The University of Utah
John and Marcia Price College of Engineering
Presents

AN IEEE MILESTONE DEDICATION EVENT

IEEE

JOHN AND MARCIA PRICE COLLEGE OF ENGINEERING
THE UNIVERSITY OF UTAH

IEEE MILESTONE DEDICATION

Friday, March 24, 10 a.m. to noon.

This event celebrates the University of Utah's impact on computer graphics and visualization. An IEEE Milestone plaque will be unveiled.

Introduction Video

Welcome: Brian Berg, IEEE Region 6 History Chair and Event MC

Why Utah?: Dan Donahoe, IEEE Milestone Proposer

IEEE Background: Kathy Hayashi, IEEE Region 6 Director

The IEEE Milestone Program: Brian Berg

Remembering David Evans: Alan Kay '69

How It All Started: Pixar Animation Studios Co-founder Alvy Ray Smith moderates a discussion with Ivan Sutherland and Bob Schumacker about the beginnings of the computer graphics revolution and the founding of Evans & Sutherland

Stories as a Student: John Warnock '69, Co-founder of Adobe

The "Utah Illuminati:" Alvy Ray Smith moderates a discussion with John Warnock '69, Henri Gouraud '71, Ed Catmull '74, Jim Clark '74, Henry Fuchs '75, Martin Newell '75, and Jim Blinn '78 about their PhD work at Utah, and their subsequent dramatic impact on CG and visualization

To Pixar and Beyond! Ed Catmull '74, Pixar Animation Studios Co-founder and past President

Milestone Plaque Presentation by Brian Berg, Kathy Hayashi and Dan Donahoe on behalf of IEEE to Richard Brown and Mary Hall of the University of Utah

- Lunch -

GRAPHICS SYMPOSIUM

Friday, March 24, 1:45 p.m. to 5:00 p.m.

Visionaries who launched the computer graphics revolution will reflect on their student days at the U and their trailblazing technology contributions.

Richard B. Brown: Welcome

Alvy Ray Smith, Event MC: Introductory Remarks

Ed Catmull: The Creative Environment

Martin Newell: The Teapot Again? Why?

James Blinn: The Bumpy Road to Blinn Shading

Henri Gouraud: The French Connection and Image Analysis

Bob Schumacker & Rod Rougelot: Evans & Sutherland – Corporate Culture and Contributions to Computer Graphics

Henry Fuchs: From Ivan Sutherland's Head-Mounted Display to Augmented Reality Eyeglasses: a 50-year Adventure

Jim Clark: Computer Graphics & Public Key Cryptography - Ivan Sutherland's and Dave Evans' Influence On My Life

Alan Kay: We Were So Lucky ...

John Warnock: New York City Harbor to PostScript and PDF

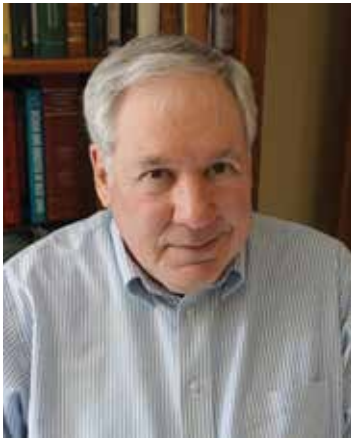
Brian Berg is an independent consultant specializing in flash memory through his Berg Software Design consultancy. He is an active IEEE volunteer in Silicon Valley, and is the History Chair for the 10 western states. As a member of the IEEE History Committee, he has been both a Milestone proposer and a Milestone Advocate, and has been involved with over two dozen IEEE Milestones since 2010. These activities help satisfy his love of history, and allow him to have fun and meet cool people – such as those who created the foundation of computer graphics that we celebrate today.

