

Lorenz Gerber

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| CITIZENSHIP | Swiss, Swedish | |
| DATE OF BIRTH | 1976–12–02 | |
| LANGUAGES | English, fluent written and oral German, mother tongue Swedish, fluent written and oral French, fluent written and oral | |
| SKILLS | Software Engineering, C, Java, R, Python, Php, Scientific Computing, Analytical Chemistry, Mass-Spectrometry, Bioinformatics, Data Modelling Multivariate Data Analysis | |
| EDUCATION | Umeå University , Umeå, Sweden | |
| | B.Sc., Computer Science, Sep '15 - Jun '18 (on-going) | |
| | Swedish University of Agricultural Sciences , Umeå, Sweden | |
| | Ph.D., Biology, Sep '12 | |
| | <ul style="list-style-type: none">• Thesis: <i>Chemotyping in Functional Genomics</i>• Area of Study: Bioinformatics, High-throughput Chemical Analysis, Mass-Spectrometry | |
| | Umeå University , Umeå, Sweden | |
| | M.Sc., Chemistry, Aug '07 | |
| | <ul style="list-style-type: none">• Thesis: <i>Minor Field Study in Can Tho, Vietnam: Analysis of the Beta-Agonist Salbuntamol in Animal Feed</i>• Area of Study: Environmental Analytical Chemistry, Mass-Spectrometry | |
| | Adult High School of Bern , Bern, Switzerland | |
| | Qualification for University entrance, Sep '02 | |
| | <ul style="list-style-type: none">• Diploma: Swiss Federal Matura• Subject: Type C, Math and Natural Science | |

Vocational Training School of Commerce, Burgdorf, Switzerland

Degree in Commerce, June '95

- Profile: Banking
- Company: Swiss People Bank (Schweizerische Volksbank) Burgdorf
- Final Grade: 5.3 of 6

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| PROFESSIONAL EXPERIENCE | Lablicate GmbH , Hamburg, Germany <i>Java Developer, Data Analyst</i> | Oct '16 to present |
| | Provement AB , Stockholm, Sweden <i>Developer php</i> | Oct '16 to present |
| | TMA Research , Ho Chi Minh City, Vietnam <i>Scientific Advisor, Life Science ICT</i> | Jan '13 to Sep '15 |
| | Banking and Finance , Switzerland <i>various positions in renowned institutes. ask for further details.</i> | Jun '92 to Sep '02 |
| OPEN SOURCE COMMUNITY CONTRIBUTIONS | OpenChrom <i>Active Developer</i> | |
| | Google Sumer of Code 2016, 2017 <i>Mentor, through FOSSASIA Organization</i> | |
| | Google Code-in 2016, 2017 <i>Mentor, through FOSSASIA Organization</i> | |
| | 'tofsims': A BioConductor package for imaging mass spectrometry <i>Lead Developer and current maintainer</i> | |
| ACADEMIC APPOINTMENTS | Researcher | Oct '14 to Oct '16 |
| | Researcher within Bio4Energy initiative. Employment at Swedish University of Agricultural Sciences in Umeå. | |
| | Postdoctoral Researcher | Sep '12 to Sep '14 |
| | 'Mobility Starting Grant' from the 'Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning' Host University: Swedish University of Agricultural Sciences, Umeå | |
| | <ul style="list-style-type: none"> • Chalmers, Gothenburg, Sweden – Developing automated data analysis tools for TOF-SIMS imaging Mass Spectrometry – PI: Prof. Andrew Ewing | Mar '13 to Aug '13 |
| | <ul style="list-style-type: none"> • Nagoya University, Nagoya, Japan – ToF-SIMS imaging of Lignin Carbohydrate Complexes – PI: Prof. Kazuhiko Fukushima | Apr '14 to Sep '14 |
| | Postdoctoral Fellowship | |
| | 'Mobility Starting Grant' from the 'Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning' (#213-2012-1055, How does Lignin-Carbohydrate-Complexes emerge during wood formation) | |
| ACADEMIC MERITS | | |
| REFEREED JOURNAL PUBLICATIONS | [1] Celine Davoine, Ilka N Abreu, Khalil Khajeh, Jeanette Blomberg Brendan N Kidd, Kemal Kazan, Peer M Schenk, Lorenz Gerber , Ove Nilsson, Thomas Moritz, Stefan Björklund. Functional metabolomics as a tool to analyze Mediator function and structure in plants <i>PloS one</i> , 2017, 12 (6), e0179640. | |

