen, Wallace, and Greenberg, Progressive Refinement[6]. <applause>

Who cited four textbooks on heat transfer in the first radiosity paper...? <buzzer> Pixar/Berkeley.

Peachey: Cindy Goral, Don Greenberg, etc.

Pike: OK. <applause> Pixar/Berkeley.

We all have shelves of books on graphics and related topics. I will give you the author names for a number of reference books. For 5 points each, you give me the title or subject matter. Max Born and Emil Wolf.

Heckbert: Optics.

Pike: Optics.

Ronald Bracewell.

Heckbert: Signal processing.

Pike: No.

Heckbert: Fast Fourier Transform. <Horn>

Pike: Fast Fourier Transforms, well Fourier Transforms.

J. D. Jackson.

$$\begin{pmatrix} 0 & 8 & 2 & 10 \\ 12 & 4 & 14 & 6 \\ 3 & 11 & 1 & 9 \\ 15 & 7 & 13 & 5 \end{pmatrix}$$

$$\begin{pmatrix} 1 & 0.916 & 0.623 \\ 1 & 0.272 & 0.648 \\ 1 & 1.105 & 0.705 \end{pmatrix}$$

$$\begin{pmatrix} 0.299 & 0.587 & 0.144 \\ 0.596 & 0.274 & 0.322 \\ 0.211 & 0.522 & 0.311 \end{pmatrix}$$

$$\begin{pmatrix} 1 & 0 & 0 & 0 \\ 0 & \sqrt{2} & \sqrt{2} & 0 \\ 0 & \sqrt{2} & \sqrt{2} & 0 \\ 0 & 0 & 0 & 1 \end{pmatrix}$$

Heckbert: That's electrodynamics.

Pike: Classic Electrodynamics.

And Carl Deboor.

Heckbert: Splines. "A Practical Guide to Splines"

Pike: 3 out of 4. *<applause>* OK, toss-up question.

For 10 points, name the company that first exhibited at SIGGRAPH in 1979 with a claim that their product "will change the way you think about computers. It makes learning to use computers enjoyable and creative." *<buzzer>* Pixar/Berkeley.

Apodaca: Apple.

Pike: Apple, it is. *<applause>*

I'll show you slides of four matrices. For 5 points each, name each matrix. *<Laughter>*

Heckbert: That's a magic square dither matrix.

Pike: Dither matrix. *<applause>*

Heckbert: This is color conversion ...from one space to another. *<Laughter>*

Pike: That's RGB to YIQ. Gotta get them in the direction.

Heckbert: Sorry!

Pike: Alright.

<Silence> <Horn>

Pike: YIQ to RGB. *<Laughter>*

Heckbert: 45 degree rotation in homogeneous coordinates.

Pike: About which axis?

Heckbert: X.

Pike: Good! *<applause>* OK, here's a toss-up question.

For 10 points, whose name is on this resume?...<Buzzer, laughter>

? (SGI): *<pause>* Alvy Ray Smith.

Pike: No. *<Laughter>* Anyone else?

...This person has contributed far more to the film show that the Proceedings. Marvin Minsky once introduced him as "a human fish" <buzzer> UC Santa Cruz

Greene (Santa Cruz): Craig Reynolds.

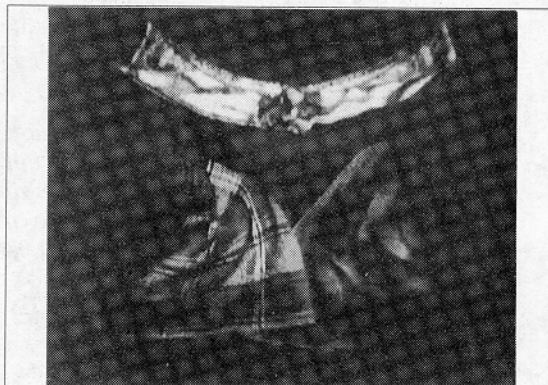
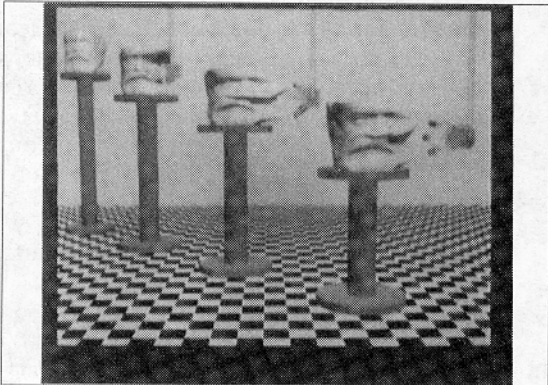
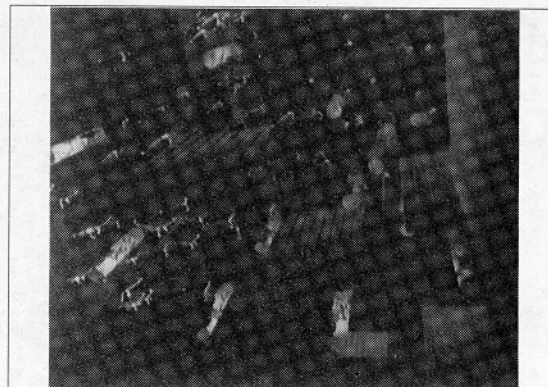
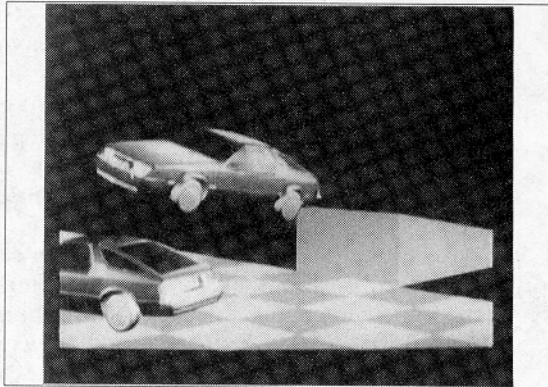
Pike: No.

...His one published paper in 1982 described the program called "Growth" Who is he? <buzzer> Pixar/Berkeley

Apodaca: Kawaguchi.

Pike: Kawaguchi.

I'll be showing you four slides demonstrating



dynamics. For 5 points each, which company or university created the image?

Heckbert: Ohio State.

Pike: Ohio State.

Heckbert: Schlumberger.

Pike: Schlumberger.

Heckbert: Symbolics.

Pike: Symbolics.

Heckbert: AT&T.

Pike: Four out of four. We must remind the audience not to shout out the answers, please.

I'm going to show a clip from a SIGGRAPH film show animation. For 10 points, what company created this piece. <buzzer> Pixar/Berkeley

Peachey: Cranston/Csuri.

Pike: Cranston/Csuri from the '83 demo reel. Okay.

We asked the question earlier today of fifty SIGGRAPH attendees with technical badges—you knew that was coming. For 5 points each, what were the four most popular answers to this impossible question: What was the best single computer-generated image ever made?

Heckbert: Road to Point Reyes, Teddy Bear, the 1984 Pool Ball Picture. <Horn>

Pike: Time's up. Road to Point Reyes and 1984 are right, the other two are the Bike Shop and the Radiosity Factory. Two out of four. <ap-
plause> Ten points. Repeat the answers: Road to Point Reyes, 1984, Bike Shop, Radiosity Factory. Anyone else. Okay toss-up question.

Who concluded SIGGRAPH in 1981 with an article... <buzzer> UC Santa Cruz

Wilhelms (Santa Cruz): Turner Whitted.

Pike: Turner Whitted, no.

...with an article whose key words are, ray tracing, vectorized, ... <buzzer> Silicon Graphics.

Haeberli (SGI): Turner Whitted.

Pike: <laughter> <boos> He's young, take it easy.

...ray tracing, vectorized, pipe line, height field, natural terrain, color table animation, piercing, line buffer, reflections ...<Horn> Hey, I get all the time I want! ...procedural model, waterwaves? <buzzer> Pixar/Berkeley

Peachey: Nelson Max.

Pike: Nelson Max.

Window systems are everywhere and I had a lot to do with it. For 5 points each, name the organization which was primarily responsible for the development of the following window systems: X

Heckbert: MIT.

Pike: MIT.

Andrew.

Heckbert: CMU.

Pike: CMU.

NeWS.

Heckbert: Sun.

Pike: Sun, okay .

