

NIDDK's Tarbell Wins Prestigious PECASE

President Barack Obama recognized Kristin V. Tarbell, Ph.D., with the Presidential Early Career Award for Scientists and Engineers (PECASE) at a January 13, 2010, White House ceremony. Tarbell is a tenure-track investigator and chief of the immune tolerance section in the Diabetes Branch of the National Institute of Diabetes and Digestive and Kidney Diseases' (NIDDK's) intramural research program. The president also recognized 11 other National Institutes of Health (NIH) grantees.



"These extraordinarily gifted young scientists and engineers represent the best in our country."

President Obama

The PECASE is the nation's highest honor for scientists at the outset of their professional careers. Since the program began in 1996, the NIH has funded a total of 153 PECASE recipients.

"These extraordinarily gifted young scientists and engineers represent the best in our country," said President Obama when he announced the winners last June. In a letter to the PECASE recipients, President Obama wrote: "You have been selected for this honor not only because of your innovative research, but also for your demonstrated commitment to community service and public outreach. Your achievements as scientists, engineers, and engaged citizens are exemplary, and the value of your work is amplified by the inspiration you provide to others."

Dendritic Cells

Tarbell and her team are probing the role of dendritic cells in the autoimmune process that underlies type 1 diabetes. Her goal is to understand how these immune cells behave normally and in autoimmunity and to then manipulate them to induce immune tolerance—quiet the immune attack. In type 1 diabetes, the targets of that misguided attack are the insulin-producing beta cells in the pancreas.

"We want to modulate dendritic cells because they function at critical decision points for immune responses," Tarbell explained. "We always have in mind the question—how can we translate what we learn to treat autoimmunity?"

TARBELL,

continued on page 9

Changes for NIH Grant Applications

As of January 25, 2010, all National Institutes of Health (NIH) grant applications must be submitted using new forms and instructions. The changes in the forms are part of the NIH Peer Review Enhancements and Implementation Plan, a series of initiatives intended to streamline the grant application and peer review process, helping the NIH fund the best science, by the best scientists, with the least administrative burden.

The revised grant application forms are aligned with new grant review criteria and better emphasize the proposed research's potential impact. The NIH encourages all grant applicants and current grantees to familiarize themselves with the new forms and instructions.

For more information, including informative slide and video presentations, and the new forms and instructions, visit the website, Enhancing Peer Review at NIH, at <http://enhancing-peer-review.nih.gov>. ■



TARBELL, from page 8

Dendritic cells, though few in number compared with the hefty populations of other immune cells, are important for directing how the immune system will respond to different stimuli. These front-line defenders fight infection by responding to environmental signals, such as bacteria, and presenting antigens to T cells, which then move into action. But dendritic cells also have a peace-making role, emitting signals that turn off the immune response. Working mainly with a mouse model of type 1 diabetes in humans, Tarbell is seeking to understand all the signals that dendritic cells respond to under different conditions.

“The immune system is designed to be antigen-specific, and in type 1 diabetes, some common antigens, such as insulin—expressed in beta cells—have been identified. The idea is to find a way for dendritic cells to present antigens in a way that will turn off the autoreactive responses and leave alone the desirable ones—that’s for me

the ultimate goal,” said Tarbell. To accomplish this, she’s looking at a number of approaches, such as inducing dendritic cells to activate regulatory T cells, which also play a role in calming the autoimmune response.

Tarbell and her group at the NIH are now pursuing new studies in diabetes-prone mice. They are attempting to prompt dendritic cells to increase the regulatory T cell responses against beta cell antigens and turn off the T cell responses that kill beta cells. Their strategy uses antibodies against proteins expressed on certain types of dendritic cells to deliver antigens to those cells in a way that promotes immune tolerance.

Tarbell earned a bachelor’s degree from Cornell University in 1995 and a doctorate in immunology at Stanford University in 2002. She later completed a postdoctoral fellowship with Ralph Steinman, M.D., at Rockefeller University. In 2007, she joined the NIDDK’s Diabetes Branch, led by David Harlan, M.D. ■

President Barack Obama recognized the winners of the 2008 Presidential Early Career Award for Scientists and Engineers at a January 13, 2010, White House ceremony. National Institutes of Health (NIH)-supported winners, their institution, and funding NIH Institute included

- **Thomas P. Cappola, M.D., Sc.M.**, University of Pennsylvania School of Medicine, National Heart, Lung, and Blood Institute
- **Pablo A. Celnik, M.D.**, The Johns Hopkins Hospital, *Eunice Kennedy Shriver* National Institute of Child Health and Human Development (NICHD)
- **Felicia D. Goodrum, Ph.D.**, University of Arizona, National Institute of Allergy and Infectious Diseases (NIAID)
- **Bruce J. Hinds III, Ph.D.**, University of Kentucky, National Institute on Drug Abuse (NIDA)
- **Helen H. Lu, Ph.D.**, Columbia University, National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS)
- **Ulrike Peters, Ph.D., M.P.H.**, Fred Hutchinson Cancer Research Center, National Cancer Institute
- **Jeremy F. Reiter, Ph.D., M.D.**, University of California at San Francisco, NIAMS
- **Marisa Roberto, Ph.D.**, Scripps Research Institute, National Institute on Alcohol Abuse and Alcoholism
- **Erica Ollmann Saphire, Ph.D.**, Scripps Research Institute, NIAID
- **Oscar E. Suman, Ph.D.**, Shriners’ Hospital for Children, University of Texas Medical Branch, NICHD
- **Kristin V. Tarbell, Ph.D.**, National Institute of Diabetes and Digestive and Kidney Diseases’ Intramural Research Program
- **Gonzalo E. Torres, Ph.D.**, University of Pittsburgh, NIDA