New Jersey Inventor's Hall of Fame Awards Banquet

Thursday, October 14, 2010



New Jersey Inventor's Hall of Fame Banquet Co-Sponsors: GT GreenbergTraurig

UNENTO

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# It starts with a spark of genius

Greenberg Traurig congratulates tonight's award winners. We applaud your creativity and spirit of innovation.



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[ 1800 ATTORNEYS IN 32 LOCATIONS° | USA LAW FIRM OF THE YEAR, CHAMBERS GLOBAL AWARDS<sup>5</sup>]

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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 driven innovations that are either adopted by the industry or serve as basis for creating new ventures.

### WELCOME

Gertrude M. Clarke, Ph.D., President, NJIHoF

### GRAND ENTRANCE OF 2010 AWARD WINNERS:

Leslie Avery, Vice President Graduate Student Awards Special Award Advancement of Invention Award Innovators Awards Inventors of the Year Inductees into New Jersey Inventors Hall of Fame Trustees Award



### PRESENTATION OF AWARD CATEGORIES 1 THROUGH 4

### DINNER

### PRESIDENT'S MESSAGE

Gertrude M. Clarke, Ph. D. President Congratulations from Governor Chris Christie

### PRESENTATION OF:

Inventors of the Year Induction of 2010 members of the NJ Inventors Hall of Fame

### DESSERT

### PRESENTATION OF:

Trustees Award

CLOSING REMARKS BY DR. CLARKE

The New Jersey Inventors Hall of Fame (NJIHoF) was established in 1987. 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. Several NJIHoF honorees have also received Nobel Prizes, which attests to the scrutiny of nominees by the NJIHoF Board of Trustees.

Since its inception the New Jersey Inventors Hall of Fame has inducted 138 inventors to the "Inventors Hall of Fame", has honored 114 as "Inventor of the Year", and 18 Corporations were recognized for supporting and fostering invention/innovation. In addition, others were recipients of the "Special Award" and "Advancement of Invention Award".\*

In recent years, the Trustees have added the "Innovator" and "Graduate Student" awards, recognizing 13 and 11 inventive/innovative New Jersey citizens respectively.\* The prestigious "Trustees Award" was created in 2008.



# ENTOR! FAMF AVVARD

### 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.

### Special Award

A recipient of this award must have been awarded a USPTO patent, either expired or unexpired. The invention must be and/or was commercialized, and/or licensed. A highly commercialized invention which has a widespread cultural impact and enduring popularity is required. Awards are given to up to three living or deceased inventor entrepreneurs.

### Advancement of Invention Award

One or more awards may be given annually to an entity that has one or more of the following attributes: exhibits a sterling record of sustained encouragement of invention and innovation in New Jersey; serves as a model to encourage careers linked with or dependent upon invention and innovation; and/or promotes technological development reliant upon the invention process.

### Innovator 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. A maximum of six awards are granted annually to living or deceased innovators.

### Inventor of the Year

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

### Inventors Hall of Fame

Each recipient of this very prestigious award is inducted into the N.J. Inventors Hall of Fame for lifetime achievements with multiple U.S. patented inventions over many years which showed widespread strong commercialization and/or licensing. Each award winner is considered to be a living or deceased "recognized luminary". A maximum of four awards may be given annually, two of which may be designated as a "Pioneer". Please visit www.njinvent.org for further details.

### Trustees Award

The NJIHoF Trustees Award is given to someone who truly values and stimulates the inventive and innovative processes, who strives to ensure that all Americans, including students, are inspired and prepared to meet many of the challenges of tomorrow, and whose actions over many years have demonstrated that commitment.







### Xiaoling Chen | Asli Ergun | Jingjing Zhang

**Xiaoling Chen** received her B.S. and M.S. degrees in Electrical Engineering from Huazhong University of Science and Technology, China, respectively in 2003 and 2006. She received her Ph.D. degree in Electrical Engineering from Stevens Institute of Technology in 2010 with the Francis T. Boesch Award and Outstanding Doctoral Dissertation Award. Her research for her thesis on "Psycho-linguistic forensic analysis of Internet Text Data" aimed to detect the deception in the Internet from psycho-linguistic and text mining approaches and resulted in one patent disclosure filed in 2009. Her research interests include data mining, text mining, machine learning, natural language processing, and Internet forensic.

