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Dr. Cynthia Leifer honored with 2012 Pfizer Animal Health Award



Dr. Cynthia Leifer, assistant professor of immunology at Cornell University's College of Veterinary Medicine, has been selected to receive the Pfizer Animal Health Award for Veterinary Research Excellence. The award fosters innovative research by recognizing outstanding research and productivity from a faculty member early in his or her career. Nominees are selected for innovative research relevant to animal health that is likely to make national impact.

Leifer's research sheds light on the currently cloudy causes of autoimmune disease by uncovering inner workings of the innate immune system. Afflicting one in five Americans, autoimmune diseases include a wide array of disorders from rheumatoid arthritis to the skin disease Lupus to irritable bowel syndrome.

"The immune system fights to protect us against invading microorganisms," said Leifer. "But it must also recognize what to attack and keep its aggressive responses under control to prevent damaging our own bodies."

When recognition and regulation fail, the immune system can attack the body and lead to autoimmune disorders. Leifer explores how immune cell receptors affect the way these cells recognize and respond to whatever they encounter, whether it's a microbial invader or a piece of the self.

"Most innate immune receptors identify microbes by detecting unique structures found only on microbes," said Leifer. "But some work by detecting structures present in both microbes and the self, such as DNA."

Focusing her research on one such receptor, Toll-like receptor 9 (TLR9), Leifer recently discovered how TLR9 makes the kind of recognition mistakes that lead to autoimmune attacks, opening the door to new possible autoimmune disease therapies.

"Identifying immune-cell regulation systems may reveal therapeutic targets for managing TLR9 function, leading to new treatments for autoimmune diseases," said Leifer.

Leifer will present her research at a special seminar to be held in September 2012. At a ceremony that follows she will receive an award of \$1,000 and an engraved plaque.

“This is a great honor for Dr. Leifer at this stage of her career,” said Dr. Avery August, chair of the department of microbiology and immunology. “Her cutting-edge work on how the immune system senses pathogens is being recognized, and she will join a distinguished list of Cornell faculty who have received this award. We congratulate her on this great accomplishment.”