# FINAL PROGRAM

## Together We Move Forward!

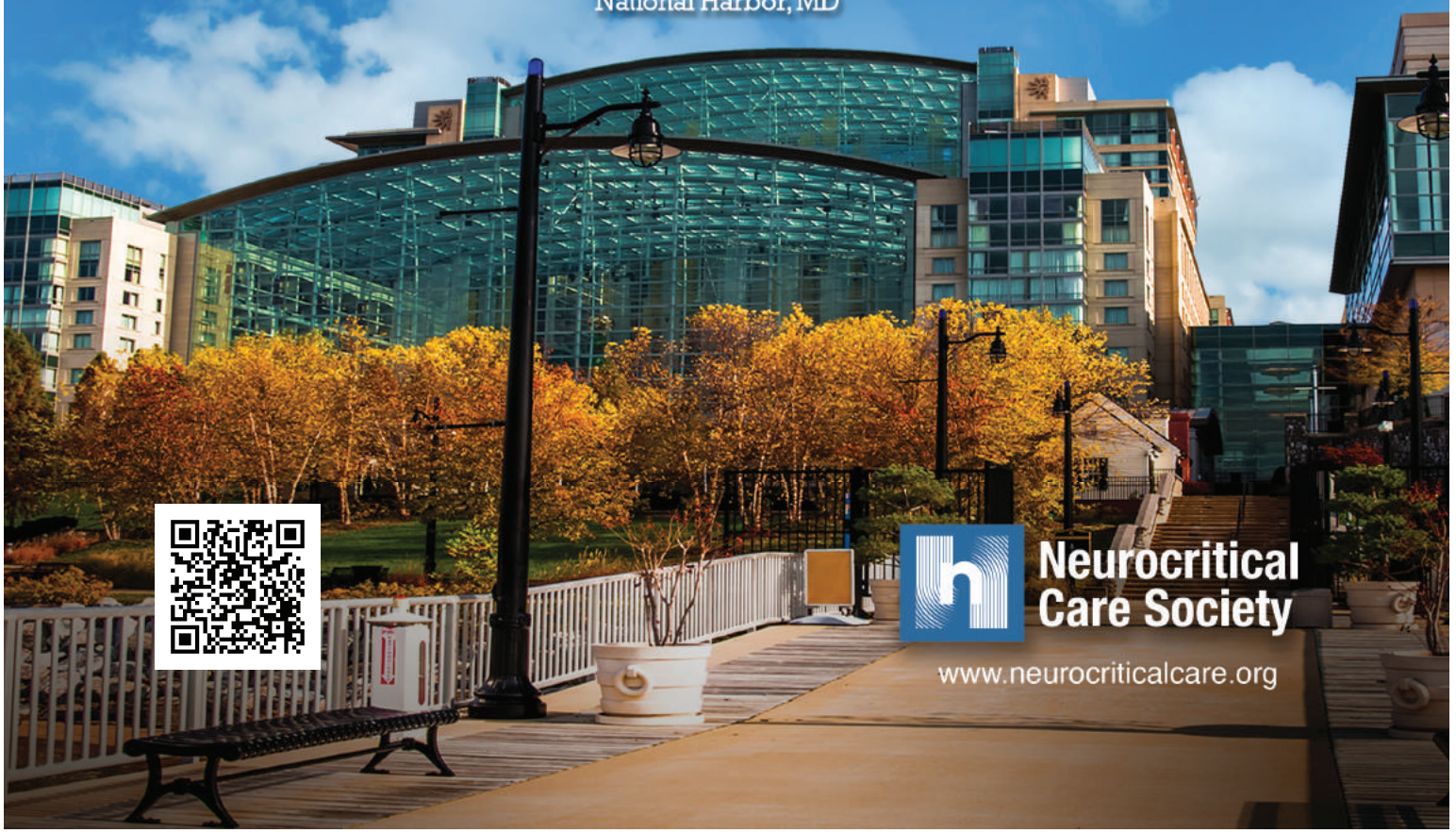
NCS 14TH ANNUAL MEETING

PRE-MEETING SESSION
SEPTEMBER 14-15, 2016

# 2016

# GAYLORD
## NATIONAL HARBOR
## SEPTEMBER 15-18

Gaylord National Resort and Convention Center,
National Harbor, MD



Neurocritical Care Society

www.neurocriticalcare.org

# Welcome

## to the 14th Annual Meeting of the Neurocritical Care Society!

**Michel Torbey, MD, MPH, FAHA, FCCM, FNCS**

Recent growth of the Neurocritical Care Society has been rapid and exciting. NCS Membership has broadened in terms of educational and professional backgrounds, and levels of training and experience. In consideration of this growth and diversity, the Annual Meeting Planning Committee, with its diverse members (e.g., emergency physicians, trauma surgeons, neurologists, scientists, neurosurgeons, pharmacists, internists, nurses, anesthesiologists and members-in-training) has worked to ensure that everyone attending the meeting in National Harbor, MD will find something professionally enriching. In 2003, the NCS held its first annual meeting in Phoenix, Arizona. Last year, we considered where it all began, by choosing the theme to be "Back to the Future." Now we look towards the future of NCS and what that means for us all. The Committee has chosen the theme of this year's 14th annual meeting to be "Together We Move Forward." We will take this opportunity to review how research and practice is progressing for the future.

Our meeting has grown from one day in the early years to four days as of three years ago. In keeping with a tremendously successful format from last year, this year's program will encompass four full days of material. We will host a pre-meeting day dedicated to early career members, with the following three days forming the core of the meeting. The program will close on Sunday with an ENLS certification and recertification course and a farewell reception.

Here is an overview of what you can expect from our plenary sessions this week:

**PRE-MEETING DAY (WEDNESDAY, SEPTEMBER 14):**
The Neurocritical Care Society will be conducting its first full day Transcranial Doppler Course chaired by Alex Razumovsky and Ryan Hakimi. The course will provide the registrants with background knowledge and number of cases required to sit for the Neurosonology Certification exam.

**PRE-MEETING DAY (WEDNESDAY, SEPTEMBER 15):**
The pre-meeting day will focus on topics of high importance to early career members. Thursday's sessions will have four primary tracks: Media Training Workshop, Career Research Development, Future Leaders, and Practice Update.

The healthcare environment may be changing, but the need for clear, targeted, message-oriented communication never does. The Media Training Workshop, chaired by Mark Bernheimer, will provide a solid education in crucial media concepts to help attendees become confortable discussing complicated medical concept with the media.

The Career Research Development session, Chaired by Anise Ardelt and Marion Buckwalter, MD, PhD, will focus on training junior NCS members for a career in the academic practice of neurocritical care.

The Future Leaders session, co-chaired by Wendy Wright, MD, JM, FCCM, FNCS and Lori Shutter, MD, FNCS FCCM will enhance leadership abilities and opportunities for junior members within and outside of the NCS.

This year the day-long Practice Update session, chaired by Panos Varelas and Gretchen Brophy, will focus on clinical updates in the field. An excellent group of speakers will review what's new in the field of stroke, spinal cord injury, status epilepticus, paraneoplastic syndromes, pediatric disorders, and neuropharmacology challenges and solutions.

The evening will conclude with a welcome reception to formally kick off the meeting and the opportunity to begin visiting vendor booths in the exhibit hall.

**DAY 1 (FRIDAY, SEPTEMBER 16):**
Friday, we start bright and early with the optional Fun Run! New this year, members created teams and competed to see who could raise the most funds for research. The Ohio State University Neurocritical Care Team: Go Buckeyes!!! edged out University of Pittsburgh by just $160 dollars with a donation during the final minute of the competition and will be sporting Top Fundraiser t-shirts at the race. (Thank you to all who participated!) With a workout behind you, you will find that the opening day of the Annual Meeting is packed with important sessions, such as: four morning workshops, the Business Meeting, the Presidential Address and the ever popular Member Submitted Session. Based on our members feedback, we have introduced this year two new workshops: 1) Difficult airways and ventilator management and 2) Essentials Skills for running a NeuroICU. End the day in the exhibit hall for Oral presentations immediately followed by a poster reception.

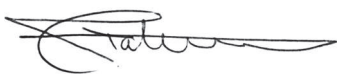
**DAY 2 (SATURDAY, SEPTEMBER 17):**
Day 2 will include Translational Science Symposium featuring Keynote Speaker Walter Koroshetz, Director of NINDS. The symposium will present the top 5 rated abstracts as oral platform presentations. In addition, we will have workshops on topics such as Advanced ICU Hemodynamics, Bronchoscopy and Percutaneous Trach, and Prognostication, Ethics, & Palliative Care in NeuroICU. In the afternoon we will reveal the ATACH 2 Trial results followed by The Society Keynote Address by Dr. Shari Ling, CMS Deputy Chief Medical Officer. Join your colleagues to listen to oral presentations in the exhibit hall immediately followed by a poster reception.

**DAY 3 (SUNDAY, SEPTEMBER 18):**
Sunday will kick off with Breakfast Corners, followed by a selection of five workshops on topics such as Essentials of Neurocritical Care, Intracranial Monitoring, Neurocritical Care Pharmacotherapy, and Professionalism and Leadership. Emergency Neurological Life Support (ENLS) certification and recertification will be offered in the afternoon, along with sessions on engaging topics such as How to Build a Dream Team. If you're hungry for more, the WINCC luncheon symposium will feature Keynote Speaker Dr. Marie Baldisseri, Chancellor, Board of Regents American College of Critical Care Medicine. We will end the meeting with a farewell reception.

***SOCIAL AND SPECIAL EVENTS***
We like to work hard, study hard, and of course, play hard! Our third annual Fun Run and Walk has been scheduled for Friday morning, to kick off day one of our program. After Friday's plenary, workshops, and concurrent sessions, everyone will head out on the Potomac Terrace of the Gaylord for our annual banquet – this year, a clam bake! You'll be greeted by a stunning setting over the harbor as several bands play tunes from yesterday and today's favorite artists. There will be plenty of yard games to play including bocce ball, ladder ball, and life-sized Jenga. Please don't miss the opportunity to dunk your favorite or not so favorite officers and board members for charity at our dunking booth. If you are still in the mood and have the legs for it, please join us following the Annual Banquet at the Gaylord's Pose Lounge and Nightclub for great music and dancing.

Please note that lunch will not be provided as a part of this year's program. Industry supporters will be hosting lunch symposia with limited attendance each day and cash concessions will be offered in our exhibits hall. Aside from this, attendees will need to find their own lunch accommodations.

I look forward to having a wonderful time learning, networking and having fun with all of you in National Harbor!



