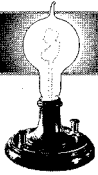


**New Jersey
Inventors
Hall of Fame**

Awards Banquet

Thursday, February 18, 1999



Hall of Fame Awards Banquet

Order of Ceremonies

Welcome

Saul K. Fenster, *Chair Emeritus*

Grand Entrance

Candida Aversenti, *Co-Vice Chair*

1999 Special Awards

1999 Inventors of the Year

1999 Members of the New Jersey Inventors Hall of Fame

Presentation of Special Awards

Dinner

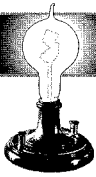
Presentation of Inventors of the Year Awards

Dessert

Chair's Message

Harry Roman, *Chair*

Induction of 1999 Members of the Hall of Fame



1999 Advancement of Invention Award

Presented annually to a not-for-profit institution.

New Jersey Commission on Science and Technology

NJIT has nominated the New Jersey Commission on Science and Technology for the 1999 Advancement of Invention Award in recognition of the organization's success in nurturing the development of science and technology within New Jersey. The Advancement of Invention Award was created by the Trustees of the Hall of Fame to honor institutions or individuals in the non-profit sector who are doing important work to promote invention.

The New Jersey Commission on Science and Technology was established in 1985 to encourage the development of scientific and technological programs, stimulate collaboration between industry and academia, and coordinate activities of technological centers and business facilities.

The commission is working to develop the state's infrastructure for research and development; to enhance technology transfer from the academic research community to the appropriate business sectors; and to encourage start-up enterprises in science and technology fields.

The commission's efforts to improve collaborative interchange between industry and the state's acade-

mic institutions enhance commercialization of products developed in New Jersey. This, in turn, cultivates necessary sources of private and corporate financing.

With the goal of enriching the state's research and development infrastructure, the Research and Development Excellence Program has funded 17 major projects at New Jersey research universities in its first three years. In addition, Matching Programs provide support for major federal awards in discrete mathematics and hazardous substance research.

The collaboration of the academic research community and various industrial sectors is being promoted through the New Jersey Manufacturing Extension Program, sponsored in cooperation with the National Institute of Standards and Technology.

The success of start-up businesses in science and technology is made increasingly possible through the Technology Transfer Program, Business Incubators, the Early Stage Enterprises Seed Investment Fund, the SBIR Bridge Loan/Proposal Support and the Technology Help Desk.



1999 Special Awards

Lisa Gable, East Windsor
LG Accessories

Working as an insurance representative in 1989, Ms. Gable often found that her bra straps would slip from her shoulders as she gave presentations to prospective clients. From this embarrassing experience, Ms. Gable created "STRAP-MATE" as a practical remedy for slipping bra straps.

With some research, Gable discovered that she was not alone — approximately 40 million women suffer from sloped shoulders, which cause bra straps to slip off. Secured by removable clips, the STRAP-MATE's design keeps bra straps intact. The design has gone through several transitions, evolving into a single elastic, horizontal hooking device, which spans the shoulder blades parallel to the back closure between the bra straps. STRAP-MATE prevents bra straps from falling, sliding or slipping, and easily attaches, adjusts and repositions to the wearer's comfort zone.

Ms. Gable has sold more than 200,000 STRAP-MATEs. Her distributor, Fashion Forms supplies some of her biggest accounts, which include Lady Grace, Macy's, Nordstrom's, and Sterns. Other creations available through Gable's company, "LG Accessories," include Easy Care Laundry Bag, a new type of laundry bag which prevents hosiery from knotting and tangling and Mini STRAP-MATE for camisoles and slips.

Born Lisa Goldschmidt in Germany, Lisa Gable and her family fled to the U.S. in 1937 and settled in Newark. Exposed to the challenge of creating a new life for herself at a young age, Gable's spirit and perseverance helped her surmount the challenges of learning English, marrying at the age of 18, rearing two sons, pursuing a career as a cosmetitian for 15 years in Newark and finally starting up her business, LG Accessories.

