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TITLE: A Civilian/Military Trauma Institute: National Trauma Research Coordinating Center

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San Antonio, TX 78229-3900

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# REPORT DOCUMENTATION PAGE

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<b>13. SUPPLEMENTARY NOTES</b>					
<b>14. ABSTRACT</b>  The purpose of this grant is to support a national coordinating center for trauma research funding, and provide a forum for dissemination of trauma research information to the trauma community. The infrastructure/processes is streamlined and efficient leading to selection of research projects based on a solid scientific, peer review of submitted research proposals. The selected research projects are well on their way to achieving their objectives. The NTI annual Trauma Symposium was held August 30 - September 1, 2010.					
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## **INTRODUCTION**

The University of Texas Health Science Center at San Antonio (UTHSCSA) proposed to utilize congressional funding to work collaboratively with National Trauma Institute to build on the establishment of NTI as a national coordinating center for trauma research funding. In addition to this, a forum for dissemination of trauma research information was provided for the trauma community through the NTI Annual Trauma Conference. A one year no-cost-extension was approved September 19, 2011.

### **Body**

#### **Statement of Work**

- A. The contractor will support a national coordinating center for trauma research funding.
1. Requests for proposals (RFP) based on areas of scientific merit in trauma and emergency or critical care will be prepared and issued.
  2. NTI Board Science Committee will score proposals according to scientific merit, clinical impact and ability to perform.
  3. NTI Board will update trauma research subject areas based upon the basis of impact on survival or care of patients, existing funding, and funding availability annually.
  4. Perform Award management and compliance to include all appropriate USAMRMC HRPO requirements.
  5. Provide research funding for proposals that seek to address areas of urgent need in the treatment of trauma.
    - a) Timing and Mechanism of Traumatic Coagulopathy, PI - Mitchell Cohen, MD, University of California, San Francisco.
    - b) Comparative Effectiveness of Clinical Care Processes in Resuscitation and Management of Moderate to Severe Traumatic Injuries. PI - Shahid Shafi, MPH, MD, FACS, Baylor Research Institute
    - c) Characterization of the Effects of Early Sex-Hormone Environment Following Injury, PI - Jason L. Sperry, MD, MPH, University of Pittsburgh
    - d) Vasopressin Supplementation during the Resuscitation of Hemorrhagic Shock PI - Carrie Sims, MD, MS, University of Pennsylvania
- B. The contractor will provide a forum for dissemination of trauma research information to the trauma community.
1. NTI Annual Trauma Symposium to be held in fall of 2010.
  2. Symposium program focus on dissemination of research information to the entire trauma community
  3. Breakouts to include minimally; Trauma/Critical Care, Orthopedic Trauma, Emergency Care, Trauma Nursing, Oral maxillofacial Trauma, Trauma Mental Health, and a poster session.

## **A. National Coordinating Center for Trauma Research Funding:**

### **Requests for Proposals and Scientific Peer Review**

The NTI Science Committee conducted scientific peer-review of research proposals submitted under the Request for Proposals (RFP). Clinical or translational research studies were given priority.

NTI maintains operation of an online software product to facilitate the submission, management and review of proposals. The Letter of Intent/Pre-proposal Form, Full Proposal Form, and Science Committee evaluation forms developed by NTI were used in this RFP cycle. This web-based system supports reporting, financial tracking and ongoing communication with awarded researchers.

The national request for proposals attracted 85 pre-proposals. A map of where the pre-proposals were from is attached (Appendix A.a). The pre-proposals were reviewed and 15 were invited to submit full proposals. A map depicting the locations of the full proposals is also attached (Appendix A.b). The 15 full proposals were reviewed by all members of the Science Committee, and scores were submitted and compiled. A face-to-face evaluation and review meeting was held in to make final award recommendations. Proposals were evaluated on the following criteria: relevance to NTI research objectives, scientific excellence, clinical relevance and impact, multicenter collaboration, military relevance, innovation, potential for follow-on studies, and feasibility of completing the objectives in one-year funding period. Four proposals were recommended by the Science Committee and approved by the Board of Directors for funding.

NTI's continual award management and compliance, to include all appropriate USAMRMC HRPO requirements is ongoing.

### **Research Funding For Proposals that Address Areas of Urgent Need in the Treatment of Trauma**

#### **Project 1:**

Project Title: Timing and Mechanism of Traumatic Coagulopathy

PI Name: Mitchell Cohen, MD

PI Institution: University of California, San Francisco

Status: Approved HRPO Log#: A-16375.3a

Participating centers include:

- a) UTHSC-Houston, Center for Translational Injury Research (CeTIR), Dr. Bryan Cotton. HRPO Log# A-16375.b
- b) University of California, Berkeley, Adam Hubbard, PhD. HRPO Log # A-16375.c

#### **Project Abstract:**

Trauma remains the leading cause of death and disability in patients less than 40 years old. Coagulopathy is common following severe trauma and is associated with poor outcome. Unfortunately the mechanisms for these clotting problems are poorly characterized and as a result diagnosis is difficult and treatment options are limited. In addition there is a newly-described link between early coagulopathy and later multiple organ failure (MOF), infection and mortality. Despite this link the mechanisms for this clotting abnormality and later inflammation

after trauma are unknown. This is clinically important because it is impossible to optimize therapeutic efficacy to control bleeding and at the same time minimize the risks of late thrombotic, infectious and inflammatory complications without completely understanding the spectrum of coagulation abnormalities seen after injury.

This clinically significant problem will be addressed by two, inter-related aims. Aim 1: Completely characterize coagulation parameters in severely injured patients by means of a prospective, multi-center observational study at two major trauma centers. Aim 2: To use systems biology methods to identify the central mediators involved in the coagulopathic phenotypes after trauma and to produce a predictive model to provide decision support to diagnose coagulopathy and guide treatment after severe trauma.

Uncontrolled hemorrhage to which clotting abnormalities contribute is responsible for the majority of trauma related deaths in the first 24 hours. Vast experience gleaned in civilian and military trauma centers has confirmed that the initial treatment of the injured must center on a resuscitation protocol that prioritizes control of hemorrhage and treatment of coagulopathy and seeks to prevent the late inflammatory dysfunction. The results of this work will improve understanding of traumatic coagulopathy and guide resuscitation toward better patient outcomes.

