

# Curriculum Vitae

Kokum Rekha De Silva

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Faculty of Science  
University of Peradeniya  
Peradeniya  
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## Education

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- 2010 – 2015      PhD in Mathematics, University of Tennessee, Knoxville, USA.
- 2010 – 2013      Concurrent Master's Degree in Mathematics, University of Tennessee, Knoxville, USA.
- 2003 – 2007      Bachelor of Science with Honours in Mathematics, University of Peradeniya, Sri Lanka.

## Research

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### Research Interests: Applied Mathematics

- Mathematical modelling in the interface of Mathematics and Biology
- Infectious Disease Modelling
- Optimal control in ordinary differential equations and partial differential equations.
- Operations Research

### Current Research:

- Optimal control of the advective direction in a competition PDE model
- A mathematical model for Johne's Disease with the disease transmission through the environment.
- Mathematical Modelling of Dengue Epidemic

## Employment

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- 2016 – Present Senior Lecturer (Grade II), Department of Mathematics, University of Peradeniya, Sri Lanka.
- 2009 – 2015 Lecturer (Probationary), Department of Mathematics, University of Peradeniya, Sri Lanka.
- 2011 – 2015 Graduate Teaching Associate, Department of Mathematics, University of Tennessee, Knoxville, USA
- 2010 – 2011 Graduate Teaching Assistant, Department of Mathematics, University of Tennessee, Knoxville, USA
- 2007 – 2009 Temporary Lecturer, Department of Mathematics, University of Peradeniya, Sri Lanka.

## Scholarships & Academic Awards

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- Summer, 2014 Summer Departmental Fellowship, University of Tennessee
- 2007 University Award for Academic Excellence 2006/2007, University of Peradeniya, Sri Lanka

## Publications

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- Kokum R. De Silva, Tuoc V. Phan and Suzanne Lenhart, “Advection Control in Parabolic PDE Systems for Competitive Populations”, *Discrete and Continuous Dynamical Systems – Series B*, **22**(2017), 1049-1072. doi:10.3934/dcdsb.2017052
- Kokum R. De Silva, Shigetoshi Eda and Suzanne Lenhart, “Modeling Environmental Transmission of MAP Infection in Dairy Cows”, *Mathematical Biosciences and Engineering* (2017). doi:10.3934/mbe.2017052
- De Silva, T. H. K. R. and Daundasekara, W. B., “Determining the optimal order quantity using a simulation model”, *Proceedings and Abstracts of the Annual Research Sessions , University of Peradeniya, Sri Lanka*, **12**(2007), 309-311
- De Silva, T. H. K. R. and Daundasekara, W. B., “An Application of Minimum Cost Network Flow problem”, *Proceedings and Abstracts of the Annual Research Sessions , University of Peradeniya, Sri Lanka*, (2008)

## Presentations and Invited Talks

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- K. De Silva, T.Phan, S. Lenhart. *Investigating advection control in parabolic PDE systems for competitive populations*. A contributed talk at 46<sup>th</sup> Annual John H. Barrett Memorial Lectures, Knoxville, TN - May 16 - 18, 2016
- K. De Silva, S. Eda, S. Lenhart. *A model of Johne's disease with the disease transmission through the environment*. A contributed talk at JMM 2016, Seattle, WA – January 2016
- K. De Silva, S. Eda, S. Lenhart. *A model of Johne's disease with the disease transmission through the environment*. A contributed talk at SEARCDE 2015, Greensboro – October 2015
- K. De Silva, S. Eda, S. Lenhart. *A model of Johne's disease with the disease transmission through the environment*. An invited mini symposium talk at the SMB Annual Meeting 2015, Atlanta – June 30 – July 03, 2015
- K. De Silva, T.Phan, S. Lenhart. *Optimal control of the advective direction in a competition model*. A contributed talk at the SEARCDE 2014, Memphis – October, 2014
- K. De Silva, T.Phan, S. Lenhart. *Optimal control of the advective direction in a competition model*. An invited special session talk at the SIAM Conference on the Life Sciences, Charlotte – August, 2014

## Conferences, Workshops and Tutorials attended

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- 46<sup>th</sup> Annual John H. Barrett Memorial Lectures, Knoxville, TN - May 16 - 18, 2016
- JMM 2016, Seattle, WA – January 6 – 9, 2016
- SEARCDE 2015, Greensboro, NC – October 10 – 11, 2015
- Annual meeting of the Society for Mathematical Biology, Atlanta, GA – June30–July 03, 2015
- Workshop on Mathematical Biology and Nonlinear Analysis, University of Miami, FL - December 19-21, 2014
- SEARCDE 2014, Memphis, TN – October11 - 12, 2014
- SIAM Conference on the Life Sciences, Charlotte, NC – August 4 - 7, 2014(Invited participant)
- Parameter Estimation for Dynamic Biological Models Tutorial, NIMBioS, Knoxville, TN – May 19 -21, 2014 (Invited participant)
- Workshop on Spring Opportunities for Women in the Mathematical Sciences, NIMBioS, Knoxville, TN – April 9-11, 2014 (Invited participant)
- Southeastern Spring Sectional Meeting, Knoxville, TN – March 21 – 23, 2014
- SEARCDE 2013, Knoxville, TN – September 21 - 22, 2013, Chaired a session at the Conference
- Workshop on Rapid Evolution and Sustainability Workshop, MBI, Columbus, OH – October 7 – 11, 2013 (Invited participant)
- Annual meeting of the Society for Mathematical Biology, Knoxville, TN– July 25 - 28, 2012

## Teaching Experience

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### Undergraduate Level Teaching:

- At University of Peradeniya, Sri Lanka -  
Mathematical Modelling, Partial Differential Equations, Measure Theory, Operations Research 1, Linear Programming, Advanced Linear Programming, Integer Programming, Foundation Course in Mathematics.
- At University of Tennessee, Knoxville -  
Finite Mathematics, Basic Calculus and Statistical Reasoning

### Graduate Level Teaching:

- At Postgraduate Institute of Science ,University of Peradeniya, Sri Lanka -  
Special Topics in Industrial Mathematics

## References

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Dr. Suzanne Lenhart, Department of Mathematics, University of Tennessee, Knoxville, TN, USA. lenhart@math.utk.edu

Dr. W. B. Daundasekera, Department of Mathematics, University of Peradeniya, Sri Lanka. wbd@pdn.ac.lk