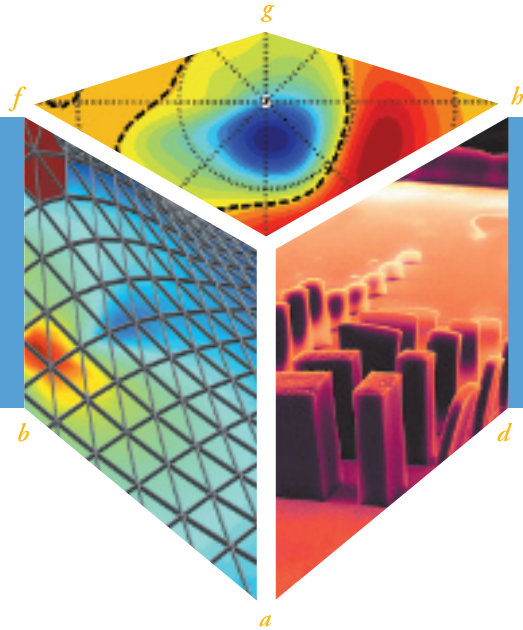


the  
**Hertz**  
FOUNDATION  
*freedom to innovate*

HERTZ FOUNDATION

**Catalyzing the Future:**  
the Magic of Invention

March 16-18, 2007  
San Jose, California



*All who have meditated on the art of governing mankind have been convinced that the fate of empires depends on the education of youth.*

—Aristotle

## Catalyzing the Future: the Magic of Invention

On behalf of the Board of Directors of the Hertz Foundation, we are pleased to welcome you to this second biennial symposium for Hertz Foundation Fellows and friends. Over the next three days, we will hear distinguished leaders in science and technology interpret the symposium theme *Catalyzing the Future: the Magic of Invention*. From our perspective, this theme expresses what Hertz Fellows achieve when they have the freedom to innovate and the opportunity to be engaged with their colleagues in the Hertz community.

The Hertz Foundation is committed to supporting its Fellows, beginning in graduate school and then extending over their lifetimes. One of the most powerful ways to support the Fellows is to bring them together at events such as this symposium, providing opportunities to meet each other, share ideas, learn cool stuff, and have fun. This symposium, our regional gatherings, and retreats for Fellows currently in school are some of the ways we are forging connections among the remarkable applied scientists and engineers who are part of the Hertz community. We know that when Hertz Fellows get together, magic happens.

We trust that you will find this symposium stimulating and inspiring. If you value the experience of interacting with these special persons, please consider becoming involved with The Hertz Foundation. Let us know, for example, if you are seeking a mentor or someone who might benefit from your guidance. We can help you make contact with Fellows in your field, with your peer group or with your community. And if you are willing to give time or other resources, we can suggest ways to make the most of your contributions. When Fellows are actively engaged with the Foundation and with each other, we all benefit.

Relax, join the conversation, and have fun!



Greg Canavan, PhD  
Chair, Board of Directors



John Holzrichter, PhD  
President, Hertz Foundation

## **Congratulations John Mather—Nobel Laureate 2006!**



The Hertz Foundation is proud to congratulate Dr. John C. Mather, Fellow 1974, who shared the 2006 Nobel Prize for Physics with Dr. George F. Smoot of the Lawrence Berkeley National Laboratory for their collaborative work on understanding the Big Bang.

Mather and Smoot analyzed data from NASA's Cosmic Background Explorer (COBE) which studied the pattern of radiation from the first few instants after the universe was formed. In 1992, the COBE team announced that they had mapped the primordial hot and cold spots in the cosmic microwave background radiation. These spots are related to the gravitational field in the early universe, only instants after the Big Bang, and are the seeds for the giant clusters of galaxies that stretch hundreds of millions of light years across the universe.\*

Dr. Mather is a Senior Astrophysicist in the Observational Cosmology Laboratory at NASA's Goddard Space Flight Center. His research centers on infrared astronomy and cosmology. As an NRC postdoctoral fellow at the Goddard Institute for Space Studies (New York City), he led the proposal efforts for the Cosmic Background Explorer (74-76), and came to GSFC to be the Study Scientist (76-88), Project Scientist (88-98), and the Principal Investigator for the Far IR Absolute Spectrophotometer (FIRAS) on COBE. He demonstrated that the cosmic microwave background radiation has a blackbody spectrum within 50 parts per million, confirming the Big Bang theory to extraordinary accuracy. As Senior Project Scientist (95-present) for the James Webb Space Telescope, he leads the science team, and represents scientific interests within the project management. He is the recipient of many awards, including the John C. Lindsay Memorial Award, National Air and Space Museum Trophy, AIAA Space Science Award, Aviation Week and Space Technology Laurels for Space/Missiles, Dannie Heinemann Prize for Astrophysics, Rumford Prize, the Benjamin Franklin Medal in Physics, and membership in the National Academy of Sciences.

