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CLEARPATH DEVELOPMENT LAUNCHES SECOND VACCINE COMPANY UNDER STRATEGIC PARTNERSHIP WITH ASTELLAS

Establishes Nosocomial Vaccine Corporation (NVC) and Initiates Research Collaboration with Affinivax and the University of Maryland School of Medicine

Rockville, MD; Baltimore MD; and Cambridge MA – October 26, 2015 – ClearPath Development Company (ClearPath) announced today the launch of its second vaccine company, NVC (Nosocomial Vaccine Corporation), with the support of its partner, Astellas Pharma Inc. The partnership between ClearPath and Astellas was established to support the goal of building a global vaccine franchise and launched its first company, RSV Corporation (RSVC), in December 2013. NVC has initiated research collaborations with two partners to develop a nosocomial vaccine; Affinivax Inc. (Cambridge MA); and the Center for Vaccine Development at the University of Maryland School of Medicine (Baltimore MD). The research collaboration will utilize Affinivax's proprietary vaccine platform, Multiple Antigen Presentation System (MAPS), to develop vaccines that prevent bacterial nosocomial infections, also referred to as health-care associated infections (HAIs).

"Together with our collaborators at Affinivax and the University of Maryland School of Medicine, we are accelerating research and development of a vaccine for important pathogens causing nosocomial infections, one of the most common HAIs," said Donna Ambrosino, MD, CEO, NVC. "HAIs are a significant global health concern, with the Centers for Disease Control and Prevention estimating that more than 1.9 million patients per year in the U.S. will contract a bacterial nosocomial infection in medical facilities, including ambulatory surgical centers, hospice centers, nursing homes and rehabilitation centers."

HAIs acquired in acute or chronic care medical facilities represent a major public health burden. According to JAMA Internal Medicine, HAIs cost \$9.8 billion annually in the U.S. alone. With up to 4% of patients becoming infected, the added morbidity and mortality is significant as bacterial nosocomial infections are highly resistant to available antibiotic therapies. Currently, there is no vaccine available for any of the major nosocomial pathogens including organisms that are responsible for the majority of highly antibiotic resistant bacteria, which have now been recognized as a significant public health threat.

"This is an important area of unmet medical need," said George Siber, CSO, ClearPath Development Company. "We are excited to launch this research program in partnership with Astellas and a team of research collaborators who are well suited to create candidate vaccines which can address this growing public health threat. We look forward to moving quickly into pre-clinical studies."

Dr. George Siber and Dr. Donna Ambrosino, both recognized vaccine experts with more than 35 years of experience, are leading the NVC development team. From 1996 to 2007, Dr. Siber was Executive Vice President and Chief Scientific Officer of Wyeth Vaccines Research where he oversaw the approval and marketing of six childhood vaccines including Prevnar, Meningitec, Rotashield and FluMist. Dr. Ambrosino from 1998-2011 was CEO of MassBiologics where she oversaw the development of monoclonal antibody products including Rabies Mab, now in Phase 3, and a C. difficile product (Bezlotoxumab) that will be submitted for approval by Merck in 2015.

The team at the Center for Vaccine Development will be led by Dr. Alan S. Cross, MD, professor of medicine at the University of Maryland School of Medicine, as well as a world-renowned expert in Gram negative bacteria research and vaccine development. The Affinivax team includes scientific founder Dr.



Richard Malley, MD, Professor of Pediatrics at Harvard Medical School, a well-recognized expert in infectious diseases, vaccine development, and a co-inventor of the Multiple Antigen-Presenting System (MAPS) platform technology, which represents a highly innovative approach for creating novel vaccine formulations that may provide broad protection against the most challenging pathogens.

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About ClearPath Development Company:

ClearPath Development Company, a subsidiary of RRD International, works with leading biopharmaceutical companies to expand product pipeline opportunities with complementary development and finance capabilities. Its business model provides biopharmaceutical companies with an alternative mechanism for accelerating product development. This model is highly capital-efficient for development of early-stage assets, enables accelerated development for existing company assets and external assets under consideration for in-licensing, and helps de-risk development projects with tailored financing structures. For more information, visit www.clearpathdevco.com.

About Astellas:

Astellas Pharma Inc., based in Tokyo, Japan, is a company dedicated to improving the health of people around the world through the provision of innovative and reliable pharmaceutical products. We focus on Urology, Oncology, Immunology, Nephrology and Neuroscience as prioritized therapeutic areas while advancing new therapeutic areas and discovery research leveraging new technologies/modalities. We are also creating new value by combining internal capabilities and external expertise in the medical/healthcare business. Astellas is on the forefront of healthcare change to turn innovative science into value for patients. For more information, please visit our website at www.astellas.com/en.

About Affinivax:

Affinivax is advancing a next generation vaccine technology platform to enable the development of vaccines that provide the highest level of protection against challenging infectious diseases. Backed by an investment from the Bill & Melinda Gates Foundation, and working with world experts in vaccine discovery and development, Affinivax is focused on creating a pipeline of vaccines for children and adults in both the developed and developing worlds. The company's proprietary vaccine platform, called Multiple Antigen Presentation System (MAPS), enables the high affinity binding of protective polysaccharides and proteins in a single vaccine and uniquely induces a broad and protective immune response. The MAPS technology provides a highly stable, modular, and efficient approach to develop vaccines against a wide range of diseases. The company has achieved preliminary preclinical proof-of-concept for several MAPS vaccines and is currently advancing its lead vaccine candidate against *Streptococcus pneumoniae*. For more information, visit www.affinivax.com.

About the University of Maryland School of Medicine:

The University of Maryland School of Medicine was chartered in 1807 and is the first public medical school in the United States and continues today as an innovative leader in accelerating innovation and discovery in medicine. The School of Medicine is the founding school of the University of Maryland and is an integral part of the 11-campus University System of Maryland. Located on the University of Maryland's Baltimore campus, the School of Medicine works closely with the University of Maryland Medical Center and Medical System to provide a research-intensive, academic and clinically based education. With 43 academic departments, centers and institutes and a faculty of more than 3,000 physicians and research scientists plus more than \$400 million in extramural funding, the School is regarded as one of the leading biomedical research institutions in the U.S. with top-tier faculty and programs in cancer, brain science, surgery and transplantation, trauma and emergency medicine, vaccine development and human



genomics, among other centers of excellence. The School is not only concerned with the health of the citizens of Maryland and the nation, but also has a global presence, with research and treatment facilities in more than 35 countries around the world. http://medschool.umaryland.edu/