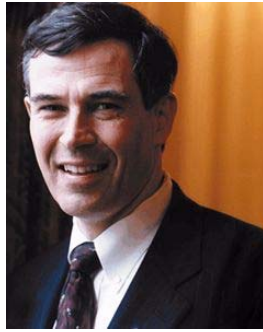




*NEW JERSEY INVENTORS HALL OF FAME*

*Awards Banquet*  
*Thursday, October 23, 2008*



*Message from Rep. Rush Holt*

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Congratulations to all award recipients of the New Jersey Inventors Hall of Fame (NJHoF) 2008 Annual Awards Ceremony. Newly headquartered at Stevens Institute of Technology, the NJHoF has for 21 years recognized the importance inventions have contributed to humanity. This ceremony celebrates the creative inventions coming out of the inspiration and perspiration of New Jerseyans to benefit the entire world.

Having invented a patented control mechanism for a solar pond energy device, I am acutely aware of the assistance inventors render toward the solution of societal problems as well as to the development of materials that improve lives.

Although my schedule precludes my joining you in person this evening, please realize that I join with other proud citizens in New Jersey to commend your achievements. Further, I urge you to continue to invent for the betterment of mankind everywhere.



*Banquet Sponsor*

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### **Stevens Institute of Technology**

Since its early days in the late 1800s Stevens Institute of Technology (“Stevens”) has been in the forefront of innovation and entrepreneurship. Its founder, Edward Augustus Stevens was born into a family of inventors and entrepreneurs that turned their inventions into successful businesses and put the first steam-driven locomotive on tracks in this country in 1826. Consistent with its tradition in innovation and entrepreneurship Stevens implemented Technogenesis® in the mid 90’s with the objective of changing the traditional university technology transfer process by creating an environment that recognizes and rewards innovation and promotes intellectual property exploitation with faculty and students being the key players.

Technogenesis® refers to an “*educational environment, where students, faculty and industry jointly nurture new technologies from concept to marketplace realization*”. This was the beginning of a long term initiative to bring about a cultural shift within the academic community that will (i) introduce the concept of entrepreneurship in undergraduate and graduate education and (ii) transform the traditional technology transfer process into a technology driven innovation exploitation process. The Office of Academic Entrepreneurship (OAE) addresses the need to radically change the process of technology commercialization in a university environment. The OAE aims to foster and exploit technology driven innovations that are either adopted by the industry or serve as basis for creating new ventures.



*Order of Ceremonies*

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### **Welcome**

Gertrude M. Clarke, Ph.D. President

### **Grand Entrance of 2008 Award Winners:** Leslie Avery, Vice President

Graduate Student Awards

Innovators Awards

Inventors of the Year

Inductees into New Jersey Inventors Hall of Fame

Trustees Award

### **Presentation of Student Awards and Innovators Awards**

Dinner

### **President’s Message**

Gertrude M. Clarke, Ph. D. President

Governor Corzine’s surrogate: congratulations from the Governor

### **Presentation of Inventor of the Year Awards**

Dessert

### **Induction of 2008 Members of the New Jersey Inventors Hall of Fame**

**Trustees Award**



### *History of the New Jersey Inventors Hall of Fame*

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The New Jersey Inventors Hall of Fame was established in 1987 as “The New Jersey Inventors Congress and Hall of Fame”. Its mission statement is “To Promote and Foster Creativity, Innovation and Invention and Thereby Contribute to Economic Growth and Improve the Quality of Life in New Jersey” and “To Honor New Jersey Inventors and Encourage Recognition of New Jersey as The Invention State”.

New Jersey, with its unusually rich mixture of scientists, engineers, and inventors, has played a key role in the birth of invention in the United States. Home to the great Thomas Edison, who codified the process of invention in his invention factories at Menlo Park and West Orange, New Jersey is a powerhouse of creativity and innovation. The tiny state ranks fourth nationally in total number of patents issued to its inhabitants. Pound-for-pound, our state is a heavy-weight of invention and intellectual property.