### **Current Progress:**

This project is in its third quarter and on target with enrollment goals. Total enrollment across all sites at the conclusion of the second quarter was 130 subjects. Preliminary data was presented at the 2011 ATACCC meeting. The presentation was entitled “*Mechanisms of Acute Traumatic Coagulopathy*” on August 17, 2011 in St. Petersburg, Florida. The PI reports that preliminary network data results on causal inference and modeling looks extremely promising and indicates the preliminary work will be successful.

### **Project 2:**

Project Title: Comparative Effectiveness of Clinical Care Processes in Resuscitation and Management of Moderate to Severe Traumatic Injuries

PI Name: Shahid Shafi, MPH, MD, FACS

PI Institution: Baylor Research Institute

Status: Approved HRPO Log#A-16375.2a

Participating centers include:

- a) University of Texas Health Science Center, Houston, Dr John Holcomb, Approved HRPO Log#16375.2c
- b) University of California at Los Angeles HRPO Log# A-16375.2d, pending approval
- c) Massachusetts General Hospital HRPO Log# A-16375.2e, pending approval

Note site withdrawals for:

- HRPO Log# A-16375.2b Ronald M. Stewart, MD, University of Texas Health Science Center at San Antonio. This site withdrew from participation—study closeout documents submitted to USAMRMC HRPO HSPS on 6/9/11.
- HRPO Log# A-16375.2d Timothy Nunez, MD, San Antonio Military Medical Center/Brooke Army Medical Center (SAMMC/BAMC). This site withdrew from participation. This site did not receive USAMRMC HRPO approval, no further action required. HSPS was notified of site withdrawal.

**Project Abstract:**

Injured patients treated at designated trauma centers are more likely to survive than patients treated at non-designated hospitals. However, it has recently been demonstrated by the PI of this project that risk-adjusted mortality rates are highly variable across trauma centers despite availability of similar resources as ensured by their designation. Donabedian principles of quality management suggest that outcomes depend upon institutional structures AND processes. If trauma centers have similar structures then variable outcomes are likely related to variations in clinical care processes. The hypothesis is that clinical care processes for management of trauma patients are variable across centers, and specific processes that improve patient outcomes can be identified. Also, processes that increase costs without improving outcomes can also be determined. This will be a multicenter retrospective study of five civilian and military Level I trauma centers that serve a diverse population exceeding 13 million. Adult patients with moderate to severe injuries will be included (n=5000, 2006-08). Clinical care processes related to initial assessment, resuscitation, hemorrhage control, operative care, critical care, and rehabilitation, as well as patient outcomes (in-hospital mortality, complications, length of stay, hospitalization costs) will be measured.

Following are the specific aims of the study: Specific Aim 1: To identify processes of care that are independent predictors of risk-adjusted outcomes (mortality, complications, costs, length of stay). Specific Aim 2: To measure variations in practices, and their associated costs, between and within institutions. Specific Aim 3: To calculate the potential impact of improved adoption of processes of care identified in Specific Aim 1 on patient outcomes. This will enable estimate of the economic benefits to the state and the nation, and help prioritize targets for future intervention studies. The findings will identify “best clinical practices” in trauma that will likely form the basis for future intervention studies to reduce harmful variations in clinical practice patterns at trauma centers.

**Current Progress:**

Dr Shafi’s project is in its fourth quarter. Baylor’s role in this project is limited to coordinating center, although this large study is based on results of a pilot study conducted at Baylor. UT Houston has completed data collection on 750 medical records and plans to add 450 more charts. Data collection will continue into the fourth quarter.

Two of the initial participating sites withdrew from the study in the first quarter. Dr. Shafi identified two new participating sites during the second quarter. These two sites are University of California at Los Angeles and Massachusetts General Hospital. Each of these sites are in the process of obtaining HRPO approval. Due to this change in participating sites, Dr Shafi is delayed in achieving his study milestones. He intends to request a 3 month no cost extension to complete the scope of work.

**Project 3:**

Project Title: Characterization of the effects of early sex-hormone environment following injury

PI Name: Jason L. Sperry, MD, MPH

PI Institution: University of Pittsburgh (Single Center study)

Status: Approved HRPO Log#: A-16375.1

**Project Abstract:**

Although significant advances in the care of the injured patient have occurred over the last decade, those who survive their initial injury continue to be plagued with the development of multiple organ failure, sepsis and their attributable morbid effects. One important and persistent finding has been that males and females respond differently following traumatic injury and hemorrhagic shock, with a relative protection afforded to females. A large body of literature has evolved attempting to elucidate the mechanisms responsible for these differences; however, a significant divide continues to exist between what experimental animal investigations have revealed and what has been shown clinically in humans. The ultimate elucidation of the mechanisms responsible for these outcome differences will allow future risk factors and therapeutic targets to be discovered and characterized having significant potential to improve outcomes in both males and females following injury. The early sex-hormone environment may help shape or determine the intensity of the early inflammatory response which follows injury and provide a predisposition towards maintenance of any excessive or inadequate response once initiated. Similarly, the early sex-hormone environment may affect the need for resuscitation or blood component transfusion and knowledge of this early hormonal milieu may allow those patients at highest risk of poor outcome post-injury to be identified. The overarching goal of this proposal is to further characterize and investigate the early sex-hormone environment following injury and the associations of early estrogen and testosterone levels with the strength of the innate immune response, the coagulation response, resuscitation requirements and clinical outcomes following injury. As few effective interventions exist which alter the morbidity and mortality that inherently follows traumatic injury, investigation into novel mechanisms which may result in a protective effect can provide a route to reduce these sequelae post-injury.

**Current Progress:**

Dr Sperry's project is in the fourth quarter. At the conclusion of the third quarter, Dr Sperry reported a total enrollment of 176 subjects with 1,780 subjects screened. The enrollment goal for the fourth quarter is 75 additional subjects. Enrollment was slow in the first quarter due to a decrease in trauma cases, but enrollment has increased in the second and third quarters. The enrollment goal is 325 subjects.

**Project 4:**

Project Title: Vasopressin Supplementation during the Resuscitation of Hemorrhagic Shock

PI Name: Carrie Sims, MD, MS

PI Institution: University of Pennsylvania

Status: Submission to MRMC is pending site IRB approval.

