



HIGH ALTITUDE MEDICINE AND PHYSIOLOGY

HIGH ALTITUDE BASIC RESEARCH

HIGH ALTITUDE FOR THE CLINICIAN
AND EXPEDITION DOCTOR

MONDAY 26 MAY 2014 HIGH ALTITUDE BASIC RESEARCH

LOCATION	AUDITORIUM (MAIN SESSION)
9:00-10:30	<p>SESSION A - Genetic adaptation to high altitude: species and population differences - C Beall / J Storz</p> <ul style="list-style-type: none"> ⌚ 30 Mechanisms of hemoglobin adaptation to hypoxia in high-altitude vertebrates <i>J Storz (United States)</i> ⌚ 10 004-0 Functional genomics of adaptation to hypoxic cold stress: regulatory plasticity and thermogenic performance in high-altitude deer mice <i>Z Cheviron, A Connaty, J Jones, G McClelland, G Scott, J Storz</i> ⌚ 10 013-0 Genetic evidence of Paleolithic colonization and Neolithic expansion of modern humans on the Tibetan Plateau <i>X Qi, C Cui, Y Peng, X Zhang, Z Yang, H Zhong, H Zhang, K Xiang, X Cao, Y Wang, L Ouzhu, S Ba, S Ciwang, B Bian, I Gongga, T Wu, H Chen, H Shi, B Su</i> ⌚ 10 015-0 Down-regulation of <i>EPAS1</i> contributes to high altitude hypoxic adaptation in Tibetans <i>B Su, Y Peng, C Cui, T Wu, S Bhandari, K Xiang, H Zhang, Ouzhuluobu, Bianba, Gonggalanzi, Basang, Ciwangsangbu, H Chen, H Shi, X Qi</i> ⌚ 30 Comparative population biology and genomics of high-altitude human populations <i>C Beall (United States)</i>
10:30-11:00	COFFEE BREAK
11:00-12:30	<p>SESSION B - Science update - Molecular biology of hypoxia - J West / M Gassmann</p> <ul style="list-style-type: none"> ⌚ 20 New physiological and genetic factors for CMS? <i>F Villafuerte (Peru)</i> ⌚ 20 Tibetan adaptations and their physiological mechanisms <i>T Simonson (United States)</i> ⌚ 20 Iron requirements in hypoxia <i>M Muckenthaler (Germany)</i> ⌚ 20 Whether Epo evolved to generate red blood cells <i>M Gassmann (Switzerland)</i> ⌚ 10 010-0 Hypoxia-induced vascular leakage and microhaemorrhage in the mouse brain: role of HIF target genes <i>H Marti, R Kunze, A Hoffmann, S Reischl, X Helluy, M Bendszus, S Heiland, M Pham</i>
12:30-14:00	LUNCH BREAK & POSTER VIEWING SESSION (TOPIC 1 AND 3, SEE PAGE 35)
14:00-15:30	<p>SESSION C - Mitochondria—Key organelle for bioenergetics in hypoxia and cold? - E Gnaiger / R Boushel</p> <ul style="list-style-type: none"> ⌚ 20 Hypoxia – is mitochondrial capacity and efficiency an issue? <i>E Gnaiger (Austria)</i> ⌚ 20 Contribution of convective O₂ supply, diffusion and mitochondrial OXPHOS capacities to maximal oxygen consumption at high altitude <i>R Boushel (Sweden)</i> ⌚ 20 Enhanced fatty acid oxidation capacity and phosphorylation control of human skeletal muscle mitochondria following 16 days at 5260 m <i>A Chicco (United States)</i> ⌚ 20 Muscle mitochondrial function in Sherpas <i>A Murray (United Kingdom)</i> ⌚ 10 007-0 Human skeletal muscle mitochondria at high-altitude: adaptation and acclimatization <i>J Horscroft, A Kotwica, V Laner, E Gilbert-Kawai, D Howard, H Montgomery, M Grocott, D Levett, E Gnaiger, D Martin, A Murray</i>
15:30-16:00	COFFEE BREAK
16:00-17:30	<p>SESSION D - Pros-cons: Hypo- vs. normobaric hypoxia and the influence on exercise performance - M Burtscher / R Roach</p> <ul style="list-style-type: none"> ⌚ 20 Differences in normobaric versus hypobaric hypoxia at rest and after training for sea level competition <i>R Roach (United States)</i> ⌚ 20 Innovation and challenges by using the High-Altitude-Chamber for flight personnel and high altitude mountaineering laboratory in contrast with reality <i>A Werner (Germany)</i> ⌚ 15 179-0 Enhanced blood boosting spleen contraction after climbing Mt Everest <i>H Engan, A Lodin-Sundström, F Schagatay, E Schagatay</i> ⌚ 15 182-0 The central role of hypoxemia in cardiorespiratory adaptation to exercise and intermittent hypoxia <i>L Plakane, V Lusa</i> ⌚ 20 Differences between cardiorespiratory responses to exercise in normobaric and hypobaric hypoxia <i>M Burtscher (Austria)</i>

CONFERENCE HALL (PARALLEL SESSION)

Special issues - Workers at high altitude - RL Ge / J West

- ⌚ 20 **Strategies for improving work performance at high altitude**
J West (United States)
- ⌚ 20 **Associations between hemoglobin concentration and exercise capacity in Tibetan highlanders**
G Wei (China)
- ⌚ 20 **Effects of chronic intermittent hypoxia on health status and performance of Chilean miners**
JP Richalet (France)
- ⌚ 10 **096-0** Chile dictates safety and health standards for intermittent occupational exposure to 3000-5500 meters altitude
D Jimenez
- ⌚ 10 **101-0** Annual and occupational screening of miners at high altitude gold mine (4000 meters) effectively precludes sick people from employment
D Vinnikov, N Brimkulov, R Redding-Jones
- ⌚ 10 **098-0** Increase in hemoglobin values through the years in Peruvian highland workers
C Mejia, D Quiñones, C Cruzalegui, V Gómez, R Gomero, I Arriola

COFFEE BREAK

Meet the expert - Practical medical problems at base camp - U Hefti / L Freer

Introduction *U Hefti (Switzerland)*

Practical medical problems at base camp

- ⌚ 12 **Mount Everest** *L Freer (United States)*
- ⌚ 12 **Pilgrims expedition** *P Koirala (Nepal)*
- ⌚ 12 **Himlung Himal Research Expedition 2013** *D Berger (Switzerland)*
- ⌚ 10 **A commercial expedition** *L Freer (United States)*
- ⌚ 8 **A privately organized expedition** *U Hefti (Switzerland)*

Controversies in expedition medicine

- ⌚ 8 **Thrombolytic medication on an expedition is a must**
Affirm: *P Hackett (United States)*
Oppose: *P Hoigné (Switzerland)*
- ⌚ 8 **The hyperbaric chamber is part of the expedition medical kit**
Affirm: *J Pichler (Switzerland)*
Oppose: *P Koirala (Nepal)*
- ⌚ 8 **Dexamethasone for summit day; a good idea?**
Affirm: *P Hackett (United States)*
Oppose: *T Merz (Switzerland)*

LUNCH BREAK & POSTER VIEWING SESSION (TOPIC 1 AND 3, SEE PAGE 35)

Meet the expert - Prevention and treatment of AMS, HAPE, HACE - M Maggiorini / P Hackett - Guests: M Piris, L Freer

This session is an interactive discussion of clinical cases. The aim is to guide participants in solving interesting health problems of high altitude. Participants are encouraged to share their own cases during the discussion as well.