Mex

Heckbert: Silicon Graphics; Paul Haeberli.

Pike: Four out of four. *<applause>* Last question, with Pixar/Berkeley probably in the lead. Here's the toss-up question.

For 10 points, Dick Shoup and Alvy Ray Smith won the computer graphic's achievement award this year. No Dick has ever won it before, no Alvy has either. What is the only first name common to two computer... <buzzer> Pixar/Berkeley. You don't need to do this.

Apodaca: Jim.

Pike: Jim, for Jim Blinn and Jim Clark. Okay. [Editor's Note: We found out after the show that "John" was an acceptable answer, referring to John Warnock and John Turner Whitted!] This final bonus question is for Pixar/Berkeley.

There are 5 other career achievement award winners, aside from Blinn and Clark and Shoup and Smith. For 5 points each, name four of them.

Heckbert: Carpenter, Cook, Warnock, *<Horn>* Smith.

Pike: Too slow. Whitted and Barr where the other two, okay Pixar/Berkeley you go on to the alpha round. *<applause>*

Flip Phillips

Game three is brought to you by MicroWave the world's first combination personal computer and food heating system. And the Tourism Board of Mount Fractalus, no matter how far away you come from, we always look the same. Let's meet the players. Player one is a former formula one race car driver and the co-inventor of the teapotahedron. Welcome, David Kirk. Player 2 is possibly the only player whose work has appeared in Playboy magazine, which was in July of 82 in case you're interested, and he's also way too fascinated with right-hand coordinate systems. Welcome, Al Barr. And player three has written various random papers and is rumored to still actually be a student at Cal Tech. Let's greet Rob Cook. That random papers thing was a joke, Rob. Welcome, Cal Tech.

Now, lets meet team two. Player one is a former national juggling champion and occa-

sional farm hand, lets meet Michael Cass. This player is recently seen about with short hair and now growing it out to a more fashionable length. Lets welcome Lance Williams. Player three once posed as a model in the 1988 Sears catalog and is now famous for his SIGGRAPH party list. Lets meet Ken Turkowski. Ladies and gentlemen, Team Apple.

Now, let's meet our third team. Player one is from Toronto and is largely responsible for all the Canadian change in circulation in the entire United States. Meet Eugene Fiume. Player two received his first doctorate in Metaphysics for \$20 from the Universal Life Church, and his second one from Berkeley, where he received his doctorate in Computer Science. Lets welcome Kelly Booth. Finally, player three is famous for developing a color space with all black primaries and currently is seeking the Canadian patent on calculus in hardware. Welcome, Alain Fournier. Welcome Team Canada. Back to you, Rob.

Pike: *<boos>*. I promise to remain entirely unbiased during this game. Here's our first toss-up question.

For 10 points, whose name is on this resume? This person is a planetary scientist.... <buzzer> Cal Tech.

Cook (Cal Tech): Jim Blinn.

Pike: No.

...This person is a planetary scientist who knows why the sky is blue. His first SIGGRAPH paper was "Imaging with GKS" in 1984. He taught an introductory course in Image Processing for SIGGRAPH 85. He is best known as the author of the 1989 bestseller: "The Cuckoo's Egg". Who is he? <Silence><Horn> OK, time's up. Cliff Stoll. Yeah, give them a boo. <boos>

OK, I'm going to show you a clip from a SIGGRAPH film show animation. For 10 points, what is the title of this piece? <buzzer> Apple?

Williams (Apple): Stanley and Stella?

Pike: Stanley and Stella, in Breaking the Ice. Symbolics SIGGRAPH 1987. This bonus question is for Apple.

I'll show you slides with four formulas. For 5 points each, (sound from film interrupts) don't make that noise, but instead, name the formula. The monitor's in front of you.

Williams: Bernstein polynomial. *<Horn>*

Pike: On time? OK, on time. Good. *<applause>*

Williams: *<Horn>* Quaternion rotation.

Pike: Yes.

Williams: Oh, no. Small and complicated. Rendering equation. *<Horn>*

$$\frac{n!}{i!(n-i)!} u^i (1-u)^{n-i}$$

$$i(x, x') = y(x, x') [r(x, x') + \int r(x, x', x'') y(x', x'') dx'']$$

$$(0, x', y', z') = Q(0, x, y, z) Q^{-1}$$

$$J = 0$$

Pike: The rendering equation, good.

Williams: <Laughter> That must be the Jello equation.

Pike: The Jello equation. <applause>

Dr. Hanrahan: Give them the rendering equation on that one.

Pike: They did get it.

Who italicized the following words in the opening two paragraphs of a 1983 paper? "Segments, patches, piece-wise, bias,..."

Booth (Canada): Barsky and Beatty.

Pike: Team Canada, I think. I can't see your lights. Yes, Team Canada.

Booth: Barsky and Beatty, both Canadians.

Pike: Barsky and Beatty. <applause> OK.

Catchy two-word names have been used through the years. For 5 points each, name the catchy two-word name for Henry Fuchs hardware project.

Booth: Pixel Planes.

Pike: Pixel Planes.

Lance Williams' texturing scheme.

Booth: Mip-maps, or pyramidal parametrics.

Pike: Two good names.

Bell Lorensen's reduced, huh, I'm getting tired.
<boos> Bell Lorensen's rendering algorithm.

Booth: Marching cubes.

Pike: Marching cubes. Three out of three. OK.

Name the company that debuted its vector terminal at the 1968 Spring Joint Computer Conference in Atlantic City. The machine drew 1500 3-D vectors in real... <buzzer> Someone's hand is still in the way. Team Canada.

? (Canada): Adage.

Pike: Adage. <applause> OK, Team Canada.

I'll be showing you four slides, demonstrating some lighting effects. For 5 points each, name the person who created the image or the person's affiliation.

Booth: Nelson Max.

Pike: No, Nakamae & Nishita, University of Hiroshima

Booth: Nelson Max.

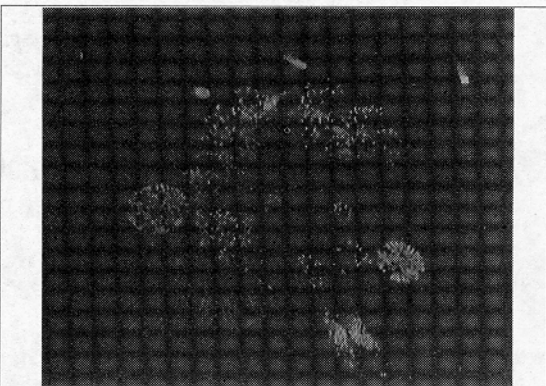
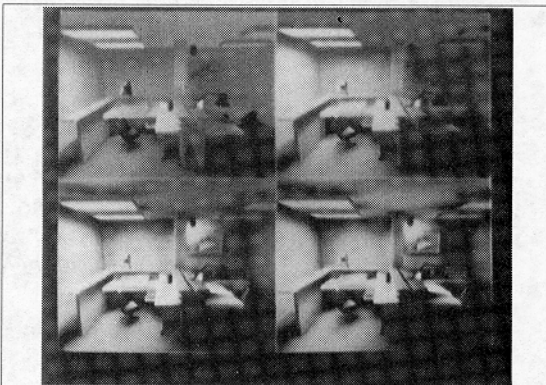
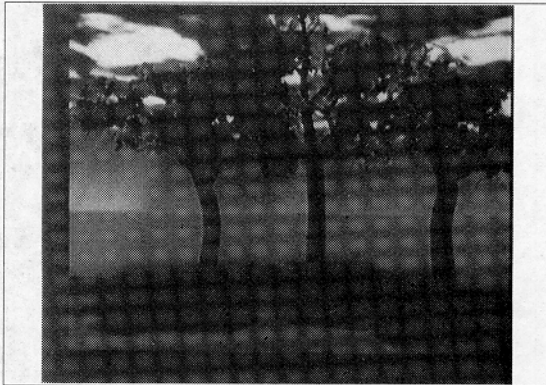
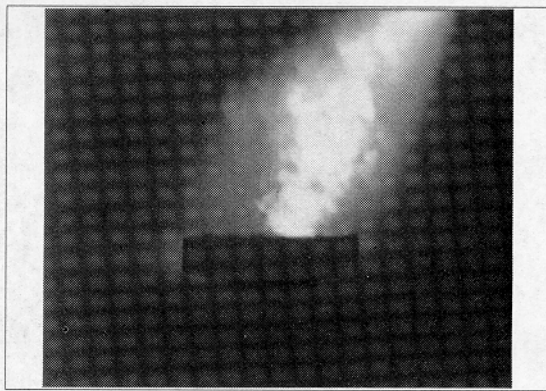
Pike: Nelson Max.