**Project Abstract:**

Trauma remains the leading cause of death for those under the age of forty in the United States with a large percentage of patients dying from hemorrhagic shock within the initial hours after a severe injury. Although aggressive treatment with intravenous fluids and blood products has been the gold standard, massive resuscitation profoundly alters the neuroendocrine milieu needed to maintain vasomotor tone and is associated with the development of a vasopressin deficiency. Vasopressin is a critical hormone needed for blood pressure support during shock and low levels are associated with recalcitrant hypotension, increased transfusion requirements, and additional morbidity. Although high dose vasopressin supplementation has been shown to improve blood pressure, decrease blood loss and improve survival in animal models of lethal hemorrhage,

clinical studies investigating vasopressin are limited to case reports, with no prospective clinical studies to date. The goal of this research is to develop targeted interventions to address hemorrhagic shock. The proposed pilot study will evaluate the clinical applicability of using the biomarker copeptin for predicting the need for resuscitation resources and as a means of monitoring the development of vasopressin deficiency. Identifying and targeting neuroendocrine deficiencies during the resuscitation trauma patients is a novel approach to ameliorate the profound hypotension seen in late stage shock; limiting the need for aggressive volume and blood product resuscitation and decreasing the incidence of resuscitation associated complications. This will support prediction of resuscitation requirements and development of resuscitation strategies/fluids that will allow for the minimization of shock.

**Current Progress:**

Dr Sims' project is in the process of obtaining site IRB approval which is expected within the month. This project will utilize Exception from Informed Consent and Community Consultation. The project received *Approval in Concept* at this site's IRB and community consultation has been completed.

**B. Provide a Forum for Dissemination of Research Outcomes to the Trauma Community.**

The 16<sup>th</sup> National Trauma Institute Annual Symposium was held August 30-September 1, 2010. There were over 400 attendees, 45% military and 55% civilian. Attendees included physicians, nurses, and pre-hospital care providers from 28 states. Up to 15.5 hours of AMA PRA Category 1 Credits or Continuing Nursing Education credits were offered. Over 100 speakers made pro/con style presentations in both general and breakout sessions.

The general sessions included PTSD and Provider Resiliency, Traumatic Brain Injury, and Resuscitation. The concurrent breakout sessions included Trauma Critical Care/Emergency Medicine/Anesthesia, Craniofacial Trauma, Neurosurgery, Orthopedic Trauma, Trauma, Nursing/Allied Health, and Burn Surgery. The listing of topics and speakers is included as Appendix B.

A three hour Advanced Airway Workshop (AAW) was also held with 100 attendees, 38% military and 62% civilian. This AAW included live demonstrations on manikins and adjunct materials that mimicked the difficult airway. The attendee rotated through 13 learning stations and utilized various fiber optic intubating devices, practiced surgical airway approaches and used video laryngoscopes and supraglottic airway devices. The listing of the topics and speakers is included as Appendix C.

**Table 1: Overall Award Milestones**

Milestone	Planned Date	Actual Date	Status
Grant Awards Announced	Q1	3/31/10	Complete
Contracting	Q1	10/5/2010	3 of 4 sites contracted (remaining site is awaiting local IRB approval)
Compliance Management	Q1-ongoing	10/5/2010 - ongoing	Ongoing
Cost reimbursement	Milestone-based, associated with reporting		Ongoing
Reporting	Quarterly & Annually	All quarters	Ongoing
2010 Symposium Management/Organization	All quarters	All quarters	Complete
Symposium held	August 2010	8/31/2010	Complete

**Key Research Accomplishments**

None at this time

**Reportable Outcomes**

Oral Presentation at ATACCC by Dr Mitch Cohen entitled “*Mechanisms of Acute Traumatic Coagulopathy*” on August 18, 2011 in St. Petersburg, Florida.

**Conclusion**

NTI has successfully completed a RFP, peer-review process, selection of four relevant trauma projects, and is conducting on-going management of the projects under this award.

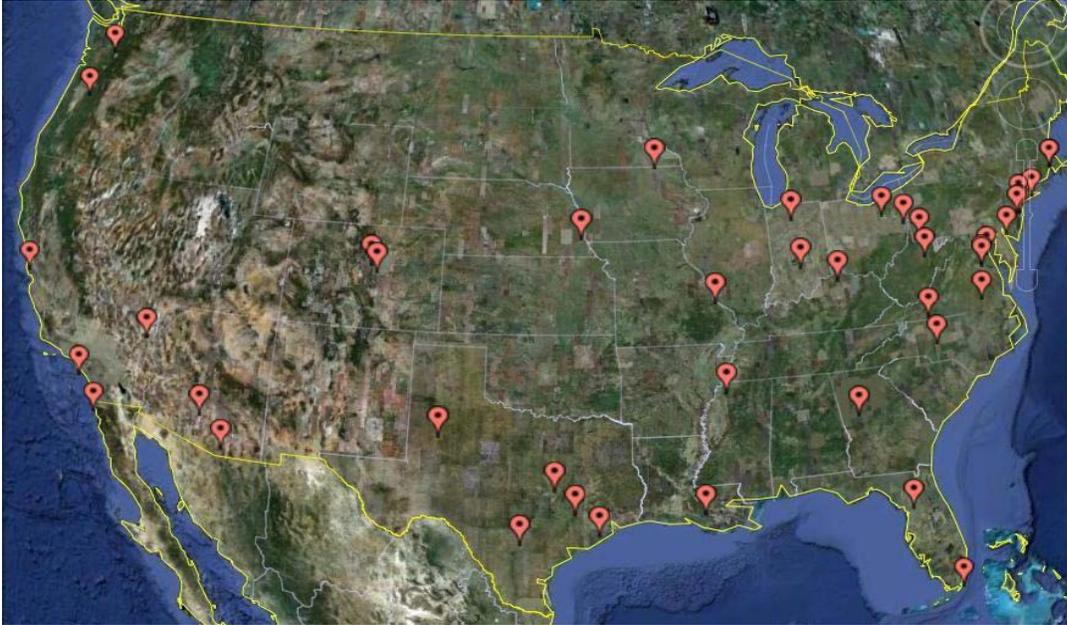
The four studies funded through this award have the potential to impact care and change current practices as they relate to coagulation, resuscitation and management of severe traumatic injuries, characterization of the effects of early sex-hormone environment following injury, and the development of targeted interventions to address hemorrhagic shock. Each of the funded project’s are of critical importance in the advancement in trauma care.

