

C. V. Kristina Edström, born 1963.

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- Associate Professor (Universitetslektor) in Engineering Education Development, since November 2012: *"The subject contains research-informed development of engineering education, through a cross-disciplinary perspective which includes higher education pedagogy. The subject focuses on quality and competence development within higher education, starting from conditions for student learning and for faculty teaching in engineering education."*
- Registered as PhD student in Engineering Education Research since September 2012, Main supervisor Professor Anette Kolmos, Aalborg University, Other supervisors Dr Lars Geschwind, KTH and Dr Åsa Lindberg-Sand, Lund University.
- Educational and staff developer at KTH Learning Lab, Development and implementation of CDIO, 2001 – ongoing.
- Vice Dean of Education at KTH Scientific Information and Learning, 2005–2008.
- Research Engineer at KTH Department of Teleinformatics, in SSVL (a KTH and Stanford University collaboration) 1997–2001.
- May 2012-September 2013 on 75% leave from KTH.

Skolkovo Institute of Science and Technology

- Director of Educational Development, May 2012-September 2013.

Degree

Master of Science in Engineering, Chalmers, Gothenburg, Sweden, 1990. The specialization was a combination of computer engineering (hardware-oriented) and industrial engineering (business-oriented).

Background as a student representative

- Board member of the Chalmers Student Union 1986/87 (employed full time for 1 year).
- Editor of "Tofsen", the Student Union magazine.

Journal papers

- Edström, K. and Kolmos, A. (accepted 2013). PBL and CDIO: Complementary models for engineering education development. *European Journal of Engineering Education*.
- Azasu, S., Hungria-Gunnelin, R. & Edström, K. (2010) The role of assessment in managing student diversity. *Journal of European Real Estate Research*, 3:1, 59-70.

- Edström, K. (2008) Doing course evaluation as if learning matters most, *Higher Education Research & Development*, 27:2, 95 – 106.
- Malmqvist, J., Östlund, S., Edström, K., "Using integrated program descriptions to support a CDIO programme design process", *World Transactions on Engineering and Technology Education* 5(2), 259-262, 2006.
- Malmqvist, J., Edström, K., Gunnarsson, S., Östlund, S., "Use of CDIO Standards in Swedish National Evaluation of Engineering Education Programs", *World Transactions on Engineering and Technology Education* 5(2), 361-364, 2006.

Books, chapters

- Crawley, E.F., Malmqvist, J., Östlund, S., Brodeur, D.R., and Edström, K. (2014) *Rethinking Engineering Education: The CDIO Approach*, 2nd ed., Springer Verlag.
- In Mertova, P., Nair, S. and Patil, A. (2012) *Enhancing Learning and Teaching through Student Feedback in Engineering*, Woodhead Publishing, Cambridge, UK. Author of chapter 1 "Student feedback in engineering: Overview and background".
- In Crawley, E.F., Malmqvist, J., Östlund, S., and Brodeur, D.R. (2007) *Rethinking Engineering Education: The CDIO Approach*, Springer Verlag. Lead author of chapter 6 "Teaching and Learning", co-author of chapter 4 "Integrated Curriculum Design".
- In Hazemi et al. (2001) *The Digital University*, Springer Verlag. Author of chapter 13 "Design for Motivation".

Reports (selection)

- Rosén, A., Edström, K., Borglund, D., Kutteneuler, J., Hallström, S. och Garne, K. (2010) Learning outcomes for engineering programs in the new educational structure at KTH. (Swedish title: Program mål inom den nya utbildningsstrukturen på KTH.)
- Bolander Laksov, K. and Edström, K., Required education on teaching and learning for higher education teachers: the background, Swednets rapportserie nr 1. (Swedish title: *Behörighetsgivande högskolepedagogisk utbildning: samtal med några nyckelpersoner om bakgrunden*)
- Edström, K., Investigation into the assessment of required teaching merits in an appointment committee, 9 maj 2008. (Swedish title: *Granskning av en tjänsteförslagsnämnds prövning av behörighetskravet för lektor avseende högskolepedagogisk utbildning: ett stickprov*)

Teaching (selection)

- Examiner and full course responsibility for *LH201V Teaching and Learning in Higher Education* (Swedish: *Lärande och undervisning*) (7.5 ECTS credits), customized for KTH faculty, from 2004. Over 650 participants have passed the course 2004-2012. Ongoing engagement as guest teacher from 2012, about 25% of the course.

