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R&D Council Announces 2016 Edison Patent Award Winners and Special Individual Honorees

Individual Awards for Nokia Bell Labs President Marcus Weldon, Former NJEDA CEO Caren Franzini and Stevens President Nariman Farvardin

Chatham, N.J., October 17, 2016: The Research & Development Council of New Jersey (“Council”) is proud to announce the 12 winners of the 2016 Edison Patent Awards. These winners will be honored at the 37th Edison Patent Awards Ceremony & Reception on November 3, 2016.

AdvanSix (Honeywell), ExxonMobil, Immunomedics, Lockheed Martin, Merck, NJIT, Nokia Bell Labs, Princeton Plasma Physics Laboratory, Rutgers University (recipient of two awards, one co-owned with Matinas BioPharma), Siemens and TE Connectivity will be awarded for innovative patent work spanning 11 R&D categories, including: agriculture, biotechnology, defense, drug delivery technology, enabling technology, energy, industrial process, industrial product, medical device, medical technology and telecommunications.

For nearly four decades, the Council has placed a call for nominations for its Edison Patent Award. The Council then assembles a committee of top state researchers who review the nominations and judge them based on the significance of the problem researched, novelty and utility of the patent, and the patent’s commercial impact. Those with the highest scores are declared winners and join the ranks of the amazing researchers who are Edison Patent Award alumni. Recognizing that New Jersey is home to some of the most cutting edge patent work dating back to the 1800s, the Council developed this award to memorialize its most prolific inventor, Thomas Alva Edison, and to highlight the Garden State’s continuous pipeline of exceptional research and development work.

“The annual conferring of the Edison Patent Award has become a time honored tradition for New Jersey’s research community,” said Troy Sarich, Ph.D., Research & Development Council of New Jersey Chairman and Vice President of Real World Evidence at Janssen. “This state is home to some of the finest researchers in the world and an honor like this allows the hard work of both the organization and the researcher to shine beyond the four walls of the laboratory. The Council is proud to be leading this recognition effort.”

The R&D Council will also honor Nokia Bell Labs’ President and Nokia Corporate Chief Technology Officer Dr. Marcus Weldon, former New Jersey Economic Development Authority CEO Caren Franzini and Stevens Institute of Technology President Dr. Nariman Farvardin for their

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unique contributions to research and development, business and STEM (Science, Technology, Engineering and Mathematics) education.

Dr. Marcus Weldon will receive the R&D Council's highest award, the Science & Technology Medal. This medal is awarded to individuals who have made significant contributions to the advancement of science and technology, while successfully bringing innovation from the laboratory to the marketplace. Dr. Weldon receives this award for his vision for Bell Labs and directing the organization's innovation in the pivotal areas of foundational networking technologies and systems for the 'cloud networking' era, via 10x game-changing research and 'Future X' projects.

Caren Franzini will receive the Chairman's Award for her role as former CEO of the New Jersey Economic Development Authority in which she developed countless public and private sector partnerships, policies and economic growth incentives that supported the advancement of New Jersey's STEM economy. Caren has worked for several governors and has for more than two decades been universally respected by public officials across our state.

Stevens Institute of Technology President Nariman Farvardin will be honored as Educator of the Year. During President Farvardin's tenure, Stevens, the Innovation University™, has won the title at the national Solar Decathlon, has consistently been ranked by U.S. News & World Report as one of the nation's top institutions, and has held the #3 rank for its return on investment under the PayScale reporting.

“This year's individual and patent award winners showcase the breadth and depth of STEM leadership and innovation in New Jersey,” said Council President Anthony Cicatiello. “New Jersey is STEM strong. Dating back to the beginning with Edison, then Bell Labs and our state's robust pharmaceutical industry, jumping to present day inventions and discoveries like those we are honoring in this year's Edison Awards class, New Jersey continues to be an innovation powerhouse.”

The 37th Edison Patent Award Ceremony & Reception will take place on the evening of November 3, 2016, at the Liberty Science Center. The Liberty Science Center is home to the nation's largest IMAX Theater, where a short original film will pay tribute to each of the winners. For more information on sponsorship options or ticket purchases, visit www.rdnj.org or call 973.274.8336.

For more than half a century, the Research & Development Council of New Jersey has been dedicated to cultivating an environment supportive of the advancement of research and development in New Jersey. Established in 1962, the Council was created to serve as a unified voice for the three R&D sectors — industry, academia and government — to work with the State to create an environment R&D could thrive in. The R&D Council is a nonprofit 501(c)(3) organization whose membership includes representatives from academia, government and industry, including several Fortune 500 companies. More information can be found at the R&D Council's website: www.rdnj.org.



2016 Edison Patent Award Winning Patents and Inventors

AdvanSix (Honeywell) and inventors John V. Facinelli, Clark V. Brown, David J. Loy, Robert A. Houck, Jr., and Dana A. Germain will receive a patent award in the industrial process category for “Method and compositions for producing polymer blends” (U.S. 9,312,047). This patent is directed to a novel process that confers an innovative and flexible solution with reduced thermal heat-history particularly suitable for producing specialized polymer blend chemistries to enable multiple higher value global end-use applications including wire & cable jacketing, fish line, films, cable ties, and high performance injection molding compounds having a wide range of beneficial properties.

ExxonMobil and inventors James T. Carey, Angela S. Galiano-Roth, and Gary K. Dudley will receive the patent award in the industrial product category for “Alkylated Naphthalene Base Stock Formulations” (U.S. 8,716,201), a novel lubricant formulation based on alkylated naphthalene (AN) as the primary base stock employed, in combination with a fully optimized additive system, that provides up to three times oil life in actual operating equipment when compared to previously known synthetic technology.

