

**GENOA, ITALY**  
March, 19<sup>th</sup> - 21<sup>st</sup>, 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



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*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**



<b>Forum Director</b>	Luigi Festi
<b>President</b>	Giacomo Strapazzon, Hermann Brugger, Osvaldo Chiara, Gianfranco Parati, Michael Wanscher
<b>Organizing and Scientific Committee</b>	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 Carenzo, Massimo Lombardo, Andrea Moscatelli, Fabrizio Iseni, Oscar Santunione
<b>Organizing Secretariat</b>	<b>N O E M A</b> Via Orefici 4 - Bologna (Italy) - Ph. +39 051 230385 info@noemacongressi.it - www.noemacongressi.it



## FORUM VENUE

### **CENTRO CONGRESSI PORTO ANTICO - Sala Scirocco - Libeccio - 3<sup>rd</sup> floor**

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 13<sup>th</sup> January 2025.

For further information please consult:

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

or write an email to [info@noemacongressi.it](mailto:info@noemacongressi.it).

## FACULTY

Alessandro Bacuzzi	Gianluca Ghiselli	Desiree Pantalone
Cristina Barbarino	Tommaso Giacon	Marcelo Parada
Cristiano Belfiore	Guido Giardini	Gianfranco Parati
Dan Benga	Emanuele Gissi	Lorenza Pratali
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Grzegorz Bilo	Peter Hackett	Steve Roy
Mattia Bixio	Tamas Haidegger	Patrizio Rubcich
Stefan Bogdan	Mark Hannaford	Katie Russell
Gerardo Bosco	Frank Hartig	Giovanni Sabatino
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Belinda De Simone	Fabrizio Masella	Sylvain Tosetti
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Valeria Di Muzio	Marco Mercurio	Valerio Tuveri
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Marika Falla	Mario Milani	Vittore Verratti
Guido Ferretti	Silvio Mondinelli	Giovanni Vinetti
Andrea Ferretti	Monica Monici	Stein Bastian von Tagen-Jordan
Luigi Festi	Luca Moroder	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	Murad Odeh	Andrea Wolfler
Federico Emiliano Ghio	Peter Paal	

**MAIN SESSION – Sala Scirocco – Libeccio 3<sup>rd</sup> floor****OPENING**

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

**Lectio Magistralis**

15:00	15:30	Impact of Environmental Factors on the Cardiovascular System	G. Parati
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**COLD INJURIES – LESSONS FROM CITIES, MOUNTAINS AND OCEANS**

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

15:45	16:00	Hypothermia from Mountain to Sea. Ten key lessons from real rescues & the literature.	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**

18:30	20:00	Between Mountains and Medicine: the Challenge of the Extreme  (This talk will be conducted in Italian with translation into English)	A. Mantovani, M. Della Bordella, S. Mondinelli, L. Festi
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**MAIN SESSION – Sala Scirocco – Libeccio 3<sup>rd</sup> floor****Lectio Magistralis**

08.30	09.00	Immunity, Inflammation and Cancer; Training the Immune System	A. Mantovani
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**MOUNTAINS: OLD AND NEW CHALLENGES WITH NEW VISITORS AND CLIMATE CHANGE**

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

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	A. 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 – Foyer adjacent to Scirocco-Libeccio plenary hall, 3rd floor</i>	
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**DIVING MEDICINE FROM BENCH TO BEDSIDE**

Chairpersons: A. Marroni, M. Wanscher

11:30	11:45	3 years of war – extreme rescue missions for Ukrainians in the Maramures Mountains, Romania	S. Bogdan, D. Benga
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
13.15	13.30	Real Time Wireless Physiological Telemonitoring of the Submerged Diver for research and emergency assistance purposes	A. Marroni

13.30	14.30	<i>Lunch Break</i>	
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## WILDERNESS AND SPACE MEDICINE - WHAT TO LEARN FROM THE EXTREMES

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

14:30	14:45	Experience from the Swiss cave diving team	S. Tosetti
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

