CURRICULUM VITAE – CHARLOTTE LING (690420-4986)

CONTACT INFORMATION
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Home page: **http://www.ludc.med.lu.se/research-units/epigenetics-and-diabetes/**
Born in Sweden 20th of April 1969

EDUCATION

2002 **PhD**, Faculty of Medicine, Dept. of Physiology, Sahlgrenska University Hospital, Göteborg University, Sweden.

1994 **Master´s of Science,** Faculty of Engineering, Chemical Engineering, LTH, Lund University, Sweden

CURRENT POSITION

2015 - present **Professor in Diabetes research** (100% research)
Faculty of Medicine, Dept. of Clinical Sciences, Lund University/ Sweden

PREVIOUS POSITIONS

2013-2014 Lecturer in Epigenetics, Faculty of Medicine, Lund University, Sweden

2011-2013 Senior researcher at the Swedish Research Council, 100% research awarded for six years, Faculty of Medicine, Dept. of Clinical Sciences, Lund University, Sweden

2009-2010 Associate Professor, Faculty of Medicine, Dept. of Clinical Sciences, Lund University, Sweden (career award from the Swedish Research Council, 100% research)

2007-2009 Assistant Professor, Faculty of Medicine, Dept. of Clinical Sciences, Lund University, Sweden (career award from the Swedish Research Council, 100% research)

2003-2006 Postdoctoral fellow, Faculty of Medicine, Lund University, Malmö, Sweden

1997-2002 PhD student, Faculty of Medicine, Dept. of Physiology, Göteborg University, Sweden

1995-1996 Sales representative, Progen Industries (Biotechnology), Brisbane, Australia

1994-1995 Process engineer, Medowlea foods, Brisbane, Australia

FELLOWSHIPS AND AWARDS

2016 The DPLU/LUDC Nordic Prize for an Outstanding Young Diabetes Investigator, Sweden

2013 Medeon award, Medeon Science Park, Sweden

2011-2015 Novo Nordisk Excellence award in Endocrinology, Five-year excellence grant, Denmark

2011-2016 Six-year research career award from the Swedish Research Council, Sweden

2006-2010 Four-year research career award from the Swedish Research Council, Sweden

2006 and 2007 Hains award from the Medical Faculty, Lund University, Sweden

2003 Swegene Postdoctoral Fellowship award from the Wallenberg Foundation, Sweden

SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS

2003 – 2017 9 Postdocs/ 12 PhD students/ 7 Master Students
Faculty of Medicine/ Dept. of Clinical Sciences, Lund University/ Sweden

COMMISSIONS OF TRUST

2015-present Associate Editor for Clinical Epigenetics, BioMedCentral

2012, 2015, 2016 Member of evaluation committees at the Swedish Research Council

2009-present Member of the PhD–examiner board and/or opponent of 9 PhD theses

2005-present Evaluator of national and international grants (Swedish Research Council; The Welcome trust, UK; The Swiss Research Council, Switzerland; Diabetes UK; NIH, USA; EFSD)

2003-present Reviewer for international journals including The Lancet, Cell Metabolism, Diabetes, Diabetologia, FASEBJ, Genome Biology, The American J of Clinical Nutrition, Plos Genetics, Hum Mol Genetics, Nature Reviews etc.

2001-present Invited speaker at >50 national/international conferences including IDF, ADA, Keystone, NIH, Endocrine Society, EASD-SGGD and Epigenomics of common disease

INSTITUTIONAL RESPONSIBILITIES

2012-present Member of the Innovation board at Lund University Diabetes Centre (LUDC)
2010-present Member of the board of the Lund University Diabetes Centre (LUDC) (http://www.ludc.med.lu.se), Sweden
2010-2013 Member of the board of the Department of Clinical Sciences, Lund University, Sweden
2010-present Member of the strategic research area, Exodiab (http://www.exodiab.se/), Lund University, Sweden
2008-2011 Member of the election committee for the board of the Medical Faculty at Lund University, Sweden
2010-2012 Organizing "Progress Reports" and "Journal Lunch" at Lund University Diabetes Centre, Sweden
2003-2006 Member of the steering group of the Diabetes Program at Lund University, Sweden; chairman in 2006

TEACHING ACTIVITIES

1996 – present Teaching at four different undergraduate programs at the Faculty of Medicine at Göteborg and Lund Universities and at several PhD courses in Sweden and Denmark

ORGANISATION OF SCIENTIFIC MEETINGS

2017 Member of the organizing committee of the EASD meeting in Portugal
2016 Member of the organizing committee of the First Swedish Diabetes Summit, Malmö, Sweden
2014 Member of the organizing committee of the Pufendorf Bioinformatics Advanced study group – "From Sequences to Systems Biology and Beyond", Lund University, Sweden
2006 Member of the organizing committee of a scientific meeting between the Medical Faculty at Lund University, Sweden, and Fudan University, China; the meeting was held at Lund University, Sweden

MEMBERSHIPS OF SCIENTIFIC SOCIETIES

2006 – present Member of EASD-SGGD (EASD Study Group on Genetics of Diabetes)
2003 – present Member of EASD (European Association for the Study of Diabetes)
2003 – present Member, Research Network "Diabetes Program at Lund University", Sweden