Booth: Greenberg, et. al. Cornell.

Pike: Yes, OK, Cornell.

Booth: Um, <snap>, ub, um, um, um, nononono, no <laughter>

Pike: Time's up. Jerry Weil. Ok, toss-up question.



This SIGGRAPH pioneer, video artist, and holographer, is best recognized as the one wearing the pith helmet to SIGGRAPH every year. <buzzer> Apple

Williams: Dan Sandin.

Pike: Dan Sandin. <applause> OK, Apple.

SIGGRAPH has been held in 13 different cities. For 5 points each, name the three cities that have hosted SIGGRAPH more than once.

Williams: Dallas.

Pike: Dallas.

Williams: Boston.

Pike: <Horn> Answer? Atlanta is the other, 78 and 88. OK, toss-up question.

We asked the question earlier today of 50 SIGGRAPH attendees with technical badges: What was the single most influential SIGGRAPH paper ever written? <buzzer> Team Canada.

? (Canada): Coral and Greenberg.

Pike: No. <buzzer> Get your hand off the buzzer, you, Boo.. Off the buzzie, Boothie! <buzzer> Yes, Cal Tech.

Cook: Turner Whitted, Ray Tracing.

Pike: Turner Whitted. Correct. <applause> OK.

Speaking of celebrities, SIGGRAPH has seen some celebrities come and go. For 5 points each, tell me whether the following celebrities have ever attended SIGGRAPH. David Letterman.

Barr (CalTech): No.

Pike: No, he has not.

Linda Ronstadt.

Barr: Yes.

Pike: Yes, with George Lucas, in fact.

Former California Governor Jerry Brown.

Barr: Yes.

Pike: Yes. Penn Jillette of Penn & Teller.

Barr: Yes.

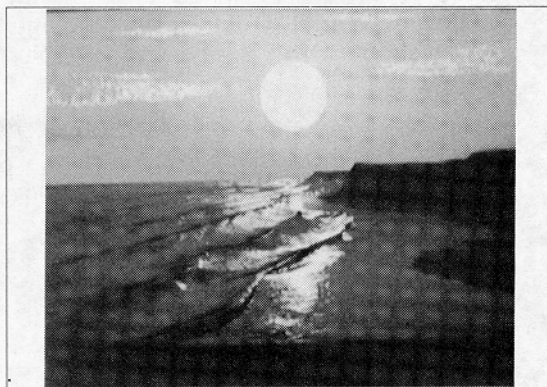
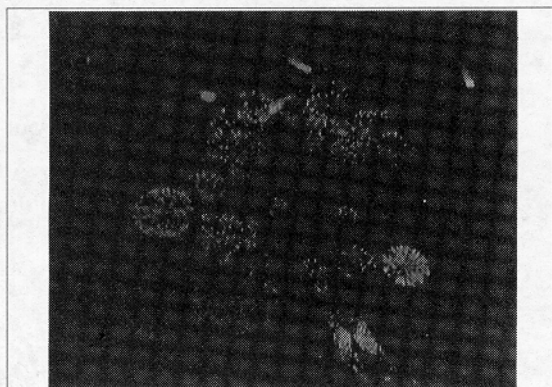
Pike: Yes. Four out of four. <applause> Well, it's the closest game so far. Let's see what happens now.

I'm going to show you a clip from a SIGGRAPH film show animation. For 10 points, what is the title of this piece? <buzzer> Team Canada.

Fournier (Canada): Opera Industriel

Pike: Opera Industriel. Very good.

I'm going to be showing you four almost indistinguishable slides of computer-generated sunsets. For 5 points each, name the person who created the image or that person's affiliation.



Booth: Nelson Max.

Pike: Nelson Max.

Booth: Carla's Island. ... Reeves and Fournier.

Pike: Good.

Booth: John Lewis.

Pike: Gavin Miller, of Alias.

Booth: Darwyn Peachey.

Pike: Darwyn Peachey, three out of four.
<applause> Okay, here's a toss-up question:

*Which of the following was not a SIGGRAPH paper:
Ray Tracing Algebraic Surfaces, Ray Tracing
Deformed Surfaces, Ray Tracing Bicubic Patches, Ray
Tracing Parametric Patches, Ray Tracing Complex
Scenes?*

Kass (Apple): Ray Tracing Parametric Patches.

? (Canada): Fault, fault, our light was on.

Pike: Team Canada was in on that I think,
there's, I'd like to know why there are two
buzzers flashing, but I won't bother asking.
Team Canada.

Fournier: Ray Tracing Bicubic Patches.

Pike: Ray Tracing Bicubic Patches was never a
SIGGRAPH paper. Okay Team Canada. <ap-
plause>

*For 5 points each name the authors of the following
four papers: Ray Tracing Algebraic Surfaces.*

<Silence> <Horn>

Pike: Times up. The author was Pat Hanrahan.

Ray Tracing Deformed Surfaces.

Booth: Sederberg.

Pike: Alan Barr.

Ray Tracing Parametric Patches.

Booth: Kajiya.

Pike: Kajiya.

Ray Tracing Complex Scenes.

Booth: Kajiya?

Pike: Kajiya and Kay, correct. Okay here's a toss-
up question:

*Who wrote the 1987 paper whose key words are
design, human factors, animation principles....*
<buzzer> Cal Tech

Barr: Norman Badler.

Pike: No.

*...animation principles, key frame animation, squash
and stretch,...* <buzzer> Apple

Turkowski (Apple): John Lasseter.

Pike: John Lasseter, "Principles of Traditional Animation". Okay, this bonus question is for Apple.

We asked the question earlier today of fifty SIGGRAPH attendees with technical badges: For 5 points each, what were the three most popular answers to the question: What city should SIGGRAPH '95 be held at?

Williams: Honolulu. <laughter> <applause>

Pike: Your other answers please.

Williams: San Francisco.

Pike: San Francisco, one more.

Williams: <Horn> New Orleans.

Pike: New Orleans! Got it. Two out of three, the third was Santa Fe. Impressive. Okay, toss-up question:

Name the Albany, New York company that introduced the Insight Mark II Image Generator in 1983, perhaps the first real... <buzzer> Team Canada

Booth: GE.

Pike: No.

*...perhaps the first real-time voxel machine.
<buzzer> Apple*

Williams: Phoenix Data Systems.

Pike: Phoenix Data Systems. Okay Apple, this is your chance to take the lead.

Serious graphics nerds not only recognize the pictures, they know the nicknames. For 5 points each, give me the name of the baby in Tin Toy.

Williams: <Horn> Drooler.

Pike: No, Billy.

Jim Kajiya's Bear.

Williams: Teddy.

Pike: Herbert.

Gavin Miller's Worm.

Williams: Eric.

Pike: Eric, good.

And finally, the Host of NY Tech's 3-DV.

Williams: User-friendly.

Pike: User-friendly. Okay, the race is getting tight here. We have 90 for Team Canada, 85 for Apple and 30 for Cal Tech.

I'm going to show you a clip from a SIGGRAPH film show animation. For 10 points, what TV show used this animation as its opening? Team Canada.

Fournier: Storyteller

Pike: What? What TV Show?

Fournier: Yeah, it's a Spielberg show about storytelling.

Pike: Okay, the judges are nice to you, I don't know why.

Williams: Amazing Stories.

Pike: Okay, Canada.

I will describe four curve or surface types. For 5 points each, name the type. Opposite pairs of boundary curves are linearly blended and added together and the bilinear patch formed by the corners is subtracted out.

Booth: Coons' Patch.

Pike: A Coons' Patch.

Control point values are used as the weight of a sum of Bernstein polynomials.

Booth: Bezier.

Pike: Bezier curve.

The zeroes on a polynomial in three variables.

Booth: B-spline.

Pike: No, it's an algebraic surface.

And the level surface of the sum of trivariate Gaussian's.

Booth: <Horn> Beatty Patches.

Pike: No, Blinn's Blobby Molecules. Okay, <boos, as Jim Blinn holds up the Jaggie sign>, however, Team Canada is still holding the lead with 110.