The NTI Annual Trauma Symposium program’s focus on dissemination of research information to the entire trauma community was an integral key to its success. Trauma providers attending the symposium have said “*This was a thoroughly enjoyable CME event. The expertise of the speakers is remarkable, and many were very dynamic and gifted lecturers. Also manifest was the excellence and dedication of deployed medical personnel. I found the example of armed forces service abroad to be inspiring.*” and “*The integration of civilian and military medical advances for the benefit of all critically injured patients was beneficial for all [providers]*”. The uniqueness of the Symposium is its blend of military and civilian speakers and topics maximized the potential for dissemination of research information to the trauma community.

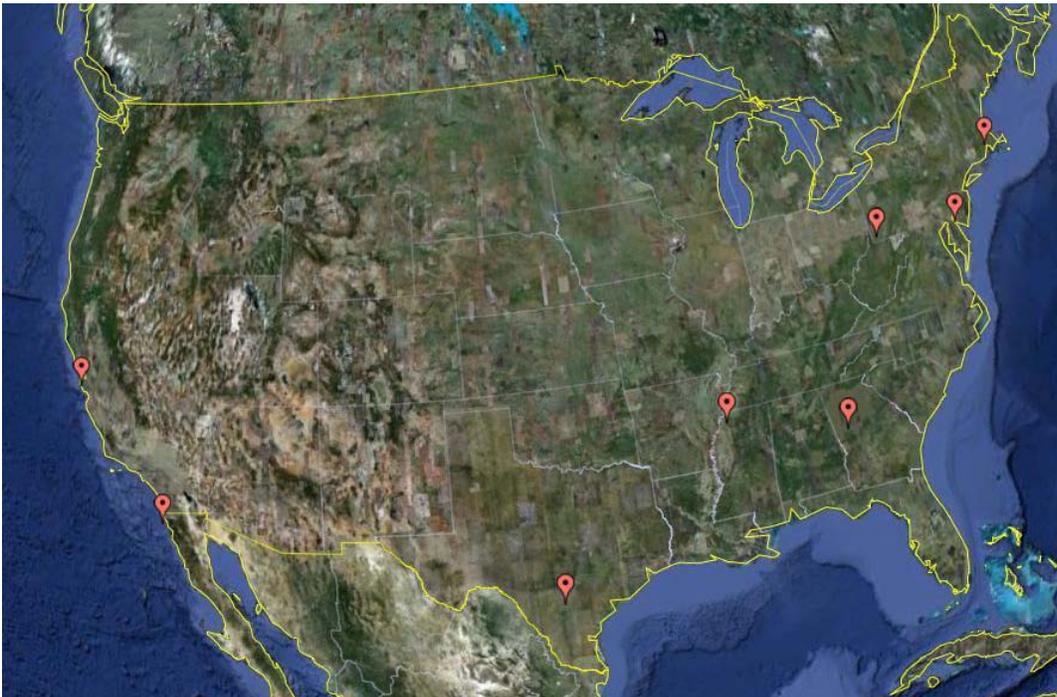
**APPENDIX A**

**National Response to NTI Request for Proposals**

a) Map of Locations of Pre-proposal Submissions for NTI-ICU-08 (85 pre-proposals from 25 states and Washington DC).



b) Map of Locations of Full Proposal Submissions (15 full proposals from 8 cities)



## APPENDIX B

### Nationa Trauma Institute Annual SAymposium 2010: List of Speakers and Topics

#### Monday, August 30, 2010

**0700-0800 Registration, Continental Breakfast**

**0800-0820 Welcome Remarks**

**0820-0840 Chairman's Address** Dr. Timothy Fabian

**0840-0940 Provider Resiliency**

**0840-0940** Speaker: Dr. Alan Peterson Title: Risk & Resiliency in Deployed Military Medical Personnel

**0940-1000 Break**

**1000-1200 Disentangling PTSD and TBI**

**1000-1045** Speaker: Dr. Charles Hoge Title:

Disentangling mTBI/Concussion, PTSD, and Post-War Symptoms: A Population Health Perspective

**1045-1130** Speaker: Dr. Harvey Levin Title: Questions and Controversies in Combat-Related Post concussive Syndrome

**1130-1200** Moderator: Dr. Alan Peterson Title: Case Presentation and Panel Discussion

**1210-1310 Lunch in Salon G-I**

**1310-1410 Lecture 1**

**Salon E TCC/EM/Anesthesia Maj Julio Lairet/Dr. Anthony Hernandez**

**1310-1320** Speaker: Dr. Renard Sessions Title: Etomidate is the intubating choice in trauma and critical care

**1320-1330** Speaker: Dr. Ben Wallisch Title: Ketamine is the intubating choice in trauma and critical care

**1330-1340** Speaker: LtCol Shawn Zarr, MD Title: Video assistance makes intubation safer in airway management for trauma patients PRO

**1340-1350** Speaker: Dr. Thomas Grissom Title: Video assistance makes intubation safer in airway management for trauma patients CON

**1350-1400** Speaker: Dr. Craig Manifold Title: Are we too aggressive with pre-hospital intubation in trauma?

**1400-1410** Title: Group Discussion, Rebuttals, Q&A

**Salon C,D Orthopedic Trauma Dr. Animesh Agarwal/LtCol Michael Charlton**

**1310-1330** Speaker: Dr. Bernard Morrey Title: Current Concepts in the Management of Radial Head Fractures

**1330-1340** Moderator: Dr. Animesh Agarwal Title: Group Discussion, Rebuttals, Q&A

**1340-1400** Speaker: Dr. Bernard Morrey Title: Complex Instability of the Elbow

**1400-1410** Moderator: Dr. Animesh Agarwal Title: Group Discussion, Rebuttals, Q&A

**Salon A Craniofacial Trauma LtCol Cecila Schmalbach**

**1310-1320** Speaker: Col Joseph Brennan, MD Title: OIF 2005: Learning From the Past

**1320-1330** Speaker: Maj Brendan Farrell, MD Title: OIF 2009: Preparing for the Future

**1330-1340** Moderator: LtCol Mark Boston, MD Title: Group Discussion, Rebuttals, Q&A

**1340-1350** Speaker: LtCol Mark Boston, MD Title: Humanitarian Efforts in a Deployed Setting PRO

1350-1400 Speaker: Dr. Drew Horlbeck Title: Humanitarian Efforts in a Deployed Setting CON  
1400-1410 Moderator: LtCol Cecilia Schmalbach, MD Title: Group Discussion, Rebuttals, Q&A

