Fifty Years of Progress

SID

SOCIETY FOR INFORMATION DISPLAY

UCLA ENGINEERING
Henry Samueli School of
Engineering and Applied Science
Birthplace of the Internet

September 29th, 2012
Society for Information Display Commemorates their Fiftieth Anniversary

The Society for Information Display was founded in Room 3400, Boelter Hall, UCLA, on September 29, 1962, by Dr. H.R. Luxenberg and 39 attendees who represented major high-tech firms. Mr. R.L. Kuehn later inaugurated the *Information Display* Journal.

Dr. Luxenberg initiated his UCLA Extension class in *Display Technology* in 1961. Mr. L.E. Tannas, Jr., SID past president, continued the UCLA *Display Technology* Extension class for 20 years after succeeding Dr. Luxenberg in 1980.

Professor Yang Yang, UCLA, now holds the *Carol and Lawrence E. Tannas, Jr., Endowed Chair in Engineering*, the world's first Collegiate Engineering Chair devoted to electronic information display technology.

SID - on September 29, 2012 - has members in 28 international chapters: 11 US chapters including SID-LA, the founding chapter, and 17 other chapters. SID has 9 worldwide student branches including the UCLA student branch.

Brian Berkeley
President, SID

Dave Eccles
SID V.P. Americas

Bao Ping Wang
SID V.P. Asia

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SID
SOCIETY FOR INFORMATION DISPLAY

Mr. R.L. Kuehn

Dr. H.R. Luxenberg

The purpose of SID shall be:

a) To encourage the scientific, literary and educational advancement of information display and its allied arts and sciences, including, but not limited to: the disciplines of display theory, display device and systems development, display systems and applications, display peripherals, display materials/processing/manufacturing, display measurements, imaging, image processing, hard copy, printing, information science, display design, display input/output devices/interaction, display perception and the psychological and physiological effects of display systems on the human senses.

b) To maintain a central repository for data relating to information display and its allied fields which shall be accessible to all qualified members of SID for research purposes.

c) To provide forums, by establishment of regular periodic publications and regular conferences, for the exchange and dissemination of ideas relating to the field of information display

d) To promulgate definitions and standards pertaining to the field of information display

e) To conduct these activities and achieve these objectives without pecuniary profit to its Directors, officers or members; any balance of money or assets remaining after the full payment of corporate obligations of all and any kinds shall be devoted solely to the above stated purposes.

The scope of SID is non-national, embracing all territories of interest to its membership. SID shall maintain its principal offices in the USA, from which it shall carry out its general administrative functions in accordance with applicable laws.

Attendees at SID Organizational Meeting September 29, 1962

Robert W. Asher, *Litton*
Raymond E. Bernberg, *RCA*
Jim Beucher, *RCA*
George B. Collins, *IBM*
Phillip Damon, *Hughes Aircraft Co.*
R. A. Davidson, *Lockheed Missiles & Space Co.*
Herbert Deich, *Aerojet General*
Robert L. Delsasso, *RCA*
Walter E. Deutsch, *RCA*
Dail D. Doucette, *Aerojet General*
W. A. Fails, *Litton*
Michael J. Flanagan, *Mitre Corp.*
Dudley E. Foster, *Hazeltine Research Facilliy*
Paul L. Fox, *Whittier*
Loren Gardner, *Houston Fearless Corp.*
Daniel J. Griffin, *CFL Co.*
Walter J. Hoffman, *IT&T*
Robert C. Knepper, *Hughes Aircraft Co.*
Rudolph L. Kuehn, *Aeronutronic/Ford Motor Co.*
Michael G. Kunec, *Autonetics*
M.C. Langtry, *Bendix Computer Div.*
William W. Lindsay, Jr., *Lockheed California Co.*
R.J. Lintell, *Houston Fearless Corp.*
Richard T. Loewe, *Aeronutronic/Ford Motor Co.*
Harold R. Luxenberg, *Houston Fearless Corp.*
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David K. Robbins, *Nortronics*
Louis M. Seeberger, *RCA*
John L. Stahlke, *Sylvania*
C. Tomaszewski, *RCA*
R. E. Turnage, *General Dynamics/Electronics*
Richard D. Van Tassell, *Sylvania*
M. Clark Wager, *Tridea Electronics*
K. H. Walker, *Houston Fearless Corp.*
Purry O. (Woody) Wilson, *General Dynamics/Electronics*
Richard N. Winner, *North American Aviation*

SID in 2012

The Society for Information has become a global organization with thousand of members who are technically responsible for a global display industry of approximately $100 billion annually, SID has chapters at the following locations:

Americas
Bay area, Canada, Delaware Valley, Greater Dayton, Kent State University, Latin America, Los Angeles, Metro Detroit, Mid-Atlantic, New England, Pacific Northwest, Southwest, Texas, UCLA, University of Central Florida, and the Upper Midwest.