16:20	16:40	<i>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 Levante – Ponente 2<sup>nd</sup> floor****TRAUMA MANAGEMENT: A COMMON THREAD FROM THE DIFFICULT ENVIRONMENT TO THE HOSPITAL TRAUMA CENTER**

Chairpersons: O. Chiara, L. Berardi

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?	M. Odeh
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 – Foyer adjacent to Scirocco-Libeccio plenary hall, 3rd floor</i>	

**PRE-HOSPITAL EMERGENCY DEPARTMENT ORGANIZATION: WHAT FUTURE?**

Chairpersons: C. Coniglio, A. Bacuzzi

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 Break</i>	

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

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

14:15	14:30	Organizing Rescue at the Winter Olympics: What's New?	G. Ghiselli
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	I. De Donato
16:00	16:15	Preparing for the Unpredictable: Foundations of Disaster Medicine for Tomorrow's Clinicians	O. Gábor
16:15	16:30	What if the organization represents a hostile environment? MedEvac Plans	R. Stucchi
16:30	16:45	Break	

## EXPEDITION MEDICINE

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

16:50	17:05	Expedition medicine: from Sandia Mountains to Himalaya	D. Macias
17:05	17:20	The women's expedition to K2: insights for a new approach to high altitudes	L. Pratali
17:20	17:35	Delivering care during Fiji eco-challenge	N. Stomeo
17:35	17:50	Expedition medicine in the Andes, teaching on expedition mode	M. Musi
17:50	18:05	Expedition medicine: the viewpoint of the expedition leader	F. Sauro
18:05	18:20	Expedition medicine: the viewpoint of the expedition doctor	P. Rubcich
18:20	18:35	Wearable devices and vital signs monitoring in mountain rescue	E. G. Bignami

**MAIN SESSION – Sala Scirocco – Libeccio 3<sup>rd</sup> floor****Lectio Magistralis**

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

09:15	09:30	Sinistre in submarine rescue	P. Privitera
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	M. Wanscher
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

11.20	11.40	<i>Coffee break – Foyer adjacent to Scirocco-Libeccio plenary hall, 3rd floor</i>	
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**MOUNTAIN RESCUE: EXPERIENCES FROM ALL OVER THE WORLD**

Chairpersons: U. Hefti, M. Milani

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
12:45	13:00	CNSAS 1 experience between sea and mountains	F. Masella R. Canese

			A. Cavalletti
13:00	13:15	From SOS to safety: the story of an all-night rescue mission	S. Berteletti M. Cocha
13:15	13:30	Enhancing rescue effectiveness in difficult environments: training, research and innovation.	M. Mercurio

13.35	14.35	<i>Lunch break</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. Strappazzon
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. Lidström

## ROUND TABLE

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

Chairpersons: L. Moroder, G. Strapazzon

17:15	18:15	Round table with short presentation
18.15		Closure of the conference

**PARALLEL SESSION – Sala Levante – Ponente 2<sup>nd</sup> floor****PEDIATRIC WILDERNESS MEDICINE: TRAUMA AND EMERGENCY MEDICINE IN REMOTE AREA**

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

09:15	09:30	Developing a pediatric urban search and rescue team	A. Moscatelli, E. Gissi
09:30	09:45	Child airway management: a hostile environment	A. Wolfer
09:45	10:00	Utah pediatric trauma network	K. Russell
10:00	10:15	Mobile pediatric ECMO	A. Moscatelli

10:20	10:35	<i>Coffee break – Foyer adjacent to Scirocco-Libeccio plenary hall, 3rd floor</i>	
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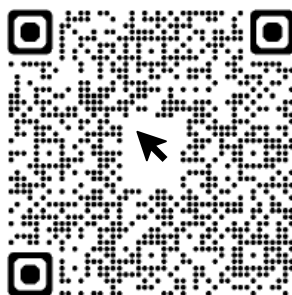
**EDUCATION AND TRAINING: A NEW APPROACH FROM THE MOUNTAIN TO THE SEA AND SPACE. ROLE OF DIFFICULT ENVIRONMENT SIMULATION**

Chairpersons: L. Festi, L. Carenzo

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

12:30	13:30	<i>Lunch break</i>	
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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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