BACKGROUND
The Human Factors and Medicine Panel (HFM) encompasses three Area Committees:

1. **Health, Medicine, and Protection Area (HMP)**: provides the scientific basis for establishing an operationally fit and healthy force, restoring health, minimizing disease and injury, optimizing human protection, and tackling sustainability and survivability issues.

2. **Human Effectiveness (HE)**: seeks to optimize individual readiness and organizational effectiveness by addressing psycho-social, organizational, cultural, and cognitive aspects in military action.

3. **Human System Integration (HSI)**: optimizes the performance of human-operated technical systems by addressing the human machine and its interactions, processes, tools, and measures of effectiveness.

SYMPOSIUM THEME
This three-day symposium will explore the NATO-mandated tenet of providing high-quality medical care to deployed military personnel in all arenas across the globe. The NATO leadership has indeed mandated, and our populations expect, that to the maximum extent possible, the medical care provided to our deployed military personnel will be of the same standard as they could receive in their home countries.

Experiences in recent wars has shown that the judicious applications of advanced medical technologies to combat casualty care has played a significant role in reducing combat-related mortality to the lowest level in recorded history. In these recent wars, analyses of deaths have consistently shown that mortality for casualties who reach a surgical hospital is low, and opportunities for further reducing mortality lie with improvements to pre-hospital care. The new NATO expeditionary strategic concept, with its emphasis on multinational shared responsibility for medical care, reduced deployed medical footprints, and early evacuation, cannot be implemented from a medical point of view without the effective use of all available advanced medical technologies in the multinational setting. Future NATO operations will be mobile and flexible, and will take place in remote and austere environments, providing new challenges to deployable medical services. As such, there is a need to gain an understanding on the part of NATO as to what new and medically relevant technologies are on the horizon. In addition, there is a need and desire to have the capability to advise the Military Committee and COMEDS as to effective integration of these technologies into our armamentarium upon request.

This activity will bring together international experts in the development and fielding of advanced medical technologies, with emphasis on improving care at the point of injury and during medical evacuation. The goal is to develop a greater understanding of soon-to-be fielded technologies, and to determine how they can best be applied within the multinational NATO environment. We plan to enhance information interchange between researchers, to reduce unnecessary duplication of effort, and to introduce to the NATO leadership the current state-of-the art medical technologies and procedures. Evaluation of the potential ability of various new modalities to support NATO goals and objectives will be carried out. Both researchers and industry representatives will be invited to participate in the symposium. Opportunity for poster exhibition/practical demonstrations will be available.

IMPORTANT NOTE
Please note that all participants must make their own travel arrangements and hotel bookings. In addition, please note that all attendees are advised to take special note of any VISA requirements and/or accommodations.

PROGRAMME COMMITTEE

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COLLABORATION SUPPORT OFFICE:

HFM-249 SYMPOSIUM
on:
“Emerging Technological Advances in Tactical Casualty Care”

ORGANIZERS:
Human Factors and Medicine Panel

LOCATION:
Warsaw, Poland

DATES:
20 – 22 April 2015

This symposium is open to citizens from NATO, the Partnership for Peace (PfP), the Mediterranean Dialogue (MD), and Contact Nations. Limited availability so please enrol early to avoid disappointment.

Please note: there are NO registration fees involved.

Civilian/Business Attire Required

LATEST ENROLMENT DATE:
23 March 2015

Enrol online at:
http://www.cso.nato.int

Once your enrolment is validated, you will receive a General Information Package (GIP) giving you further necessary details about the meeting.
**SESSION 1**

**15:10**

Title: Stored Whole Blood is Preserved for 14 Days in Austere Conditions: a ROTEM Feasibility Study During a Norwegian Antipiracy Mission and Comparison to Equal Ratio Reconstituted Blood

Speaker: Geir Strandenes, MD (NOR)

**16:30**

Title: Crisis Resource Management for Damage Control Ground Zero on the Battlefield

Speaker: Geir Strandenes, MD (NOR)

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**SESSION 2**

**10:00**

Title: Bridging the Gap Between In and Out of Hospital Care: the Role and Limitations of Technology

Speaker: Stacy Shackelford, MD, FACS

**11:00**

Title: The Beneficial Effects of C-Peptide in a Mouse Model of Hemorrhagic Shock and Resuscitation

Speaker: Capt. Dr. Raymond LC Kao, USN (CAN)

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**SESSION 3**

**14:00**

Title: The BIO Nexus Medical Platform: A Full Dynamic, Interactive, Hands-Free Mobile EMR

Speaker: Roy D. Bloebaum, PhD (USA)

**15:00**

Title: New Devices to Control Severe Hemorrhages in War Surgery

Speaker: Prof Dominique Blin (FRA)

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**SESSION 4**

**14:00**

Title: Modern Trauma Skills: Method & Technique

Speaker: Col. (Ret) Mark W. Bowyer, MD (USA)