COFFEE BREAK

Future issues - Ultrasound and NIRS—new tools for research at high altitude - M Wilson / G Strapazzon

- ⌚ 20 **Ultrasound and NIRS at altitude—implications of the Xtreme Everest study and the future**
M Wilson (United Kingdom)
- ⌚ 15 **Ultrasound and NIRS during acute hypoxia, hypercapnia and cold—from experiments to the clinic**
G Strapazzon (Italy)
- ⌚ 15 **053-0** Correlation of severity of high altitude illnesses with the optic nerve sheath diameter in non-acclimatized lowlanders at high altitude
U Yanamandra, A Gupta, S Yanamandra, S Patyal, V Nair
- ⌚ 15 **049-0** Ultrasound-based biomarkers as predictors of acute mountain sickness
L Pratali, RM Bruno, S Malacrida, B Catuzzo, S Armenia, R Brustia, E Cauchy, G Giardini
- ⌚ 15 **050-0** Cerebral hemodynamic responses to 6 days at 4350 m
S Verges, T Rupp, M Villien, P Bouzat, F Esteve, C Lundby, S Perrey, Y Wamking, P Robach, P Levy
- ⌚ 10 **Discussion on future perspectives**

HELPFUL HINT ON SESSION TYPES

Main sessions (sessions A to D) cover main topics with a focus on clinical and science updates. Simultaneous translation in English, German and Italian will be provided.

Special issues sessions deal with specific topics related to the environmental influence that laypersons and rescuers have to face in mountain and remote areas.

Future issues sessions present front-line, open issues that are currently under discussion.

Meet the expert sessions are an interactive, seminar-like session hosted by leading experts in the field.

Technical workshops focus on practical rescue-related issues and are addressed to medical and non-medical rescue personnel.

Wilderness workshops present practical wilderness-related issues by the leading experts in the field and are addressed to medical and non-medical attendees.

Medical workshops are offered in an adjunct programme and are addressed to medical attendees. Pre-registration is required.

TUESDAY 27 MAY 2014 HIGH ALTITUDE FOR THE CLINICIAN AND EXPEDITION DOCTOR

LOCATION	AUDITORIUM (MAIN SESSION)
9:00-10:30	SESSION A - Science update - Acute altitude illnesses (AMS, HAPE, HACE) - B Basnyat / M Maggiorini <ul style="list-style-type: none"> ⌚ 15 Epidemiological and clinical aspects of high altitude illness <i>B Basnyat (Nepal)</i> ⌚ 15 047-0 The AL.P.I. project (Altitude & Pathology in Italy, AL.P.I.) Italian Survey on High Altitude Illnesses on behalf of Club Alpino Italiano (CAI) and the Italian Society of Mountain Medicine (SIMEM) <i>F Marchiori, I Rigucci, G Nadali, M Cavana, L Fortunato, L Bastiani, M Bartesaghi, G Miserocchi, G Giardini, L Pratali</i> ⌚ 15 051-0 Impact of study design on the incidence of acute mountain sickness. Systematic review <i>B Waeber, N Elia, L Dumont, C Lysakowsky, MR Tramèr, B Kayser</i> ⌚ 15 Circulatory hemodynamic aspects of high altitude illness <i>M Maggiorini (Switzerland)</i> ⌚ 15 044-0 Cerebral hemodynamic characteristics of acute mountain sickness upon acute high-altitude exposure at 3700 m in young Chinese men <i>L Huang</i> ⌚ 15 052-0 Observational study of radiological features of 588 cases of HAPO and validation of new radiological severity scoring <i>U Yanamandra, A Gupta, S Yanamandra, M Chinta, S Patyal, V Nair</i>
10:30-11:00	COFFEE BREAK
11:00-12:30	SESSION B - Science update - Chronic mountain sickness - RL Ge / F León Velarde <ul style="list-style-type: none"> ⌚ 20 Recent advances of pathophysiological studies on chronic mountain sickness in China <i>RL Ge (China)</i> ⌚ 20 New risk factors for CMS? <i>F León Velarde (Peru)</i> ⌚ 15 097-0 Differential gene expression profile and biological features of bone marrow mesenchymal stem cells in chronic mountain sickness <i>J Li, J Feng, W Li, X Dai, L Wang, G Han, G Han, W Yan</i> ⌚ 15 093-0 Study on brain structure and cognitive function in patients with chronic mountain sickness in 3T MRI <i>HH Bao, M He, RL Ge</i> ⌚ 15 095-0 Major components level of the ACE-Ang-AT1 axis in local hematopoietic bone marrow of patients with chronic mountain sickness <i>L Ji, Z Li, S Cui, J Su, H Geng, H Xiong, W Luo, X Ma, Y Chen, RL Ge</i> ⌚ 5 Discussion
12:30-14:00	LUNCH BREAK & POSTER VIEWING SESSION (TOPIC 2 AND 6, SEE PAGE 35)
14:00-15:30	SESSION C - Women and children at high altitude - H Messner / D Jean <ul style="list-style-type: none"> ⌚ 25 Exercise and travel at high altitude during pregnancy <i>L Keyes (United States)</i> ⌚ 25 Children going to the mountains <i>D Jean (France)</i> ⌚ 15 High altitude illness in youth: do parents matter? <i>S Kriemler (Switzerland)</i> ⌚ 10 149-0 Using ventilation to get ahead: gender differences in ventilatory parameters at high altitude <i>S Dua</i> ⌚ 10 150-0 Acute mountain sickness (AMS) among high altitude Nepalese pilgrim children – A five year study <i>M Pun, PS Holck, GB Thapa, S Neupane, N Kharel, S Shrestha, P Subedi, M Neupane, B Basnyat</i> ⌚ 5 Discussion
15:30-16:00	COFFEE BREAK
16:00-17:30	SESSION D - Pros-cons: Is physiologic testing helpful for predicting the risk of acute high altitude illnesses? P Bärtsch / JP Richalet <ul style="list-style-type: none"> ⌚ 20 Pro: Hypoxic exercise test is useful for the detection of subjects at high risk for severe high altitude illness <i>JP Richalet (France)</i> ⌚ 20 Con: Physiologic testing is not helpful for predicting the risk of acute high altitude illnesses <i>P Bärtsch (Germany)</i> ⌚ 15 Abnormal hypoxic pulmonary vascular response alone is not sufficient to induce high altitude pulmonary edema <i>C Dehnert (Switzerland)</i> ⌚ 15 045-0 Can lung function assessment help predict Acute Mountain Sickness? <i>O Johansson, A Patrician, S Wisniewski, E Schagatay</i> ⌚ 15 181-0 Maintaining a good ventilatory efficiency in the transition between normoxia (N) and hypoxia (H) at rest predicts a better oxygenation (SpO₂) during exercise in hypoxia <i>G Papi Renzetti, G Giardini, G Mandolesi, B Catuzzi, A Cogo</i>

