

Biography of Michael Gigliotti

- The editor of the March 2005 issue of *The Indicator* -- the Stevens Institute of Technology Alumni magazine – wrote, “Michael Gigliotti – ‘42 – could not stop smiling. The boy from Hoboken who became a pioneer in the plastics industry marveled at his standing ovation as he received the Stevens Honors Award – 2004.” Among his many other awards are:
 - The 1939 Wendell Prize in Physics from Stevens Institute of Technology
 - The John Henry Cardinal Newman Honors Award from the Newman Club Federation in 1941
 - The Lifetime Directors Award from the American Society for Engineering Education
 - The Riestter Davis Award from the Institute of Food Technologists 1990
 - The Lifetime Achievement Award from the Blow Molding Division of the Society of Plastics Engineers 2003
 - His Induction into the Plastics Hall of Fame by the Plastics Academy 2003

”I told a news reporter once that what has always driven me is the desire to accomplish things, to finish things, important things. I was fortunate in my career because I had the opportunity to become involved in many cutting edge projects and was always able to accomplish them working with great people and great organizations.”

- Michael Gigliotti

Michael Francis Xavier Gigliotti was born in 1921 in Utica, New York. His father Francesco Savero Gigliotti was born, an American citizen, in San Bernardo, Calabria, Italy. His grandfather, Michele F. S. Gigliotti, had been born in Braddock, Pennsylvania, the son of an immigrant family that had been recruited from Calabria by the steel and railroad industries to fill their need for laborers. Grandfather Michele received only a missionary-school education, in Italian, before he began working in the steel mills at age eleven. By the time he was seventeen, he had accumulated enough scrip to enable him to purchase passage back to Italy, with the intention of learning a trade and finding a wife and starting a family.

Michael’s father, Francis Savior Gigliotti, was brought by his father, Michele, along with his family, to Utica, New York, where Michele opened a butcher shop in accordance with his apprenticeship training from Italy. Fluent in both Italian and English, Francis – as a

very young man – became influential and politically important among the Calabrian immigrant population in Utica. After graduation from the Utica Free Academy he began several businesses with the help of uncles and other relatives. Among them were a taxicab company, a photo studio, and the East Utica Savings Bank – of which Francis became an officer. With his father and his brothers, he also started the Oneida Charcoal Company, which manufactured and packaged that material. In 1920 Francis married Maria (Mary) Caligiure; they had two children, Michael and Francis Pasquale.

In 1922 Francis died in the midst of a tuberculosis epidemic, leaving behind his widow Mary and sons Michael and Francis (who had been born blind). Michael's mother Mary kept Francis with her as she moved in with her parents and began a small business as a seamstress and dressmaker in Utica; Michael lived with his paternal grandparents in Utica and, occasionally, with cousins on a farm in Clinton, New York. In 1925, in Utica, Mary met and married Armando Castellini, a widower with a successful real estate and insurance business in Hoboken, New Jersey. Armando's first wife came from a Utica family that was a neighbor to Mary's family.

In 1929 Michael and his brother Francis moved to Hoboken to rejoin their mother, their stepfather Armando, and new sister Adelaide; sister Iole and brother Armando, Jr. (Arcy) followed. Hoboken, a famous mile-square emigrant city, was composed of several distinct ethnic enclaves. Michael's new home was in the Irish-American area, 4th Street and Park Avenue, neighboring Our Lady of Grace Church and School, A. J. Demerest (the Hoboken High School), and a central, small park. Michael's introduction to this area, as the only Italian name in an Irish neighborhood, was exciting, and because of it he developed some significant relationships and an interest in boxing ... which he followed into the Hudson County Golden Gloves Competition in the mid 1930s. "I learned early on that if I was to survive then I had to learn how to fight. So I joined the Hudson County Golden Gloves, where I learned how to box, and, more importantly, I learned how to take care of myself."

As a result of the 1930s economic collapse and Depression, the Castellini family moved several times within Hoboken, ending up in an upscale mixed-ethnic area. One of their neighbors was the Sinatra family; Dolly Sinatra, the mother of Frank, and Mary Castellini, Michael's mother, became close friends. The Castellini family in the '30s often vacationed in Long Branch, New Jersey. During one summer vacation, young Francis Albert Sinatra was a guest and shared the boys' bunkroom with Michael.

Michael matriculated through Our Lady of Grace Grammar School (serving as altar boy at 5 a.m. Mass all those years), David E. Rue Middle School, and A. J. Demerest – the Hoboken High School. At Demerest, the freshman class advisor and math teacher, Thomas Gaynor, and the school principal, Arthur Stover, were both graduates of Stevens Institute of Technology. With their encouragement Michael became socially and academically active and proficient – being groomed for the entrance requirements of Stevens.

Each year Stevens would provide three scholarships within the State of New Jersey – but the applicants had to pass a rigorous set of tests, for which Stover and Gaynor trained selected students. As it was, Michael flunked the math portion of the test, scoring very high on the science and liberal arts areas. What Michael didn't know was that he was so respected by his teachers that they secretly negotiated with the administrators at Stevens, agreeing that if Michael didn't make honors in his freshman year, Stevens could revoke his scholarship.

Gigliotti started classes at Stevens Institute of Technology in the fall of 1938. “During my first week of school, a professor told me that I would eventually fail because my math exam scores were too weak and I wouldn't be interested in working extra hard to keep up with the assignments.” However, Professor Hazeltine, in charge of the physics department, picked Michael and one other student for special projects instead of physics lab; Gigliotti's work on magnetostriction, using steel and nickel bars, won him the Wendell Prize for Physics, presented during the 1939 graduation ceremony. At the end of his freshman year, Michael kept the scholarship and went on to thrive at Stevens.

In 1939, toward the end of freshman year, with Joe Scavullo (SIT '41) Gigliotti helped form the Catholic men's club at Stevens. With representatives of Catholic students' clubs from nine other colleges, they met regularly at Corpus Christi Church on the campus of Columbia University, under Father Martin Ford, and eventually founded the New York State Federation of Newman Clubs that became the nationwide Catholic campus ministry: The Newman Club, under the sponsorship of the Catholic Cardinal Archbishop of New York. The twenty founding members, including Michael, were given the John Henry Cardinal Newman Honor Award from the Cardinal Archbishop of New York.

Gigliotti became involved with *The Stute*, the student newspaper, eventually becoming Editor-In-Chief. Over the weekend of December 6-7, 1941 (Pearl Harbor), Michael was chairing the Annual Meeting of the Intercollegiate Newspaper Association, held at Stevens.

