

GENOA, ITALY

March, 19th - 21st, 2025



International Forum on **RESCUE in DIFFICULT ENVIRONMENT**

New Advances in Mountain, Sea and Space Rescue. A new approach against the consequences of climate change

with patronage of



Dear Colleagues and Esteemed Participants,

*It is with great enthusiasm and pleasure that we extend to you a warm invitation to the International Forum on "**RESCUE in DIFFICULT ENVIRONMENT: New Advances in Mountain, Sea and Space Rescue**". This congress, taking place in **Genoa, Italy from March 19th to 21st, 2025**, aims to foster innovative approaches and solutions in the field of rescue operations, particularly in the face of the ever-growing challenges posed by climate change.*

Our forum brings together leading experts, researchers, and practitioners from around the globe to share their insights and advancements in mountain, sea, and space rescue missions with a specific interest in the healthcare aspects of rescue operations. This event provides a unique platform for interdisciplinary collaboration, where new ideas and cutting-edge technologies will be discussed to enhance our collective response capabilities in difficult environments. Additionally, we will delve into the specialized fields of mountain, diving, space, expedition and wilderness medicine.

As we face the consequences of climate change, it is imperative that we adapt and develop new strategies to ensure effective rescue operations. This congress will address critical issues and present pioneering techniques that will shape the future of rescue missions, ensuring safety and resilience in extreme conditions.

We look forward to your active participation and contributions to what promises to be an enlightening and groundbreaking event. Let us unite our efforts to advance the field of rescue operations and make significant strides in protecting lives in the most challenging environments.

Warm regards,

Dr. Luigi Festi

Dr. Federico Emiliano Ghio



| | |
|--|---|
| Forum Director | Luigi Festi |
| President | Giacomo Strapazzon, Hermann Brugger, Osvaldo Chiara, Gianfranco Parati, Michael Wanscher |
| Organizing and Scientific Committee | Federico Emiliano Ghio, Urs Hefti, Lorenza Pratali, George Rodway, Natalie Holzl, Peter Paal, Marika Falla, Simona Mrakic Sposta, Giovanni Vinetti, Vittore Verratti, Stefano Trinchi, Bruna Catuzzo, Francesco Marchiori, Gege Agazzi, Desiree Pantalone, Alessandro Marroni, Simona Berteletti, Mario Milani, Alessandro Bacuzzi, Luca Carengo, Massimo Lombardo, Andrea Moscatelli, Fabrizio Iseni, Oscar Santunione |
| Organizing Secretariat | N O E M A Via Orefici 4 - Bologna (Italy) - Ph. +39 051 230385 info@noemacongressi.it - www.noemacongressi.it |



FORUM VENUE

CENTRO CONGRESSI PORTO ANTICO - Sala Scirocco/ Sala Libeccio

Magazzini del cotone - Modulo 8

16128 Genova



OFFICIAL LANGUAGES

English, Italian.



REGISTRATION FEES

- € 300 (22% VAT included)
- Reduced fee for undergraduate student (subject to availability): € 150 (22% VAT included)



HOW TO REGISTER

On-line on the website: <https://www.noemacongressi.it/en/> from 13th January 2025.

For further information please consult:

<http://noemacongressi.onlinecongressi.it/InternationalForumRescueDifficultEnvironment2025>

or write an email to info@noemacongressi.it.