CONFERENCE HALL (PARALLEL SESSION)	SEMINAR ROOM (PARALLEL SESSION)
Special issues <ul style="list-style-type: none"> Xtreme Everest 2 - D Martin ⌚ 15 Xtreme Everest 2 <i>D Martin (United Kingdom)</i> ⌚ 15 Microcirculation at high altitude <i>E Gilbert-Kawai (United Kingdom)</i> ⌚ 15 Mitochondrial metabolism at high altitude <i>A Murray (United Kingdom)</i> Resamont 2 project - G Miserocchi ⌚ 15 Individual differences in the adaptation of the air-blood barrier when an increase in oxygen diffusion/transport is requested <i>G Miserocchi (Italy)</i> ⌚ 15 Human genomics and hypoxia adaptive response <i>P Laveder (Italy) / S Malacrida (Italy)</i> ⌚ 15 Regional differences in lung matrix remodelling in hypoxia <i>A Panariti (Italy)</i> 	
COFFEE BREAK	
Meet the expert - Requirements for expedition doctors—what to bring and what to know F Berghold / R Fischer <ul style="list-style-type: none"> ⌚ 20 Do they really need an expedition doctor? <i>F Berghold (Austria)</i> ⌚ 20 From the airport to basecamp <i>R Fischer (Germany)</i> ⌚ 20 Up to the summit <i>W Schaffert (Germany)</i> ⌚ 30 Discussion 	
LUNCH BREAK & POSTER VIEWING SESSION (TOPIC 2 AND 6, SEE PAGE 35)	
Meet the expert - Prevention and treatment of non-altitude sickness related problems - B Basnyat / K Zafren <ul style="list-style-type: none"> ⌚ 15 Problems at altitude other than AMS/HACE and HAPE <i>K Zafren (United States)</i> ⌚ 15 Neurologic problems at altitude other than AMS/HACE <i>B Basnyat (Nepal)</i> ⌚ 15 178-0 Medical data from Aconcagua Provincial Park's Medical Service, 2011-2012 season <i>S Donato, M Straniero, I Rogé, V Rainone, F Borzotta</i> ⌚ 45 Interactive case presentations 	Applied Workshop – High-resolution respirometry and mitochondrial function under hypoxia: overview, demo experiment and discussion – E Gnaiger <p>A three-part applied workshop including an overview of the measurement of mitochondrial function in the lab and the field and its scopes and limitations, a demo experiment on cell respiration and ROS production under normoxia and hypoxia, and a discussion of mitochondria and intercellular oxygen levels and what is normoxia.</p> <p>Location: Seminar 8</p> <p>Pre-registration is required at the info-desk.</p>
COFFEE BREAK	
Future issues - Utstein style and GRADE—models for establishing high altitude recommendations? K Monsieus <ul style="list-style-type: none"> ⌚ 20 How to use GRADE for guideline development <i>K Monsieus (Belgium)</i> ⌚ 20 Data collection in emergency medicine (UTSTEIN) <i>JT Gräsner (Germany)</i> ⌚ 20 Assessing high altitude illness over the last 25 years: can we do better? <i>M Maggiorini (Switzerland)</i> ⌚ 15 046-0 Strengthening Altitude Research (STAR): guidelines for collecting and reporting data from high altitude studies The STAR task force (in alphabetic order): <i>P Bärtsch, H Brugger, M Falk, P Hackett, M Maggiorini, S Malacrida, E Procter, G Strapazzon, K Zafren</i> ⌚ 15 Discussion 	

