

# **15th Vienna International Workshop on FES & 30 years IFESS Anniversary**

Preliminary Program per 19.08.2025

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## **Monday 15.09.2025**

09:00-17:00      Pre-Conference Workshop  
17:00-19:00      Welcome Cocktail

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## Tuesday 16.09.2025

08:20-08:30      Opening

### Key

#### *Keynote Lecture*

Chairperson:      Jonathan Jarvis (Liverpool, United Kingdom)

08:30              Stanley Salmons (Liverpool, UK)  
PARADIGM SHIFTS: THE FOUNDATIONS OF FUNCTIONAL ELECTRICAL STIMULATION

09:15-10:15      **Ceremony IFESS**

10:15-10:45      **Coffee Break**

#### *Clinical applications of FES*

### Session 1

Chairpersons:      Tamsyn Street (Salisbury, United Kingdom)  
Werner Girsch (Graz, Austria)

10:45              Tamsyn Street et al (United Kingdom)  
QUALITY OF LIFE AND PATIENT REPORTED OUTCOME MEASURES FOLLOWING THE USE OF  
FUNCTIONAL ELECTRICAL STIMULATION FOR WALKING POST STROKE

11:00              Erika G. Spaich et al (Denmark)  
EFFECT OF ELECTRICAL STIMULATION ON THE TIMING OF THE PREPARATORY PHASE OF GAIT  
INITIATION IN PARKINSON'S DISEASE

11:15              Ugo Carraro et al (Italy)  
EFFECTIVENESS OF FES X DDM AFTER TWENTY YEARS OF PERMANENT DENERVATION AND  
DEGENERATION OF HUMAN MUSCLES

11:30              Christina Buchgeher et al (Austria)  
CLINICAL IMPLICATIONS OF ELECTRICAL STIMULATION IN A HOME-BASED TREATMENT SETTING  
FOR PATIENTS WITH FACIAL NERVE PARALYSIS TO STOP DENERVATION ATROPHY

11:45              Tamsyn Street (United Kingdom)  
A RANDOMISED, SHAM-CONTROLLED, REMOTELY CONDUCTED, PROOF OF PRINCIPLE STUDY OF  
ABDOMINAL FUNCTIONAL ELECTRICAL STIMULATION (ABFES) FOR BOWEL MANAGEMENT IN  
SPINAL CORD INJURY (SCI)

12:00              Ines Bersch et al (Switzerland)  
THE EFFECT OF NEUROMUSCULAR ELECTRICAL STIMULATION ON BOWEL MANAGEMENT IN  
PEOPLE WITH CHRONIC SPINAL CORD INJURY

12:15              Benjamin Forrest et al (United Kingdom)  
A RETROSPECTIVE ANALYSIS OF ABFES IN TREATING AND MANAGING CONSTIPATION IN  
INDIVIDUALS WITH NEUROLOGICAL IMPAIRMENT

12:30              Janez Rozman et al (Slovenia)  
STIMULATION OF NEUROVASCULAR BUNDLES DURING ROBOT-ASSISTED RADICAL  
PROSTATECTOMY

12:45-13:45      **Lunch**

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## *Afferent Nerve Stimulation*

### **Session 2**

Chairpersons: Winfried Mayr (Vienna, Austria)  
Ines Bersch-Porada (Notwil, Switzerland)

