

# Facts and Figures 2015

Swiss Federal Institute of Sport Magglingen SFISM



**SFISM**  
Swiss Federal  
Institute  
of Sport  
Magglingen



# Tenth anniversary of SFISM

**The 2015 graduation ceremony was a fitting occasion to look back on the SFISM's ten-year history. The review highlighted the consolidation and development of the institute to include teaching, research and services.**

The Swiss Federal Institute of Sport Magglingen SFISM was established in 2005 from the merger of ESSM with the SWI Research Institute. Today it is a lean educational institution comprising three sections, an interdisciplinary section and two specialist services. Institutional accreditation will be the next major milestone.

## Interdisciplinary cooperation

The SFISM operates in the field of «Technologies in Sports and Medicine» as one of four centres of excellence at Berne University of Applied Sciences (BFH). This enables it to take an even greater interdisciplinary approach.

Work on the reform of the Bachelor's degree made good progress and in 2015 involved drawing up the curriculum requirements. In future this will include a long-term internship to guarantee lasting practical experience. The redesigned Bachelor's course will be introduced in autumn 2016.

	2014	2015
Employees	125	134
<b>Courses and education programmes</b>		
BSc students	110	111
MSc elite sports students	74	63
MSc in Health and Research (joint master with UniFR)	103	118
CAS/DAS/MAS students	11	18
Magglinger Hochschulwoche Students	787	825
Professional coach course participants	85	92
Coach certification course participants	29	28
Candidates for the performance sports coach examination (number who passed)	67 (54)	91 (74)
Candidates for the advanced elite sports coach examination (number who passed)	20 (17)	no examination
Participants in continuing education for coaches (incl. autumn coach conventions)	430	591

## Unabating demand

Demand for services for performance sport and the related sports associations remains high. The establishment of a performance sports desk serves to optimize cooperation between the Performance Sport section and the associations. However, activities in the services area are limited by the human resources situation. With a view to the government's announced stabilization programmes, the situation is likely to be exacerbated.

Nevertheless, the SFISM also provided support services for various sports policy transactions, including the overall context of sports promotion, the evaluation of sport in schools, and the sector research concept.

	2014	2015
<b>Support for elite sports</b>		
Medical consultations	1368	862
Physiotherapy consultations	3188	3165
Performance diagnostics (strength): No. of athletes (tests)	1116 (5078)	981 (3807)
Performance diagnostics (endurance): No. of athletes (tests)	449 (1768)	312 (1397)
Candidates for the RS in elite sports	57	69
Candidates for the WK in elite sports	335	315
Coach counselling	117	194

	No. of participants	
<b>Continuing education opportunities at SFISM</b>		
CAS sports facilities	11	18
Sports journalism compact course	9	did not take place
Continuing education programme – quality and competency in vocational school sports	44	38

# Publications

## I. Original articles (in periodicals)

**Ammann, R., Taube, W., & Wyss, T.** (2015). Accuracy of PARTwear inertial sensor and Optojump optical measurement system for measuring ground contact time during running. *Journal of Strength and Conditioning Research*, in press.

Bringolf-Isler, B., **Mäder, U., Dössegger, A., Hofmann, H., Puder, J.J., Braun-Fahrlander, C., & Kriemler, S.** (2015). Regional differences of physical activity and sedentary behaviour in Swiss children are not explained by socio-demographics or the built environment. *International journal of public health*, 59 (6), p. 889-1026.

Brocherie, F., Millet, G., **Hauser, A., Steiner, T., Rysman, J., Wehrlin, J.P., & Girard, O.** (2015). "Live High-Train Low and High" Hypoxic Training Improves Team-Sport Performance. *Medicine and Science in Sports and Exercise*, 47 (10), p. 2140-2149.

**Hauser, A., Schmitt, L., Trösch, S., Saugy, J., Cejuela, R., Faiss, R., Robinson, N., Wehrlin, J.P., & Millet, G.** (2015). Similar Hemoglobin Mass Response in Hypobaric and Normobaric Hypoxia in Athletes. *Medicine and Science in Sports and Exercise*, Epub ahead of Print.

