

FARIDA CHAMCHOD

## **Research Activities**

### **Areas of Expertise**

Mathematical modelling in biology and engineering; optimal control; stochastic modeling; solution methods for PDEs

### **Current Interests and Activities**

My current research activities include modelling in the following areas.

1. Epidemiology that involves infectious diseases in farm animals and antimicrobial-resistant bacteria in hospital environments.
2. Bioengineering with topics related to drug and nanoparticle spread.
3. Civil engineering with topics devoted to investigating structures like buried pipelines or road structures.
4. Numerical methods for solving higher-order partial differential equations and fractional differential equations.

Normally, most of my modeling investigations involve model and mechanism development based on ODEs and PDEs, theoretical findings, numerical simulation techniques, optimal control approach, and stochastic effects. Some explorations in engineering may also involve error investigations and solution methods such as finite elements and collocation methods