**Salon B Neurosurgery Dr. James Ecklund**

1310-1320 Speaker: CDR Lisa Mulligan, MD Title: Decompressive Craniotomy PRO

1320-1330 Speaker: Dr. Alex Valadka Title: Decompressive Craniotomy CON

1330-1340 Moderator: Dr. James Ecklund Title: Group Discussion, Rebuttals, Q&A

1340-1400 Speaker: Dr. James Ecklund Title: Blast Induced TBI, What We Know

1400-1410 Moderator: COL Geoff Ling, MD Title: Group Discussion, Rebuttals, Q&A

**1420-1520 Lecture 2**

**Salon E TCC/EM/Anesthesia Dr. Stephen Venticinque/Dr. Timothy Fabian**

1420-1430 Speaker: Dr. Martin Croce Title: Do Sepsis bundles save lives?

1430-1445 Speaker: Dr. Seth Lotterman Title: The Phenomenon of Checklists.

1445-1455 Speaker: COL Kurt Grathwohl, MD Title: Do VAP bundles save lives?

1455-1510 Speaker: Dr. Thomas Grissom Title: How did the state of Michigan lower catheter related infections to zero?

1510-1520 Moderator: Title: Group Discussion, Rebuttals, Q&A

**Salon C,D Orthopedic Trauma Dr. Animesh Agarwal/LtCol Michael Charlton**

1420-1430 Speaker: Dr. Anil Dutta Title: 4 part proximal humerus fractures: ORIF

1430-1440 Speaker: Col Damian Rispoli, MD Title: 4 part proximal humerus fractures: Hemiarthroplasty

1440-1450 Moderator: Maj Michael Charlton, MD Title: Group Discussion, Rebuttals, Q&A

1450-1500 Speaker: Dr. Sudeep Taksali Title: Humerus fractures: IM Nail

1500-1510 Speaker: Dr. Animesh Agarwal Title: Humerus fractures: ORIF

1510-1520 Moderator: Maj Michael Charlton, MD Title: Group Discussion, Rebuttals, Q&A

**Salon A Craniofacial Trauma LtCol Cecilia Schmalbach**

1420-1430 Speaker: Maj Erik Weitzel, MD Title: Endoscopic Management of Frontal Sinus Fractures PRO

1430-1440 Speaker: Dr. Christopher McMains Title: Endoscopic Management of Frontal Sinus Fractures CON

1440-1450 Moderator: LtCol Cecilia Schmalbach, MD Title: Group Discussion, Rebuttals, Q&A

1450-1500 Speaker: Maj Robert Eller, MD Title: Application of Stents in Laryngeal Trauma PRO

1500-1510 Speaker: Dr. Blake Simpson Title: Application of Stents in Laryngeal Trauma CON

1510-1520 Moderator: LtCol Cecilia Schmalbach, MD Title: Group Discussion, Rebuttals, Q&A

**Salon B Neurosurgery Dr. James Ecklund**

1420-1430 Speaker: Dr. Alex Valadka Title: Hypothermia Should Be Used On The Battlefield

1430-1440 Speaker: CDR Dennis Rivet, MD Title: Hypothermia Should NOT Be Used On The Battlefield

1440-1450 Moderator: CDR Lisa Mulligan, MD Title: Group Discussion, Rebuttals, Q&A

1450-1510 Speaker: COL Geoff Ling, MD Title: Functional Restoration Through Robotics, Capitalizing on the Brain Machine Interface

1510-1520 Moderator: Dr. James Ecklund Title: Group Discussion, Rebuttals, Q&A

**1520-1540 Break**

**1540-1640 Lecture 3**

**Salon E TCC/EM/Anesthesia Dr. Andrew Peitzman/Dr. Charles Cairns**

1540-1555 Speaker: Dr. Eileen Bulger Title: What are the indicators for who needs to be resuscitated?  
1555-1610 Speaker: Dr. Martin Croce Title: When to operate on which injuries after the first hit: avoiding the second hit  
1610-1630 Speaker: LtCol Alan Murdock, MD Title: What is the best measurement of how much resuscitation is needed: Endpoints in Resuscitation  
1630-1640 Moderator: Dr. Andrew Peitzman Title: Group Discussion, Rebuttals, Q&A  
**Salon C,D Orthopedic Trauma Dr. Animesh Agarwal/LtCol Michael Charlton**  
1540-1550 Speaker: Dr. Jason Evans Title: Segmental bone loss: direct bone grafting  
1550-1600 Speaker: MAJ Joseph Hsu, MD Title: Segmental bone loss: distraction osteogenesis  
1600-1610 Moderator: Maj Michael Charlton, MD Title: Group Discussion, Rebuttals, Q&A  
1610-1620 Speaker: Dr. Mark Slabaugh Title: Knee Dislocations: acute repair  
1620-1630 Speaker: LtCol Warren Kadrmaz Title: Knee Dislocations: delayed reconstruction  
1630-1640 Moderator: Maj Michael Charlton, MD Title: Group Discussion, Rebuttals, Q&A  
**Salon A Craniofacial Trauma LtCol Cecilia Schmalbach**  
1540-1550 Speaker: Dr. Manuel Lopez Title: OIF: Perspective of H&N Surgeon in Theater  
1550-1600 Speaker: LTC George Coppit, MD Title: OIF: Perspective of H&N Surgeon Stateside  
1600-1610 Moderator: LtCol Cecilia Schmalbach, MD Title: Group Discussion, Rebuttals, Q&A  
1610-1620 Speaker: LtCol Carlos Esquivel, MD Title: Hearing Loss Due to Blast Injury  
1620-1630 Speaker: Maj Travis Pfannenstiel, MD Title: Hearing Loss Due to Operational Injury  
1630-1640 Moderator: LtCol Mark Packer, MD Title: Group Discussion, Rebuttals, Q&A  
**Salon B Neurosurgery Dr. James Ecklund**  
1540-1550 Speaker: COL Geoff Ling, MD Title: Advanced Neurocritical Care Should Be Deployed Far Forward  
1550-1600 Speaker: CDR Dennis Rivet, MD Title: Stick With The Basics In The Far Forward Environment  
1600-1610 Moderator: Dr. James Ecklund Title: Group Discussion, Rebuttals, Q&A  
1610-1630 Speaker: CDR Lisa Mulligan, MD Title: Far Forward Neurosurgical Care, Where We've Been and Where We're Going  
1630-1640 Moderator: Dr. James Ecklund Title: Group Discussion, Rebuttals, Q&A

