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52ND ANNUAL ROCKEFELLER UNIVERSITY
HOLIDAY LECTURES ON SCIENCE
ESTABLISHED BY ALFRED E. MIRSKY

Not Just Another Macrophage

How Ralph Steinman's controversial discovery
of the dendritic cell *slowly* transformed immunology



Lecture by **Marina Caskey**, Assistant Professor of Clinical Investigation, and
Sarah Schlesinger, Associate Professor of Clinical Investigation

Marina Caskey and Sarah Schlesinger, both members of Nobel Prize winner Ralph Steinman's Laboratory of Cellular Physiology and Immunology, are clinicians and immunologists. Dr. Caskey, originally from Brazil, joined Rockefeller upon the completion of her medical residency in 2006. Her research is focused on the development and clinical testing of HIV vaccines and vaccine adjuvants. Dr. Schlesinger, who first came to work with Dr. Steinman as a high school student, has been his collaborator since the early 1990s. She has held positions at the Walter Reed Army Institute of Research and the International AIDS Vaccine Initiative, and joined Rockefeller in 2002. Dr. Schlesinger's research is focused on the clinical manipulation of dendritic cells to elicit immunity to diseases including HIV and cancer.

**TUESDAY,
DECEMBER 27, 2011**
10:30 A.M.–2:30 P.M.

Lunch served
12–1 p.m.

Lecture will be held
in Caspary Auditorium

The Rockefeller University
1230 York Avenue
(at East 66th Street)
New York, NY 10065

Online registration at
www.rockefeller.edu/holidaylecture/2011

“If you think of the immune system as an orchestra, the dendritic cell is its conductor. It tells the other cells when to play and when to stop, when to go faster and when to go slower.” — Ralph Steinman

Some scientific advances are made in a single moment, their importance and brilliance instantly recognizable. Ralph Steinman's discovery of the dendritic cell was not one of these.

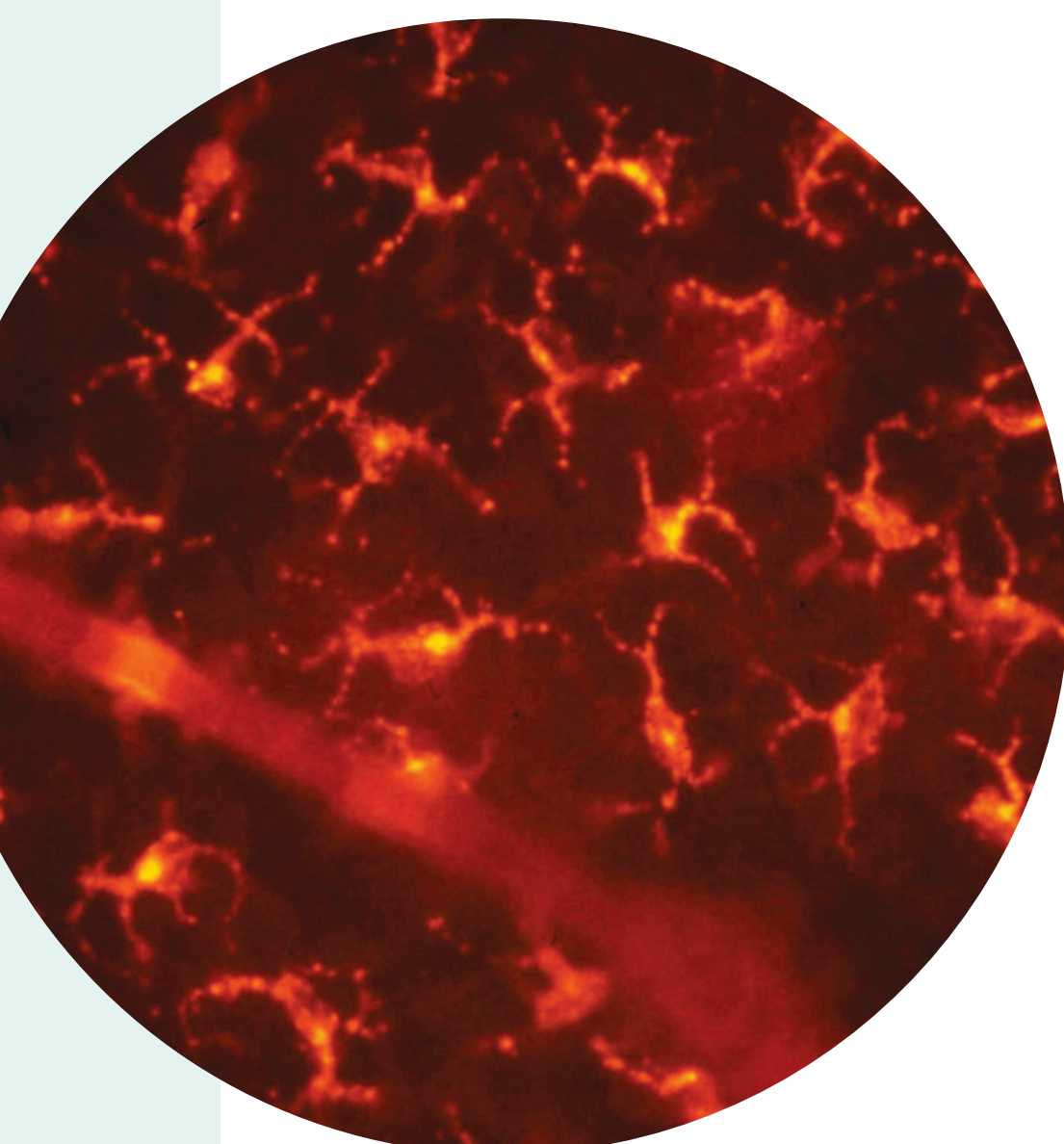
When Dr. Steinman first described and photographed a new kind of immune cell in 1972 the response from the field was deafening silence. Surely, his colleagues thought, a cell this important to the body's immune system would already be known; it must just be a new type of macrophage.

For nearly 15 years, Dr. Steinman and his colleague, Zanvil Cohn, toiled away in relative isolation, working to understand more about the long-armed dendritic cells, which use their characteristic appendages to gather information about invading bacteria and viruses and present it — in the form of antigens — to immune system T cells that launch attacks. Dendritic cells eventually came to be recognized as a critical component of the immune system, without which the body would be able neither to fight infection nor to tolerate its own cells.

Ultimately, with persistence, Dr. Steinman won not only the respect of his field, but also their commendation. This fall, 38 years after his landmark publication, Dr. Steinman was recognized with science's most prestigious prize, the Nobel. Although it came three days too late for Dr. Steinman himself to enjoy — he died September 30 after a four-year battle with pancreatic cancer — the honor is nevertheless a vindication of Dr. Steinman's rigor and tenacity. It's also a reflection of the great promise dendritic cells hold in medicine.

In recent years, Dr. Steinman devoted much of his efforts to pursuing clinical therapies built on dendritic cells. Sarah Schlesinger and Marina Caskey direct clinical trials designed to better understand the role of dendritic cells in the immune systems of healthy human volunteers and the impact of dendritic cell-based vaccines in patients with certain types of disease, including HIV, autoimmune diseases and cancer. In their work, they are picking up where Dr. Steinman left off, translating his fundamental discovery into a new generation of medicine.

Learn more about dendritic cells and see a video of Dr. Steinman at
www.rockefeller.edu/holidaylecture/2011.



*Left: Dendritic cells in skin
Middle: Electron micrograph of a dendritic cell
Right: Ralph Steinman, 2011 Nobel Prize winner*