During his four years at Stevens, Michael held several part-time jobs, including night-shift iron-worker in the Todd Shipyards, evening shift copywriter at the *Jersey Observer* morning newspaper, morning milk deliverer, oil truck driver, and miscellaneous-item courier.

By the fall of '41, Michael had received 5 offers of employment. Of them, Monsanto's new Plastics Division offered the lowest salary, but "I told my mother and stepfather that I would choose Monsanto because everybody there was enthusiastic about the future of plastics, while all of the other offers were from companies that were worried about their profits and competitive positions." Monsanto was new to the plastics industry, having purchased Fiberloid Company in 1938; Fiberloid was one of the earliest manufacturers of cellulose nitrate plastic and cellulose acetate sheets.

Immediately after graduation in 1942, Gigliotti joined Monsanto's Plastics Division at Indian Orchard/Springfield, Massachusetts. Monsanto was involved in numerous projects for the U.S. Defense Plant Corporation and the U.S. Signal Corps. The U.S. Signal Corps had a copy of Gigliotti's Stevens paper, published by the Franklin Institute, on magneto striction behavior of steel and nickel -- magneto strictive effects are used in the proximity fuse. Also in 1942 Michael joined the Massachusetts State Guard, and was promoted to Master Sergeant (Sergeant Major) in the Headquarters Company of the 22nd Infantry Regiment; honorably discharged in 1945.

Michael's first projects were the construction of a dichlorostyrene polymer plant (radar essential) and a body-armor resin plant for the Defense Plant Corporation, followed by a Safelex resin plant in the Shawinigan facilities. Immediately thereafter, Gigliotti became a Research Engineer on the cake-and-frame process for manufacturing polystyrene. Then he was Technical Superintendent for the cellulose nitrate plastics plant. Next, Michael became Process Design Supervisor of a three-engineers-plus-ten-draftsmen process design group for "greenfield" new units to make polystyrene, PVC resin, PVC (polyvinyl chloride) sheet, melamine resin and formaldehyde. Gigliotti also managed the transfer of plywood glue facilities and resinox (phenol-formaldehyde) into the Indian Orchard plant. In 1949 he became the Maintenance Superintendent for both the new and the old facilities at Indian Orchard.

There was time for other things in Michael's life. In 1943 he married his high school sweetheart, Rita Patricia Landrigan. He joined the Knights of Columbus – Indian Orchard Council and was elected Grand Knight and attained 4th Degree ranking in this service

organization; he now holds Emeritus Membership. Michael and Rita had three children: Michael F. X., Jr. (1944), Chalice Eileen (1946), and Valerie Bernardine (1948).

In early 1950 Rita passed away unexpectedly after a long illness, leaving Michael in the middle of a burgeoning professional career as a single parent of three kids. He was 29 years old and the children were ages six, four, and one-and-one-half. Gigliotti relied heavily on friends during this period, hiring a married couple to live in his home to help with the care of his children.

One day during that summer, as Michael was rushing off to have lunch with his children, he accidentally stepped on the hand of a summer employee as she sat on the steps of his office building eating her lunch with friends. Miss Miriam Coombs was on leave from her position as a professional skater with Holiday on Ice. That weekend, the Plant Personnel Manager called Gigliotti and asked if he would transport a new employee who lived near to him to work. On Monday morning when Michael showed up to give this new employee a ride, to his surprise he discovered that the young lady was the person from his Friday noon-time encounter.

While on a temporary Monsanto assignment in Montreal, Canada, Michael received an urgent phone call one day saying that the child-care husband had accepted a new job and the couple had to move, immediately. That weekend Gigliotti packed up his family, preparing to move to his parents' home in Hoboken. He wrote a letter of resignation to Fred Abbiati, the Monsanto Vice-President and General Manager, who refused the resignation and, instead, ordered Michael to report to the New York City office. Gigliotti's new assignments involved recovering the business that Monsanto had lost due to war allocations; his territory was New Jersey, Delaware, Maryland, and the District of Columbia.

On his birthday in January 1951, while in Philadelphia, Michael asked the international telephone operator to locate Miriam Coombs in Rio de Janeiro (with Holiday On Ice); when the operator called back with the connection, Michael asked Miriam to come home to marry him. She quickly said "Yes!" and hung up. Luckily, the man at the Monsanto New York office working next to Michael was Edward McCormack, a retired Navy Captain, and son of the McCormack who started and controlled the Moor-McCormack Shipping Line – practically a monopoly on freight in and out of Brazil. Ed McCormack said, "Mike, my roommate at Annapolis, Julio Frota, is a Commander in the Brazilian navy; he will take care of everything for Miriam." And he did.

Bob Miller, by now the new General Manager and VP of Monsanto's Plastics Division, called Gigliotti up to Springfield in March 1951 to offer him a new position. Miller told him that the Board had approved the construction of a new mid-western factory, greenfield, for the plastics division, and they had preliminarily selected a site in the Cincinnati area. Miller said that after Michael got remarried and was ready to take on a new assignment, preferably in May 1951, the Division would give him an appointment as Project Construction Manager and, temporarily, the Location Manager at the selected site.

Miriam and her mother had selected April 30 as an appropriate wedding date, especially since Miriam would turn 21 on April 15, and April was her mother's favorite month. Michael and Miriam checked with their pastors in Springfield and Hoboken, both of whom indicated difficulty in getting the banns published and expediting the marriage for April. Father Edward Kroyak, a young priest-friend, jokingly suggested to Michael that under the circumstances with an office in New York City, he should try for St. Patrick's Cathedral – and, if Michael and Miriam would like this, Fr. Kroyak would get to work on the necessary papers immediately, which he did, and successfully. Michael and Miriam were married in Our Lady's Chapel, St. Patrick's Cathedral, New York City, on April 30 – with their families and Monsanto's New York Office in attendance. After a short camping honeymoon trip in upstate New York and Canada, Michael and Miriam, with Michael Jr. and Chalice, took up residence in a downtown Cincinnati hotel; Valerie went up to Springfield to stay with the Coombs.

Monsanto St. Louis Corporate Real Estate Managers had selected an abandoned U.S. Cast Iron Pipe & Foundry site in Addiston, Ohio, at the north end of Cincinnati's Ohio River strip, with the Little Miami River as boundary. The Texas Monomers Division wanted a river port and this site was chosen for both the new Plastics Division Midwest plant and the monomers division river port – and Gigliotti was named the Project Construction/temporary Site Manager for both projects.