COLLABORATORS Prof Allan Vaag, University of Copenhagen, Denmark (2003-present), Prof Oluf Pedersen, Copenhagen University, Denmark (2012-present), Dr Ulf Riserus, Uppsala University, Sweden (2012-present); Prof Claes Wollheim, University of Geneva, Switzerland (2010-present); Prof Lena Eliasson, Lund University, Sweden (2009-present); Prof Michael Roden, Dusseldorf University, Germany (2008-2012); Prof Sue Ozanne, University of Cambridge, UK ((2007-2011); Prof Renming Hu, Fudan University, Shanghai, China (2007-2011); Prof Prof Per-Anders Jansson, Göteborg University, Sweden (2007-present); Prof Mario Fraga, Spain (2004-2014); Prof Stefano Del Prato, University of Pisa, Italy (2003-2008); Prof Leif Groop, Prof Håkan Billig, Göteborg University, Sweden (1996-2012).

EXPERTISE AND COMPOSITION OF THE EPIGENETICS AND DIABETES UNIT

The 'C. Ling' research group includes ~10 members with the following expertise;

Dr Tina Rönn (expert in bioinformatics and genome-wide analysis of DNA methylation and gene expression), **Dr Emma Nilsson** (expert on non-coding RNA, DNA methylation, gene expression and clinical studies), **Dr Karl Bacos** (expert in islet physiology, metabolism and functional experiments in beta-cells, islets and rodents), **Dr Sonia Garcia** (expert on DNA methylation, epidemiology and prospective cohorts), **Dr Peter Volkov** (expert in mathematics, computer programming and bioinformatics), PhD student **Alexander Perfilyev** (expert in mathematics, computer programming and bioinformatics), PhD student **Cajsa Davegård** (expert in genome-wide analysis of DNA methylation, bioinformatics and functional experiments), and Master student **Josefin Jönsson** (expert in islets physiology, functional experiments and inhibitors of epigenetic enzymes).

CAREER BREAKS

Parental leave for three children born 2001, 2004 and 2006.

CURRENT GRANTS

European Commission H2020 (Marie Curie IF) and ERC consolidation grant, Swedish Research Council (VR), Regional Research Council (ALF), EFSD-Lilly, Swedish Diabetes Foundation, Diabetes Wellness, Påhlsson's foundation, SciLife

PUBLICATIONS

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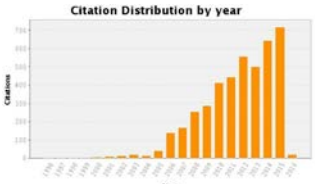
Total number of original peer-reviewed publications	**90**
Number of publications without PhD supervisor	79
First author (since 2000)	9
Last author (since 2005)	39
Total number if invited review papers and commentaries	**15**
Total number on book chapters	**8**



Web of Science
(31st Jan 2017)
H-index: 31
M-index: 1.9
Number of citations ~5500

Ten selected papers where I have had a leadership role. These reflect both my work in diabetes and epigenetic research as well as my interest in bioinformatics and statistical analysis of genome-wide data.

1. Bacos K, Gillberg L, Volkov P, Olsson AH, Hansen T, Pedersen O, Prior Gjesing A, Eiberg H, Tuomi T, Almgren P, Groop L, Eliasson L, Vaag A, Dayeh T and **Ling C.**
Blood-based biomarkers reflect age-associated epigenetic changes in human pancreatic islets and associate with insulin secretion and diabetes.
Nature Communications, 2016 Mar 31. ***Impact factor: 12.1*** ***Citations: 12***
This is the first study identifying age-related genom-wide epigenetic differences in human pancreatic islets. Some of these epigenetic differences were also found in blood and could be used as biomarkers to predict future type 2 diabetes and future insulin secretion.

2. E Hall, P Volkov, T Dayeh, JLS Esguerra, S Salö, L Eliasson, T Rönn, K Bacos and **C Ling.**
Sex differences in the genome-wide DNA methylation pattern and impact on gene expression, microRNA levels and insulin secretion in human pancreatic islets.
Genome Biology, 2014 Dec 3;15(12):522. ***Impact factor: 11.9*** ***Citations: 22***
This is the first study identifying genome-wide epigenetic differences in human pancreatic islets from male compared with female donors. These epigenetic differences in human islets contribute to differential gene expression, microRNA levels and insulin secretion between males and females.

3. E Nilsson, PA Jansson, A Perfilyev, P Volkov, M Pedersen, MK Svensson, P Poulsen, J Fadista, T Rönn, B Klarlund-Pedersen, C Scheele, A Vaag and **C Ling.**
Altered DNA methylation and differential expression of genes influencing metabolism and inflammation in adipose tissue from monozygotic twin pairs discordant for type 2 diabetes.
Diabetes, 2014, Sep;63(9):2962-76. ***Impact factor: 8.6*** ***Citations: 85***
This is the first study analyzing DNA methylation genome-wide in human adipose tissue from subjects with type 2 diabetes and non-diabetic controls as well as in monozygotic twins discordant for type 2 diabetes. We identified numerous epigenetic alterations in subjects with type 2 diabetes.

