Welcome

The mission of the Neurocritical Care Society is to improve outcomes for patients with life-threatening neurological/neurosurgical illnesses by promoting quality patient care, multi-disciplinary professional collaboration, research training and advocacy. This year’s Annual Meeting Committee is comprised of an extremely talented and diverse group of health care professionals who practice neurocritical care and include nurses, nurse practitioners, pharmacists, anesthesiologists, emergency medicine physicians, internists, interventionalists, neurologists and neurosurgeons who have put together a fantastic program to meet our mission. This is easily the most comprehensive and ambitious program we have had to date.

The theme of the 9th Annual Meeting of the Neurocritical Care Society is ‘Improving the Practice of Neurocritical Care’.

The two previous meeting themes have been ‘Setting Standards’ and ‘Making Connections’, which we have been doing and continue to do. The NCS now has members from over 30 different countries and many different disciplines. We have had collaborations and joint conferences throughout Asia, Africa, Europe and North and South America. The NCS has started to help set standards in education with the Neurocritical Care Review Course and the Emergency Neurologic Life Support program and in practice with practice guidelines and consensus statements. We need to translate these collaborations and standards to improved practice.

The first day and a half of this year’s meeting is packed with a variety of offerings to help improve practice with: 1) the United Council for Neurological Subspecialties (UCNS) Neurocritical Care test Review Course; 2) hands-on/small group workshops; and 3) a basic science-translational science workshop.

The Review Course has been restructured to more closely meet the needs of those who will be taking the UCNS test, but will also be useful for those who just want to brush up on basics of neurocritical care.

The hands-on/small group workshops were wildly popular last year and will be offered again this year. One aspect of improving practice that we are addressing is the learning of techniques and close interaction with experts in different fields. Some of the session topics include intracranial monitor placement and interpretation, mechanical ventilation, airway management, percutaneous tracheotomy, and financial aspects of how to start and run neurocritical care units. The workshops will have limited registration and sold out last year, so register early!

In addition, there will be an all day workshop on basic science and translational aspects of consciousness, TBI and inflammation in neurocritical care. Science is the foundation of good medicine and these will be important opportunities for NCS members to learn and contribute.

Thursday afternoon through Saturday morning will be the start of the main meeting of the NCS with an agenda continuing the focus on Improving the Practice of Neurocritical Care. We will start with a session on Neurotrauma that begins with what promises to be a moving talk by the ‘Central Park Jogger’ – the young investment banker who was brutalized by a gang while jogging in Central Park. This should help remind us why we do what we do.

Other plenary sessions include neurocritical care complications in the ICU and an examination of the development and use of biomarkers in acute neurologic injury. A session detailing the consensus conference on SAH in Paris that was arranged by the NCS will be presented as will a session that deals with one of the future projects of the NCS: the delivery of neurocritical care under catastrophic conditions. Depressingly, it seems that we will continue to suffer the threat of war and terrorism and astonishing acts of nature that will test our ability to care for our patients.

There will also be more workshop offerings including how to hire and use physician assistants and nurse practitioners, how to develop a continuous EEG program, using transcranial Doppler monitor placement and interpretation, mechanical ventilation, airway management, percutaneous tracheotomy, and financial aspects of how to start and run neurocritical care units. The workshops will have limited registration and sold out last year, so register early!

Research is an extremely important area for NCS and is integral in our ability to improve practice and an important part of the meeting is the display of our member’s research efforts and there will be oral abstract and poster sessions as usual.

Finally, our annual Society Dinner will include an interesting talk by Dr. William Feindel from Montréal, a retired neurosurgeon and former director of the Montréal Neurological Institute who will discuss some of the ground breaking work done at the institute.

I selected a very diverse, multi-disciplinary Annual Meeting Committee who I believe have come up with yet another great NCS meeting in a great city – if you take care of neurocritically ill patients and can only go to one meeting, this is it!

Gene Sung, MD, MPH
Chair, Annual Meeting Program Committee
Vice President, Neurocritical Care Society
Director, Division of Neurocritical Care and Stroke
University of Southern California

9TH ANNUAL NEUROCRITICAL CARE SOCIETY MEETING

Learning Objectives

9th Annual Neurocritical Care Society Meeting
The attendee will be able to:

- Identify strategies to improve the practice of neurocritical care.
- Describe how consensus statements are developed and how they can improve clinical practice and improve outcome.
- Identify the neurocritical care complications that can develop in critically ill patients.
- Describe the development, uses and limitations of biomarkers in the measurement of acute neurologic injury.
- Describe the development and results of studies in the management of traumatic brain injury.
- Discuss the challenges that face caregivers delivering Neurocritical care under catastrophic conditions.
- Describe how fundamental advances in the basic sciences can influence changes in the practice of Neurocritical care.

2011 Neurocritical Care Society Review Course
The attendee will be able to:

- Describe general principles in critical care medicine.
- Assess his/her knowledge in critical care medicine and neurological disease processes found in the critically ill patient.
- List the core curriculum and content for the UCNS neurocritical care certification examination.
- Identify strong knowledge base and areas that require further review.

Clinical Workshops
(Learning objectives are dependent on the workshop/s attended.)
The attendee will be able to:

- Describe the techniques, uses and limitations of microdialysis, brain oxygen monitoring, and continuous EEG monitoring in the neuro-ICU.
- Identify indications for different modalities of mechanical ventilation.
- Optimize diagnosis of airway problems and recognize best techniques for management.
• Describe the financial management of neurocritical care.
• Describe the differences in imaging modalities and their indications and interpretations.
• Recognize the utility of transcranial Doppler ultrasound.
• Identify the different management strategies of delivering and maintaining hypothermia and normothermia.
• Appropriately start and utilize continuous EEG in his/her hospital.
• Identify how to hire and utilize physician assistants and nurse practitioners.