In 1951 Michael selected Penker Construction as the General Contractor, Monsanto selected a bank, establishing a large line of credit available to Michael plus one other signature as the checkbook for the entire project. The family that had owned and operated the U.S. Cast Iron Pipe and Foundry Company had a plot of land on the other side of the Little Miami River, in the Fernbank district of Cincinnati. On this plot of land they had built four substantial brick homes, three of which had been sold outside the family, one of which remained unoccupied. Miriam picked this to be their future home and immediately set about

clearing it out and filling it with old and new furniture. The only electricity in this house was in the kitchen; the upstairs bedroom and the downstairs living rooms had gas fireplaces and gas lamps, and the central heating was a huge hot air coal-fired furnace in the basement, which sent hot air into the house through a large grill in the central hallway. Michael arranged for electricity to be put into each room via outside wiring with an outlet in each room under the window. Son Edward was born in Cincinnati in 1952.

While getting the project started, the early trucks and vehicles began experiencing blown out tires caused by the cast-out cast iron sprues and runners from the foundry. Michael received a proposal from a local scrap dealer to re-work all of the land, removing all of the cast iron sprues and runners, plus giving Monsanto a substantial payment per ton for valuable cast iron scrap!

Michael hired a couple of young engineers from the Cincinnati University cooperative program – George Drebo and Glen Smith - to be his assistants, and the project progressed speedily and efficiently towards an on-date and below-budget start-up in 1953. In the midst of this project, the plate & frame polystyrene process was converted over to produce Krilium, the new miracle soil conditioner that turned mud into workable soil. Because Krilium was cut 1/100 with lime to be used, in only a few months this little plant had produced a five-year supply of this material against sales forecasts, and was converted back to polystyrene.

Upon start up of the several polymer units and the river port in 1953, under budget and on time, Michael turned down the offer of Plant Engineer in the new Port Plastics plant, and instead, accepted assignment as the project construction manager for a high density polyethylene plant to be built in Swedesboro, New Jersey, based on licenses from BASF (Badische Aniline and Soda Fabriken) from Ludwigshaven, Germany, for their high-pressure process (3,000 atmospheres). BASF fell behind on its scheduled delivery of data and process information, so the Monsanto process team in Germany (Clem Smith, John Chamberlin, Chet Knowles) called for Michael's presence in Germany to put the project back on its time schedule. Michael left Miriam in Swedesboro, New Jersey, purchasing a home, and the children remained with grandparents in Hoboken and Springfield.

Michael discovered that, because none of the Monsanto engineers had doctorates, but the Monsanto interpreter had one, the German hierarchy believed that the interpreter was in charge of the project, which caused great confusion and resulted in a major breakdown in the delivery of drawings and documents. Michael corrected this by sending the interpreter back to the United States and, after some table-pounding, the project went back on schedule. In the

midst of his stay in Ludwigshaven, Germany, Michael received a “Hello, Tex” telegram from Miriam, which made him phone his bosses in Springfield, Massachusetts, to discover that the Board of Directors had reversed its decision to build this plant in New Jersey and instead, had agreed to build it in Texas City, Texas, at the urging of the Monsanto Texas City Monomer Division Manager.

In late 1953, Michael set up headquarters in the Texas City Monomers plant, hired Farnsworth & Chambers as the General Contractor, put together a cadre of engineers, utilizing some of the Texas City people, and began contracting for the construction of this unique, huge high-pressure process polyethylene facility.

The family moved to Dickinson, Texas, where Michael leased a house on a property for which the mineral rights were owned by John Mecum, a wildcat prospector. Because of this, Miriam and family later encountered an oil rig being erected on their driveway early one morning!

Michael discovered that Gulf Coast chemical plant construction was tightly and rigidly controlled by local craft unions, who disregarded national union practices and agreements, and enforced their own local preferences. With encouragement from Farnsworth & Chambers, Michael began a much more efficient set of craft rules, built his own concrete plant, and located and qualified non-local pile suppliers. Despite at least a dozen work-stoppages, the project finished on time and below budget, in January of 1955.

In January 1955, Bob Miller, the Corporate Vice-President and General Manager of Monsanto’s rapidly-growing Plastics Division, called Michael to Springfield, Massachusetts, to tell him that Edgar Queeney, Chairman of Monsanto, and the Plastics Division Executive Committee, had decided that – because the common perception of plastics at that time was that it was “kunststoffe” (fake stuff), good only for toys and flower pots – a major campaign was needed to establish plastics as engineering materials suitable for design into appliances and structures. Queeney and Miller had selected Gigliotti, because of his reputation as a successful engineer/builder of major buildings/factories, as the person to accomplish this. He was placed in charge of a small, recently-formed, structural plastics engineering group operating as “SPEG”.

The family moved from Texas to Wilbraham, Massachusetts that spring, into a 1790s house with a “coffin window” and a tooth in the wall, on eleven acres of land adjoining the Wilbraham Academy. Daughter Anne Elizabeth completed the family, born in Springfield,

Massachusetts in 1955. With advice and encouragement from Ralph Hansen, the Plastics Division Director of New Business Development, Bob Whittier and Kent Hatch, the engineer and architect members of SPEG, Michael created a multi-fold plan to change the perception of plastics, recognizing that there were two major problems: (1) building and appliance safety codes did not mention or allow the use of plastics materials, and (2) despite tremendous industrial interest, there were no demonstrable products or applications that were credible to the engineering profession or general public. Immediately, SPEG expanded its contacts with the MIT Engineering & Architecture Department, and in June 1955, MIT brought in a study, *Plastics In Housing*, showing a variety of ways in which plastics could be used to form different kinds of panels and different kinds of products to fit into current standards of housing construction methods. This was not, in Michael's view, the way to go, so SPEG appointed a Creative Design team at MIT, made up of people from the Engineering and Architectural Departments, to explore how to use molded or formed plastics structural articles in a "concept house," furnished with new, creative, plastic furniture and appliances. This team came up with the idea of using multi-curved shells as the structural components, assembled into a cruciform shape, attached to a cube mainframe.

Under constant guidance from Bob Whittier and Kent Hatch, this concept emerged as the Monsanto House of the Future, to be designed architecturally by Marvin Goody and Richard Hamilton (Goody & Hamilton), plus oversight from Pietro Belluschi, Dean of the School of Architecture at MIT, plus engineering structural calculations/designs by the Construction/Civil Engineering Dept under Albert Dietz. Gigliotti liked and approved of this approach, and began developing this activity into a formal request for funds from Monsanto corporate headquarters, which he prepared and submitted. The proposal circulated around Monsanto with architectural renderings, and received enthusiastic support from Edgar Queeney, Monsanto Chairman. Monsanto at that time was building a Hall of Chemistry in the new Walt Disney theme park (Disneyland) in Anaheim, California. Queeney and Disney were acquainted and apparently shared an interest in both flying and fishing. A general discussion started within the Monsanto-MIT groups regarding the purpose, content, location, and funding for this project. With Ralph Hansen's help, Gigliotti proposed a multi-company approach, in a spectacular location, with each participant using the house to display its futuristic applications of plastics materials in its standard appliance or structural products. Hansen and Monsanto's Plastics Marketing Department enthusiastically arranged for a dozen plastic-product manufacturers to participate. Queeney arranged for Disney to consider the

Monsanto House of the Future concept house, and its display of futuristic plastic products, as a feature of the Tomorrowland section of the new Disneyland then under construction. Walt Disney immediately invited Gigliotti to visit with him in Burbank to discuss how and when to do this.