FACULTY

| | | |
|------------------------|--------------------|--------------------------------|
| Alessandro Bacuzzi | Gianluca Ghiselli | Marcelo Parada |
| Cristina Barbarino | Tommaso Giacom | Gianfranco Parati |
| Steen Kroyer Barnung | Guido Giardini | Lorenza Pratali |
| Cristiano Belfiore | Les Gordon | Marco Prisco |
| Luca Berardi | Angelo Gratarola | George Rodway |
| Simona Berteletti | Stefano Gualandris | Nicola Rotolo |
| Loredana Bessone | Peter Habeler | Steve Roy |
| Elena Giovanna Bignami | Peter Hackett | Patrizio Rubcich |
| Grzegorz Bilo | Tamas Haidegger | Katie Russell |
| Mattia Bixio | Mark Hannaford | Giovanni Sabatino |
| Gerardo Bosco | Frank Hartig | Francesco Sauro |
| Hermann Brugger | Wade Hawkins | Gianluca Savoca |
| Michele Burlando | Urs Hefti | Tom Scalea |
| Roberto Canese | Sharon Henry | Carlo Serini |
| Giulio Carcano | Natalie Holzl | Federico Semeraro |
| Luca Carenzo | Chris Imray | Sven Christjar Skaiaa |
| Osvaldo Chiara | Matthias Jacob | Maria Rosaria Squeo |
| Francesca Cialdai | Marc Kaufmann | Niccolò Stomeo |
| Barbara Codo | Andrew Kirkpatrick | Giacomo Strapazzon |
| Carolina Cogo | Axel Krieger | Pascal Strappazzon |
| Davide Colombo | Marco Lastilla | Riccardo Stucchi |
| Paolo Comune | Erik Ldström | Guenther Sumann |
| Carlo Coniglio | Mijel Lotfi | Marco Tartaglione |
| Claudia Dallari | Massimo Lombardo | Michael Tipton |
| Francesco Daminelli | Andrew Luks | Andrea Tomaselli |
| Andrea De Bellis | Darryl Macias | Iztok Tomazin |
| Gianluca Degani | Enrico Macrì | Luca Tortorolo |
| Belinda De Simone | Alberto Mantovani | Sylvain Tosetti |
| Matteo Della Bordella | Alessandro Marroni | Alessandro Tuveri |
| Valeria Di Muzio | Fabrizio Masella | Valerio Tuveri |
| Angelo Doria | Kyle McLaughlin | Francesca Verginella |
| Marika Falla | Hubert Messner | Vittore Verratti |
| Guido Ferretti | Mario Milani | Giovanni Vinetti |
| Andrea Ferretti | Silvio Mondinelli | Stein Bastian von Tagen-Jordan |
| Luigi Festi | Monica Monici | Beat Walpoth |
| Jean Pierre Fosson | Andrea Moscatelli | Michael Wanscher |
| Paolo Frisoni | Simon Murray | Dave Weber |
| Orosz Gábor | Martin Musi | Sebastian Wiberg |
| Lorenzo Gamberini | Marie Nordgreen | Jason Williams |
| Hannes Gatterer | Peter Paal | Andrea Wolfler |
| Alessandro Geddo | Desiree Pantalone | |
| Federico Emiliano Ghio | Andrea Panzeri | |

*** = Faculty subject to change**

OPENING

| | | |
|-------|-------|--------------------------------|
| 13:30 | 14:30 | Registration |
| 14:30 | 15:00 | Greetings from the authorities |

Lectio Magistralis

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|-------|-------|--|-----------|
| 15:00 | 15:30 | Impact of Environmental Factors on the Cardiovascular System | G. Parati |
|-------|-------|--|-----------|

COLD INJURIES – LESSONS FROM CITIES, MOUNTAINS AND OCEANS

Chairpersons: H. Brugger, L. Gordon, P. Paal



Each lecture: 15 min

| | | | |
|-------|-------|--|---------------|
| 15:45 | 16:00 | Hypothermia from the mountain to the sea | L. Gordon |
| 16:00 | 16:15 | Frostbites: a “orphan” disease? | C. Imray |
| 16:15 | 16:30 | Physiology of cold-water immersion | M. Tipton |
| 16:30 | 16:45 | ALS changes in hypothermic patients | F. Semeraro |
| 16:45 | 17:00 | ECLS in hypothermic patient: cerebral prognostication | M. Wanscher |
| 17:00 | 17:15 | Hypothermia and coagulation | P. Paal |
| 17:15 | 17:30 | Impact of climate change on human health at high altitude | G. Rodway |
| 17:30 | 17:45 | How to manage blood pressure and cardiovascular problems at altitude | G. Bilo |
| 17:45 | 18:00 | Avalanches accident: old and new threats | G. Strapazzon |

Talk

| | | | |
|-------|-------|--|---|
| 18:00 | 20:00 | Between Mountains and Medicine: the Challenge of the Extreme | A. Mantovani, M. Della Bordella, S. Mondinelli |
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MAIN SESSION – Sala Scirocco
Lectio Magistralis

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|-------|-------|---|--------------|
| 08.30 | 09.00 | Immunity, Inflammation and Cancer; Training the Immune System | A. Mantovani |
|-------|-------|---|--------------|

MOUNTAINS: OLD AND NEW CHALLENGES WITH NEW VISITORS AND CLIMATE CHANGE

Chairpersons: N. Holzl, G. Strapazon, G. Giardini


Each lecture: 15 min

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|-------|-------|---|---------------|
| 09:15 | 09:30 | Oxygen at high altitude: from the past to the future | P. Hackett |
| 09:30 | 09:45 | The pioneers of high-altitude sickness: a masterful story | C. Cogo |
| 09:45 | 10:00 | High altitude illnesses | A. Luks |
| 10:00 | 10:15 | Challenges for patients in the mountains | M. Falla |
| 10:15 | 10:30 | Search and rescue at altitude - new ICAR guidelines | K. McLaughlin |
| 10:30 | 10:45 | Challenges for athletes in the mountain | H. Gatterer |
| 10:45 | 11:00 | Hyperthermia: so important and so underestimated | D. Macias |
| 11.05 | 11.25 | <i>Coffee break</i> | |