The National Inventors Hall of Fame exists in Akron, Ohio, with a number of NJIHOF inductees also honored there. New Jersey is the only state to have its own Inventors Hall of Fame, and has been recognized by the National Hall of Fame and the U.S. Patent Office for its outstanding organization and commitment to honoring inventors.

Since its inception the New Jersey Inventors Hall of Fame has inducted 130 inventors to the “Hall of Fame” and has honored 107 as “Inventor of the Year”, and 14 Corporations were recognized for supporting and fostering invention/innovation.

In recent years, the Trustees have added the “Innovator” and “Graduate Student” awards, recognizing nine and eight distinguished New Jersey citizens respectively. This year a new award will be presented for the first time, the distinguished “Trustees” award.



### *Board of Trustees*

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Mr. Les Avery, Vice President, NJIHof  
Director, Silicon Semiconductor Products, Sarnoff Corporation

Mr. Gilbert Buchalter  
President, Pharmaceutical Innovations, Inc.

Gertrude Clarke, Ph.D., President, NJIHof  
Founder, U.S.A.'s 1<sup>st</sup> statewide business/industry/education partnership; Physicist (Ret.)

Mr. Charles Dzuba, NJIHof Archivist  
PSE&G Metallurgist (Ret.)/Consultant

Mr. Samuel Goldfarb  
Consulting Engineer: Princeton Univ. & Sarnoff Corp.

Paul Israel, Ph.D., Secretary, NJIHof  
Director & General Editor, Thomas A. Edison Papers  
Rutgers, The State University of New Jersey

Ricky John, Ph.D.  
Technical Advisor, New Jersey Board of Public Utilities

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Resource Family Advocate, Foster & Adoptive Family Services

Melvin Kamen, Ph.D.  
Executive Vice President., Head of Technology  
Revlon Tech Inc., Revlon Research Center (Ret.)

Alexander Magoun, Ph.D.  
Executive Director, David Sarnoff Library, Curator, Sarnoff Museum

Harry Roman, President Emeritus, NJIHof  
Public Service Electric & Gas Co. (Ret.)  
Inventor/Consultant



**Saul K. Fenster** *Trustees Award*



The recipient of the NJIHoF Trustees Award, given this year for the first time, is Saul K. Fenster, Ph.D. An unusually clear thinker, of extraordinary erudition and keen intellectual judgment, he brought vast experience and great enthusiasm in administering this statewide organization.

In 1987, Dr. Fenster collaborated with the late Mr. Philip Sperber to establish the nation's first, and only statewide inventors hall of fame, the NJIHoF. The amity between the fledgling organization formed to provide a congratulatory platform for inventors, and the academic institution Dr. Fenster headed, nurtured recognition of New Jersey's technological achievements within and beyond the state's borders.

While engaged in multifarious responsibilities as President of the New Jersey Institute of Technology (NJIT), he also served as the President of the NJIHoF in 1990, 1995 and 1996. He continued his involvement as an active member of the NJIHoF Board of Trustees until his retirement from NJIT in 2002. During those fifteen years, he guided the NJIHoF to stimulate the invention process and improve the public's awareness of the outstanding achievements of many creative individuals in our state. He is a man who clearly understands the meaning of the phrase, "success breeds success!"



*Requirements for New Jersey Inventors Hall of Fame Awards*

**Graduate Student Awards**

Graduate Student Awards are given to a maximum of six recipients per year. Current graduate students or graduate students of the previous year are eligible for recognition. Those considered for an award must show evidence of participation in the invention process. Although a patent is not required, thesis work must show significant research which is amenable to a patent application.

**Innovators Award**

To receive an Innovators Award, the nominee must have made a significant technological/scientific achievement. This would include a conceptual idea, theory, mathematical formula or the like. Although a patent is not required, the innovative content must be distinctly unique. Awards are granted to living or deceased innovators.