Target Audience
• Physicians in neurosurgery and neurology
• Physicians in critical care and pulmonary medicine
• Physicians in anesthesiology
• Physicians in surgery
• Physicians in emergency medicine
• Critical care nurses
• Neurological nurses
• Advanced critical care nurse practitioners
• Physician assistants
• Pharmacists

2011 NCS Annual Meeting
Committee Members
Gene Sung, MD, MPH, Chair
Opeolu Adeoye, MD
Sheila Alexander, PhD
Gretchen Brophy, PharmD, BCPS, FCCP, FCCM
Ross Bullock, MD, PhD
Giuseppe Citerio, MD
Fern Cudlip, MSN, FNP-BC, CNRN
Joshua Goldstein, MD
J. Claude Hemphill, III, MD
Theresa Human, PharmD, BCPS
Andrew Kofke, MD
Byung-In Lee, MD
Geoffrey Ling, MD, PhD
Edward Manno, MD
William Mack, MD
Laura H. Mcilvoy, PhD, RN, CCRN, CNRN
J. Javier Provencio, MD
Álvaro Réa-Neto, MD
Erich Schmutzhard, MD
David Seder, MD
Michel Torbey, MD
Paul Vespa, MD (Fundraising Committee Liaison)

2011 Fundraising Committee Members
Paul Vespa, MD, Chair
Cherylee Chang, MD
Michael DeGeorgia, MD
Michael Diringer, MD
Martha Eggleston, RN, MS, CCRN, CNS
J. Claude Hemphill, III, MD
Michael L. James, MD
Emanuela Keller, MD
George A. Lopez, MD
Stephan Mayer, MD
Gene Sung, MD
Panayiotis Varelas, MD

Acknowledgement:
The Neurocritical Care Society and the Minnesota Medical Association gratefully acknowledge support of this activity from: (as of May 24, 2011)

Platinum Level - $50,000
Baxter
Otsuka

Gold Level - $25,000
Codman

Silver Level - $15,000
Neuroptics

2011 Exhibitors: (as of May 25, 2011)
Baxter
CareFusion
Codman
Hospira
InnerSpace, Inc.
Integra LifeSciences

Endorsements
The following organizations endorse the 9th Annual Neurocritical Care Society Meeting:
German Society for Critical Care Neurology
Neurological Emergencies Treatment Trials
Society of Interventional Radiology
Society of Vascular and Interventional Neurology

Young Investigator Award with support from Codman
An award will be given at the 2011 meeting for the outstanding abstract submitted by a junior member of the society (student, resident, or fellow). Please note that one must be a member of the Neurocritical Care Society at the time the abstract is submitted. The recipient is expected to attend the annual meeting. To be considered for this award, please check the Young Investigator Award box on the online abstract submission form when submitting your abstract. Abstract submission details may be found on the NCS website at www.neurocriticalcare.org/2011Meeting. The deadline to submit an abstract is July 1, 2011.

Best Scientific Abstract Award
An award will be given at the 2011 meeting for the outstanding scientific abstract submitted by a member of the society. Please note that one must be a member of the Neurocritical Care Society at the time the abstract is submitted. The recipient is expected to attend the annual meeting. To be considered for this award, please check the Best Abstract Award box on the online abstract submission form when submitting your abstract. Abstract submission details may be found on the NCS website at www.neurocriticalcare.org/2011Meeting. The deadline to submit an abstract is July 1, 2011.
### NEUROCRITICAL CARE SOCIETY TRANSLATION/BASIC RESEARCH SYMPOSIUM

This year, the second translational science mini-symposium will focus on three topics: 1) imaging of the conscious mind particularly in patients with brain injuries; 2) pathological mechanisms of brain injury; and 3) inflammatory pathways in disease.

Our goal is to highlight research done in our field by members of our society as well as to invite researchers from around the world to join us in our endeavor to answer questions that will lead to treatments and hopefully cures for patients with critical illness neurological problems. We have assembled a diverse and interesting symposium. Science is the foundation of good medicine and these will be important opportunities for NCS members to learn and contribute.

**Learning Objectives**
- The attendee will be able to describe the current understanding of the conscious mind in the setting of brain injury.
- The attendee will be able to understand new pathways that could be important targets for future therapies.
- The attendee will be able to identify current basic science related to inflammation in the brain injury.
- The attendee will be able to understand how to develop interactions between scientists in the field of neurocritical care.

#### Wednesday, September 21, 2011
9:00 - 9:05 a.m.  
**Introduction**  
Jennifer Frontera, MD and J. Javier Provencio, MD

**CONSCIOUSNESS AND CRITICAL ILLNESS**  
**Moderators:**  
Jennifer Frontera, MD and Robert Stevens, MD

9:05 - 9:35 a.m.  
**Critical Illness Encephalopathy**  
Robert Stevens, MD

9:35 - 10:05 a.m.  
**Imaging in Neurological Illnesses**  
Ramon Diaz-Arrastia, MD, PhD

10:05 - 10:35 a.m.  
**Cerebrovascular Determinants of Cognition**  
William J. Mack, MD

10:35 - 11:00 a.m.  
**Break**

**PATHOLOGICAL MECHANISMS IN BRAIN INJURIES**  
**Moderator:**  
Daniel Laskowitz, MD

11:00 - 11:30 a.m.  
**PARP-1 and TBI**  
Robert S.B. Clark, MD

11:30 a.m. - 12:00 p.m.  
**Adenosine and Cerebral Blood Flow after Hypoxic Injury**  
TBD

12:00 - 12:30 p.m.  
**Glucose Control after Neurological Injury**  
Christiana E. Hall, MD, MS

12:30 - 1:30 p.m.  
**Lunch**

**THE LINKS BETWEEN INFLAMMATION AND ACUTE NEUROLOGICAL DISORDERS**  
**Moderators:**  
Marion Buckwalter, MD, PhD and Gail Pyne Geithman, DPhil

1:30 - 2:00 p.m.  
**Platelet Interactions and Inflammation after SAH-human**  
Jennifer Frontera, MD