Who wrote the paper that included the color images of More Bottles and Glasses,... <buzzer> Apple

Williams: Turner Whitted.

Pike: Turner Whitted and Dave Weimer, "Software Testbed". Okay Apple.

SIGGRAPH Bowl wouldn't be complete without a second question about Paul Heckbert's paper Ray Tracing Jello Brand Gelatin. As the motivation for choosing to ray trace Jello, Heckbert cites thirteen other surface primitives for which researchers have investigated ray-surface intersection calculations. For 5 points each, name any four of those surface primitives.

<Silence>

<Horn>

Pike: Sorry.

Williams: Quadrics.

Pike: Quadrics, no. Abstracts of Blue Surfaces, Aquatic Blobby Things, Checkerboard, Cloud City, and Glass Balls, Green Balls, More Glass Balls, Mandrills, Morphine Molecules and something I can't read. Running Skeletons. Noble try, though. Okay, toss-up question.

This person moved up from being AV coordinator in 1979 to SIGGRAPH Co-chair in '85. This person has worked for NASA, Langley; ... <buzzer> Team Canada.

Booth: Pat Cole.

Pike: Pat Cole. <applause>

The movie Tron was a major event for computer graphics. Three of the companies that worked on it showed their pieces from Tron in the '82 film show. For 5 points each, name the three companies.

Booth: Triple-I, MAGI, Digital Productions.

Pike: Only one: Digital Effects, Bob Abel and Triple-I. Okay.

Booth: Magi was in the ...

Pike: Take it up with them. Okay, who ...

Williams: They are right.

Pike: Take it up with them later. <boos> Hey guys, you're out in front, quit bickering.

[Editor's Note: MAGI did produce footage for TRON, but it was not shown at the '82 Film Show. The question is correct, though too devious.]

Okay, who wrote the 1987 paper whose key words are adaptive sampling, antialiasing, filtering, ... <buzzer> Cal Tech

Cook (Canada): Don Mitchell.

Pike: Don Mitchell, "Generating Antialiased Images". Okay, Cal Tech this is for you.

I'll give you the titles of some famous thesis papers from the University of Utah. For 5 points name the author. The Aliasing Problem in Computer Synthesized Shaded Images.

Barr: Ed Catmull.

Pike: Frank Crow.

Computer Display of Curved Surfaces.

Barr: Jim Blinn.

Pike: Jim Blinn.

Computer Display of Curved Surfaces.

<Silence> <Horn>

Pike: Henri Gouraud.

A Subdivision Algorithm for Computer Display

of Curved Surfaces.

Barr: Catmull.

Pike: Catmull. Two out of four. Okay, toss-up question.

I'm going to show you a clip from a SIGGRAPH film show animation For 10 points, what company created this piece? : Apple

Williams: Triple-I.

Pike: Triple-I. Okay.

We all have shelves of books on graphics and related topics. I will give you the author names for a number of reference books and for 5 points you give me the title or subject matter. Brian Kernighan and Dennis Richie.

Williams: C

Pike: C.

Aho, Hopcroft and Ullman.

Williams: <Horn> Algorithms.

Pike: Algorithms.

Robert Ulichney.

<Silence> <Horn>

Pike: Digital Halftoning.

Ray Fielding.

Williams: Special Effects Film, Cinematography.

Pike: Correct, three out of four. Okay, so it's 125 to 120 to 50 with Team Canada tailed here by Apple.

Give either name of the company that came to SIGGRAPH '82 with their new Iris 1... : I don't see any lights. Are you hiding yourself, Booth? Team Canada.

Booth: Silicon Graphics.

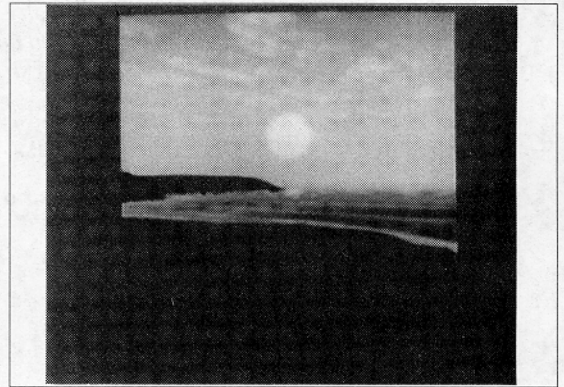
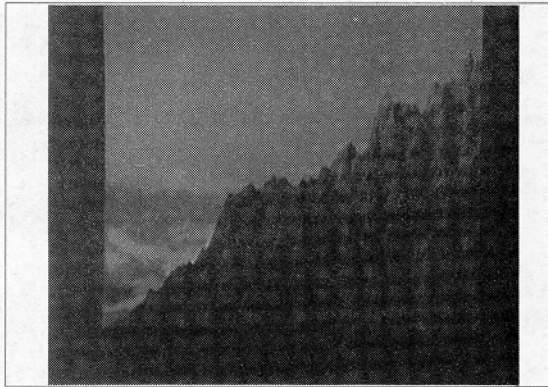
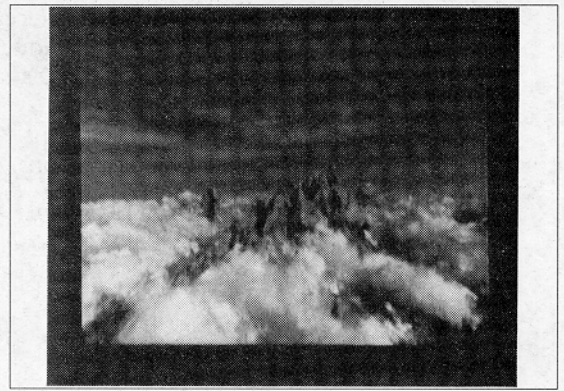
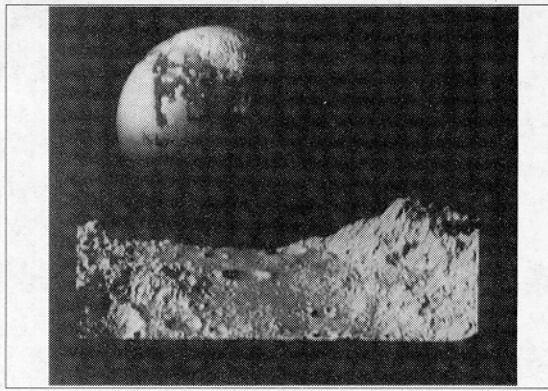
Pike: No.

Give either name of the company that came to SIGGRAPH '82 with their new Iris 1. A high performance 3-D raster display system for real time display of things with ten thousand edges. They changed their name in 1983 before being purchased by NY Tech. The machine was designed by Ron Swallow. <buzzer> Apple

Williams: Trillium.

Pike: Trillium, also known as Image Dynamics. Okay Apple, you're in the lead.

I'll be showing you four slides of fractals. For 5 points each, name the person who created the image or that person's affiliation.



Williams: Dick Voss.

Pike: Dick Voss of IBM.

Williams: Loren Carpenter.

Pike: Loren Carpenter of Boeing.

Williams: Grumman.

Pike: Grumman, Geoff Gardner.

<Silence> <Horn>

Pike: Musgrave and Mandelbrot, IBM. Three out of four and you're in the lead. Okay, the last question Team Canada.

In a whopping twenty-six page paper for SIGGRAPH '83, who wrote "Bit map displays are in vogue..."
<buzzer> Team Canada

Booth: Rob Pike.

Pike: Rob Pike. *<applause>* Team Canada goes on to the alpha round.

Booth: We need two of these.

Pike: That's the last question. You guys, Team Canada... Oh, no it's not?

Booth: We need two to win.

Pike: I have to knock myself again. Okay, bonus question, Team Canada, pardon me.

We asked the question early today of fifty SIGGRAPH attendees with technical badges, for 5

points each, what were the three most popular answers to the question: What individual has made the most money in computer graphics? <laughter>

Booth: Jim Clark, Ivan Sutherland, Dave Evans.

Pike: Three out of three! *<applause>* Okay, I was right, but at the wrong time. Team Canada, you advance to the final round, and Apple good try. Cal Tech, hit those books.