William R. Greeley, Maplewood **G&H Manufacturing**

William R. Greeley's invention of the Bulb and Plant Auger with its soil clearing whip and triangular tip has made the planting of bulbs and plants much faster, easier and less messy than previously possible.

The Bulb and Plant Auger, with a 2-3 inch steel diameter that bends around a narrow shaft, inserts directly into an electric, cordless or gas-powered drill to quickly and easily drill holes for planting bulbs and plants. Two of the auger's patented features are key to its usefulness to gardeners. The soil clearing whip, located six inches above the auger base, measures the appropriate depth for bulb planting and clears the excavated dirt away from the hole to prevent it from falling back when the drill is pulled out of the ground. The triangular tip serves to loosen the soil beneath the hole to

promote strong root growth and to cut away roots that might otherwise get caught in the auger.

Greeley and his friend Harry Heide formed the G & H Manufacturing Company and began to market the auger in 1987. The product quickly gained popularity in several gardening catalogs including Smith and Hawken, Gardener's Supply, Breck's and Kinsman and in retail gardening centers. By the mid-1990's, such well-known chains as Hechingers, HQ Warehouse, Lowes, The Home Depot, Builders Square, and Earl May Seed and Nursery began carrying the product.

William Greeley is neither an engineer nor a gardener by trade. It was his passion for gardening, especially his love of tulips, that inspired him to create a more efficient way to plant.



1999 Inventors of the Year

Andrew Chraplyvy, Matawan

Robert Tkach, Little Silver

Kenneth L. Walker, New Providence

Bell Laboratories/Lucent Technologies, Holmdel & Murray Hill

The Optical Fiber for Wavelength Division Multiplexing (WDM) is an optical fiber designed for very high capacity communications systems invented by Robert Tkach, Andrew Chraplyvy, and Kenneth L. Walker.

What makes this fiber special is that it provides a solution to the need for increasing the capacity of multiple light wavelength systems – Wavelength Division Multiplexing. Lucent Technologies incorporates this new technology into their Truewave™ fiber which allows communication service providers to increase capacity both efficiently and economically, and assures robust operation over long distances. Providers can add capacity by adding optical channels, multiple wavelengths, at the terminals without having to replace or add more fibers.

Truewave™ fiber has been accepted as a new standard, ITUG655 joining unshifted fiber and DSF as standard fiber designs. Truewave™ sets a precedent for future Wavelength Division Multiplexing systems having achieved \$500M in revenues within a 3-year period.

Kenneth L. Walker is the technological and managerial leader of optical fiber research and development at Lucent Technologies in Murray Hill,

New Jersey, where he has spent his entire professional career. In addition to the patent cited above, Dr. Walker has 29 other issued patents. He has an impressive history of technological leadership in the area of optical fiber design and processing, including work on optical fiber design and specialty fiber devices such as optical amplifiers as witnessed by 17 of the last 30 patents issued to Lucent Technologies in the last four years.

Dr. Andrew Chraplyvy adds to his credit 13 additional patents. A leader in the study of high capacity lightwave communications systems, Dr. Chraplyvy is an expert in fiber optics, fiber networks, nonlinear interactions in fibers and lasers. He heads the lightwave systems research department at Lucent Technologies' Holmdel plant.

Robert Tkach has contributed extensively to optical communications systems and network technologies related to optical communications systems and networks including work on WDM, linear and nonlinear propagation in optical fibers, semiconductor lasers and solid state lasers and optics. He is an inventor on six patents with five more pending.

William Hickerson, Hamburg
Curtiss-Wright Flight Systems, Fairfield

William Hickerson's invention, the Power Hawk™ Rescue System, is a self-contained, portable extrication kit for use by fire departments and rescue squads. The Power Hawk™ spreads, cuts and lifts machinery, usually vehicles, during rescue operations.