## **Tuesday, August 31, 2010**

### **0700-0800 Continental Breakfast**

### **0800-1000 TBI Plenary Dr. Stephen Cohn/Dr. David Hoyt**

0800-0815 Speaker: COL Geoff Ling, MD Title: Does CPP Management Change Outcome?  
0815-0830 Speaker: Dr. Eileen Bulger Title: Why Doesn't Hypersmolar Therapy (HTS) Improve Outcomes?  
0830-0900 Moderator: Dr. Stephen Cohn Title: Case Presentation and Panel Discussion  
0900-0910 Speaker: Maj Vikhyat Bebartha, MD Title: Does Progesterone Therapy Improve TBI Outcome?  
0910-0920 Speaker: Dr. Guy Clifton Title: Is Hypothermia of Any Benefit?  
0920-0930 Speaker: Dr. Alex Valadka Title: When Should Craniectomy be Performed?  
0930-1000 Moderator: Dr. David Hoyt Title: Case Presentation and Panel Discussion

### **1010-1110 Lecture 1**

### **Salon E TCC/EM/Anesthesia CAPT James Dunne/Dr. Donald Jenkins**

1010-1020 Speaker: Dr. Bryan Cotton Title: 1:1 blood products ratios save lives PRO  
1020-1030 Speaker: Dr. Jordan Weinberg Title: 1:1 blood products ratios save lives CON  
1030-1040 Moderator: CAPT James Dunne, MD Title: Group Discussion, Rebuttals, Q&A  
1040-1100 Speaker: MSG Harold Montgomery Title: Are hemostatic dressings valuable in the prehospital setting?  
1100-1110 Moderator: Dr. Donald Jenkins Title: Group Discussion, Rebuttals, Q&A

**Salon A Trauma Nursing COL Belinda Spencer**

1010-1020 Speaker: Maj John Melvin Title: Ccomputer assisted burn resuscitation decision support CON

1020-1030 Speaker: LTC Maria Serio-Melvin Title: Ccomputer assisted burn resuscitation decision support PRO

1030-1040 Moderator: MAJ Maximino Martell Title: Group Discussion, Rebuttals, Q&A

1040-1050 Speaker: COL Kurt Grathwohl, MD Title: Every patient should receive 1:1 PRBC:FFP ratios PRO

1050-1100 Speaker: MAJ Jeremy Pamplin, MD Title: Every patient should receive 1:1 PRBC:FFP ratios CON

1100-1110 Moderator: Ms. Darlene Deters Title: Group Discussion, Rebuttals, Q&A

**Salon D Burn Surgery Dr. Stephen Wolf**

1010-1020 Speaker: MAJ Kevin Chung, MD Title: Urine Output is the Best Monitor of Burn Resuscitation

1020-1030 Speaker: Dr. David Greenhalgh Title: Urine Output Should be Only One of Many Monitors Used in Burn Resuscitation

1030-1040 Moderator: LTC Booker King, MD Title: Group Discussion, Rebuttals, Q&A

1040-1050 Speaker: Dr. Bill Hickerson Title: Integra Should be Used in Burn Wound Closure and Reconstruction

1050-1100 Speaker: COL Leopold Cancio, MD Title: Integra has Limited Application in Burn Wound Closure and Reconstruction

1100-1110 Moderator: LTC Booker King, MD Title: Group Discussion, Rebuttals, Q&A

**Salon C Trauma Mental Health Dr. Alan Peterson**

1010-1030 Speaker: Dr. Randy Strong Title: Mechanisms of Vulnerability to PTSD: The Role of Early Life Stressors

1030-1040 Moderator: Dr. Alan Peterson Title: Group Discussion, Rebuttals, Q&A

1040-1100 Speaker: Dr. Sheila Rauch Title: Treatment of Deployment-Related PTSD in Primary Care: A Pilot Investigation

1100-1110 Moderator: Dr. Alan Peterson Title: Group Discussion, Rebuttals, Q&A

**1120-1220 Lecture 2**

**Salon E TCC/EM/Anesthesia LtCol Alan Murdock/Dr. Ronald Stewart**

1120-1130 Speaker: LtCol Jeffery Bailey, MD Title: Factor VIIa should be used in combat casualties PRO

1130-1140 Speaker: Dr. Ronald Stewart Title: Factor VIIa should be used in combat casualties CON

1140-1150 Moderator: LtCol Alan Murdock, MD Title: Group Discussion, Rebuttals, Q&A

1150-1210 Speaker: Dr. Rodney Michael Title: What is the future of blood products: fresh, frozen, freeze dried?