**Inventor of the Year Award**

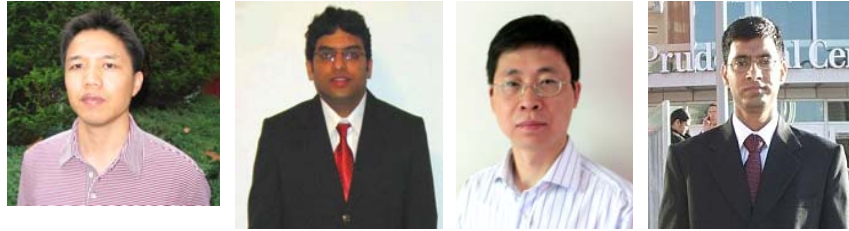
An individual worthy of this award must be living and have a patented invention that has been successfully commercialized. A full copy of the pertinent U.S. patent for which any nominee is considered undergoes screening during the award selection process.

**Hall of Fame Award**

Anyone inducted into the NJIHoF Hall of Fame can be categorized as a "recognized luminary." Whether living or deceased, the individual's patented invention, along with multiple associated inventions over a period of time, must have had a major impact on society and exhibited strong commercialization. In cases where there are co-inventors, each person in the patent-holding group is worthy of induction into the NJIHoF.

**Trustees Award**

The NJIHoF Board of Trustees created a new award in 2008 to honor an exceptional individual directly related to the mission of the NJIHoF over a considerable period of time. That person personifies an inspiring leader who worked assiduously to achieve greater recognition of New Jersey's innovators, inventors and entrepreneurs.



**Zhiqiang Gao, Amey Shevtekar, Hong Zhang, Amit Goyal**

*Graduate Student Award*

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**Zhiqiang Gao**     *Internet Attach Protection*

Dr. Gao received the Bachelor of Engineering in Computer Science from Zhejiang University, China in 1989, and his Ph. D. in Computer Engineering from New Jersey Institute of Technology (NJIT) in 2006. He has three patents pending, has published seven papers in refereed journals/magazines and four in conference proceedings. He is a member of IEEE.

**Amey Shevtekar**     *Denial of Service Attack Protection*

Amey Shevtekar received the B.S. degree in Electronics and Telecommunications Engineering from University of Mumbai, India, in 2002 and the M.S. degree from NJIT in Telecommunications in 2003, and is currently pursuing his doctorate at NJIT focusing on Internet security. He has contributed to six technical papers and has two US patents pending.

**Hong Zhang**     *Wireless Mobile Speed Measurement*

Dr. Zhang has spent over a decade in wireless communications research and development. Dr. Zhang has 4 US patents pending and is the recipient of the Hashimoto Fellowship. He received the B.S. and M.S. degrees in Electronic Engineering from Beijing University of Aeronautics & Astronautics, China, and the Ph.D. in Electrical Engineering from NJIT.

**Amit Goyal**     *Nanotube Manipulation*

Dr. Goyal received his Bachelors in Chemical engineering from Manipal Institute of Technology, and his Ph.D. in Chemical Engineering from NJIT. He was awarded the Schering Plough Science and Innovation award in 2007 for his dissertation research work on the Synthesis of Single and Multi Walled Carbon Nanotubes by thermally induced catalytic chemical vapor deposition.



**Willard Boyle and George Smith**     *Charge Coupled Device*

*Inductees, New Jersey Inventors Hall of Fame*

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**George Smith**

Dr. George Smith performed research at Bell Labs from 1959 to 1986. For much of this time, he led research aimed at creating novel lasers and other semiconductor devices. Working together with fellow Bell Labs researcher, Dr. Willard Boyle, he designed and developed the first Charge-Coupled Device (CCD) in 1969. CCD technology transforms patterns of light into useful digital information. By 1970, the pair had built the CCD into the world's first solid-state video camera. In 1975, they demonstrated the first CCD camera with image quality sharp enough for broadcast television. Dr. Smith holds 31 patents and has authored over 40 papers. He has received numerous awards and was inducted in the National Inventors Hall of Fame in 2006.

