Curriculum vitae for Henrik Eriksson

Personal data

- **Born** 1942-01-19, Stockholm, Sweden.

- **Status** Swedish citizen. Married to Gerd Eriksson. Three children.

Education

- 1963 MSc in Engineering Physics (Civilingenjör F), KTH. *"The algebra of Venn diagrams"*

- 1967 Tekn.lic in Mathematics and Numerical analysis at KTH, Stockholm. *"Fractional categories and Grothendieck topologies"* (This obsolete degree is often put on a par with the PhD of today.)

- 1963-83 Single-subject courses at Stockholm University: Mathematics 80p, Japanese 50p and others. (40p is a full-time year).

- 1994 PhD in Mathematics at KTH.*"Combinatorial and computational aspects of Coxeter groups"* Advisor: Anders Björner.

- 2001 Docent in Mathematics at Umeå university.

- 2001 Docent in Computer Science at KTH.

Employment etc

- 1960–1968 Department of Mathematics, KTH (assistant and deputy lecturer).

- 1968–1976 TRU, educational television (scriptwriting, screen appearance)

- 1976–1978 UR, educational TV/radio (scriptwriter and speaker)

- 1978–1984 QZ computer centre (numerical analyst, halftime)

- 1982–1984 KTH, Teaching and learning centre (teacher)

- 1984–1995 KTH, Nada (tenured lecturer)

- 1995–   KTH, Nada (associate professor)

Awards and grants

- 1995 Teacher of the year, elected by the 1200 electrical engineering students

- 1998 Teacher of the year, elected by the 1200 mechanical engineering students

- 1999 KTH teacher of the year, elected by the students' union.

- 2000 Best science teacher in Sweden (100 kSEK awarded by the ÅF foundation)

- 2001 Teacher of the year, elected by the 500 industrial economics students

- 2005 Teacher of the year, elected by the 700 computer science students

- 2008 Teacher of the year, elected by the 400 electrical engineering students

Opponent commissions

- 1995 Principal opponent for Josefin Bodell's licentiate thesis, *Aspects of the search time in binary search trees modified according to the move-to-root heuristic*, TRITA/MAT-94/0048, KTH.

- 1999 Secondary opponent for Inga-Britt Werner's PhD thesis, *Spelar kvalitet någon roll för priset?*, KTH.

- 2001 Principal opponent for Per Håkan Lundow's PhD thesis, *Let me count the ways – On some enumeration problems in combinatorics, computational chemistry and statistical physics.*, Umeå University.

- 2002 Principal opponent for Paul Stankovski's master's thesis, *In search of a constructive proof of the four-color theorem*, Lund 2002.

- 2003 Principal opponent for Klas Markström's PhD thesis, *There and back again – On cycles in graphs and physics.*, Umeå University.

- 2004 Principal opponent for Agneta Avasjö's licentiate thesis, *Automata and growth functions of Coxeter groups*, KTH.

- 2007 Principal opponent for Daniel Andrén's PhD thesis, *On the Ising problem and some matrix operations*, Umeå University.

Grading committee appointments

- 1995–Ph.D. grading committees, five occasions.

- 1995–Docent grading committees, three occasions.

- 2001–Prize jury for Young researchers (Unga forskare), nine occasions.

Review activities

- 1985– Referee work for journals and conferences, more than 30 reports.

- 2004 External reviewer for the Swedish Research Council.

Supervision

Supervision of Ph.D. students

- Anna Redz had me as deputy advisor for six months in 1999 and wrote *Gene rearrangement with repetitions*, TRITA-NA-0007, under my supervision. She graduated as tekn.lic. in 2003 with Johan Håstad as advisor.

- Tomas Ohlson, started his PhD studies in 2001 at the department of Structural Chemistry with Sven Hovmöller as principal advisor and me as secondary advisor. (He graduated in 2006 with Arne Elofsson as advisor.)

Supervision of Master thesis students

I have supervised 240 Master thesis students who have completed their theses.

Supervision of Bachelor thesis students

I have supervised 30 Bachelor thesis students who have completed their theses.

Supervision of summer school thesis students

I have supervised students in Research academy for young scientists for three weeks every summer since 2012.