**15:00**

Title: Percutaneous Osseointegrated Prosthesis Attachment for Warfighter Amputees

Speaker: Roy D. Bloebaum, PhD (USA)

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**SESSION 5**

**16:00**

Title: French Vital-Surgery Module: a New Tool for Surgery Everywhere at Any Time

Speaker: MED OF-5 Patrick Jault (FR)
SESSION 6 – HEMORRHAGE CONTROL
Chair: Dr. Michael Dubick (USA)

08:00 21 New Devices to Control Severe Hemorrhages in War Surgery
Dr. Dominique Blin (FRA)

08:50 22 Intrathoracic Pressure Regulation for Combat Casualty Care
Víctor A. Convertino, PhD (USA)

09:10 23 Recent Technological Advances in Hemorrhage Control for Improved Survival from Combat Wounds
Michael A. Dubick, PhD (USA)

09:30 24 Control of Severe Intra-Abdominal Hemorrhage with Infusible Platelet-Derived Hemostatic Agents in a Non-Human Primate (Macaca Mulatta) Model
CDR Forest Sheppard, USN (USA)

09:50 25 Overview of the Office of Naval Research, Casualty Care & Management Research Program
Dr. Michael B. Given (USA)

10:10 BREAK

SESSION 7 – EXTREMITY & INFECTION
Chair: MAJ Stuart Tyner (USA)

10:30 26 Reduction of Extremity War Injury Infection from Iraq and Afghanistan
Maj. Stuart D. Tyner, PhD (USA)

11:00 27 Percutaneous Osseointegrated Prosthesis Attachment for Warfighter Amputees
Roy D. Bloebaum, PhD (USA)

11:30 28 Epidemiology of Genitourinary Injury and Extremity Trauma in OEF/OIF
Jean A. Orman, ScD, MPH (USA)

12:00 LUNCH

SESSION 7 – EXTREMITY & INFECTION (CONTINUED)
Chair: MAJ Stuart Tyner (USA)

13:20 29 French Surgical Experience in the Role 3 Medical Treatment Facility of KAI (Kabul International Airport, Afghanistan): the Place of Orthopaedic Surgery
MED OF-3 Olivier Barbier (FR)

13:50 30 Treatment of Open Fractures in Austere Setting
MED OF-3 Pierre Pasquier (FR)

14:20 BREAK

SESSION 8 – CRISIS & PREPAREDNESS
Chair: Jean-François Ringeval (FR)

14:50 31 Development of a Standardized International Comprehensive Advanced Surgical Readiness Training Curriculum for Combat Casualty Care
Col. (Ret) Mark W. Bowyer, MD & Capt. Eric A. Elster, MD (USA)

15:10 32 Initial Deployment of the 14th Parachutist Forward Surgical Team at the Beginning of the Operation Sangaris in Central African Republic
MED OF-3 Brice Malgras (FR)

15:30 33 Results of ISAF Lessons Identified Learned LI/LL
Brig. Gen. Dr. Stefan Kowitz (HUN)

15:50 BREAK

16:10 Closing Remarks
Eva Erik Fosse (NOR)

17:10 END OF SYMPOSIUM

WEDNESDAY 22 APRIL 2015

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SCIENCE AND TECHNOLOGY ORGANIZATION IN NATO

In NATO, Science & Technology (S&T) is defined as the selective and rigorous generation and application of state-of-the-art, validated knowledge for defence and security purposes. S&T activities embrace scientific research, technology development, transition, application and field-testing, experimentation, and a range of related scientific activities that include systems engineering, operational research and analysis, synthesis, integration, and validation derived through the scientific method.

In NATO, S&T is addressed using different business models:

- The Collaborative Business Model where NATO provides a forum whereby NATO Nations and partner Nations elect to use their national resources to define, conduct, and promote cooperative research and information exchange.
- The In-House Delivery Business Model where S&T activities are conducted in a NATO dedicated executive body - having its own dedicated personnel, capabilities, and infrastructure.

THE SCIENCE AND TECHNOLOGY ORGANIZATION - STO

The mission of the NATO STO is to help position the Nations’ and NATO’s S&T investments as a strategic enabler of the knowledge and technology advantage for the defence and security posture of NATO Nations and partner Nations, by:

- Conducting and promoting S&T activities that augment and leverage the capabilities and programmes of the Alliance, of the NATO Nations and the partner Nations, in support of NATO’s objectives;
- Contributing to NATO’s ability to enable and influence security- and defence-related capability development and threat mitigation in NATO Nations and partner Nations, in accordance with NATO policies;
- Supporting decision-making in NATO Nations & NATO.

ACKNOWLEDGEMENTS:

The Human Factors and Medicine Panel expresses its sincere thanks to the representatives from Warsaw for the invitation to hold this meeting in Poland. In addition, the members are appreciative of the facilities and personnel which make this meeting possible.
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