WEDNESDAY 28 MAY 2014 HIGH ALTITUDE FOR THE CLINICIAN AND EXPEDITION DOCTOR

LOCATION	AUDITORIUM (MAIN SESSION)
9:00-10:30	SESSION A - Pre-existing cardiac and metabolic diseases at high altitude - G Parati / A Luks <ul style="list-style-type: none"> ⌚ 20 Cardiac patients at high altitude 1: Coronary artery disease and cardiomyopathy <i>A Luks (United States)</i> ⌚ 20 Cardiac patients at high altitude 2: Hypertension <i>G Parati (Italy)</i> ⌚ 15 127-0 Hypobaric hypoxia causes body weight reduction in obese males, double-blinded, placebo-controlled study <i>B Buchzik, M Robinzonov, RM Huber, J Behr, R Kiefl, N Robinzonov, M Karasz, R Fischer</i> ⌚ 15 128-0 Normobaric hypoxia stress test in coronary heart disease patients <i>B Catuzzo, G Giardini, M Sicuro, B Thiebat, G Cavoretto, F De la Pierre</i> ⌚ 15 126-0 Prevalence and predictors of ambulatory hypertension among high altitude dwellers; HIGHCARE-ANDES Highlanders Study <i>G Bilo, FC Villafuerte, C Anza Ramirez, JL Macariupu, G Vizcardo-Galindo, M Revera, A Giuliano, A Faini, S Caravita, F Gregorini, G Parati</i> ⌚ 5 Discussion
10:30-11:00	COFFEE BREAK
11:00-12:30	SESSION B - Pre-existing pulmonary, immunologic and neurologic diseases at high altitude - E Swenson / A Cogo <ul style="list-style-type: none"> ⌚ 20 Going high with immunologic diseases <i>E Swenson (United States)</i> ⌚ 20 Going high with respiratory diseases <i>A Cogo (Italy)</i> ⌚ 20 Going high with neurologic diseases <i>R Baumgartner (Switzerland)</i> ⌚ 15 184-0 Applying pulmonary function parameter changes to screen hypoxia-susceptible candidates of Chinese Antarctic expeditioners in Tibet <i>C Xu</i> ⌚ 15 006-0 Genetic evidence for the origin and dispersal of HBV/CD in Tibetans on the Qinghai-Tibetan Plateau <i>C Cui, X Qi, L Ouzhu, B Bian, T Wu, B Su</i>
12:30-14:00	LUNCH BREAK & POSTER VIEWING SESSION (TOPIC 4, 5 AND 7, SEE PAGE 35)
14:00-15:30	SESSION C - Mountain medicine diploma and education sessions <p>UIAA/IKAR/ISMM Diploma of Mountain Medicine and other educational initiatives - D Hillebrandt (UIAA MEDCOM) / B Basnyat (ISMM) / F Elsensohn (ICAR MEDCOM)</p> <ul style="list-style-type: none"> ⌚ 8 UIAA/IKAR/ISMM Diploma of Mountain Medicine <i>D Hillebrandt (United Kingdom)</i> ⌚ 8 UIAA/IKAR/ISMM Rescue Specialty Module <i>O Reisten (Switzerland)</i> ⌚ 8 Transalp Ausbildung für Bergrettungsärzte (Bavarian, Austrian and South Tyrolean mountain rescue) <i>J Schiffer (Germany)</i> ⌚ 5 Educational activities of the Asia Pacific Society of Mountain Medicine <i>F Ming (China)</i> ⌚ 5 Educational activities of the Italian Society of Mountain Medicine <i>G Giardini (Italy)</i> ⌚ 5 Educational activities of the Asociación Andina de Medicina para la Altura-AAMpA with specific reference to Aconcagua <i>S Donato (Argentina)</i> <p>Celebrating the diversity of national diplomas - D Hillebrandt / J Ellerton / S McIntosh</p> <ul style="list-style-type: none"> ⌚ 3 each <p><i>Austria, F Berghold; Canada, D Watson; Germany, Nordbadische Sportärztebund, P Bärtsch; Italy, Padova, A Ponchia; Italy, International Master Course in Mountain Medicine, L Festi; Japan, K Oshiro; Nepal, M Neupane; Spain, Barcelona, X Sanchez; United Kingdom, M Greene; United States, New Mexico, J Williams; United States, Utah, S McIntosh; Unites States Military, I Wedmore</i></p>
15:30-16:00	COFFEE BREAK
16:00-17:30	SESSION D - Pros-cons: Medications at high altitude—moving on from right and wrong to disclosure - J Ellerton <ul style="list-style-type: none"> ⌚ 15 Introduction <i>J Ellerton (United Kingdom)</i> ⌚ 75 Panel discussion <i>D Hillebrandt (United Kingdom), B Basnyat (Nepal), N Dikic (Serbia), D Moens (France), I Tomazin (Slovenia), D Wagner (United States)</i>

CONFERENCE HALL (PARALLEL SESSION)
Special issues <p>Solar irradiation and eye problems at high altitude - MM Bosch</p> <ul style="list-style-type: none"> ⌚ 15 Solar irradiation and its damaging effects to the eye at high altitude <i>MM Bosch (Switzerland)</i> ⌚ 10 092-0 The influence of chronic hypoxia to retinal venous and ocular perfusion pressure <i>M Baertsch, J Flammer</i> ⌚ 10 162-0 The clinical curative effect observation about the treatment of Lucentis in choroid neovascularization of high altitude <i>L Ling</i> ⌚ 10 Discussion <p>Kilimanjaro: a mountain medicine hot-spot - P Hackett / A Kulkarni</p> <ul style="list-style-type: none"> ⌚ 15 Safety, evacuation and rescue on Kilimanjaro <i>A Kulkarni (Tanzania)</i> ⌚ 10 180-0 Our experience in telemedical prevention and treatment of acute mountain sickness in 280 clients ascending to 5895 m above sea level <i>P Jonetzko, T Kobielski</i> ⌚ 20 Panel discussion
COFFEE BREAK
Meet the expert - Advising mountaineers in planning a trip to high altitude - P Hackett / P Bärtsch <ul style="list-style-type: none"> ⌚ 15 Introduction ⌚ 30 Risk assessment of ascent profile / Preacclimatization <i>P Bärtsch (Germany)</i> ⌚ 30 Protocols for treatment and medical kits / Preexisting medical conditions <i>P Hackett (United States)</i> ⌚ 15 Summary and discussion
LUNCH BREAK & POSTER VIEWING SESSION (TOPIC 4, 5 AND 7, SEE PAGE 35)
Meet the expert - Sport climbing injuries - V Schöffl / T Küpper <ul style="list-style-type: none"> ⌚ 10 Epidemiology of sport climbing injuries <i>V Schöffl (Germany)</i> ⌚ 10 Ice climbing injuries <i>M Schneider (Germany)</i> ⌚ 15 Prehospital emergency care of sport climbing injuries <i>T Keil (Germany)</i> ⌚ 15 Are supplements needed to improve climbing performance? <i>A Morrison (United Kingdom)</i> ⌚ 15 Osseous adaptations and osteoarthritis in long time climbers <i>A Schweizer (Switzerland)</i> ⌚ 10 Finger injuries in sport climbing <i>V Schöffl (Germany)</i> ⌚ 15 Sport climbing with internal medical conditions <i>T Küpper (Germany)</i>
COFFEE BREAK
Future issues - Registries in high altitude and mountain emergency medicine - BH Walpoth / JK Baillie <ul style="list-style-type: none"> ⌚ 20 International Hypothermia Registry <i>BH Walpoth (Switzerland)</i> ⌚ 20 International HAPE Registry—REDCAP's to the rescue <i>S Harris (United States)</i> ⌚ 15 International Alpine Trauma Registry <i>G Strapazzon (Italy)</i> ⌚ 20 International HAPE Database: direct recruitment of probable cases of altitude illness through www.altitude.org <i>JK Baillie (United Kingdom)</i> ⌚ 15 Discussion