Flip Phillips

Okay, let's bring those teams up. Okay, team number one in the contest is Xerox PARC coming back on stage for you. Andrew Glassner, Frank Crow and Jules Bloomenthal. And team number two is that team from Pixar/Berkeley: featuring Tony Apodaca, Paul Heckbert and Darwin Peachey. And team number three, fresh from their win in game number three, the Team from Canada, Alain Fournier, Brian Wyvill, Eugene Fiume; replacing Kelly Booth is Brian Wyvill in this particular match. *<applause>*

Pike: Funny, that man looks like Kelly Booth to me.

Phillips: Actually, Kelly Booth...Actually it's Brian Wyvill for Eugene Fiume.

Pike: Okay men, are you ready? Are you finished Frank? I'm not ready, I'm asking if they're ready. Are we ready? Let me know when you're done Frank? Okay,

For 10 points whose's name is on this resume? This

person published no papers until 1984, but he now holds the record for the most papers in a single year. <buzzer> Team Canada

Fournier: Al Barr.

Pike: Al Barr, four in 1987. Okay, Team Canada.

With nine published SIGGRAPH papers, Al Barr has been among the most prolific. For 5 points each, name the three people with at least that many papers published through 1989.

Booth: Blinn, Greenberg and Fuchs.[Editor's Note: Our count is 9, 18, and 9, respectively.]

Pike: Three out of three!

Booth: All Canadians. <laughter>

Pike: Okay, I'm going to show you a clip from a SIGGRAPH film show animation. For 10 points what is the title of this piece?

Booth: Pencil Test.

Pike: Team Canada?

Booth: Pencil Test.

Pike: I can't see what light is flashing. Team Canada.

Booth: What is the name of Pencil Test?

Pike: Okay, Team Canada. This bonus questions is for Team Canada.

I will describe four properties, For 5 points each name them. It's not as hard as it sounds. A signal whose components above a certain frequency have zero amplitude.

Booth: Band Limited.

Pike: Band limited.

A curve having no more zeroes than its control polygon.

Booth: Variation diminishing.

Pike: Correct.

A function whose derivative is bounded by a constant.

<Silence> <Horn>

Pike: Answer? The Lipschitz Condition.

Booth: The Lipschitz Condition, of course

Pike: A matrix whose transpose is equal to its inverse.

Booth: <Horn> If it's complex it's Hermitian.

Pike: An orthogonal matrix. Okay, here's the toss-up question.

For 10 points, who wrote "A major deficiency in

most computer synthesized shaded images today has been the lack of shadows. Quite realistic..."
<buzzer> Xerox PARC

Bloomenthal (Xerox): Lance Williams.

Pike: No.

Booth: What was their answer?

Pike: Their answer was Lance Williams. Hands on your buzzers. <buzzer> Pixar/Berkeley

Peachey: Frank Crow.

Pike: Frank Crow. <boos> I imagine there will be a little discussion about that one afterwards. By the way, that was the most cited '70s paper last year. But Pixar/Berkeley it's your toss up.

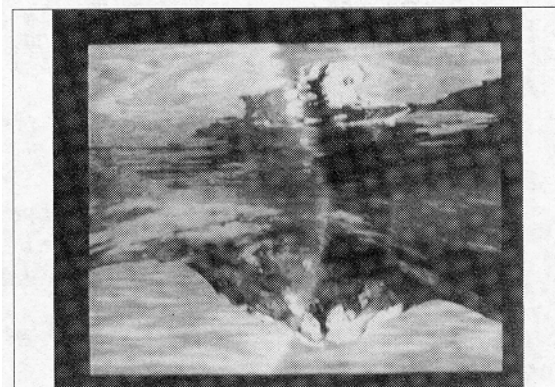
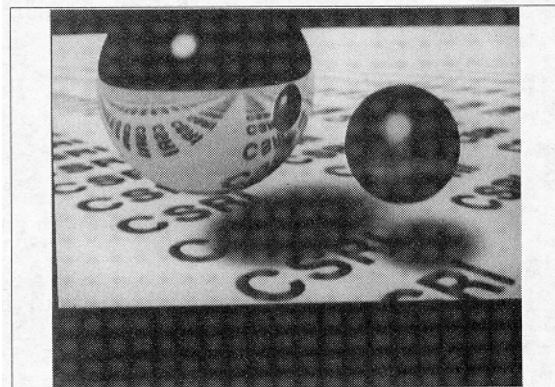
I'll be showing you four slides of ray traced images. Ray traced spheres in fact. For 5 points each, name the person who created the image or that person's affiliation.

Heckbert: Amanatides.

Pike: John Amanatides.

Heckbert: RPI

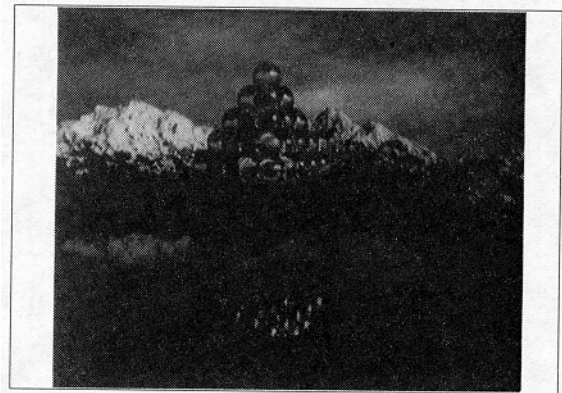
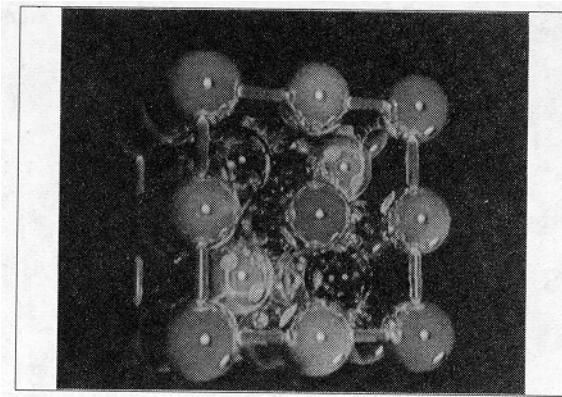
Pike: No, it's Mel Pruitt at Los Alamos.



Heckbert: Sandia, Watterberg.

Pike: Sandia. Yes.

Heckbert: Kajiya.



Pike: Kajiya at Cal Tech. Three out of four. Okay

For 10 points whose name is on the resume. He's coauthor of a 1974 SIGGRAPH "Computers as a Way of Life" with Tom DeFanti....<buzzer> Canada

Booth: Dan Sandin and ... Mr. Computer Lib <Horn> Ted Nelson.

Pike: No, you blew it. You'll apologize to the other teams for blurting out the answer. Okay, another toss-up question.

Name the company that sold a processor/frame-buffer combination to graphics research labs in the early '80s. They were bought by Fulcrum and Fulcrum by Adage. <buzzer> Team Canada

Booth: Ikonas.

Pike: Ikonas. <applause>

Everyone has one shelf of the bookcase dedicated to the SIGGRAPH Proceedings. For 5 points each, name the year of the Proceedings with the first color front cover.

Booth: 1978.

Pike: 1978.

The first color back cover.

Booth: <Horn> '80.

Pike: '81.

A cumulative index.

Booth: Cumulative index, 1983, a Canadian conference. <laughter>

Pike: '83.

And the worst binding job.

Booth: '80.

Pike: 1980. Okay, Pixar/Berkeley and Xerox PARC get your hands on your buzzers.

I'm going to show you a clip from a SIGGRAPH film show animation, For 10 points what equipment was used to render this piece. <buzzer> Xerox PARC

<Silence> I believe this is an array of Apollo machines.

Pike: No, it is not. <buzzer> Pixar/Berkeley

Peachey: Bosch.

Pike: It's a Bosch FGS 4000. Okay, Pixar/Berkeley.

In 1966, filtering was done for coffee and subdivision for real estate. For 5 points each, does the 1966 unabridged edition of the Random House Dictionary of the English Language include any entry for the following words: radiosity?

Heckbert: No.

Pike: No.

Aliasing or the verb to alias.

Heckbert: Yes.

Pike: No, it does not.

Caligraphic.

Heckbert: Yes.

Pike: Yes it does.

Dithering or the verb to dither.

Heckbert: Yes.

Pike: Yes. Toss-up question.