Of our distinguished Fellows, Dr. Mather is the Hertz Foundation's second Nobel laureate. Dr. Carl E. Wieman received the Nobel Prize in Physics in 2001 and was named the U.S. Professor of the Year in 2004.

\*NASA website

## SPEAKER BIOS



### **Edward F. Brennan**

Dr. Ed Brennan is currently Chief Executive Officer and President of CryoCor. He was elected to the board in March 2006 when he was appointed CEO. He joined the company as Chief Operating Officer (COO) in January 2005 and was made it's President and COO in June 2005. He was the acting Executive Vice President of HemoSense, Inc. from January 2001 to May 2003. He has been a director of HemoSense since 2000 and was elected Chairman in January 2004. While a director he was also a managing partner of Perennial Investments, a Seattle-based venture capital firm, beginning in 2001. Prior to that time, he served as Vice President at Tredegar Investments. He also served on the board of directors of Molecumetrics, Inc., wholly-owned by Tredegar Corp. Dr. Brennan has participated in the development, management and financing of new medical technology ventures for over 25 years, including scientific and executive positions with Syntex, Inc., UroSystems, Inc., Medtronic Inc., DepoMed Systems, Inc. and CadioGenesis Corp. Dr. Brennan also serves on the board of Kilroy Realty Corporation, a Southern California based REIT and serves on the board of several private companies. He previously served on the Board of the American Heart Association, Santa Clara chapter. Dr. Brennan holds a BA degree in chemistry and biology and a PhD in biology from the University of California, Santa Cruz.



### **Robert L. Byer**

Professor Bob Byer has conducted research and taught classes in lasers and nonlinear optics at Stanford University since 1969. He has made numerous contributions to laser science and technology including the demonstration of the first tunable visible parametric oscillator, the development of the Q-switched unstable resonator Nd:YAG laser, remote sensing using tunable infrared sources and precision spectroscopy using Coherent Anti Stokes Raman Scattering (CARS).

He is currently the Director of Edward L. Ginzton Laboratory at Stanford University after serving as Director of Hansen Experimental Physics Laboratory from 1997 through 2006. He was Chair of the Applied Physics Department from 1981 to 1984, Associate Dean of Humanities and Sciences from 1985 to 1987, and served as Vice Provost and Dean of Research at Stanford University from 1987 through 1992.

In 1985 Professor Byer served as president of the IEEE Lasers and Electro-optics Society. He was elected President of the Optical Society of America and served in 1994. He is a founding member of the California Council on Science and Technology. He has served on the Engineering Advisory Board of the National Science Foundation.

## SPEAKER BIOS



### **Gregory H. Canavan, Fellow 1969**

Dr. Greg Canavan previously served as the DOE Director of the Office of Inertial Fusion, Special Assistant to the Chief of Staff of the U.S Air Force, and as a Presidential White House Fellow. He is a Fellow of the American Physical Society and a member of the American Association for the Advancement of Science.

He currently chairs panels of the U.S. NORTH Command, Air Force Space Command Independent Strategic Assessment Group (ISAG), USSTRATCOM, the Missile Defense Advisory Committee, and the New York City Mayor's Commission on Counter Terrorism. He has served as a member of the National Academy of Science Committee on Climate Change, the Army Science Board, the Commission on the International Space Station, the NASA Earth Systems Science and Applications Advisory Committee, the USAF Scientific Advisory Board study of New World Vistas, the White House Science Council Military Committee, and SDIO Advisory Committee.

His current research interests are stochastic processes, missile defense, and arms stability. Dr. Canavan received his BS in Mathematics from the USAF Academy, a MBA from Auburn University, and a MS and PhD in Applied Science from University of California at Davis. He received a Hertz Foundation Fellowship at the University of California at Davis, 1969.



