



Where I work Desireé Leach

Photographed for *Nature* by
Nolis Anderson.

My research focuses on receptors in heart-muscle cells that influence heart development and cardiac disease. I study how these receptors, which act like inboxes for the body's chemical messages, are involved. My findings could contribute to the development of treatments for heart disease.

This work is a way for me to give back to my community: cardiovascular disease is the number-one killer of Black people in the United States.

I'm excited about my work on a receptor called PTH1R. The message that it receives is a protein called parathyroid hormone, which helps cells to control their calcium levels. In our laboratory, we have found that embryos in which the heart lacks this receptor have underdeveloped ventricles and die. This is similar to what happens in Blomstrand chondrodysplasia, a condition that is caused by PTH1R mutations.

Here, I'm using a pipettor to transfer kidney cells – along with a red liquid that keeps the cells happy in our incubator – to

a fresh dish for a preliminary experiment.

We're investigating another receptor, S1PPR1, that receives messages from fat molecules. We think that these messages might block changes to the heart in adults with cardiac fibrosis. It's exciting to think that our understanding of how things work on a cellular and molecular level could advance the science to a point at which we can treat a major disease.

Along with a physician, I co-founded Color of Medicine, a non-profit organization in Chicago, Illinois, that aims to help students from under-represented groups get into science and medicine. Our efforts include outreach, mentoring, career panels and a study of the barriers preventing these students from pursuing such careers.

Ultimately, I'd like to work in drug development, to see medicines get to that final level and go out into the world.

Desireé Leach is a molecular biologist at the Feinberg Cardiovascular and Renal Research Institute in Chicago, Illinois. **Interview by Amber Dance.**