2:00 - 2:30 p.m.  
**Mechanisms of Inflammation after Intracerebral Hemorrhage: The Role of Immune Cells in Early Brain Injury**  
Matthew Loftspring, PhD

3:00 - 3:15 p.m.  
**Closing Remarks**  
Jennifer Frontera, MD and J. Javier Provencio, MD

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### 2011 NEUROCRITICAL CARE SOCIETY WORKSHOPS

#### Wednesday, September 21, 2011

<table>
<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
<td>8:30 – 11:30 a.m.</td>
<td>Ultrasound: Line Placement, Cardiac, Abdominal, Bladder</td>
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<tr>
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<td>Percutaneous Tracheostomy</td>
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<tr>
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<td>Continuous EEG</td>
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<tr>
<td>1:30 – 4:30 p.m.</td>
<td>Ultrasound: Line Placement, Cardiac, Abdominal, Bladder</td>
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<td>Imaging: When and What to Order, How to Interpret</td>
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<td>Normothermia/Hypothermia: Induction, Management</td>
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#### Thursday, September 22, 2011

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>8:30 – 11:30 a.m.</td>
<td>Percutaneous Tracheostomy Simulation Codes*</td>
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<td>Continuous EEG</td>
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<td>Transcranial Doppler</td>
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<td>Normothermia/Hypothermia: Induction, Management</td>
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#### Friday, September 23, 2011

<table>
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<th>Time</th>
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<tr>
<td>8:30 – 11:30 a.m.</td>
<td>Intracranial Monitors: Placement/Interpretation</td>
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<tr>
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<td>Mechanical Ventilation</td>
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<td>How to Run a Unit I: How to Use/Hire PAs and NPs</td>
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<td>Intracranial Monitors: Placement/Interpretation</td>
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<td>Airway Management</td>
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<td>How to Run a Unit II: Show Me the Money/Write a Business Proposal</td>
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<td>Airway Management</td>
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## Schedule at-a-Glance

Registration opens daily at 6:45 a.m.  
Exhibits are open Wednesday-Friday 7:00 a.m. – 4:00 p.m.

<table>
<thead>
<tr>
<th>Location</th>
<th>Tuesday, September 20</th>
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<tbody>
<tr>
<td>Montréal Ballroom Foyer</td>
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<tr>
<td>4:00 p.m. – 8:00 p.m.</td>
<td>Registration</td>
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<td>6:45 a.m. - 5:00 p.m.</td>
<td>Registration</td>
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<tr>
<td>7:00 a.m. - 8:30 a.m.</td>
<td>Breakfast</td>
</tr>
<tr>
<td>7:00 a.m. - 4:00 p.m.</td>
<td>Exhibits</td>
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<tr>
<td>7:30 a.m. - 5:30 p.m.</td>
<td>NCS Review Course</td>
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<tr>
<td>9:00 a.m. – 3:15 p.m.</td>
<td>Translational/Basic Research Symposium</td>
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<td>8:30 a.m. - 4:30 p.m.</td>
<td>Clinical Workshops</td>
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<tr>
<td>12:00 p.m. - 1:00 p.m.</td>
<td>Lunch/Mentorship Tables</td>
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<tr>
<td>5:45 p.m. - 8:00 p.m.</td>
<td>Satellite Dinner Symposium, <em>with support from Otsuka</em></td>
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<td>1:00 p.m. - 4:30 p.m.</td>
<td>9th Annual NCS Meeting</td>
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<tr>
<td>4:45 p.m. – 6:15 p.m.</td>
<td>Oral Abstract Session I</td>
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<tr>
<td>6:15 p.m. – 7:30 p.m.</td>
<td>Poster Session I</td>
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<td>Breakfast - Subspecialty Corners: <em>Residents/Fellows, Fellowship Directors, Nurses, ICU Directors, Pharmacists, Neurohospitalists, International NCS Members</em></td>
</tr>
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<tr>
<td>8:00 a.m. - 9:00 a.m.</td>
<td>Oral Abstract Session II</td>
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<tr>
<td>8:30 a.m. - 4:30 p.m.</td>
<td>Clinical Workshops</td>
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<tr>
<td>12:10 p.m. – 1:15 p.m.</td>
<td>Lunch/Mentorship Tables</td>
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<tr>
<td>12:30 p.m. – 1:15 p.m.</td>
<td>Technology Lunch Symposium <em>with support from NeurOptics</em></td>
</tr>
<tr>
<td>5:15 p.m. – 6:30 p.m.</td>
<td>Poster Session II</td>
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<tr>
<td>7:00 p.m. - 12:30 a.m.</td>
<td>Society Reception and Dinner: <em>Keynote Address, Award Ceremony, followed by the Battle of the Bands</em></td>
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*NEUROCRITICAL CARE*

*ScheDule at-a-glance*
FACULTY

2011 NCS Review Course, 9th Annual Neurocritical Care Society Meeting, and NCS Clinical Workshops

Faculty:

Opeolu Adeoye, MD
University of Cincinnati
Cincinnati, OH

Ramon Diaz-Arrastia, MD, PhD
University of Texas Southwestern
Dallas, TX

Mary Kay Bader, MSN, RN, CCRN, CNRN
Mission Hospital
Mission Viejo, CA

Howard Belzberg, MD
University of Southern California
Los Angeles, CA

Gretchen M. Brophy, PharmD, BCPs, FCCP, FCCM
Virginia Commonwealth University
Richmond, VA