Who wrote a 1985 paper citing a 1758 reference from Euler, an 1844 reference from... <buzzer> Xerox PARC

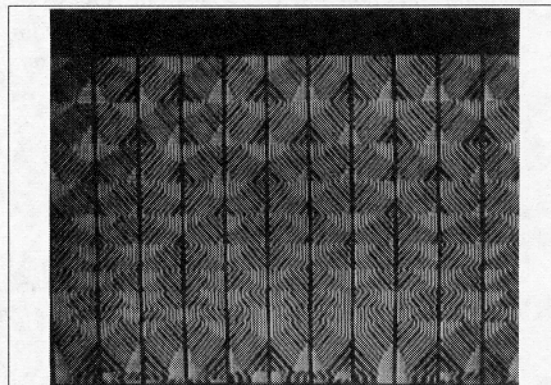
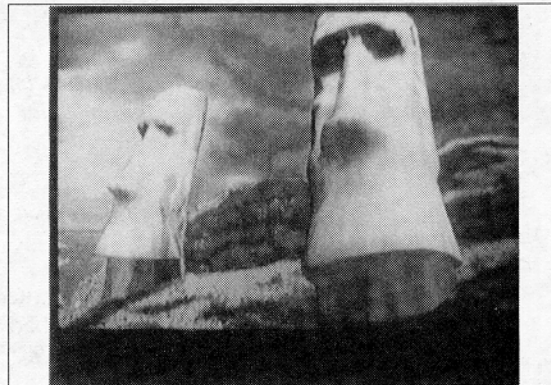
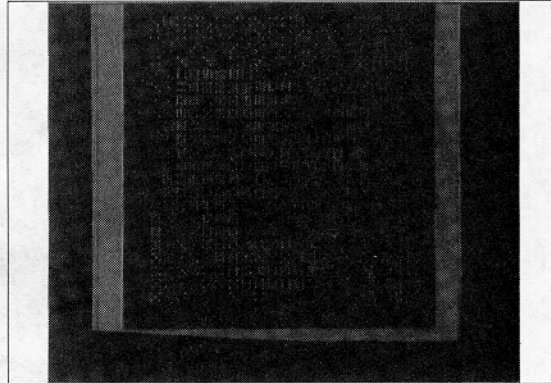
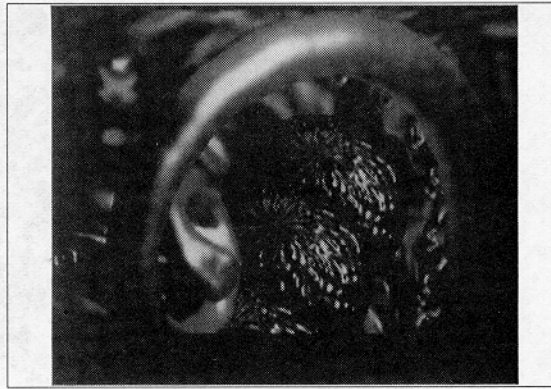
<Silence> Ken Shoemake.

Pike: Ken Shoemake "Animating Rotation with Quarternian Curves" Okay, this bonus question is for Xerox PARC.

I'll be showing you four slides of computer art. For 5 points each, who is the artist?

Crow: Kawaguchi.

Pike: Kawaguchi.



Crow: Ken Knowlton.

Pike: Ken Knowlton.

<Silence> <Horn>

Pike: Time. What is it? John Lewis.

Crow: Video wallpaper. Larry Cuba.

Pike: Copper Giloth, not Larry Cuba. Two out of four. Toss up question.

Within 5 megabytes per second, how many megabytes per second must be transferred from a frame buffer to refresh a 1280 by 1024 by 24 bit image at 60 hz? <buzzer> Xerox PARC

Crow: 120.

Pike: No. <buzzer> Pixar/Berkeley

Apodaca: 200.

Pike: No. <Horn> 225 megabytes per second. <boos> Okay, toss up question.

This person has had many of his films shown at SIGGRAPH film shows, including "First Fig", "Calculated Movements", "3/78", "Two-Space", and his work for the 1977 film "Star Wars". Who is he? <buzzer> Team Canada

Booth: Larry Cuba.

Pike: Larry Cuba. <applause> Okay Team Canada.

Patent fights have pestered the industry. For 5 points each, name the company principally associated with defending patents... on digital airbrushes.

Booth: Quantel.

Pike: Quantel. ...on XOR

Booth: The three lawyers company. <laughter> That's all they are.

Pike: No, it's a company called CadTrak.

...On Z buffering (or Zed buffering for you Canadians).

Booth: Lexidata

Pike: Lexidata. And the clipping divider.

Booth: Evans and Sutherland.

Pike: Evans and Sutherland. Three out of four.

Okay, I'm going to show you a clip from a SIGGRAPH film show animation, for 10 points what company created this piece? <buzzer> Pixar/Berkeley

Apodaca: PDI.

Pike: No. <buzzer> Team Canada

Fournier: NHK.

Pike: Repeat. Didn't sound right but I didn't hear it. Cancel. Play the rest of the tape please. <buzzer> Xerox PARC

Glassner: Robert Abel and Associates.

**SIGGRAPH
Bowl**

```
image[x+1,y] = image[x+1,y] + 3*e/8;
image[x,y-1] = image[x,y-1] + 3*e/8;
image[x+1,y-1] = image[x+1,y-1] + e/4;
```

```
if( code & 1 ) {
    y = y0 + dy * (xmin - x0) / dx;
    x = xmin;
}
if( code & 2 ) {
    y = y0 + dy * (xmax - x) / dx;
    x = xmax;
}
```

```
while( e >= 0 ) {
    y = y + 1;
    e = e - 2 * dx;
}
x = x + 1;
e = e + 2 * dy
```

```
P0' = 1/2 * ( P0 + P1 )
P1' = 1/2 * ( P1 + P2 )
P2' = 1/2 * ( P2 + P3 )

P0'' = 1/2 * ( P0' + P1' )
P1'' = 1/2 * ( P1' + P2' )

P' = 1/2 * ( P0'' + P1'' )
```

Pike: Bob Abel. Okay, Xerox PARC with 30 points, this bonus is for you.

I'll show you slides of four algorithms. For 5 points each, name them.

Crow: Dithering.

Pike: Dithering, not enough. Floyd, oh they want it, they'll give it to you, they're softies. Floyd Steinberg Dither.

Crow: Bresenham.

Pike: Bresenham, line drawing.

Crow: Clipping.

Pike: Clipping, it's the Cohen-Sutherland Clipping Algorithm.

Crow: Spline of some kind, Subdivision.

Pike: Subdivision. No, not enough, we wanted the Patch or Bezier Subdivision Algorithm. *<boos>* Okay, Team Canada has 95, Pixar/Berkeley 50, Xerox PARC 45. Toss up question.

Who made fireworks in a 1983 SIGGRAPH? (cacophony of buzzers) You got that? <laughter>

Glassner: Jerry Weil, AT&T Bell Labs.

Pike: No, *<buzzer>* Pixar/Berkeley.

Peachey: Bill Reeves.

Pike: Bill Reeves, "Particle Systems". Okay,

Pixar/Berkeley

We asked the question early today of fifty SIGGRAPH attendees with technical badges, for 5 points each, what were the four most popular answer to the question, what was the best piece of computer animation ever made?

Heckbert: Luxo, Jr., Knickknack, *<laughter>* Tin Toy, *<more laughter>* Tony de Peltre

Pike: No, Luxo, Jr., Knickknack are right, Red's Dream and 3DV are the other two. Not bad for guessing. Okay, six minutes to go and it's a pretty tight race.

Name the company whose booth in 1982 was empty except for a simple monolith with a sign reading "We will be back, bigger and better". The company never returned with its SpaceGraph.

<Silence> <Horn>

Booth: Computervision.