- 13:45 Werner Girsch et al (Austria)  
TREATMENT OF CHRONIC NEUROPATHIC PAIN WITH PERIPHERAL NERVE STIMULATION
- 14:00 Milana Mileusnic et al (Austria)  
CLINICAL ADVANCES IN FULL BODY NEUROMODULATION TO TREAT SPASTIC MOTOR DISORDER AND CHRONIC PAIN
- 14:15 Rebecca Grenfell et al (Australia)  
FUNCTIONAL IMPACT OF THE EXOPULSE MOLLIE SUIT IN SPG4 HEREDITARY SPASTIC PARAPLEGIA: A SINGLE-SUBJECT AB CASE STUDY
- 14:30 Sarah Massey et al (United Kingdom)  
OPTIMAL PARAMETERS FOR LOWER LIMB AFFERENT NERVE ROOT ACTIVATION USING TRANSCUTANEOUS SPINAL CORD STIMULATION IN HEALTHY ADULTS.
- 14:45 Anna Pataria et al (Austria)  
HOME-BASED TRANSCUTANEOUS ELECTRICAL NERVE STIMULATION FOR IDIOPATHIC SENSORY POLYNEUROPATHY: A PERSONALIZED APPROACH
- 15:00 Dibya Chowdhury et al (Austria)  
REAL-TIME R-PEAK PREDICTION IN ECG FOR CARDIAC-GATED AURICULAR VAGUS NERVE STIMULATION
- 15:15-15:45 **Coffee Break**

## *FES-Technology*

### **Session 3**

Chairpersons: Nick Donaldson (London, UK)  
Thomas Schauer (Berlin, Germany)

- 15:45 Javier Sáez et al (Chile)  
DESIGN PARAMETERS OF CONCENTRIC ELECTRODES: A SIMULATION STUDY TO OPTIMIZE NON-INVASIVE FUNCTIONAL ELECTRICAL STIMULATION
- 16:00 Kevin Schuh et al (Austria)  
LOW-RESISTANCE COST-EFFICIENT INTERFACING FOR NEUROSTIMULATION NEEDLES BASED ON PRINTED CIRCUIT BOARD TECHNOLOGY
- 16:15 Siobhan Mackenzie Hall et al (United Kingdom)  
AI ELECTRODE AND STIMULUS DESIGN FOR FES RESEARCH: A PILOT STUDY
- 16:30 Hany Shaker et al (Egypt)  
COST-EFFECTIVE REMOTELY FULLY-CONTROLLED ELECTRICAL STIMULATOR FOR SKELETAL MUSCLES REHABILITATION
- 16:45 Hermann Lanmüller et al (Austria)  
INCREASING THE RELIABILITY OF AN IMPLANTABLE PULSE GENERATORS FOR SMALL AND LARGE LABORATORY ANIMALS
- 17:00 Hany Shaker et al (Egypt)  
TOWARDS A SAFE LONG-TERM IMPLANTABLE ELECTRICAL STIMULATION: A HIGH-EFFICIENCY CHARGE BALANCER DESIGN
- 17:15-19:45 ViennaFES Cybersports 2025

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## Wednesday 17.09.2025

### Key

#### Keynote Lecture

Chairperson: Thomas Stieglitz (Freiburg, Germany)

08:30 Stanisa Raspopovic (Vienna, Austria)  
HUMAN-MACHINE INTERFACING FOR HEALTH BENEFITS

#### Sensory Restoration

### Session 4

Chairpersons: Stanisa Raspopovic (Vienna, Austria)  
Eugenius Kaniusas (Vienna, Austria)

09:10 Michael Handler et al (Austria)  
COMPUTER SIMULATION OF COMBINED VESTIBULAR/COCHLEAR IMPLANTSTIMULATION FOR THE ANALYSIS OF CROSS-TALK AND NEURONALRESPONSES

09:25 Laurin Xaver Koppenwallner et al (Austria)  
FOCAL STIMULATION OF RETINAL GANGLION CELLS BY PULSEDURATION MODULATION AND CURRENT STEERING

09:40 Klaus Peter Koch et al (Germany)  
A FIRST APPROACH TO PHASE-MODULATED INTERFERENCESTIMULATION FOR GENERATING MOVING TACTILE PERCEPTION

09:55-10:25 Coffee Break

#### Methodological Insights

### Session 5

Chairpersons: Matthias Krenn (Mississippi, United States)  
Christine Azevedo (Montpellier, France)

