

# Swiss University Centre for Music Physiology

Contact: [www.shzm.ch](http://www.shzm.ch)

## Annual Report 2020 / 2021 and Newsletter August 2021

The SHZM was cooperation partner of the international online symposium "Art in Motion" on June 4<sup>th</sup> and 5<sup>th</sup>, 2021 in Munich. In addition to presentations and workshops, the focus was on various research results from music, dance and sports in the contexts of movement, coordination, precision, learning, training and their life cycles under the heading "**Rhythm**". The flyer can be found on our homepage under the [Current Activities / Events](#).

The continuing education study program in Music Physiology, supported by the SHZM and structured by lecturers of several Swiss music universities has accepted a new group of nine students for the syllabus. More information on the syllabus aiming for the degrees CAS, DAS and MAS (Master of Advanced Studies) can be found on the website of the SHZM under [Links](#).

In the past academic year, Gail Schwarz (recorder, Vienna) completed her Master of Advanced Studies (MAS) in music physiology. Her Master's project and final documentation are dedicated to the successful implementation of the elective course Performance Training for the Pre-College Section of the Vorarlberg State Conservatory in Feldkirch. Performance Training is based on the Swiss model as implemented at the Zurich and Basel University of Music.

In the past academic year, a total of five Diplomas of Advanced Studies (DAS) in music physiology were completed by:

- Mischa Greull (french horn, Uitikon)
- Elisabeth Hofer (piano, St. Gallen)
- Lina Schwob (piano, Zürich)
- Renate Steinmann (violin, Uitikon)
- Monika Quinn (piano, Warsaw, Poland)

The further education offers in music physiology, now available for over 15 years, continue to be offered for music universities wishing to host such events in collaboration with the SHZM. In addition to their own musicophysiological courses on offer, the respective music universities also have the option of booking one of 15 events, held in multiple languages. Information can be found on the SHZM website under [Current Activities/Events](#).

The project designed twelve years ago to build up fitness and good physical condition amongst students of Swiss music universities continues on a regular basis. In coordination with the universities' sport offers, the introduction to this program is given by Christoph Mohler, directly in the respective music universities. In addition, there

exists the possibility of booking a fitness check-up free of cost with suggestions for exercises and a progress control of development after several months. Music universities, who are currently not participating in this scheme, are invited to contact Horst Hildebrandt anytime (please refer to the SHZM's homepage for further information).

The research project "Neurofeedback-Training for Attention and Concentration in Music Students" was successfully completed. Within the framework of this study and after qEEG analysis, music students trained professionally relevant attentional conditions using portable neurofeedback devices for several months. According to data, Neurofeedback training resulted in improvements in the feeling of an increased level of concentration when practicing and in some aspects of performance. A publication of the results and follow-up projects are in preparation.

The research project "Music Performance Anxiety from the Challenge and Threat Perspective: Psychophysiological and Performance Outcomes" started in autumn 2019 in cooperation with the University of Lausanne. After an interruption caused by the Corona-Virus pandemic, the first measurement phase has now been completed end of June 2021 with 121 students. The focus of this study is the examination of changes in stress, cognition, emotion and physiological parameters attributable to stage fright (stress hormone levels, cardio-vascular functions and respiration) with regards to how they relate to qualitative parameters relevant for solo performance quality. The project aims to make a further contribution to the prevention of performance anxiety and a constructive way of dealing with excessive levels of stage fright. A special feature of the study setting is the systematic assessment of performance quality carried out by a panel of experts in parallel to the physiological measurements.

The newly approved SNF research project „The Influence of an Instrument's Dimensions, String Length-dependent Finger Spacing and Position on Muscle Activity and Perceived Effort in Viola Playing" has begun in March 2021 after the Corona-Virus pandemic had led to a lag in the project's preparation. This use-inspired project aims to investigate how the instrument's dimensions and string length-dependent finger spacing affect muscle activity and perceived effort in a player's left hand and arm in conjunction with position effects on these parameters. The project will gather data on objective, physiological parameters such as biomechanics, span-widths and reach of fingers and the arm, as well as muscle activity as criteria, paving the way towards an individually suitable viola's position and dimensions. A further aim is the development of ergonomic solutions for playing the viola based on objective data. They are expected to yield information on the influence of the string's length and its influence on the hand, the size and position of the instrument as well as objective muscle activation and subjectively perceived effort. Results will allow for physiological guidelines and specific pedagogical recommendations as well as for targeted choice

of instrument, ergonomic optimisation and prevention of playing-related health problems.

The SHZM's flyer can be downloaded and printed out in German, French and English from the homepage under the link "Downloads".

Important projects involving the SHZM were presented during the last season at continuing education courses and conventions in Hildesheim, Muttentz and Munich.

Written publications have appeared in the following journals:

Frontiers in Psychology

<https://www.frontiersin.org/articles/10.3389/fpsyg.2020.585875/full>

and

BMC Psychology

<https://doi.org/10.1186/s40359-020-00448-8>

Horst Hildebrandt, Johanna Gutzwiller and Irene Spirgi for the SHZM coordination team, August 2021.