Europe
Belarus, France, Israel, Mid Europe, Russia, UK/Ireland, and the Ukraine.

Asia
Bangalore, Beijing, Hong Kong, India, Japan, Korea, Singapore/Malaysia, Taipei, and the Yonsei University.

Greetings from SID's President

29 September 2012

Dear fellow SID members and friends,

We are here in Room 3400 of UCLA's Boelter Hall to celebrate a unique occasion, the 50th anniversary of our beloved engineering society, the Society for Information Display. Our founding members met in this very room exactly 50 years ago today. This evening we are fortunate to have several of those founding members here to describe their memories of that first meeting.

The founding members tried to form a new display systems section within IRE. When that could not be accomplished, they decided to form their own society. As a result, SID was born. SID is older than IEEE, which was formed in 1963 from the merger of IRE and AIEE.

SID grew out of the Sputnik Age and grew up with the aerospace industry as a leader in new frontiers in engineering, championing a systems engineering approach to development of new electronic technologies made feasible by a multidiscipline methodology. The electronic display as we know it today is the most complex and most interdisciplinary component ever made.

In 1961, our founders, led by Dr. Harold Richard Luxenberg, organized the first class on electronic display systems, which led to organization of the first engineering society on the subject in 1962. This resulted in publication of the first book in 1968, entitled Displays Systems Engineering, edited by Luxenberg and Kuehn. The book was a collection of chapters written for class by fellow lecturers. The initial nucleus was a UCLA Engineering Extension class on Display Systems Engineering, taught here for 39 years. SID has, from the start, always been the place to learn about displays and display-related technologies, including the latest developments in the field.

Today is a momentous occasion and one of which we can all be proud. Our display products are enablers to many new products in the 21st Century. Just in the past ten years, innovations that were first reported at SID have enabled pervasive flat screen televisions, smart phones, tablets, and many other world-changing products that otherwise would not have been possible. We look forward to the next 50 years of innovation in the electronic display field. Congratulations are in order for all of us!

Brían Berkeley

Major Stepping Stones In The Last 50 Years Leading To The Successes Of The Flat Panel Display Industry

During the past 50 years, the Flat Panel Display (FPD) industry was created and has developed into a market with annual sales of over US$ 100 billions. Today, FPD devices are everywhere in our daily life. FPD applications include TV, smart phones, tablet and notebook PCs, PC monitors, digital cameras, etc. There can be almost no activity carried out without an FPD device. The FPD industry has surely made significant contributions to our society and has been a tremendous success.

During the past 50 years, numerous FPD technologies have been invented. However, only a few of these have survived the severe tests of meeting performance, engineering, manufacturing and market requirements. The successful technologies include liquid crystal, electroluminescent and plasma displays and active matrix addressing. Each technology has gone through the route of invention, prototype demonstration, small-size manufacturing and finally large-scale manufacturing. It is an arduous and severely tested process. Only the fittest have survived. It is also a collected-effort process involving many companies and individuals. One company invents the technology. Another company takes it to manufacturing. The process may take 20 to 30 years from invention to mass production. Along the way, numerous scientists, engineers and managers in many companies have made contributions to the success of these technologies.

The development and evolution of these technologies have been closely correlated with the creation and growth of SID. Today, in celebrating the 50th anniversary of SID, the SID Honors &Awards Committee has selected 22 events in the history of FPD development which we consider fit the definition of "Major stepping stones in the past 50 years leading to the successes of the FPD industry". Our selection has been based on suggestions from members of the SID Board of Directors, SID Fellows and interested SID members. We may inadvertently have missed a few important events along the way. If so, we apologize. However, we do assure you that we have given careful consideration to all the inputs we have received. We hope that publicizing the list of major events on this 50th anniversary of our Society will provide suitable recognition of the major contributions from involved individuals and companies which have led to the success of today's FPD industry.

Major Stepping Stones In The 50 Years Of the FPD industry

Year	Event
1962-1972	Pioneering LC developments and active matrix addressing, RCA
1964	Invention of plasma display, U of Illinois
1970	Twisted nematic LC, Hoffman-La Roche and ILIXCO
1971	AC PDP 512x512 graphic terminal, Owens-Illinois
1974	First AMLCD prototype, Westinghouse
1974	First TFEL panel, Sharp
1979	a-Si TFT, University of Dundee
1982/1983	Supertwisted nematic LCD for passive matrix addressing, RSRE and Brown Boveri
1983	First commercial pocket LCTV using poly-Si, Seiko Epson
1984	First commercial LCD TV using a-Si TFT, Matsushita
1987	Invention of low voltage OLED, Kodak
1992	21" color PDP, Fujitsu
1993	Blue LED, Nichia
1995	IPS TFT-LCD, Hitachi
1995	Wide-view compensation film, Fuji films
1996	First 42" PDP TV, Fujitsu
1998	MVA TFT-LCD, Fujitsu
1998	Invention of Phosphorescent OLED, Princeton and USC
1999	First commercial OLED panel, Pioneer
2001	40" TFT-LCD TV, Samsung
2003	First color AMOLED product in camera, Kodak and Sanyo
2012	Large-area AMOLED TV panels, Samsung and LGD

