

Carl Stefan Engblom

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 Sweden

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

POSITION Assistant professor with 25% teaching and 75% research within the Lin-
 naeus center of excellence [UPMARC](#) at the Department of Information
 Technology, Uppsala University, Uppsala.

EDUCATION **Sep 2002–Dec 2008** Doctor of Philosophy in *Scientific Computing and*
 Numerical Analysis at the Division of Scientific Computing, [Department](#)
 [of Information Technology](#) at [Uppsala University](#), Uppsala, Sweden.

- Thesis: *Numerical Solution Methods in Stochastic Chemical Kinetics* presented the 28th of November 2008. Opponent: [Wilhelm Huisinga](#), Hamilton Institute, Ireland.
- Advisor: [Per Lötstedt](#), Uppsala University, 2nd advisor [Jan Hesthaven](#), Brown University.
- Keywords: stochastic models, chemical master equation, mesoscopic kinetics, Markov property, jump process, moment closure problem, spectral-Galerkin method, high dimensional problem, hybrid methods, time-parallel, homogenization.

Sep 2002–Sep 2006 Licentiate degree in *Scientific Computing*.

- Thesis: *Numerical Methods for the Chemical Master Equation* presented the 27th of September 2006. External reviewer: [Anders Szepessy](#), KTH.

Aug 1997–Feb 2002 Master of Science in *Engineering Physics with Scientific Computing* at [Uppsala University](#), Uppsala, Sweden.

- Thesis: *Multigrid preconditioners with applications to incompressible Navier-Stokes equations* presented the 1st of February 2002.
- Advisors: Daniel Bertilsson at [COMSOL AB](#) and [Michael Hanke](#) at KTH.

Jan 1997–Jun 1997 One semester of studies in *Theoretical philosophy* at the [University of Linköping](#), Linköping, Sweden.

Aug 1995–Nov 1996 Military service (Coastal ranger, Amphibious Battalion) at the [Vaxholm Coastal Artillery Regiment KA1](#).

–Jun 1995 High-school diploma at Folkungaskolan, Linköping.

EMPLOYMENTS **Oct 2010–Present** Assistant professor at the Department of Information Technology, Uppsala University, Uppsala.

Sep 2009–Dec 2010 Postdoc in the Micro- and complex fluids project at the [Linné FLOW centre](#) with advisors [Anna-Karin Tornberg](#) and [Gustav Amberg](#). Project title “*Hybridization of sharp and diffuse interface methods for micro-fluidic simulations*”.

Jan 2009–Sep 2009 Postdoc in the Numerical Analysis group with [Anna-Karin Tornberg](#) as the main advisor. Project title “*Simulation of fibers suspended in Stokes flow*”.

Sep 2002–Dec 2008 PhD student with 20% teaching at the Department of Information Technology, Uppsala University, Uppsala.

Jun 2003–Aug 2003 Developer within the FEMLAB project at COMSOL, Stockholm.

Feb 2002–Aug 2002 Developer at COMSOL, MSc thesis work followed by a permanent position as a developer.

Jun 2000–Aug 2000 and **Jun 1999–Aug 1999** Summer-work as a developer at COMSOL.

Jun 1998–Aug 1998 Summer-work at Ericsson in Kista, Stockholm.

TEACHING - As the teacher responsible at the Department of Information technology, Uppsala University:

- Classic Articles in Numerical Analysis (2012),
- Advanced Course on Topics in Scientific Computing (continuously),
- Finite element methods (2010).

- As an assisting teacher at the Department of Information technology, Uppsala University:

- Scientific computing II (2008, 2005 and 2004),
- Scientific computing I (2003),
- Numerical analysis I (2002).

SUPERVISION - PhD student Pavol Bauer (2012–). “*Parallelism in event-based models for stochastic chemical kinetics*”.

- Postdoc Sara Zahedi (2011–). “*Modeling and Simulation of multiphase flows*”.

- Secondary supervisor of PhD student Lina Meinecke (2011–) and Marcus Holm (2011–).

- BSc-thesis “*Parallelization, performance, and usability in simulation of infection spreading*” by Magnus Söderling and Fredrik Pasanen (2012).

- BSc-thesis “*GPU-Parallel simulation of rigid fibers in Stokes flow*” by Ronny Eriksson (*spring 2012, to be completed*).

- Software project [URDME](#): “*Unstructured reaction-diffusion master equation*” by Josef Cullhed (2008).
- MSc-thesis work “*Deterministic and stochastic methods for solving the master equation*”, UPTEC Report F 05 017, School of Engineering, Uppsala University, by Magnus Ingelson (2005).
- High-school thesis work “*Godtycklig precision med C++*” by Josef Cullhed (2006).

EXPERIENCE

ABROAD

- Visiting scholar at the [Division of Applied Mathematics](#), Brown University during 7 months (2006/2007).
- ERASMUS-student at [ENS Lyon](#), Lyon, France (2000/2001).

TALKS

“*Simulation of surfactant in diffuse interface flow*” at the workshop ‘Flashes on research in scientific computing’, Uppsala, Sweden (2010).

“*Mesoscopic Stochastic Modeling of Reaction-Diffusion Processes*” in the KCSE Seminar series at the KTH Computational Science and Engineering Centre in Stockholm, Sweden (2010).

“*Simulation of stochastic reaction-diffusion processes on unstructured meshes*” at the First Swedish meeting on Theory and Mathematics in Biology and Medicine held at the Centre for Interdisciplinary Mathematics in Uppsala, Sweden (2009).

“*Simulation of stochastic reaction-diffusion processes on unstructured meshes*”, invited talk given at the Fraunhofer-Chalmers Centre in Gothenburg, Sweden (2008).

“*Parallel Solution of Multiscale Stochastic Chemical Kinetics*”, at the Dahlquist Fellowship Workshop at KTH, Stockholm, Sweden (2008).

“*Time-parallel Simulation of Stochastic Chemical Kinetics*” at the ICNAAM conference at Kos, Greece (2008).

“*Numerical solution methods for the master equation*”, at the IHP-EU Network Workshop/Winter school 2005: *Breaking complexity* in Bad Honnef, Germany (2005).

AFFILIATION

Member of [SIAM](#).