**Heydenreich, J., Melzer, K., Schutz, Y., Kayser, B., & Mäder, U.** (2015). Energy Expenditure, Energy Intake, and Body Composition in Adult Endurance Athletes across the Training Season: A Systematic Review. *International Journal of Sports Nutrition & Exercise Metabolism*.

**Heydenreich, J., Melzer, K., Schutz, Y., Kayser, B., & Mäder, U.** (2015). Influence of Aerobic Fitness on Resting Metabolic Rate in Endurance Athletes: A Systematic Review. *International Journal of Sports Nutrition & Exercise Metabolism*.

**Hübner, K., & Schärer, C.** (2015). Wie viel Maximalkraft ist für explosivkräftige Bewegungen notwendig? Und wie kann diese ermittelt werden? – Vorstellung des leistungsdiagnostischen Verfahrens «Muskelleistungsdiagnostik». *Schriftenreihe Angewandte Trainingswissenschaft*, in press. Meyer & Meyer Verlag: Aachen.

**Hübner, K., & Schärer, C.** (2015). Relationship between the Elements Swallow, Support Scale and Iron Cross on rings and their specific preconditioning strengthening exercises. *Science of Gymnastics Journal*, 7 (3), p. 59-68.

Manios, Y., Moschonis, G., Androutsos, O., Filippou, C., Van Lippevelde, W., Vik, F. N., te Velde, S. J., Jan, N., **Dössegger, A., Bere, E., Molnar, D., Moreno, L. A., Chinapaw, M. J., De Bourdeaudhuij, I., & Brug, J.** (2015). Family sociodemographic characteristics as correlates of children's breakfast habits and weight status in eight European countries. The ENERGY (European Energy balance Research to prevent excessive weight Gain among Youth) project. *Public Health Nutrition*, 18 (5), p. 774-83.

Manios, Y., Moschonis, G., Karatzi, K., Androutsos, O., Chinapaw, M., Moreno, L.A., Bere, E., Molnar, D., Jan, N., **Dössegger, A., De Bourdeaudhuij, I., Singh, A., & Brug, J.** (2015). Large proportions of overweight and obese children, as well as their parents, underestimate children's weight status across Europe. The ENERGY (European Energy balance Research to prevent excessive weight Gain among Youth) project. *Public Health Nutrition*, 18 (12), p. 2183-2190.

**Melzer, K., Heydenreich, J., Schutz, Y., Renaud, A., Kayser, B., & Mäder, U.** (2015). Resting metabolic rate of specific population subgroups in relation to the commonly accepted value of the metabolic equivalent. *PlosOne*.

**Melzer, K., Renaud, A., Zurbuchen, S., Tschopp, C., Lehman, J., Malatesta, D., Ruch, N., Schutz, Y., Kayser, B., & Mäder, U.** (2015). Alterations in energy balance from an exercise intervention with ad libitum food intake. *J Nutr Sci*.

**Melzer, K., & Mäder, U.** (2015). Effects of 8-week exercise intervention with ad libitum food intake on android/gynoid fat ration in male adults. *Clin Nutr*, 34(51), p. 211.

Naef, N., **Steiner, T., & Wehrlin, J.P.** (2015). Replicate Measurements of Haemoglobin Mass during a Single Day are Feasible and Precise. *International Journal of Sports Medicine*, Epub ahead of Print.

Pauli, C., Keller, M., Ammann, F., **Hübner, K., Lindorfer, J., Taylor, W.R., & Lorenzetti, S.** (2015). Kinematics and Kinetics of Squats, Drop Jumps and Imitation Jumps of Ski Jumpers. *(The) Journal of Strength and Conditioning Research*.

**Romann, M., & Coble, S.** (2015). Relative age effects in athletic sprinting and corrective adjustments as a solution for their removal. *Plos One*, 20 (3), p. 10.

**Romann, M., & Fuchslocher, J.** (2015). Assessment of Skeletal Age on the Basis of DXA-Derived Hand Scans in Elite Youth Soccer. *Research in Sports Medicine*, 15(1), p.1-5.

**Romann, M., & Fuchslocher, J.** (2015). Validation of digit-length ratio (2D: 4D) assessments on the basis of DXA-derived hand scans. *BMC Medical Imaging*, 15(1), p. 1-13.

