
CURRICULUM VITAE, *Emilie Lovisa Katarina Krite Svanberg*

Emilie Lovisa Katarina Krite Svanberg, born August 3, 1979 in Gothenburg, Sweden

Swedish citizen

Civil status: married

Children: William 15 years, Valdemar 12 years and Ragnhild 10 years

Language knowledge

English; fluent

German; good knowledge

Italian; knowledge

Degrees

High school diploma, Lund, Sweden, June, 1998

Medical degree (MD), Lund University, Lund; Sweden, January 19, 2007

Doctoral dissertation (PhD), Lund University, Lund; Sweden March 18, 2016

Hospital employments

Physicians' assistant, full time during the period June 7 – August 8 2005, Department of Anesthesiology and Intensive Care, Skåne University Hospital Malmö, Sweden

Assistant physician, full time during the period June 12 – August 18 2006, Sahlgrenska University Hospital, Department of Cardiology, Gothenburg, Sweden

Assistant physician, full time during the period January 22 – August 5 2007, Department of Anesthesiology and Intensive Care, Skåne University Hospital, Malmö, Sweden

Preregistration physician (with 6 months of research time included), full time during the period September 1 – December 5, 2008, Department of Anesthesiology and Intensive Care, Skåne University Hospital, Lund, Sweden.

Resident, full time during the period December 6 2010 – May 17 2018, Department of Anesthesiology and Intensive Care, Skåne University Hospital, Lund, Sweden.

Specialist physician (consultant), May 17 2018 – August 31 2020, Department of Anesthesiology and Intensive Care, Skåne University Hospital, Lund, Sweden.

Specialist physician (consultant), September 2 2019 – August 30 2020, Pediatric Anesthesiology and Intensive Care, Department of Pediatric Surgery, Skåne University Hospital, Lund, Sweden. (Leave of absence from Department of Anesthesiology and Intensive Care between September 2 2019 – August 31 2020.

Assistant chief physician, August 31 2020 – *ongoing*. Pediatric Anesthesiology and Intensive Care, Department of Pediatric Surgery, Skåne University Hospital, Lund, Sweden.

Research activity

Research work at the Faculty of Medicine, Lund University (*scholarship for young students*). The work was conducted at the Department of Molecular Pathogenesis

(Supervisor: Associate Prof. Roger Sundler), Wallenberg Laboratory, Biomedical Centre, Lund University, Lund; June - August 2001.

Summer scholarship, Faculty of Medicine, Lund University, Lund; summer 2006

PhD student, Faculty of Medicine, Lund University, Lund, January 2007 – March 2016
(Supervisor: Prof. Jonas Åkeson, Department of Anesthesiology and Intensive Care, Skåne University Hospital, Malmö, co-supervisors: Prof. Stefan Andersson-Engels, Department of Physics, Lund University, Lund and Prof. Vineta Fellman, Department of Pediatrics, Skåne University Hospital, Lund)

Doctoral dissertation

”Non-invasive optical monitoring of free and bound oxygen in humans”

Faculty opponent: Prof. Eddie Weitzberg

Committee: Prof. Mikael Bodelsson, Associate Prof. Tomas Jansson, Prof. Gorm Greisen

Lunds University, Malmö, March 18, 2016

Part time clinical researcher 2016 – ongoing

Interdisciplinary studies of tissue oxygenation and physiological gases – using broad-band and narrow-band optical spectroscopy

Honorable mentions and awards

Poster Award, Honorable Mentioning, 3rd International Graduate Summer School, Biophotonics '07

Acta Anaesthesiologica Scandinavia Award, Swedish Society of Anesthesiology Congress, Jönköping, Sweden, 2014 (best research presentation of unpublished work during the congress)

Runner up: Athena prize 2016

Presentations (partial list)

“Physiological effects on skin and skeletal muscle studied with three non-invasive optical techniques”, poster presentation at the 3rd International Graduate Summer School, Biophotonics '07 (see above “Honorable mentions and awards”), June 2007, Ven, Sweden

“Physiological influence of basic perturbations assessed by non-invasive optical techniques in humans”, poster presentation at the 15th WFSA World Congress of Anaesthesiologists, March 25-30, 2012, Buenos Aires, Argentina