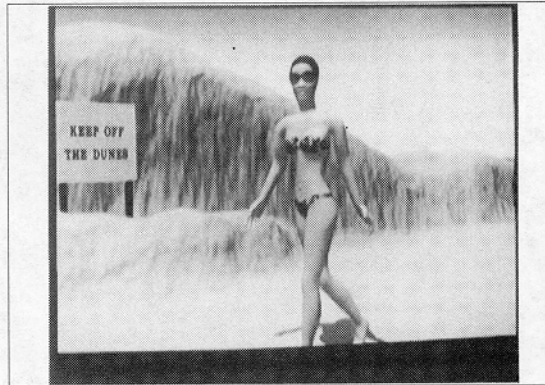
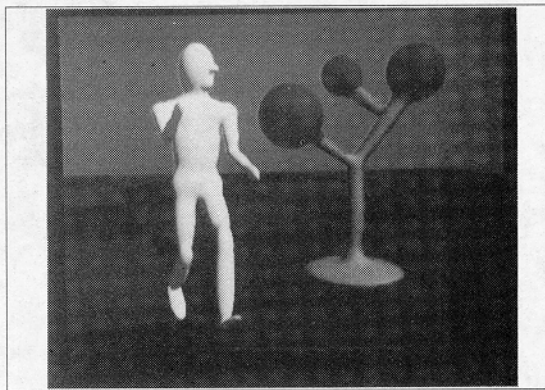
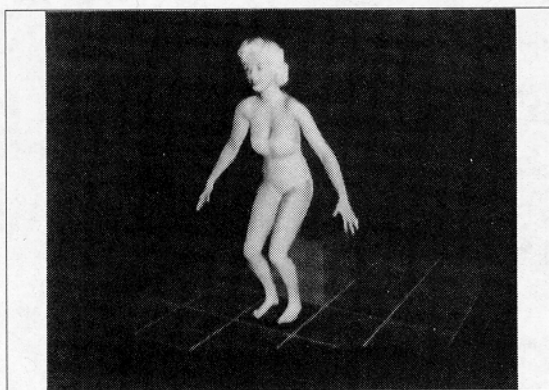
Pike: No, it's Genisco.

Okay, For 10 points, whose name is on this resume? This pioneering researcher developed the first hidden line algorithm, advocated the use of homo... <buzzer> Pixar/Berkeley

Peachey: L. G. Roberts.

Pike: Okay, Pixar/Berkeley.

The 1977 Proceedings included color images with



only four papers. Three of which came from Cornell, and one from Naval Ocean Systems Center. For 5 points for each paper, name any author or coauthor of the papers with those color images.

Heckbert: Weiler/Atherton, Crocker, Torrance, ... Dan Quayle <laughter>

Pike: You got one of them, Weiler and Atherton, Lawrence McCleary, Don Greenberg and Marc Levoy.

Okay, I'm going to show you a clip from a SIGGRAPH film show animation, For 10 points, what is the title of this piece? <buzzer> Team Canada

Wyvill (Canada): "Waterfall".

Pike: No. <buzzer> Xerox PARC

Crow: It was done by Simms, it called "Waterworks" or something.

Pike: No. We want the title of the piece.

Heckbert: "How to have fun with a Connection Machine". <laughter>

Pike: You should've hit your button, but it's wrong anyway. No, that was called "Particle Dreams". Frank, you had the right guy, but the wrong title.

Dr. Hanrahan: Remember, there's no consultation on the toss-up questions.

Pike: Yes, please. OK. Toss-up question.

Technical people at animation companies have often chosen to spend more time making pictures than papers. Of Chuck Csuri, Gary Demos, Bill Kovacs, and Judson Rosebush, name the person who has... <buzzer>

Booth: Chuck Csuri has...

Pike: Team Canada.

Booth: Chuck Csuri has had a paper at SIGGRAPH. The others have not.

Pike: Good thing that was the question. Yes. <laughter> OK, Team Canada.

I'll be showing you four slides of human figures. For 5 points each, name the person who created the image or the person's affiliation.

Booth: Thalmans—now in Switzerland, but Montreal, then. Canadian!

Pike: Good.

Booth: Tony de Peltrie, Canadian! Bergeron, et al.

Pike: Good.

Booth: Blinn.

Pike: Blinn.

<Silence><Horn>

Pike: Done by NY Tech by Susan van Bearle and Dick London. Three out of four.

Visual material unavailable

Visual material unavailable

Visual material unavailable

Visual material unavailable

Okay, who wrote the 1984 paper whose key words are computer imagery, database amplification, ... <buzzer> Pixar/Berkeley

Peachey: Alvy Ray Smith.

Pike: Alvy Ray Smith. "Plants, Fractals and Formal Languages". Okay Pixar/Berkeley.

For 5 points each, where are SIGGRAPH '91, '92, '93 and '94 going to be held? First SIGGRAPH '91.

Heckbert: Las Vegas.

Pike: Las Vegas.

'92?

Heckbert: San Francisco.

Pike: Chicago.

SIGGRAPH '93?

Heckbert: San Francisco.

Pike: Anaheim.

SIGGRAPH '94?

Heckbert: Orlando, Fla.

Pike: Got it. Toss up.

Get your right-handed coordinate systems ready. You are at the origin looking along the positive Z or Zed axis in a right-handed coordinate system. Positive Y is up. You see a cone whose base is in the Y-Z plane and whose tip is at the point (1,0,1). Is

the tip pointing up, down, right or left? <buzzer> Xerox PARC

Glassner: It's pointing to the right and away.

Pike: It is not. <buzzer> Pixar/Berkeley

Apodaca: To the right.

Pike: No, it's not pointing to the right. It wasn't pointed to the right for them, either. Team Canada

Booth: Can you repeat the actual question? What are you asking? <Horn>

Pike: Time's up. It's pointed to the left. I'm disappointed.

I am going to show you a clip from a SIGGRAPH Film Show animation. For 10 points, what company created this piece? <buzzer> Xerox PARC

Glassner (Xerox): Apollo.

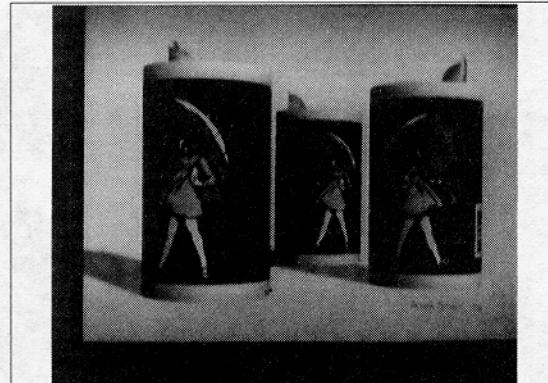
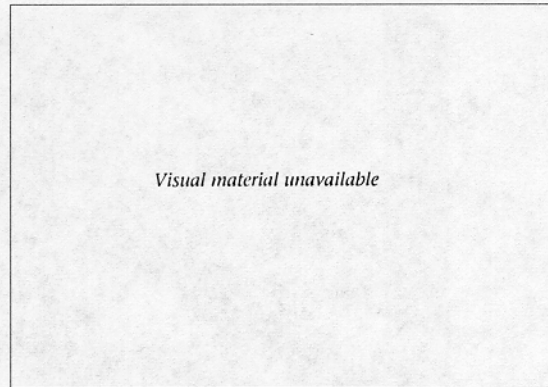
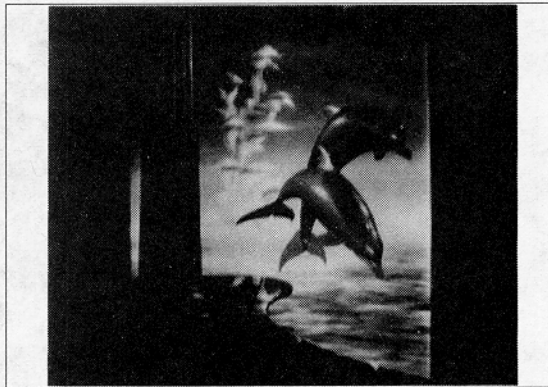
Pike: Apollo. OK.

I'll be showing you four slides of matrices that describe a type of curve or surface. For 5 points each, name the type.

Crow: Hermite, Interpolation. No, I'm sorry: Bezier.

Pike: B-spline.

Crow: No, I'm sorry: B-spline. This next one is Hermite.



Pike: This is Hermite.

Crow: Catmull-Rom.

Pike: Catmull-Rom.

Crow: Bezier.

Pike: Bezier.

Fournier: The first one was wrong. There's a 1/6 term missing in front of it.

Pike: We have two questions to go. Let's go.

Name the machine designed by Jim Kajiya and Gary Demos. <buzzer> I've said the question wrong. <laughter>

Glassner: But we know the answer anyway.

Pike: I need a call from the judges. ... Go for it. OK.

Crow: The Evans and Sutherland frame buffer.

Pike: That's right. OK, Xerox PARC.

I'll be showing you four slides from the SIGGRAPH Technical Slide Set. For 5 points each, which modelling and animation software company is responsible for creating each image?

Crow: Wavefront.

Pike: Wavefront.

Crow: Alias.