Marion S. Buckwalter, MD, PhD
Stanford University
Stanford, CA

Ross Bullock, MD, PhD
Virginia Commonwealth University
Richmond, VA

Cherylee W.J. Chang, MD
The Queen's Medical Center
Honolulu, HI

Ira Chang, MD
Blue Sky Neurology, PC LLC
Englewood, CO

Randall Chesnut, MD
University of Washington
Seattle, WA

Giuseppe Citerio, MD
Hospital San Gerardo
H San Gerardo - Monza, Italy

Jan Claassen, MD
Columbia University
New York, NY

Robert S.B. Clark, MD
University of Pittsburgh School of Medicine
Pittsburgh, PA

Guy L. Clifton, MD
University of Texas Medical School
Houston, TX

William Coplin, MD
Wayne State University
Detroit, MI

Michael N. Diringer, MD
Washington University in St. Louis
St. Louis, MO

Guy M. Dugan, MD
Alexian Brothers Medical Center
Elk Grove Village, IL

William Feindel, MD
Montréal Neurological Institute and Hospital
Montréal, Québec, Canada

Jeffrey I. Frank, MD
University of Chicago
Chicago, IL

W. David Freeman, MD
Mayo Clinic
Jacksonville, FL

Jennifer A. Frontera, MD
Mount Sinai Medical School
New York, NY

Gail Pyne-Geithman, DPhil
University of Cincinnati
Cincinnati, OH

Carmelo Graffagnino, MD
Duke University
Durham, NC

Erin Grise, PharmD
University of Cincinnati
Cincinnati, OH

J. Claude Hemphill, III, MD, MAS
University of California, San Francisco
San Francisco, CA

Galen V. Henderson, MD
Harvard University
Boston, MA

Dale Hoekema, MD
Kadlec Regional Medical Center
W. Richland, WA

Chris Hogan, MD, FACEP
Virginia Commonwealth University
Medical Center
Richmond, VA

Brian Hoh, MD, FACS, FAHA
University of Florida
Gainesville, FL

Theresa Human, PharmD, BCPs
Washington University in St. Louis
St. Louis, MO

Andreas Jeromin, PhD
Banyan Biomarkers, Inc.
Alachua, FL

Christopher Junker, MD
George Washington University
Washington, DC

Mary Kerr, PhD
University of Pittsburgh
Cranberry Twp., PA

Matthew A. Koenig, MD
The Queen's Medical Center
Honolulu, HI
Bradley Kolls, MD
Duke University
Durham, NC

Andreas Kramer, MD
University of Calgary
Calgary, AB, Canada

Daniel Laskowitz, MD, PhD
Duke University
Durham, NC

Christos Lazaridis, MD
Medical University of South Carolina
Charleston, SC

Kiwon Lee, MD
Columbia University
New York, NY

Peter D. LeRoux, MD
University of Pennsylvania
Philadelphia, PA

Geoffrey Ling, MD, PhD
Uniformed Services University of the Health Sciences
Bethesda, MD

Sarah Livesay, MS, RN, ACNP, DNPc
St. Luke’s Episcopal Hospital
Houston, TX

Matthew Loftspring, PhD
University of Cincinnati
Cincinnati, OH

William J. Mack, MD
University of Southern California
Los Angeles, CA

Edward M Manno, MD
Cleveland Clinic
Cleveland, OH

Stephan A. Mayer, MD, FCCM
Columbia University
New York, NY

Patricia Meili
Jacksonville, FL

Andrew M. Naidech, MD
Northwestern University
Chicago, IL

Bart Nathan, MD
University of Virginia
Charlottesville, VA

Mauro Oddo, MD
Lausanne University Hospital
Lausanne, Switzerland

DaiWai Olson, PhD, CCRN
Duke University
Durham, NC

Peter J. Papadakos, MD
University of Rochester
Rochester, NY

J. Javier Provencio, MD
Cleveland Clinic
Cleveland, OH

Álvaro Réa-Neto, MD
CEPETI - Centro de Estudos e Pesquisas em Terapia Intensiva
Curitiba, Brazil

Owen B. Samuels, MD
Emory University
Atlanta, GA

Erich Schmutzhard, MD
Medical University Innsbruck
Innsbruck, Austria

Stefan Schwab, MD
Universitätsklinikum Erlangen
Erlangen, Germany

David B Seder, MD
Maine Medical Center
Portland, ME

David M. Sileo, RN, MS, ACNP
Hospira, Inc.
Woodbury, NJ

Martin Smith, MD, FRCA
University College London
London, United Kingdom

Wade S. Smith, MD, PhD
University of California, San Francisco
San Francisco, CA

Robert D. Stevens, MD
Johns Hopkins University
Baltimore, MD

Michel T. Torbey, MD, MPH, FAHA, FCCM
The Ohio State University
Columbus, OH

Paul M. Vespa, MD
University of California, Los Angeles
Los Angeles, CA

Eelco F. Wijdicks, MD
Mayo Clinic
Rochester, MN

Christine A. Wijman, MD, PhD
Stanford University Medical Center
Stanford Stroke Center
Palo Alto, CA

