

# Roscoe Owen Brady: Passion for patients

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How do you distill the dignitas and essence of a scientist and a trailblazer and a mentor in just a few paragraphs? And communicate this adequately to peers, former colleagues, and people that have never met him? Especially a scientist with a career longer than most, who discovered more than most, who practiced his craft more deeply than most, and who ultimately impacted more patients than most?

First, you could start with the facts. Roscoe Owen Brady was born in Philadelphia, Pennsylvania, and died on June 13, 2016, in Bethesda, Maryland, at age 92. Roscoe's first job was working in his father's pharmacy. He received his doctoral degree from Harvard Medical School. His family relates that Roscoe's interest in lipid biochemistry stemmed from his experience as a third-year medical student: a young mother died from what was thought to be a myocardial infarction.

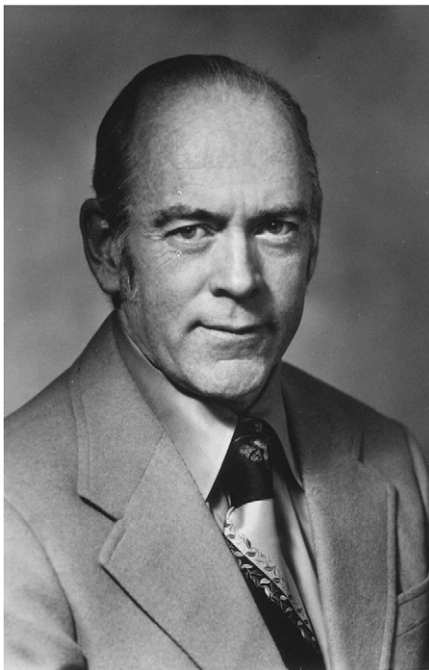
At that time, lipid deposition in atherosclerotic plaques was understood to contribute to the pathology of myocardial infarction, but little was known about how the body synthesized or metabolized lipids. After Harvard, Roscoe did research and clinical fellowships at the University of Pennsylvania. Subsequently, he moved to the NIH in 1954 and spent more than 60 years there, most of that time as the Chief of the Developmental and Metabolic Neurology Branch (DMNB) in the National Institute of Neurological Disorders and Stroke (NINDS). He was elected to the National Academy of Sciences in 1975 and was also a member of the Institute of Medicine.

Next, you could mention the discoveries. Very few individuals have discovered the enzymatic bases for genetic defects

(Gaucher's disease, Fabry disease, Tay-Sachs disease, and Niemann-Pick disease), developed screening and genetic counseling for such disorders, and then formulated and implemented therapies that have positively impacted outcomes for patients. Roscoe Brady did this more than once. His family relates that one day he was traveling back to Maryland on the train from New York City and thinking about some parents and their young children with Gaucher disease. Roscoe then had the insight that maybe glucocerebrosidase could be isolated from human placental tissue and given to such kids. This helped launch an entire industry. Indeed, Genzyme and Shire (and the like) were not always the corporate juggernauts they are today.

Following that, do you mention all of the tributes? The numerous awards from institutions and foundations? In that context Roscoe Brady won the Gairdner Foundation Award, the Lasker Foundation Award, the Jessie Stevenson Kovalenko Medal from the National Academy of Sciences, and the National Medal of Technology and Innovation, among others. He also published around 500 scientific papers. Or is it sufficient to simply communicate the gratitude evidenced on the obituary links from patients that had never met him but who benefitted immensely from the diagnostics and therapies he developed?

But what about the stories? These can convey much more about an individual than plaques on a wall. Roscoe Brady loved a good party and, especially, a good story. His laugh was deep—from the belly—and highly infectious. One of my favorite stories that he told concerned a Friday afternoon from the very early days of the Clinical Center at the NIH. Apparently, Roscoe's experiments were not going well that day and he decided to head over early to the Officer's Club for some liquid therapy. Soon others from the NIH started filing in, a number of the early pioneers of biomedical research. So many came in, in fact, that the bartender turned to the assembled group and asked: Did the NIH give up today? Or what about the stories of Roscoe Brady attending parties with the Kennedys and Lady Bird



Roscoe Owen Brady. Image courtesy of NIH.

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and Lyndon Johnson, back when Washington, DC was a much smaller place?

Or is the measure of such a career in the legacy? A number of distinguished scientists and clinicians have passed through the DMNB at the NIH. Many are much more well-known than this writer. However, my connection to Roscoe Brady was direct, tangible, and still ongoing. Roscoe started me and my team on the pathway toward the development of gene therapy for Fabry disease. I remember asking him one day, as a young research fellow, if he thought that any other lysosomal storage disorder might be amenable to correction by virus-mediated gene transfer. He said: you should look into Fabry disease. We did; it seemed like a compelling target. So Roscoe set me up with a small laboratory and a small budget and we undertook making recombinant gammaretroviruses that engineered expression of alpha-galactosidase A in transduced cells. I think he was just as happy as we were when we first demonstrated enzymatic correction in infected cells in vitro and in tissues from transplanted Fabry mice. We had stayed in contact ever since and Roscoe had been active and very encouraging at all points in the process of us bringing this therapy into the clinic. It is sad that we have just now opened the inaugural gene-therapy trial in the world for Fabry disease and he will not be physically present at the

first infusion of such genetically modified cells into a patient.

More on legacy: age did not define Roscoe Brady. An amazing corollary to the above story is that I only started working with Roscoe when he was already in his 70s. However, Roscoe was still a young man then. Indeed, he rode his bike to work well into his late 80s. Roscoe never took vacations and yet he had traveled the world. He had good friends and good enemies. His table at every banquet for scientific meetings was always the most popular and always the loudest. However, when asked if he might like to leave a scientific session at a meeting early for some refreshment, Roscoe always declined. There was always one more talk he wanted to see. Even into his late 80s, Roscoe would say to me, with that impish glimmer in his eye, that he was working on something interesting and he could not tell me about it yet.

NIH had a "festschrift" for Roscoe Brady in 2007. The Director of NINDS declared that that was not a retirement party because Roscoe would have hated that idea. Indeed, he was still working up until just a few months before his death. We should all aspire to work with such passion, to make such an impact on people's lives, and to be feted at official nonretirement parties in our 80s.