

## MD/PhD Student Wins \$60,000 Research Award

**UPSTATE MD/PHD** student Nick Huang has received a prestigious Rheumatology Research Foundation Future Physician Scientist Award.

The award is \$30,000 a year for two years, to be used for expenses related to Nick's research. He's a student in the lab of Andras Perl, MD, PhD, distinguished professor of medicine and division chief of rheumatology. Huang's grant application centered on his primary research project, which investigates the role of a protein, Rab4a, in the development of lupus and other autoimmune diseases.

Lupus, or Systemic Lupus Erythematosus (SLE), is a chronic disease that causes systemic inflammation affecting multiple organs, according to the American College of Rheumatology.

"I've always found immunology to be fascinating," Huang says. As an undergraduate at Stony Brook University, he conducted research on hematopoietic stem cells, which can cross-differentiate into neural stem cells.

"I'm fascinated most with why things are the way they are in human physiology," he says. "I've always played sports and I'm competitive. Why do muscles hurt after training? Why do we get sick? Immunology is involved in everything from birth and through time as we age."

Huang says his project fits into the shift in disease research that focuses more on cellular pathways and immunotherapy.

Starting in the 1990s, drug development targeted specific genes, Huang says, for example, the Philadelphia chromosome, an abnormality often found in types of leukemia. Now, more

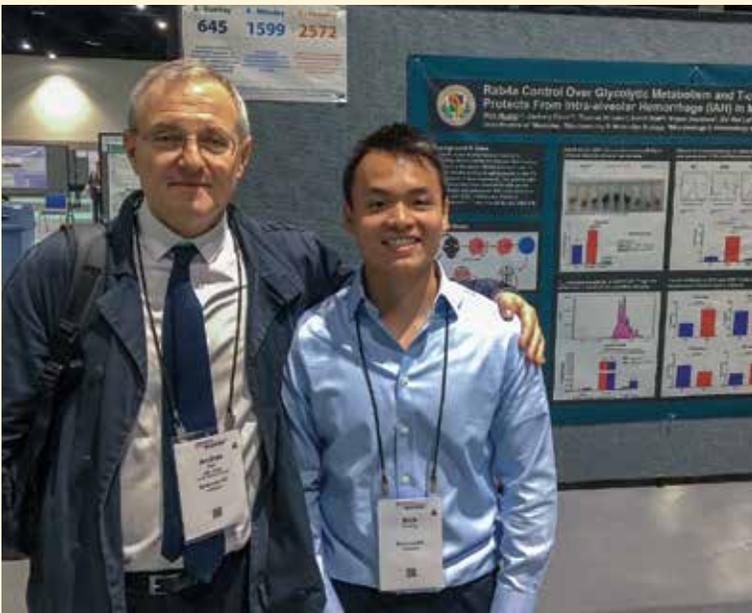
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attention is given to pathways—actions among molecules within a cell that lead to a product or a change in the cell, including turning genes on or off.

"Our lab is one of the few working on Rab4a and autoimmunity," he says. "My project is unique—no one has linked this gene to metabolism and immunological development. If what we propose is true, it provides a mechanism to target treatment of lupus and it gives us a better understanding of why lupus occurs. The etiology of the disease is still unknown."

If the lab can prove that Rab4a contributes to disease-causing inflammation, it could provide new therapeutic avenues of exploration that can develop into clinical trials in the future. "Even if we don't prove it, we still gain insight into changes in the lupus disease model due to changes in Rab4a," Huang says. "Either way, we win."



Dr. Andras Perl with MD/PhD student Nick Huang