Since its invention, the CCD has spawned significant new industries and markets by enabling a wide range of products including digital cameras, video cameras, bar code readers, image scanners, copy machines, high-definition television, security monitoring, medical endoscopy, modern astronomy and video conferencing. The insights behind CCDs also played a crucial role in the emergence of optical networking, which is the underlying transport technology for both the Internet and all other core communication networks today. Beginning in 1983, telescopes were first outfitted with solid-state CCD cameras, which enabled astronomers to study objects thousands of times fainter than the most sensitive existing photographic plates, and enabled scientists to image in seconds what would have taken hours before. Most optical observatories, including the Hubble Space Telescope, rely on digital information systems built around "mosaics" of ultra sensitive CCD chips. CCD-enabled cameras also are used in satellite observations of the earth for environmental monitoring, surveying, and surveillance.



**Willard Boyle and George Smith** *Charge Coupled Device*

*Inductees, New Jersey Inventors Hall of Fame*

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**Willard Boyle**

From 1953 to 1979, Dr. Boyle led Bell Labs research in optical and satellite communications, digital and quantum electronics, computing, and radio astronomy. He was also part of the scientific team that helped NASA select the site for the first Apollo landing on the moon in 1969. Working together with fellow Bell Labs researcher, Dr. George Smith, he designed and developed the first Charge-Coupled Device (CCD) in 1969. CCD technology transforms patterns of light into useful digital information. By 1970, the Bell Labs pair had built the CCD into the world's first solid-state video camera. In 1975, they demonstrated the first CCD camera with image quality sharp enough for broadcast television. Dr. Boyle holds 16 patents and has authored many papers. He has received numerous awards and was inducted in the National Inventors Hall of Fame in 2006.

Since its invention, the CCD has spawned significant new industries and markets by enabling a wide range of products including digital cameras, video cameras, bar code readers, image scanners, copy machines, high-definition television, security monitoring, medical endoscopy, modern astronomy and video conferencing. The insights behind CCDs also played a crucial role in the emergence of optical networking, which is the underlying transport technology for both the Internet and all other core communication networks today. Beginning in 1983, telescopes were first outfitted with solid-state CCD cameras, which enabled astronomers to study objects thousands of times fainter than the most sensitive existing photographic plates, and enabled scientists to image in seconds what would have taken hours before. Most optical observatories, including the Hubble Space Telescope, rely on digital information systems built around "mosaics" of ultra sensitive CCD chips. CCD-enabled cameras also are used in satellite observations of the earth for environmental monitoring, surveying, and surveillance.



**Mohammed Ettouney, Ali Abdi, Michael Wong**

*Innovators Award*

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**Mohammed Ettouney** *Progressive Collapse Theory*

Dr. Ettouney received his Doctor of Science degree in Structural Mechanics from the Massachusetts Institute of Technology (MIT), Cambridge, MA. He has published more than 275 articles and reports, and has contributed to several books, including "Building Security: Multidisciplinary Approach" by ASCE Press and "Structural Health in Civil Engineering" by the CRC Press. He has introduced numerous new practical and theoretical methods in the fields of earthquake engineering, acoustics, structural health monitoring, progressive collapse, blast engineering, and underwater vibrations.

**Ali Abdi** *Underwater Acoustic Communication*

Dr. Abdi received his Ph.D. in Electrical Engineering from the University of Minnesota and is currently an Associate Professor at NJIT. His current research interests include digital communication in underwater and terrestrial channels, estimation and characterization of wireless channels, blind modulation recognition, and molecular networks. Dr. Abdi was an Associate Editor for IEEE Transactions on Vehicular Technology from 2002 to 2007, and was the co-chair of the Communication and Information Theory Track of the 2008 IEEE International Conference on Computer Communications and Networks (ICCCN). Dr. Abdi is a Senior Member of IEEE.