2012 SID Honors and Awards Committee

Chris King

Jun Souk

Shiego Mikoshiba

Ching Tang

Larry Weber

Shin-Tson Wu

Tony Lowe

Nobuki Ibaraki

Fan Luo, Chair

Fellows of the SID

1963 Ruth M. Davis
1963 James H. Howard
1964 Anthony Debons
1965 Rudolph L. Kuehn
1966 Edith Bardain
1966 William P. Bethke
1966 Carlo P. Crocetti
1966 Frances R. Darne
1966 Harold R. Luxenberg
1966 Petro Vlahos
1967 William R. Aiken
1967 Sid Deutsch
1967 George Dorion
1967 Solomon Sherr
1968 Fordyce M. Brown
1968 Robert C. Carpenter
1968 Phillip P. Damon
1969 James H. Redman
1969 Carl Machover
1969 Louis M. Seeberger
1970 Leo Beiser
1970 Nobuo John Koda
1970 Bernard J. Lechner
1970 Harry H. Poole
1971 Benjamin Kazan
1971 Harold B. Law
1972 Pierce W. Siglin
1973 Irving Reingold
1974 Vernon J. Fowler
1974 Charles P. Halsted
1974 Edwin H. Hiborn
1974 George Holtz
1974 Albert M. Loshin
1975 Lucien M. Biberman
1975 William E. Good
1975 H. Gene Slottow
1976 Sanai Mito
1976 Dalton Pritchard
1976 Gerald K. Slocum
1977 Thomas C. Maloney
1977 Ko-Ichi Miyaji
1977 William H. Ninke
1977 John A. van Raalte
1978 Ifay F. Chang
1978 Gentaro Miyazaki
1978 Peter Pleshko
1979 Aron Vecht
1980 P. Samuel Christaldi
1980 Cecil E. Land
1980 Masanobu Wada
1981 Frederic J. Kahn
1981 Elliott Schlam
1981 Alan Sobel
1982 Jay J. Brandinger
1982 Peter D.T. Ngo
1982 John M. Constantine, Sr.
1983 Yoshifumi Amano
1983 T. Peter Brody
1983 Webster E. Howard
1983 Lawrence E. Tannas, Jr.
1984 Thomas L. Credelle
1984 Werner E. Haas
1984 P. Andrew Penz
1985 Cornelius J . Gerritsma
1985 Allan R. Kmetz
1986 Tomio Wada
1986 Paul M. Alt
1986 Roger L. Johnson
1987 Andras I. Lakatos
1987 Shunsuki Kobayashi
1987 Omesh Sahni
1988 Dwight W. Berreman
1988 Akio Sasaki
1988 Heiju Uchiike
1989 Takehiro Kojima
1989 Larry F. Weber
1989 Zvi Yaniv
1990 Eiji Kaneko
1990 Christopher N. King
1990 Harry L. Snyder
1991 Masami Yoshiyama
1992 Walter F. Goede
1992 Fang-Chen Luo
1992 Iwao Ohishi
1992 Martin Schadt
1993 Peter G. J. Barten
1993 Makoto Ikegaki
1993 Chuji Suzuki
1994 Masakazu Fukushima
1994 Edward P. Raynes