**Roos, L., Boesch, M., Sefidan, S., Frey, F., Mäder, U., Annen, H., & Wyss, T.** (2015). Adapted marching distances and physical training decrease recruits' injuries and attrition. *Military Medicine*, 180 (3), p. 329-336.

**Roos, L., Hofstetter, M.C., Mäder, U., & Wyss, T.** (2015). Training methods and training instructors' qualification are related to recruits' fitness development during basic military training. *(The) Journal of Strength and Conditioning Research*, 29(11), p. S178-186.

**Roos, L., Taube, W., Zuest, P., Clélin, G., & Wyss, T.** (2015). Musculoskeletal injuries and training patterns in junior elite orienteering athletes. *Biomed Res Int*, p. 8.

**Steiner, T., Müller, B., Maier, T., & Wehrlin, J.P.** (2015). Performance differences when using 26- and 29-inch-wheel bikes in Swiss National Team cross-country mountain bikers. *Journal of Sports Sciences*, in press.

Wunderlin, S., **Roos, L., Roth, R., Faude, O., Frey, F., & Wyss, T.** (2015). Trunk muscle strength tests to predict injuries, attrition and military ability in soldiers. *Journal of Sports Medicine and Physical Fitness*, 55(5), p. 535-543.

Zinner, C., **Hauser, A., Born, D., Wehrlin, J.P., Holmberg, H.C., & Sperlich, B.** (2015). Influence of Hypoxic Interval Training and Hyperoxic Recovery on Muscle Activation and Oxygenation in Connection with Double-Poling Exercise. *PLoS One*, 10(10).

## II. Book chapters

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**Gogol, A.** (2015). Zur Vermittlung sport- und bewegungskultureller Kompetenz - im Sportunterricht das selbstbestimmte und verantwortliche Rollen und Springen lernen und lehren. In: Bietz, J., Laging, R., & Pott-Klindworth, M., *Didaktische Grundlagen des Lehrens und Lernens von Bewegungen – bewegungswissenschaftliche und sportpädagogische Bezüge*. Schneider: Hohengehren.

**Kempf, H., Weber, A.C., Weber, A., & Suter, P.** (2015). Die Organisation des internationalen Sports. In: Kempf, H., & Lichtsteiner, H., *Das System Sport – in der Schweiz und international*. Eidgenössische Hochschule für Sport Magglingen und VMI Universität Freiburg/CH: Magglingen.

**Neuenschwander, M., Güntensperger, A., Kempf, H., & Renaud, A.** (2015). Das Phänomen Sport in der Schweiz. In: Kempf, H., & Lichtsteiner, H., *Das System Sport – in der Schweiz und international*. Eidgenössische Hochschule für Sport Magglingen und VMI Universität Freiburg/CH: Magglingen.

**Stopper, M., Kempf, H., Suter, P., & Weber, A.** (2015). Internationale Sportveranstaltungen. In: Kempf, H., & Lichtsteiner, H., *Das System Sport – in der Schweiz und international*. Eidgenössische Hochschule für Sport Magglingen und VMI Universität Freiburg/CH: Magglingen.

**Weber, A.C., Güntensperger, A., Lichtsteiner, H., Stopper, M., & Renaud, A.** (2015). Die Organisation des Sports in der Schweiz. In: Kempf, H., & Lichtsteiner, H., *Das System Sport – in der Schweiz und international*. Eidgenössische Hochschule für Sport Magglingen und VMI Universität Freiburg/CH: Magglingen.

## III. Publishers

**Kempf, H., & Lichtsteiner, H.** (2015). *Das System Sport - in der Schweiz und international*. Eidgenössische Hochschule für Sport Magglingen und VMI Universität Freiburg/CH: Magglingen.

Sigrist, H., & **Lécho, R.** (2015). *Sportanlagen 542 – Kletteranlagen Orientierungshilfe*. BASPO, Fachstelle Sportanlagen (EHSM): Magglingen.

## IV. Other academic publications (research articles etc.)

**Baumgartner, M.** (2015). Vom Wissen, dass Wissen alleine nicht reicht. Keine Kompetenzentwicklung ohne Verknüpfung von Theorie und Praxis. *Didactiv*, 1(8) p. 5–8.