- Examiner for *LH207V Research Supervision (Swedish: Forskarhandledning)*, 3 ECTS credits. Joint development and course responsibility with Professor Lars Kloo 2007 – 2009. In total 98 KTH faculty had passed the course by April 2009 when the course was handed over to another colleague.
- Invited to teach workshops in numerous Swedish institutions and in Denmark, Finland, Iceland, Estonia, Lithuania, Germany, Croatia, Russia, Singapore, Vietnam, Thailand, Australia, South Africa.

Commissions (selection)

- Invited as a Panel member in the 2013 review for Innopolis, Kazan, Russia, of curricula developed by iCarnegie of Carnegie Mellon University.
- Invited as a Panel member in the 2011 Teaching Evaluation Exercise, Aalto University. Panel for the School of Electrical Engineering.
- Edström, K. (2010). Commissioned evaluation of the staff and educational development center at Malmö university college. (Swedish title: Utvärdering av Akademiskt lärarskap – högskolepedagogisk verksamhet vid Malmö högskola.)
- Elected member of the SEFI Administrative Council, 2010 – 2013.
- Engaged as expert (19 days) by the National Agency for Higher Education (HSV) in the implementation of a new evaluation system for Swedish higher education, 2009 – 2010.
- Board member of Swednet, Swedish Network for Educational Development in Higher Education, from March 2009 – 2011.
- Instigator, program chair and organiser of the 1st National Engineering Education development conference (Ingenjörsutbildningarnas utvecklingskonferens) at KTH, 26-27 November 2008. See www.kth.se/ingenjorsutbildningarna. This conference was organised again in 2009 by Lund University, and in 2011 by Linköping University. Engaged as keynote speaker in 2013 when the conference is organised by Umeå University.
- Member of the international CDIO Initiative Council, 2005 – 2013, Co-leader of the CDIO European Region, 2005 – 2013.

Prizes

- Honorary lifetime member of the KTH Student Union, from May 2009. The two most recent honorary members are Professor Janne Carlsson (1999) and Professor Gunnar Brodin (1988), both former KTH Rectors.
- The 2004 KTH prize for outstanding contributions to education, SEK 30.000. *”For her engagement and innovative work in faculty development and program development. Kristina is one of the engaged staff developers and a driving force and source of inspiration in the CDIO project which has clearly contributed to a systematic view on development of engineering education at KTH.”*

Conference contributions (selection)

- Edström, K., Froumin, I., Stanko, T. and Crawley, E.F. (2013). Engaging stakeholders in defining education for innovation in Russia: consensus and tensions. *The EAIR 35th Annual Forum 2013*, Rotterdam, the Netherlands, August 28 – 31, 2013.
- Crawley, E. F., Edström, K and Stanko, T (2013). Educating Engineers for Research-based Innovation – Creating the learning outcomes framework, *Proceedings of the 9th International CDIO Conference*, Massachusetts Institute of Technology and Harvard University School of Engineering and Applied Sciences, Cambridge, Massachusetts, June 9 – 13, 2013.
- Edström, K. (2012). “*Organizational gravity: strategies for sustainable educational development*”, III International Conference of the Russian Association of Higher Education Researchers, Moscow, Russia, October 19-20, 2012.
- Edström, K. & Kolmos, A. (2012) Comparing two approaches for engineering education development: PBL and CDIO, *Proceedings of the 8th International CDIO Conference*, Queensland University of Technology, Brisbane, July 1 - 4, 2012.
- Edström, K. (2011) *Organisationens gravitationskraft – om uthållig utveckling av utbildningsprogram* (Organizational gravity – on sustainable educational development), Konferensen Att leda högre utbildning, Sveriges universitets- och högskoleförbund (SUHF), 14-15 november 2011.
- Edström, K., Hallström, S., Kutteneuler, J. (2011). Designing Project-Based Courses for Learning and Cost-Effective Teaching, *Proceedings for the Frontiers in Education 2011 Conference*, Rapid City, South Dakota, October 12-15, 2011.
- 3+2≠5 eller Programsmål för ingenjörsutbildningar i ljuset av Bologna-reformen, Rosén, A., Edström, K., Borglund, D., Kutteneuler, J., Hallström, S., Garne, K., 3:e Utvecklingskonferensen för Sveriges ingenjörsutbildningar, Norrköping, Nov 30-Dec 1, 2011.
- Carlsson, C.-J., Malmström, H., Edström, K. (2010) Engineering and Communication Integrated Learning - Collaboration Strategies for Skills and Subject Experts, *Proceedings of the 6th International CDIO Conference*, École Polytechnique, Montréal
- Edström, K., Karlsson, S., Malmström Jonsson, E., Hanson, M. (2009). A strategy for implementing CDIO across an institution, *Proceedings of the 5th CDIO Conference*, Singapore.
- Edström, K. (2008). *Faculty training programs as drivers of educational change – 10 principles*. Presented at the 4th International CDIO Conference, Gent, Belgium.
- Hallström, S., Kutteneuler, J., and Edström, K. (2007). The route towards a sustainable design-implement course, *Proceedings of the 3rd CDIO Conference*, Cambridge, USA.
- Edström, K. and Arehag, M. (2007) *A systems view on courses – and on universities*. Presented at the 3rd International CDIO Conference, MIT, Cambridge, USA.