### **Ruth A. David**

Dr. Ruth David is president and chief executive officer of ANSER, an independent, nonprofit public service research institute that provides research and analysis support on national and transnational issues. Dr. David also serves on the Defense Science Board, the National Security Agency Scientific Advisory Board, the National Research Council Naval Studies Board, the Senate Select Committee on Intelligence Technical Advisory Board, the Securities and Exchange Commission Advisory Committee on Technology, and as a Senior Advisor

for the USSPACECOM Computer Network Defense/Attack Task Force. As the former Deputy Director for Science and Technology at the Central Intelligence Agency, Dr. David was responsible for research, development, and deployment of technologies in support of all phases of the intelligence process. She also represented the CIA on numerous national committees and advisory bodies, including the National Science and Technology Council and the Committee on National Security. Prior to joining the CIA, Dr. David spent 20 years in technical staff and leadership positions at Sandia National Laboratories in Albuquerque, New Mexico. She earned the Bachelor of Science in Electrical Engineering from Wichita State University, and the Masters and Doctoral degrees, also in Electrical Engineering, from Stanford University. She is a former adjunct professor at the University of New Mexico and coauthor of three technical reference books.



### **Esther Dyson**

Esther Dyson is the Internet's court jester, a person of no institutional importance who somehow manages to speak the truth and to be heard when and where it matters. She does business as EDventure, the reclaimed name of the company she owned for 20-odd years before selling it to CNET Networks in 2004.

Her primary activity is investing in start-ups and guiding many of them as a board member. Her board seats include CVO Group, Eventful, Evernote, IBS Group (Russia, advisory board), Meetup, Midentity (UK), NewspaperDirect, Yandex (Russia) and WPP Group (not a start-up). Some of her other direct IT investments include Flickr and Del.icio.us (sold to Yahoo!), BrightMail (sold to Symantec), Orbitz (sold to Cendant), ActiveWeave, BlogAds, ChoiceStream, Dotomi, Linkstorm, Medstory, Ovusoft, Plazes, Powerset, Resilient, Tacit, Technorati, Visible Path, Vizu.com and Zedo. She is also a board member for 4 not-for-profit foundations.

For more than 20 years Esther wrote the newsletter Release 1.0 and ran PC Forum, the IT market's leading executive conference. She sold them to CNET Networks in 2004, and left CNET at the end of 2006. Esther was the founding chairman of ICANN (policy-setter for the DNS) from 1998-2000, and was also chairman of the Electronic Frontier Foundation in the 90s. In both her investments and her nonprofit activities, she has always been concerned with the impact of information (technology) on business and society.



### **Mike Farmwald, Fellow 1981**

Mike has founded six companies to date, five of which were financed in part by Benchmark Capital, where he is a Venture Partner and by Skymoon Ventures, where he is a General Partner.

Mike is probably best known for cofounding Rambus Inc., a developer of high-bandwidth interfaces for memories and other chips. After founding the company in 1990, Mike served as Vice President and Chief Scientist, overseeing the development of several key innovations, including the 1992 introduction of the world's first 4 Mbit RDRAM.

In 1993, Mike cofounded Chromatic Research, a privately held developer of media processors for the PC industry. Mike served on the board of Chromatic Research until the company was acquired by ATI Technologies in November 1998. In 1996, Mike cofounded Epigram, creator of advanced semiconductor home networking technology, which helped revolutionize high-speed networking connectivity within the home. Epigram was acquired by Broadcom in April 1999. In late 1997, Mike cofounded Matrix Semiconductor, a start-up backed by Skymoon, Benchmark and Microsoft, among others, which was recently sold to SanDisk.

Prior to his success at Rambus, Mike founded FTL in 1986. FTL, an ECL supercomputing company, merged with MIPS in the same year. Mike holds a BS degree in Mathematics from Purdue University and a PhD in Computer Science from Stanford University. He currently sits on the boards of Rambus (Nasdaq: RMBS), Finesse Solutions, LLC, Dash Navigation, Inc. and Numenta.

## SPEAKER BIOS



### **Alex Filippenko, Fellow 1984**

Dr. Alex Filippenko received his BA in Physics from UC Santa Barbara in 1979 and his PhD in Astronomy from Caltech in 1984. After a two-year Miller Fellowship at UC Berkeley, he joined the Berkeley faculty in 1986. His primary areas of research are supernovae, active galaxies, black holes, gamma-ray bursts, and cosmology. His research accomplishments, documented in about 500 published articles, have been recognized by several major awards, most recently the Richtmyer Memorial Award (2007), and he is one of the world's most highly cited astronomers. His team's discovery that the expansion of the Universe is accelerating was voted the top "Science Breakthrough of 1998" by Science magazine. Dr. Filippenko has won the highest teaching awards at UC Berkeley and has been voted the "Best Professor" on campus five times. In 2006, he was selected as the Carnegie/CASE Doctoral and Research Universities National Professor of the Year. He has appeared in several TV documentaries, most recently Discovery Science's "Exploring Time" (airing in March 2007). He has produced three astronomy video courses with The Teaching Company (1998, 2003, 2007), and in 2001 he coauthored an award-winning textbook, now in its third edition. He is the recipient of the 2004 Carl Sagan Prize for Science Popularization.