4. T Dayeh, P Volkov, S Salö, E Hall, E Nilsson, A H. Olsson, CL. Kirkpatrick, C Wollheim, L Eliasson, T Rönn, K Bacos and **C Ling.**
Genome-wide DNA methylation analysis of human pancreatic islets from type 2 diabetic and non-diabetic donors identifies candidate genes that influence insulin secretion.
PLoS Genetics, 2014 Mar 6;10(3):e1004160. ***Impact factor: 9.4*** ***Citations: 118***
This is another benchmark study in my group. It is the first study analyzing DNA methylation genome-wide in human pancreatic islets from donors with type 2 diabetes and non-diabetic controls. Here, we identified epigenetic alterations in ~800 genes in diabetic islets.

5. T Rönn, P Volkov, C Davegård, T Dayeh, E Hall, T Elgzyri, Å Tornberg, M Dekker-Nitert, K-F Eriksson, H Jones, L Groop and **C Ling**.
A six months exercise intervention influences the epigenetic pattern in human adipose tissue.
PLoS Genetics 2013 Jun;9(6):e1003572. ***Impact factor: 9.4*** ***Citations: 164***
This is the first study analyzing DNA methylation genome-wide in human adipose tissue before and after regular exercise. We found that an exercise intervention altered methylation of ~1/3 of all genes in human adipose tissue. Here, we developed a bioinformatics pipe-line to analyse genome-wide DNA methylation data. This study received enormous media attention i.e. The New York Times and The Economist.

6. M Dekker Nitert, T Dayeh, P Volkov, T Elgzyri, E Hall, E Nilsson, BT Yang, S Lang, H Parikh, Y Wessman, H Weishaupt, J Attema, M Ländin, N Wierup, P Almgren, PA Jansson, T Rönn, O Hansson, KF Eriksson, L Groop and **C Ling.**
Impact of an Exercise Intervention on DNA Methylation in Skeletal Muscle from First Degree Relatives of Patients with Type 2 Diabetes. ***Diabetes 2012 Dec;61(12):3322-32*** ***Impact factor: 8.6*** ***Citations: 110***
This is the first study analyzing DNA methylation genome-wide in human skeletal muscle before and after

regular exercise. We found that a six month exercise intervention altered the DNA methylation pattern of ~3000 genes in skeletal muscle of sedentary middle aged men. Here, we developed a bioinformatics and statistical pipe-line to analyse data from a tiling array.

7. T Koeck, AH Olsson, M Dekker Nitert, VV. Sharoyko, C Ladenvall, O Kotova, E Reiling, T Rönn, H Parikh, J Taneera, JG Eriksson, MD Metodiev, NG Larsson, A Balhuizen, H Luthman, A Stančáková, J Kuusisto, M Laakso, P Poulsen, A Vaag, L Groop, V Lyssenko, H Mulder and **C Ling**.
A common variant in TFB1M is associated with reduced insulin secretion and increased future risk of type 2 diabetes. ***Cell Metabolism 2011 Jan 5;13(1):80-91.*** ***Impact factor: 17.5*** ***Citations: 33***
This study shows how mitochondrial dysfunction due to genetic variation influences insulin secretion and risk for type 2 diabetes. This study included analysis of genome-wide SNP data.

8. C Ling, S Del Guerra, R Lupi, T Rönn, C Granhall, H Luthman, P Marchetti , L Groop and S Del Prato.
Epigenetic Regulation of PPARGC1A in Human Type 2 Diabetic Islets and Effect on Insulin Secretion.
Diabetologia 2008 51(4):615-22. ***Impact factor: 6.8*** ***Citations: 197***
This is the first study to identify altered DNA methylation levels in human pancreatic islets from subjects with type 2 diabetes compared with non-diabetic controls.

9. C Ling, P Poulsen, S Simonsson, T Rönn, J Holmkvist, P Almgren, E Nilsson, P Hagert, AG Mabey, P Nilsson, A Vaag and L Groop.
Genetic and epigenetic factors are associated with expression of respiratory chain component NDUFB6 in human skeletal muscle.
The Journal of Clinical Investigation, 2007 117(11): 3427-35. ***Impact factor: 14.7*** ***Citations: 102***
This study shows how genetic (SNPs), epigenetic (DNA methylation) and non-genetic (age) factors interact to affect expression of a candidate gene for diabetes and metabolic function in human muscle.

10. **C Ling**[*], P Poulsen[*], E Carlsson, M Ridderstråle, P Almgren, H Beck-Nielsen, L Groop and A Vaag.
Multiple environmental and genetic factors influence skeletal muscle PGC-1α and PGC-1β gene expression in twins. [*] Equal contribution.
The Journal of Clinical Investigation, 2004; 114:1518-26. ***Impact factor: 14.7*** ***Citations: 194***
This study shows how combinations of genetic and non-genetic factors affect gene expression of a candidate gene for type 2 diabetes and metabolic function in human skeletal muscle.