**Michel Torbey, MD, MPH, FAHA, FCCM, FNCS**
*Vice President, Neurocritical Care Society*
*Chair, 14th Annual Meeting Committee*

2016
GAYLORD
NATIONAL HARBOR
SEPTEMBER 15-18

# Schedule at a Glance

NCS 14th ANNUAL MEETING

*subject to change

## WEDNESDAY, SEPTEMBER 14 (Pre-Meeting)

| TIME | SESSION/ EVENT |
|---|---|
| 8:00am – 12:00pm | TCD Course Part 1: Didactic Lecture & Overview |
| 12:00pm – 1:00pm | Break (Lunch-not provided) |
| 1:00pm – 5:00pm | TCD Course Part 2: Hands on, 50 cases |
| 3:00pm – 6:00pm | Registration |

## THURSDAY, SEPTEMBER 15 (Pre-Meeting)

| TIME | SESSION/ EVENT |
|---|---|
| 6:45am – 5:30pm | Registration |
| 8:00am – 11:00am | Media Training Workshop |
| 8:00am – 12:00pm | Career Research Development** |
| 8:00am – 12:00pm | Practice Update |
| 12:00pm – 1:00pm | Lunch Break (Lunch-not provided) |
| 12:00pm – 1:00pm | UCB Lunch Symposium: Myth Busters: Epilepsy Management in the Hospital |
| 1:00pm – 5:00pm | Future Leaders** |
| 1:00pm – 5:30pm | Practice Update Continued |
| 1:00pm – 5:00pm | TCD Course Part 3: Hands on, 50 cases |
| 3:00pm – 3:30pm | Break |
| 5:00pm – 6:30pm | Welcome Reception with Exhibitors |

***Previously accepted applicants only*

## FRIDAY, SEPTEMBER 16

| TIME | SESSION/ EVENT |
|---|---|
| 6:30am – 8:00am | Fun Run |
| 6:45am – 5:30pm | Registration |
| 7:00am – 8:00am | Continental Breakfast |
| 7:00am – 8:00am | NICO Breakfast Symposium: Growing Body of Evidence: Surgical Management of Spontaneous ICH |
| 8:00am – 9:45am | Joint Session with ESICM: Fever Management in the Neurocritical Care Unit |
| 8:00am – 9:45am | Main Symposium: Worldwide Variations in End of Life Approaches |
| 8:00am – 12:00pm | **Workshop 1**: Advanced Practice Providers |
| 8:00am – 12:00pm | **Workshop 2**: Difficult Airway and Ventilation Management |
| 8:00am – 12:00pm | **Workshop 3**: Essential Skills for Running a NeuroICU |
| 8:00am – 12:00pm | **Workshop 4**: Ultrasound & Echo in NeuroICU |
| 9:45am – 10:15am | Coffee Break |
| 10:15am – 12:00pm | Main Symposium: Neurocritical Care Debates- Should we have closed units in the NCCU? Should we use guidelines in the ICU? |
| 10:15am – 12:00pm | Nursing Session: Not Just a Nurse- Advancing Patient Care and the Specialty |
| 12:00pm – 1:15pm | Lunch Break - A la Carte Cash Lunch Offered in Exhibit Hall |
| 12:00pm – 1:00pm | NeurOptics Lunch Symposium: Pupillometry in the Neurocritical Care Unit |
| 12:00pm – 1:00pm | Zoll Lunch Symposium: Practical aspects of therapeutic temperature management |
| 1:15pm – 3:00pm | Main Symposium: Business Meeting, Keynote Address, and Presidential Address |
| 3:00pm – 3:45pm | Coffee & Dessert with Exhibitors |
| 3:45pm – 4:30pm | Main Symposium: News in Neurocritical Care Drug Use- What fits for fits? |
| 3:45pm – 4:30pm | Concurrent Session: Member Submitted Session- Lymphatic Drainage from the Brain |
| 3:45pm – 4:30pm | Joint Session with Japanese Society of Neurological Emergency and Critical Care (JNE) |
| 4:30pm – 5:30pm | Oral Platform Presentations in Exhibit Hall |
| 5:30pm – 6:30pm | Exhibit and Poster (stand by) Reception 1 |
| 6:30pm – 8:00pm | Arbor Pharmaceuticals Dinner Symposium: Contemporary Medication Safety Issues in Neurocritical Care: It is Everyone's Responsibility |

## SATURDAY, SEPTEMBER 17

| TIME | SESSION/ EVENT |
|---|---|
| 6:45am – 5:30pm | Registration |
| 7:00am – 8:00am | Continental Breakfast |
| 7:00am – 8:00am | Pfizer-BMS Breakfast Symposium: Reducing Stroke and Thromboembolic Risk in Patients with Nonvalvular Atrial Fibrillation (NVAF) and Treating Venous Thromboembolism |
| 7:00am – 8:00am | BARD Medical Breakfast Symposium: Fever Management and Hyperthermia |
| 8:00am – 11:00am | Translational Science with Keynote Speaker Walter Koroshetz, MD |
| 8:00am – 12:00pm | **Workshop 5:** Advanced ICU Hemodynamics |
| 8:00am – 12:00pm | **Workshop 6**: Bronchoscopy & Percutaneous Trach |
| 8:00am – 12:00pm | **Workshop 7:** EEG101 |
| 8:00am – 12:00pm | **Workshop 8:** Prognostication, Communication, and Shared Decision Making: Palliative Care in the Neuro ICU |
| 11:00am – 12:00pm | Top Rated Abstract Platform Presentations (Immediately Following Translational Science) |
| 12:00pm – 12:30pm | Decisio Product Demo in the Exhibit Hall (Free lunch to first 25 participants; must sign up at booth #48) |
| 12:00pm – 1:15pm | Lunch Break - A la Carte Cash Lunch Offered in Exhibit Hall |
| 12:00pm – 1:00pm | SAGE Lunch Symposium: Diagnosis and Management of Super Refractory Status Epilepticus |
| 12:00pm – 1:00pm | Portola Lunch Symposium: New Developments in the Reversal of Factor Xa Inhibitors |
| 1:15pm – 3:00pm | Main Symposium: Blood Pressure and Intracerebral Hemorrhage: ATACH 2 Trial Results |
| 3:00pm – 3:45pm | Coffee & Dessert with Exhibitors |
| 3:45pm – 4:30pm | Main Symposium: Keynote Speaker Address with Shari Ling, MD |
| 4:30pm – 5:30pm | Oral Platform Presentations in Exhibit Hall |
| 5:30pm – 6:30pm | Exhibit and Poster (stand by) Reception 2 |
| 6:30pm – 10:00pm | Annual Banquet sponsored by Chiesi USA |
| 10:00pm – 1:00pm | After Party in Pose Nightclub at the Gaylord (with access to VIP lounge) |

## SUNDAY, SEPTEMBER 18

| TIME | SESSION/ EVENT |
|---|---|
| 6:45am – 5:30pm | Registration |
| 7:00am – 8:00am | Various Breakfast Corners |
| 8:00am – 9:45am | Joint SNACC Session: Endovascular Treatment of Acute Ischemic Stroke |
| 8:00am – 9:45am | Pediatric Neurocritical Care |
| 8:00am – 12:00pm | **Workshop 9:** EEG201 |
| 8:00am – 12:00pm | **Workshop 10:** Essentials of Neurocritical Care |
| 8:00am – 12:00pm | **Workshop 11:** Intracranial Monitoring |
| 8:00am – 12:00pm | **Workshop 12:** Neurocritical Care Pharmacotherapy |
| 8:00am – 12:00pm | **Workshop 13:** Professionalism and Leadership |
| 9:45am – 10:15am | Coffee Break |
| 10:15am – 12:00pm | Main Symposium: Ethical and Legal Conundrums in the NCC Unit |
| 10:15am – 12:00pm | Concurrent Session: The Bionic NCC Patient- Risks and Changes of Organ Assist Devices |
| 12:00pm – 1:15pm | Lunch Break |
| 12:00pm – 1:00pm | Women in Neurocritical Care Lunch Symposium with Keynote Speaker Marie Baldisseri, MD, MPH, FCCM |
| 1:15pm – 5:00pm | ENLS: Emergency Neurological Life Support Certification/Recertification Course |
| 1:15pm – 2:15pm | Main Symposium: How to Build a Dream Team |
| 2:15pm – 3:00pm | Main Symposium: When the Dream Team Fizzles |
| 3:00pm – 3:45pm | Coffee Break |
| 3:45pm – 4:30pm | Joint Brazilian Neurocritical Care Association Session: Brazilian Contributions to Neurocritical care beyond Carnival and the Olympics: from the new concepts of Driving Pressure to Complications of Zika virus infection |
| 5:00pm – 6:30pm | Farewell Reception |

# General Information
## 14th NCS Annual Meeting

### DISCLAIMER
The information provided at this meeting is for general medical education purposes only and is not meant to substitute for the independent medical judgement of a physician relative to diagnostic and treatment options of a specific patient's medical condition. In no event will the Neurocritical Care Society be liable for any decision made or action taken in reliance upon the information provided through this activity.

### MEETING LOCATION
**Gaylord National Resort and Convention Center**
**201 Waterfront Street**
**National Harbor, MD 20745**

Hotel Direct & Reservations: (301) 965-4000
Online Reservations: https://aws.passkey.com/g/55322366
Website: http://www.marriott.com/hotels/travel/wasgn-gaylord-national-resort-and-convention-center/

### ANNUAL MEETING REGISTRATION
The NCS registration desk will be located in the Maryland Ballroom Foyer (level 2) of the Gaylord National Resort and Convention Center. The registration desk will be open during the following times:

Wednesday, September 14 ..... 3:00 p.m. – 6:00 p.m.
Thursday, September 15..... 6:45 a.m. – 5:30 p.m.
Friday, September 16..... 6:45 a.m. – 5:30 p.m.
Saturday, September 17..... 6:45 a.m. – 5:30 p.m.
Sunday, September 18 ..... 6:45 a.m. – 5:30 p.m.

### WORKSHOP CANCELLATION POLICY
Workshop cancellations will not be refunded if the cancellation takes place on the same day that the workshop is scheduled.

### EXHIBIT & POSTER HALL
This year's exhibits & poster hall will be in the Prince George Exhibit Hall A of the Gaylord National Resort and Convention Center. Be sure to visit this year's exhibitors during the exhibit hall's open hours: Thursday 5:00pm-6:30pm, and Friday and Saturday.

**Special Events**
**Thursday, September 15**
5:00pm – 6:30pm.....Welcome reception kick-off with exhibitors

**Friday, September 16**
Noon – 1:15pm.....A la carte cash lunch in hall
3:00pm – 3:45pm.....Coffee and dessert with exhibitors
5:30pm – 6:30pm.....Reception in exhibit hall

**Saturday, September 17**
Noon – 1:15pm.....A la carte cash lunch in hall and product demonstrations
3:00pm – 3:45pm.....Coffee and dessert with exhibitors
5:30pm – 6:30pm.....Reception in exhibit hall

### SPEAKER LOUNGE
The Speaker Lounge will be located in National Harbor 8 on Wednesday and in Maryland 1 Thursday through Sunday. The room will be open during the following dates and times:

Wednesday, September 14 .....3:00 p.m. – 6:00 p.m.
Thursday, September 15.....6:45 a.m. – 5:30 p.m.
Friday, September 16.....6:45 a.m. – 5:30 p.m.
Saturday, September 17.....6:45 a.m. – 5:30 p.m.
Sunday, September 18 .....6:45 a.m. – 5:30 p.m.

### LUNCH
Please note that lunch will not be provided as a part of this year's program. Industry supporters will be hosting lunch symposiums with limited attendance each day and cash concessions will be offered in the exhibitors' hall. A guide to local restaurants will be available at the materials table.

### ATTIRE
The attire for the Annual Meeting is business casual.

### CLIMATE
The average temperature in National Harbor in September is mid-70s to mid-80s and sunny. Beautifully warm days are followed by refreshingly cool evenings.

### MEMBERSHIP
To join the Neurocritical Care Society, please visit **www.neurocriticalcare.org** and hover over "Membership," "Join NCS," and click on "Dues & Eligibility." Then click on the "Join or Renew Now" button. Please make sure you are logged in to your NCS account at this time. Membership benefits include the Neurocritical Care journal subscription, discounted Annual Meeting rates, access to the members only discussion forums, and networking opportunities.

### ACCREDITATION
This activity has been planned and implemented by Ciné-Med and the Neurocritical Care Society. Ciné-Med is accredited by the American Nurses Credentialing Center (ANCC), the Accreditation Council for Pharmacy Education (ACPE), and the Accreditation Council for Continuing Medical Education (ACCME), to provide continuing medical education for the health care team.

**Physicians**
Ciné-Med designates this live activity for a maximum of 34.5 ***AMA PRA Category 1 Credit(s)***™. Physicians should only claim credit commensurate with the extent of their participation in the activity.

**Nurses**
This educational activity is approved for 34.5 contact hours for nurses.

**Pharmacists**
This activity has been accredited for 3.45 CEU (34.5 credit hours) of continuing education credit. ACPE Universal Number: 0399-9999-16-002-L01-P.

**THIS MEETING HAS BEEN ENDORSED BY THE FOLLOWING ORGANIZATIONS:**

DGNI · SNIS · SVIN · World Stroke Organization

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# HELPFUL INFORMATION

# Welcome to National Harbor!

Just across the river from the bustling town of Alexandria, VA lies the rapidly-growing community of National Harbor, Maryland.