### **Dan Gregerson**

Dan Gregerson began programming computers to underwrite a flagging career as a musician and songwriter. He cofounded Intelligent Technologies in 1981 to develop PC Express, the first hardware/software product connecting local networks of IBM PCs to "mainframe" computers. In 1986 he founded PeerLogic. PeerLogic's PIPES Platform, was the first distributed operating system kernel enabling distributed application components to find and talk to each other across multiple operating systems and communications protocols. Techniques first commercialized by PeerLogic include asynchronous peer-to-peer communication, real-time distributed namespace services, "self-healing" logical networks, and "live" content management. Dan was a founding member of the Message-Oriented Middleware Association—where the term "middleware" was coined. He holds several patents in the area of distributed computing. When he's not working with entrepreneurs, Dan enjoys flying, novel writing, and pocket billiards. He received a BA in biology from UC Santa Cruz.



### **Morton Grosser**

Dr. Morton Grosser received his BS and MS from M.I.T. and his PhD from Stanford University. He was a National Institutes of Health Postdoctoral fellow at UCLA Medical Center and later won the Stegner Fellowship competition and returned to Stanford as a Creative Writing Fellow. He works in technology venture capital, holds a number of patents, and is the author of eight books, many technical papers, and fiction and poetry published in *The Atlantic*, *Harper's*, and *The New Yorker*. He has been involved with aviation for many years, and was a member of the *Gossamer Albatross* team and a pilot of the *Gossamer Albatross II*.





### **John L. Hennessy**

Dr. John Hennessy was inaugurated as Stanford University's 10th president in October 2000. He joined Stanford's faculty in 1977 as an assistant professor of electrical engineering. He rose through the academic ranks to full professorship in 1986 and was the inaugural Willard R. and Inez Kerr Bell Professor of Electrical Engineering and Computer Science from 1987 to 2004.

From 1983 to 1993 Dr. Hennessy was director of the Computer Systems Laboratory, a research and teaching center operated by the Departments of Electrical Engineering and Computer Science that fosters research in computer systems design. He served as chair of computer science from 1994 to 1996 and, in 1996, was named dean of the School of Engineering.

In 1999, he was named provost, the university's chief academic and financial officer. As provost, he continued his efforts to foster interdisciplinary activities in the biosciences and bioengineering and oversaw improvements in faculty and staff compensation. In 2005, he became the inaugural holder of the Bing Presidential Professorship.

Dr. Hennessy is a recipient of the 2000 IEEE John von Neumann Medal, the 2000 ASEE Benjamin Garver Lamme Award, the 2001 ACM Eckert-Mauchly Award, the 2001 Seymour Cray Computer Engineering Award, a 2004 NEC C&C Prize for lifetime achievement in computer science and engineering and a 2005 Founders Award from the American Academy of Arts and Sciences. He is a member of the National Academy of Engineering and the National Academy of Sciences, and he is a Fellow of the American Academy of Arts and Sciences, the Association for Computing Machinery, and the Institute of Electrical and Electronics Engineers.



### **John F. Holzrichter, Fellow 1971**

Prior to becoming President of the Hertz Foundation in 1999, Dr. John Holzrichter directed the Lawrence Livermore National Laboratory's internal research program, and its inertial confinement laser-fusion programs. He also continues to serve as a senior scientist at the Lawrence Livermore National Laboratory, and as a research professor at the University of California at Davis.

Dr. Holzrichter is an AAAS Fellow. He has published over 100 papers, monographs, and lectures on lasers, fusion, speech recognition, and research management. He has been granted 10 patents. His present work is concerned with optimizing R&D investments in the public sector.

Dr. Holzrichter received a BS with Honors in Applied Mathematics and Engineering Physics from the University of Wisconsin in 1964 and an MS and PhD in Physics from Stanford University in 1971. He received an A. E. Sloan Fellowship, a Fulbright Fellowship (Heidelberg 1965), and a Hertz Foundation Fellowship at Stanford, 1971.

