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URI researcher awarded \$13 million grant for development of vaccines for emerging infectious diseases

Simulation tools used to train next generation of scientific researchers

PROVIDENCE, R.I. – July 28, 2009 -- University of Rhode Island Professor Annie De Groot has been awarded a \$13 million grant from the National Institutes of Health to pioneer the development and application of an integrated gene-to-vaccine program targeting emerging infectious diseases. It is the second multi-million dollar NIH grant awarded to URI researchers in recent months, coming on the heels of an \$18 million award to a pharmacy professor in May.

De Groot, who joined the faculty of the URI College of the Environment and Life Sciences just six months ago and who directs the University's Institute for Immunology and Informatics, said the new Translational Immunology Research and Accelerated Vaccine Development (TRIAD) program will integrate vaccine design studies in silico (via computer simulation) with in vitro and in vivo research.

“While the NIH grant is Professor De Groot’s first award since joining the URI faculty, she has an outstanding track record of earning significant funding in her previous position at Brown University and at EpiVax, now totaling more than \$25 million,” said URI President David Dooley. “We are immensely proud of her accomplishments, and I am confident that her work will continue to strengthen the research enterprise at the University and will provide exciting opportunities for technology transfer.”

“This grant is a dream come true,” said De Groot, president of the biotechnology company EpiVax. “The TRIAD grant provides a team of researchers based right here in Rhode Island with the exciting opportunity to collaborate across disciplines and to teach the next generation of scientists to use tools that are accelerating the development of vaccines and therapeutics.”

The NIH funds will enable De Groot and URI colleagues Thomas Mather and Lenny Moise to collaborate with Steve Moss and Steve Gregory of Lifespan and Bill

Martin of EpiVax to develop vaccines that will address emerging infectious diseases such as Hepatitis C, *Helicobacter pylori* and engineered biowarfare/bioterror agents. Mather will direct a project on the development of a vaccine against a range of tick borne diseases.

“This grant will fund translational research for the development of human vaccines, thus all of the work to be performed under TRIAD funding is directed at moving vaccine products towards the clinic,” De Groot explained. “The unique area of focus will be what are called immunome-derived vaccines. Compared to traditional vaccines, immunome-derived vaccines have the potential to be safer and more effective since they focus the protective immune response on the most essential antigenic elements of the pathogenic bacteria or virus, while eliminating potentially cross-reactive and deleterious or simply inert components, reducing the potential for adverse outcomes.”

The funding will also support a training course and pilot grants for researchers interested in using new vaccine design tools developed by De Groot and Martin. The first training session will take place Aug. 24-26 at the URI Providence Biotechnology Center.

In addition, the grant will allow De Groot to hire eight new staff members for the Institute for Immunology and Informatics, and it will also result in new hires at affiliated research centers. The research being conducted at the Institute is expected to make it a magnet for attracting translational immunology researchers from around the world.

Peter Alfonso, URI vice president for research and economic development, said: “Dr. De Groot's research has regional and national importance not only because it will lead to a significant reduction in the time and cost to create new vaccines against a host of emerging infection diseases such as Lyme disease, which is rampant in Rhode Island, but also because it makes considerable contribution to Rhode Island's economic development efforts in two important ways; first, through the creation of technologies and products that have commercial value, and second, through the creation of a highly-skilled workforce that is absolutely essential for our economic wellbeing. Through Dr. De Groot's leadership, URI will be recognized throughout the world for our scientific contributions in this area.”

“I commend URI for their efforts to accelerate the development of safer, more efficient vaccines,” added U.S. Senator Jack Reed, who supported De Groot’s funding proposal. “This federal funding will boost critical vaccine research to help protect public health against emerging infectious diseases. It will also provide critically important educational opportunities to further expand Rhode Island’s health care and biotech workforce.”

The Institute for Immunology and Informatics, established earlier this year at URI’s Providence Biotechnology Center, applies cutting edge bioinformatics tools to accelerate the development of treatments and cures for immune-system diseases like HIV and tuberculosis. The Institute also aims to quickly make these tools available to the global research community for the development of vaccines for tropical diseases and other infectious diseases.

De Groot has received national and international recognition for her innovative “genome-to-vaccine” approach, and has been a vocal advocate for tiered pricing of globally-relevant HIV and TB vaccines. *Esquire Magazine* gave her a Genius Award in Science and Technology in 2003, and she was named Rhode Island Woman Physician of the Year by Women and Infants Hospital in 2006. She is the scientific founder of the Global Alliance to Immunize against AIDS (GAIA), and she and Martin declared that their GAIA HIV vaccine was a not-for-profit research program in 2001. Work on the development of the GAIA HIV vaccine trial site is ongoing in Mali, with the support of her GAIA Vaccine Foundation.

For more information about De Groot, the Institute for Immunology and Informatics, and the TRIAD grant research, visit www.immunome.org.

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