



Santosh Verma, a Cosmic Ray Group lab assistant, studies a projected image of a cloud-chamber photograph.

The Sari-Clad Tech

An iconic photo and a professor's quest.

In 2004, the Ray and Maria Stata Center opened on the site of Building 20, a structure that was meant to be temporary but lasted 55 years. At the dedication, Hale Bradt, PhD '61, emeritus professor of physics, was delighted to see a familiar image in the lobby: a black-and-white picture of a colleague from his graduate school days. The caption read, "Cosmic Ray Research lab assistant, 1959"

The photograph of the sari-clad Indian woman had appeared, off and on, in the MIT course catalogue and on various displays at MIT in the 1960s and '70s. Now here it was again. But at no time had the woman been identified explicitly. And in this permanent memorial to Building 20, she remained anonymous. "The technical and administrative staff who make our research possible typically receive much less recognition than is their due," says Bradt, "and this was an example of that."

The woman had joined physicist Bruno Rossi's research group as a lab assistant in 1955, a year before Bradt signed on as a graduate research assistant. Rossi's Cosmic Ray Group studied high-energy particles from outer space that produce fundamental particles as they move through Earth's atmosphere. "In the 1950s, accelerators began generating beams of high-energy particles," says Bradt. As "scanners" in Rossi's lab, both he and the lab assistant were charged with scrutinizing projected images of photographs from the cloud chamber at the Brookhaven National Laboratory accelerator, looking for tracks of fundamental particles. Working in Building 20, they were supervised by more advanced graduate students, Yash Pal, PhD '58, and Elihu Boldt '53, PhD '58.

Scanning was tedious business. "As a grad student, I would breeze into the scanning room for a few hours at a time, whereas she worked all day long," Bradt recalls. "We talked very little, if at all. One had to concentrate on those projected images, carefully perusing all parts of them so as not to miss anything." Members of the Rossi group socialized outside the lab; researchers and students typically attended dinner parties at each other's homes, but not the technical staff. So in 2004, Bradt remembered his scanning partner's face and quiet personality, but not her name.

Two years later, Bradt was preparing a short talk he would give at the celebration of Pal's 80th birthday in New Delhi. "I went around campus taking photos of places Yash would have known," he says. Since Building 20 was gone, he photographed the Stata Center Building 20 exhibit instead. From the MIT Archives, he got copies of the title and abstract pages of Pal's PhD thesis. The archivist, Eva Bacinska, thoughtfully handed him the acknowledgements page as well, because Bradt's name was included for "considerable help" in the "analysis of pictures." Listed as a member of the "scanning and measurement" team was Santosh Verma—Bradt's former scanning partner.

On that trip to India, Bradt made inquiries about Santosh Verma. Pal had attended the same Indian university as her husband. Although Pal did not recall his first name, he remembered that he'd been a graduate student at Harvard. And Pal had invited Santosh to work in Rossi's group when he realized that the young couple could use a second income. But upon returning to India, Pal and the Vermas went their separate ways.

Back in Cambridge after Pal's celebration, Bradt contacted Harvard and found a good candidate for Santosh's husband: Raj K. Verma, a 1960 recipient of a PhD in geological sciences. Bradt found a book the same Verma had written on geodynamics, dedicated to "Santosh." The author was affiliated with the Indian School of Mines, but a call to that school and Internet searches got Bradt no further. So in the fall of 2009, he shared the story of his quest with Chandar Sundaram, the Indian father of one of his freshman advisees, who volunteered to help.

In a matter of weeks, Sundaram had dug up the Vermas' phone number and New Delhi address. Bradt called and found that Santosh, who hadn't worked outside the home after her four-year stint at MIT, had fond recollections of her time in Cambridge, where her daughter was born. Bradt told Santosh about the "ever-present" photograph and mailed her a copy. But the Vermas couldn't make the trip to see the permanent display at Stata as he'd hoped. Their traveling days were behind them, they said.

Santosh, whose first name means "happiness" in Sanskrit, died in September 2012 at 82. But a framed copy of the photograph Bradt sent now hangs at the Verma residence, cherished by her family.

—Vijaysree Venkatraman