SYMPOSIUM AT A GLANCE

Friday, March 16		
8:00 am	<b>Registration</b> Club Regent	
9:45 am	<b>Opening Remarks</b> Club Regent	<b>John Holzrichter and Ray Sidney</b>
10:00 am	<b>Robotics Panel</b> Club Regent	<b>Mike Montemerlo (facilitator), Neal Tanner, Simon Sponberg</b> , introduced by Wendy Cieslak
11:00 am	Break	
11:30 am	<b>Buffet Lunch</b> Regency Ballroom	
12:30 pm	<b>Speaker</b> Regency Ballroom	<b>John Hennessy</b> , <i>Science and Technology Leadership</i> , introduced by John Wakerly
1:30 pm	<b>Poster Session</b> Imperial Foyer	
3:00 pm	<b>Speaker</b> Club Regent	<b>Ray Kurzweil</b> , <i>Era of Accelerating Technologies</i> , introduced by Ilene Busch-Vishniac
4:00 pm	Break	
4:30 pm	<b>Speaker</b> Club Regent	<b>Morton Grosser</b> , <i>Flight of Imagination</i> , introduced by Dick Miles
6:00 pm	<b>Reception</b> Regency Foyer	
6:45 pm 7:00 pm 7:45 pm 8:15 pm	<b>Dinner</b> <b>Master of Ceremonies</b> <b>Donor Recognition</b> <b>Speaker</b> Regency Ballroom	<b>Bill Wattenburg</b> , introduced by John Holzrichter <b>John Browne</b> <b>Nathan Myhrvold</b> , <i>The Magic of Invention</i> , introduced by Ray Sidney
9:30 pm	<b>Close of Evening</b>	<b>Bill Wattenburg</b>
Saturday, March 17		
8:30 am	<b>Poster Session</b> Imperial Foyer	
9:30 am	<b>Welcome</b> Imperial Foyer	<b>Greg Canavan</b>

10:00 am	<b>Speaker</b> Club Regent	<b>Bill Perry</b> , <i>Technology and National Security</i> introduced by Gil Decker
11:00 am	<b>Entrepreneur Panel</b> Club Regent	<b>Dan Gregerson (facilitator), Ed Brennan</b> <b>Mike Farmwald, Kathy Johnson</b> , introduced by Gil Decker
12:00 pm	<b>Lunch</b> Imperial Ballroom	
12:45 pm	<b>Speaker</b> Imperial Ballroom	<b>Alex Filippenko</b> , <i>Dark Energy and the Runaway Universe</i> , introduced by Tom Weaver
2:00 pm	<b>Speaker</b> Club Regent	<b>Art Rosenfeld</b> , <i>Alternative Energy</i> , introduced by John Browne
3:15 pm	<b>Speaker</b> Club Regent	<b>Jeffery Kelly</b> , <i>Understanding and Ameliorating Age Onset Neurodegenerative Diseases</i> , introduced by David Galas
4:15 pm	<b>Poster Session</b> Imperial Foyer	
5:00 pm	<b>Reception</b> Imperial Foyer	
5:45 pm 5:50 pm 6:00 pm 7:45 pm	<b>Dinner</b> <b>Master of Ceremonies</b> <b>Speaker</b> <b>Wilson Talley Tribute</b> Imperial Ballroom	<b>Ruth David</b> , introduced by Jay Davis <b>Esther Dyson</b> , introduced by Ruth David <b>Tom McCann</b> , introduced by Ruth David
9:30 pm	<b>Close of Evening</b>	<b>Ruth David</b>
<b>Sunday, March 18</b>		
8:30 am	<b>Speaker</b> Club Regent	<b>Bob Byer</b> , <i>Technology Futures in Academia, Industry, and the Public Sector</i> , introduced by John Holzrichter
9:30 am	<b>Round Table Discussions</b> Club Regent	<i>Careers in the Following: Private Sector, Public Sector and Education</i>
11:00 am	<b>Speaker</b> Club Regent	<b>Lowell Wood</b> , <i>Planet Engineering</i> , introduced by John Holzrichter
12:00 pm	<b>Close of Symposium</b>	<b>John Holzrichter</b>

## SPEAKER BIOS



### **Kathy Johnson**

Kathy's pioneering ventures include Firefly, where she developed the international channel and distribution strategy before it was acquired by Microsoft; the introduction of online loyalty, where Kathy was pivotal in the creation of international strategies for companies including Bertelsmann, Vivendi-Universal, BT and Dentsu; and most recently, co-founded Blinkx, the world's first video search engine. Her evangelism of disruptive technologies has garnered unprecedented levels of media attention including international newspapers (*WSJ, NYT, Guardian, The Times, Die Welt, Reuters, etc.*), international TV and radio (*BBC, CNN, CNBC, etc.*), and business and lifestyle magazines (*Fast Company, Red Herring, Real Business, PC Magazine, etc.*).

Kathy is also actively involved with nation branding initiatives; including Japan's first inbound tourism campaign, "Yokoso Japan," with Prime Minister Koizumi's administration, "Invest Japan", Japan's first inbound FDI advertising and PR campaign, and "Germany in Japan 2005/2006" with the German government's Foreign Affairs Office.