In December 1956, with the help of Monsanto's corporate legal staff, Gigliotti and Disney agreed to a ten-year placement of the Monsanto House of the Future at the entrance to Tomorrowland, directly in front of Cinderella's Castle. Gigliotti also arranged for the approval of a major corporate funding request and the internal Monsanto project would be managed by Gigliotti. After realistic testing of the structural parts in Monsanto's Springfield plant, construction started in Disneyland in early 1957 and the House of the Future was opened in June of that year, to an immediate, worldwide, enthusiastic audience. In the ten years from 1957 to 1967, more than twenty million people visited the Monsanto House of the Future and more than several hundred technical and popular articles were written in important technical and popular publications throughout the world.

Meanwhile, in addition to this construction/housing prototype project, Gigliotti and SPEG started other prototyping projects:

- Furniture, with a famous designer and major, name-brand furniture maker
- Automotive interiors at Pratt Institute with Luigi Contini
- Automotive parts and miscellaneous articles with General Motors Institute in Detroit.
- Miscellaneous building products projects, such as roofing; a joint venture on house siding, downspouts and gutters, corrugated vinyl panels, and a joint venture on sandwich panels were conducted.

All of these projects also ended up with either prototyping or actual commercial products that received technical and popular favorable receptions.

Meanwhile, on the legal and regulatory side, Gigliotti with assistance from Monsanto executives, encouraged the formation, inside of The Manufacturing Chemists Association and The Society of the Plastics Industry, of building and regulatory code committees to work on including sound, safe, engineered regulations allowing the use of plastic products in those applications. Gigliotti became the first chairperson of each of these committees and then arranged so that other persons immediately took over implementing the activity. Monsanto's C. Howard Adams and Rohm & Haas's Fritz Rarig began a vigorous, thoughtful campaign of code modifications inside of Underwriters Laboratories, National Building Official

Conference, National Fire Protection Association, and other regulatory bodies. With Gigliotti's encouragement, chemical industry executives urged the stock insurance companies to begin considering life-saving codes in addition to property-saving codes, and Underwriters Labs formed a Plastics Advisory Committee to which Gigliotti was appointed. Also, the National Academy of Science started a Building Research Institute in which there was a Plastics Study Group; Gigliotti became its Chairman and the Building Research Institute sponsored a number of conferences on the use of plastics materials in building construction.

In 1960 the Principal of Springfield's Cathedral High School asked Gigliotti if he would become the sponsor for the local chapter of a national club for technical and scientific minded students – JETS, the Junior Engineering Technical Society, headquartered at Michigan State University. Michael did this and, to his delight, son Michael Jr. won the National Science and Engineering Competition, and was named the National Junior Engineer of 1962. Michael Sr. continued his JETS activities, was elected to its Board of Directors, and served as its President intermittently in the period from 1966 to 1976, after which he was elected an honorary Lifetime Director of that organization. "It is important that high school students understand themselves well enough to choose between careers where the end result is abstract and those where the result is physical. Satisfaction," he stated with respect to the abstract result, "comes from knowing that the problem has been solved. Satisfaction from the physical result comes from seeing the finished bridge or the daily production of pounds of product."

In 1961 it appeared that most of the major objectives taken on by Gigliotti and SPEG had been achieved, and Gigliotti was appointed Director of Process Technology and Engineering for the Plastics Products and Resins Division, and moved to Monsanto Headquarters in St. Louis, Missouri, in May 1962. In this position he was active in a wide-ranging Monsanto acquisition program, which included the acquisition of PLAX Packaging with headquarters in Bloomfield Conn., Gehring Plastics with headquarters in Kenilworth N.J., and a variety of other polymers/plastics products businesses. In addition, a number of joint ventures were initiated, such as house siding and other building products.

In September 1961, while attending an Executive Committee meeting of the Plastics Products and Resins Division in St. Louis, Michael was summoned to the Corporate Board Room. Because of the landfall of Category 5 Hurricane Carla, an emergency communications headquarters had been set up with the Texas City plant. The devastation caused by Hurricane Carla had shut down the Texas City monomers plant and engulfed the

surrounding residences and local industries of Texas City. At the request of Frank Reese, the Monomers Division Vice-President and General Manager, an emergency team was being formed to immediately fly to Texas and take over the process of opening Monsanto's plant and enabling its employees to return safely and repair their homes for occupancy. Gigliotti was put in charge of the technical aspects of restoring services and residences to the Texas City plant employees. Ten years later, on a visit to Texas City, he and Miriam were recognized, enthusiastically greeted and thanked by Texas City people as they walked down the main street!

In early 1968, Gigliotti joined the Rotary Club in Clayton, Missouri, as an engineer, transferred in 1972 to Bloomfield, Connecticut, and in 1973 to Gloucester, Massachusetts – at which club he served as the 1985-86 President.

In 1968 the McKinsey Managing Consulting Group was promoting R.A.P. (Resource Allocation Planning) studies to major corporations, consisting of matching future market projections / plans with adequate research and development supports. Monsanto Corporation contracted with McKinsey to study Monsanto Divisional market development and research development projects within this context. The McKinsey Group report selected polymer permeation as a focal point in the central research, textiles, packaging, and polymer groups, with a very strong recommendation that this diversity of sales and market projections, based on a diversity of product research and development programs, was basically flawed and impractical. They recommended that a difficult application/market, of sufficient size to justify the work, be selected and that the current scattered research development activities be combined under a single person, appointed to determine commercial feasibility and initiate commercial development if there was a high enough feasibility projection.

On October 14, 1968, Gigliotti was called to a corporate meeting, in advance of a Board Meeting scheduled for later in that day. He was given a copy of the McKinsey Report and a copy of a Corporate Board announcement, dated that day, stating that the McKinsey recommendations were being implemented effective November 1st, the target market being carbonated beverages, the six current research groups to be retained at their current locations but assigned under a new Director, and the new Director of this corporate low-oxygen packaging project (LOPAC) was to be Michael Gigliotti of the Plastics Products Division. The project was given a two-year funded term, the first year to determine technical feasibility and the second year to determine commercial feasibility. The announcement immediately stirred internal and external Monsanto interest, comments and contacts.