Asli Ergun attended the Chemical Engineering Department of Hacettepe University in Ankara, Turkey, and graduated with a Bachelor of Science degree in 2003. Asli continued her studies at the Institute of Molecular-Biology, Genetics and Biotechnology of Istanbul Technical University (ITU), and earned her Master of Science degree in 2007. Immediately upon graduation from ITU, she joined Stevens Institute of Technology, attracted to Stevens by the Technogenesis thrust of Stevens and was awarded an Innovation & Entrepreneurship Doctoral Fellowship. Asli is in the process of completing the requirements of her PhD degree in Chemical Engineering at Stevens Institute of Technology with a thesis in the area of tissue engineering. Her work with Prof. Kalyon has resulted in two new methods of scaffold fabrication (with a provisional patent for the first filed and a second invention disclosure on the way).

Jingjing Zhang received the B.E. degree from Xi'an Institute of Posts and Telecommunications, Xi'an, China, in 2003, and the M.E. degree from Shanghai Jiao Tong University, Shanghai, China, in 2006, both in electrical engineering. She is currently working toward the Ph.D. degree in electrical engineering at the Advanced Networking Laboratory, Department of Electrical and Computer Engineering, New Jersey Institute of Technology, Newark. Her current research interests include planning, capacity analysis, resource allocation of green broad-band access networks, and quality of experience provisioning in next-generation networks. Her research in her Ph. D study has resulted in three patent applications and five patent disclosures.





**Timothy N. Chang** 

**Dr. Timothy Chang** is Distinguished Professor of Electrical & Computer Engineering, NJIT. He received his B.Eng (honours) degree from McGill University, M.A.Sc. and Ph.D. degrees from University of Toronto, and joined NJIT in 1991. His experience as a consultant for several companies tapped his expertise in Doppler mirror ring laser gyroscopes, sidewinder inertial navigation signal processing, among other technological areas. Dr. Chang has been the Chairman of the North Jersey IEEE Control Systems Chapter since 1994. He is currently an Associate Editor for the IEEE Transactions on Industrial Informatics. His areas of interest include: ultra-high precision systems, genetic systems, robotics/motion control, embedded real time systems, decentralized control systems, and web-based experiments. Dr. Chang holds 7 patents with 3 patents pending. He has published over 70 referred journal and conference papers. He is the author of "Servo Control Design", in Encyclopedia of Life Support Systems, published by United Nations Educational, Scientific, and Cultural Organization (UNESCO).





### Vikki Hazelwood

**Dr. Vikki Hazelwood** is a Professor of Biomedical Engineering at Stevens. Having served 25 years in industry prior, she held executive positions in Sales and Business Development for Medical Device companies with technologies for pain management, drug delivery, and specialty biomaterials, with focus in the fields of orthopaedics and interventional cardiology. Her experience includes many years of clinical interface with surgeons and NY metro area hospitals, as well as successful business collaboration with senior decision makers of global medical device companies.

Dr. Hazelwood also works for Hackensack University Medical Center where she performs clinical research for the Emergency Trauma Department on projects related to disaster response.

Since at Stevens, she has successfully brought entrepreneurship into the educational process. Dr. Hazelwood has worked with students to develop a venture capital backed start-up company, and to develop and improve various life-saving technologies, with several patent filings and related clinical trials in progress.