- Edström, K. (2006) Conceptions of course evaluation among teachers and student representatives of an engineering program, Presented at the 14th Improving Student Learning, 2006, Bath, UK.
- Malmqvist, J., Östlund, S., Edström, K., (2006). Integrated Program Descriptions – A tool for communicating goals and design of CDIO programs, *Proceedings of the 2nd International CDIO Conference*, Linköping University.
- Crawley, E. F., Edström, K., Malmqvist, J., Soderholm, D. H., Östlund, S. (2005) Curriculum Design Based on the CDIO Model, *Proceedings of SEFI-05*, Ankara, Turkey.
- Crawley, E., Östlund, S., Edström, K. and Soderholm, D., "Curriculum design based on the CDIO syllabus", *Proceedings of the 8th Annual Conference on Engineering Education*, UICEE, Kingston, Jamaica, February 7-11, 2005.
- Edström, K., Hallström, S., El Gaidi, K., Kutenkeuler, J. (2005). Integrated assessment of disciplinary, personal and interpersonal skills – student perceptions of a novel learning experience, *Proceedings of the 2005 13th Improving Student Learning*, OCSLD, Oxford, UK.
- Edström, K., Törnevik, J., Engström, M., Wiklund, Å. (2003). Student involvement in principled change: Understanding the student experience, *Proceedings of the 2003 11th Improving Student Learning*, OCSLD, Oxford.

Invited keynotes and workshops, selection among the most recent (since Jan 2011)

- Invited keynote: Edström, K. “*Teaching effectiveness: The Teaching Trick*” in the International CDIO Fall meeting in Kuala Lumpur, Malaysia, October 2013.
- Invited workshop: “*Effective Assessment Practices*”, Singapore Polytechnic, October 28, 2013.
- Invited plenary address: “*Setting up an institution for excellence in education: Strategies that support lasting impact on education. And strategies that don’t.*”, Inspirational Seminar on Learning: Towards World-Class Education – What can Chalmers do to promote excellence in teaching?, Chalmers, Gothenburg, September 13, 2013.
- Invited workshop: “*Design Active Experiential Learning Experiences*”, Chulalongkorn University, Bangkok, Thailand, July 25-26, 2013.
- Invited workshop: “*Design Active Experiential Learning Experiences*”, Vietnam National University, Ho Chi Minh City, July 22-24, 2013.
- Invited workshop: “*Can we get better learning and more efficient teaching – at the same time?*”, Denmark University Network (DUN), Fredericia, May 23, 2013.
- Invited research seminar: “*To understand how a system works – try to change it*”, Lund University, May 2, 2013.
- Invited plenary address: “*Educational development: how it works*”, Seminar in the honour of Torgny Persson, Uppsala University, March 20, 2013.