A waterfront resort destination on the banks of the Potomac River, National Harbor offers something for everyone! Located just eleven miles from the heart of the nation's capital, the area is rich with history, entertainment, dining, shopping, and stunning harbor views.

National Harbor is home to the national spelling bee competition, and has hosted a variety of events since it opened less than ten years ago. Such events include culinary festivals, an annual ice sculpture exhibition, outdoor concerts by military bands, movies on a large-scale outdoor screen facing the river, and even a Peeps eating contest in honor of Peeps Day!

Whatever your interests, you're sure to enjoy the site of this year's Annual Meeting!

Visit https://www.nationalharbor.com for additional National Harbor information.

**Hotel Information:**
Gaylord National Resort and Convention Center
201 Waterfront Street
National Harbor, MD 20745
Hotel Direct & Reservations: (301) 965-4000
Online Reservations: https://aws.passkey.com/g/55322366
Website: http://www.marriott.com/hotels/travel/wasgn-gaylord-national-resort-and-convention-center/

Set your sights on luxurious comfort at Gaylord National Resort & Convention Center when visiting the Washington D.C. area. Our spectacular waterfront resort, with a stunning 19-story glass atrium and sweeping views of the Potomac River, is steps from National Harbor's premier entertainment and shopping district and only 8 miles south of the nation's capital.

After exploring the city and surrounding areas, return to our first-class resort featuring a rejuvenating spa, indoor pool and whirlpool, state-of-the-art fitness center and a number of unique restaurants and shops. With more than 500,000 square feet of flexible event space, we also offer a chance to experience unforgettable business meetings, conferences, or social gatherings.

For late-night excitement with picturesque views of the capital, take our express elevator up to the Pose Rooftop Lounge before retreating just steps away to your luxurious accommodations. Come discover why Gaylord National offers an unmatched experience in the Capital Region.

**Please see the resort maps in this section for additional information.**

# Helpful Attendee Information

**Internet Access**

Feel free to bring your laptop/mobile device, etc. as complimentary internet access is available for NCS attendees in the NCS meeting space at Gaylord National Resort and Convention Center. Below are the instructions on how to access the Wi-Fi.

**Internet Access Instructions:**

1. Access your Wi-Fi antenna settings on your portable device.
2. Select the Internet connection labeled "NCS2016Meeting"
3. Upon connection to the network you will be prompted to enter a password.
4. Enter your designated password into the supplied box: NCS2016Meeting
6. You now have internet access! If you do not gain access right away, please open a browser for any additional confirmation pages.

**NCS Mobile App**

Be sure to check out the new NCS 14th Annual Meeting Mobile Application which includes great information: program agenda, speaker information, exhibitor/support information, abstract posters, and more.

For some fun new features, try:

- With one click, easily enter events into "My Schedule" to create your personalized agenda
- Evaluate, rate, and comment on the sessions you attend
- Interactively locate, learn about, and keep track of exhibitors you visit
- Connect with your colleagues with the Friends feature

The 2016 Mobile App, powered by EventLink and created by Core-Apps LLC, is a native application for smartphones (iPhone and Android), a hybrid we-based app for Blackberry, and a web-based version of the application is available for all other web browser-enabled phones.

**How to Download:**

For iPhone (including iPod Touch & iPad) and Android phones: Visit your App Store or Android Market and search for Neurocritical 2016. You may also download the NCS Mobile App by scanning the code below.

For all other phone types (including Blackberry and all other web browser-enabled phones): While on your smartphone, point your mobile browser to m.core-apps.com/ncsconf2016. From there you will be directed to download the proper version of the app for your particular device, or, on some phones, you simply bookmark the page for future reference.

**e-Poster Viewing**

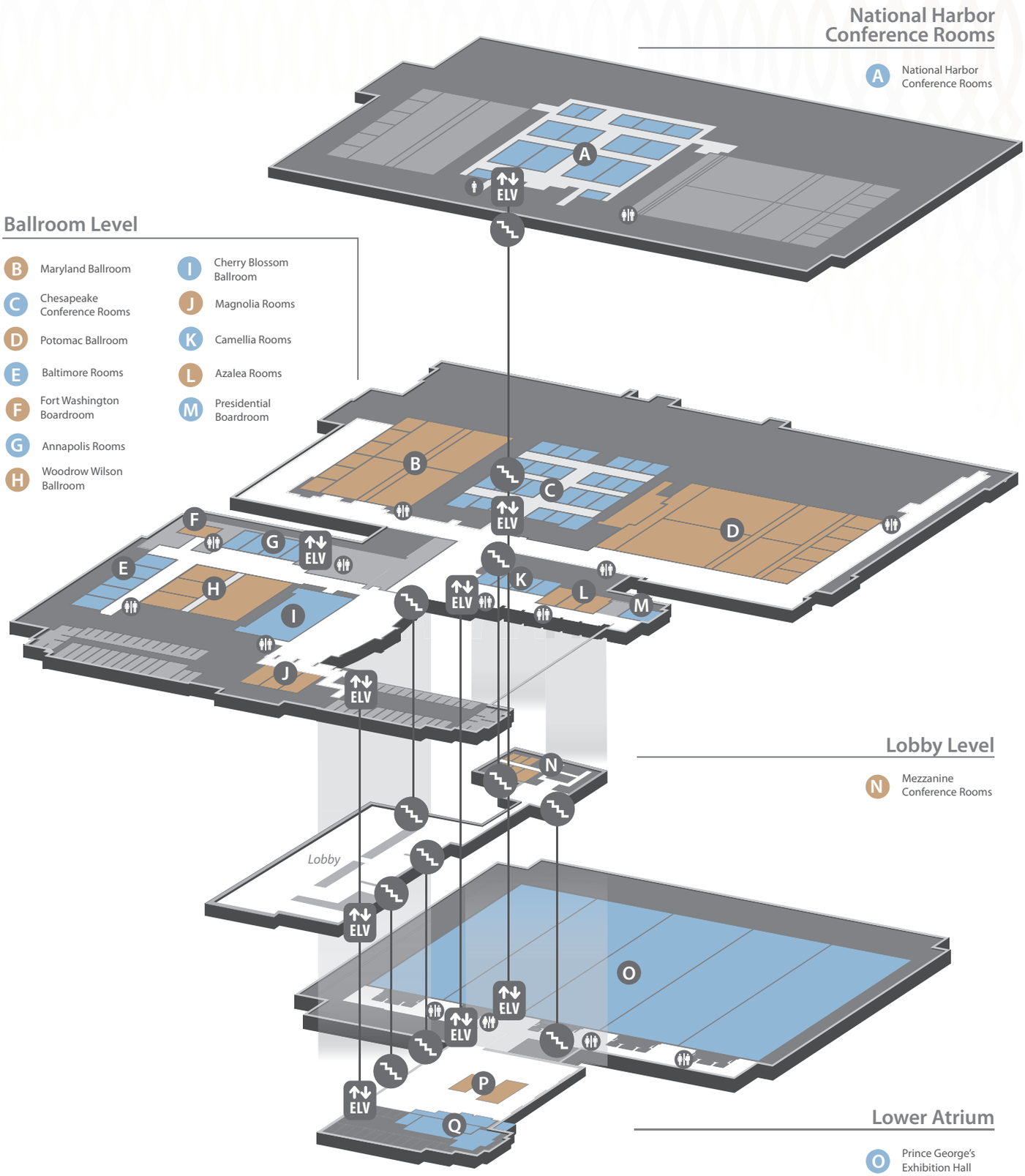
e-Posters will be displayed on touch screen monitors in the Hall of State throughout the conference. We encourage you to engage in conversation about yours and other abstracts with other attendees throughout the meeting. Please feel free to use your iPad/tablet/laptop or mobile devices to view the e-Posters online.

**Presentation Access:**

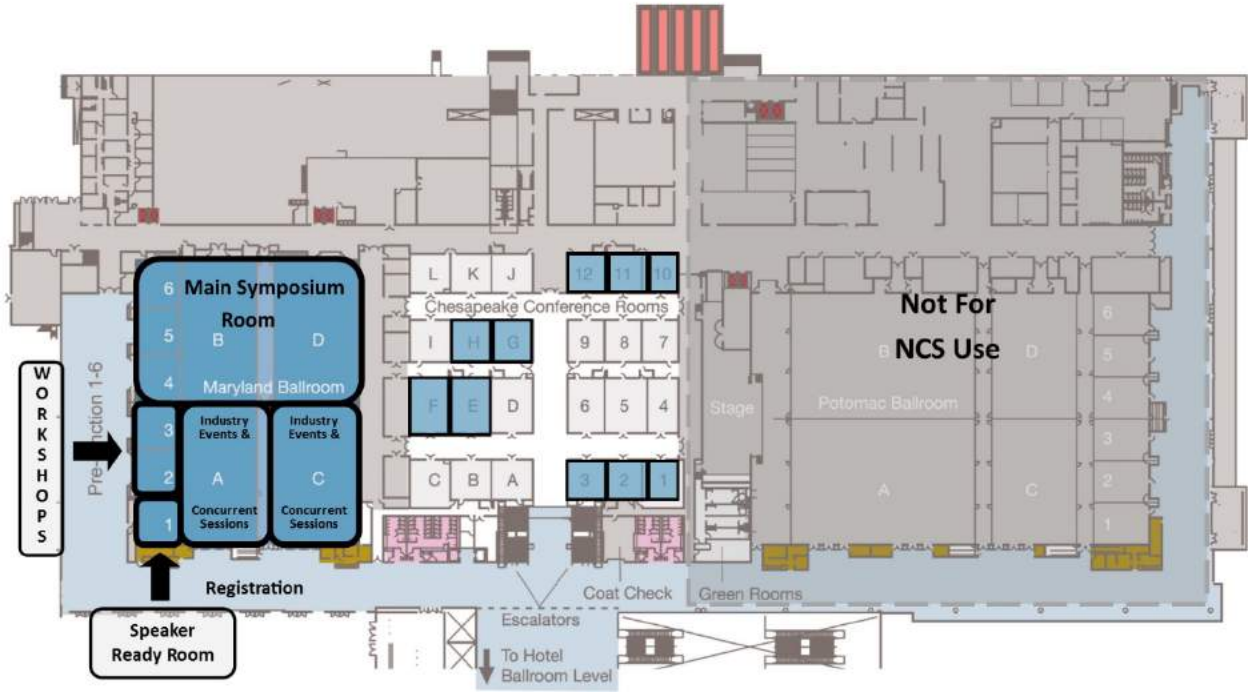
Annual Meeting PowerPoint slides will be available on the NCS OnDemand platform shortly following this year's Annual Meeting. You may purchase access to these presentations at the On-Site Registration desk in the Maryland Ballroom Foyer (level 2) of the Gaylord National Resort and Convention Center. Announcements will be made when the programs are available.

