Carl Stefan Engblom

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Person Born August 7, 1976 in Stockholm, Sweden, but grew up in Linköping. Married to Märta Cullhed Engblom, five children.

Position Associate professor with 75% teaching and 25% research at the Department of Information Technology, Uppsala University, Uppsala.

Appointed to Docent in *Scientific Computing with a specialization in Numerical Analysis* at the Faculty of Science and Technology, Uppsala University (April 18th, 2013).

Appointed to Excellent Teacher at the Faculty of Science and Technology, Uppsala University (December 15th, 2017).

Honours I am a member of the Young Academy of Sweden. The Young Academy of Sweden consists of about 35 members. The length of office is 5 years and the criteria for election are scientific excellence and a proven interest in the matters handled by the Academy. All scientific disciplines are welcome into the Academy.

Supervision - Current PhD-students:

- Main supervisor of Robin Eriksson (2017–), *Computational Modeling, Parameterization, and Evaluation of the spread of Diseases.*
- Main supervisor of Jing Liu (2012–), *Parallel algorithms in imaging of biomolecules with X-ray lasers.* Half-time seminar: *Flash X-ray single particle imaging in 3D: computational scalability and resolution assessment* (2017).
- Secondary supervisor of Markus de Rujiter (2019–) and of Adrien Coulier (2015–).

- Previous PhD-students:

- Main supervisor of Pavol Bauer (2012–2017), PhD thesis *Parallelism in Event-Based Computations with Applications in Biology* (2017). Licentiate thesis: *Parallelism and Efficiency in Discrete-Event Simulation* (2015).
- Secondary supervisor of Stefan Widgren (2011–2016), PhD thesis *Studies on verotoxigenic Escherichia coli O157 in Swedish cattle: from sampling to disease spread modelling* (2016).

- Secondary supervisor of Lina Meinecke (2011–2016), PhD thesis *Stochastic simulation of multiscale reaction-diffusion models via first exit times* (2016).
- Secondary supervisor of Marcus Holm, Licentiate thesis *Scientific computing on hybrid architectures* (2013).

- Postdocs: Stefan Widgren (2017–2018), Jonathan Bull (2016–2017), Doghonay Arjmand (2016–2017), Emilie Blanc (2014–2015).

- MSc/BSc-theses:
  - MSc-thesis *Bayesian Parametrisation of In Silico Tumour Models* by Jonas Radvilas Umaras (2018, Computational Science).
  - MSc-thesis *Computational modeling of avascular tumours using a hybrid on-lattice framework for cell-population dynamics* by Lina Viklund (2018, Engineering Physics).
  - BSc-thesis *Mathematical modeling of interactions between colonic crypts* by Martin Edin and Nils Erlanson (2017, Engineering Physics).
  - MSc-thesis *Multiscale Stochastic Neuron Modeling: with applications in deep brain stimulation* by Aleksandar Senek (2017, Engineering Physics).
  - MSc-thesis *Bayesian Parameterization in the spread of Diseases* by Robin Eriksson (2017, Engineering Physics).
  - MSc-thesis (eq.) *Pathwise error bounds in Multiscale variable splitting methods for spatial stochastic kinetics* by Augustin Chevallier (2016, Applied Mathematics).

TEACHING

- As the teacher responsible at the Department of Information technology, Uppsala University:
  - Scientific computing II (every year 2015–2019). Engineering students at the basic level.
  - PhD-course: Numerical Functional Analysis (2014, 2019), developed this course
  - Advanced Numerical Methods (2016, 2017), co-developed this course
  - Co-developer of the course Applied Finite Element Methods (2016)
  - PhD-course: Numerical methods in stochastic modeling and simulations (2016), developed this course

TALKS

Bridging the single cell with the cell population: opening up for data-driven methodologies at the ENUMATH conference, Egmond aan Zee, The Netherlands (2019).

Bayesian epidemiologial modeling: with little and without data, at the conference *Multiscale Modelling of Materials and Molecules* in Uppsala, Sweden (2019).

From the bottom and up: bridging the single cell with the cell population, invited talk at the workshop *Multidisciplinary and multiscale approaches to bridge the gap between molecular and cellular level* at the Centro di Ricerca Mathematica (CRM) Ennio De Giorgio in Pisa, Italy (2018).

Bridging the scales between the single cell and the cell population - computational considerations, keynote talk at the workshop *Uncertainty Quantification for Stochastic Systems and Application* at UCLA, CA, USA (2017).

A case study of Data-driven computational modeling in Epidemics: bringing the dirt to the classroom, in Lund, Sweden (2017).

Data-driven Epidemiological Simulations: Verotoxigenic E. coli O157 invited talk given at the workshop *Mathematical Biology for Understanding Emerging Infectious Diseases at the Human-Animal-Environment Interface: a "One Health" Approach*, in Banff, Alberta, Canada (2016). Related talks were given at the workshop *Scientific computing in Sweden* and at the *Bayesian Meeting*, both in Uppsala (2016).

Stability and strong convergence in multiscale methods for spatial stochastic kinetics at the workshop *Spatially Distributed Stochastic Dynamical Systems in Biology*, Cambridge, UK (2016).

Pathwise analysis for split-step methods and multiscale variable splitting in spatial stochastic kinetics at SciCADE 2015 in Potsdam, Germany (2015). A talk with the same title was given in the *Numerical Analysis* series at KTH, Stockholm, Sweden (2015).

Towards consistent and effective modeling in the stochastic reaction-diffusion framework invited talk in the Mathematical Biology and Ecology Seminar series at Oxford University, UK (2015).

Pointless exams at advanced level courses at the internal pedagogical conference of the Faculty of Science and Technology, Uppsala, Sweden (2015).

AFFILIATION Member of *SIAM*.