Immunomedics and inventors Chien-Hsing Chang, Ph.D., David M. Goldenberg, Sc.D., M.D., Edmund A. Rossi, Ph.D., and Diane Rossi will receive the patent award in the biotechnology category for “T-cell redirecting bispecific antibodies for treatment of disease” (U.S. 9,315,567), a method of treating cancer by redirecting a patient’s own immune system to kill cancer cells using a novel bispecific antibody format, DOCK-AND-LOCK[®], proprietary to Immunomedics, that can simultaneously bind to two receptors, one on the cancer cells and the other on T cells, a type of white blood cells.

Lockheed Martin and inventors Valerie Underwood, Lillian Andres, and Travis Lenhart will receive the patent award in the defense category for “Apparatus and method for executing equipment inspection requirements” (U.S. 8,436,767), a new testing apparatus that defines, tests and evaluates various fault paths associated with the components comprising the Aegis radar system installed on U.S. Navy ships. This invention accelerates the development and performance of the operational test system by generating tests directly from performance requirement specifications.

Merck and inventors Michael Galluppi, Scott Brown, and Peter A. Basile will receive the patent award in the medical device category for “Drug products, dry powder inhalers and polyflux collider arrangements” (U.S. 9,174,012), a dry powder inhaler (DPI) that incorporates a “polyflux collider” and is capable of delivering a significantly higher amount of respirable sized drug particles to the lung than typical inhalers, specifically targeted for Asthma and COPD patients.

NJIT and inventors Rajesh N. Dave, Ph.D., Daniel To, Ph.D., and Maxx W. Capece, Ph.D. will receive the patent award in the enabling technology category for “Solventless Mixing Process for Coating Pharmaceutical Ingredients” (U.S. 9,107,851), a process that combines water insoluble and soluble polymers to form a highly structured particle coating layer, deformed as a composite



film in a single, high intensity, vibratory process so that the bitter taste of the drug is masked, while not impeding the delivery of the drug to the body in a reasonable time frame.

Nokia Bell Labs and inventors Ilija Hadzic, Dennis R. Morgan, Zulfiqar Sayeed, Alf Neustadt will receive the patent award in the telecommunications category for “Method, apparatus and system for frequency synchronization between devices communicating over a packet network” (U.S. Patent 8,300,749), a new synchronization algorithm that complements or replaces the use of GPS designed to operate in modern mobile wireless systems where extremely rigorous timing requirements are imposed on base stations and GPS is not always a practical solution.

Princeton Plasma Physics Laboratory and inventors Charles Gentile, Adam Cohen, George Ascione, will receive the patent award in the medical technology category for “Production of Radionuclide Molybdenum 99 in a Distributed In Situ Fashion” (U.S. 9,318,228), an on-demand method to create Mo-99 from Mo-100. Molybdenum (Mo-99), which decays to Technetium-99m, is used in tens of millions of medical diagnostic procedures annually, making it the most commonly used medical radioisotope. This invention could help solve a worldwide shortage of a radioactive element that is crucial in medical scanning devices used to diagnose diseases such as heart disease and breast cancer. The invention uses no uranium, and can be produced in situ to make it widely available to third-world countries without supply chain and transportation issues.

Rutgers, The State University of New Jersey will receive two Edison Patent awards:

Inventors Raphael Mannino, Ph.D. (Rutgers), and Ruying Lu (Matinas BioPharma, a New Jersey biotech company), will receive the patent award in the drug delivery technology category for “Cochleates made with Soy Phosphatidylserine” (US 9,370,572, jointly owned by Rutgers and Matinas), a cochleate lipid-crystal nano-particle medicinal formulations prepared using a more economic and durable preparation of soybean derived phosphatidylserine that is superior to the synthetic lipid DOPS (dioleoylphosphatidylserine). Matinas license this technology as well as all other cochleate patents from Rutgers with global exclusive rights. Matinas is developing orally administered anti-infection formulations of IV-only antibiotic and antifungal agents. Cochleate technology represents a broad based, disruptive drug formulation and delivery technology utilizing a unique lipid-crystal nano-particle to nano-encapsulate existing drugs and other biologically active compounds, making them safer, more tolerable, less toxic and orally bioavailable.

Inventors Joseph Goffreda, Ph.D. and Anna Voordeckers will receive the patent award in the agriculture category for “Peach Tree named ‘NJF16’” (US PP18,997), a patented hybrid peach variety of *Prunus persica* that was developed to be positioned as a value-added cultivar that improves the profitability of growing peaches. ‘NJF16’ is adapted to the challenging environmental and growing conditions of the New Jersey region while possessing the combination of peach attributes that are attractive to both commercial producers and consumers.



Siemens and inventors Dr. George Lo, Mohammad Abdullah Al Faruque, Hartmut Ludwig, Livio Dalloro, Barry R. Contrael, Paul Terricciano will receive the patent award in the energy category for “Network as automation platform for collaborative E-car charging at the residential premises” (U.S. 8,957,634), a novel solution using a collaborative energy management strategy that includes a distributed system to manage the residential-level power distribution grid in a collaborative way for E-car charging stations.

TE Connectivity and inventors Massimo Manna, Ekaterina A. Golovchenko, and Mark Enright will receive the patent award in the telecommunications category for “Optical Transmission System Including Repeated and Unrepeated Segments” (U.S. 7,574,140), an undersea fiber optic transmission network that has a main path (a repeated, optically amplified trunk) and branch paths that can connect multiple landing sites, eliminating the need for amplifiers in branch cables, allowing optimization of network capacity, powering and cost.