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Personal data

Date of birth:	01.05.1979
Place of birth:	Altstaetten SG, Switzerland
Marital status:	Married, 2 children Sean (2010) and Neil (2012)

Professional experience

Since Jan 2015	Empa – Materials Science & Technology Group leader Particles@Barriers, Laboratory for Particles-Biology Interactions	St.Gallen, Switzerland
05/2012-12/2014	Empa – Materials Science & Technology Scientific associate, Laboratory for Materials-Biology Interactions	St.Gallen, Switzerland
07/ 2007-04/2012	Empa – Materials science & Technology Postdoctoral fellow, Laboratory for Materials-Biology Interactions	St.Gallen, Switzerland

Education

12/2002–08/2006	Swiss Federal Institute of Technology (ETH) *Ph.D. Thesis:* "Studies on vertebrate nervous system myelination: The role of cdc42, rac1, and profilin 1 signaling in oligodendrocyte and Schwann cell biology"; Thesis supervisors: Prof. U. Suter / Prof. M.E. Schwab / Dr. J. Relvas	Zurich, Switzerland
10/1998-10/2002	Swiss Federal Institute of Technology (ETH) • *Study of biology* Courses in cell biology, biochemistry, molecular biology, microbiology and genetics Degree: Dipl. Nat. ETHZ • *Diploma thesis* "Characterization of the interaction of sarcoplasmic reticulum proteins with creatine kinase"; Supervisors: Prof. T. Wallimann / Dr. T. Hornemann	Zurich, Switzerland
1994-1998	Kantonsschule Heerbrugg *Graduation* (Matura Type E: Economics)	Heerbrugg, Switzerland

Qualifications

2012-2014	Leadership training, Empa
2006	Doctoral degree, ETH Zurich

2006	Certificate in Neuroscience, received by Neuroscience Center, Zurich
2005	Statistic course, Neuroscience Center, Zurich
2003	Training in laboratory animal experiments (LTK Modul I)
2002	Master's degree in general biology
1998	Swiss Cantonal Maturity

Awards

2016	**Best Poster Award**, Clinical Nanomedicine and Targeted Medicine (CLINAM), Basel, Switzerland, T. Buerki-Thurnherr, S. Grafmueller, P. Manser, C. Muoth, L. Aengenheister, A. Wichser, W. Jochum, PA. Diener, U. von Mandach, P. Wick, "Studying nanoparticle translocation an d effects at the human placental barrier using ex vivo and advanced in vitro model systems"
2014	**2nd Best Talk Award**, 7th International Nanotoxicology Congress, Antalya, Turkey Muoth C, Schipanski A, Buerki-Thurnherr T, Rottmar M, Wick P, Maniura K, "Does the cell architecture influence engineered nanomaterial uptake? – an experimental approach"
2011	**2nd Best poster award**, 35th International conference on advanced ceramics and composities, Daytona Beach, Florida, L. Xiao, S. Stucky, O. Arslan, D. Hermann, S. Kremer, B. Müller, S. Mathur. T. Buerki-Thurnherr, H. Krug, J. Shi, A. Kunzmann, B. Fadeel, "How safe are nanomaterials for human beings"
2010	**Best poster award**, 2nd Nanpoimpactnet conference, Lausanne, Switzerland, T. Buerki-Thurnherr, C. Brandenberger, JP.Kaiser, P. Manser, L. Diner, HF.Krug, P. Wick, "Long-term accumulation of multi-walled carbon nanotubes has no major effects on human lung cell survival and functionality in vitro"

Grant acquisition

2015-2018	BMBF-proposal NanoUmwelt	Co-applicant (1.8 M€ / 180 k€)
2013-2017	7th FP EU Nanosolutions (*NMP*.2012.1.3-1)	Co-applicant (10 M€ / 290 k€)

Student supervision

Since 2009	Supervision of 2 master students, 3 PhD students and 1 exchange postdoctoral student ; Co-supervision of 2 PhD students, Empa	St.Gallen, Switzerland
2003	Co-supervision of 1 master student, ETH	Zurich, Switzerland

Teaching/courses

Lectures	Vorarlberg University of Applied Sciences: Master course in micro- and nanotechnology (acknowledged as the best technical degree program in Austria) 2010-2011

Service

Ad hoc reviewer	Nanotoxicology, International Journal of Nanomedicine, Science and Technology of Advanced Materials (STAM), Environmental Pollution, Altex
Member	ETPN- European Technology Platform Nanomedicine (2015-present); Competence Center TEDD (Tissue engineering for drug development and substance testing) (2007-present)