Stefan Wolf, MD
Charité – University Medicine Berlin
Berlin, Germany

Daniel Woo, MD
University of Cincinnati
Cincinnati, OH

Wendy L. Wright, MD
Emory University
Atlanta, GA

Susan Yeager, MS, RN, CCRN, ACNP
The Ohio State University
Hilliard, OH
<table>
<thead>
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<tbody>
<tr>
<td>7:30 - 7:55 a.m.</td>
<td>Infarction and Ischemia</td>
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<td>Wade Smith, MD, PhD</td>
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<tr>
<td>7:55 - 8:20 a.m.</td>
<td>Intracranial Hemorrhage</td>
</tr>
<tr>
<td></td>
<td>J. Claude Hemphill, III, MD</td>
</tr>
<tr>
<td>8:20 - 8:45 a.m.</td>
<td>SAH, Vascular Malformations, Dural Sinus Thrombosis, Carotid-Cavernous Fistulae, Cervical and Cerebral Arterial Dissections</td>
</tr>
<tr>
<td></td>
<td>Owen Samuels, MD</td>
</tr>
<tr>
<td>8:45 - 9:45 a.m.</td>
<td>Neurotrauma/General Trauma</td>
</tr>
<tr>
<td></td>
<td>Christos Lazaridis, MD &amp; Geoffrey Ling, MD</td>
</tr>
<tr>
<td>9:45 - 10:00 a.m.</td>
<td>Break</td>
</tr>
<tr>
<td>10:00 - 10:20 a.m.</td>
<td>Seizures and Epilepsy</td>
</tr>
<tr>
<td></td>
<td>Ira Chang, MD</td>
</tr>
<tr>
<td>10:20 - 10:40 a.m.</td>
<td>Neuromuscular Diseases</td>
</tr>
<tr>
<td></td>
<td>Eelco F. Wijdicks, MD, PhD</td>
</tr>
<tr>
<td>10:40 - 11:00 a.m.</td>
<td>Neuroendocrine Disorders/Neuro-oncology</td>
</tr>
<tr>
<td></td>
<td>Galen Henderson, MD</td>
</tr>
<tr>
<td>11:00 - 11:30 a.m.</td>
<td>Infections/Inflammatory and Demyelinating Diseases</td>
</tr>
<tr>
<td></td>
<td>Bart Nathan, MD</td>
</tr>
<tr>
<td>11:30 a.m. - 12:00 p.m.</td>
<td>Encephalopathies/Toxic-Metabolic Disorders</td>
</tr>
<tr>
<td></td>
<td>Carmelo Graffagnino, MD</td>
</tr>
<tr>
<td>12:00 - 1:00 p.m.</td>
<td>Lunch/Mentorship Tables</td>
</tr>
<tr>
<td></td>
<td>Attendees will have the opportunity to meet with mentors from their respective fields to discuss career related topics over lunch.</td>
</tr>
<tr>
<td>1:00 - 1:40 p.m.</td>
<td>Clinical Syndromes</td>
</tr>
<tr>
<td></td>
<td>Christine Wijman, MD, PhD</td>
</tr>
<tr>
<td>1:40 - 2:00 p.m.</td>
<td>Herniation Syndromes, High and Low ICP</td>
</tr>
<tr>
<td></td>
<td>Stephan Mayer, MD, FCCM</td>
</tr>
<tr>
<td>2:00 - 2:35 p.m.</td>
<td>Pharmacotherapeutics</td>
</tr>
<tr>
<td></td>
<td>Theresa Murphy, PharmD, BCPS</td>
</tr>
<tr>
<td>2:35 - 3:00 p.m.</td>
<td>Perioperative Neurosurgical Care</td>
</tr>
<tr>
<td></td>
<td>Peter LeRoux, MD, FACS</td>
</tr>
<tr>
<td>3:00 - 3:15 p.m.</td>
<td>Break</td>
</tr>
<tr>
<td>3:15 - 4:15 p.m.</td>
<td>Cardiovascular Physiology, Pathology, Pathophysiology, and Therapy</td>
</tr>
<tr>
<td></td>
<td>Andrew Naidech, MD</td>
</tr>
<tr>
<td>4:15 - 5:30 p.m.</td>
<td>Respiratory Physiology, Pathology, Pathophysiology and Therapy</td>
</tr>
<tr>
<td></td>
<td>Peter Papadakos, MD &amp; David Seder, MD</td>
</tr>
<tr>
<td>5:45 p.m. - 8:00 p.m.</td>
<td>Satellite Dinner Symposium: Recognition and Treatment of Hyponatremia in the Neurocritical Care Setting (Non-CME) with Support from Otsuka</td>
</tr>
</tbody>
</table>

**THURSDAY, September 22, 2011**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:30 - 8:15 a.m.</td>
<td>Renal Physiology, Pathology, Pathophysiology and Therapy</td>
</tr>
<tr>
<td></td>
<td>Guy Dugan, MD</td>
</tr>
<tr>
<td>8:15 - 8:45 a.m.</td>
<td>Metabolic and Endocrine Effects of Critical Illness</td>
</tr>
<tr>
<td></td>
<td>Kiwon Lee, MD</td>
</tr>
<tr>
<td>8:45 - 9:15 a.m.</td>
<td>Physiology, Pathology, Pathophysiology and Therapy of Acute Hematologic Disorders</td>
</tr>
<tr>
<td></td>
<td>Andreas Kramer, MD</td>
</tr>
<tr>
<td>9:15 - 9:45 a.m.</td>
<td>Physiology, Pathology, Pathophysiology and Therapy of Acute Gastrointestinal (GI) and Genitourinary (GU) Disorders</td>
</tr>
<tr>
<td></td>
<td>Christiana E. Hall, MD</td>
</tr>
<tr>
<td>9:45 - 10:00 a.m.</td>
<td>Break</td>
</tr>
<tr>
<td>10:00 - 10:40 a.m.</td>
<td>Infectious Disease Physiology, Pathology, Pathophysiology and Therapy</td>
</tr>
<tr>
<td></td>
<td>Howard Belzberg, MD</td>
</tr>
<tr>
<td>10:40 - 11:00 a.m.</td>
<td>Immunology and Transplantation/Ethical and Legal Aspects of Critical Care Medicine</td>
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<tr>
<td></td>
<td>Jeffrey Frank, MD</td>
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<tr>
<td>11:10 - 11:30 a.m.</td>
<td>Administrative and Management Principles and Techniques</td>
</tr>
<tr>
<td></td>
<td>Wendy Wright, MD</td>
</tr>
<tr>
<td>11:30 a.m. - 1:00 p.m.</td>
<td>Lunch/Mentorship Tables</td>
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<td></td>
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<td>Clinical Syndromes</td>
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<tr>
<td>2:00 - 2:30 p.m.</td>
<td>Herniation Syndromes, High and Low ICP</td>
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<td></td>
<td>Stephan Mayer, MD, FCCM</td>
</tr>
<tr>
<td>2:30 - 3:00 p.m.</td>
<td>Pharmacotherapeutics</td>
</tr>
<tr>
<td></td>
<td>Theresa Murphy, PharmD, BCPS</td>
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</tbody>
</table>