10:25 Hazzira Ameera Safin Hashim et al (Malaysia)  
ULTRASOUND ASSESSMENT OF FOREARM MUSCLE CHANGES FOLLOWINGFES IN SARCOOPENIC ELDERLY: PRELIMINARY RESULTS OF AFEASIBILITY STUDY

10:40 Nur Azah Hamzaid et al (Malaysia)  
MUSCLE OXYGENATION-BASED CLASSIFICATION OF SPINAL CORDINJURY DURING FES USING NIRS AND MACHINE LEARNING

10:55 Ellen Huld A. Þórðardóttir et al (Denmark)  
INVESTIGATING PREDICTORS OF RECOVERY AFTER SPINAL CORDINJURY: A STATISTICAL APPROACH TO SECONDARY INJURY ANDCLINICAL OUTCOME ANALYSIS

11:10 Sandra Dorfer et al (Austria)  
RESPIRATION-DRIVEN CLOSED-LOOP MODULATION OF BINAURAL BEATS

11:25 Matthias Krenn et al (United States)  
ELECTRICAL PRECONDITIONING OF DENERVATED MUSCLE PRIOR TONERVE TRANSFER: A FEASIBILITY STUDY IN A NON-HUMAN PRIMATEMODEL

11:40 Jan Namysl (Poland)  
COUPLING FES AND DYNAMIC SURFACE ELECTROMYOGRAPHY:ADVANCING NEUROREHABILITATION

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11:55 Ellen Huld A. Þórðardóttir et al (Denmark)  
EFFECTS OF INTERNAL AND EXTERNAL COOLING ON TEMPERATURE REGULATION FOLLOWING  
SPINAL CORD INJURY: A MATHEMATICAL SIMULATION-BASED STUDY

12:10-13:10 Lunch

## *FES-Cycling*

### **Session 6**

Chairpersons: Martin Schmoll (Vienna, Austria)  
Lynsey Duffell (London, United Kingdom)

13:10 Stephan Baglikow et al (Germany)  
REAL-TIME BAYESIAN OPTIMIZATION OF FES CYCLING

13:25 Nick Donaldson et al (United Kingdom)  
ADDING IMPOSED ANKLE MOTION TO FES CYCLING

13:40 Mariann Mravcsik et al (Hungary)  
FES-INDUCED CHANGES IN EXCITABILITY OF DENERVATED MUSCLES IN FLACCID PARAPLEGIA -  
CASE STUDY

13:55 Isabelle Rösler et al (Austria)  
DEVELOPMENT OF MODELS TO ESTIMATE REALISTIC KEY PERFORMANCE INDICATORS ON A FES-  
CYCLING-ERGOMETER

14:10 Tiago Coelho-Magalhães et al (France)  
OPTIMAL CONTROL FRAMEWORK FOR PERSONALIZED FES-CYCLING IN INDIVIDUALS WITH SPINAL  
CORD INJURY

14:25 Martin Schmoll et al (Austria)  
ASSESSING ACCURACY OF POWER-PEDALS FOR LOW POWER OUTPUT IN FES-CYCLING –  
PRELIMINARY RESULTS

14:40-15:10 Coffee Break

## *Movement Restoration*

### **Session 7**

Chairpersons: Kristin E. Musselman (Toronto, Canada)  
Nur Azah Hamzaid (Malaya, Malaysia)

15:10 Jonathan Baum et al (France)  
TOWARDS ELECTROPHYSIOLOGICAL AND HISTOLOGICAL MAPPING OF UPPER LIMB NERVES IN  
PIGS USING EPINEURAL STIMULATION

15:25 Jonathan Jarvis et al (United Kingdom)  
INTERFERENTIAL OR MIDDLE-FREQUENCY STIMULATION OF PERIPHERAL NERVE

