

CURRICULUM VITAE

Veit SENNER (Professor Dr.-Ing. Dipl. Sportlehrer)



Associate Professor for Sport Equipment and Materials
Technical University of Munich (TUM), Germany

born 10.05.1959 in
Wolfratshausen, Germany
married, no children

Research focus

Human-centered engineering, human movement biomechanics, athlete equipment interaction, personal protection gear, wearables, close-to-the body sensor and measurement technologies

Education

1978	Abitur, Friedrich-Schiller Gymnasium Pfullingen, Germany.
1979	Compulsory community service (DPWV, Reutlingen, Germany)
1989	Graduation (Dipl.-Ing.) in Mechanical Engineering (Specialization in Construction and Development), Technical University of Munich.
1995	Graduation (Dipl.-Sportl.) in Sports Science & Physical Education, Technical University of Munich.
2001	Ph.D. (Dr.-Ing.) TUM School of Mechanical Engineering, Chair of Construction and Product Design. Thesis: <i>Biomechanical Methods in Sport Equipment Design</i> (translated)

Further professional education

1983 - 1995	Governmental education program for professional ski instructors. Finished with a degree as Certified Ski Instructor (“Staatlich geprüfter Skilehrer”)
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Academia career and employment

2002	Appointment as Assistant Professor (Extraordinarius) at the Technical University of Munich, Department of Sports Science.
2007	Associate Professor for Sport Equipment and Materials (same Department).
2005 - 2009	Associate Dean, Faculty of Sport Science
2009	Transfer professorship to TUM Mechanical Engineering Department. Secondary membership in the Department of Sport and Health Sciences.

Employment in industry

1985 - 1988	Student trainee at TÜV Bayern, Segment Ergonomics and Biomedicine
1989 - 1995	Scientific Associate TÜV Product Service GmbH, Munich
1995 - 2001	TÜV Southern German Holding AG. Leaving as head of BASiS-Institute of TÜV Product Service GmbH
2001 – 2009	Managing Director Science to Business GmbH (formerly BASiS – Angewandte Biomechanik GmbH, Munich)
2007 – 2011	Managing Director Kompetenzzentrum Sport-Gesundheit-Technologie Garmisch Partenkirchen GmbH

Activities & memberships in scientific associations and commissions

2008 -	Editorial Board <i>Journal Sports Engineering and Technology</i> (SAGE)
2007 - 2019	President German Interdisciplinary Sport Technology Association e.V. (divers)
2002 -	Vice President of the <i>International Society Skiing Trauma and Safety</i> (ISSS)
2006 -	President Association Snow Sport Education at German Universities (ASH)
2012 -	Founding Member at the Bavarian Board of Trustees for Alpine Safety (BayKurASi)
2004 -	Convener ISO TC83/SC3 WG2 on Ski Bindings
2008 -	Member of German Alpine Association's (DAV) Safety Commission
2010 - 2016	Member Executive Board <i>International Sports Engineering Association</i> (ISEA)
2005 - 2017	Member Executive Board of Evangelical Student Houses in Munich (ESWM)

Prizes

Michael Jäger Prize 2015 from the GOTS (Society for Orthopedic Traumatological Sports Medicine). Author Group: P. Brucker, P. Spitzenpfeil, M. Olvermann, A. Grabisch, L. Diez, V. Junior, A. Huber, KH. Waibel, G. Stehling, I. Valtingoier, H. Semsch, V. Senner & E. Moritz. Title: *Development of a preventive knee brace in professional ski racing – a holistic development concept with implementation in the Alpine FIS Ski World Cup.*

Supervised Dissertations and Habilitations

15 completed as supervisor, 24 completed as co-supervisor or second examiner, 11 ongoing Ph.D.'s as principal doctoral advisor, 1 Habilitation

Number of Scopus Listed Publications / H-Index

86 in Scopus listed publications, H-Index: 11 (updated April 2021)

Selection of Publications

- Bere, T., Flørenes, T., Krosshaug, T., Koga, H., Nordsletten, L., Irving, C., Muller, E, Reid, R.C., Senner, V. & Bahr, R. (2011). Mechanisms for Anterior Cruciate Ligament Injury in World Cup Alpine Skiing: A Systematic Video Analysis of 20 Cases. *American Journal of Sports Medicine*, 39(7), 1421–1429.
- Böhm, H., & Senner, V. (2008). The effect of skiboot settings on tibio-femoral abduction and rotation during standing and simulated skiing. *Journal of Biomechanics*, 41(3), 498–505.
- Elhady, N., Jonas, S., Provost, J., Senner, V. (2020) Sensor Failure Detection in Ambient Assisted Living Using Association Rule Mining. *Sensors*. 2020; 20(23):6760. <https://doi.org/10.3390/s20236760>
- Krämer, C. H., Schneider, I., Böhm, H., Klöpfer, I., & Senner, V. (2009). Effect of different handgrip angles on work distribution during hand cycling at submaximal power levels. *Ergonomics*, 52(10), 1276–1286.
- Lehner, S., Geyer, T., Michel, F. I., Schmitt, K.-U., & Senner, V. (2014). Wrist Injuries in Snowboarding – Simulation of a Worst Case Scenario of Snowboard Falls. *Procedia Engineering*, 72, 255–260. doi:10.1016/j.proeng.2014.06.037
- Meyer, D., Korber, M., Senner, V. & Tomizuka, M. (2018). Regulating the Heart Rate of Human-Electric Hybrid Vehicle Riders Under Energy Consumption Constraints Using an Optimal Control Approach. *IEEE Transactions on Control Systems Technology*, 1–14. <https://doi.org/10.1109/TCST.2018.2852743>
- Passler, S., Müller, N. & Senner, V. (2019). In-Ear Pulse Rate Measurement: A Valid Alternative to Heart Rate Derived from Electrocardiography? *Sensors (Basel, Switzerland)*, 19(17). <https://doi.org/10.3390/s19173641>
- Senner, V., Michel, F. I., Lehner, S., & Brügger, O. (2013). Technical possibilities for optimizing the ski-binding-boot functional unit to reduce knee injuries in recreational alpine skiing. *Sports Engineering, Volume 16* (Issue 4), 211–228.
- Senner, V., Lehner, S., Michel, F. I. & Brügger, O. (2019). Modelling and simulation to prevent overloads in snowboarding. In A. Baca & J. Perl (Hg.), *Modelling and simulation in sport and exercise* (S. 211–236). Routledge / Taylor & Francis Group.
- Supej, M., Senner, V., Petrone, N., & Holmberg, H.-C. (2017). Reducing the risks for traumatic and overuse injury among competitive alpine skiers. *British Journal of Sports Medicine*, 51(1), 1–2. doi:10.1136/bjsports-2016-