Pike: Alias.

Crow: <Silence> <Horn> Oh, I was, it was ... b-b-b-b-b-

Pike: Intelligent Light.

Crow: I was wrong anyway. <Pause> <Horn> Mumble.

Pike: Cubicomp. OK. Hands on your buzzers.

Of Jim Blinn, Turner Whitted, Frank Crow, and Jim Clark, who was the only one never to earn a... <buzzer> Yes, Darwyn.

Peachey: Frank Crow.

Pike: No. <buzzer> Team Canada

Fournier: Jim Blinn.

Pike: No. Would you like to hear the rest of the question? OK.

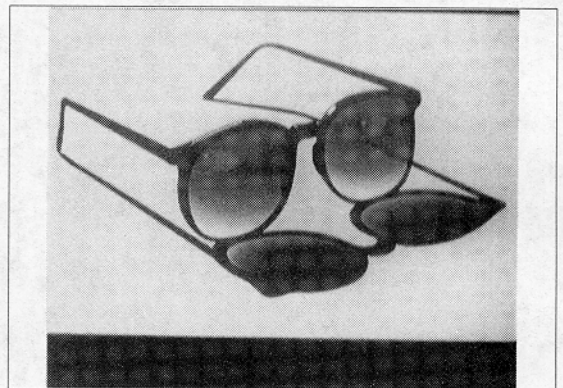
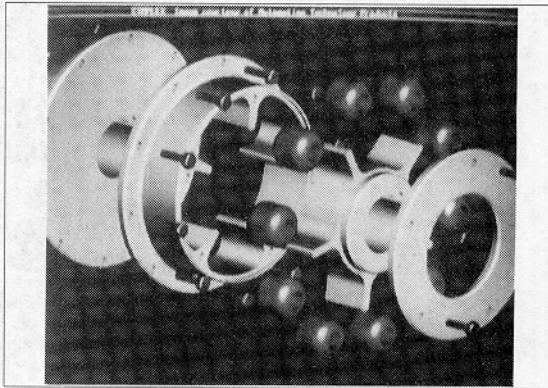
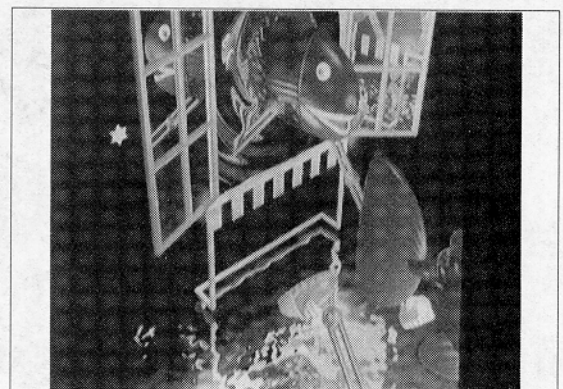
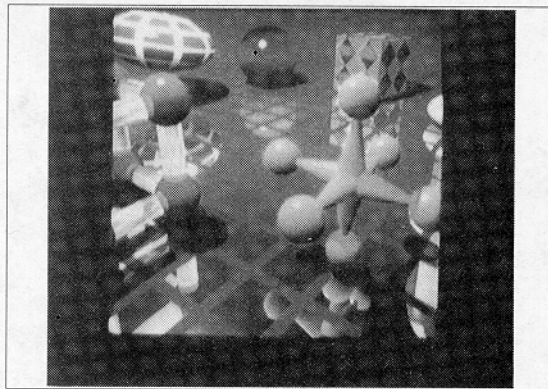
...who is the only one never to earn a paycheck from New York Tech? <buzzer> Frank Crow, Xerox PARC

Crow: It was the one that wasn't Jim Clark, Jim Blinn, or myself. <laughter>

Pike: Turner Whitted. All right.

OK, great minds think alike. For 5 points each, name the authors of two different 1985 papers on solid texture.

Crow: Oh, Peachey and Perlin.



Pike: Yes.

Name the authors of two different 1980 papers on stochastic modeling. Papers were later merged for a CACM article.

Crow: Cook and Dippe

Pike: No, Carpenter, Fournier & Fousell.

Name the authors of two different 1978 SIGGRAPH papers on scan line algorithms, the papers were merged with other work for a CACM article.

Crow: Whitted and Carpenter.

Pike: Whitted and Blinn ... and Carpenter, you got it. No, no, no, no, no. [Editor's Note: The correct answer is Whitted and Blinn. The "other work" refers to Carpenter and Lane.] Last question, let's see we've got Team Canada with 120, Pixar/Berkeley with 105, Xerox PARC 105.

Name the two coauthors who contributed two papers in 1981, one presenting the 8 by 8 display... <buzzer> Team Canada

Booth: Bob Sproull and <Horn> no.

Pike: It's two, we need two coauthors. <buzzer> Xerox PARC

Crow: Satish Gupta was the other.

Pike: Yes and Bob Sproull. Last question.

I'll be showing you four slides from the SIGGRAPH technical slide set. For 5 points each, which

computer hardware company is responsible for creating the image?

Crow: Apollo.

Pike: Apollo.

Crow: <Horn> Raster Technologies.

Pike: No. Silicon Graphics.

Crow: Symbolics.

Pike: No. Toyo Links.

Crow: Cranston/Csuri.

Pike: No. DEC. Well, you all know the rules, so here they are again. We have two teams tied for first place. We play those two, just two, with toss up questions. The first correct answer...

Crow: Who are the first two?

Pike: We're getting there. I'm letting the judges scramble here in the front. They can't see much, the light's dim. Okay, incorrect answers are out—no, okay. Team Canada has 120 points, Xerox PARC has 120 points, and Pixar/Berkeley is a very respectable 105 points. <applause>

So, Pixar/Berkeley hands off your buzzers, Xerox PARC and Team Canada, I will be reading toss up questions only. The first correct answer to a toss up question wins SIGGRAPH Bowl.

I'm going to show you a clip from a SIGGRAPH film show animation. For 10 points, what company created this piece? <buzzer> Xerox PARC

Crow: Cranston/Csuri, no.

Pike: No.

Booth: We didn't hear their answer, so, are we allowed to hear their answer first?

Pike: The answer was Cranston/Csuri.

Fournier: No. *<Horn>*

Pike: Never mind. Next question, try again.
<boos> Speak directly into the microphone please, contestants.

Booth: We have been unable to hear most of their answers. [Editor's Note: This is true. The acoustics on stage were lousy.]

Pike: Well, their answers are not very good anyway.

Fournier: How come we didn't get to answer the question?

Booth: We're ready.

Pike: Ready, we're going to avoid all animosity here, we're just going to go for it.

Who wrote the 1981 article whose principle figure included a dozen variations on a sphere and mandrill cube? <buzzer> Team Canada

Fournier: Potmesil and Chakravarty.

Pike: Potmesil and Chakravarty. Ladies and gentlemen meet the 1990 SIGGRAPH Bowl Champions! *<applause, standing ovation>*

Tom Porter

I want to thank my colleagues. I was responsible for most of the questions, but I had lots of help. Pat Hanrahan and Rob Pike created a number of questions. Tom Duff submitted the nerdy graphics questions. Eben Ostby and Flip Phillips recommended the Film Show clips. Rodney Stock suggested questions regarding defunct exhibitors. Tom DeFanti added a couple of questions and made the SIGGRAPH Slide Set available. Ed Catmull, along with all my colleagues on the Panel, reviewed the questions and validated answers.

Pat and I want to thank Nick England for donating the trophy. We want to thank Academic Press for donating copies of Andrew Glassner's *Graphics Gems* to the winning team. We want to thank Addison-Wesley for donating copies of *Computer Graphics* by Foley, van Dam, Feiner & Hughes to the winning team. We want to thank Lauren Herr for a copy of the SIGGRAPH Video Review given to the winning team. We want to thank Pixar for video tapes given to all finalists.

We want to thank the contestants. We appreciate the efforts of the SIGGRAPH Student Volunteers: Cheryl Scribner, Margaret Sturgill,

Frank Henigman, Julie Waterhouse, Alex Brown, and Clemi Boubli. Finally, we want to thank the SIGGRAPH A/V Crew for an outstanding job!

**SIGGRAPH
Bowl**

Stephen Sharp *Technical Director*

Rick Conyers *Audio*

Matthew McShane *Projection*

Dave Dorr *Lighting*

John Rousseau *Video*