15:40 Manuela Riegler et al (Austria)  
STUDY PROTOCOL: EFFICACY OF EMG-TRIGGERED FOUR-CHANNEL FUNCTIONAL ELECTRICAL  
STIMULATION IN ARM-HAND PARESIS FOLLOWING STROKE

15:55 Christine Azevedo et al (France)  
EPINEURAL ELECTRICAL STIMULATION FOR GRASP RECOVERY: 28-DAY STUDY IN 4 TETRAPLEGIC  
PARTICIPANTS

16:10 Gabriel Graffagnino et al (France)  
REAL-TIME GAIT EVENT DETECTION USING MOTION CAPTURE TO CONTROL AN ELECTRICAL

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|-------------|--------------------------------------------------------------------------------------------------------------------------------|
|             | STIMULATOR: PROOF-OF-CONCEPT                                                                                                   |
| 16:25       | Christine Singleton et al (United Kingdom)<br>FES THERAPY IMPROVES GAIT DYNAMICS IN PEOPLE WITH LIMB LOSS– A FEASIBILITY STUDY |
| 16:40-22:40 | Bus to Conference Dinner                                                                                                       |

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## Thursday 18.09.2025

### Key

#### *Keynote Lecture*

Chairperson: Simona Ferrante (Milano, Italy)

08:30

Ines Bersch-Porada (Nottwil, Switzerland)

"THE SUCCESS OF NOTTWIL" - TAKING A CRITICAL LOOK AT HOW "SUCCESSFULLY" FES HAS BEEN INTEGRATED INTO NEUROREHABILITATION

### Session 8

#### *Current Challenges and Future Directives of FES 1*

Chairpersons: Richard Crevenna (Vienna, Austria)  
Ugo Carrao (Padova, Italy)

09:00

Kristin E. Musselman et al (Canada)

DEVELOPMENT OF TOOLKITS AS AN IMPLEMENTATION STRATEGY FOR FUNCTIONAL ELECTRICAL STIMULATION (FES) IN NEUROREHABILITATION PRACTICE

09:15

Elina Nezon et al (Canada)

STRATEGIES TO IMPROVE USE, KNOWLEDGE, AND CONFIDENCE OF FUNCTIONAL ELECTRICAL STIMULATION IN CEREBRAL PALSY REHABILITATION

### Key

#### *Keynote Lecture*

Chairperson: Michaela Mödlin (Vienna, Austria)

09:30

Barbara Chaloupek (Vienna, Austria)

FROM THE PATIENT'S PERSPECTIVE: VISION FOR THE FUTURE AND CURRENT OBSTACLES

10:00-10:30

Coffee Break

### Key

#### *Keynote Lecture*

Chairperson: Manfred Bijak (Vienna, Austria)

10:30

Werner Girsch (Pressbaum, Austria)

40 YEARS PHRENIC NERVE PACING

### Key

#### *Keynote Lecture*

Chairperson: Erika Spaich (Aalborg, Denmark)

11:00

Manfred Bammer (Vienna, Austria)

REGULATORY HURTTLES FOR INNOVATIVE MEDICAL DEVICES

### Session 9

#### *Current Challenges and Future Directives of FES 2*

Chairpersons: Christine Singleton (Birmingham, UK)  
Hermann Lanmüller (Vienna, Austria)

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|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11:30       | Thomas Stieglitz et al (Germany)<br>FROM INNOVATIVE IDEAS TO CLINICAL TRIALS OPPORTUNITIES AND OBSTACLES IN<br>TRANSLATIONAL RESEARCH ON NEURAL IMPLANTS |
| 11:45       | Christof Ullrich (Austria)<br>OVERVIEW: PROVIDING FUNCTIONAL ELECTRICAL STIMULATION TO PEOPLE WITH WALKING<br>DISABILITIES IN AUSTRIA                    |
| 12:00-13:30 | Round Table Discussion                                                                                                                                   |
| 13:30-13:40 | Closing Remarks                                                                                                                                          |