**FRIDAY, September 23, 2011**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00 - 8:00 a.m.</td>
<td>Special Interest Breakfast Corners: Fellowship Directors, ICU Directors, International Members, Neurohospitalists, Nurses, Pharmacists, Residents and Fellows</td>
</tr>
<tr>
<td>8:00 - 8:25 a.m.</td>
<td>Multiple Organ Dysfunction Complicating Acute Neurologic Injury</td>
</tr>
<tr>
<td></td>
<td>Alvaro Rea-Neto, MD and Erich Schmutzhard, MD</td>
</tr>
</tbody>
</table>

**NEUROCRITICAL CARE MEETING**

**NEUROCRITICAL CARE SOCIETY MEETING**

1:00 - 2:00 p.m. | Presidential Address - Business Meeting                                  |
2:00 - 3:00 p.m. | Society Lecture - A Patient’s Experience with Brain Injury             |
Patricia Meili
8:25 - 8:50 a.m.  
Complications of Hypothermia Therapy  
Stefan Schwab, MD

8:50 - 9:15 a.m.  
Nosocomial Infections: Prevention and Treatment  
Erich Schmutzhard, MD

9:15 - 9:40 a.m.  
Electrolyte and Acid-Base Disorders  
Michel Torbey, MD, MPH, FAHA, FCCM

9:40 - 10:15 a.m.  
BREAK

10:20 - 10:50 a.m.  
Development of Biomarkers  
Andreas Jeromin, PhD

10:50 - 11:10 a.m.  
Biomarker Kinetic Characteristics and Associated Outcomes  
Gretchen Brophy, PharmD, BCPS, FCCP, FCCM

11:10 - 11:30 a.m.  
Use of Microdialysis Specific to Biomarkers  
Martin Smith, MD

11:30 - 11:50 a.m.  
Imaging-Based Biomarkers  
Ramon Diaz-Arrastia, MD, PhD

11:50 a.m. - 12:10 p.m.  
Genetics  
Daniel Woo, MD

12:10 - 1:15 p.m.  
Lunch/Mentorship Tables  
Attendees will have the opportunity to meet with mentors from their respective fields to discuss career related topics over lunch.

12:30 - 1:15 p.m.  
Technology Lunch Symposium: Pupillometry in Neurocritical Care  
with support from SUBARACHNOID HEMORRHAGE

Moderator:  
Giuseppe Citerio, MD

1:15 - 1:35 p.m.  
What are our Clinical Targets?  
Mauro Oddo, MD

1:35 - 1:55 p.m.  
Why and How to Reach a Consensus on SAH  
Michael Diringer, MD

1:55 - 2:15 p.m.  
Monitoring and Management of Volume Status and Cardiovascular Complications  
Stefan Wolf, MD

2:15 - 2:35 p.m.  
Medical Treatment of Delayed Cerebral Ischemia  
J. Claude Hemphill, III, MD

2:35 - 2:55 p.m.  
Endovascular Treatment of Delayed Cerebral Ischemia  
Brian Hoh, MD, FACS

2:55 - 3:15 p.m.  
Metabolic Derangements  
Monitoring and Treatment  
Giuseppe Citerio, MD

3:15 - 3:45 p.m.  
BREAK

3:45 - 5:15 p.m.  
Oral Abstracts

5:15 - 6:30 p.m.  
Poster Session

7:00 p.m. - 12:30 a.m.  
SOCIETY RECEPTION AND DINNER, KEYNOTE ADDRESS, AWARD CEREMONY  
followed by the Battle of the Bands.  
Le Windsor  
1170 Peel Street  
Montreal, Québec H3B 4P2  
Canada  
Website: www.lewindsor.com

Keynote Address:  
The Work of Penfield and Milner  
William Feindel, MD

Join your colleagues for a fun evening of socializing, dining, and dancing!  
The event is complimentary for attendees. Guest tickets are available for $125. Pre-registration is strongly encouraged to help with attendance guarantees.

8:00 - 9:00 a.m.  
Oral Abstracts

9:00 - 9:15 a.m.  
BREAK

9:15 - 9:20 a.m.  
NEUROCritical CARE IN CATAstrophic Conditions  
Moderators:  
William Coplin, MD and Geoffrey Ling, MD, PhD

9:20 - 9:40 a.m.  
Introduction  
Geoffrey Ling, MD, PhD

9:40 - 10:00 a.m.  
War  
Geoffrey Ling, MD, PhD

9:40 - 10:00 a.m.  
Terrorism  
Stephan A. Mayer, MD, FCCM

10:00 - 10:20 a.m.  
Earthquake  
David Silco, RN, MS, ACNP

10:20 - 10:40 a.m.  
Hurricane  
Chris Hogan, MD, FACEP

10:40 - 10:55 a.m.  
Limited Resources/Poverty - Africa  
Matthew A. Koenig, MD

10:55 - 11:10 a.m.  
Limited Resources - East Africa  
William Coplin, MD

11:10 - 11:30 a.m.  
Panel Discussion

11:30 a.m.  
Final Adjourn

The Neurocritical Care Society, with support from the Integra Foundation, is pleased to offer the 2011 NCS Meeting Travel Grant program. The purpose of the travel grant program is to provide financial assistance to neuroscience critical care nurses, pharmacists, and resident/fellow physicians in order to attend the 2011 NCS Annual Meeting. Ten $1,000 awards will be awarded to eligible NCS members through an application process. The travel grant can be used for registration, special sessions, and/or travel expenses.

To apply, please visit:  
www.neurocriticalcare.org/2011TravelGrant.

Completed applications must be received by June 30, 2011.
The MMA designates this educational activity for AMA PRA Category 1 credits™.