The Power Hawk™ is the result of defense conversion and technology transfer. A rotary gearbox that comprises the wing flap actuator of a military jet aircraft, the F-16 Fighting Falcon, was adapted for use in the Power Hawk™. Hickerson, a 24-year veteran volunteer firefighter, recognized the potential application of the gearbox for tearing and cutting automobiles to free victims from twisted metal.

The system operates on 12 volts DC power, which gives it a number of significant advantages over extrication kits with hydraulic systems powered by gas engines. The Power Hawk™ is driven by an electric motor that drives a gear train to produce extremely high spreading and cutting forces.

The Power Hawk's™ quieter operation reduces victim trauma and allows better communication among rescue workers and victims. The system can be carried and operated by one person. It does not require set up time for hoses and is more versatile in terms of application because several hazards, such as exhaust fumes, high pressure, explosive fuel, and environmentally hazardous hydraulic fluid, are eliminated.

The Power Hawk™ Rescue System is currently used by emergency personnel in over 45 states and 15 countries. Customers include fire, first-aid, police and sheriff departments, rescue squads, and both U.S. and foreign militaries.

Hickerson is Vice-President and General Manager of Curtiss-Wright Flight Systems Commercial Technologies Division and holds three patents.

Ronald J. Vigneri

Wilmington, N.C. (formerly of Kinnelon)

In 1979, Ronald J. Vigneri and a partner opened Rocket Man Inc. to develop, build and race hydrogen powered racing cars. They set a Guinness Record for speed on ice at 248 mph. In 1980, Vigneri started his own company, Venture Enterprises, and transferred the hydrogen peroxide chemical technology, a rarely used gas-chemical technique, for rocket-powered cars to environmental cleanup. During this time, he patented his remediation method for hydrocarbon groundwater contamination through the company's CleanOX Division.

Founding Thermax Corporation in 1981, Vigneri invented and commercialized an oil well fracturing stimulating system, which also employed hydrogen peroxide technology by essentially mounting a rocket onto an oil well, and developed computerized

oil well analysis and field management software. In 1992, Cleanox Environmental Services Inc., Vigneri's fourth company was born. Clients used Vigneri's services, applying his patented process for in-situ chemical oxidation to remediate groundwater contamination. The company was sold in April 1998 to ManTech International, where Vigneri now serves as corporate senior technical advisor.

At age 24, while at Bendix Corporation, Vigneri received a patent for the laser gyro and electronic tachometer now used in the Boeing 757, 767 and 717 aircrafts and in satellite launch systems. He holds six U.S. patents and 18 patents are pending.

Haig Kafafian, West Orange
Cyber Corporation, West Orange

Haig Kafafian's inventions applied the principles of cybernetics — the science of control — to create some of the first communications devices for the handicapped. His communications systems and their offshoots have allowed many persons with limited mobility to lead confident, productive lives, and develop their innate talents.

Kafafian's inventions, which he manufactured under the CYBERCOM trademark permit persons who are unable to type or use a conventional keyboard, but who can control a single part of their body, to communicate effectively. He developed interfaces suitable for people whose loss of fingers or muscle coordination do not allow the use of multi-key keyboards. Keyboard interfaces were reduced

from the standard 104 keys to 14. Injured veterans, quadriplegics, cerebral palsy and thalidomide victims were able to communicate effectively through Kafafian's systems.

Before focusing on the needs of the physically challenged, Kafafian was involved for 20 years in designing aircraft control and missile guidance systems and served as director of the Guided Missiles Division of the National Company. He is a fellow of the New York Academy of Sciences, and has served as president of the Academy of Sciences at Philadelphia. Kafafian's commitment to the physically challenged has led him to grant license-free use of his 11 U.S. and foreign patents in this field.

Morton A. Kreitchman (1923-1987)

Valcor Engineering Corporation, Springfield

Morton A. Kreitchman's three patents for various fluid control valves grew his company, Valcor Engineering, from a Newark loft in 1951 into an international corporation specializing in valves for the aerospace, nuclear, biomedical and chemical industries.