Supervision of programming projects

About 400 big projects (groups of 4 to 6 persons) in the courses High-level programming (for third year E students) and Computer science (for second year E students).

Selected scientific presentations

- 1964 *Event-controlled or time-controlled simulation*, Nordic Computer Symposium, Stockholm.

- 1967 *Universal problems for properties of morphisms*, Nordic conference for homological algebra, Copenhagen.

- 1984 *The impact of computers on teaching*, Workshop in Mathematics education, Stockholm.

- 1991 *The unexpected integers*, Annual meeting of the Swedish Mathematicians Society, Linköping.

- 1993 *Rat races and the hook length formula*, 5th conference on Formal Power Series and Algebraic Combinatorics, Firenze.

- 1993 *Combinatorics of the affine groups*, Nordic combinatorics meeting, Halvorsböle.

- 1994 *Chip-firing and Coxeter elements*, 6th conference on Formal Power Series and Algebraic Combinatorics, New Jersey.

- 1995 *Coxeter groups and games*, Algebra seminar, Lund University.

- 1995 *Mirrors and Coxeter groups*, European network in combinatorics, Alsace.

- 1995 *Affine Coxeter groups as infinite permutations*, 7th conference on Formal Power Series and Algebraic Combinatorics, Paris.

- 1996 *Iterated posets and commutation classes*, Nordic combinatorics meeting, Umeå.

- 1996 *Pegs, pebbles and pennies*, 8th international conference on mathematical education, Sevilla.

- 1998 *Sorting a bridge hand*, invited speaker at the MIT combinatorics seminar, Cambridge.

- 1998 *Of mice and men*, Michigan graph theory conference MIGHTY'29, East Lansing.

- 1998 *Gene rearrangement by transpositions*, Nordic bioinformatics workshop, Copenhagen.

- 1999 *Biocombinatorics*, Nordic combinatorics meeting, Turku.

- 2000 *Expected number of inversions after a sequence of random adjacent transpositions*, 12th conference on Formal Power Series and Algebraic Combinatorics, Moscow.

- 2001 *Light the lamps*, Swedish combinatorics meeting, Linköping.

- 2001 *Exact expectations for random graphs and assignments*, 13th conference on Formal Power Series and Algebraic Combinatorics, Arizona.

- 2002 *Dense packing of patterns in a permutation*, 14th conference on Formal Power Series and Algebraic Combinatorics, Melbourne.

- 2002 *Two forgotten matrix theorems*, invited seminar talk, Mälardalens Högskola, Västerås.

- 2005 *Stochastic geometric constants*, Combinatorics seminar series, KTH, Stockholm.

- 2005 *Pebbling*, 24th Nordic and 1st Franco-Nordic Congress of Mathematicians, Reykjavik.

- 2006 *Bulgarian solitaire and dynamic systems*, Computer science seminar series, KTH, Stockholm..

- 2005 *Integrals, partitions and MacMahon's theorem*, Combinatorics seminar series, KTH, Stockholm.

Selected popular science presentations

- 1983–2005 *Bulgarisk patiens etc*, Matematiska sällskapet i Lund, several occasions.

- 1982– *Kryptografi, artificiell intelligens etc*, lectures for high school pupils, several occasions, Stockholm.

- 1990 *Gud och den nya fysiken*, Human-etiska föreningen, (Swedish humanists), Stockholm.

- 1999 *Sannolikt, sannolikt säger jag eder...*, Vetenskap och folkbildning, (Swedish skeptics), Stockholm.

- 2001 *Darwin som bridgespelare*, public docent lecture, KTH, Stockholm.

- 2006 *Att ta in genus i vanliga kurser*, Genusforum, MDH, Västerås.

Scientific publications

References

Refereed journal articles

[1] H. Eriksson. The impact of computers on the teaching of university mathematics. *Int. J. Math. Educ. Sci. Technol. 16*, 247–251, 1985.

[2] H. Eriksson and G. Rehbinder. Thermal dynamics of a block-filled underground hot water store. *Applied Sci. Research*, 193–211, 1986.

[3] H. Eriksson and B. Lindström. Twin checker jumping. *Europ. J. Combinatorics 16*, 153–157, 1995.