### Linda Brzustowicz | Leonard J. Cimini, Jr. | Yun-Qing Shi

**Dr. Linda Brzustowicz** is a Professor of Genetics at Rutgers, the State University of New Jersey. She received her BA in Biochemistry from Harvard University, followed by medical school and psychiatric residency training at the Columbia University College of Physicians and Surgeons. She has been a faculty member at Rutgers since 1994. A board-certified psychiatrist with training in molecular and statistical genetics, she investigates the genetic basis of psychiatric disorders, focusing on schizophrenia and autism. Work in her laboratory includes multiple facets of the genetic studies of these disorders, including development of phenotype definitions, subject recruitment and assessment, genotyping and statistical analysis for linkage and association studies, comparative genomic analysis, and gene expression studies. Dr. Brzustowicz's laboratory has identified the role of the genes NOS1AP in schizophrenia susceptibility and EN2 in autism susceptibility.

Len Cimini received a Ph.D. from the University of Pennsylvania in 1982, and, then worked at Bell Labs and AT&T Labs for twenty years. In 2002, he joined the ECE Department at the University of Delaware. He has published more than 140 journal and conference papers and has been awarded 21 US patents. Dr. Cimini has been very active within the IEEE, and he was the founding Editor-in-Chief of the IEEE J-SAC: Wireless Communications Series. He has served two terms as a Member at-Large on the Board of Governors of the IEEE Communications Society, and is currently Vice President - Publications. He was elected a Fellow of the IEEE in 2000 for contributions to the theory and practice of high-speed wireless communications, and, in 2007, was given the James R. Evans Avant Garde Award from the IEEE Vehicular Technology Society for his pioneering work on OFDM for wireless communications.

Having obtained B.S. and M.S. degrees from Shanghai Jiao Tong University, China; M.S. and Ph.D. degrees from University of Pittsburgh, PA, **Professor Yun-Qing Shi** has joined New Jersey Institute of Technology since 1987. His research interests include data hiding, steganalysis, and forensics, resulting in 12 awarded US patents. He is an author/coauthor of 250 papers, a book, and five book chapters; the editor-in-chief of LNCS Transactions on Data Hiding and Multimedia Security, and an associate editor of three journals. He served as an associate editor of two IEEE transactions and a few journals, an IEEE Circuits and Systems Society Distinguished Lecturer, a technical chair of a few international conferences/workshops; and delivered 100 invited talks around the world. He is the chair of Signal Processing Chapter at IEEE North Jersey Section, a member of a few IEEE technical committees, and a Fellow of IEEE for his contribution to Multidimensional Signal Processing.



### Richard Caizza | Nicolas Girard | Bijan Harichian

**Mr. Caizza** is the Founder of Fulcrum PDC LLC, a medical device technology consulting firm providing design and development expertise. Rich is listed on 40 US Patents and pending applications and 270 international patents, applications and publications. He is a pioneer in the design of engineered injection safety devices for both healthcare workers and patients.

During his 23 years at Becton Dickinson, he was privileged to positively impact many global healthcare issues through his designs. Rich created most of BD's modern portfolio of safety injection devices, generating over \$100 million in annual revenues in the US alone. He has traveled extensively in Africa, China, South American and India, conducting research to address the challenges of disease spread via unsafe injection practices.Rich serves as Technical Advisor for HONOReform Foundation, a national advocacy organization dedicated to protecting patients through safeguarding the medical injection process. Mr. Caizza is a graduate of NJIT.

**Nicolas Girard**, Founder, President & Chief Operating Officer at Attila Technologies leads the development and commercialization of their breakthrough patented technology (DPCC) he invented and developed while a researcher at Stevens Institute of Technology in Hoboken, NJ. Nicolas led the development of benchmarking tools for the European IST project NESSIE, (New European Schemes for Signatures, Integrity, and Encryption the equivalent of FIPS in the United States.

Nicolas has a PhD in Computer Science from Universität des Saarlandes in Germany, and holds a M.S in Information Systems from Wesley J. Howe School of Technology Management, a M.S in Computer Science Engineering from EPITA School of Engineering (Paris, France) and a Bachelor degree in Mathematics and Physics from PARIS XI University (Paris, France). He holds multiple patents (granted or in pending state) in network communication, security protocols and algorithms.