# Meeting Space Map



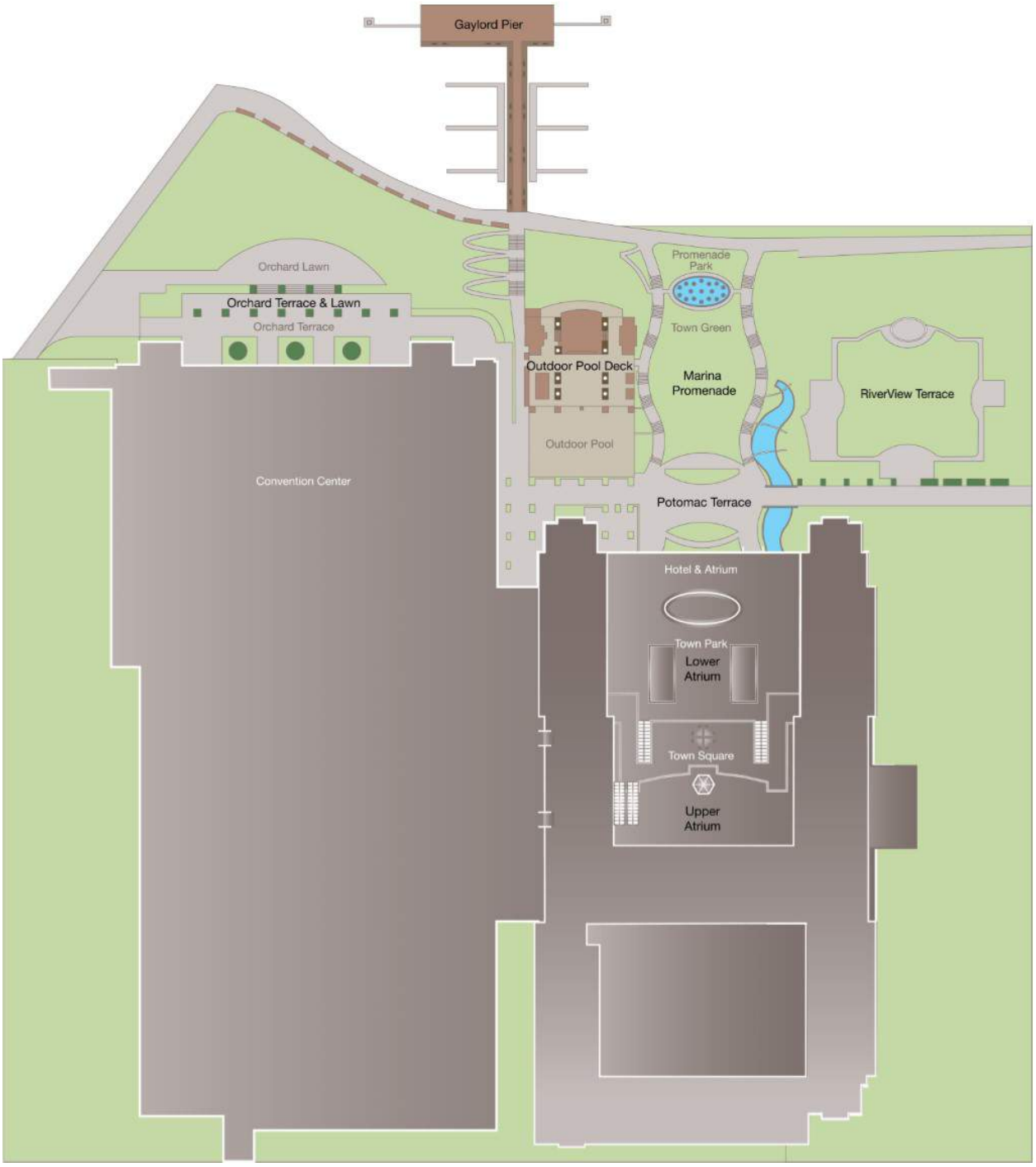


## Maryland Ballroom & Chesapeake Conferences Rooms Map




## National Harbor Conference Rooms Map

# Gaylord National Harbor Outdoor Map



# MEETING PROGRAM

# 2016 Detailed Program

## Wednesday, September 14th
### PRE-MEETING DAY

**8:00a.m. - 5:00p.m.**
**TCD Course Part 1 & 2**
**Part 1 will consist of didactic lecture and overview.**
**Part 2 will consist of 50 hands on cases.**
**Room: National Harbor 12/13**

*Co-Chairs: Ryan Hakimi, DO, MS; Alex Razumovsky, PhD, FAHA*
*Speaker: Gregory Kapinos, MD, MS*

## Thursday, September 15th
### PRE-MEETING DAY

**8:00a.m. - 11:00a.m.**
**Media Training Workshop**
**Room: National Harbor 4/5**
*Faculty: Mark Bernheimer, MediaWorks Resource Group*

**8:00a.m. - 12:00p.m.**
**Career Research Development**
**Room: Maryland 2/3**
*Co-Chairs: Agnieszka Ardelt, MD, PhD;*
*Marion Buckwalter, MD, PhD*
**Approved applicants only*

**Life After Research: Neurointensivists Have Nine Lives**
(Agnieszka Ardelt, MD, PhD)
**Career Development Awards: Strategies for Success**
(Marion Buckwalter, MD, PhD)
**Clinical Trials Best Practice in Neurocritical Care**
(Daniel Hanley, MD)
**A Pharmacist's Take on a Clinical Research Career**
(Jimmi Hatton Kolpek, PharmD)
**A Neurointensivist's Journey to a K Award** (Matthew Maas, MD)
**Basic Advice: Bench Research and Neurocritical Care**
(J. Javier Provencio, MD, FNCS)

**8:00a.m. - 5:30p.m.**
**Practice Update**
**Room: Maryland A**
**must be registered for this session*

**Cerebral Infarction** (Adnan Qureshi, MD)
**Intracerebral Hemorrhage** (Wendy Ziai, MD, MPH)
**Aneurysmal SAH** (Sherry H-Y. Chou, MD, M.Sc, FNCS)
**Spinal Cord Injury** (Gisele Silva, MD, MPH, PhD)
**Seizures and Status Epilepticus** (Rodney Bell, MD)
**Neuromuscular Disorders** (Jennifer Frontera, MD, FNCS)
**Encephalopathies and Delirium** (Matthew Koenig, MD, FNCS)
**Comatose States and Brain Death** (Galen Henderson, MD)
**Paraneoplastic Syndromes** (John Probasco, MD)
**Principles of Antibiotic Use in the ICU**
(Aaron M. Cook, PharmD, BCPS)
**Traumatic Brain Injury Management**
(Lori Shutter, MD, FNCS, FCCM)
**Hemostasis and Anticoagulation**
(John Lewin III, PharmD, MBA, FASHP, FCCM, FNCS)
**Pediatric Special Considerations** (Courtney Robertson, MD)
**Multidisciplinary Practice Considerations**
(Mary McKenna Guanci, MSN, RN, CNRN, SCRN)
**Multimodality Monitoring** (Paul Vespa, MD)
**Prevention of Complications in the ICU** (Chad Miller, MD, FNCS)
**Neuropharmacotherapy Challenges and Solutions**
(Eljim Tesoro, PharmD, BCPS)

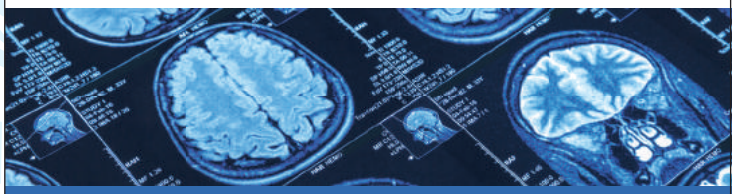
**12:00p.m. - 1:00p.m.**
**Lunch Symposium** *with support from UCB*
**Room: Maryland C**

**1:00p.m. - 5:00p.m.**
**Future Leaders Forum**
**Room: Maryland 2/3**
*Co-Chairs: Wendy Wright, MD, JM, FCCM, FNCS; Lori Shutter, MD, FNCS, FCCM*
**Approved applicants only*

**Introduction to Leadership** (Edward Manno, MD, FNCS)
**Leadership Ethics and Values**
(Wendy Wright, MD, JM, FCCM, FNCS)
**Process Improvement Initiatives**
(DaiWai Olson, RN, PhD, FNCS)
**Effective Teaching** (Lori Shutter, MD, FNCS, FCCM)
**Keys to Collaboration** (William Knight IV, MD, FACEP, FNCS)
**How to start/grow/run a unit** (Tom Bleck, MD, MCCM, FNCS)
**The Future of the NCS**
(Michel Torbey, MD, MPH, FNCS, FAHA, FCCM)
**Q&A** (Panel)

**1:00p.m. - 5:00p.m.**
**TCD Course Part 3**
**Room: National Harbor 12/13**
**Hands on 50 cases**

**5:00p.m. - 6:30p.m.**
**Welcome Reception with Exhibitors**
**Room: Prince George Exhibit Hall A**
*All attendees, exhibitors and supporters are welcome to attend!*



## Friday, September 16th
### DAY ONE

**7:00a.m. - 8:00a.m.**
**Breakfast Symposium** *with support from NICO*
**Room: Maryland C**

**7:30a.m. - 12:00a.m.**
**WORKSHOP: Ultrasound and Echo in NeuroICU**
**Room: National Harbor 12/13**
*Workshop Director: Aarti Sarwal, MD*

**Ultrasound Introduction: Physics and Knobology**
(Lauren Ng, MD, MPH)
**Point of Care Lung and Pleural Ultrasound** (Sudhir Datar, MD)
**Cardiac Ultrasound and IVC** (Neha Dangayach)
**Optic Nerve Sheath and Pupillary reflex**
(Wan-Tsu Wendy Chang, MD)

*DAY ONE: Friday, September 16th (continued)*

**8:00a.m. - 9:45a.m.**
**Joint Session with ESICM: Fever Management in the Neurocritical Care Unit**
**Room: Maryland Ballroom B,D,4,5,6**

**Why do we need to treat fever in the neurocritical care unit** (Fred Rincon, MD)
**Pharmacological Management of Fever** (Theresa Human, PhD, PharmD, BCPS, FNCS)
**Is there a role for hypothermia in the Neurocritical Care Unit** (Raimund Helbok, MD)
**How best to develop a fever management program in your ICU** (Mary Kay Bader, RN, MSN, CCNS, FNCS, FAHA)
**What's next: clinical trials on TTM** (Niklas Nielsen, MD, PhD, Associate professor)
**Panel Discussion** (All Speakers)

**8:00a.m. - 9:45a.m.**
**Worldwide Variations in End of Life Approaches**
**Room: Maryland A**
*Moderator: Gisele Silva, MD, MPH, PhD*

**Transition to Palliative Care** (David Y. Hwang, MD)
**Brain Death** (Gabriel de Freitas, MD, PhD)
**Organ Donation** (Nelson Maldonado, MD)

**8:00a.m. - 12:00p.m.**
**WORKSHOP: Ultrasound and Echo in NeuroICU**
**Room: National Harbor 12/13**
*Workshop Director: Aarti Sarwal, MD*

**Ultrasound Introduction: Physics and Knobology** (Lauren Ng, MD, MPH)
**Point of Care Lung and Pleural Ultrasound** (Sudhir Datar, MD)
**Cardiac Ultrasound and IVC** (Neha Dangayach, MD)
**Optic Nerve Sheath and Pupillary reflex** (Wan-Tsu Wendy Chang, MD)

**8:00a.m. - 12:00p.m.**
**WORKSHOP: Advanced Practice Providers**
**Room: Maryland 2/3**
*Workshop Directors: Susan Yeager, MS, RN, CCRN, ACNP, FNCS; Sarah Livesay, DNP, RN, ACNP-BC*

**Real Life, Stranger than Fiction: Encephalitis Case Studies** (Dea Mahanes, MSN, RN, CCNS)
**Shake it, Relax it, and DeBug it: Neuro ICU Seizure, Pressure, and Antibiotic Pharmacology** (Sarah Adriance, PharmD, BCPS)
**Show Me the Money: Demonstrating Your Value as a Neuro ICU APP** (Jessica White, MMS, PA-C)
**Shades of Grey: Making Sense Out of Brain MRI** (Susan Yeager, MS, RN, CCRN, ACNP, FNCS)
**Hammer Time: Reflexes and Diagnosis** (Sarah Livesay, DNP, RN, ACNP-BC)
**Local Yokel: Using Data to Localize Lesions** (Sarah Livesay, DNP, RN, ACNP-BC)

**8:00a.m. - 12:00p.m.**
**WORKSHOP: Difficult Airway and Ventilation Management**
**Room: National Harbor 4/5**
*Workshop Director: Avinash B. Kumar, MD, FCCM, FCCP*

**The Neurocritical Care Airway** (Avinash B. Kumar, MD, FCCM, FCCP)
**APRV in Neurocritical Care** (Ines Koerner, MD, PhD)
**Alternate modes of ventilation - VDR and ECMO** (Merrick Miles, MD)
**Evidence based mechanical ventilation** (Nadeem Rahman, MD)