Among the latter, the most useful was Allen Heininger, then General Manager of the Monsanto Food and Flavors Division, who called Michael the next day to volunteer making contacts for Gigliotti among the leading carbonated beverage companies. He recommended, and Gigliotti agreed, that Monsanto should have two soft drink companies alongside of two beer companies, and that the soft drink companies should be Coca-Cola and Dr. Pepper, and the beer companies should be Anheuser-Busch and Coors. Heininger promptly made dates for Gigliotti to visit with Mr. Robert Woodruff, Chair/CEO/major shareholder of Coca-Cola; Fots Clements, President of Dr. Pepper; Augie Busch of Anheuser-Busch, and Jeff Coors of Coors Brewery. At each of these visits, a quick handshake and draft agreement was reached, under which, in exchange for first rights to commercial development if successful, the beverage companies would run their own organoleptic and shelf life tests on each set of the candidate bottles sent to them by Monsanto, on a strictly-confidential basis, returning all bottles to Monsanto. All agreed that Monsanto would not inform them of the chemical nature of the polymers they were testing and that Monsanto would assure them in writing that the contents were safe for taste-testing, having done initial organoleptic and toxicity testing with its own people before shipping samples.

Within the first several days, Gigliotti talked, by phone, or visited with the managers of each of the six research groups that had been assigned to him, making certain that he understood the extent and success probability of each project in each group. He then began a round-robin series of visits with the textile research groups in Pensacola Florida and Decatur Alabama, the Central Research Group in St. Louis, the Corporate Research Group in Dayton Ohio, the Polymer Research Group in Springfield Massachusetts, and the Packaging Research Group in Bloomfield Connecticut. Since the Packaging Research Group occupied the whole of the Bloomfield Technical Center, with the agreement of Jim Crawford (the Packaging Division General Manager), Gigliotti became the on-site manager of the Bloomfield Technical Center and responsible for the progress reporting for the LOPAC project.

In January 1969 at the Bloomfield Technical Center, Gigliotti began a single-mold, blow-molded bottle test program, utilizing every candidate polymer from each of the polymer research labs under his direction. He also began an internal organoleptic, shelf-life and toxicity testing program for each of these materials in the Bloomfield Technical Center, and arranged to ship test quantities of the more promising candidates to each of the four beverage companies.

One day in March/April 1969, Gigliotti received a phone call from Mr. Kehoe, President of Coca-Cola USA, requesting that an urgent meeting be arranged for the next day that would include himself and several other top Coke executives, along with the CEO of Monsanto and any other necessary Board Members or Company Executives. Michael asked, “Why?” Mr. Kehoe replied that, “because, against all of our technical predictions, the current batch of ‘dirty-brown’ bottles work, and we must discuss the future.” (These “dirty-brown” bottles were made from a copolymer of 70% acrylonitrile and 30% styrene; after much work a clear, lightly-yellow-colored bottle was made.) The meeting was arranged for the next day, in the Monsanto Boardroom in St. Louis. Gigliotti chaired the meeting. Among the Coca-Cola group were Mr. Woodruff; Mr. Kehoe, Ira Herbert, Coca-Cola Product Sales Director; the Director of Coca-Cola Research and manager of patent rights; and Harry Teasley, a young packaging researcher. Monsanto’s participants included Gigliotti; Monty Throdall, Corporate Technical Director and Board Member; Charles Somers, President and CEO of Monsanto; Jim Crawford, Corporate Vice President and General Manager of the Packaging Division; and Frank Reese, Corporate Vice President and General Manager of the Polymer Division.

Mr. Herbert began the meeting with a slide presentation that included:

- A report from Opinion Research Corporation, indicating that whichever cola company – Coca-Cola or Pepsi-Cola – came up with a plastics bottle first, it would take away 70% of the market from its competitor
- A report from Princeton Research Inc., indicating that a complete study of all possible combinations of polymer molecules pointed to there being very slim, perhaps no, probability of there ever being a plastic bottle that would meet Coca-Cola’s requirement of a six-month carbonation shelf life and pass Coca-Cola’s taste test.
- An internal Coca-Cola research report, indicating that their tests of the recent “dirty brown” batch of Monsanto test bottles showed that this polymer, used in standard-sized bottles, would pass the necessary Coke requirements with an almost 100% probability.

At this point Gigliotti asked what would Coca-Cola propose should be done next. Mr. Herbert responded with another slide presentation, spelling out a six-step go/no-go commercial validity test program. The steps were:

1. Blind taste-testing with independent panel and Coca-Cola panel.
2. Perceived taste-testing with independent panel and Coca-Cola panel.

3. Controlled in-home market preference testing.
4. Public six-store market preference testing, with experimental price vs. performance testing.
5. Public six-months market test in a small city, with experimental price/performance variations (New Bedford, MA).
6. Large city, 12-month market test with varied price/performance testing (Providence, RI).

All of these test programs would be conducted by Coca-Cola, at their own expense, paying the cost of the bottles from Monsanto, and sharing the confidential results of the tests with Monsanto.

At this point the Coca-Cola group offered Monsanto an immediate one-million-dollars as Coke's down payment on the exclusive purchase of the LOPAC project. Monsanto's group caucused for a few minutes, then countered with a proposal that, if Coca-Cola would conduct the six-step market test program as they had proposed, Monsanto would then build commercial bottle making plants in three of Coca-Cola's ten selected market areas; 85% of the capacity of these plants would be committed to Coca-Cola on a take-or-pay basis, priced initially for an agreed period of time at a premium over the price of glass bottles of the same capacity. The group agreed to draft Letters of Understanding and proceed immediately on the basis of beginning the first steps using single-portion bottles in the Coke trademarked shape and using Coca-Cola's trademarked green color.

Through Jerry Heckman, the Plastics Industry Food and Drug lawyer, Monsanto received, after substantial testing by the FDA's toxicity and other groups, a "no migration" letter from the Commissioner of the FDA. The letter indicated that it was not necessary for Monsanto to apply for or get an FDA indirect food additive regulation allowing the use of its LOPAC containers for commercial bottling of carbonated beverages.

Gigliotti quickly arranged for a single eight-mold BDS machine to be converted to the making of lightweight blow-molded ten-ounce bottles (the same external dimensions as the current 8-ounce glass Coke bottles). The first bottles for these tests were blown in January 1970 and filled in March 1970 for public market tests.