- [2] Helder Miranda, Peter Immerzeel, **Lorenz Gerber**, Katarina Hörnaeus, Sara Bergström Lind, Bgami Pattanaik, Pia Lindberg, Fikret Mamaedov, Peter Lindblad. SH1783, a monooxygenase associated with polysaccharide processing in the unicellular cyanobacterium *Synechocystis* PCC 6803 *Physiologia Plantarum*, 2017, 161 (2), 182–195.
- [3] Julie Tolu, Johan Rydberg, Carsten Meyer-Jacob, **Lorenz Gerber**, Richard Bindler. Spatial variability of organic matter molecular composition and elemental geochemistry in surface sediments of a small boreal Swedish lake. *Biogeosciences*, 2017, 16(7), 1773–1792.
- [4] **Lorenz Gerber**, David Öhman, Manoj Kumar, Philippe Ranocha, Deborah Goffner, Björn Sundberg. High-throughput microanalysis of large lignocellulosic sample sets by Pyrolysis-Gas Chromatography/Mass Spectrometry. *Physiologia Plantarum*, 2016, 156 (2), 127–138.
- [5] Julie Tolu, **Lorenz Gerber**, Jean-Francois Boily, Richard Bindler. High-throughput method for characterizing organic matter composition in sediments with sub-mg sample size using Py-GC/MS and TPD-FTIR-MS. *Analytica Chimica Acta*, 2015, 880, 93–102
- [6] Madhavi Latha Gandla, Marta Derba-Maceluch, Xiaokun Liu, **Lorenz Gerber**, Emma R Master, Ewa Mellerowicz, Leif J Jönsson. Expression of a fungal glucuronoyl esterase in *Populus*: effects on wood properties and saccharification efficiency. *Phytochemistry*, 2015, 210–220
- [7] **Lorenz Gerber**, Viet Mai Hoang, Linh Tran, Hoang Anh Tuan Kiet, Per Malmberg, Jörg Hanrieder, Andrew Ewing. Using imaging ToF-SIMS data to determine the cell wall thickness of fibers in wood. *Surface and Interface Analysis*, 2014, 46(S1), 225–228
- [8] **Lorenz Gerber**, Bo Zhang, Melissa Roach, Andras Gorzas, Umut Rende, Manoj Kumar, Ingo Burgert, Totte Niittylä, Björn Sundberg. Sucrose synthase activity is not essential for cellulose biosynthesis but important for overall carbon allocation to wood in hybrid aspen. *The New Phytologist*, 2014, 203(4), 1220–30
- [9] Jörg Hanrieder, **Lorenz Gerber**, Åsa Persson Sandelius, Eva Brittebo, Andrew G. Ewing, Oskar Karlsson. High Resolution Metabolite Imaging in Adult Hippocampus Following Neonatal Exposure to the Environmental Toxin BMAA using ToF SIMS. *ACS Chemical Neuroscience*, 2014, 5(7), 568–575
- [10] Jorma Vahala, Judith Felten, Jonathan Love, Andras Gorzas, **Lorenz Gerber**, Airi Lamminmäki, Jaako Kangasjärvi and Björn Sundberg. A genome wide screen for ethylene induced ethylene response factors (ERFs) in hybrid aspen stem identifies five ERF genes that modify wood properties. *The new Phytologist*, 2013, 200(2), 511–522.
- [11] Edouard Pesquet, Bo Zhang, Tuula Puhakainen, Odile Barbier, **Lorenz Gerber**, Sacha Escamez, András Gorzsás, Charleen Courtois-Moreau, Edward Alatalo, Lars Paulin, Jaakko Kangasjärvi, Björn Sundberg, Deborah Goffner, Hannele Tuominen. Non-cell autonomous lignification of tracheary elements. *The Plant Cell*, 2013, 25(4), 1314–28