Kreitchman first designed a valve that expanded the then state-of-the-art shear seal or gate valves by connecting a floating solenoid parallel to the valve. Until Kreitchman met the challenge, seal shear valves operating with contaminated fluids, such as were found in many aircraft fuel systems, wore out quickly. Aircraft fuel systems are prone to grit contamination because of the large volume and multiple tanks. Use of a solenoid not only reduced the size, weight and cost of the valve operation but permitted the valve's seal to operate repeatedly and consistently without damage. The invention was patented in 1956; more than 40 years later,

over 1 million of Kreitchman's reliable and safe valves are still working on aircraft, fuel control systems and turbine-driven auxiliary power systems throughout the world.

Kreitchman also helped the beverage dispensing industry to meet sanitary requirements with an inexpensive valve assembly that minimizes crevices and areas where sediment and organic matter collect, and allows for easy cleaning and sterilization.

His third major contribution, the electromagnetic pump, provides a low-cost, precision pump for dispensing very small quantities of liquid. The pump is used in scientific and medical applications. Kreitchman devised a unique solution by replacing a motor typically used for these applications with a solenoid-operated pump. He also used the principle of a floating "O" ring to control the pumping action, rather than a conventional piston and check valve.

Arthur Schawlow

Charles Townes

Bell Laboratories/Lucent Technologies, Murray Hill

Charles Townes and Arthur Schawlow are credited with inventing the maser, a device that amplifies electromagnetic waves and creates a means for the sensitive reception of communications and for precise navigation. By applying the same concepts to visible light, Schawlow and Townes were able to create the laser.

Both Schawlow and Townes sought ways to expand on the maser principle of electromagnetic amplification into shorter wavelengths of infrared and visible light. Their paper published in the August 1958 issue of *Physical Review* titled "Infrared and Optical Lasers" described the concept and design for the laser. Schawlow and Townes received a patent for their proposal in 1960. Their paper describing the basic principles of lasers initiated the development of a new scientific field and laid the groundwork for a multibillion-dollar industry.

By the end of the 1960s, eye surgeons were routinely using lasers because the light beams can be made minutely small and be precisely focused. Today, the laser is ubiquitous; areas where its use has become essential include radar, telecommunications, astronomy, navigation, data processing and retrieval, surgery and medical diagnostics, scientific analysis and holography.

In 1964 Townes was awarded the Nobel Prize for his advances in the field of quantum electronics and currently serves as professor emeritus in the physics department of the University of California, Berkeley.

In 1961, Schawlow became professor of physics at Stanford University, and received the Nobel Prize in Physics in 1981 for his work in laser spectroscopy.



1999 Corporate Hall of Fame

General Magnaplate Corporation

Linden

General Magnaplate has been a world leader in specialty metal surface enhancements for the past 46 years. Its unique coatings have saved industry millions of dollars in downtime and replacement costs throughout the world.

Magnaplate is totally committed to the invention process. Employees are encouraged to improve on existing products and procedures. And almost everyone does.

The company was shaped by a patent for an alloy which ended a series of accidents in Air Force F-105 fighter jets. In the words of Charles Covino, Magnaplate's founder and a 1992 New Jersey Inventor of the Year, "We composited a new lubricant and it worked the first time." This was Hi-T-Lube® which the Guinness Book of World Records calls the "world's most slippery solid lubricant."

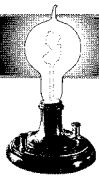
In the 1960s, Magnaplate produced the first Teflon-impregnated aluminum cookware. But by 1969, Magnaplate was focusing on outer space. When Apollo 13 reported, "Houston, we

have a problem," the LEM's fuel valve, coated with Magnaplate's Tuftram®, operated far beyond rated capacity to bring the astronauts home. Magnaplate coated the moon drill and the moon camera shutter. NASA designated Hi-T-Lube® "the mandatory space lubricant" and Magnaplate has coated thousands of space vehicle parts, including the new International Space Station.