DIVING MEDICINE FROM BENCH TO BEDSIDE

Chairpersons: A. Marroni, M. Wanscher


Each lecture: 15 min

| | | | |
|-------|-------|---|-------------|
| 11:30 | 11:45 | Real Time Wireless Physiological Telemonitoring of the Submerged Diver for research and emergency assistance purposes | A. Marroni |
| 11:45 | 12:00 | Keeping people alive during rescue - lessons from other scenarios? | M. Tipton |
| 12:00 | 12:15 | Biomarkers and cerebral outcome following cardiac arrest/cerebral hypoxia normo-/hypothermia | S. Wiberg |
| 12:15 | 12:30 | Diving and Hyperbaric Medicine: New Perspectives | G. Bosco |
| 12:30 | 12:45 | Stress and circadian rhythm | T. Giacon |
| 12:45 | 13:00 | Modern cave diving rescue technique with limited equipment | F. Hartig |
| 13:00 | 13:15 | Physiology of water immersion | G. Ferretti |
| 13.20 | 14.20 | <i>Lunch</i> | |

WILDERNESS AND SPACE MEDICINE - WHAT TO LEARN FROM THE EXTREMES

Chairpersons: D. Pantalone, B. Walpoth, J.P. Fosson



Each lecture: 15 min

| | | | |
|-------|-------|--|--------------|
| 14:30 | 14:45 | Experience from the Swiss cave diving team | GRIMM |
| 14:45 | 15:00 | ESA CAVES: simulating space expeditions in underground environments | L. Bessone* |
| 15:00 | 15:15 | TerraXcube: where extreme conditions are controlled | G. Vinetti |
| 15:15 | 15:30 | Aeromedical mass evacuation: challenges in extreme environments | M. Prisco |
| 15:30 | 15:45 | The new frontiers of surgery in space missions: exosome and more | D. Pantalone |
| 15:45 | 16:00 | Submarine environment and similitude with space environment condition | M. Monici |
| 16:00 | 16:15 | From altitude to space: aeronautical legacy and the future of extreme rescue | V. Di Muzio |

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| 16:20 | 16:40 | <i>Coffee break</i> | |
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| 16:45 | 17:00 | Autonomous Robotic Surgery: Science Fiction or Reality? | A. Krieger |
| 17:00 | 17:15 | The marriage of drone delivered resuscitative responses with tele mentored just in time guidance: 2 + 2 is 64 | A. Kirkpatrick W. Hawkins |
| 17:15 | 17:30 | Pharmaceuticals at low atmospheric pressure: implications for human space flight | S. Roy |
| 17:30 | 17:45 | Wound Healing in Space – ESA and ASI Projects | F. Cialdai |
| 17:45 | 18:00 | Trauma care in space: how far the robotic and AI solutions? | T. Haidegger |
| 18:00 | 18:15 | Extreme Medicine: a global perspective | M. Hannaford |

PARALLEL SESSION – Sala Libeccio
TRAUMA MANAGEMENT: A COMMON THREAD FROM THE DIFFICULT ENVIRONMENT TO THE HOSPITAL TRAUMA CENTER

Chairpersons: O. Chiara, G. Carcano, L. Berardi



Each lecture: 15 min

| | | | |
|-------|-------|---|------------|
| 09:15 | 09:30 | The Organization of trauma network: between present and future | O. Chiara |
| 09:30 | 09:45 | Hybrid damage control in hybrid room: a new option for a hybrid trauma surgeon | T. Scalea |
| 09:45 | 10:00 | Strategies in soft tissue injuries in civil and military settings | S. Henry |
| 10:00 | 10:15 | Thoracic trauma in difficult environment: what are the options? | N. Rotolo |
| 10:15 | 10:30 | New technologies in surgery: from the operating room to the extreme environment, what future? | G. Carcano |
| 10:30 | 10:45 | From Haiti to the European civil protection system: new approach to organization of disaster response | D. Colombo |
| 10:45 | 11:00 | What we have learned from the military healthcare | C. Serini |
| 11.05 | 11.25 | <i>Coffee break</i> | |

PRE-HOSPITAL EMERGENCY DEPARTMENT ORGANIZATION: WHAT FUTURE?