**Michael Wong** *Improvements in Cataract Surgery*

Dr. Wong earned a combined B.S. and M.D. through the Six-year Accelerated Biomedical Program at Rensselaer Polytechnic Institute and Albany Medical College, and did his ophthalmology residency at Wills Eye Hospital in Philadelphia. He is one of the pioneers in minimally-invasive cataract surgery, bringing the incision to the "micro-incisional" level and advancing methods of lens fragmentation. Dr. Wong developed an important technique to better seal the bloodless clear corneal incision that has been credited for reducing the rate of post-operative intra-ocular infection and promote faster healing.



**Amit Limaye** *Chemical and Biological Agent Detector*

*Inventor of the Year Award*

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Mr. Amit Limaye's invention of a system to enable detection, classification, and identification of chemical and biological threat agents spurred his founding of AC Biros Company. The company received the 2006 New Jersey Technology Council Emerging Technology Award. Mr. Limaye holds several patents and has received several awards for his business leadership. His B.S. degree in Mechanical Engineering is from University of Bombay, India; M.S. degree in Mechanical Engineering is from Concordia University, Canada; and M.S. degree in Computer and Information Science is from NJIT.

Mr. Limaye is also founder and president of Logistic Solutions, Inc (LSI), a large (\$40+ M) multinational software consulting firm specializing in staff supplementation, on-site and off-site project work in telecommunications, finance, pharmaceutical, healthcare, and educational markets. LSI major clients include Merrill Lynch, Goldman Sachs, AT &T, Lucent, CISCO, 3COM. LSI has received Deloitte & Touche "Fast 50 technology companies in New Jersey" Award for the last 2 years.



**James West and Gerhard Sessler** *Electroacoustic Transducer*

*Inductees, New Jersey Inventors Hall of Fame*

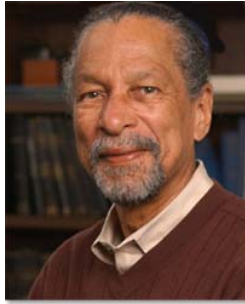
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**Gerhard Sessler**

At Bell Labs Dr. Sessler performed research in electro-acoustics, physical acoustics, and architectural acoustics. In 1962, he and Dr. James West invented the electret microphone in which thin sheets of polymer electret film are metal-coated on one side to form the membrane of the movable plate capacitor that converts sound to electrical signals with high fidelity. The microphone became widely used because of its high performance, accuracy, and reliability, in addition to its low cost, small size, and light weight. Ninety percent of today's microphones are electret microphones, and they are used in everyday items such as telephones, hearing aids, camcorders, and tape recorders. It revolutionized the microphone industry, with more than one billion manufactured each year.

Dr. Sessler holds more than 100 U.S. and foreign patents, and has authored many papers. He has received numerous awards and was inducted into the National Inventors Hall of Fame in 1999.





**James West and Gerhard Sessler** *Electroacoustic Transducer*

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### **James West**

At Bell Labs Dr. West performed research in electro-acoustics, physical acoustics, and architectural acoustics. In 1962, he and Dr. Gerhard Sessler invented the electret microphone in which thin sheets of polymer electret film are metal-coated on one side to form the membrane of the movable plate capacitor that converts sound to electrical signals with high fidelity. The microphone became widely used because of its high performance, accuracy, and reliability, in addition to its low cost, small size, and light weight. Ninety percent of today's microphones are electret microphones, and they are used in everyday items such as telephones, hearing aids, camcorders, and tape recorders. It revolutionized the microphone industry, with more than one billion manufactured each year.