Richard B. Brown, a distinguished professor of ECE and KSOC, is the H. E. Thomas Presidential Endowed Dean of the Price College of Engineering. He earned an EE Ph.D. from the University of Utah in 1985 and started his academic career at the University of Michigan, where he developed the VLSI program and conducted research on microprocessor design, silicon-based chemical sensors, and brain probes. Prof. Brown has 22 patents, has founded four companies, and is a Fellow of the National Academy of Inventors. He was awarded the Utah Governor's Medal for Excellence in Science and Technology and is a recipient of the U of U Rosenblatt Prize.

Jim Blinn made his first computer generated pictures in 1968 while an undergraduate at the University of Michigan. From 1974 to 1977 he was a graduate student at the University of Utah where he did research in specular lighting models, bump mapping and environment mapping. In 1977 he received a Ph.D. and moved to the Jet Propulsion Laboratory, producing animations for space missions to Jupiter, Saturn and Uranus, the PBS series COSMOS, and for college level physics and high school mathematics telecourses. He has received the Siggraph Coons Award, a MacArthur fellowship and the Ub Iwerks award.

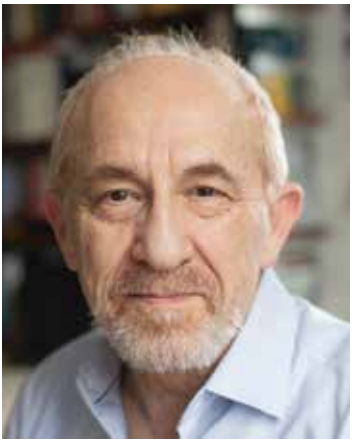
Ed Catmull is cofounder of Pixar Animation Studios and retired president of Walt Disney and Pixar Animation Studios. Previously, he was vice president of the Computer Division of Lucasfilm Ltd., where he managed development in the areas of computer graphics, video editing, video games and digital audio. Catmull is one of the architects of the RenderMan rendering software. Catmull has received numerous awards including five Academy Awards; the Gordon E. Sawyer Award; the ACM SIGGRAPH Steven A. Coons Award; the Progress Medal and the Fuji Gold Medal awards from the Society of Motion Picture and Television Engineers, and the 2019 ACM Turing Award.

Jim Clark born in Plainview Texas in 1944, joined the Navy in 1961, studied EE at Texas Tech, earned BS and MS degrees in Physics from LSU, and in 1974 received a Computer Science PhD at U of Utah. He was CS professor at UC Santa Cruz (1974-1977) and an EECS professor at Stanford University (1979-1983). He has Honorary Doctorates from U of New Orleans, Tulane, and U of Utah, and was elected to the National Academy of Engineering (2002) and Horatio Alger Society (2017). Jim led teams founding Silicon Graphics (1982), Netscape(1994), Healtheon/WebMD(1996), MyCFO(1998), CommandScape (2014), and Beyond Identity (2021). He, his children Michael (57), Kathy (52), Dylan (11) Harper(8) and wife Kristy Hinze all live in New York.



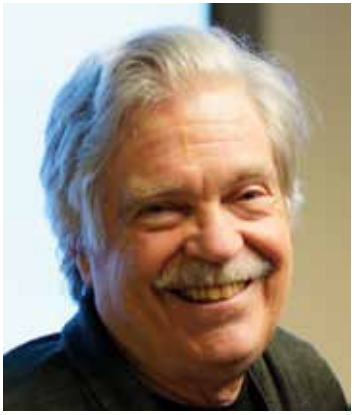
Dan Donahoe holds BS and MS degrees from the University of Illinois, an MBA from Santa Clara University, and a PhD from the University of Maryland. He has served as a member of the IEEE-USA board, as chair of the Utah Section, as chair of the TAB Ad Hoc committee on standards, and on other organizational and conference committees. He has been employed by Lockheed, Motorola, Ford Aerospace, Teledyne, Compaq Computer, Iomega, Exponent Failure Analysis Associates, and the United States Air Force. Dan was honored with the Utah Engineers Council 2022 Engineer of the Year award and the Air Force Award for Meritorious Civilian Service.