In 1972, based on the successful completion of the Providence six-step testing program, Monsanto began building the three factories, in South Windsor, CT, Havre De Gras,

Maryland, and Chicago, Illinois. These plants began commercial production in June 1975, and the bottle and Coca-Cola's reaction was enthusiastically successful.

In June 1976, while they were receiving honors and awards in Chicago for the successful LOPAC program, Michael advised Mr. Throdall, Corporate Vice President for Technology, that he intended to retire from Monsanto in January of 1977. He would, at Monsanto's request, provide whatever assistance Monsanto wished to install his successor as Director of Research & Development for the new Bottle Division and continue the LOPAC market expansions. Michael then put his intention in writing to Virgil Waggoner, who, in 1975, had been named a Corporate Vice President and General Manager of the new Carbonated Beverage Product Division of Monsanto.

In February 1977 the Carbonated Beverage Products Division held a Divisional Executive Committee Meeting in Chicago – focused on the introduction into the Chicago market of refillable/returnable Coke bottles which had already been manufactured at the South Windsor plant. During this meeting Waggoner and the Division's Executive Group (including Gigliotti) received word that the Commissioner of the FDA had issued a press release saying that the FDA would not obey a court order requiring an Environmental Impact Study on the Sohio Barex™ (ABS) food additive beverage bottle petition. The reasons were that this application was only experimental and, someday, acrylonitrile would be found to be unsafe for human consumption. By this time many million Monsanto-Coke LOPAC bottles had already been sold.

The anti-plastics environmental groups immediately began an anti-Coke campaign, picketing supermarkets. In the next week, realizing that the beneficial Coca-Cola image would rapidly be destroyed by this negative anti-plastic campaign, Monsanto shut down its bottle plants and Coca-Cola withdrew the bottles from the market. Ironically, even though the original LOPAC Coca-Cola bottles had not shown any migration problems, and were only “guilty by association,” it took another seven years for the FDA to re-approve the Cycle-Safe bottle made from the LOPAC resin.

Gigliotti stayed on in the Bloomfield Technical Center until June 1977 to assist Monsanto in its honorable effort to find equal or better employment for every one of its displaced LOPAC project employees, and to assist Monsanto in activating its court suit against the FDA – which resulted in the world famous “de minimus” ruling (“the law does not deal with trifles”), favorable to Monsanto.

In the 1970s a small group of early plastics industry pioneers formed the PLASTICS INSTITUTE OF AMERICA, headquartered at Stevens Institute of Technology in Hoboken, New Jersey, and Mr. Gigliotti quickly became Monsanto's representative on the Board of Directors. In the years that followed, Michael was reelected and became Corporate Secretary, until finally, in 2005, he tried to retire from the Board, but the Board gave him an emeritus status, and he continues to participate in PIA activities. Originally the Plastics Institute of America focused on granting specific fellowships to promising young engineers, leading to their doctorates in plastics and polymer technology. In the 1980s, as PIA's Director of Research, Michael joined with Melvin Druin, PIA's Director of Conferences, to format a series of seminars that would enable the food industry to become technically and commercially educated in the use of plastic packaging. They called these conferences FOODPLAS, and hired Henry Griffith as the Conference Coordinator/Manager. FoodPlas ran from 1983 for thirteen years, and was considered by almost everyone in the food and plastics industry as the source of the microwavable plastic food packaging explosion. For each of these conferences Gigliotti gave either the keynote address or an opening technology overview, in which he expanded his version of "megatrends" to guide FoodPlas attendees. PIA is now headquartered at the University of Massachusetts Lowell.

MICHAEL GIGLIOTTI & ASSOCIATES, INC. (MGA, INC.)

In January 1977, before the closure of Monsanto's LOPAC project had begun, Michael had decided to start a technical management and professional services, staffed with retired/independent engineering and research development managers and directors, from the worldwide plastics industry. This led to the organization of MICHAEL GIGLIOTTI & ASSOCIATES INC. (MGA, INC.). The objective of this company was to assist corporate technical executives to create, evaluate and commercialize technical programs, particularly in plastics packaging for the food and beverage market, in response to environmental and commercial market realities.

Moreover, back in October 1976, Gottfried Mehnert, the President/owner of Bekum – Berlin Kunststoffe Maschinenfabriken GmbH, and his son Mattios, had offered Michael employment as their international technical management consultant, to assist them in expanding the company out of its German base into the new world of carbonated beverages. Bekum's line of blow-molding machinery was then, and is now, recognized as the most reliable, most efficient machinery for the manufacture of hollow plastic articles. During the

Christmas/New Year's holidays 1976/1977, on a week-long visit to Bekum's Berlin headquarters, Gigliotti agreed to a long-term, evergreen contract – providing these services to Gottfried Mehnert and Bekum. This relationship continued until 2002, when Michael closed the MGA business.

Shortly after the word of Michael's retirement from Monsanto and his creation of MGA, Inc., circulated throughout the plastics machinery and plastics products industry, Mitchell (Mike) Ford, the CEO of Emhart Manufacturing Company, asked Gigliotti to become a technical management advisor to Emhart's Board of Directors. Emhart had been the owner of PLAX Packaging, the plastic machinery and product development company that, with Gigliotti's help, Monsanto had earlier acquired. Mike Ford and Gigliotti had worked together to make this acquisition happen. Emhart also asked Gigliotti to serve as the "outsider" secretary to their New Business Development Committee, made up of internal executives. Emhart's line of glass bottle manufacturing equipment dominated the glass bottle industry. Subsequently this relationship resulted in Gigliotti's being retained by the Glass Bottle Manufacturing Institute, a consortium of glass bottle makers, which placed research programs in universities around the world. The program was aimed at the manufacture of lightweight glass containers that would hold carbonation pressures and bounce if dropped from three feet. For this group, Gigliotti made a television documentary, which was circulated through its many company members worldwide.

In 1979 during a visit by Michael and Miriam to one of the early plastic expositions (Kunststoffe) in Düsseldorf, Germany, Gottfried Mehnert asked Gigliotti to visit GW Sohlberg Oy in Helsinki, Finland. Sohlberg was the owner of Bekum's earliest blow molding machines, and had received a grant from the Finnish government to develop a measurement device using infrared technology, which would measure the thickness of transparent plastic containers. Jukka Makela, the Corporate Director of New Business Development, and Sauli Tormala, a brand-new engineering graduate from Oulu University, had designed, built and experimented with a machine that would do this to large PET soda bottles. In fact, they were so confident about this development that they already had some of these machines under construction, and had trademarked the name GAWIS™ for this machine. GAWIS is the Finnish pronunciation of GWS, the Sohlberg initials. Gigliotti's technical forecast was enthusiastic, but his commercial forecast was for only a few machines per year for the next five to ten years, which turned out to be very realistic, especially since almost all of the sales were to American corporations. As a result of this report, Sohlberg spun this development out

of its corporation, as a separate company named TopWave Oy, controlled by an agency of the Finnish Government, with Makela and Tormala as minority shareholders.

