

Mildred (Millie) S. Dresselhaus
Pioneer of Nanoscience
 11 November 1930 - 20 February 2017

Birthplace: Brooklyn, N.Y.
 mother of four (and grandmother of five).

Honors (list): too long
 “woman of firsts.”

1968, Millie became the first woman at MIT to attain the rank of full, tenured professor.
 2012, She was the first solo recipient of a Kavli Prize (O “Nobel” de Nano)
 2013, first woman to win the National Medal of Science in Engineering





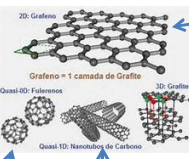
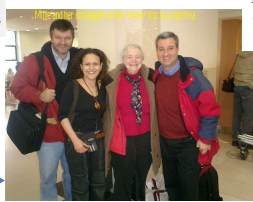


2014, Presidential Medal of Freedom
 (highest civilian honor bestowed by the United States, B. Obama)

Millie achievements:
 “Queen of Carbon”

2010
 “for her pioneering contributions to the study of phonons, electron-phonon interactions, and thermal transport in nanostructures”

1996
 2008

(2003, Bariloche ARG, Photo from digital camera no selfie available at the time)

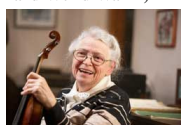
Childhood Life: daughter of impoverished Polish immigrants in the Bronx (Great Depression and World War II)
“My early years were spent in a dangerous, multiracial, low-income neighborhood...”

Education: primary school in the Bronx (kids were mostly uninterested in their studies)
Music: New York City’s prestigious Greenwich House music school.
 Mildred (4 or 5 years ol), began studying music there,
 music brought her into contact with children attending higher quality schools
“It was obvious—education was important,” “That was the most important lifelong thing I learned at the music school.”

High School: Bronx High School of Science, in those days was **for boys only**
 Hunter College High School, a New York City preparatory school for girls
only city-wide public high school of high academic standing available at that time to girls
 (entrance exam) discovered how easily math came to her.
“My interest was inspired by studying—by myself and motivated by myself—math for the entrance exam to Hunter High,”

Undergraduate: Hunter College: advised that the only jobs open to her were schoolteacher, secretary, or nurse
 (“Rosalyn Yalow’s 1977 Nobel Prize in Physiology or Medicine). “Rosalyn insisted that I go to graduate school”

Graduate: 1951 Radcliffe College “classes were at Harvard. But the exams were at Radcliffe. Women didn’t take their exams with the men...”
 1953 University of Chicago, Nobel laureate Enrico Fermi.
 often the only woman in her classes. (in 1953, for instance, there were just 11 physics students)
“He developed in me the mind-set that we should be interested in everything,” she says, “because we never know where the next big breakthrough in science will occur.”
 1955, began Ph.D. (microwave properties of a superconductor in a magnetic field)
 —involving low-temperature and solid-state physics, electrical engineering, and materials science—
 She grew superconducting wire, built microwave equipment, and even produced liquid helium.
 Astonishing Initiative/resources: due to her were terrible primary school teachers.
“They were sufficiently bad that if you wanted to learn something, you taught yourself,” she says. “That was terrific training.”
“When I got my degree in 1958 it was pretty lonely - we [women] were only two percent of the physics community then.”



1958 and moved to Cornell, Ithaca, N.Y. (husband, Gene Dresselhaus.)

Early on, a faculty member told her point blank that
no woman would ever be permitted to lecture to his engineering students.

1960 went to MIT's Lincoln Lab Magnetic and optical properties
of graphite, bismuth, and other so-called [semimetals](#).
field, wasn't popular or very competitive providing
Time she needed to have four children (one daughter and three sons) through 1964.



"When I first came to MIT, the [physics] department was only interested in high-energy physics,"

field that was then consumed with colliding subatomic particles at ever-higher energies.
more quotidian fields of physics, from materials science to engineering physics,
were on the back burner at the time.

1967 crossed MIT in 1967, visiting professorship in electrical engineering, under under the Abby Mauze

Rockefeller Fund, [set up to promote the scholarship of women in science and engineering](#)

1968 position became permanent (**first woman at MIT to attain the rank of full, tenured professor**)

1983 She added a joint appointment in physics

1984, Professor Dresselhaus was appointed president of the American Physical Society.

"I tried to move APS into a more interdisciplinary mode.

***I found it one of the most challenging things to overcome,
the fact that everyone was so strongly focused in their own avenues of physics."***

"I think we are doing better as physicists at talking to each other and with other fields

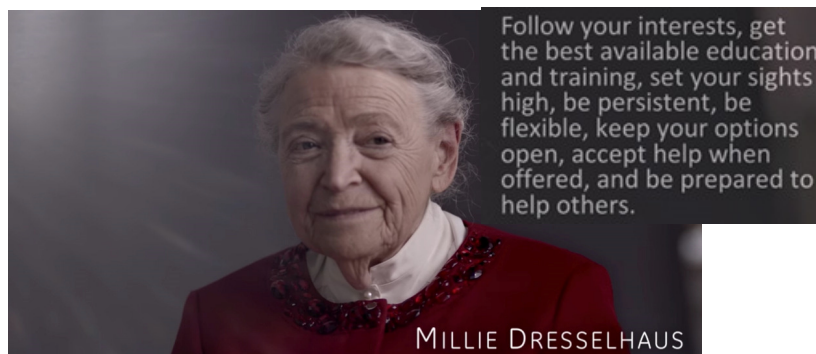
- because physics doesn't exist by itself, and I think we need to be mindful about that.

And I think some of the big discoveries in front us will be in those borderline areas".

for much of the scientific world,

she was a star... a superstar.

**promoting opportunities for women in science and engineering
were a high priority throughout her career.**



MILLIE DRESSELHAUS

At Hunter, (high school)
a poem in senior yearbook
pays tribute to her
math & science abilities:

***"Any equation she can solve
Every problem she can resolve
Mildred equals brains plus fun
In math and science, she's second to none."***