Henry Fuchs (PhD, Utah, 1975) is the Federico Gil Distinguished Professor of Computer Science and Adjunct Professor of Biomedical Engineering at the University of North Carolina at Chapel Hill, where he leads UNC's Graphics and Virtual Reality Research Group. He has been active in 3D computer graphics and computer vision, with rendering algorithms (BSP Trees), high performance graphics hardware (Pixel-Planes), office of the future, virtual and augmented reality, telepresence, and medical applications. He is a member of the National Academy of Engineering, a fellow of the American Academy of Arts and Sciences, a fellow of the ACM, a Life Fellow of the IEEE, recipient of the ACM SIGGRAPH Steven Anson Coons Award, and an honorary doctorate from TU Wien, the Vienna University of Technology.



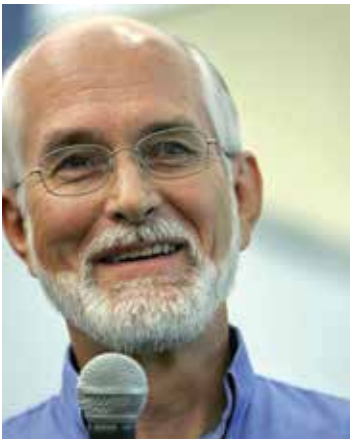
Henri Gouraud got his PhD from the University of Utah in 1971 after engineering studies at Ecole Centrale and Sup'Aéro in Paris. After his return to France and a one year of service in the French Air Force, he was a consultant at Tecsi. In 1982, he briefly joined the Centre Mondial Informatique and founded Tangram (2D graphics) in 1984 with Patrick Baudelaire, M. Gangnet and B. Scheurer. Tangram was sold in 1986 to Digital Equipment Corp to form DEC's European research lab (PRL). Henri joined DEC's Internet Business Unit after the closing of PRL in 1997 and joined Sun Microsystems in 2000 to form its European research lab in Grenoble with Jeff Rulifson. After Sun Lab's closing, he acted as consultant with Exalead and with the European Commission on multimedia search.

Kathy Herring Hayashi has been involved in the semiconductor industry her entire career – developing, deploying, and analyzing advanced software tools used to create computer and mobile phone chips. At Unisys, she created some of the first graphical layout tools in the semiconductor industry. She has since worked for Cadence Design Systems and Syntricity. She is now at Qualcomm, working with semiconductor workflows in large-scale compute environments. She is currently the IEEE Director of Region 6 (Western Region of the United States) and a member of the IEEE Board of Directors. She is a senior member of IEEE and IEEE-HKN (IEEE Honor Society).



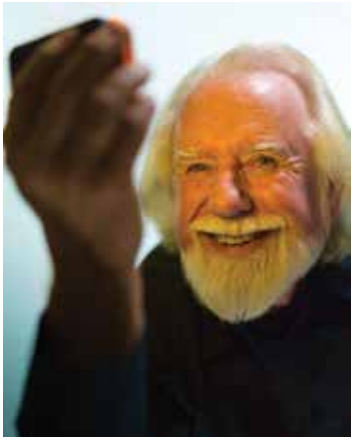
Alan Kay has often said: "No one owes more to his research community than he does". While a member of the ARPA research community in the 1960s, and then at PARC, Alan participated in the inventions and development of object-oriented programming, personal computing, the modern graphical user interface, and computing to help children learn powerful ideas. He has been recognized for these efforts with the ACM Turing Award, the NAE Draper Prize, and the Kyoto Prize.