A new corporation, TopWave USA, Inc., was established in 1980, headquartered in the MGA offices in Gloucester, Massachusetts, with exclusive worldwide marketing rights. In exchange for acting as a Founder, Corporate Secretary, and Director of this new company, Michael became a shareholder of TopWave USA, the other major owners being the Finnish government agency, and other interested parties. A cadre of Finnish machine parts suppliers later formed TestWorks Oy, to design and build the GaWIS™ machines in Finland. Although the TopWave USA, Inc., business grew and expanded internationally, TopWave Oy, the supplier of the GAWIS machine, was forced into liquidation by corporate Finnish accounting regulations, and TestWorks, the maker of the machines, became the independent supplier to TopWave USA, Inc. TopWave USA grew, merged with TestWorks to form TopWave Industries, Inc. TopWave became the worldwide standard for quality control of the PET bottle. In 2001, TopWave was acquired by AGR (American Glass Research Inc.) to form a new LLC named AGR-TopWave LLC, to develop and sell a line of quality-control instruments for the PET bottle industry.

During the Monsanto LOPAC development, the Metal Box Company of the UK and Yoshino Inc. of Japan, licensees of the PLAX blow molding machinery, became Monsanto LOPAC licensees. After the demise of the LOPAC project, both Metal Box and Yoshino continued their relationships with Monsanto for the development and use of the LOPAC product and machinery technology. In 1980 Peter Blackwell and Jeremy Appleton, officers of Metal Box and its plastic bottle venture, requested that Gigliotti become their provider of technical management professional services, by way of MGA, Inc. Michael agreed to a long-term evergreen contract, which continued for many years - through the Carnaud-MetalBox merger and the Crown Cork & Seal acquisition of CMB.

In the early 1980s, Pat Seddon, Technical Director, and Peter Campbell, CEO, of Metal Box South Africa, invited Gigliotti to Cape Town and Johannesburg, to begin providing technical management professional services to their company, which had only just begun making plastics bottles. The Metal Box South Africa relationship was expanded to Nampak, the new totally-South Africa Packaging Group, which acquired MBSA.

Trevor Evans, a young engineer with Nampak, was assigned to the relationship with MGA. The Evans family and the Gigliottis became house-to-house visitors, a relationship that has continued into the present, and they have enjoyed a number of vacations together.

One memorable event was the Evans family visit to the Gigliottis in Cape Canaveral on the occasion of one of the first shuttle takeoffs. Evans went on to become the General Manager of the Plastics Division and, later, the Chairman of Nampak. Along the way Evans started a monthly breakfast meeting with important anti-apartheid industrial executives and leaders of the black nationalist movement, including Bishop Tutu; Prime Minister Botha was a frequent guest. It is said that this breakfast group made possible the inside-South-African-government actions that led to the release of Nelson Mandela from prison, an event that changed the course of South African history.

To serve other such Southern European and African companies, Gigliotti established, with Ian Strachan – a retired executive of Nampak – an MGA Southern Africa Pty Ltd. office in Somerset West, Cape, South Africa. MGA-SA took on a number of government and industry sponsored projects, especially in solid waste handling, recycling and plastic packaging, in Malta and several mid-Africa developing countries.

At the request of the South African Government (when the apartheid sanctions against South Africa were lifted), the Plastics Industries Society of South Africa, and Nampak, Gigliotti and Strachan organized a three-week series of workshops and conferences on the subject of “World Class Manufacturing of Plastic Containers for the Food & Beverage Industry.” The participants from the USA included Alfred Alberghini, Dr. David Williams, Dewey Rainville, Irv Rubin, William McConnell, and other distinguished USA plastics authorities.

Also in the early 1980s, Gigliotti was contacted by Dr. Emery Valyi, whom he had met in the 1940s when Valyi came to Monsanto to acquire a special volatile form of polystyrene for use in his work at the Manhattan Atomic Bomb Project. Dr. Valyi asked Michael and Allan Griff to join him in a consortium to take on a major two-year project for Lesieur Cotelle E Frere, the large French P&G-style provider of toiletries and cooking oils. Lesieur Cotelle operated three plastic bottle making facilities, which had poor performance and high costs, plus the PVC plastic bottles they used for their peanut cooking oil had been suffering from vacuum collapse on the shelf. They wanted the Valyi-Gigliotti-Griff team to take on evaluating their plastic container activities and recommending/supervising corrective actions. The team recommended the use of PET resin instead of PVC and a new shape (patterned after the Michelob beer bottle in the USA) for the oil bottle. The new bottle was named “avril”. For the development and market trials of the new Avril oil bottle, the team

contracted with DYNAPLAST Company in Geneva, Switzerland, a small, but highly successful, PET bottle manufacturer, owned by Dr. Glauco Curetti.

Also recommended was a complete overhaul of all of the blow molding equipment to unify the machines under one design. Of the 15 machines operated in three plants by Lesieur Cotelte, there were no two alike. Lesieur plus a PVC resin manufacturer had partnered in the forming of SIDEL to make the blow molding machinery; SIDEL had used the Lesieur plants as its experimental development location. Mr. Lesieur and his associates celebrated the team's successful completion of these projects by way of a formal dinner party in Lesieur's Paris home, at which all present spoke perfect English – a surprise to the team, because all meetings with the Lesieur executives were conducted in French through interpreters!

Meanwhile, on a worldwide basis, the activities of MGA, Inc., were expanded into:

- Australia – to ICI's Vinyl Packaging Group (Bruno Coniglio)
- Australia – to BlowPack (Kevin Morley), which later became James Hardy (Graeme Richardson), which later became ACI which later became Amcor (Russell Jones)
- Australia – two industry-sponsored FoodPlas seminars with Jerome Heckman, Esq., and Sophia Dilberakis, Editor of *Packaging Magazine*.
- Australia – Australian Ministry of Science and Technology, with two other independent associates, a technical audit of government-sponsored research into the processing and packaging of Australian food products
- Italy – SNIA, Milan: textile resins (Dr. Pietro Piscitelli, VP). Gigliotti's first meeting with Dr. Piscitelli followed a trip to Germany. "I had been told that negotiations in Germany would be precise, detailed and complete, but negotiations in Italy would be time-consuming and rambling. To my surprise, upon entering his office, Dr. Piscitelli handed me a document covering a project that he wanted me to handle for him. After I had read it, he asked me if I liked it. When I said 'Yes' he asked me to sign it; then he took my arm and said 'Let's go out for coffee' – which resulted in a relaxed three hours under an umbrella at a pleasant Milan sidewalk café."
- New Zealand – UEB (United Empire Boxboard), modified atmosphere packaging (MAP) of lamb cuts for direct delivery to USA supermarkets (Jack Tunnicliff)
- Auckland University – Plastic Packaging Conferences

- Brazil - Assisting Nitriflex, the Brazilian petroleum conglomerate, in a technical/commercial audit of their resin making facilities in Rio de Janeiro.