- [12] Rui Pinto, **Lorenz Gerber**, Björn Sundberg, Johan Trygg. Strategy for minimizing between-study variation of large scale phenotypic experiments using multivariate analysis. *Analytical Chemistry*, 2012, 84(20), 8675–8681
- [13] David Öhman, Brecht Demendts, Manoj Kumar, **Lorenz Gerber**, Andras Gorzsas, Geert Goeminne, Mattias Hedenström, Brian Ellis, Wout Boerjan, Björn Sundberg (2012). MYB103 regulates FERULATE-5-HYDROXYLASE expression and syringyl lignin biosynthesis in Arabidopsis stems. *The Plant Journal*, 2012, 73(1), 63–76
- [14] **Lorenz Gerber**, Mattias Eliasson, Johan Trygg, Thomas Moritz, Björn Sundberg. Multivariate curve resolution provides a high-throughput data processing pipeline for pyrolysis-gas chromatography/mass spectrometry. *Journal of Analytical and Applied Pyrolysis* 2012, 95, 95–100
- [15] Melissa Roach, **Lorenz Gerber**, David Sandquist, Gorzas Andras, Matthias Hedenström, Manoj Kumar, Marie-Caroline Steinhauser, Regina Feil, Geoffrey Daniel, Mark Stitt, Björn Sundberg, Totte Niittylä. Fructose kinase is required for carbon partitioning to cellulose in aspen. *The Plant Journal*, 2012, 70(6), 967–977
- [16] Anne-Mari Olsson, Ingela Bjurhager, **Lorenz Gerber**, Björn Sundberg, Lennart Salmén. Ultra-structural organisation of cell wall polymers in normal and tension wood of aspen revealed by polarisation FTIR microspectroscopy. *Planta*, 2011, 223(6), 1277–86.
- [17] Ingela Bjurhager, Anne-Mari Olsson, Bo Zhang, **Lorenz Gerber**, Manoj Kumar, Lars A. Berglund, Ingo Burgert, Björn Sundberg, Lennart Salmén. Ultrastructure and mechanical properties of populus wood with reduced lignin content caused by transgenic down-regulation of cinnamate 4-hydroxylase. *Biomacromolecules*, 2010, 11(9), 2359–65.
- [18] Ai-Min Wu, Emma Hörnblad, Aline Voxeur, **Lorenz Gerber**, Christophe Rihouey, Patrice Lerouge, Alan Marchant. Analysis of the arabidopsis IRX9/IRX9-L and IRX14/IRX14-L pairs of glycosyltransferase genes reveals critical contributions to biosynthesis of the hemicellulose glucuronoxylan. *Plant Physiology*, 2010, 153(2), 542–554.
- [19] Mattias Hedenström, Susanne Wiklund-Lindström, Tommy Öman, Fachuang Lu, **Lorenz Gerber**, Paul Schatz, Björn Sundberg, John Ralph. Identification of lignin and polysaccharide modifications in populus wood by chemometric analysis of 2D NMR spectra from dissolved cell walls. *Molecular Plant*, 2009, 2(5), 933–42.

REFERENCES
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- Professor, Forest Genetics and Plant Physiology, Swedish University of Agricultural Sciences,
- VP Forest Biotechnology, StoraEnso AB
- ★ *Prof. Sundberg was my PhD supervisor*

Prof. Dr. Andrew G. Ewing

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- Professor, [Analytical Chemistry](#), Chalmers University of Technology
- ◇ Kemivägen 10, S-412 96 Gothenburg, Sweden

★ *Prof. Andrew Ewing was hosting me during the postdoc at Chalmers University of Technology.*