

**CeBiSM**

Research Center in Bioengineering  
and Motor Sciences, Rovereto - Italy

# 3<sup>rd</sup> INTERNATIONAL CONGRESS Mountain, Sport & Health

UPDATING STUDY AND RESEARCH  
FROM LABORATORY TO FIELD

12-14 November 2009

MART, corso Bettini, 43 - Rovereto (TN) - Italy



Università di Brescia



UNIVERSITÀ DI UDINE



Università di Verona



UNIVERSITÀ DEGLI STUDI DI TRENTO

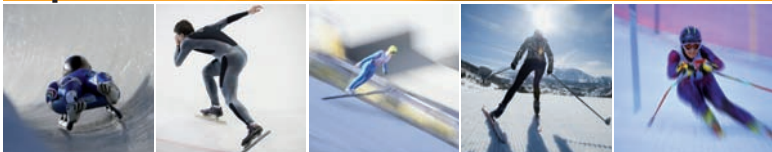


Comune di Rovereto  
Assessorato all'Università,  
Formazione ed Educazione Permanente



<http://events.unitn.it/en/msh09>

MAIN SPONSOR  
**COSMED** S.r.l.





## Introduction

**Mountains** are an exciting natural environment for the implementation of a number of sports and physical activities, ranging from the top high-level performance to the promotion of health and wellbeing.

**Mountains** are also an intriguing laboratory for the better understanding of the responses to physical effort in order to address the correct approach to fitness increase through appropriate exercises program and sports.

Sport Sciences, Physiology, Biomechanics, Medicine, Health Sciences and Education are the main scientific fields which will be considered in an active life perspective.

**Mountain, Sport, & Health** aims at offering an updated panorama, from laboratory experimental studies to the application on day to day practice, on different topics related to mountain sports activities and their impact on human performance and health.

It is a great satisfaction for CeBiSM to announce the third edition of this international congress that will turn out to be a new appointment for scientists, trainers, mountain experts, students for sharing knowledge and experiences on the sport and mountain studies.

We strongly hope to host many participants interested in attending the lectures and also in presenting their own data in the **poster sessions**.

# Programme

**Thursday 12<sup>th</sup> November**

16.00 **Registration**

16.30 Welcome

16.45 **Lecture - Chairman: F. Schena**

E. Mueller (Salzburg)

*Biomechanics in skiing - a challenge on performance and safety*

17.45 **Symposium FROM ROVERETO TO VANCOUVER 2010**

**Chairman: F. Schena**

F. Impellizzeri (Rovereto)

*From Rovereto to Vancouver 2010: project and numbers*

S. Maldifassi (Milano)

*Research and study programs of FISL towards Vancouver 2010*

H. Schoenhuber (Milano)

*Prevention and treatment of training injuries in Italian Alpine Skiers*

B. Pellegrini, N. Fabre (Rovereto)

*Assessment for training: testing for National Olympic Teams*

R. Manzoni (Milano)

*An integrated approach to Alpine Skiing Trainers Education*

## **Roundtable**

**The project FROM ROVERETO TO VANCOUVER 2010: global evaluation**



*Participants:*

Provincia autonoma di Trento

Comune di Rovereto

Agenzia per la Promozione dello Sport della Vallagarina

Federazione Italiana Sport Invernali

19.30 **Welcome party**

**Special event** (open to non registered guests)

**GUYA TREKKING 2009 - Scientific expedition**



Guya Trekking 2009 is a human and scientific experience of Manfredi Salemme, a normal senior adult who walked around the Alps through the 2.500 km of "Via Alpina".

He realized a personal and scientific experience supported by the Faculty of Exercise and Sport Science of University of Verona that will be presented by slides, videos and scientific data and enriched with the testimony of Manfredi himself and by the scientists who helped him in the performance.

## Friday 13<sup>th</sup> November

- 8.30 **Symposium MUSCLE CHANGES TO HYPOXIA - Chairman: G. Ferretti**  
R. Bottinelli (Pavia)  
*Cellular and molecular mechanisms of muscle plasticity in disuse and exercise training*  
H. Hoppeler (Berna)  
*Muscle response to exercise training in hypoxia*  
S. Schiaffino (Padova)  
*Molecular mechanisms of the muscle response to hypoxia*  
T. Pietrangelo, S. Fulle (Chieti)  
*The transcriptional profile of vastus lateralis muscles of climbers exposed to extreme work and to high altitude*
- 10.00 **Lecture - Chairman: P.E. Di Prampero**  
P. Cerretelli (Milano)  
*Revisiting energy metabolism at altitude on the basis of recent findings of molecular physiology*
- 11.00 Coffee break
- 11.30 **Symposium ADAPTATIONS TO HYPOXIA - Chairman: G. Fumagalli**  
J.H. Macdonald, S.J. Oliver (Bangor)  
*Hypoxic acclimatisation: effect on health & performance*  
G. Millet (Losanna)  
*Hypoxic training in intermittent sports - innovations and perspectives*  
N. Prommer (Bayeruth)  
*Erythropoietic stimulation of different types of altitude training*  
F. Formenti (Oxford)  
*A genetic disease of the hypoxia inducible factor pathway alters skeletal muscle metabolism in humans*
- 13.00 Lunch
- 13.30 **POSTER SESSION**
- 14.30 **Lecture - Chairman: P. Cerretelli**  
P. Tesch (Ostersund)  
*Muscle training for alpine skiing*
- 15.30 **Symposium EQUIPMENT FOR MOUNTAIN SPORT & FITNESS**  
**Chairman: P. Tosi**  
M. Faina (Roma)  
*The contribution of the Italian Sport Sciences Institute in the preparation to the Vancouver Olympic Games*  
N. Petrone (Padova)  
*The role of technology and research for a safe development of alpine skiing*  
B. Hötter (Innsbruck)  
*Injuries and helmet use among recreational mountain bike riders in Tirol*  
L. Bortolan (Rovereto)  
*Technologies to analyze different mountain locomotions*