FOCUS TOPIC: RESCUE IN NEPAL

THURSDAY 29 MAY 2014 FOCUS TOPIC: RESCUE IN NEPAL

Location	AUDITORIUM (MAIN SESSION)
14:00-15:30	<p>Special issues - Rescue initiatives in Nepal - B Basnyat / I Tomazin</p> <ul style="list-style-type: none"> ⊙ 15 Helicopter-based training and rescue in Nepal <i>G Biner (Switzerland)</i> ⊙ 15 272-0 From Sagarmatha to Bung: training helicopter rescuers, developing a rescue chain in the Khumbu region and improving health in remote areas of Nepal <i>M Brodmann Maeder, B Basnyat, S Harris</i> ⊙ 15 267-0 Mountain Medicine Society of Nepal-actively involved in making the Nepalese Himalayas safer <i>M Neupane, GB Thapa, P Koirala, M Pun, B Basnyat</i> ⊙ 15 259-0 Professional pre-hospital care in Nepal - The Nepal Ambulance Service <i>M Doe, N Wilson, E Stirling, R Pariseau, E Coleman, C White, C Stirling</i> ⊙ 15 Nepalese Mountain Rescue Development Project (EURAC/BRD/HRA) <i>G Strapazzon (Italy)</i> ⊙ 15 Discussion
15:30-16:00	COFFEE BREAK
16:00-17:30	<p>Panel discussion - Nepal mountain rescue development projects - G Cologna</p> <ul style="list-style-type: none"> ⊙ 15 An insider account of the Everest tragedy 2014 <i>P Koirala (Nepal) / S Stokes (United Kingdom)</i> ⊙ 10 Discussion ⊙ 10 Perspective on future developments in mountain rescue in Nepal <i>GB Thapa (Nepal)</i> ⊙ 55 Panel discussion <i>B Basnyat (Nepal), G Biner (Switzerland), M Brodmann (Switzerland), H Brugger (Italy), F Elsensohn (Austria), P Koirala (Nepal), T Preindl (Italy), L Sherpa (Nepal), GB Thapa (Nepal)</i>

CONFERENCE HALL (PARALLEL SESSION)

CONFERENCE HALL (PARALLEL SESSION)
<p>Special issues - Research initiatives in Nepal - A Ponchia / A Lohani</p> <ul style="list-style-type: none"> ⊙ 15 094-0 Educational and research project to increase awareness of chronic obstructive pulmonary disease (COPD) in Nepal and investigate the respiratory health in mountain dwellers exposed to indoor pollution <i>A Cogo, L Pratali, Italian-Nepalese Research Group</i> ⊙ 15 048-0 Science in thin air: Himlung Himal Research Expedition 2013 - a study of human adaptation to hypoxia <i>J Pichler Hefti, P Koirala, T Merz, U Hefti</i> ⊙ 15 099-0 Exposure to indoor air pollution induces endothelial dysfunction in nepalese high-altitude dwellers <i>L Pratali, A Cogo, Italian-Nepalese Research Group</i> ⊙ 15 073-P Role of low dose Acetazolamide (125 mg bid) in prevention of acute mountain sickness in pilgrims ascending rapidly: A prospective double blind placebo controlled randomized trial <i>M Pun, M Neupane, A Lohani, GB Thapa, S Yadav, PS Holck, B Basnyat</i> ⊙ 15 025-P A genome-wide association study of acute mountain sickness susceptibility in the Nepalese Himalaya <i>M MacInnis, N Widmer, U Timalsina, A Subedi, A Siwakoti, BP Pandit, M Freeman, E Carter, I Manokhina, GB Thapa, M Koehle, J Rupert</i> ⊙ 15 Discussion
COFFEE BREAK
<p>Future issues (panel discussion) - Revision of the Lake Louise Score - P Hackett / JK Baillie</p> <ul style="list-style-type: none"> ⊙ 15 Acute mountain sickness - the need for a data-driven definition <i>JK Baillie (United Kingdom)</i> ⊙ 15 Laboratory- and field-based evidence to revise the current definition of acute mountain sickness <i>M MacInnis (Canada)</i> ⊙ 15 042-0 A different scoring system to assess acute mountain sickness in the Italian Survey (Altitude & Pathology in Italy, AL.P.I.): Psychometric properties <i>L Bastiani, L Fortunato, F Marchiori, I Rigucci, G Nadali, M Cavana, M Bartesaghi, G Miserocchi, G Giardini, S Molinaro, L Pratali</i> ⊙ 15 Acute mountain sickness - the laboratory experience <i>R Roach (United States)</i> ⊙ 30 Panel discussion

ALTERNATIVE PROGRAMME

9:00-17:30
MEDICAL WORKSHOPS
 Location: Free University of Bozen/Bolzano
 (see page 35)

7:30-17:30
GUIDED EXCURSIONS
 (see page 38)



MOUNTAIN EMERGENCY MEDICINE

IV. INTERNATIONAL SYMPOSIUM ON HYPOTHERMIA

TRAUMA, AIRWAY & CIRCULATION

FRIDAY 30 MAY 2014 IV. INTERNATIONAL SYMPOSIUM ON HYPOTHERMIA

LOCATION	AUDITORIUM (MAIN SESSION)
9:00-10:30	<p>SESSION A - Clinical update - Accidental hypothermia—prehospital management - K Zafren / G Strapazzon</p> <ul style="list-style-type: none"> ⌚ 15 Update on the physiology and pathophysiology of accidental hypothermia <i>K Zafren (United States)</i> ⌚ 15 Field assessment and core temperature measurement in cold patients—a hot issue <i>G Strapazzon (Italy)</i> ⌚ 10 Field management of hypothermic patients without cardiac arrest <i>SC Skaiaa (Norway)</i> ⌚ 10 Field management of hypothermic patients with cardiac arrest <i>P Paal (Austria)</i> ⌚ 15 220-0 Deep accidental hypothermia with core temperature below 24°C <i>M Pasquier, B Weith, N Zurrón, P Turini, F Dami, P Carron, P Paal</i> ⌚ 15 Protection against cold—from simulation to practice <i>P Lundgren (Sweden) / O Henriksson (Sweden)</i> ⌚ 10 Discussion
10:30-11:00	COFFEE BREAK
11:00-12:30	<p>SESSION B - Clinical update - Accidental hypothermia—in-hospital management - BH Walpoth / D Brown</p> <ul style="list-style-type: none"> ⌚ 20 Extracorporeal rewarming of deep accidental hypothermia victims <i>BH Walpoth (Switzerland)</i> ⌚ 20 Outcome of accidental hypothermia with circulatory arrest in 7 young victims. Experience from the Danish Præstø Fjord boating accident <i>M Jaeger Wanscher (Denmark)</i> ⌚ 15 218-0 A proposal of modified in-hospital hypothermia algorithm in trans-border coordinating center for treatment of accidental hypothermic patients <i>L Festi, G Covaia, C Beghi, F Perlasca, G Minoja, A Zoli, G Avanzi, A Larghi, L Introzzi, F Barazzoni, M Lepori, C Bravi</i> ⌚ 15 217-0 The Bernese Hypothermia Algorithm goes Swiss <i>M Brodmann Maeder, I Breitenmoser, BH Walpoth</i> ⌚ 20 Accidental hypothermia—building the chain of survival <i>D Brown (Canada)</i>
12:30-14:00	LUNCH BREAK & POSTER VIEWING SESSION (TOPIC 8 TO 11, SEE PAGE 35)
14:00-15:30	<p>SESSION C - Avalanche accidents - H Brugger / C Grissom</p> <ul style="list-style-type: none"> ⌚ 20 Update on the pathophysiology of avalanche victims <i>C Grissom (United States)</i> ⌚ 10 Two case reports of deeply hypothermic avalanche victims <i>M Blancher (France)</i> ⌚ 10 Is extracorporeal rewarming indicated in avalanche victims with unwitnessed hypothermic cardiorespiratory arrest? <i>P Mair (Austria)</i> ⌚ 20 ICAR MEDCOM treatment recommendations—adherence of emergency physicians and consideration of an update <i>H Brugger (Italy)</i> ⌚ 10 The influence of snow density on survival <i>G Strapazzon (Italy)</i> ⌚ 10 The effectiveness of avalanche airbags <i>E Procter (Italy)</i>
15:30-16:00	COFFEE BREAK
16:00-17:30	<p>SESSION D - Traumatic and therapeutic hypothermia—recent developments and open issues P Mair / M Holzer</p> <ul style="list-style-type: none"> ⌚ 30 Traumatic hypothermia—An overview <i>P Mair (Austria)</i> ⌚ 30 Therapeutic hypothermia after cardiac arrest: pros, cons and open issues <i>M Holzer (Austria)</i> ⌚ 15 223-0 Mild therapeutic hypothermia and DADLE rescue the brain after ischemia <i>K Schmitt, M Feldmann, G Tong, F Berger</i> ⌚ 15 243-0 Is core temperature assessed and relevant in severe alpine trauma victims? <i>G Strapazzon, A Trincanato, A Frasnelli, F Bonsante, G Rammilmair, E Gruber, E Fop, G Drüge, F Ploner, G Hofer, W Lunz, C Rilk, E Pandolfo, M Ströhle, P Zanon, P Mair, H Brugger for the International Alpine Trauma Registry group</i>