**8:00a.m. - 12:00p.m.**
**WORKSHOP: Essentials Skills for Running a NeuroICU**
**Room: National Harbor 6/7**
*Workshop Director: Kristine O'Phelan, MD*

**Comparisons private/ academic** (Diana Greene-Chandos, MD)
**Nursing perspective** (Ruth Salathe, MSN, RN, CCRN, CNRN, SCRN)
**Academic perspective** (Owen Samuels, MD)
**International perspective** (Gisele Silva, MD, MPH, PhD)

**10:15a.m. - 12:00p.m.**
**Neurocritical Debates**
**Room: Maryland Ballroom B,D,4,5,6**
*Moderator: Matthew Koenig, MD, FNCS*

**Neurocritical: Should we have a closed unit in the NCCU? Pro** (Panayiotis Varelas, MD, PhD)
**Neurocritical: Should we have a closed unit in the NCCU? Con** (Arash Afshinnik, MD)
**Neurocritical: Should we have a closed unit in the NCCU? Rebuttal**
**Neurocritical Care Units: Should we use guidelines in the ICU? Pro** (Aaron M. Cook, PharmD, BCPC)
**Neurocritical Care Units: Should we use guidelines in the ICU? Con** (Michael Diringer, MD)
**Neurocritical Care Units: Should we use guidelines in the ICU? Rebuttal**
**Neurocritical: Should we have a closed unit in the NCCU? Questions**

**10:15a.m. - 12:00p.m.**
**Not "Just a Nurse"...A Neurocritical Care Nurse: Advancing Patient Care and the Specialty**
**Room: Maryland A**
*Moderator: Patricia A. Blissitt, PhD, RN, CCRN, CNRN, SCRN, CCNS, CCM, ACNS-BC*

**Definitions of Roles and Educational Preparation** (Patricia A. Blissitt, PhD, RN, CCRN, CNRN, SCRN, CCNS, CCM, ACNS-BC)
**Historical and International Perspectives** (Lori Kennedy Madden, PhD, RN, ACNP-BC, CCRN, CNRN)
**Contributions to Neurocritical Care: Past, Present and Future** (Asma M. Moheet, MD)
**Advancing Patient Care and the specialty** (Karen March, MN, RN, CNRN, CCRN-a)

**12:00p.m. - 1:00p.m.**
**Lunch Symposium** *with support from Zoll*
**Room: Maryland A**

**12:00p.m. - 1:00p.m.**
**Lunch Symposium** *with support from NeurOptics*
**Room: Maryland C**

**1:15p.m. - 3:00p.m.**
**Business Meeting**
**Room: Maryland B,D,4,5,6**

**Presidential Address: State of the Neurocritical Care Society** (Edward Manno, MD, FNCS)

*DAY ONE: Friday, September 16th (continued)*

**3:45p.m. - 4:30p.m.**
**Joint Session with Japan Society of Neurological Emergency and Critical Care (JNE)**
**Room: Maryland C**
*Moderator: Romergryko Geocadin, MD, FNCS*

**Multidisciplinary cEEG neuromonitoring from ER to Neuro-ICU** (Masao Nagayama, MD, PhD, FAAN)
**Early Evaluation of post-arrest injury and tailored TTM** (Yasuhiro Kuroda, MD)

**3:45p.m. - 4:30p.m.**
**Lymphatic Drainage from the Brain: Does this help answer any questions in Neurocritical Care?**
**Room: Maryland A**
*Chair: J. Javier Provencio, MD, FNCS*

**What are the implications of CNS lymphatics for injuries that affect the brain parenchyma (ICH and Stroke)** (Marion Buckwalter, MD, PhD)
**Lymphatics in the CNS: Start rewriting the textbooks** (Antoine Louveau)
**What are the implications of CNS lymphatics for injuries that affect the meninges (SAH and meningitis)** (J. Javier Provencio, MD, FNCS)

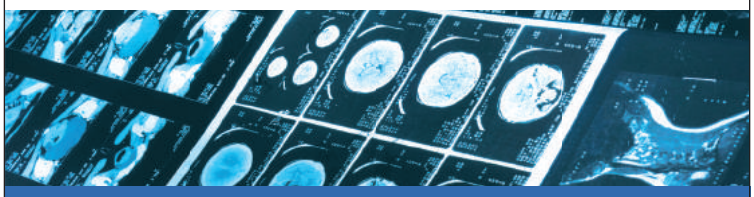
**3:45p.m. - 4:30p.m.**
**News in Neurocritical Care Drug Use**
**Room: Maryland B,D,4,5,6**
*Speaker/Moderator: Christopher Morrison, PharmD*

**What fits for fits? Update on new anticonvulsant** (Sherif Hanafy Mahmoud, BSc (Pharm), MSc, PhD)
**From the OR to the NCCU: Inhalational Anesthetics for NCC sedation** (Julian Bösel, MD, PhD)

**4:30p.m. - 5:30p.m.**
**Oral Platform Presentations**
**Room: Prince George Exhibit Hall A**

**5:30p.m. - 6:30p.m.**
**Poster Reception**
**Room: Prince George Exhibit Hall A**

**6:30p.m. - 8:00p.m.**
**Dinner Symposium** *with support from Arbor*
**Room: Maryland A & C**



## Saturday, September 17th
## DAY TWO

**7:00a.m. - 8:00a.m.**
**Breakfast Symposium** *with support from Pfizer-BMS*
**Room: Maryland A**

**7:00a.m. - 8:00a.m.**
**Breakfast Symposium** *with Support from BARD*
**Room: Maryland C**

**8:00a.m. - 12:00p.m.**
**WORKSHOP: Advanced ICU Hemodynamics**
**Room: National Harbor 4/5**
*Workshop Director: Christopher Junker, MD*

**Hemodynamic Monitoring practice and pitfalls** (Christopher Junker, MD)
(Bogdan Tiru, MD)
**Ultrasound for Hemodynamic Monitoring and Diagnosis** (Keith Boniface, MD)
**Applied hemodynamic physiology for the Neurointensivist** (William McGee, MD, MHA, FCCP, FCCM)

**8:00a.m. - 12:00p.m.**
**WORKSHOP: Bronchoscopy and Percutaneous Tracheostomy**
**Room: National Harbor 12/13**
*Workshop Director: Krishna Rajajee, MD*

**Bronchoscopy overview didactic, Bronchoscopy skill station hands on instruction** (Anthony Courey, MD)
**Bronchoscopy skill station hands on instruction** (Akshu Balwan, MD)
**Percutaneous Tracheostomy skill station hands-on instruction** (Kyle Sheehan, MD)
**Percutaneous Tracheostomy skill station hands-on instruction** (Craig Williamson, MD)
**Percutaneous Tracheostomy skill station hands-on instruction** (Niket Nathani, MD)

**8:00a.m. - 12:00p.m.**
**WORKSHOP: EEG 101**
**Room: National Harbor 6/7**
*Workshop Director: Emily Gilmore, MD, MS*

**Basics of normal and abnormal EEG findings** (Eric Rosenthal, MD)
**Basics on acquisition, including emergency methods** (Andres Fernandez, MD)
**Basics of QEEG tools** (Brandon Foreman, MD)

**8:00a.m. - 12:00p.m.**
**WORKSHOP: Prognostication, Communication, and Shared Decision Making: Palliative Care in the Neuro ICU**
**Room: Maryland 2/3**
*Workshop Director: David Y. Hwang, MD*

**Primary Palliative Care in the Neuro ICU** (Claire Creutzfeldt, MD)
**Pitfalls in Neuro ICU Prognostication** (David Y. Hwang, MD)
**Difficult Discussions with Neuro ICU Surrogate Decision Makers** (Jessica McFarlin)
**Current Research in Goals-of-Care Decision Making in the Neuro ICU** (Susanne Muehlschlegel, MD, MPH, FNCS, FCCM)

**8:00a.m. - 11:00a.m.**
**Translational Science**
**Room: Maryland B,D,4,5,6**

**Blood-brain barrier and the immune response in TBI** (Dorian McGavern, Ph.D.)
**Imaging Blood-Brain Barrier Damage in Ischemic Stroke – Lesson from Animal Models** (Dritan Agalliu, Ph.D.)
**Targeted Drug Delivery with Focused Ultrasound-induced Blood-Brain Barrier Opening using Acoustically-activated Nanodroplets** (Elisa E. Konofagou, Ph.D.)
**Intraventricular nimodipine and NEWTON trial** (R. Loch Macdonald, M.D., Ph.D)
**Translational science in neurocritical care – moving the field forward** (Walter Koroshetz, M.D.)

**11:00a.m. - 12:00p.m.**
**Top Rated Abstract Platform Presentations**
**Room: Maryland B,D,4,5,6**

*DAY TWO: Saturday, September 17th (continued)*

**12:00p.m. - 1:00p.m.**
**Lunch Symposium** *with support from Portola*
**Room: Maryland A**

**12:00p.m. - 1:00p.m.**
**Lunch Symposium** *with support from SAGE*
**Room: Maryland C**

**1:15p.m. - 3:00p.m.**
**Blood Pressure and Intracerebral Hemorrhage: ATACH 2 Trial Results**
**Room: Maryland B,D,4,5,6**
*Moderator: Jose Suarez, MD*

**ATACH 2 Main Results** (Adnan Qureshi, MD)
**Statistical Review** (Yuko Palesch, PhD)
**NINDS Perspective** (Claudia Moy, PhD)
**Interact Perspective** (Craig Anderson, MD, PhD)
**Implication for Neurocritical Care** (Jose Suarez, MD)

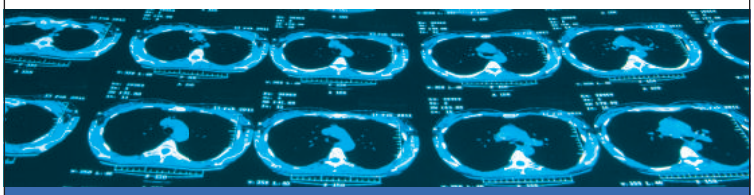
**3:00p.m. - 3:45p.m.**
**Coffee and Dessert with Exhibitors**
**Room: Prince George Exhibit Hall A**

**3:45p.m. - 4:30p.m.**
**Keynote**
**Room: Maryland B,D,4,5,6**
**The Cost of Medical Care in the 21st Century**
(Shari Ling, MD)

**4:30p.m. - 5:30p.m.**
**Oral Platform Presentations**
**Room: Prince George Exhibit Hall A**

**5:30p.m. - 6:30p.m.**
**Poster Reception**
**Room: Prince George Exhibit Hall A**

**6:30p.m. - 10:00p.m.**
**Annual Banquet**
**Room: Potomac Terrace**



## Sunday, September 18th
## DAY THREE

**7:00a.m. - 8:00a.m.**
**BREAKFAST CORNERS**
Various, see Breakfast Corner page

**8:00a.m. - 9:45a.m.**
**Pediatric Neurocritical Care**
**Room: Maryland C**
*Moderator: Mark Wainwright, MD, PhD*

**Not Just small brains: Difference in cerebral physiology between adult and pediatric critical care patients** (Courtney Roberston)
**Going noninvasive: Advances in pediatric neuromonitoring** (Michael Bell, MD)
**Kids brain on Fire: ICU Management of autoimmune encephalitis in pediatric neurocritical care** (Mark Wainwright, MD, PhD)

**8:00a.m. - 9:45a.m.**
**Joint SNACC Session: Endovascular Treatment of Acute Ischemic Stroke**
**Room: Maryland B,D,4,5,6**
*Co-Moderators: Arthur Lam, MD and David McDonagh, MD*

**Does the Anesthetic technique matter?** (Deepak Sharma, MBBS, MD, DM)
**Beond GA versus MAC** (W Andrew Kofke, MD, MBA, FCCM, FNCS)
**Potential neuroprotective strategies** (David McDonagh, MD)