17.00 Coffee break

17.15 **Symposium MOUNTAIN LOCOMOTION - Chairman: A. Minetti**

H.C. Holmberg (Ostersund)

*Whole body work in Cross-Country Skiing*

P. Tosi (Trento)

*Energy cost and efficiency of ski mountaineering. A laboratory study*

A. Rouard (Chambery)

*Effects of fatigue on the dynamic model of the cross country cycle*

A. Rosponi (Rovereto)

*Assessment of rock climbing performance in recreational and competitive climber*

18.45 **Special event** (open to non registered guests) - **Chairman: G. Fanò**

**MANASLU 2008 - Scientific research**



The scientific project "Manaslu 2008" is connected to the expedition that climbed Manaslu (8,163 m.). For the components of the expedition scientists have been studied neuropsychological responses in living conditions related to extreme high altitude, in carrying out field tests at various altitudes, and in the laboratory.

G. Fanò (Chieti)

*Manaslu expedition: functional adaptation to extreme environmental conditions*

C. Reggiani (Padova)

*Cellular and molecular adaptations of skeletal muscles*

*in seven mountaineers during the ascent to Manaslu*

C. Capelli (Verona)

*Oxygen deficit and cardiovascular oxygen transport after*

*prolonged exposure to hypobaric hypoxia*

F. Amicarelli (L'Aquila)

*The peripheral blood lymphocytes:*

*a model to monitor physiological adaptation to high altitude*

20.30 **SOCIAL DINNER**

## Saturday 14<sup>th</sup> November

- 8.30 **Symposium WINTER OLYMPIC SPORTS - Chairman: W. Nachbauer**  
M. Mössner (Innsbruck)  
*Simulation of the dynamics and reaction forces in bob sledge running*  
K. Schindelwig (Innsbruck)  
*Comparison of inline skates regarding stability and energy expenditure*  
G.L. Salvagno, G. Lippi (Verona)  
*Biochemical adaptations in endurance athletes: from the field to the benchside*  
M. Cardinale (London)  
*Monitoring training in Olympic athletes: moving towards evidence-based approaches*
- 10.00 **Special event**  
  
Provincia autonoma di Trento **MOUNTAIN & EDUCATION: Trentino School Award**  
Schools of Trentino explain their projects to integrate the mountain environment in the school programmes.
- 11.00 Coffee break
- 11.30 **Symposium MOUNTAINS AS TOOL FOR HEALTH PROMOTION**  
**Chairman: A. Veicsteinas**  
S. Maffiuletti (Zurigo)  
*Physical activity guidelines for overweight and obese subjects*  
M. Bernardi (Roma)  
*High intensity of exercise in Nordic Sit Skiing*  
P. Bouquet (Trento)  
*UniFit at UniTrento: including sport activities among the academic proposals*
- 13.00 Lunch  
**PRACTICAL WORKSHOP** Sponsored by   
S. Pogliaghi (Verona)  
*Functional evaluation for tailored exercise prescription: equipments and methods*
- 13.30 **POSTER SESSION**
- 14.30 **Lecture - Chairman: S. Marcora**  
E. Borg (Stockholm)  
*Borg-scales - why so good? Basic principles and some applications*
- 15.30 **Symposium LIMITING FACTORS TO EXERCISE CAPACITY - Chairman: C. Capelli**  
G. Ferretti (Brescia)  
*An integrative view of VO<sub>2</sub>max limitation*  
F. Schena (Rovereto)  
*Central and peripheral adaptation to oxygen uptake in ageing*  
S. Marcora (Bangor)  
*Psychobiological limitations to exercise performance*  
S. Pogliaghi (Verona)  
*Does "fat-loading" enhance aerobic metabolism?*
- 17.30 **Closing remarks**



## Poster awards

The Organizing committee will assign an award to the best posters selected in each of the two categories **basic research** and **applied research**. The selection will be done on the basis of originality, quality and applicability of the work.

The two posters which will be adjudged to be the best shall be awarded **a prize of 500,00 euro each**. Please refer to the congress web site: <http://events.unitn.it/en/msh09>

## Registration

Congress participants must register on the congress web site: <http://events.unitn.it/en/msh09>

## Payment

### Till October 20<sup>th</sup>, 2009:

- Congress participant: 150,00 euro (for all days) - 100,00 euro (for only 1 day);
- Congress students (\*): 50,00 euro.

### After October 20<sup>th</sup>, 2009:

- Congress participant: 200,00 euro (for all days) - 120,00 euro (for only 1 day);
- Congress students (\*): 90,00 euro.

(\* ) Students are requested to prove their status by sending an appropriate attestation.

## Congress language

The official languages of the congress are **English** and **Italian**.

It will be available a service of simultaneous translation Italian-English and English-Italian.

## Accommodation

Please refer to the congress web site: <http://events.unitn.it/en/msh09>

#### ORGANIZING COMMITTEE

Federico Schena, CeBiSM  
Paolo Tosi, University of Trento  
Carlo Capelli, University of Verona  
Guido Ferretti, University of Brescia  
Franco Impellizzeri, CeBiSM

#### ORGANIZING SECRETARIAT

Sandra Iob  
CeBiSM - Research Center  
in Bioengineering and Motor Sciences  
via Matteo del Ben, 5/b  
38068 Rovereto (TN), Italy  
tel. +39 0464 808139  
fax +39 0464 808141  
e-mail: cebism@unitn.it

---

#### SPONSORS



---

#### PATRONS



Provincia autonoma di Trento



**SISMeS**  
Società  
di Scienze Motorie e Sportive