On the domestic front, Michael Gigliotti, through MGA, Inc., assisted many prominent North and South American corporations. Among these specific projects were:

- Redesign of the “Squeez-It” fruit beverage container for General Mills.
- A formal technical / commercial-potential audit of several plastic packaging ventures, including the Rampart Company, for the Shell Chemical Company.
- A technical audit and formal judgment of a major new Dutch research resin for the Shell Oil Company.
- A nine-volume study of the processes employed in the USA by produce packagers, for the Combibloc Company.
- Assistance to Campbell Soup in the review and selection of plastic packaging for its line of vegetable beverages.
- A review and assistance to Consumers Glass of Canada, in the modification of their future growth plans in the packaging industry.
- Continuous support to Brockway Glass in its development of plastic beverage containers, and its technical management rearrangement and relocation.
- Being the Expert Witness in the successful defense of the Owens-Illinois/Brockway corporate merger, before the FTC and Federal Courts.
- Providing technical/environmental/commercial audit assistance to Air Products & Chemical, American Cyanamid, Ashland Oil & Chemical, Avon Products, Inc., Belvac/Dover, Cincinnati-Milacron, Diamond International, Dunkin’ Donuts, EcoScience Laboratories, Ex-Cell-O Corp., Gulf Oil Chemical, Heekin Can, Monarch Wine Company, National Can, Polysar Inc., PepsiCo, Procter & Gamble, E.S. Robbins Corp., Rowland Products, Joseph Seagram, Sonoco Products, Tahoe Research, Welch’s, Williams Associates, etc.

The international reputation of Michael Gigliotti and his small company, led to his being requested to provide *pro bono* services to a number of enterprises, such as

- the Plastics Engineering Department at the University of Massachusetts Lowell
- the major effort by the Republic of China, beginning in the 1980s, to become educated and knowledgeable about plastics packaging and plastics manufacturing processes. This included assisting the government in creating the first IPPCONEX – International Plastics Packaging Conference and Exposition – in Beijing; the

China National Packaging Corp.; the China Association for Science and Technology; and the government's aeronautical and plastic-forming research operations.

- The Eisenhower Foundation's People-To-People program, for which Gigliotti organized and led two three-week delegations to Japan, China and Korea in the mid-1980s.
- Preparing and presenting more than 50 technical and commercial papers, regarding environmental, educational, plastics performance, and food packaging issues, at national and international conferences and events: England, Belgium, Germany, France, South Africa, Singapore, Canada, Algiers, Israel, Switzerland.

Gigliotti retired from and closed MGA in 2002 and has finally settled down, at least a little bit. He is active in the Plastics Pioneers Association, and along with Miriam and daughter Valerie published and maintained the arduous task of updating the Who's Who of the Plastics Pioneers Association.

Gigliotti was inducted into the Plastics Hall of Fame in 2003 and, one year later, received the Stevens Honor Award – 2004. Gigliotti remembers when his first professor at Stevens Institute of Technology told him that he would fail ... and since that day Michael has done nothing but achieve success and recognition for his abilities to plan, organize, implement and successfully complete projects that often appeared as daunting as completing school at Stevens.

Gigliotti is the author of over 50 articles and papers ranging in subject matter from high school and college technical curricula, to building codes and building products, barrier polymers and plastic beverage containers, solid waste and recycling, to worldwide packaging trends, corporate restructuring and planning, and new business development. He has presented papers at conferences organized by Packaging Strategies, Ryder, Schotland and the PIA series of FoodPlas, ConstructionPlas and RecyclingPlas. He has been published in virtually every major engineering, plastics, and packaging journal including *Modern Plastics*, *Modern Plastic International*, *South Africa Plastics News*, *Food Packaging*, *Beverage World*, *Engineering Education*, and *Professional Engineer*.

Gigliotti is a 50-year member of the American Institute of Chemical Engineers (AIChE) and a former representative to the American Standards Association where he participated on the development of standards for plastic pipe. He remains a registered professional engineer in Texas and Massachusetts. He has been a member of the Society of

Plastics Engineers (SPE) since 1968 and, in addition to being active in his local chapter, served as a Director of the Blow Molding Division and the first editor of the Blow Molding Division's newsletter, which received a "best" award.

Today Michael lives in Gloucester, Massachusetts with his wife Miriam. He has five children, seven grandchildren, and eight great-grandchildren.

His oldest son, Michael, Jr., with a doctorate from Thayer School of Engineering, Dartmouth College, is a Coolidge Fellow (one of 13) Senior Scientist at General Electric's worldwide research laboratories – like his father, working on leading edge projects. Michael Jr. has received The Minerals, Metals & Materials Society's (TMS) *Application to Practice Award*. At GE he has worked on the analysis and design of jet engines; he is a world authority on titanium metals.

Chalice Eileen is an LPN whose special practice is the care of terminally ill children. One of her sons, Brett, following in his grandfather's footsteps into the world of polymers, is the Director of New Business Development – Europe, for the Bulk Molding Company, stationed in Hamburg, Germany.

Daughter Valerie is a graduate of Emmanuel College; after working in retail and publishing, she became the Office Manager for MGA.

Edward, a business management graduate of University of New Hampshire, is a senior employee of a local, major building supply company. Edward's oldest son, Joshua, served honorably with the 101st Airborne Infantry Division in Iraq, and is now home in Gloucester.

Anne Elizabeth holds a Merchant Captain license from the U.S. Coast Guard. After three years of captaining fishing boats and acting as First Officer on local commercial vessels, she now works in a major ship-building and repair wharf, and teaches navigation in a USCG-approved program.

Michael Gigliotti, Sr., maintains an office in his home and still performs *pro bono* consulting work for old clients and friends. He has a wealth of stories to tell, and enjoys spending time with his family and friends. His distinguished career in the plastics and packaging industries has set a high bar for anyone to follow and certainly a respectful one for any professional to emulate.