- Invited workshop: “*Course development for improving learning and teaching effectiveness*”, Die hessischen Fachhochschulen, Germany, March 7-8, 2013.
- Invited workshop: “*Course development for improving learning and teaching effectiveness*”, Novia University College, Ekenäs, Finland, March 6, 2013.
- Invited workshop: “*Evaluating Teaching Competence in Tenure Track Promotions*”, Aalto University, Helsinki, Finland, March 5, 2013.
- Invited workshop: Edström, K. “*The Skoltech educational model*”, Moscow Aviation Institute, Moscow, Russia, February 25, 2013.
- Invited workshop: Edström, K. “*The CDIO approach to engineering education development*”, Higher School of Economics, Moscow, Russia, February 11, 2013.
- Invited workshop: “*Educating engineers who can really engineer*”, Reykjavik University, January 8, 2013.
- Invited workshop: “*The CDIO approach to curriculum development - educating engineers who can really engineer*”, Tallinn University of Technology, 10 December, 2012.
- Invited seminar: “*The CDIO Initiative - opportunities for Aalborg University*”, Aalborg University, 8 November 2012.
- Invited plenary address: “*Institutionalizing an educational framework*”, CDIO Fall meeting 2012, Telecom Bretagne, Brest, 23 October, 2012.
- Invited workshop: “*Faculty development for CDIO implementation [sensitive viewers be warned]*”, 8th International CDIO Conference, Queensland University of Technology, Brisbane, July 1 - 4, 2012.
- Invited keynote: Edström, K. “*Cambios institucionales*” (Institutional Change), in the conference “*Repensando la educación en ingeniería en América Latina*” (Rethinking Engineering Education in Latin America), organised by the Asociación Colombiana de Facultades de Ingeniería, March 21, 2012, San Andres Island, Colombia.
- Invited keynote: Edström, K. “*Att utveckla utbildning uthålligt. Eller kanske inte.*” Internal research and development conference in higher education, theme: “*Utveckling vs. Forskning. Hur utvecklas vi som högskolelärare?*” (Experience vs. Research. How do we develop as university teachers?) Malmö högskola, 7-8 December 2011.
- Invited plenary address and workshop: Edström, K. “*Making Educational Change Sustainable - Or Not.*” The 2011 Worldwide CDIO Meeting, Naval Postgraduate School, Monterey, CA and Stanford University, Oct. 17-19, 2011.
- Invited plenary address: Edström, K. “*Development of engineering education - how can we achieve the vision?*” The “*Best Practices of Engineering Training with Industry Assistance at European Universities*”, 7 -11 November 2011, Prague. Organised by the Association for Engineering Education of Russia (AEER) and other partners.
- Invited keynote: Edström, K. “*CDIO – Educating engineers who can really engineer*”, in the conference “*Qualitätsdialog – Lehre und Lernen in der Ingenieurausbildung*”, arranged by

VDI (The German Association of Engineers) and the HRK Hochschulrektorenkonferenz, Hannover September 12-13 2011.

- Invited workshop: Dominguez Garrido, U. & Edström, K. “*Curriculum development – experiences from SEFI and CDIO*”, at the 2011 Annual CDIO Conference, DTU, Lyngby Denmark, June 20-23, 2011.
- Invited workshop: Kolmos, A. & Edström, K. “*Should we do CDIO or PBL? Yes!*”, at the 2011 Annual CDIO Conference, DTU, Lyngby, Denmark, June 20-23, 2011.
- Invited plenary address: “*10 år med CDIO – resultat och erfarenheter*” Samverkansgruppen för högskoleingenjörutbildning conference at KTH (Swedish Network for Professional Bachelor Engineering Programs), May 4, 2011
- Invited plenary address: “*The CDIO approach: Educating engineers who can engineer*”, QUESTE-SI Working sessions in Paris, organised by CEFI, March 28-29, 2011.
- Invited plenary address: “*CDIO Concept in Engineering Education*”, International Workshop “Planning, Forming and Assessing the Graduate’s Learning Outcomes in Engineering Education”, March 28- April 1, 2011, Paris.
- Invited plenary address: “*Learning in Design-Implement Experiences*”, Iberian CDIO Workshop, organised by ISEP-Porto and UPC-Barcelona, 24-25 March 2011.
- Invited pre-conference workshop: “*Engineering education development*”, Edström, K. & Kutteneuler, J., at the conference University Teaching as Scholarship, January 24th – 26th, 2011 in Tartu, Estonia.