Invited lectures

3.3.2016	9.Tierversuchstagung des Schweizer Tierschutz STS, Ersatzmethoden – wohin? Plazenta-Barriere: Mit neuen Technologien und Erkenntnissen zu aussagekräftigen humanen Modellen, Olten, Switzerland
5-6.2.2015	Education Days on Organotypic Cell Models, Sanofi Pasteur, Marcy l'Etoile, France
29.10.2014	Mini Symposium: Nanoparticle interaction with the placental barrier, Exploiting novel technologies to develop advanced placenta models for nanomaterial testing, Medical University Graz, Graz, Austria
14.3.2013	In vitro Barrier Models, Novel human placenta in vitro models for nanomaterial testing, Empa,

St.Gallen, Switzerland

12.9.2011 Alte Garde Ascom, Nanotechnologie im Alltag: Fluch oder Segen? Hotel Bern, Bern, Switzerland

19.3.2010 1st VERT Forum, Placenta penetration of nanoparticles, Empa, Dübendorf, Switzerland

Publications

> 1149 citations, h-index 13 (Google scholar 14.11.2016)

1. Muoth C., Wichser A., Monopoli M., Correia M., Ehrlich N., Loeschner K., Gallud A., Kucki M., Diener L., Jochum W., Wick P., **Buerki-Thurnherr T**. (2016). A 3D microtissue co-culture model of the human placenta for nanotoxicity assessment. **Nanoscale**, 2016, 8, 17322 - 17332.

2. Muoth C., Rottmar M., Schipanski A., Gmuender C., Maniura-Weber K., Wick P., **Buerki-Thurnherr T.** (2016). A micropatterning approach to study the influence of actin cytoskeletal organization on polystyrene nanoparticle uptake by BeWo cells. **RSC Advances**, 2016, 6, 72827 - 72835.

3. Muoth C., Aengenheister L., Kucki M., Wick P., **Buerki-Thurnherr T.** (2016). Nanoparticle transport across the placental barrier: Pushing the field forward! **Nanomedicine**, Apr;11(8):941-57.

4. Schlagenhauf L., Kianfar B., **Buerki-Thurnherr T.**, Kuo, Y., Wichser A., Nueesch F., Wick P., Wang J. (2015). Weathering of a Carbon Nanotube / Epoxy Nanocomposite under UV Light and in Water Bath: Impact on Abraded Particles. **Nanoscale**. 7, 18524 - 18536

5. Schlagenhauf L., **Buerki-Thurnherr T.**, Losert S., Ott N., Wichser A., Nüesch F., Wick P., Wang J. (2015). Released carbon nanotubes from an epoxy-based nanocomposite: quantification and toxicity. **Environ. Sci. Technol.**, 49 (17): 10616–10623

6. Grafmueller S., Manser P., Diener L., Maurizi L., Diener PA., Hofmann H., Jochum W., Krug HF., **Buerki-Thurnherr T.**, von Mandach U., Wick P. (2015). Transfer studies of polystyrene nanoparticles in the ex vivo human placenta perfusion model: key sources of artifacts. **Sci. Technol. Adv. Mater.** 16 (4) 044602

7. Grafmueller S., Manser P., Diener L., Diener PA., Maeder-Althaus X., Maurizi L., Jochum W., Krug H.F., **Buerki-Thurnherr T.**, von Mandach U., Wick P. (2015). Differential bidirectional transfer of polystyrene nanoparticles across the placental barrier reveals different transport kinetics. **Environ Health Persp.**,123(12):1280-6.

8. **Buerki-Thurnherr T.** *, Montani L. *, Paes de Faria J., Pereira J.A., Dias N., Fernandes R., Braun A., Benninger Y., Goncalves A. F., Nave K.A., Franklin R.J.M., Meijer D., Fässler R., Suter U., Relvas J.B. (2014) Profilin1 is required for peripheral nervous system myelination. **Development** 141, 141(7):1553-61 *shared first author

9. Tuomela S., Autio R, **Buerki-Thurnherr T.**, Arslan O., Kunzmann A., Andersson-Willmann B., Wick P., Matur S., Scheynius A., Krug H.F., Fadeel B., Lahesmaa R. (2013). Gene expression profiling of immune-competent cells exposed to engineered zinc oxide or titanium dioxide nanoparticles. **Plos ONE** 8(7):e68415

10. Kaiser JP., **Buerki-Thurnherr T.**, Wick P. (2013). Influence of single walled carbon nanotubes at subtoxical concentrations on cell adhesion and other cell parameters of human epithelial cells. **The Journal King Saud University – Science** 25(1),15-27