Chairpersons: C. Coniglio, A. Bacuzzi



Each lecture: 15 min

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|-------|-------|---|--------------------------------|
| 11:30 | 11:45 | Trauma care in extreme conditions - from austere environments to the hospital | N. Holzl |
| 11:45 | 12:00 | Management of critically ill patients in austere environment | M. Bixio |
| 12:00 | 12:15 | Prehospital blood in Italy: state of the art | M. Tartaglione F. Daminelli |
| 12:15 | 12:30 | The role of prehospital ultrasound in clinical decision making in austere and remote environments | L. Gamberini |
| 12:30 | 12:45 | Urban environments are extreme environments | C. Belfiore |
| 12:45 | 13:00 | Mass Casualty Incident Management in Extreme Environments: the WSES project | B. De Simone |
| 13.05 | 14.05 | <i>Lunch</i> | |

EVENT MEDICINE AND MASS GATHERING IN EXTREME ENVIRONMENT: NEW ORGANIZATIONAL AND CLINICAL APPROACH

Chairpersons: F. Ghio, M. Lombardo, A. Ferretti



Each lecture: 15 min

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|-------|-------|---|-------------|
| 14:15 | 14:30 | Title: TBD | A. Panzeri |
| 14:30 | 14:45 | Ski Patrol | F. Ghio |
| 14:45 | 15:00 | Elite sporting event medical management | M. R. Squeo |
| 15:00 | 15:15 | World Athletics Label Marathons | L. Carengo |
| 15:15 | 15:30 | Delivering high quality clinical care during olympic winter sports | M. Lombardo |
| 15:30 | 15:45 | Exertional Heat Stroke - Principles of Management | N. Stomeo |
| 15:45 | 16:00 | High profile football games | A. Geddo |
| 16:00 | 16:15 | Preparing for the Unpredictable: Foundations of Disaster Medicine for Tomorrow's Clinicians | O. Gábor |
| 16.20 | 16.35 | <i>Coffee break</i> | |

EXPEDITION MEDICINE

Chairpersons: D. Macias, M. Musi, V. Verratti



Each lecture: 15 min

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|-------|-------|---|---------------|
| 16:40 | 16:55 | Expedition medicine: from Sandia Mountains to Himalaya | D. Macias |
| 16:55 | 17:10 | The women's expedition to K2: insights for a new approach to high altitudes | L. Pratali |
| 17:10 | 17:25 | Delivering care during Fiji eco-challenge | N. Stomeo |
| 17:25 | 17:40 | Expedition medicine in the Andes, teaching on expedition mode | M. Musi |
| 17:40 | 17:55 | Expedition medicine: the viewpoint of the expedition leader | F. Sauro |
| 17:55 | 18:10 | Expedition medicine: the viewpoint of the expedition doctor | P. Rubcich |
| 18:10 | 18:25 | Wearable devices and vital signs monitoring in mountain rescue | E. G. Bignami |

Lectio Magistralis

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|-------|-------|---|------------|
| 08.30 | 09.00 | Beyond the Limits – Mountain Medicine Pushing the Extreme | H. Brugger |
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SEA RESCUE: EXPERIENCES FROM ALL OVER THE WORLD

Chairpersons: A. Gratarola, S. Gualandris



Each lecture: 15 min

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|-------|-------|--|------------------------|
| 09:15 | 09:30 | Sinistre in submarine rescue | Italian Navy |
| 09:30 | 09:45 | Hemorrhagic shock management in the context of special forces operations | G. Degani |
| 09:45 | 10:00 | Norway: characteristics of helicopter hoist operations with intubated patients - experiences from the RNoAF 330 Squadron | S.C. Skaiaa |
| 10:00 | 10:15 | When tragedy strikes for the helicopter rescue crew rescuing in extreme environments | S. Murray |
| 10:15 | 10:30 | Denmark: The Praestoe mass drowning incident, very difficult rescue operation | S. K. Barnung |
| 10:30 | 10:45 | The National Search and Rescue (SAR) Organization at Sea and on Major Lakes. Medical Evacuation Procedures | E. Macrì |
| 10:45 | 11:00 | The Coast Guard Underwater Operations Units. Emergencies Following a Diving Accident: Types and Procedures | A. Doria |
| 11:00 | 11:15 | Advanced medical rescue beyond siphon and underwater evacuation | A. Tuveri V. Tuveri |

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| 11.20 | 11.40 | <i>Coffee break</i> | |
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MOUNTAIN RESCUE: EXPERIENCES FROM ALL OVER THE WORLD