**Bijan Harichian** carried out his undergraduate and graduate studies at Imperial College, London University, England where he received his Ph.D in Medicinal Organic Chemistry/Synthetic Organic Chemistry in 1979 working with Prof. Phillip Magnus and late Nobel laureate Prof. Sir Derek Barton. He became a member of the staff at the Organic Chemistry Department at the University of Texas at Austin until he joined Unilever in 1988 as a Senior Scientist.

Bijan has been granted more than 55 patents in 23 different scientific fields and has dozens more patent applications pending for approval. He is frequently published in a wide array of reputable journals and has made numerous scientific presentations worldwide. Bijan is currently a Senior Manager and head of Chemistry in the Bioscience Expertise group at Unilever's Skin R&D located in Trumbull, CT. He has won a number of awards at Unilever, including the Scientist of the Year distinction which was awarded by his peers.



### Andrew R. Chraplyvy | Robert W. Tkach

Andrew R. Chraplyvy received the B.S. degree in physics from Washington University, St. Louis, Missouri, and the M.S. and Ph.D. degrees in physics from Cornell University. Since 1980, he has been with Bell Laboratories, where he currently is Optical Networks Research Vice President. Dr. Chraplyvy holds over 30 patents in the areas of lightwave systems and fiber optics He is a Bell Labs Fellow, Marconi Fellow, member of the National Academy of Engineering, Fellow of the Optical Society of America, and Fellow of IEEE. He is the recipient of the 2009 Marconi Prize, 2003 John Tyndall Award, the 1999 Thomas Alva Edison Patent Award, the 1999 New Jersey Inventor of the Year Award, the 1998 Lucent Technologies Patent Award, and the Bell Laboratories President's Gold Award on four separate occasions.

**Robert W. Tkach** is Director of the Advanced Photonics Research department at Bell Laboratories, Alcatel-Lucent, Crawford Hill Location. His research has involved dispersion management, optical amplification, optical networking, and high-speed DWDM transmission systems. Prior to rejoining Bell Laboratories in 2006, he has been: CTO of Celion Networks, Division Manager at AT&T Labs - Research, and a Distinguished Member of Technical Staff at AT&T Bell Laboratories. He has been General Co-Chair of OFC, Vice-President of OIF, Associate Editor of the Journal of Lightwave Technology and on the IEEE LEOS Board of Governors. He received the Thomas Alva Edison Patent Award from the R&D Council of New Jersey and is a Fellow of the Optical Society of America, the IEEE, and AT&T. He received the 2008 John Tyndall Award and in 2009 he was elected to the U.S. National Academy of Engineering and was awarded the 2009 Marconi Prize and Fellowship.



### Dr. Michael Tompsett | Dr. Kenneth L. Walker

Before moving to New Jersey from England, **Dr Michael Tompsett** developed an ultra-high-vacuum analytical system, used to study the growth of ultra-thin films. That technology is still used today in solid-state lasers and high-speed transistors. He also invented a thermal-imaging camera tube that has been deployed globally for military night-vision, fire-fighting and search-and-rescue. Another of his inventions is the basis for contemporary night-vision imagers.

At AT&T Bell Laboratories, Murray Hill, NJ from 1969 to 1989 Dr. Michael Tompsett designed and demonstrated the first image sensor known as a Charge Coupled Device (CCD). He alone has the first patent for CCD imaging. He led the development of the first linear and area charge coupled imaging devices, and the world's first CCD color television cameras. (This invention and the development were cited for the 2009 Nobel Prize for Physics). Dr Tompsett's inventive acuity also let in the development of mobile phones, scanners and digital cameras. Ten years ago, Dr Tompsett started his own electronic medical records company, TheraManager LLC, in New Providence, NJ.

**Dr. Kenneth L. Walker** is Executive Vice President of Luna nanoWorks, a division of Luna Innovations. He was previously the head of Optical Fiber Research at Bell Labs where he had responsibility for optical fiber research, process development and scale-up. He also initiated and lead the development of Specialty Photonic Devices business in Lucent Technologies. Kenneth grew this group from a research concept to a multi-hundred million dollar business and played a key role in the divestiture of OFS from Lucent.