**8:00a.m. - 12:00p.m.**
**WORKSHOP: EEG 201**
**Room: Maryland 2/3**
*Workshop Director: Brad Kolls, MD, PhD, MMCi*

Jan Claassen, MD; Emily Gilmore, MD, MS; Mark Scheuer, MD

**8:00a.m. - 12:00p.m.**
**WORKSHOP: Essentials of Neurocritical Care**
**Room: National Harbor 6/7**
*Workshop Directors: Tom Bleck, MD, MCCM, FNCS; Cherylee, MD, FNCS*

**It All Starts Here: Neuroanatomy** (Cherylee Chang, MD, FNCS)
**How to See What's Going on Inside-Neuroimaging** (Matthew Koenig, MD, FNCS)
**Continuous EEG & Management of Status Epilepticus** (Tom Bleck, MD, MCCM, FNCS)
**Rating scales and Predicting Outcome** (Jennifer Moran, MD, ACNP)
**ICP monitors & Managing Intracranial Hypertension and Herniation Syndromes** (Cherylee Chang, MD, FNCS)
**Neuromuscular Emergencies** (Torrey Birch, MD)

**8:00a.m. - 12:00p.m.**
**WORKSHOP: Intracranial Monitoring**
**Room: National Harbor 13**
*Workshop Directors: Benjamin Emanuel, DO; Joshua Medow, MD, MS, FAANS, FACS, FNCS*

Tracy Berlin, RN, MSN, CNRN, CCRN
Yince Loh, MD, FNCS
Amedeo Merenda, MD

**8:00a.m. - 12:00p.m.**
**WORKSHOP: Neurocritical Care Pharmacotherapy**
**Room: National Harbor 4/5**
*Workshop Director: Eljim Tesoro*

**Laboratory Testing for TSOACs – When, Why, and How?** (Jennifer Frontera, MD, FNCS)
**Drug Interactions** (Theresa Human, PhD, PharmD, BCPS, FNCS)
**Drug Dosing During Targeted Temperature Management** (Christopher Morrison, PharmD)
**Challenges in ICU Care - the Parkinson's Patient** (Jeffrey Mucksavage, PharmD)
**Challenges in ICU Care - the Pregnant Patient** (Kent Owusu, PharmD, BCPS)
**Antiepileptic Drug Dosing/Monitoring in Renal Replacement Therapies** (Sherif Hanafy Mahmoud, BSc (Pharm), MSc, PhD)
**Neurostimulant Use in the Neuro ICU** (Paola Saccucci, RPh, PharmD)

*DAY THREE: Sunday, September 18th (continued)*

**8:00a.m. - 12:00p.m.**
**WORKSHOP: Professionalism and Leadership**
**Room: National Harbor 12**
*Workshop Director: Lori Shutter, MD, FNCS, FCCM*

**Welcome** (Lori Shutter, MD, FNCS, FCCM)
**Making an Impression / Graceful Promotion** (Lori Shutter, MD, FNCS, FCCM)
**Getting to Yes: Negotiation** (James Szalados, MD, MBA, Esq)
**Mentorship, Coaches & Sponsors** (Jason Moore, MD, MS)
**Career Development – The Power of Portfolios, 360s & Awareness of Leadership Styles** (Wendy Wright, MD, JM, FCCM, FNCS)
**Organizational Dynamics / Senior Leadership** (Jimmi Hatton Kolpek,PharmD)
**Dealing with Conflict & Crises** (Wendy Wright, MD, JM, FCCM, FNCS)
**Finding Balance/Avoiding Burn-out** (Deborah Green-LaRoche)
**Panel** (All Speakers)

**10:15a.m. - 12:00p.m.**
**Ethical and Legal Conundrums in the Neurocritical Care Unit**
**Room: Maryland B,D,4,5,6**
*Moderator: Jordan Bonomo, MD, FCCM*

**Brain Death: A useful construct - Does it have value outside of the dead-donor rule?** (Jeffrey Bishop, MD, PhD)
**The Hidden Ethical Quagmire of Prognostication in ICH** (J. Claude Hemphill III, MD, MAS, FNCS)
**Should we disable pacemakers at End-of-Life knowing it will hasten death?** (Michael Rubin, MD, MA)
**Panel Discussion: Questions and Answers**

**10:15a.m. - 12:00p.m.**
**The Bionic Neurocritical Care Patient - Risks and chances of organ assist devices**
**Room: Maryland C**
*Moderator: Marie R. Baldisseri, MD, MPH*

**Brain Kidney: Hemodialysis and hemofiltration in the NCCU** (Neeraj Badjatia, MD, MS)
**Brain-Heart: Intraaortic Balloon Pump and other cardiac assist devices in the NCCU** (Marie R. Baldisseri, MD, MPH)
**Brain-Lung: ECMO and other pulmonary assist devices in the NCCU** (Joshua Medow, MD,MS,FAANS,FACS,FNCS)
**Panel discussion: Questions and Answers**

**12:00p.m. - 1:00p.m.**
**Women in Neurocritical Care Lunch Symposium**
**Room: Maryland A**
**Leadership in Neurocritical Care** (Marie R. Baldisseri, MD, MPH)

**1:15p.m. - 2:15p.m.**
**How to Build the Dream Team**
**Room: Maryland B,D,4,5,6**
*Moderator: Agnieszka Ardelt, MD, PhD*

**You really need a pharmacist** (Amber Castle, PharmD, BCPS, BCCCP)
**ICU Organizational and Staffing Structure Models** (Navaz Karanjia, MD)
**Neuronursing competencies, protocols, collaboration** (DaiWai Olson, RN, PhD, FNCS)

**1:15p.m. - 5:00p.m.**
**ENLS**
**Room: Maryland C**
*Chairs: Chad Miller, MD, FNCS and Wade Smith, MD, PhD*
Chad Miller, MD, FNCS
Shaheen Shaikh, MD
Gentle Shrestha, EMD, FACC, EDIC, FCCP
Wade Smith, MD, PhD

**2:15p.m. - 3:00p.m.**
**When the Dream Team Fizzles**
**Room: Maryland B,D,4,5,6**
*Chair: Deborah Green-LaRoche, MD*

**Burnout: Do We Have A Problem?** (Deborah Green-LaRoche, MD)
**What is Burnout** (Alan Garber, MD)
**Strategies to prevent and manage burnout: Nursing Perspective** (Dea Mahanes, MSN, RN, CCNS)
**Strategies to prevent and manage burnout: Physician Perspective** (Lori Shutter, MD, FNCS, FCCM)

**3:45p.m. - 4:30p.m.**
**Brazilian Contributions to Neurocritical Care Beyond Carnival and the Olympics: From the New Concepts of Driving Pressure to Complications of Zika Virus Infection**
**Room: Maryland A**
*Moderator: Pedro Kurtz, MD, MSc*

**Neurocritical care in low and middle income countries, a perspective** (Jose Suarez, MD)
**Mechanical Ventilation and driving pressure in neurocritical care** (Eduardo Leite Costa, MD, PhD)
**Neurological complications of arboviruses' infection - Zika and Dengue** (Fernando Bozza)

**4:30p.m. - 6:00p.m.**
**Farewell Reception**
**Room: Gaylord Atrium**

# 14th NCS Annual Meeting Speakers

**Panos Varelas, MD, PhD**
*Practice Update Co-Chair*

**Gretchen Brophy, PharmD, BCPS, FCCP, FCCM, FNCS**
*Practice Update Co-Chair*

## Practice Update Overview

The Practice Update in the 2016 Neurocritical Care Society Annual Meeting will serve all members who desire up-to-date information about Neurocritical care clinical practice topics. The course is aimed at all clinicians (nurses, APPs, pharmacists, physicians and trainees) and is designed to educate attendees from around the globe. The Update will occur on the second pre-meeting day of the conference and will be conducted by speakers who are experts in their fields. The talks will focus on reviews of recent (within the last 3 years) principles in pathophysiology and diagnosis and management of core Neurocritical and general critical care topics.

**Topics will include:**
Encephalopathies and Delirium, Seizures and Status Epilepticus, Aneurysmal SAH, Principles of Antibiotic Use in the ICU, Neuromuscular Disorders, Comatose States and Brain Death, Hemostasis and Anticoagulation, Multidisciplinary Practice Considerations, Prevention of Complications in the ICU, Paraneoplastic Syndromes, Cerebral Infarction, Pediatric Special Considerations, Traumatic Brain Injury Management, Spinal Cord Injury, Neuropharmacotherapy Challenges and Solutions, Multimodality Monitoring and Intracerebral Hemorrhage.

**Practice Update Learning Objectives:**
- Identify recent practice updates for consideration in Neurocritical care patients.
- Determine the most up-to-date diagnostic work-up for Neurocritical care patients.
- Recognize multidisciplinary challenges and solutions to optimizing care of Neurocritical care patients.
- Develop evidence-based up-to-date management strategies for Neurocritical care patients.

**Kevin Sheth, MD, FAHA, FCCM**
*Science Committee Co-Chair*

**Wendy Ziai, MD**
*Science Committee Co-chair*

## Scientific Review

This year's scientific program is packed with exciting sessions such as: Blood Pressure and Intracerebral Hemorrhage: ATACH 2 Trial Results. In response to continued demand from the membership, we will once again offer the Translational Science Symposium. The topic of this year's symposium focuses on the blood-brain barrier and will feature Walter Koroshetz and Loch Macdonald.

The core of the scientific program, however, is the showcase of work from the most important investigators – ALL OF YOU! Once again, we will have a display of traditional posters each day, which will be highlighted during a poster reception each evening. New this year, all posters will be displayed for the entire conference! We will also feature the top rated abstracts as oral sessions in the Exhibit Hall. In addition, the top five will be highlighted in the main symposium room immediately following the Translational Science Symposium. Every poster presenter will also have the opportunity to create an E-poster which will be viewable online as well as on the mobile app. Once again this year, the late-breaking abstract submission process will leverage our membership's rapidly advancing work. Finally, the Best Abstract and Christine Wijman Young Investigator Awards will honor deserving applicants.

**Shari M. Ling, MD**

## Keynote Speaker

Dr. Shari M. Ling currently serves as the Deputy Chief Medical Officer for the Centers for Medicare and Medicaid Services (CMS), and Medical Officer in the Center for Clinical Standards and Quality (CCSQ). She assists the CMS Chief Medical Officer in the Agency's pursuit of better health care, healthier populations, and smarter spending.
Dr. Ling's committed focus is on the achievement of meaningful health outcomes for patients and families through the delivery of high quality, person-centered care, across all care settings. Her clinical focus and scientific interest is in the care of persons with dementia, multiple chronic conditions, and functional limitations.