11. **Buerki-Thurnherr T.**, Xiao L., Diener L., Arslan O., Hirsch C., Maeder-Althaus X., Grieder K., Wampfler B., Mathur S., Wick P., Krug H.F. (2012). In vitro mechanistic study towards a better understanding of ZnO nanoparticle toxicity. **Nanotoxicology**. 7(4):402-16

12. Andersson-Willman B., Gehrmann U., Cansu Z., **Buerki-Thurnherr T.**, Krug H.F., Gabrielsson S.,

Scheynius A. (2012). Effects of subtoxic concentrations of TiO2 and ZnO nanoparticles on human lymphocytes, dendritic cells and exosome production. **Toxicol Appl Pharmacol.** 264(1):94-103

13. **Buerki-Thurnherr T.**, von Mandach U., Wick P. (2012). Knocking at the door of the unborn child: Engineered nanoparticles at the human placenta barrier. **Swiss Med Wkly.** 2012;142:w13559

14. Kaiser J-P., Roesslein M., **Buerki-Thurnherr T.**, Wick P. (2011). Carbon Nanotubes- Curse or Blessing. **Current Medicinal Chemistry**, 18, 2115-2128

15. Kunzmann A., Andersson B., Vogt C., Neus F., Ye F., Gabrielsson S., Toprak M.S., **Buerki-Thurnherr T.**, Laurent S., Bridot J.L., Müller R., Vahter M., Krug H.F., Muhammed M., Scheynius A., Fadeel B. (2011). Efficient internalization of silica-coated iron oxide nanoparticles of different sizes by primary human macrophages and dendritic cells. **Toxicol Appl Pharmacol.**253(2):81-93

16. **Thurnherr T.**, Brandenberger C., Fischer K., Diener L., Manser P., Maeder-Althaus X., Kaiser J.P., Krug H.F., Rothen-Rutishauser B., Wick P. (2011). A comparison of acute and long-term effects of industrial multiwalled carbon nanotubes on human lung and immune cells in vitro. **Toxicol Lett.** 200(3):176-86

17. Kunzmann A., Andersson B., **Thurnherr T.**, Krug H.F., Scheynius A., Fadeel B. (2010). Toxicology of engineered nanomaterials: Focus on biocompatibility, biodistribution and biodegradation. **Biochim Biophys Acta**, 1810(3):361-73

18. **Thurnherr T.**, Su D.S., Diener L., Weinberg G., Manser P., Pfänder N., Arrigo R., Schuster M.E., Wick P., Krug H.F. (2009). Comprehensive evaluation of in vitro toxicity of three large-scale produced carbon nanotubes on human Jurkat T cells and a comparison to crocidolite asbestos. **Nanotoxicology** 3 (4), 319-338.

19. Pereira J.A., Benninger Y., Baumann R., Gonçalves A.F., Özçelik M., **Thurnherr T.**, Tricaud N., Meijer D., Fässler R., Suter U., Relvas J.B. (2009). Integrin-linked kinase is required for radial sorting of axons and Schwann cell myelination in the peripheral nervous system. **J Cell Biol.** *185* (1), 147-161.

20. **Thurnherr T.***, Benninger Y.*, Pereira J.A., Krause S.M., Wu X., Chrostek A., Herzog D., Nave K.A., Franklin R.J.M., Meijer D., Brakebusch C., Suter U., Relvas, J.B. (2007). Essential and distinct roles for cdc42 and rac1 in the regulation of Schwann cell biology during PNS myelination. **J Cell Biol.** *177*, 1051-61. See also commentary: Chan, J.R. (2007). Myelination: all about Rac 'n' roll. The Journal of Cell Biology: 177:953-5 and Whalley, K. (2007). It's a wrap. Nature reviews Neuroscience 8:572 *shared first author

21. **Thurnherr T.***, Benninger Y.*, Wu X., Chrostek A., Krause S.M., Franklin, R.J.M., Nave K.A., Brakebusch C., Suter U., Relvas, J.B. (2006). Cdc42 and rac1 signaling are both required for and act synergistically in the correct formation of myelin sheaths in the CNS. **J Neurosci** *26*, 10110-10119. (featured article). Faculty of 1000 Recommended, *shared first author

22. Benninger Y., Colognato H., **Thurnherr T.**, Franklin, R.J.M., Leone D.P., Atanasoski S., Nave, K.A., Ffrench-Constant C., Suter U., Relvas, J.B. (2006). Beta1-integrin signaling mediates premyelinating oligodendrocyte survival but is not required for CNS myelination and remyelination. **J Neurosci** *26*, 7665-7673. Faculty of 1000 Recommended