1210-1220 Moderator: Dr. Ronald Stewart Title: Group Discussion, Rebuttals, Q&A

**Salon A Trauma Nursing COL Belinda Spencer**

1120-1210 Speaker: COL Greg Kidwell Title: Trauma and the Combat Support Hospital in Iraq, Comparing 2004 and 2009 and Casualty Data of Previous US Wars/Conflicts

1210-1220 Moderator: MAJ Beverly Inocencio Title: Group Discussion, Rebuttals, Q&A

**Salon D Burn Surgery Dr. Stephen Wolf**

1120-1130 Speaker: Dr. David Greenhalgh Title: Vitamin C Should be Used in Burn Resuscitation

1130-1140 Speaker: COL Leopold Cancio, MD Title: Vitamin C Should Not be Used in Burn Resuscitation

1140-1150 Moderator: Dr. Steven Wolf Title: Group Discussion, Rebuttals, Q&A

1150-1200 Speaker: Dr. Bill Hickerson Title: Burn Scars Should be Reconstructed Within One Year of Injury

1200-1210 Speaker: Dr. Steven Wolf Title: Burn Scar Reconstruction Should Only be Performed on Mature Scars

1210-1220 Moderator: Dr. Steven Wolf Title: Group Discussion, Rebuttals, Q&A

**Salon C Trauma Mental Health Dr. Alan Peterson**

1120-1140 Speaker: Dr. Patricia Resick Title: Long Term Follow-up of a Clinical Trial of Cognitive Processing Therapy and Prolonged Exposure

1140-1150 Moderator: Dr. Alan Peterson Title: Group Discussion, Rebuttals, Q&A

1150-1210 Speaker: Dr. Edna Foa Title: Efficacy of Prolonged Exposure Therapy for PTSD in Adolescents

1210-1220 Moderator: Dr. Alan Peterson Title: Group Discussion, Rebuttals, Q&A

**1230-1330 Lunch in Salon G-I**

**1330-1430 Lecture 3 Dr. Stephen Venticinque/Dr. Antonio Hernandez**

**Salon D Orthopedic Trauma ( Dr. Animesh Agarwal/LtCol Michael Charlton**

1330-1340 Speaker: Dr. Adam Starr Title: Pertrochanteric hip fractures: IM nail

1340-1350 Speaker: Dr. Sudeep Taksali Title: Pertrochanteric hip fractures: ORIF

1350-1400 Moderator: Maj Michael Charlton, MD Title: Group Discussion, Rebuttals, Q&A

1400-1410 Speaker: Dr. Ken Koval Title: Distal Femur Fractures: IM Nail

1410-1420 Speaker: Dr. Mark Richardson Title: Distal Femur Fractures: Bridge Plating

1420-1430 Moderator: Maj Michael Charlton, MD Title: Group Discussion, Rebuttals, Q&A

**Salon A Trauma Nursing COL Belinda Spencer**

1330-1340 Speaker: CPT David Ferraro Title: Hypothermia For Only Ventricular Tachycardia/Ventricular Fibrillation Cardiac Arrest PRO

1340-1350 Speaker: CPT James Hull Title: Hypothermia For Only Ventricular Tachycardia/Ventricular Fibrillation Cardiac Arrest CON

1350-1400 Moderator: MAJ Beverly Inocencio Title: Group Discussion, Rebuttals, Q&A

1400-1430 Speaker: CPT Monique Grinnell Title: Nursing assessment in an austere environment

**1440-1540 Lecture 4 Dr. Stephen Venticinque/Dr. Antonio Hernandez**

**Salon C,D Orthopedic Trauma Dr. Animesh Agarwal/LtCol Michael Charlton**

1440-1450 Speaker: Dr. Ken Koval Title: Extra-articular proximal tibia fracture: IM Nail

1450-1500 Speaker: Dr. Jason Evans Title: Extra-articular proximal tibia fracture: Plate 3

1500-1510 Moderator: Dr. Animesh Agarwal Title: Group Discussion, Rebuttals, Q&A

1510-1520 Speaker: Dr. Mark Richardson Title: Extra-articular distal tibia fracture: IM Nail

1520-1530 Speaker: Dr. Ravi Karia Title: Extra-articular distal tibia fracture: Plate

1530-1540 Moderator: Dr. Animesh Agarwal Title: Group Discussion, Rebuttals, Q&A

**Salon A Trauma Nursing COL Belinda Spencer**

1440-1450 Speaker: MAJ Jeremy Pamplin Title: Rapid Response Teams: Matching Resources to Patient Needs

1450-1500 Speaker: LTC Pedro Lucero Title: Rapid response team CON

1500-1510 Moderator: Mr. Harry Bradstreet Title: Group Discussion, Rebuttals, Q&A

1510-1520 Speaker: CPT Sally DelVecchio Title: Stress Dose Steroids in Sepsis PRO

1520-1530 Speaker: CPT Allyson Fewell Title: Stress Dose Steroids in Sepsis CON

1530-1540 Moderator: Mr. Harry Bradstreet Title: Group Discussion, Rebuttals, Q&A

**1540-1600 Break****1600-1700 Lecture 5 Dr. Stephen Venticinque/Dr. Antonio Hernandez****Salon C,D Orthopedic Trauma Dr. Animesh Agarwal/LtCol Michael Charlton**

1600-1610 Speaker: LtCol Michael Charlton Title: Pelvic Ring Injuries: The Role of Definitive External Fixation

1610-1620 Speaker: Dr. Adam Starr Title: Anterior pelvic fixation: ORIF

1620-1630 Moderator: Dr. Animesh Agarwal Title: Group Discussion, Rebuttals, Q&A

1630-1640 Speaker: Maj Patrick Osborn, MD Title: Lisfranc Injuries: ORIF

1640-1650 Speaker: LTC Kevin Kirk, MD Title: Lisfranc Injuries: Arthrodesis

1650-1700 Moderator: Dr. Animesh Agarwal Title: Group Discussion, Rebuttals, Q&A

**Salon A Trauma Nursing COL Belinda Spencer**

Speaker: CPT Schmidt

Speaker: CPT Moore

1620-1635 Speaker: COL Steve Hadley Title: Blast Injuries with Israel Perspective

1635-1650 Speaker: MAJ Tamara Funari Title: Pediatric Blast Injuries

1650-1700 Moderator: COL Greg Kidwell Title: Group Discussion, Rebuttals, Q&A

1600-1620 Title: Bagdad to Boston and back: Pediatric burn care during war time

**Wednesday, September 1, 2010****0800-0940 Resuscitation Plenary Dr. Stephen Cohn/Dr. Peter Rhee**

0800-0810 Speaker: Dr. Paul Pepe Title: Should we ever use fluids in the prehospital setting?

0810-0820 Speaker: LTC Robert Gerhardt, MD Title: Should we perform needle thoracotomy?

0820-0830 Speaker: Dr. Thomas Knuth Title: Optimal Vascular Access: IO/IV/Central Access

0830-0850 Moderator: Dr. Stephen Cohn Title: Case Presentation and Panel Discussion

0850-0900 Speaker: Dr. Peter Rhee Title: What is the Optimal Crystalloid for fluid resuscitation?