# 2016 Workshops

*All participants must be registered for workshops before onsite registration closes the evening before the course is to take place. No changes or refunds will be accepted the day of the course.*

**Wednesday, September 14 (Pre-Meeting Day)**

**8:00am – 12:00pm**

| | |
|---|---|
| TCD Course Part 1: Didactic Lecture & Overview | National Harbor 12/13 |

**1:00pm – 5:00pm**

| | |
|---|---|
| TCD Course Part 2: Hands On, 50 Cases | National Harbor 12/13 |

**Thursday, September 15 (Pre-Meeting Day)**

**8:00am – 11:00am**

| | |
|---|---|
| Media Training Workshop | National Harbor 4/5 |

**1:00pm – 5:00pm**

| | |
|---|---|
| TCD Course Part 3: Hands On, 50 Cases | National Harbor 12/13 |

**Friday, September 16 (Day 1)**

**8:00am – 12:00pm**

| | |
|---|---|
| Workshop 1: Advanced Practice Providers | Maryland 2/3 |
| Workshop 2: Difficult Airway and Ventilation Management | National Harbor 4/5 |
| Workshop 3: Essential Skills for Running a NeuroICU | National Harbor 6/7 |

**7:30am-12pm**

| | |
|---|---|
| Workshop 4: Ultrasound and Echo in NeuroICU | National Harbor 12/13 |

**8:00am-12:30pm**

| | |
|---|---|
| Workshop 4: Ultrasound and Echo in NeuroICU | National Harbor 12/13 |

**Saturday, September 17th (Day 2)**

**8:00am – 12:00pm**

| | |
|---|---|
| Workshop 5: Advanced ICU Hemodynamics | National Harbor 4/5 |
| Workshop 6: Bronchoscopy and Percutaneous Trach | National Harbor 12/13 |
| Workshop 7: Continuous EEG 101 | National Harbor 6/7 |
| Workshop 8: Prognostication, Communication, and Shared Decision Making: Palliative Care in the Neuro ICU | Maryland 2/3 |

**Sunday, September 18th (Day 3)**

**8:00am – 12:00pm**

| | |
|---|---|
| Workshop 9: Continuous EEG 201 | Maryland 2/3 |
| Workshop 10: Essentials of Neurocritical Care | National Harbor 6/7 |
| Workshop 11: Intracranial Monitoring | National Harbor 13 |
| Workshop 12: NCC Pharmacotherapy | National Harbor 4/5 |
| Workshop 13: Professionalism and Leadership | National Harbor 12 |

**1:15pm – 5:00pm**

| | |
|---|---|
| ENLS Certification and Recertification | Maryland A |

# NCS WORKSHOPS

2016

**Kristine O'Phelan, MD**
*Workshop Subcommittee Chair*

**Soojin Park, MD**
*Workshop Subcommittee Co-Chair*

**The Neurocritical Care Society Workshop series is unique – a reasonably-priced, multispecialty, multidisciplinary approach to continuing medical education.** Intended as a complement to the Annual Meeting, the workshops offer an unparalleled opportunity to dive deeper into timely and relevant topics and gain the critical skills you need to perform in your field. These are intensive sessions using case-based, hands-on, pragmatic approaches. The faculty includes some of the leading experts and educators in Neurocritical care. We have doctors, nurses, pharmacists, and mid-level providers here to show you what to do. Sometimes PowerPoint is not enough ... Conduct your own ultrasound, place an ICP monitor, and interpret EEG! Our instructors will be right there with you. This year, by popular demand, we will cover difficult airway and vent management, bronchoscopy and percutaneous tracheostomy, and advanced ICU hemodynamics workshops! There is truly something here for everyone!

Every person attending the Annual Meeting should plan to participate in a workshop. We will give you more than your money's worth in practical information, pearls, and techniques you can use immediately. We want to give away the secrets of Neurocritical care!

Can't wait to see you in National Harbor!

*The 2016 NCS Workshop Committee*

**Kristine O'Phelan, MD** **Soojin Park, MD**

## 2016 WORKSHOP DESCRIPTIONS

Only $150 per workshop.

*(Workshop information is subject to change upon further program development prior to Annual Meeting)*

*NEW*

## PRE-DAY WORKSHOPS
**Wednesday, September 14 & Thursday, September 15**

### TRANSCRANIAL DOPPLER COURSE (TCD)

Room: National Harbor 12/13

This program is designed for physicians, sonographers, technologists, and other healthcare professionals seeking to acquire the skill sets and knowledge base required to apply, perform and interpret Transcranial Doppler (TCD) and Transcranial Doppler Imaging (TCDI) studies. Didactic lectures and daily faculty-guided hands-on scanning sessions will provide learners with the opportunity to view and practice TCD Applicants will review up to 100 cases to qualify for TCD certification.

Annual Meeting registration is not required to register for this session.

**Pricing for TCD courses are $125 each or $350 for all 3.** Residents and fellows receive a discount when registering for all 3. The residents/fellows package price is $300.

**TCD Course Part 1: Didactic Lecture & Overview**
Wednesday, September 14
8:00a.m.-12:00p.m.

**TCD Course Part 2: Hands On, 50 Cases**
Wednesday, September 14
1:00p.m.-5:00p.m.

**TCD Course Part 3: Hands On, 50 Cases**
Thursday, September 15
1:00p.m.-5:00p.m.

### Media Training Workshop

Room: National Harbor 4/5
Thursday, September 15th
8:00a.m.-11:00a.m.

The Media Training Workshop, chaired by Mark Bernheimer, will provide a solid education in crucial media concepts to help attendees become comfortable discussing complicated medical concepts with the media.

## Friday, September 16
**8:00 a.m. – 12:00 p.m.**

### Advanced Practice Providers

Room: Maryland 2/3

*Course Directors: Sarah Livesay, DNP, RN, ACNP-BC, APP and Susan Yeager, MS, RN, CCRN, ACNP, FNCS*

This workshop is geared toward any Advanced Practice Provider (Nurse Practitioner, Clinical Nurse Specialist, or Physician Assistant) who is interested in taking their practice to the next level. Working through challenging case studies calling on your differential diagnoses skills, MR imaging, drug selection, and discussions on how to demonstrate your worth, APPs will be stretched clinically and professionally. You will walk away from this mental workout with new knowledge and skills that can be directly applied to your clinical practice.

### Difficult Airway and Ventilation Management

Room: National Harbor 4/5

*Course Director: Avinash B. Kumar, MD, FCCM, FCCP*

Learn from the experts how to identify and approach a patient with a difficult airway. Case based reviews will cover techniques used to manage patients with difficult ventilation and when advanced ventilator modalities may be useful.

### Essential Skills for Running a Neuro ICU

Room: National Harbor 6/7

*Course Director: Kristine O'Phelan, MD*

This course covers the basic concepts needed to run a successful neuro ICU. These include budgets, staffing, preparing for surveys and certifications, collaboration and team building in a multidisciplinary environment, negotiation, conflict resolution and building excellence in your nursing team. Diverse models will be represented including private, academic, open, closed and international critical care units.

### Ultrasound and Echo in NeuroICU

Room: National Harbor 12 and 13

*Course Director: Aarti Sarwal, MD*

Critical care ultrasound is a required skill in the modern ICU. This workshop consists of high-yield didactics and faculty supervised hands-on scanning stations with live models covering the fundamentals of critical

care echocardiography, lung ultrasound, assessment of preload status and optic nerve sheath sonography for the detection of raised intracranial pressure. Case reviews with clinical application of use on ultrasound in Neurocritical care patients will be done with review of a range of pathology.

## Saturday, September 17
**8:00 a.m. – 12:00 p.m.**

### Advanced ICU Hemodynamics
Room: National Harbor 4/5
*Course Director: Christopher Junker, MD*
This workshop will focus on the use of hemodynamic therapy to provide optimal outcomes in TBI, SAH/vasospasm, and those with acute lung injury/ARDS. The workshop will also cover hemodynamic therapy of the brain dead organ donor which has been shown to significantly increase organ yield in these physiologically complex patients. The emphasis will be on pulse contour analysis technology and an overview of basic ECHO techniques that are essential for practicing neurointensivists. Our workshop will include description and use of "the physiologic optimization program" through real case interactive simulation sessions to emphasize the course content.

### Bronchoscopy and Percutaneous Tracheostomy
Room: National Harbor 12/13
*Course Director: Krishna Rajajee, MD*
Whether you want to begin performing these key airway procedures or just refresh your skills, this workshop is for you! This is a hands-on workshop that covers critical care bronchoscopy and bedside percutaneous tracheostomy. Didactic sessions cover indications, technique, pitfalls, complications and credentialing issues. Participants then get to perform bronchoscopy as well as percutaneous tracheostomy at instructor led skill stations. Perform a complete percutaneous tracheostomy and learn the basics of bronchoscopy technique as well as bronchial anatomy. Get started on two key ICU procedures, or just practice your skills!

### EEG 101
Room: National Harbor 6/7
*Course Director: Emily Gilmore, MD*
This workshop will enhance the participant's practical utilization of continuous EEG in the ICU. We will teach you the fundamentals through both didactics and hands on experience. In the didactics, we will cover a broad range of topics spanning the basics of acquisition and montage selection, the ACNS Critical Care EEG Terminology as well as the role of quantitative EEG in seizure and ischemic detection. During the second half of the workshop, you will rotate in small groups though interactive workstations with the experts where you get hands-on experience reviewing case studies on various EEG systems.

### Prognostication, Communication, and Shared Decision Making: Palliative Care in the NeuroICU
Room: Maryland 2/3
*Course Director: David Y. Hwang, MD*
This workshop will consist of both didactic and interactive sessions focused on incorporating principles of palliative care and shared decision making (SDM) into Neuro ICU care. Sessions will address the proper timing and triggers for palliative care consultation, common pitfalls when formulating and discussing prognosis for Neuro ICU patients, and the evolution of use of formal decision aids to facilitate SDM in practice. An interactive session will allow participants the opportunity to learn and practice effective communication strategies for difficult situations with patient's families.

## Sunday, September 18
**8:00 a.m. – 12:00 p.m.**

### EEG 201
Room: Maryland 2/3
*Course Director: Brad Kolls, MD, PhD, MMCi*
This advanced ICU EEG course (intended for individuals with at least a functional knowledge of EEG rhythms and techniques) will use case-based examples to illustrate clinical applications and qEEG applications of ICU EEG monitoring. Topics will include Quantitative EEG methods (QEEG), detection of seizures and ischemia, evaluation of coma and cardiac arrest patients, use of advanced multimodal monitoring methods, new ICU EEG terminology, and management of complex ICU cases including refractory status epilepticus. The workshop is sponsored by many of the EEG equipment vendors and there will be time and opportunity to discuss the equipment and practice of ICU EEG with the vendors and expert presenters.

### Essentials of Neurocritical Care
Room: National Harbor 6/7
*Course Directors: Cherylee Chang, MD, FNCS and Tom Bleck, MD, MCCM, FNCS*
This course covers basic neuroanatamony and neuroimaging, EEG essentials, management of common ICU interventions on cerebral blood flow, neuromuscular emergencies in the ICU, rating scales, anticonvulsant drugs, adverse neurologic effects of common ICU drugs, and osmolar disturbances. What a great opportunity to brush up on the basics, whether you're a physician, nurse, mid-level provider, or any other type of care provider.

### Intracranial Monitoring
Room: National Harbor 13
*Course Directors: Benjamin Emanuel, DO and Joshua Medow, MD, MS, FAANS, FACS, FNCS*
This is a hands-on workshop in which you will learn and practice basic techniques for the insertion, management, troubleshooting, data interpretation, and removal of intracranial monitoring devices! This workshop includes ventricular catheterization, ICP, brain tissue oxygen, cerebral blood flow monitoring, and cerebral microdialysis technologies.

### Neurocritical Care Pharmacotherapy
Room: National Harbor 4/5
*Course Director: Eljim Tesoro, PharmD, BCPS*
This course will cover the hottest topics in Neurocritical care pharmacotherapy! Experts will discuss therapeutic controversies, challenging patient populations, and innovative practice in a case-based learning environment. This year's topics will include pharmacokinetic dosing strategies in TTM and CRRT, ICU considerations in Parkinson's Disease and pregnancy, drug interactions to avoid in the neuro ICU, an update on neurostimulant use, and recommendations for laboratory monitoring of target-specific oral anticoagulants. Attendees are encouraged to bring their own cases/examples to the course for discussion.

### Professionalism and Leadership
Room: National Harbor 12
*Course Director: Lori Shutter, MD, FNCS, FCCM*
This course covers essential skills for a successful career. These include how to identify your leadership style, interview for a job, negotiate a contract, seek out career development, develop team building skills, deal with conflict, work with senior leadership, and manage your own wellness and work/life balance.

## SPECIAL SESSION
**Sunday, September 18**
**1:15 p.m. - 5:00 p.m.**

Annual Meeting registration is not required to register for this session.