Magnaplate applications include eliminating galvanic corrosion in molds, doubling the life of water pumps, protecting surfaces of gas lasers, eliminating adhesive residue buildup, facilitating pasta production, and much more.

The company moved into a new field with its recent patent for CMPT®, a breakthrough in layup-molding technology for composite materials.

Magnaplate has five plants in the United States and Canada, and licensees in Sweden, the United Kingdom, Germany, the Netherlands, and Japan.



Board of Trustees

Harry Roman, Senior Consultant;
Public Service Electric and Gas, *Chair*

Eric Addeo, Dean of Electronic
Technology; DeVry Institute**

Candida Aversenti, President and
COO; General Magnaplate
Corporation, *Co-Vice Chair*

William O. Baker, Vice Chairman, New
Jersey Commission on Science and
Technology

Len Bearison, President and CEO,
Technogenesis, Inc.

James H. Blow, Jr.

Jay Brandinger, President and CEO;
J.A. Brand Associates

Gil Buchalter, President,
Pharmaceutical Innovations, Inc.**

William J. Burke, Vice President,
Intellectual Property and Licensing;
Sarnoff Corporation

Gert Clarke, Executive Director; New
Jersey Business Industry Science
Education Consortium, Stevens
Institute of Technology, *Co-Vice Chair*

Charles Dzuba, Senior Test Engineer;
Public Service Electric & Gas

Peter Eisenberger, Director and Vice
Provost for the Earth Institute;
Columbia University

Saul K. Fenster, President; New Jersey
Institute of Technology, *Chair Emeritus*

Samuel Goldfarb, Inventor

Michael Greene, Vice President,
Intellectual Property; Lucent
Technologies

Robert Z. Gussin, Corporate Vice
President, Science and Technology;
Johnson & Johnson

Carmine P. Iovine, Vice President,
Research & Development; National
Starch & Chemical Company

Melvin E. Kamen, Executive Vice
President; Revlon Technologies**

Steven Kuznicki, Research Fellow;
Engelhard Corporation**

John H. Martinson, Managing Partner;
Edison Venture Fund

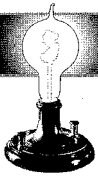
Lucye Millerand, Coordinator of
Special Events; New Jersey Institute of
Technology, *Treasurer*

Marcus Millet, Partner; Lerner, David,
Littenberg, Krumholz & Melnik

Greg Olsen, President; Sensors
Unlimited**

* Member, New Jersey Inventors Hall of Fame

** Past New Jersey Inventor of the Year



Selection Committee

Eric Addeo, DeVry Institute, *Chair* **

James H. Blow, Jr.

Andrew G.F. Dingwall, Sarnoff
Corporation *

Charles Dzuba, Public Service
Electric & Gas Company

James W. Falk, Bellcore

Michael Johnstone, College-Bound
Student Athletes, Inc.

Harry Roman, Public Service Electric
& Gas Company

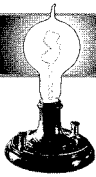
Larry Schmerzler, National Society of
Inventors

Brian Silvetti, Calmac Manufacturing

George Tselos, Edison National Historic
Site

* *Member, New Jersey Inventors Hall of Fame*

** *Past New Jersey Inventor of the Year*



Contributors

We are most grateful for the financial support of the following contributors. Their generous support of the New Jersey Inventors Hall of Fame makes it possible for us to continue our efforts to nurture the spirit of invention in New Jersey.

Founder

National Starch and Chemical Company

Sponsors

Bellcore

Exxon Research and Engineering Company

General Magnaplate Corporation

Glenbrook Technologies

Lucent Technologies

Public Service Electric & Gas Company

Sarnoff Corporation

Patrons

Dendrite International

Edison Venture Partners

Fluoramics, Inc.

Friends

James Hillier

List as of February 4, 1999