“Physiological influence of basic perturbations assessed by non-invasive optical techniques in humans”, oral presentation at the *Interdisciplinary summer school on clinical biophotonics*, (Photonics4life) May 6-10, 2012, Schkopau (Halle), Germany

”Non-invasive monitoring of oxygen and water vapor in the lungs and gastrointestinal tract of newborn infants using laser diode spectroscopy” oral presentation at *the national yearly congress* organized by the Swedish Society of Anesthesiology ”*SFAI-veckan*”, 17-19 September 17-19, 2014, Jönköping, Sweden (See above “Honorable mentions and awards”)

“Monitoring lung function using optical spectroscopy”, oral presentation at the congress *Medicinteknik i Skåne*, focusing on research within medical techniques within the Scania region, 1 December 2016

“New monitoring techniques to assess composition of alveolar gases”, oral presentation at the *SSAI Congress*, 6-8 September 2017, Malmö, Sweden

Scientific papers

Krite Svanberg E, Wollmer P, Andersson-Engels S, Åkeson J. Physiological influence of basic perturbations assessed by non-invasive optical techniques in humans. *Applied Physiology, Nutrition and Metabolism* 2011; 36: 946-957.

Pikwer A, Bergenzaun L, Sterner G, Krite Svanberg E and Åkeson J “Fluid balance monitoring by cuff-occluded rate of rise of peripheral venous pressure in haemodialysis patients” *Anaesthesia* 67(8); 894-898 (2012) doi:10.1111/j.1365-2044.2012.07165.x

Lundin P, Krite Svanberg E, Cocola L et al. ”Noninvasive monitoring of gas in the lungs and intestines of newborn infants using diode lasers: feasibility study”. *Journal of Biomedical Optics* 18 (12) 127005 (2013) doi: 10.1117/1.JBO.18.12.127005

Krite Svanberg E, Lundin P, Larsson M, Åkeson J, Svanberg K, Svanberg S, Andersson-Engels S, Fellman V. Diode laser spectroscopy for noninvasive monitoring of oxygen in the lungs of newborn infants. *Pediatric Research* 79 (4) 2016, advance online publication 10 February 2016; doi:10.1038/pr.2015.267.

Larsson J, Liao P, Lundin P, Krite Svanberg E, Swartling J, Lewander Xu M, Bood J, Andersson-Engels S. Development of a 3-dimensional tissue lung phantom of a preterm infant for optical measurements of oxygen - Laser-detector position considerations. *Journal of Biophotonics* 2018;11:e201700097, doi: 10.1002/jbio.201700097

Liao P, Larsson J, Krite Svanberg E, Lundin P, Swartling J, Lewander Xu M, Bood J, Andersson-Engels S. Computer simulation analysis of source-detector position for percutaneously measured O₂-gas signal in a three-dimensional preterm infant lung *Journal of Biophotonics* 2018;11e201800023, <https://doi.org/10.1002/jbio.201800023>

Larsson J, Leander D, Lewander Xu M, Fellman V, Bood J, Krite Svanberg E. Comparison of dermal versus internal light administration in human lung diagnostics using the GASMAS technique – Phantom measurements. *Journal of Biophotonics* 2019;12:e201800350, <https://doi.org/10.1002/jbio.201800350>

Krite Svanberg E, Shaharin A, Ellerström I, Subash AA, Khoptyar D, Andersson-Engels S, Åkeson J. Time-resolved versus continuous-wave near-infrared spectroscopy for determination of oxygen saturation in human skeletal muscle tissue. Manuscript.

Krite Svanberg E, Larsson J, Rasmussen M, Larsson M, Leander D, Bergsten S, Bood J, Greisen G, Fellman V. Changes in pulmonary oxygen content are detectable with laser absorption spectroscopy: proof of concept in newborn piglets. *Pediatric Research* 2021, 89: 823–829

Xu C, Angeli B, Krite Svanberg E, Cinthio M, Erlöv M, Reistad N. Property characterization of tissue-mimicking oil-based optical phantoms for photoacoustic imaging. Manuscript.