CONFERENCE HALL (PARALLEL SESSION)
<p>Special issues</p> <p>Immersion hypothermia and consequences for rescue and resuscitation - J Bierens</p> <ul style="list-style-type: none"> ⌚ 15 Immersion hypothermia and its consequences for rescue and resuscitation <i>J Bierens (Netherlands)</i> ⌚ 15 Immersion hypothermia in a disaster setting <i>M Jaeger Wanscher (Denmark)</i> ⌚ 15 From a Lazarus case-report to an immersion hypothermia protocol <i>RD O'Connor (Netherlands)</i> <p>Insights from diving science - C Balestra</p> <ul style="list-style-type: none"> ⌚ 15 Patency of the cardiac Foramen Ovale (PFO) / “The Normobaric Oxygen Paradox” <i>C Balestra (Belgium)</i> ⌚ 15 285-0 Comparative analysis of decompression stress at altitude based on the Dan Europe DSL (Diving Safety Laboratory) database using gradient factor (GF) analysis <i>S Murat Egi, M Pieri, D Cialoni, C Bonuccelli, C Balestra, A Marroni</i> ⌚ 15 286-0 Effect of acute hypobaric hypoxia on cerebral arousal in non-acclimatized lowlanders <i>S Theunissen, Q Crèvecoeur, E Cauchy, S Bolognesi, S Dupont, P Germonpré, C Balestra</i>
COFFEE BREAK
<p>Meet the expert - Frostbite and crevasse accidents - E Cauchy / B Durrer</p> <ul style="list-style-type: none"> ⌚ 25 New advances in frostbite treatment: which treatment considering the healthcare environment? <i>E Cauchy (France)</i> ⌚ 25 On-site treatment of crevasse accidents. State of the art 2014? <i>B Durrer (Switzerland)</i> ⌚ 15 221-0 Epidemiology of glacier crevasse accidents <i>M Pasquier, A Kottmann, O Reisten, U Mosimann, O Hugli</i> ⌚ 15 219-0 The cold-induced vasodilatation response as a predictor of the risk of freezing cold injury <i>J Gorjanc, SS Cheung, M Milcinski, I Mekjavic</i> ⌚ 10 Discussion
LUNCH BREAK & POSTER VIEWING SESSION (TOPIC 8 TO 11, SEE PAGE 35)
<p>Wilderness workshop - Surviving the cold - S McIntosh / G Rodway</p> <p>This workshop focuses on the prevention and treatment of cold and cold injuries in the mountains: non-freezing cold injuries, frostbite, and hypothermia. In a practical session we will demonstrate how to care for and manage these problems, both as a patient and rescuer.</p>
<p>Future issues - Avalanche mass casualty accidents—advances in rescue strategies - A Kottmann / M Genswein</p> <ul style="list-style-type: none"> ⌚ 5 Introduction <i>A Kottmann (Switzerland) / M Genswein (Switzerland)</i> ⌚ 15 Statistical overview of MCIs in avalanche rescue <i>J Schweizer (Switzerland)</i> ⌚ 20 The USAR and UAVSAR perspective on MCIs <i>S Thorvaldsdóttir (Iceland)</i> ⌚ 20 AvaLife, Survival chance optimized decision making and procedures in avalanche rescue <i>M Genswein (Switzerland)</i> ⌚ 20 ICAR MEDCOM Avalanche victim resuscitation checklist. And if it is a mass casualty avalanche? <i>A Kottmann (Switzerland)</i> ⌚ 10 Panel discussion and summary <i>A Kottmann (Switzerland), J Schweizer (Switzerland), S Thorvaldsdóttir (Iceland), M Genswein (Switzerland)</i>