Kathy also manages Consort Communications.



### **Jeffery W. Kelly**

Dr. Kelly received his PhD in organic chemistry from the University of North Carolina at Chapel Hill (1986) and performed post-doctoral research at The Rockefeller University in the area of chemistry and biology. After rising through the ranks in the chemistry department at Texas A&M University, he joined the Department of Chemistry at The Scripps Research Institute in 1997 as the Lita Annenberg Hazen Professor of Chemistry. Three years later, he became Dean of Graduate Studies and Vice President of Academic Affairs. His research focuses on the biological and chemical basis of protein folding. His group has made substantial progress in the context of four human amyloid diseases, Alzheimer's Diseases, Parkinson's Disease, and the familial gelsolin and transthyretin-based amyloidoses—publishing over 190 peer reviewed papers in this area. Two small molecules synthesized by the Kelly laboratory are now being tested in placebo controlled human clinical trials for the amelioration of peripheral neuropathy and cardiomyopathy caused by transthyretin amyloidosis. Dr. Kelly has won numerous awards including the American Chemical Society Arthur C. Cope Scholar Award, an NIH Merit Award, the State University of New York at Fredonia Alumni Distinguished Achievement Award, the Protein Society-Dupont Young Investigator Award, The Biophysical Society National Lecturer Award, the Texas A&M University Honors Program Teacher/Scholar Award, the Camille Dreyfus Teacher-Scholar Award and the Searle Scholar Award.



### **Ray Kurzweil**

As one of the leading inventors of our time, Ray Kurzweil was the principal developer of the first CCD flat-bed scanner, the first omni-font optical character recognition, the first print-to-speech reading machine for the blind, the first text-to-speech synthesizer, the first music synthesizer capable of recreating the grand piano and other orchestral instruments, and the first commercially marketed large-vocabulary speech recognition.

Ray is the recipient of the \$500,000 MIT-Lemelson Prize, the world's largest for innovation. In 1999, he received the National Medal of Technology, the nation's highest honor in technology, and in 2002, he was inducted into the National Inventor's Hall of Fame.

Ray has written five books, four of which have been national best sellers. His latest book, *The Singularity is Near*, was a New York Times best seller.



### **Mike Montemerlo, Fellow 2002**

Mike Montemerlo is a Senior Research Engineer in the Stanford Artificial Intelligence Lab. He received his BS and MS in Electrical/Computer Engineering and his PhD in Robotics from Carnegie Mellon University. He was the software lead for Stanley, the robot that won the 2005 DARPA Grand Challenge.



### **Nathan Myhrvold, Fellow 1984**

At Intellectual Ventures, Dr. Nathan Myhrvold is focused on a variety of business interests relating to the funding, creation and commercialization of inventions. During his 14-year tenure at Microsoft, Dr. Myhrvold held various positions within the company and was responsible for founding Microsoft Research and numerous technology groups that resulted in many of Microsoft's most successful products. He has extensive experience successfully linking research to product development and commercialization.

In 1986, his company Dynamical Systems was acquired by Microsoft. Prior to that, he was a postdoctoral fellow in the department of applied mathematics and theoretical physics at Cambridge University and worked with Professor Stephen Hawking on research in cosmology, quantum field theory in curved space time and quantum theories of gravitation. Dr. Myhrvold holds nearly 20 patents and has more than 100 patents pending.

Dr. Myhrvold earned a doctorate in theoretical and mathematical physics and a master's degree in mathematical economics from Princeton University. In 2005, in recognition of his distinguished career, Princeton awarded Dr. Myhrvold the James Madison Medal, the university's top honor for alumni. He also has a master's degree in geophysics and space physics and a bachelor's degree in mathematics, both from UCLA. Currently, he serves on the Advisory Board for the Department of Physics at the University of Washington. He is also an affiliate research associate of paleontology at the Museum of the Rockies where he funds and participates in paleontological research and yearly expeditions.

## SPEAKER BIOS



### **William J. Perry**

Dr. Bill Perry is the Michael and Barbara Berberian Professor at Stanford University, with a joint appointment in the School of Engineering and the Institute for International Studies. He is also a Senior Fellow at the Hoover Institution and Co-director of the Preventive Defense Project, a research collaboration of Stanford and Harvard Universities. From 1988 until 1993 he was Co-director of the Center for International Security and Arms Control, Stanford University. Dr. Perry was the 19th Secretary of Defense for the United States, serving from February 1994 to January 1997. He also served as Deputy Secretary of Defense (1993-1994) and as Under Secretary of Defense for Research and Engineering (1977-1981). Dr. Perry's business experience includes founding and serving as the president of ESL, Inc. (1964-1977); Executive Vice-President of Hambrecht & Quist, Inc. (1981-1985); and founding and serving as the chairman of Technology Strategies & Alliances (1985-1993).