Lin Y, Lundin P, Krite Svanberg E, Svanberg K, Svanberg S, Sahlberg AL. Gas in scattering media absorption spectroscopy on small and large scales: Toward the extension of lung spectroscopic monitoring to adults. *Translational Biophotonics*, 2021;3:e202100003, <https://doi.org/10.1002/tbio.202100003>

Pacheco A, Jayet B, Krite Svanberg E, Dehghani H, Dempsey E, Andersson-Engels S. Numerical investigation of the influence of the source and detector position for optical measurement of lung volume and oxygen content in preterm infants. *Journal of Biomedical Optics*, 2022; <https://doi.org/10.1002/jbio.202200041>

Press coverage

”Non-invasive optical techniques monitor oxygen in different tissues” (In Swedish). *Läkartidningen* 2016;113:D3CY

”Laser analysis can improve lung function control” (In Swedish). *Sydsvenska Dagbladet*, 5 Oktober 2015

”Laser helps infants born preterm” (In Swedish):<http://www.lu.se/article/laser-ska-hjalpa-for-tidigt-fodda-barn?ref=pressrelease>. Youtube: <https://www.youtube.com/watch?v=EWTBcIU00A>

“New method gives hope for prematurely born infants” (In Swedish), *Dagens Industri (Life Science)*, 16 Januari, 2019. <http://lifescience.businessstories.se/ny-metod-hopp-for-prematurbarn-lunds-universitet/>

“New method gives hope for prematurely born infants” (In Swedish), *Ny teknik (Innovation och forskning)*, 26 September, 2019.

Clinical teacher

Clinical teacher within Anesthesiology and Intensive Care for medical students (4th year), Lund University, full time during the period march 2 – April 5, 2015

Board member

Lund University Medical Laser Centre, representing the Medical Faculty

Reviewer

“Journal of Biomedical Optics”

Research grants

3 months full time from Region Skåne 2014, 2015 and 2016, regional research grant

Participant in EUREKA EUROSTARS NEOLUNG project (2016-2018). Partners: Lund University, GPX Medical, NEO, NanoPlus

Clinical assistant (20%), 12 November 2018 – 31 December 2019 - LASERLAB-EUROPE (EUH2020 654148) JRA project BIOAPP and Departments of Pediatrics and Physics, Lund University, Lund, Sweden.

VINNOVA grant “ Swelife and Medtech4Health – Collaborative Projects for improved Health. Project title “Surveillance of pediatric lungs using light amplification”.

Approved 2023-03-30. (Period 2023-04-01 – 02025-03-31)

Collaborative partners: Lund University, Skånes Universitetssjukhus, Physics department (Combustion Physics) and Neola Medical (medical company)

Book chapter author

Co-author of one chapter “Anaesthesia, intensive care, trauma and fluid therapy” (in Swedish) in “Surgery” (in Swedish), course literature for medical students. 36 pages. Publisher: Studentlitteratur. Editors: Bengt Jeppson, Olle Ljungqvist, Peter Naredi, Malin Sund. 5th edition.

Other relevant activities

Responsible for the local Lund University examination arrangements for the “European Diploma of Anaesthesiology and Intensive Care (EDAIC)”. 2019 - *ongoing*

Lecturer at the EDAIC preparation course “Crash-kursen”, given annually at Karolinska University Hospital, Stockholm, Sweden. Lecture title: Medical Physics (3 hours). 2018 – *ongoing*.

Responsible for the one-week course for resident doctors in Anesthesiology and Intensive Care Medicine “Fundamental Anesthesiology”, arranged one or two times a year, Skånes Universitetssjukhus, Lunds Universitet, Lund, Sweden. 2019 – *ongoing*.

Responsible for the one-week course for resident doctors in Anesthesiology and Intensive Care Medicine “Pediatric Anesthesiology and Intensive Care”, arranged one or two times a year, Skånes Universitetssjukhus, Lunds Universitet, Lund, Sweden. 2021 – *ongoing*.

Faculty member (instructor), Advanced Trauma Life Support (ATLS), College of Surgeons, mandatory course for medical doctors working in the emergency/surgery/anesthesiology/orthopedics field, Skånes Universitetssjukhus, Lund. 2021 – *ongoing*

Director of Studies for resident doctors in Anesthesiology and Intensive Care, Pediatric Anesthesiology and Intensive Care, Skånes Universitetssjukhus, Lund, Sweden. January 2021 – *ongoing*

Lecturer (part-time teacher) in the field of Anesthesiology and Intensive care, both for resident doctors and nurses undergoing training to become specialized nurses in Anesthesiology and Intensive care. 2018 - *ongoing*