Kenneth was inducted into the National Academy of Engineering in 2002, and was honored as an Optical Society of America fellow in 2003. He has a BS from CalTech and a MS and PhD in Chemical Engineering from Stanford University. He holds over 50 patents.



### Ralph Izzo, Ph.D.



**Dr. Ralph Izzo** was elected Chairman and Chief Executive Officer of Public Service Enterprise Group Inc. (PSEG) in April, 2007. Prior to that he was elected to eight other top executive positions within PSEG's family of companies.

Dr. Izzo is a well-known leader within the utility and public policy arenas. In the office of U.S. Senator Bill Bradley, he served as an American Physical Society Congressional Science Fellow. In New Jersey's Governor Thomas H. Kean, he served four years as a senior policy advisor specializing in energy, science and technology.

Ralph Izzo's career began as a research scientist at the Princeton Plasma Physics Laboratory, performing numerical simulations of fusion energy experiments. He has published or presented over 35 papers on magnetohydrodynamic modeling. He received his Bachelor of Science and Masters of Science degrees in mechanical engineering and his Doctor of Philosophy degree in applied physics from Columbia University. He also received a Master of Business Administration degree, with a concentration in finance from the Rutgers Graduate School of Management. Further, he received Honorary Degrees from the New Jersey Institute of Technology (Doctor of Science) and Thomas A. Edison State College (Doctor of Humane Letters). He is listed in numerous editions of Who's Who and has been the recipient of national fellowships and awards.

Dr. Izzo serves as Chair of Rutgers University Board of Governors and on the Board of Directors for the New Jersey Chamber of Commerce, the New Jersey Utilities Association, the Edison Electric Institute (EEI), the Nuclear Energy Institute (NEI) and The Center for Energy Workforce Development.



Gertrude M. Clarke, Ph.D., President Founder, U.S.A.'s 1st statewide business/indus./ed. partnership Physicist (Ret.)



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



Michael Y. Wong, M.D., Secretary Ophthalmologist, The Princeton Eye Group Princeton Healthcare Center



David Peacock, Treasurer Director, Intellectual Property Management Stevens Institute of Technology

**Mr. Gilbert Buchalter** President, Pharmaceutical Innovations, Inc.

Melvin Kamen, Ph.D. Executive V.P.- Head of Technology, Revlon Research Center (Ret.)

**Mr. Samuel Goldfarb** Consulting Engineer, Princeton University & Sarnoff Corporation

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

Mr. Mike Johnstone Resource Family Advocate, Foster & Adoptive Family Services

Ralph W. Selitto, Jr. Shareholder, Greenberg Traurig , LLP

### Ali Abdi, Ph.D.

Associate Professor, Electrical & Computer Engineering Dept. + Dept. of Biological Sciences New Jersey Institute of Technology







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## Congratulations to all the 2010 New Jersey Inventors Hall of Fame award winners.

You inspire all of us.

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Roche

Roche, a proud recipient of an NJ Inventors Hall of Fame Corporate Award in 2009, congratulates the 2010 winners for their work in advancing scientific excellence.

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# Congratulations to the Well-deserving Honorees

Michael Wong, MD Princeton Eye Group • 419 N. Harrison St. • Princeton, NJ 08540 • 609-921-9437



Glenbrook Technologies honors Dr. "Gert" Clarke whose dedication has sustained and advanced the New Jersey Inventors Hall of fame Congratulations to my fellow honorees

> Best Wishes to the New Jersey Inventors Hall of Fame

Thank you for this honor



Rutgers, The State University of New Jersey

Proudly Salutes

NEW JERSEY INVENTORS HALL OF FAME 2010 AWARD WINNERS

### INNOVATORS AWARD Linda Brzustowicz

Professor and Chair, Department of Genetics at Rutgers

### TRUSTEES AWARD Ralph Izzo

Chair of the Board of Governors of Rutgers Chairman, President, and Chief Executive Officer of Public Service Enterprise Group, Inc.

We congratulate the honorees for their outstanding innovations and contributions to the science community.

# RUTGERS

A contribution of the Rutgers University Foundation