Disclaimer:
The information is provided for general medical education purposes only and is not meant to substitute for the independent medical judgment of a physician relative to diagnostic and treatment options of a specific patient’s medical condition. In no event will the Neurocritical Care Society or Minnesota Medical Association be liable for any decision made or action taken in reliance upon the information provided through this activity.

Exhibitors:
Exhibits will be held in Salon Fontaine A-B, near the meeting session.

EXHIBIT HOURS:
Wednesday, September 21 7:00 a.m. – 4:00 p.m.
Thursday, September 22 7:00 a.m. – 4:00 p.m.
Friday, September 23 7:00 a.m. – 4:00 p.m.

Climate:
The average temperature in Montréal ranges from 49 – 68 degrees Fahrenheit in September.

Membership:
To join the Neurocritical Care Society, please visit www.neurocriticalcare.org and click on “Join NCS.” Membership benefits include the Neurocritical Care journal subscription, discounted Annual Meeting rates, access to the members only discussion forum, and networking opportunities.

Membership rates are as follows:
(The International Rate Guide according to the World Bank may be found on the NCS website www.neurocriticalcare.org/rateguide by clicking on ‘Join NCS.’)

Physicians who:
• Reside in the US and countries not listed on the International Rate Guide - $250/year
• Reside in World Bank Group A countries - $175/year
• Reside in World Bank Group B countries - $40/year

Healthcare Professionals, Pharmacists, Physician Assistants, Nurses who:
• Reside in the US and countries not listed on the International Rate Guide - $150/year
• Reside in World Bank Group A countries - $100/year
• Reside in World Bank Group B countries - $25/year

*Residents, Fellows, Students who:
• Reside in the US and countries not listed on the International Rate Guide - $100/year
• Reside in World Bank Group A countries - $70/year
• Reside in World Bank Group B countries - $15/year

*Note to all residents, fellows, and students: You must submit verification from your Program Director to the NCS office either by fax (952-545-6073) or by email at info@neurocriticalcare.org.

**Industry Professionals:
• $250/year

**Member type does not include complimentary job postings on the NCS website.

Location:
All sessions will be held at the:
Hilton Montréal Bonaventure
900 de La Gauchetiere W.
Montréal, Quebec, Canada H5A 1E4
Tel: (514) 878-2332
Website: www.hiltonmontreal.com

Hotel Reservations:
Discounted rooms are available to NCS Meeting attendees at the Hilton Montréal Bonaventure until August 31, 2011 or until the block fills. The group rate for a single/double is $185CAD. Reserve a room online by visiting the NCS website at www.neurocriticalcare.org/2011Meeting and clicking on ‘Make your reservation online’ or by calling (877) 705-0658 and indicating the group code NCS.

Please visit www.neurocriticalcare.org/2011Meeting for information about local restaurants, attractions, and transportation needs.

Registration:
The pre-registration deadline is August 22, 2011. After this date, registration will be accepted onsite at the Hilton Montréal Bonaventure in the Montréal Ballroom Foyer. Registration is open on Tuesday from 4:00 – 8:00 p.m. and opens at 6:45 a.m. Wednesday through Saturday.

Cancellation Policy:
All cancellations after August 5, 2011 are subject to a $50 cancellation fee. Written notification of your cancellation is required in order to process your refund. NO REFUNDS WILL BE ISSUED AFTER SEPTEMBER 1, 2011.

Contact Information:
Neurocritical Care Society
5841 Cedar Lake Road, Suite 204
Minneapolis, MN 55416
Tel: (952) 646-2034
Fax: (952) 545-6073
Website: www.neurocriticalcare.org
Email: info@neurocriticalcare.org
9th ANNUAL NEUROCRITICAL CARE SOCIETY MEETING  
SEPTEMBER 21-24, 2011 • HILTON MONTREAL BONAVENTURE • MONTREAL, QUEBEC, CANADA

REGISTRATION FORM

INTERNATIONAL REGISTRANTS: If you reside in a country designated as Group A or B by the World Bank (see www.neurocriticalcare.org/rateguide), please complete the international registration form by visiting www.neurocriticalcare.org/2011RegAB.

Pre-registration deadline is Monday, August 22, 2011. After that date, registrations will be accepted onsite.

Last Name ________________________________________First Name_____________________________________Middle Initial________
Degree___________________________________________Specialty_________________________________________________________
Hospital/Institution__________________________________________________________________________________________________
Street Address _____________________________________________________________________________________________________
City___________________________________State________________________Country___________________Zip/Postal_____________
Phone __________________________________E-mail Address ______________________________________________________________

Full Meeting:
Wednesday, 9/21 - Saturday, 9/24
❏ $750 (Non NCS Member Physicians)
❏ $650 (NCS Member Physicians)
❏ $400 (Fellows, Residents, Students)
❏ $400 (Nurses/Pharmacists/Physician Assistants/Medical Professionals)

Please indicate which you plan to attend:
❏ NCS Review Course (Wed-Thurs AM)
❏ Translational Medicine Symposium (Wed)

Translational Medicine Symposium
ONLY: Wednesday, 9/21
❏ $100 (Non NCS Member Physicians)
❏ $75 (NCS Member Physicians)
❏ $50 (Fellows/Residents/Students)
❏ $50 (Nurses/Pharmacists/Physician Assistants/Medical Professionals)

NCS Review Course ONLY:
Wednesday, 9/21 - Thursday AM, 9/22
❏ $500 (Non NCS Member Physicians)
❏ $400 (NCS Member Physicians)
❏ $250 (Fellows/Residents/Students)
❏ $250 (Nurses/Pharmacists/Physician Assistants/Medical Professionals)

NCS Meeting ONLY:
Thursday PM, 9/22 - Saturday, 9/24
❏ $425 (Non NCS Member Physicians)
❏ $325 (NCS Member Physicians)
❏ $200 (Fellows/Residents/Students)
❏ $200 (Nurses/Pharmacists/Physician Assistants/Medical Professionals)

NCS Review Course, Meeting, and Science Symposium:

Please indicate which you plan to attend:
❏ NCS Review Course (Wed-Thurs AM)
❏ Translational Medicine Symposium (Wed)

CLINICAL WORKSHOPS:
The cost is $60/workshop.