He currently serves on the board of several emerging high-tech companies and is the chairman of Global Technology Partners. He received his BS and MS from Stanford University and his PhD from Penn State, all in mathematics. He is a member of the National Academy of Engineering and a fellow of the American Academy of Arts and Sciences. Dr. Perry has received numerous awards and decorations from U.S. and foreign governments, non-governmental organizations and the military, including the Presidential Medal of Freedom in 1997.



### **Arthur H. Rosenfeld**

Dr. Art Rosenfeld was appointed to the California Energy Commission by Governor Gray Davis in April 2000, and reappointed by Governor Arnold Schwarzenegger in January 2005.

Dr. Rosenfeld received his PhD in Physics in 1954 under Nobel laureate Enrico Fermi. He then joined the Department of Physics at the University of California at Berkeley. There he joined, and eventually led, the Nobel prize-winning particle physics group of Luis Alvarez at Lawrence Berkeley National Laboratory until 1974. At that time, he changed to the new field of efficient use of energy, formed the Center for Building Science at Lawrence Berkeley National Laboratory (LBNL) and led it until 1994. From 1994-1999 Dr. Rosenfeld served as Senior Adviser for the U.S. Department of Energy's Assistant Secretary for Energy Efficiency and Renewable Energy.

Dr. Rosenfeld received the Szilard Award for Physics in the Public Interest in 1986, and the Carnot Award for Energy Efficiency from the U.S. Department of Energy in 1993. On June 21, 2006, Dr. Rosenfeld received the prestigious Enrico Fermi Award, the oldest and one of the most prestigious science and technology awards given by the U.S. Government.



### **Simon Sponberg, current Fellow**

Simon is currently a doctoral candidate in Integrative Biology at UC, Berkeley and has been a Hertz fellow since 2002. His work has led to fellowships and awards from the National Science Foundation, the University of California, the Woods Hole Marine Biological Institute, the American Physical Society, the Society of Integrative and Comparative Biology, and the International Association of Physics Students. He is also currently affiliated with the new Center for Interdisciplinary Bio-Inspiration in Education and Research (CIBER) at Berkeley. His most recent work has demonstrated the importance of an animals' natural dynamics for maintaining stability in the absence of neural feedback.



### **Neal Tanner, Fellow 2006**

Dr. Neal Tanner grew up in Austin, Texas and received his BS in Mechanical Engineering from The University of Texas. In 2001 he was awarded a Fannie and John Hertz Graduate Fellowship and joined the Telerobotics Lab at Stanford University where he studied force feedback in time-delayed telerobotics. Upon completion of his PhD in 2006, Neal joined Hansen Medical in Mountain View, CA. His research interests include telerobotics, haptics, controls, robotics, and human in the loop systems. His non-research interests include sailing, windsurfing, skiing, music, and "building stuff".



### **Willard H. Wattenburg**

Dr. Bill Wattenburg is a senior research scientist at the Research Foundation, California State University, Chico; and a scientific consultant for the University of California Lawrence Livermore National Laboratory and many other institutions. He is a former nuclear weapons designer at the Lawrence Livermore National Laboratory; a former member of the US Air Force Scientific Advisory Board; and a former UC Berkeley professor of electrical engineering. He is also the host of the very popular radio talk show, "The Open Line to the West Coast," KGO Radio AM810, ABC Network, San Francisco (six hours per week since 1972, Saturday and Sunday nights 10pm to 1am). This is the most listened to night-time radio talk show in eleven western states in that time slot.



### **Lowell Wood**

Dr. Lowell Wood is a member of the Directors Technical Staff at the University of California's Lawrence Livermore National Laboratory of the U.S. Department of Energy, where he has worked in a variety of capacities for the past 38 years. During this same time, Dr. Wood has served as an interviewer of applicants for the Fannie and John Hertz Foundation, which supports graduate studies in the applied physical sciences. He has also served as an officer and member of the board of Directors of the Hertz Foundation. He continues to serve on various advisory groups supporting the legislative and executive branches of the federal government.

Dr. Wood's professional interests center in science and technology applied to national security problems, and extend more generally to national issues having a significant technical component. He received his Bachelors degrees in Chemistry and Math in 1962 and a PhD in Astrophysics in 1965 from the University of California at Los Angeles.

