



Mercy Afadzi was born in Kweikuma, Ghana where she grew up with her brothers and sisters. Her interests include singing and listening to music as well as reading motivational books.

Mercy attended the University of Cape Coast in Ghana and graduated in 2005 with a bachelor's degree in physics. She received the Dean of Science Award for academic performance in 2001 along with a number of other awards including Best Graduating Student, Unilever Award for Outstanding Performance, and Best Science Graduate in 2005. In 2008 she obtained her master's degree in Medical Technology from the Norwegian University of Science and Technology (NTNU) in Trondheim, Norway, where she is pursuing a PhD in Medical Technology.

Mercy Afadzi

Home Country

Ghana

Degree

PhD in Medical Technology

Expertise

Biophysics and Medical Physics

Research Focus

Combining Ultrasound With Drug Delivery

Host University

Norwegian University of Science and Technology, Norway

Fellowship Awarded

2009

Mercy is working to improve the delivery of cytotoxic drugs to cancer tissues by combining ultrasound with drug delivery. Successful cancer therapy requires that cytotoxic agents reach all cancer cells and deactivate them, but the lack of specificity toward tumor cells is a major obstacle in conventional cancer therapy. During treatment, normal tissue can also be damaged, and this limits the dosage that can be applied to the tumor.

One solution is to deliver large doses in a highly localized manner, but to do that it is necessary to have triggerable release mechanisms such as ultrasound. Ultrasound is of special interest because it is non-invasive, it can be focused on targeted sites, it can penetrate the interior of the body without affecting the interposed tissue, and no ionizing radiation is involved. Mercy is investigating the interaction between ultrasound and encapsulated drugs in solution and tissues, and she is designing ultrasonic beams and transducer arrays for dual frequency detection and destruction of the encapsulated drug.

Mercy intends to return to her native country, Ghana, where she hopes to become a lecturer at the University of Cape Coast and at the University of Ghana.