**Heyer, L., & Ammann, R.** (2015). Hundertstel gewinnen dank Sensor. *hitech*, Berner Fachhochschule BFH: Bern.

## V. Conference abstracts

**Ammann, R., & Wyss, T.** (2015). *Running Asymmetries during a 5-Km Time Trial and their Changes*. Book of Abstracts of the 3rd International Congress on Sport Sciences Research and Technology Support (icSPORTS 2015), Lissabon, Portugal (p. 161-64). Scitepress.

**Beeler, N., Roos, L., Ammann, R., & Wyss, T.** (2015). *Accuracy of Commercial Fitness Trackers Measuring Distance Covered on Foot*. Book of Abstracts of the Seventh Annual Congress of the Swiss Society of Sports Sciences, Lausanne, Schweiz.

**Gogoll, A.** (2015). ‚Wann ist Abschts?‘ – die Bedeutung von sprachlichen und fachlichen Anforderungen beim Aufgabenlösen im Sportunterricht. Book of Abstracts des Internationalen Kongresses Lernen in der Praxis, Brugg-Windisch, Schweiz (p. 15-16). PH FHNW.

**Gogoll, A.** (2015). *Fachdidaktische Forschung zur Qualitätsentwicklung des Sportunterrichts*. Book of Abstracts des Qualitäts- und Bildungsdiskurs, St. Gallen, Schweiz (p. 67-69). PH SG.

**Jeanneret, O.** (2015). *Life stories of coach developers: A better understanding of learning situations developed in the profession*. Book of Abstracts of the 10<sup>th</sup> Global Coach Conference, Vierumäki, Finland. International Council for Coaching Excellence ICCE.

**Melzer, K., Renaud, A., Zurbuchen, S., Tschopp, C., Lehman, J., Malatesta, D., Ruch, N., Schutz, Y., Kayser, U., & Mäder, U.** (2015). *Alterations in energy balance from an exercise intervention with ad libitum food intake*. Book of Abstracts of the annual ACSM Meeting, San Diego, USA (p. 859-861). Med Sci Sports Exerc.

**Romann, M., & Fuchslocher, J.** (2015). *Subjective coach assessment of biological maturation in elite youth soccer*. Book of Abstracts of the 20th Annual Congress of the ECSS, Malmö, Schweden (p. 591-592). European College of Sport Science.

**Roos, L., Taube, W., Zuest, P., Glélin, G., & Wyss, T.** (2015). *Acute and overuse injuries of Swiss orienteering athletes*. Book of Abstracts of the 20th Annual Congress of the European College of Sport Science, Malmö, Schweden (p. 287). ECSS.

**Steiger, J.** (2015). ‚Sportunterricht bietet Einblick in die Persönlichkeiten der Schülerinnen und Schüler...‘ – Überzeugungen von Sportlehrpersonen zur migrationsbedingten Heterogenität im Sportunterricht. Book of Abstracts of the SGBF Congress 2015, Qualitäts- und Bildungsdiskurs, St. Gallen, Schweiz (p. 68-69). Schweizerische Gesellschaft für Bildungsforschung.

## VI. Conference articles

**Ammann, R., & Thoma, P.** (2015). *Lauf(a)symmetrie während einem 5000 m Bahnrennen*. Vortrag, gehalten an der Trainerherbsttagung, Magglingen, Schweiz.

**Baumgartner, M.** (2015). «...ich weiss, was ich tun sollte, jedoch kann ich nicht tun, was ich weiss!» Vortrag, gehalten an der Jahrestagung der Deutsche Vereinigung für Sportwissenschaft, Sektion Sportpädagogik, Bochum, Deutschland.

**Baumgartner, M.** (2015). *Herausforderungen der Lehrerausbildung bearbeiten, professionelle Handlungskompetenzen von Sportlehrpersonen fördern*. Vortrag, gehalten an der Jahrestagung der Schweizerischen Gesellschaft für Sportwissenschaft, Lausanne, Schweiz.

**Baumgartner, M.** (2015). *Phänomen Schulpraktikum. Ein notwendiges, jedoch nicht hinreichendes Ausbildungselement? Eine quasi-experimentelle Feldstudie zur Entwicklung des Standards Rückmeldung*. Vortrag, gehalten am Internationalen Kongresses Lernen in der Praxis, Brugg-Windisch, Schweiz.