SEMINAR ROOM (PARALLEL SESSION)
<p>Technical workshop - Stretchers: different models in mountain, canyoning and cave rescue CNSAS - F Bonsante / G Mancinelli / A Santini</p> <p>The evacuation and transport of victims in mountain, canyoning and cave rescue are strongly influenced by environmental and logistical factors. In a hands-on workshop CNSAS-Italian Mountain Rescue Service medical and technical personnel will illustrate different medical and technical characteristics of the stretchers (e.g., protection from impact/collision, positioning according to terrain transport and injury). Participants will rotate between three stations dedicated to specific scenarios.</p> <p>Location: Seminar 7</p>
<p>Technical workshop - Rescue of hanging victims: technical and medical aspects - CNSAS - F Bonsante / M Biasioni</p> <p>The on-site management of victims on walls and couloirs of the Dolomites requires specific medical and technical skills. CNSAS-Italian Mountain Rescue Service of South Tyrol, in collaboration with its historical group called <i>Judacrep Gherdeina-Catores</i>, will lead an interactive demo-workshop on the side of the congress building explaining specific evacuation and transport techniques and medical tips.</p> <p>Location: Seminar 8</p>
<p>Technical workshop - Helicopter-supported water rescue - Fire Department Bolzano / Emergency Dispatch 118 / Helicopter Rescue South Tyrol</p> <p>Hosted by highly-specialized teams from the local rescue organizations, this workshop focuses on the logistical and medical aspects of white water, flooding and ice accidents. Participants will discuss the elements of a coordinated response by air-based and water rescue teams, rapid intervention for hypothermic and drowning victims, and practical application to real case examples.</p> <p>Location: Seminar 7</p>
<p>Technical workshop - Insulation techniques in the field - BRD im AVS</p> <p>This workshop provides an overview of common and novel insulation techniques used in the field. The aim is an interactive discussion with experts and exchange of experience between participants.</p> <p>Location: Seminar 8</p>

SATURDAY 31 MAY 2014 TRAUMA, AIRWAY & CIRCULATION

LOCATION	AUDITORIUM (MAIN SESSION)
9:00-10:30	<p>SESSION A - Clinical update - Alpine trauma treatment - F Elsensohn / E Visetti</p> <ul style="list-style-type: none"> ⌚ 20 Multiple trauma in mountain rescue: Treatment, rescue strategy and limitations <i>F Elsensohn (Austria)</i> ⌚ 15 271-P Evaluation of pain management in mountain rescue: a prospective observational study of 49 patients managed by Physician Staffed Helicopter Emergency Medical Service (P-HEMS) during mountain rescue missions <i>M Blancher, E Dubie, I Favier, F Rocourt, R Briot, V Danel</i> ⌚ 15 244-0 Can emergency physicians correctly assess the pattern and severity of injury at the scene in alpine multitrauma victims? <i>M Ströhle, E Moritz, G Strapazzon, H Brugger, P Mair</i> ⌚ 15 256-0 Two year prospective observational study on mountaineering medical events and trauma: "Mind the head" <i>R Brustia, G Enrione, B Catuzzo, A Iriti, L Cavoretto, M Pesenti Compagnoni, E Visetti, E Cauchy, G Giardini</i> ⌚ 15 257-0 Epidemiology of fallers in Snowdonia, UK <i>N Dodds, J Christley, L Dykes</i> ⌚ 10 Discussion
10:30-11:00	COFFEE BREAK
11:00-12:30	<p>SESSION B - Clinical update - Basic and advanced airway management - P Paal / I Tomazin</p> <ul style="list-style-type: none"> ⌚ 15 241-0 Basic Life Support trained nurses ventilate more efficiently with laryngeal mask Supreme than with facemask or laryngeal tube Suction-Disposable—a prospective, randomized clinical trial <i>E Gruber, R Oberhammer, K Balkenhol, G Strapazzon, E Procter, H Brugger, M Falk, P Paal</i> ⌚ 30 Non-invasive ventilation and basic life support ventilation in mountains <i>P Paal (Austria)</i> ⌚ 30 Advanced airway management in mountains <i>I Tomazin (Slovenia)</i> ⌚ 15 Discussion
12:30-14:00	LUNCH BREAK
14:00-15:30	<p>SESSION C - Clinical update - Circulation management and cardiac arrest in mountain and remote areas J Ellerton / M Milani</p> <ul style="list-style-type: none"> ⌚ 20 Shock update <i>P Paal (Austria)</i> ⌚ 30 Termination of CPR including traumatic cardiac arrest <i>M Milani (Italy)</i> ⌚ 15 AED in remote areas—a case series from South Tyrol <i>G Rammlmair (Italy) / L Lintner (Italy)</i> ⌚ 10 261-0 Cardiac arrest in mountain setting (above 1800m); two years HEMS experience review in Aosta Valley, Italy <i>G Enrione, S Roero, B Catuzzo, G Giardini, E Visetti</i> ⌚ 15 Discussion
15:30-16:00	COFFEE BREAK
16:00-17:00	<p>Key lecture & Closing ceremony</p> <ul style="list-style-type: none"> ⌚ 30 Recent developments and future perspectives in out-of-hospital resuscitation in mountain areas <i>H Brugger (Italy) / F Elsensohn (Austria)</i> ⌚ 30 Presentation of XI. World Congress 2016 <i>B Basnyat (Nepal) / P Hackett (United States)</i>

CONFERENCE HALL (PARALLEL SESSION)
<p>Special issues</p> <p>Shoulder dislocation and thoracostomy - C Kruis / A Rinaldi</p> <ul style="list-style-type: none"> ⌚ 15 Traumatic pneumothorax—minithoracotomy <i>A Rinaldi (Italy)</i> ⌚ 15 When and how to reduce a shoulder dislocation in the field <i>C Kruis (Germany)</i> ⌚ 15 240-0 Improving patient safety—minimally-invasive drainage in the field for the treatment of a traumatic or spontaneous pneumothorax <i>L Festi, E Nardecchia, MA Cattoni, F Berizzi, U Hefti, L Dominioni</i> <p>Lightning - K Zafren</p> <ul style="list-style-type: none"> ⌚ 45 The shocking truths about lightning injuries! <i>K Zafren (United States)</i>
COFFEE BREAK
<p>Meet the expert</p> <p>Analgesia in the field - J Ellerton</p> <ul style="list-style-type: none"> ⌚ 15 Managing moderate and severe pain in mountain rescue. Official recommendations of ICAR MEDCOM <i>J Ellerton (United Kingdom)</i> ⌚ 15 258-0 Not to be sniffed at: efficacy & safety of intranasal diamorphine in UK adult mountain casualties <i>N Dodds, K Nakirikanti, J Ellerton, L Dykes</i> <p>Canyoning and caving rescue - I Soteras</p> <ul style="list-style-type: none"> ⌚ 25 Scenario and panel discussion <i>I Soteras (Spain), O Reisten (Switzerland), G Strapazzon (Italy), J Ellerton (United Kingdom)</i> ⌚ 5 268-0 First-responder caving rescue bags <i>L Pilo, A Santini, R Trevi, G Mancinelli, M Milani, G Strapazzon</i> ⌚ 5 269-0 STC Speleo Trauma Care—a course focused on trauma care in caving rescue <i>L Pilo, A Santini, M Milani, G Strapazzon, Medical Commission of the CNSAS Italian Caving Rescue (CoMed speleo)</i> ⌚ 5 266-0 A new stretcher for canyoning rescue based on medical and technical experience <i>G Mancinelli, P Schiavo, M Biasioni, M Milani, G Strapazzon</i> ⌚ 10 260-0 Canyoning injuries. Impact of wearing technical canyoning shoes in canyoning related accidents <i>JS Dupeyrat, C Riello, J Barberis, F Rocourt, I Favier, R Briot, M Blancher</i> ⌚ 10 262-0 Medical management of caving injuries in France. 71 medical rescue missions deep inside <i>J Faurax, M Blancher, F Rocourt, I Favier, F De Felix, R Briot</i>
<p>Special issues - Rescue in mountain and remote areas: educational and logistical issues M Blancher / G Cipolotti</p> <ul style="list-style-type: none"> ⌚ 15 Mountain telemedicine, here and there, today and tomorrow <i>E Cauchy (France) / P Zellner (France)</i> ⌚ 15 Telemedicine in mountain huts: going beyond simple AEDs <i>G Cipolotti (Italy)</i> ⌚ 15 183-0 Telemedicine backpack: bringing healthcare attention closer to inaccessible areas <i>M Sierra, M Avellanas, J Coll, R Anglés, S Mayo, V Rodrigalvarez, R Hurtado</i> ⌚ 15 263-0 Lessons learned from the Yushu earthquake 2010 <i>C Gongbao</i> ⌚ 15 264-0 Ultra events at high altitude: A challenge for the doctors <i>P Koirala</i> ⌚ 15 265-0 Medical simulation training in mountain rescue <i>V Lischke, A Berner, U Pietsch, J Schiffer, L Ney</i>