Chairpersons: U. Hefti, M. Milani



Each lecture: 15 min

| | | | |
|-------|-------|---|------------------------|
| 11:45 | 12:00 | Rescue experience in Valais region/ locoregional anaesthesia in the austere environment | S. Tosetti |
| 12:00 | 12:15 | Valle D'Aosta rescue team experience | P. Comune |
| 12:15 | 12:30 | Scotland: Challenges for the pilots rescuing in extreme environments | S. Murray |
| 12:30 | 12:45 | Norway: Operating heavy helicopters in mountain rescue, a presentation of 330 squadrons super long line procedure | S.B. Von Tangen-Jordan |

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| 12:45 | 13:00 | CNSAS 1 experience between sea and mountains | F. Masella R. Canese |
| 13:00 | 13:15 | From SOS to safety: the story of an all-night rescue mission | S. Berteletti M. Cocha |
| 13:15 | 13:30 | Mountain rescue: the Italian Army's experience | TBD |

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| 13.35 | 14.35 | <i>Lunch</i> | |
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|-------|-------|---|----------------------------|
| 14:45 | 15:00 | Helicopter Rescue in Italy: Past, Present, and Future | C. Barbarino |
| 15:00 | 15:15 | Bavarian mountain rescue service | M. Jacob |
| 15:15 | 15:30 | Limitations in Mountain Emergency Medicine | G. Sumann |
| 15:30 | 15:45 | Mountain rescue in Argentina: A general review of rescue organization in the Argentine Andes | M. Parada |
| 15:45 | 16:00 | Rescues in Aconcagua provincial park as a particular example in Andes | M. Lotfi |
| 16:00 | 16:15 | Andes: Rescue at El Chalten, what challenges? | C. Codo |
| 16:15 | 16:30 | The survival course for the French sécurité civile hélicoptère teams | P. Strappazon |
| 16:30 | 16:45 | Slovenian rescue team experience | I. Tomazin |
| 16:45 | 17:00 | National Park service mountain rescue | D. Weber |
| 17:00 | 17.15 | Mountain Rescue in Sweden: Search and Rescue of missing people in extreme bad weather condition | M. Nordgreen E. Ldström |

ROUND TABLE

HELICOPTER RESCUE OPERATION FROM MOUNTAIN TO THE SEA AND BACK: WHAT FUTURE?

Chairpersons: M. Kaufmann, P. Frisoni

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|-------|-------|-------------------------------------|
| 17:15 | 17:45 | Round table with short presentation |
| 17:45 | 18:00 | Closure of the conference |

PARALLEL SESSION - Sala Libeccio
PEDIATRIC WILDERNESS MEDICINE: TRAUMA AND EMERGENCY MEDICINE IN REMOTE AREA

Chairpersons: F. Verginella, L. Tortorolo, A. Tomaselli



Each lecture: 15 min

| | | | |
|-------|-------|---|------------------------|
| 09:15 | 09:30 | Children at high altitude: what perspectives with climate change? | H. Messner |
| 09:30 | 09:45 | Developing a pediatric urban search and rescue team | A. Moscatelli and VVFF |
| 09:45 | 10:00 | Child airway management: a hostile environment | A. Wolfer |
| 10:00 | 10:15 | Utah pediatric trauma network | K. Russell |
| 10:15 | 10:30 | Mobile pediatric ECMO | A. Moscatelli |
| 10:30 | 10:45 | Burns: the first approach in children | A. De Bellis |

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| 10:50 | 11:05 | <i>Coffee break</i> | |
|-------|-------|---------------------|--|

EDUCATION AND TRAINING: A NEW APPROACH FROM THE MOUNTAIN TO THE SEA AND SPACE. ROLE OF DIFFICULT ENVIRONMENT SIMULATION

Chairpersons: L. Festi, L. Careno



Each lecture: 15 min

| | | | |
|-------|-------|---|--------------|
| 11:10 | 11:25 | Diploma in mountain medicine and emergency medicine | J. Williams |
| 11:25 | 11:40 | Mountain medicine course on the Andes | M. Musi |
| 11:40 | 11:55 | Cognitive appraisal in high stakes environment | L. Gamberini |
| 11:55 | 12:10 | Simulation for elite providers | L. Careno |
| 12:10 | 12:25 | Putting it all together: the master in mountain emergency medicine | C. Dallari |
| 12:25 | 12:40 | From CAVES to SPACE: using terrestrial analogues to train astronaut expeditionary behaviour | L. Bessone* |
| 12:40 | 12:55 | Canyoning medicine and first aid training, an example of a safety switch | I. Soteras |

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| 13:00 | 14:00 | <i>Lunch</i> | |
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ORAL PRESENTATION SESSION



Each presentation: 05 min

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|-------|-------|-------------------|
| 14.00 | 15.30 | SIMeM, UIAA, ICAR |
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This document is constantly updated. Please find the latest version of the program and the registration opening date on our website:



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