Büchler, N., **Gross, M., & Hübner, K.** (2015). *Relation zwischen individuellem Sprintvermögen und tatsächlicher Anlaufgeschwindigkeit im Stabhochsprung – Eine Studie bei einem internationalen Stabhochsprungwettkampf*. Vortrag, gehalten an der Trainerherbsttagung 2015, Magglingen, Schweiz.

**Hübner, K.** (2015). *Wie viel Maximalkraft ist für explosivkräftige Bewegungen notwendig? – Und wie kann diese ermittelt werden?* Vortrag, gehalten an der 17. Frühjahrsschule – Technologien im Leistungssport, Leipzig, Deutschland.

**Jeanneret, O.** (2015). *Récits de vie de formateurs d'entraîneurs comme contribuant au processus de compréhension des situations d'apprentissage développées dans la profession*. Vortrag, gehalten an der Jahrestagung der Schweizerischen Gesellschaft für Sportwissenschaft, Lausanne, Schweiz.

**Renaud, A., de Bosscher, V., & Kempf, H.** (2015). *La tête et les jambes. Un cours de statistique au pas de course?* Colloque Francophone international sur l'enseignement de la statistique, Bordeaux, Frankreich. Societe Francaise de Statistique.

**Renaud, A., de Bosscher, V., & Kempf, H.** (2015). *Multivariate exploration of elite sport national systems*. Vortrag, gehalten am Swiss Statistic Meeting, Bern, Schweiz. Swiss Statistical Society.

**Schärer, C., & Hübner, K.** (2015). *Zusammenhang zwischen den Elementen Schwalbe, Stützwaage und Kreuzhang an den Ringen und sieben spezifischen vorbereitenden Krafttrainingsübungen – Studie mit Athleten des Schweizerischen Nationalkaders im Kunstturnen der Männer*. Vortrag, gehalten an der Trainerherbsttagung 2015, Magglingen, Schweiz.

**Sonderegger, K., & Tschopp, M.** (2015). *Longitudinal performance development in national youth soccer players*. Vortrag, gehalten am World Congress on Science and Football 2015, Copenhagen, Dänemark.

**Stopper, M., & Weber, A.C.** (2015). *The Swiss Elite Sport System - Striving for Excellence*. Vortrag, gehalten an der EASM Conference 2015, Aalborg, Dänemark.

**Troesch, S., Hauser, A., Steiner, T., Gruenenfelder, A., Heyer, L., Gojanovic, B., & Wehrli, J.P.** (2015). *Individual haemoglobin mass response to altitude training at 1800m in elite endurance athletes*. Vortrag, gehalten am 20<sup>th</sup> annual congress of the ECSS, Malmö, Schweden. ECSS.

**Tschopp, M., & Baumgartner, D.** (2015). *Running performance during World Cup 2014 under different climatic conditions*. Vortrag, gehalten am World Congress on Science and Football 2015, Copenhagen, Dänemark.

**Weber, A.C.** (2015). *SPLISS – CH 2011. Momentaufnahme des Schweizer Leistungssportsystems*. Vortrag, gehalten an der Präsidentenkonferenz Swiss Sailing, Ittigen, Schweiz.

**Weber, A.C., de Bosscher, V., & Kempf, H.** (2015). *Strategic Positioning at the Olympic Winter Games: Comparing eight Nations*. Vortrag, gehalten am World Congress on Elite Sport Policy, Melbourne, Australien.

## VII. Articles in print or online media

**Jeanneret, O.** (2015, 22. November). *Parents de sportif: l'intérêt du récit de vie. In: comportement et innovation*. Online verfügbar unter <http://www.comportementsetinnovation.com/parents-de-sportif-linteret-du-recit-de-vie/>.

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**Jeanneret, O.** (2015, 22. September). *Pour une approche pluridisciplinaire de la préparation physique*. In: *Comportements et innovation*. Online verfügbar unter <http://www.comportementsetinnovation.com/pour-une-approche-pluridisciplinaire-de-la-preparation-physique/>.

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