Martin Newell earned a BS (Mech Eng) from London University in 1966, and an MS (Mech Eng) from Penn State in 1968. He started his career at the CAD Centre in Cambridge, England. He moved, with his wife, Sandra, to the U.S. in 1972 and earned a PhD (Comp Sci) at the University of Utah in 1975, after which he worked at large companies (Xerox PARC, Adobe Systems) and small (CIMLINC, Ashlar). He was founder and CEO of Ashlar. Dr. Newell was elected a member of The National Academy of Engineering in 2006. Since retiring, Martin spends his time designing and building very small-scale radio controlled airplanes, enjoying his annual fly fishing trip to Alaska, and doting on his three grandchildren.



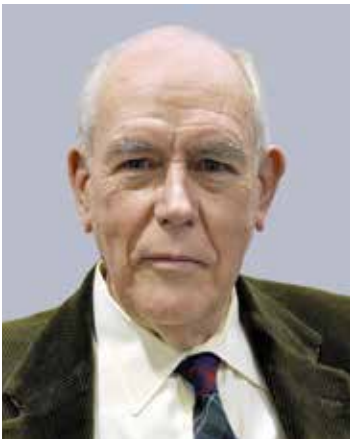
Rodney Rougelot retired as president and chief executive officer of Evans & Sutherland, in 1994 after 22 years with the company. He was recruited to the company from GE, along with Bob Schumacker and Ed Wild, to develop computer technology for pilot training. With the aid of the three former GE engineers, Evans & Sutherland entered what would become one of its key markets, the NOVOVIEW visual simulators for commercial airlines. As the company evolved, Rod went on to lead the Interactive Systems Division. He was awarded the Judith A. Resnick Award in 1997.

Robert A. Schumacker joined GE in 1960 with a BS/MSEE from MIT, and started a 35-year career developing computer hardware, architectures, algorithms, and displays for visual simulation systems. Evans and Sutherland beckoned in 1972, and within a year, the first of some 1,000 flight simulators were shipped to worldwide airlines. In 1978 he conceived a fundamentally new architecture for rendering complex, high quality 3D images. He was awarded the Governor's Medal for Science and Technology and named Simulation Division President in 1989. Departing E&S in 1995 enabled more time to ski, hike, fly, and folk dance - and explore remote parts of the world. He received the FAA Wright Brother's Master Pilot Award in 2014 for more than 50 years of safe flying.



Alvy Ray Smith cofounded Pixar and Altamira Software. He was the first Director of Computer Graphics at Lucasfilm and the first Graphics Fellow at Microsoft. Before that he was with Xerox PARC and New York Institute of Technology in their computer graphics heydays. He has received two technical Academy Awards for his contributions to digital movie-making technology. A video piece he co-created, Sunstone, is in the collection of the Museum of Modern Art in New York City. MIT Press recently published his book, A Biography of the Pixel, which took him 10 years to research and write.

Ivan Sutherland received his PhD from MIT in 1963, and has held professorships at Harvard, the University of Utah, and Caltech. He joined Portland State University in 2009 as a "Visiting Scientist" to found the Asynchronous Research Center (ARC) with his research partner and wife, Marly Roncken. Sutherland holds the 1988 ACM Turing Award, the 2012 Kyoto Prize and over 70 US patents. He is a Fellow of the ACM and a Member of both the US National Academy of Engineering and National Academy of Sciences. Now 84 years of age, Ivan devotes full time to research, lectures, and writing.



John Warnock co-founded Adobe in 1982 with the late Dr. Charles Geschke, and together, built Adobe from a small start-up into one of the largest, most recognized software brands in the world. He was president of Adobe for two years and CEO for the next 16 years. Warnock retired as CEO in 2000 and as CTO in 2001. He served as chairman of the board from April 1989 to January 2017. Today, he remains a member of Adobe's board of directors. Warnock, along with Geschke, was the recipient of the National Medal of Technology and Innovation, one of the nation's highest honors bestowed on scientists, engineers and inventors.

JOHN AND MARCIA PRICE
COMPUTING AND ENGINEERING BUILDING

IEEE

JOHN AND MARCIA PRICE
COLLEGE OF ENGINEERING
THE UNIVERSITY OF UTAH