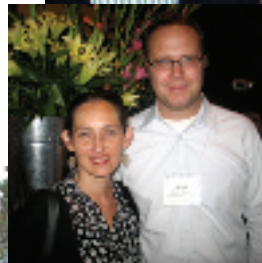
## Building a Community of Fellows

*Never doubt that a small group of thoughtful, committed citizens can change the world. Indeed, it's the only thing that ever has.*

—Margaret Mead



the  
**Hertz**  
FOUNDATION  
*freedom to innovate*





## Partnering with the Hertz Foundation

In 2001, Hertz Director Peter Strauss, invested one million dollars in the Hertz Foundation and launched our fundraising program. Subsequently, John Wakerly, Fellow 1973, challenged others by designating a million dollar gift as a match for endowed Fellowships.

During the past several years, Ray Sidney, Fellow 1995, has demonstrated an extraordinary commitment to the Foundation. We thank these special individuals for their investment in the nation's future leaders in applied science and technology.



The endowment of a Hertz Fellowship is a most helpful and distinctive gift to the Hertz Foundation. The donors who establish these Fellowships are Hertz partners by providing outstanding young people the freedom to innovate. These Fellowships may be named for the donor or someone the donor wishes to honor. Selected Fellows cite this distinction in publications produced during their Fellowships.

Thanks to Ray Sidney's generosity several graduate students now hold these special Fellowships. Ray chose to name three of the Fellowships for professors he admires and the other for his company.

During the past year, Paul Young, Fellow 1991, and Eric Wepsic, Fellow 1995, established two additional Fellowships; students will be selected in March.

Donor	Fellowship	Student	School
<b>Ray Sidney</b>	Abu-Mostafa	David Van Valen	Caltech
	Daniel Strock	Monika Schleier-Smith	MIT
	Silvio Micali	Dmitriy Aronov	MIT
	Big George Ventures	Daniel Slichter	UC Berkeley
<b>Paul Young</b>	Lowell Wood	TBA	TBA
<b>Eric K.Wepsic</b>	Endowed Fellowship	TBA	TBA

For further information as to how you might participate, contact Susan Overman [soverman@hertzfoundation.org](mailto:soverman@hertzfoundation.org)

## Wilson K. Talley Fellowship

**The Board of Directors of the Fannie and John Hertz Foundation recognizes the dedication and commitment of Wilson Talley for over 35 years as President, Interviewer, Director, and Trustee. In Wilson's honor we have established the Wilson K. Talley Fellowship.**

Dr. Talley was named President of the Fannie and John Hertz Foundation in October of 1972. He had already begun his illustrious Hertz interviewing career in 1969 and was honing his interrogation methods and practicing his withering 'look of intimidation'—a look that would carry him through thirty years of separating Hertz Fellows from regular folk. A leader and mentor for 35 years, Wilson inspired staff and Fellows while keeping them laughing.

If you received your Hertz Fellowship between 1972 and 1999, chances are good that Wilson read your application and helped decide your "Hertz" fate. He well could have been one of your interviewers. While you were in graduate school, as a Hertz Fellow,



Wilson was back at the office making sure that you submitted your progress reports and transcripts on time while negotiating with the various bureaucracies at our tenable schools to make certain you were treated with a level of respect appropriate for a successful survivor of the Hertz interview process.

### **Eric Altschuler, Fellow 1993**

*Could it be possible that individual persons could have played such significant roles in the education and training of over 1000 applied physicists in the United States? Yes, two such outstanding persons are Dr. Edward Teller and Dr. Wilson Talley.*

### **Louis Lerman, Fellow 1986**

*Wikipedia: Mensch*

- 1) A mensch means "a good person." A role model.... a person with the qualities one would hope for in a dear friend or trusted colleague.*
- 2) [A] mensch is a someone to admire and emulate, someone of noble character. The key to being "a real mensch" is nothing less than character, rectitude, dignity, a sense of what is right, responsible, decorous.*

*Hertzepedia: Wilson Talley*

*The Hertz Foundation builds America's capacity for innovation by nurturing remarkable applied scientists and engineers who show the most promise to change the world.*

## **Our Deep Appreciation...**

To Ray Sidney who underwrote the 2007 Symposium and to Benefactors, Peter Strauss and Harold Newman, Hertz Directors, for their symposium support. Thank you to all of the speakers who generously donated their time to join the conversation.

We also thank Hertz Fellows, Michael Ansour, Fellow 1978, and Doyme Farmer, Fellow 1981, for their counsel and special contributions. We are indebted to our volunteer interviewers who help us identify and select our Fellows.

the  
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