Dr. West holds more than 200 U.S. and foreign patents on microphones and techniques for making polymer foil-electrets. He has authored more than 100 papers and contributed to books on acoustics, solid state physics, and material science. Dr. West has received numerous awards including the National Society of Black Engineers Golden Torch Award. He was New Jersey Inventor of the Year in 1995 and was inducted into the National Inventors Hall of Fame in 1999.



**Sidney Pestka** *Recombinant Interferons*

*Inventor of the Year Award*

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Dr. Sidney Pestka is a pioneer known for his breakthrough work in developing antiviral treatments for chronic hepatitis B and C, multiple sclerosis, and cancers. His contributions to the biotechnology, chromatography and pharmaceutical industries have resulted in the improved health of those suffering many serious diseases. Early in his career, while at the National Institutes of Health Dr. Pestka was part of the team working on the genetic code, protein synthesis and ribosome function. In 1969, at Roche Institute of Molecular Biology in Nutley, New Jersey, he focused on defining how antibiotics work, how proteins are synthesized and later, how to purify, produce and develop interferons for therapeutic indications. At Roche Institute, he was the first to purify interferon alpha and beta; to develop reverse-phase high-performance liquid chromatography (RP-HPLC) for protein purification; to genetically engineer interferons; and to manufacture interferons for human therapy.

Dr. Pestka is chairman of the Department of Molecular Genetics, Microbiology and Immunology at UMDNJ-Robert Wood Johnson Medical School. He is also the chief scientific officer at Pestka Biomedical Laboratories (PBL), which he founded in 1990 to manufacture interferon products, investigate anti-viral compounds, and look for new ways to treat cancers. He holds 270 U.S. and foreign patents and has published more than 400 papers, and edited five books related to protein biosynthesis and interferons. Dr. Pestka has received many honors and awards including the National Medal of Technology, and was inducted into the New Jersey Inventors Hall of Fame in 1993.



**Herman Sokol** *Tetracycline*

*Inductee, New Jersey Inventors Hall of Fame*

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Dr. Herman Sokol was part of a team of researchers at Heyden Chemical Corporation, NJ who discovered the antibiotic tetracycline in the early 1950s. However, he was responsible for the development of the basic processes for manufacturing the antibiotic and these processes are still in use today worldwide as tetracycline remains one of the most prescribed antibiotic medication. Dr. Sokol went from pharmaceutical research to business management and joined Bristol-Myers in 1962 to organize the company's international pharmaceutical program. He was elected a director of the company in 1973, and was chairman of its pharmaceutical, health care, and international divisions. In 1976, he was named president of Bristol-Myers, a position he held until retiring in 1981. Dr. Sokol holds 7 patents including one for the production of aspirin. Since his death in 1985, his family has continued his philanthropic activities.



**Eugene Gordon** *Practical Semiconductor Laser*

*Inductee, New Jersey Inventors Hall of Fame*

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Dr. Eugene Gordon retired from Bell laboratories in 1983, where he was Director of the Lightwave Devices Laboratory. He has worked in the field of gas-discharge physics, microwave traveling wave tubes, gas and semiconductor, injection, lasers, acousto-opto modulation and deflection devices, and image and display devices. He has directed the Bell Labs programs in electron beam pattern generation, integrated circuit packaging, internal device marketing and customer engineering, and technology forecasting.

He invented the practical semiconductor laser and the solution for making semiconductor lasers sufficiently reliable for long haul fiber optic communications, specifically, the Bell System's first transatlantic under-sea fiber optic cable (1985). As a result, fiber optics has since become the backbone of telephony and internet communications. Dr. Gordon has also contributed to the use of laser technology in medical applications including vision correction. He has been an adjunct professor at the UMDNJ.

In 1975 Dr. Gordon received the IEEE Vladimir K. Zworykin Award; in 1978 was elected member of the National Academy of Engineering; and in 1984 was awarded the IEEE Edison Medal "For a singular career of invention, development, and leadership in electron devices." He holds 80 patents and is the author of over 50 articles published in peer-reviewed journals.