SEMINAR ROOM (PARALLEL SESSION)
<p>Technical workshop - Rescue strategies in cable car evacuations - BRD im AVS</p> <p>With the amount of tourist traffic via cable cars in mountain areas in the Alps, cable car evacuations belong to the basic skills of a mountain rescue team. This unique workshop presents a standard rescue technique that was successfully introduced in South Tyrol.</p> <p>Location: Seminar 7</p>
<p>Technical workshop - How to extricate and immobilise a patient in extreme rescue situations B Jelk / BRD im AVS</p> <p>This workshop will be a discussion of extrication and immobilization skills from specific and extraordinary rescue situations, drawing on the long-time experience of air-based rescue teams in Switzerland and South Tyrol.</p> <p>Location: Seminar 7</p>



POSTER SCHEDULE & MEDICAL WORKSHOPS

4.2 Poster schedule

Posters have been assigned to the first section (High Altitude Medicine and Physiology, 26-28 May 2014) or the second section (Mountain Emergency Medicine, 30-31 May 2014). Posters can remain for the entire duration of the section, but authors should be present between **12:30 and 14:00** during the poster viewing session specified below.

	TOPIC	POSTER ID	DATE
1	Molecular or genetic aspects of hypoxia and high altitude	016-P to 037-P	MONDAY 26 MAY 2014
2	Acute exposure to hypoxia and high altitude	054-P to 089-P	TUESDAY 27 MAY 2014
3	Chronic exposure to hypoxia and high altitude	102-P to 124-P	MONDAY 26 MAY 2014
4	Preexisting diseases at high altitude	129-P to 148-P	WEDNESDAY 28 MAY 2014
5	Women and children at high altitude	151-P to 161-P	WEDNESDAY 28 MAY 2014
6	Medications at high altitude	163-P to 173-P	TUESDAY 27 MAY 2014
7	Mountaineering, expedition and sports medicine	185-P to 208-P	WEDNESDAY 28 MAY 2014
8	Hypothermia and cold injuries	222-P, 227-P to 237-P	FRIDAY 31 MAY 2014
9	Airway, circulation and trauma management	242-P, 245-P to 254-P	FRIDAY 31 MAY 2014
10	Rescue in mountainous or remote areas	270-P to 282-P	FRIDAY 31 MAY 2014
11	Special issues	287-P to 290-P	FRIDAY 31 MAY 2014

4.3 Medical workshops

These refresher medical workshops are an adjunct programme. Pre-registration is required online or at the info-desk by Wednesday, 28 May 2014.

Location / Date	FREE UNIVERSITY OF BOZEN/BOLZANO / THURSDAY 29 MAY 2014		
9:00-12:00	<p>WORKSHOP 1 Targeted temperature management in accidental hypothermia <i>P Mair / P Paal</i></p> <p>A practice-oriented workshop on targeted temperature management in accidental hypothermia, including interactive discussion of case studies and current technology for core temperature measurement.</p> <p>Location: Room D1.03 Price: 100 €</p>	<p>WORKSHOP 2 Trauma management <i>E Gruber / I Tomazin</i></p> <p>An update on front-line issues in trauma management. This is an interactive session with discussion of case studies.</p> <p>Location: Room D1.01 Price: 100 €</p>	
14:00-15:30	<p>WORKSHOP 3 (group 1) Mechanical chest compression devices in mountain emergency medicine <i>G Putzer / O Reisten</i></p> <p>With the current buzz around mechanical chest compression devices, this workshop provides a discussion of existing evidence for use of these devices in terrestrial and air rescue and ample hands-on time for participants to familiarize themselves with different commercially-available devices.</p> <p>Location: Room D0.02 Price: 50 €</p>	<p>WORKSHOP 4 Alternative access for drug and volume administration <i>J Ellerton / M Milani / P Paal</i></p> <p>Participants will be shown state-of-the-art alternatives for prehospital drug and volume administration.</p> <p>Location: Room D0.03 Price: 50 €</p>	<p>WORKSHOP 5 Ultrasound at high altitude I — optic nerve <i>P Lochner / ML Zedde / L Coppo</i></p> <p>Participants will receive hands-on instruction in optic nerve ultrasonography and discuss its application in clinical studies at high altitude. The participants will be introduced to the basics of transcranial color-coded sonography and its value to detect, localize and quantify disease and evaluate hemodynamic responses.</p> <p>Location: Room F0.03 Price: 50 €</p>
16:00-17:30	<p>WORKSHOP 3 (group 2) Mechanical chest compression devices in mountain emergency medicine <i>G Putzer / O Reisten</i></p> <p>With the current buzz around mechanical chest compression devices, this workshop provides a discussion of existing evidence for use of these devices in terrestrial and air rescue and ample hands-on time for participants to familiarize themselves with different commercially-available devices.</p> <p>Location: Room D0.02 Price: 50 €</p>		<p>WORKSHOP 6 Ultrasound at high altitude II—lung <i>L Pratali / L Gargani</i></p> <p>Participants will receive hands-on instruction in lung ultrasonography using a portable ultrasound device and will be introduced to its application in clinical practice and clinical studies at high altitude.</p> <p>Location: Room F0.03 Price: 50 €</p>