[4] H. Eriksson. Pebblings. *Electr. J. Combinatorics 2*, 15p, 1995.

[5] H. Eriksson and K. Eriksson. Affine Weyl groups as infinite permutations. *Electr. J. Combinatorics 2*, 20p, 1998.

[6] H. Eriksson, G. Eriksson and K. Eriksson. Moving a food trolley around a corner. *Theoretical Computer Science 191*, 193–203, 1998.

[7] N. Eriksen, H. Eriksson and K. Eriksson. Diagonal checker-jumping and Eulerian numbers for color-signed permutations. *Electr. J. Combinatorics*, 14p, 2000.

[8] H. Eriksson, K. Eriksson, J. Karlander, L. Svensson and J. Wästlund. Sorting a bridge hand. *Discrete Mathematics 241*, 289–300, 2001.

[9] H. Eriksson and Mats Löfdahl. An algorithm for resolving 2π ambiguities in interferometric measurements by use of multiple wavelengths. *Optical engineering* **40**(6), 984–990, 2001.

[10] H. Eriksson, K. Eriksson and J. Sjöstrand. A note on the Lamp Lighting Problem. *Advances in Applied Mathematics 27*, 357–366, 2001.

[11] H. Eriksson, K. Eriksson and J. Sjöstrand. Exact expectations for random graphs and assignments. *Combinatorics, Probability and Computing 12*, 401–412, 2003.

[12] T. Chow, H. Eriksson and K. Fan. Chess Tableaux *Electr. J. Combinatorics 11(2)*, 14p, 2005.

[13] G. Andrews, H. Eriksson, F. Petrov and D. Romik. Integrals, Partitions and MacMahon's Theorem *Journal of Combinatorial Theory. Series A 114 (3)*, 545-554, 2007.

[14] H. Eriksson, K. Eriksson, S. Linusson and J. Wästlund. Dense Packing of Patterns in a Permutation. *Annals of Combinatorics 11*, 459-470, 2007.

[15] H. Eriksson and K. Eriksson. Conjugacy of Coxeter elements. *Electr. J. Combinatorics 16(2)*, 9p, 2009.

[16] H. Eriksson and K. Eriksson. Words with intervening neighbours in infinite Coxeter groups are reduced. *Electr. J. Combinatorics 17(2)*, 7p, 2010.

Refereed conference papers

[17] H. Eriksson. Event-controlled and time-controlled simulation. *NORDSAM-konferensen 1964*, 288–298. Inget förlag.

[18] H. Eriksson. Rat races and the hook length formula. *Proceedings of the 5th conference on Formal Power Series and Algebraic Combinatorics*, 179–185, Firenze, 1993.

[19] H. Eriksson and K. Eriksson. Chip-firing and Coxeter elements. In *Proceedings of the 6th conference on Formal Power Series and Algebraic Combinatorics*, 145–151, DIMACS, 1994.

[20] H. Eriksson and K. Eriksson. Affine Coxeter groups as infinite permutations. *Proceedings of the 7th conference on Formal Power Series and Algebraic Combinatorics*, 145–156, Paris, 1995.

[21] H. Eriksson, K. Eriksson and J. Sjöstrand. Expected number of inversions after a sequence of random adjacent transpositions. *Proceedings of the 12th conference on Formal Power Series and Algebraic Combinatorics*, 677–685, Moscow, 2000. Springer Mathematics.

[22] H. Eriksson, K. Eriksson, S. Linusson and J. Wästlund. Dense packing of patterns in a permutation. *14th conference on Formal Power Series and Algebraic Combinatorics*, Melbourne, 2002.

Theses

[23] H. Eriksson. *Fractional Categories and Grothendieck Topologies* Tekn.lic.thesis, KTH, Stockholm, 1967.

[24] H. Eriksson. *Computational and combinatorial aspects of Coxeter groups* PhD thesis, KTH, Stockholm, 1994.

Other publications

- Twenty textbooks in analysis, linear algebra, computer science and programming.

- More than a hundred video lectures in analysis, linear algebra and computer science.

- Twenty broadcast radio- and TV-programs about mathematical subjects for adult education.

- Fifty popular science articles in Nya Cykeltidningen.