0900-0910 Speaker: Dr. Timothy Fabian Title: What is the Optimal Colloid for fluid resuscitation?

0910-0920 Speaker: Dr. David Hoyt Title: Should we use hypertonic saline for fluid resuscitation?

0920-0940 Moderator: Dr. Peter Rhee Title: Group Discussion, Rebuttals, Q&A

**0940-1000 Break**

1000-1020 Speaker: COL Kurt Grathwohl, MD Title: Are Pressors valuable in the setting of hemorrhagic shock?

1020-1040 Speaker: Dr. Phillip Spinella Title: Whole Blood versus components, which is better?

1040-1100 Moderator: Dr. Stephen Cohn Title: Case Presentation and Panel Discussion

1100-1115 Course Evaluation

## APPENDIX C

### Advanced Airway Workshop Stations

#### **Station 1**

##### **Optical Stylet**

Dr. Jay Ellis, MD, Anesthesiologist;  
Vice President, Tejas Anesthesia

Practice use of an optical stylet with the Levitan device, a malleable intubating stylet that contains a fiberoptic Bundle. It allows the user to “see” the airway at the tip of the stylet via an eyepiece.

#### **Station 2**

##### **Fiberoptic Intubation**

Dr. Mike Little, MD, Asst Prof,  
Dept of Anesthesiology, University  
of Texas Health Science Center

Practice tracheal intubation utilizing a fiberoptic bronchoscope. The fiberoptic bronchoscope is a foundational device in difficult airway management. Review standard use and common challenges.

#### **Station 3**

##### **Supraglottic Airway Device**

Dr. Seth Lotterman, MD, Staff  
Physician, Wilford Hall Medical Center

Use the King supralaryngeal airway, a blindly placed, supralaryngeal ventilation device. Supralaryngeal airway devices provide a temporizing alternative to tracheal intubation and mask airway maintenance when difficult circumstances are encountered.

#### **Station 4**

##### **Video Laryngoscope**

Dr. Thomas Grissom, MD, FCCM,  
Assoc Prof, Dept of Anesthesiology,  
University of Maryland School of Medicine

Practice using the Glidescope video laryngoscope device. The Glidescope device incorporates image sensor technology into its laryngoscope blade, allowing the user to visualize the glottic aperture on a separate video screen.

#### **Station 5**

##### **Percutaneous Airway**

Dr. (Col) Kurt Grathwohl, MD, FS,  
FCCP, Medical Director Surgical/Trauma Intensive Care Unit;  
Critical Care Consultant to the Army Surgeon General, Brooke Army Medical Center  
Practice emergency percutaneous cricothyroidotomy using the Cook Melker cricothyroidotomy kit on a fresh porcine airway.

## **Station 6**

### **Laryngeal Mask**

Dr. (Maj) Chad Holmes, MD, Prog

Dir, Anesthesiology Residency;

Staff Anesthesiologist, Brooke Army Medical Center

Practice supraglottic airway placement and blind intubation with the laryngeal mask. Participants will practice placing the LMA brand and I-Gel brand supraglottic airways and will intubate the trachea using the LMA brand Fastrach device.

## **Station 7**

### **Optical ETT Guides**

Dr. Ben Wallisch, DO, Asst Prof,

University of Texas Health Science Center

Practice tracheal intubation using optical endotracheal tube guides (ETTg). Participants will practice intubating the trachea utilizing the AirTraQ optical laryngoscope and the Pentax-AWS video ETTg.

## **Station 8**

### **Surgical Airway**

Dr (Col) Joseph Brennan, MD, & Dr. (Maj) Eller

Prog Dir, Otolaryngology, Wilford Hall Medical Center

Practice emergency open cricothyroidotomy techniques on a porcine airway model. Participants will perform open cricothyroidotomy using standard instruments mentored by ENT faculty.

## **Station 9**

### **Video Laryngoscope and Video Stylet**

Mr. (Col Ret) John Sherner, CRNA, MSN, Asst Prof, Dept of Veterans Affairs Liaison/Instructor  
US Army Graduate Program in Anesthesia Nursing, Northeastern University

Practice video laryngoscopy and fiberoptic intubating stylet techniques. Participants will practice intubating using the Karl Storz C-MAC video laryngoscope and the Karl Storz Bonfils Intubation Endoscope.

## **Station 10**

### **Video Laryngoscope**

Dr. (Maj) Elvin Cruz, Staff Anesthesiologist, Wilford Hall Medical Center

Practice video laryngoscopy techniques. Participants will intubate using the LMA brand McGrath video laryngoscope.

## **Station 11**

### **Percutaneous Airway**

Dr. (Capt) Matt Wallace, Staff Anesthesiologist and Dir of Cardiothoracic Anesthesiology; Dir of Anesthesia Quality Improvement; Asst Prof of Anesthesiology, Brooke Army Medical Center  
Practice emergency percutaneous cricothyroidotomy techniques on a manikin model.

Participants will perform Percutaneous cricothyroidotomy using the Cook Melker cricothyroidotomy kit.

## **Station 12**

### **Laryngeal Mask Facilitated Intubation**

Dr. Rafael Elenes, MD, Asst Prof of Anesthesiology, University of Texas Health Science Center  
Practice tracheal intubation with a supraglottic airway using a fiberoptic bronchoscope and an intubation catheter. Participants will practice placing LMA supraglottic airway devices and will intubate the trachea using a fiberoptic bronchoscope fitted through the Cook Aintree intubation catheter.

### **Bonus Table 1**

#### **Intubating Bougie and Laryngeal Manipulation**

Dr. Eric Boatman, MD, Asst Prof; Assoc Prog Dir & Chair, Resident Education Committee;  
Deputy Dir ALMVAH Anesthesia, University of Texas Health Science Center  
Practice the technique of laryngeal manipulation and the use of a tracheal tube introducer (bougie) when faced with a sub-optimal laryngoscopic view.

### **Bonus Table 2**

#### **Difficult Airway Algorithm Review**

Dr. (Maj) Christopher Nagy Maj Christopher Nagy, MD, Associate Program Director  
SAUSHEC Anesthesiology Residency, Wilford Hall Medical Center  
Walk through various challenging airway scenarios while illustrating the use of a difficult airway algorithm.