Fellows of the SID

1994 Tatsuo Uchida
1995 Hsing-Yao Chen
1995 Hiroo Hori
1995 Shigeo Mikoshiba
1995 Carlo Infante
1995 Hideaki Kawakami
1995 Alan G. Knapp
1995 Chizuka Tani
1997 Güenter Baur
1997 James L. Fergason
1997 Louis D. Silverstein
1997 Eiichi Yamazaki
1998 Fumiaki Funada
1998 William Glenn
1998 Ernst Lüeder
1998 Shinji Morozumi
1998 P. Niel Yocom
1999 Makoto Maeda
1999 Shoichi Matsumoto
1999 Terry J. Scheffer
1999 Tsutae Shinoda
2000 J. William Doane
2000 Setsuo Kaneko
2000 Hiroyuki Ohshima
2000 A.S. Sluyterman
2001 Shoji Shirai
2001 Takeo Sugiura
2001 Shosaku Tanaka
2001 Shin-Tson Wu
2001 Kei-Hsing Yang
2002 Philip Bos
2002 Daniel den Engelsen
2002 Nobuki Ibaraki
2002 Shohei Naemura
2002 Ching W. Tang
2003 William P. Bleha
2003 Shui-Chih Alan Lien
2003 Eli Peli
2003 Gary K. Starkweather
2003 Edward H. Stupp
2003 I-Wei Wu
2004 Jean-Pierre Boeuf
2004 Arlie Richard Conner
2004 Katsumi Kondo
2004 Anthony C. Lowe
2004 Masataka Matsuura
2004 Kouji Suzuki
2005 Adi Abileah
2005 Gregory P. Crawford
2005 Paul S. Drzaic
2005 Hoi-Sing Kwok
2005 Hiroshi Murakami
2005 Han-Ping Shieh
2006 Chin Hsin (Fred) Chen
2006 Wilem den Boer
2006 Jin Jang
2006 Tsunehiko Sugawara
2006 Steven A. Van Slyke
2006 Ki-Woong Whang
2007 Dena-Ke Yang
2007 Yoshifumi Shimodaira
2007 Kalluri Sarma
2007 Michael Hack
2007 Myung Hwan Oh
2007 Kenji Okamoto
2008 Richard McCartney
2008 Seung Hee Lee
2008 Junji Kido
2008 Vladimir Chigrinov
2008 Ingrid Hyendericks
2008 Chishio Hosokawa
2009 John Zhong
2009 Sashiro Uemura
2009 Jun Souk
2009 Amal Ghosh
2009 Min Koo Han
2009 Sang Soo Kim
2010 Andrew Watson
2010 Roger Stewart
2010 Haruhiko Okumura
2010 Wei Chen
2010 Edward Kelley
2011 Julie Brown
2011 In-Jae Chung
2011 Yoichi Sato
2011 Sung Tae Shin
2011 Xiao Wei Sun
2012 Nikhil Balram
2012 Brian Berkeley
2012 Ho Kyoon Chung
2012 Oh-Kyong Kwon
2012 Hiap L. Ong

The Presidents Of The SID

1962	Harold Luxenberg
1962	Rudolph L. Kuehn
1964	Anthony Debons
1965	James Redman
1966	William P. Bethke
1968	Carl Machover
1970	Philip P. Damon
1972	Carlo Crocetti
1974	Robert C. Klein
1976	Erwin A. Ulbrich
1978	Bernard Lechner
1980	Tarricia Dupuis
1982	Gus F. Carroll
1984	Ifay F. Chang
1986	John van Raalte
1988	Larry Tannas
1990	Walter Goede
1992	Philip Heyman
1994	Andras Lakatos
1996	Webster Howard
2000	Aris Silzars
2002	Allan Kmetz
2004	Shigeo Mikoshiba
2006	Larry Weber
2008	Paul Drzaic
2010	Munisamy Anandan
2012	Brian Berkeley

SID 50th Anniversary Celebration Committee
September 29, 2012

Presented By
SID Los Angeles Chapter

General Chairman, Larry Tannas

List of Sub-Committee Chairman

1. Curator of Historical Archives	Steve Atwood
2. List of Most Significant Display Events	Fan Luo
3. Historical Display Boards	Pete Baron
4. Plaque Design & Procurement	Bob Schmahl
5. Research Historian	Bob Knepper
(SID Historian/Robert Donofrio)	
6. Publicity	Frank Evagues, III
7. Treasurer	Larry Iboshi
8. One-Day Conference	
Co-Chair	Larry Iboshi
Co-Chair	Jim Kennedy
Program Chair	Prof. Yang Yang
9. Banquet Program Chair	Larry Tannas
10. Facilities Chair	Bob Schmahl
11. Archival Storage and Care	Mark Goldfarb
12. Archival Cabinets and Logistics	Jennifer Murray
(GES National Account Manager)	
13. Archival Setup at UCLA/CNSI	Phil Joujon-Roche
14. Commemorative Ceremony Chair	Erwin Ulbrich
Speaker – Early Technology	Pete Baron
Speaker – Early Presidents	Phil Damon
Speaker - Early Policy Considerations	Dail Doucette
Speaker - First Twenty-Five Years	Bob Knepper
Speaker – One Day Symposia	Bob Schmahl

Thanks To Our Sponsors

"Mei Yang and Carol Tannas wish to support the 50th anniversary of SID because SID and UCLA have been a large part of our lives. This photo was taken on the occasion of a banquet given to honor Dr. Yang Yang, Professor in the Materials Science and Engineering Department, Henry Samueli School of Engineering and Applied Science. Professor Yang was awarded the appointment of Chair Holder of the Carol and Lawrence E. Tannas, Jr. Endowed Chair."

President's Reception Sponsor

William Klein of Palisades Institute which has had a close relationship to SID for over 40 years in the meeting, coordination, and publication areas.

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