Mathematical Autobiography

Sibusiso S. Mabuza

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My name is Sibusiso Mabuza, I was born and raised in Manzini the hub of the Kingdom of Swaziland. I completed my high school at St. Paul's Methodist High School where I found natural and mathematical sciences to be the most interesting subjects. It was my utmost interest after high school to further my studies in the natural sciences and particularly mathematics which I enjoyed the most. I entered the University of Swaziland where I undertook basic natural sciences and then majored in chemistry and mathematics. My most favorite undergraduate subjects were physical and organic chemistry, fluid dynamics, numerical analysis, classical dynamics and partial differential equations. I also undertook a final year project about the mathematical modeling of reaction diffusion systems in a porous medium. In June 2007, I graduated with a B.Sc. in chemistry and mathematics.

Following my studies at the University of Swaziland, I felt a strong need to know more about the subjects I had encountered. It was then that I decided to continue with my postgraduate studies at Ohio University where I am currently pursuing an M.Sc. with specialty in applied mathematics. I have taken many interesting courses and these include optimization theory, differential equations, real analysis, numerical analysis and functional analysis. The computational project was also very interesting as I had the opportunity to study material outside the usual classes. My computational project involved studying coupled reaction diffusion equations which are used to model biological pattern formation paying attention to the numerical techniques used to solve these systems. I have also been a teaching assistant teaching algebra and precalculus.

My current goal is to earn a PhD in mathematics, and future interests

include doing research in mathematical physics(geometry and hamiltonian systems) , nonlinear dynamics, calculus of variations, fluid dynamics and computational mechanics particularly focusing on applications to materials science.

I joined the research group with professor Mohlenkamp to learn a lot of new things in this very fascinating area. I hope to gain some computational and research experience. This will also be an opportunity for me to work in a group and hence develop my interpersonal skills in a mathematical environment. I have a mild read-write learning preference. My Vark score is : 5 for Visual; 6 for Aural; 12 for Read/Write and 7 for Kinesthetic.