Please indicate below the number of workshops you wish to attend

❏ $60 X ______ (# of Workshops) – Please select your workshops by completing the next page.

TOTAL PAYMENT: $ ___________________ (Meeting fee plus Membership, if applicable)

The NCS invites you to become a member. Please check the appropriate box below to join today.
❏ $250 Physician  ❏ $150 Nurse, Pharmacist, Physician Assistant, and Medical Professional  ❏ $100 Trainee* (Fellow, Resident, Student)
* Payment must include letter with verification of status from your program director.

Please make check payable to: Neurocritical Care Society and mail to address below along with completed form - OR - ❏ VISA ❏ MasterCard

Cardholder's Name (Print):______________________________________________________________________
Card Number __________________________________________ Expiration date ______________
Signature ____________________________________________________________________________________

NCS fully complies with the legal requirements of the ADA and the rules and regulations thereof. Please describe any special accommodations you need to participate fully in the NCS meeting.

CANCELLATION POLICY: All cancellations occurring after August 22, 2011 are subject to a $50 cancellation fee. Written notification of your cancellation is required in order to process your refund. NO REFUNDS WILL BE ISSUED AFTER SEPTEMBER 1, 2011.

Mail completed form(s) to: NCS, 5841 Cedar Lake Road, Suite 204, Minneapolis, MN 55416 or Fax to: (952) 545-6073

IF YOU REGISTERED FOR THE CLINICAL WORKSHOPS, PLEASE COMPLETE THE NEXT PAGE.
### 2011 NCS Workshop Selection

**Instructions:** Space for workshops is limited and will be confirmed on a first come first served basis.

1. Please indicate the number of workshops for which you would like to register: _____
2. Please prioritize your workshop selections by indicating 1, 2, 3, etc. next to the date/time of the desired workshop.
3. Once your meeting registration has been processed, you will receive a confirmation via email that will include your scheduled workshops.

<table>
<thead>
<tr>
<th>Workshop Description</th>
<th>Date and Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airway Management</td>
<td>Friday, 9/23, 1:30 – 4:30 p.m.</td>
</tr>
<tr>
<td></td>
<td>Saturday, 9/24, 8:30 – 11:30 a.m.</td>
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<tr>
<td>Continuous EEG</td>
<td>Wednesday, 9/21, 8:30 – 11:30 a.m.</td>
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<td></td>
<td>Thursday, 9/22, 8:30 – 11:30 a.m.</td>
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<tr>
<td>How to Run a Unit I: How to Use/Hire PA's and NP's</td>
<td>Friday, 9/23, 8:30 – 11:30 a.m.</td>
</tr>
<tr>
<td>How to Run a Unit II: Show Me the $$/Write a Business Proposal</td>
<td>Saturday, 9/24, 8:30 – 11:30 a.m.</td>
</tr>
<tr>
<td>Imaging: When and What to Order, How to Interpret</td>
<td>Wednesday, 9/21, 1:30 – 4:30 p.m.</td>
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<tr>
<td>Intracranial Monitors: Placement/Interpretation</td>
<td>Friday, 9/23, 8:30 – 11:30 a.m.</td>
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<td>Saturday, 9/24, 8:30 – 11:30 a.m.</td>
</tr>
<tr>
<td>Mechanical Ventilation</td>
<td>Friday, 9/23, 8:30 – 11:30 a.m.</td>
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<tr>
<td></td>
<td>Saturday, 9/24, 8:30 – 11:30 a.m.</td>
</tr>
<tr>
<td>Normothermia/Hypothermia: Induction, Management</td>
<td>Wednesday, 9/21, 1:30 – 4:30 p.m.</td>
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<td>Thursday, 9/22, 8:30 – 11:30 a.m.</td>
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<tr>
<td>Percutaneous Tracheostomy</td>
<td>Wednesday, 9/21, 8:30 – 11:30 a.m.</td>
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<td>Thursday, 9/22, 8:30 – 11:30 a.m.</td>
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<tr>
<td>Simulation Codes</td>
<td>Thursday, 9/22, 8:30 – 11:30 a.m.</td>
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<td>Friday, 9/23, 1:30 – 4:30 p.m.</td>
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<tr>
<td>Transcranial Doppler</td>
<td>Thursday, 9/22, 8:30 – 11:30 a.m.</td>
</tr>
<tr>
<td>Ultrasound: Line Placement, Cardiac, Abdominal, Bladder</td>
<td>Wednesday, 9/21, 8:30 – 11:30 a.m.</td>
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<tr>
<td></td>
<td>Wednesday, 9/21, 1:30 – 4:30 p.m.</td>
</tr>
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</table>

**Hotel:** Discounted rooms are available to NCS Meeting attendees at the [Hilton Montréal Bonaventure](#) until **August 31, 2011** or until the block fills. The group rate for a single/double is $185CAD.

*Make your reservation online!* You may also make your reservation by calling (877) 705-0658 and indicating the group code NCS.

*Hilton Montréal Bonaventure*
900 de La Gauchetiere W.
Montreal, Quebec, Canada H5A 1E4
Tel: (514) 878-2332

Mail completed form(s) to: NCS, 5841 Cedar Lake Road, Suite 204, Minneapolis, MN 55416 or Fax to: (952) 545-6073
Sign Up Today.

Pre-registration deadline is **August 22, 2011**.

[www.neurocriticalcare.org](http://www.neurocriticalcare.org)
9TH ANNUAL NEUROCRITICAL CARE SOCIETY MEETING
IMPROVING THE PRACTICE OF NEUROCRITICAL CARE

September 21-24, 2011
Hilton Montréal Bonaventure
Montréal, Quebec, Canada