### ENLS CERTIFICATION AND RECERTIFICATION
Room: Maryland C
*Co-Directors: Wade Smith, MD, PhD and Chad Miller, MD, FNCS*
ENLS Certification and Recertification
Emergency Neurological Life Support (ENLS) is a comprehensive educational program designed to help healthcare professionals improve patient care and outcomes during the critical first hours of a patient's neurological emergency. ENLS demonstrates a collaborative, multi-disciplinary approach and provides a consistent set of protocols, practical checklists, decision points, and suggested communication to use during critical patient management of 14 neurological conditions. Access to online resources of written chapters on each subject, as well as algorithms pertinent to the management of the patient, supplement the presentations and are available to each learner after registering for the ENLS course. To become ENLS certified, the learner is required to successfully complete a 10 question exam on each subject. Participants are awarded two-year ENLS certification as well as additional continuing education credit after successful completion of the online ENLS course. Recertification can be achieved through completion of this course as well. (Separate online course enrollment applies.)

## Special Interest Breakfast Corners
## Sunday, September 18th * 7:00am – 8:00am

Co-Chairs: Gretchen Brophy, PharmD and Jose Suarez, MD

Grab your breakfast from the Maryland Ballroom Foyer and then join your fellow industry professionals to discuss special interests in your field. Below is a list of the special interest areas represented, along with the names of the facilitators and location of the meetings.

| Special Interest | Facilitator(s) | Location |
|---|---|---|
| **Advanced Practice Providers** | Susan Yeager, MS, RN, CCRN, ACNP, FNCS<br>Jessica White, PA | Maryland C |
| **Fellowship Directors** | David McDonagh, MD<br>Matthew Maas | Camellia 2 |
| **Pharmacists** | Amber Castle, PharmD<br>Eljim Tesoro, PharmD | National Harbor 10 |
| **Global Members** | Masao Nagayama, MD<br>Gisele Sampaio, MD | Camellia 3 |
| **ICU Directors** | Lori Shutter, MD<br>Venkatakrishna Rajajee, MD | Camellia 1 |
| **Non Neurologist Neurointensivists** | Fernando Goldenberg, MD<br>Jordan Bonomo, MD | Camellia 4 |
| **Nurses** | Dea Mahanes, RN<br>Rachel Malloy, RN | National Harbor 3 |
| **Pediatric Neurocritical Care** | Courtney Robertson, MD<br>Ericka Fink<br>Tell Bennett | National Harbor 9 |
| **Research Professionals** | Nerissa Ko, MD<br>Susanne Muehlschlegel, MD, MPH, FNCS, FCCM | Azealia 2 |
| **Resident and Fellow Networking And Career Advice** | Jennifer Kim, MD<br>Deepa Malaiyandi, MD | National Harbor 11 |

# Industry-Sponsored Symposia

## Thursday, September 15, 2016

**UCB**
**Lunch, 12pm-1pm**
**Maryland Ballroom C**

***Title:***
Myth Busters: Epilepsy Management in the Hospital

***Speakers:***
**Denise H. Rhoney, Pharm.D**
Ron and Nancy McFarlane Distinguished Professor and Chair
Division of Practice Advancement and Clinical Education
UNC Eshelman School of Pharmacy

**Panayiotis N. Varelas, MD, PhD**
Division Head, Neurosciences Critical Care Services
Director, Neuro-Intensive Care Unit, Henry Ford Hospital
Professor of Neurology, Wayne State University

## Friday, September 16, 2016

**NICO Corporation**
**Breakfast, 7am-8am**
**Maryland Ballroom C**

***Title:***
Growing Body of Evidence for Surgical Management of Spontaneous ICH

***Presenters:***
**Gustavo Pradilla, MD**
Chief of Neurosurgery
Grady Health System

**Jonathan J. Ratcliff, MD, MPH**
Emergency Neurosciences and Neuroscience Critical Care
Grady Health System

**ZOLL Medical Corporation**
**Lunch, 12pm-1pm**
**Maryland Ballroom A**

***Title:***
Practical Aspects of Therapeutic Temperature Management

***Presenter:***
**Kees H. Polderman, MD, PhD**
*Professor of Critical Care Medicine, Department of Critical Care Medicine*
*University of Pittsburgh Medical Center*

**NeurOptics**
**Lunch, 12pm-1pm**
**Maryland Ballroom C**

***Title:***
*Pupillometry in the Neurocritical Care Unit*

***Presenter:***
**Gregory Hawryluk, MD, PhD, FRCSC**
*Assistant Professor Director, Neurosurgical Critical Care*
*University of Utah Medical Center*

**Arbor Pharmaceuticals, LLC**
**Reception, 6:30pm-8:00pm**
**Maryland Ballroom A and C**

***Title:***
*Contemporary Medication Safety Issues in Neurocritical Care: It is Everyone's Responsibility*

***Presenters:***
**Ryan Hakimi, DO, MS**
*Director Neuro ICU, Director Inpatient Neurology, Clinical Associate Professor*
*University of South Carolina-Greenville*
*Greenville Health System*

**Michael Armahizer, PharmD, BCPS**
*Clinical Specialist, Neurocritical Care*
*University of Maryland Medical Center*

**Joseph B. Haymore, DNP**
*Senior Nurse Practitioner, NCCU*
*University of Maryland Medical Center*

***Moderator*:**
**A. Shaun Rowe, PharmD, BCPS, BCCCP, FNCS**
*Pharmacist Specialist, Neurocritical Care*
*University of Tennessee Medical Center*
*Associate Professor of Clinical Pharmacy*
*UTHSC*

## Saturday, September 17, 2016

**Pfizer-Bristol Myers Squibb**
**Breakfast, 7am-8am**
**Maryland Ballroom A**

***Title:***
*Reducing Stroke and Thromboembolic Risk in Patients with Nonvalvular Artial Fibrillation (NVAF) and Treating Venous Thromboembolism (VTE)*

***Presenter:***
**Dr. Mark Alberts**
*Vice Chair of Hospital Neurology*
*UT Southwestern Medical Center*

**BARD Medical**
**Breakfast, 7am-8am**
**Maryland Ballroom C**

***Title:***
*Fever Management and Hyperthermia*

***Presenter:***
*Dr. Stephan A. Mayer*
*Director, Neurocritical Care*
*Mount Sinai Health System*

**Sage Therapeutics**
**Lunch, 12pm-1pm**
**Maryland Ballroom C**

**Title:**
*Diagnosis and Management of Super Refractory Status Epilepticus*

***Presenters:***
*Gretchen M. Brophy, PharmD, BCPS, FCCP, FCCM, FNCS*
*Virginia Commonwealth University*

*Stephan A. Mayer, MD, FCCM*
*Director, Neurocritical Care*
*Mount Sinai Health System*

*Jan Claassen, MD, PhD, FNCS*
*Columbia University Medical Center*

**Portola Pharmaceuticals**
**Lunch, 12pm-1pm**
**Maryland Ballroom A**

**Title:**
*New Developments in the reversal of Factor Xa Inhibitors*

**Presenter:**
**Dr. Mark Alberts**
*Vice Chair of Hospital Neurology*
*UT Southwestern Medical Center*

## Thank You to Our Workshop Supporters

**Medtronic InnerSpace**

**Sonosite Sawbones Hemedex**

**Integra LifeSciences Nihon Kohden**

# SOCIAL EVENTS

The 5k Run and 1 Mile Walk will begin promptly at 6:30am at Potomac Terrace, located on the beautiful property of the Gaylord National Resort & Convention Center, on Friday, September 16th. A Master of Ceremonies will lead us in stretching exercises prior to the run/walk.

Please carefully review the information below for details.

**Race Bibs, T-Shirts & Waivers**
The Fun Run race bibs, pins for the bibs, and t-shirts will be available for pick-up during set registration hours at the Pre-Registration desk in the Maryland Ballroom Foyer at the Gaylord National Resort & Convention Center. Extra pins will be made available at the race site on Friday morning. Please note, all bibs must be picked up prior to 5:30pm on Thursday, September 15th. Please also be aware that when picking up your bib and t-shirt, you will be asked to sign a standard liability waiver. This waiver is required in order to participate in the Fun Run.

**On-site Registration**
If you arrive in National Harbor and have not yet registered for the race, you may still do so at the On-Site Registration Desk, also located in the Maryland Ballroom Foyer. Once payment is collected at the On-Site desk, bibs and t-shirts will be available for pick-up at the Pre-Registration desk. On-site registration must be completed by 5:30pm on Thursday, September 15th. Registration will not be available on race day.

Bottled water and bananas will be provided at the race site. Restroom facilities will be available in the Prince George Exhibit Hall area and in the Lower Atrium near Pienza restaurant. It is recommended to use the restroom prior to arrival in order to avoid lines.

**Run for Research Fundraiser**
New this year, a team fundraising competition has added another element of fun to the event! Teams were formed by institutions, friends, and colleagues to raise funds for Neurocritical care research, with the team with the highest funds raised receiving the honor of wearing a specially-designed “Top Fundraiser” t-shirt with their organization’s name proudly displayed on the back on race day.

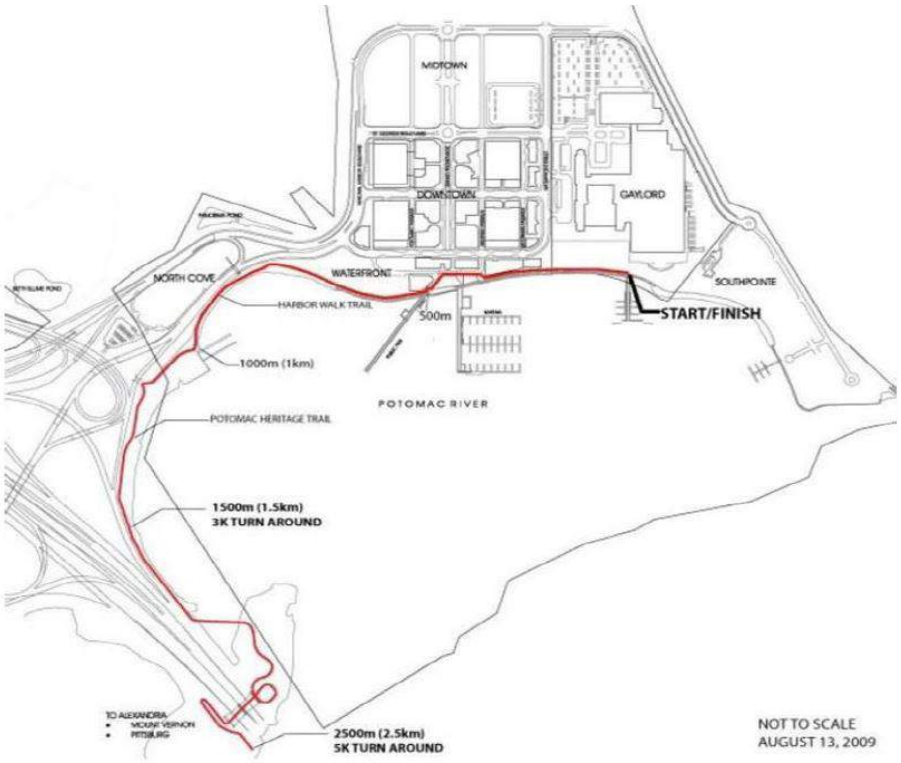
The competition for “Top Fundraiser” concluded on August 31st with The Ohio State University: Go Buckeyes! claiming the title of “Top Fundraiser”! However, individuals are encouraged to continue their fundraising efforts through October 15th, 2016. Visit www.crowdrise.com/NCSRunforResearch to make a tax deductible donation. An official announcement of total funds raised will be made in late October.

All proceeds of this fundraiser go directly to the NCS Research Fund intended to sponsor the NCS research fellowship, which will be given out for the second time this year.

Thank you again for your participation in this ongoing program. Please feel free to reach out to Katie Fernstaedt at meetings@neurocriticalcare.org, or to race Co-Directors Susanne Muehlschlegel or Corey Fehnel, with any questions you may have.

**Most importantly: have fun, be fair, and stay healthy!**

# 2016 Race Route



## ***2016 Annual Banquet***

## ***Saturday, September 17th, 6:30pm – 10:00pm***

Just outside the doors of the Gaylord National Resort and Convention Center are a sprawling lawn of lush green grass, a majestic fountain, and the sparkling Potomac River. With a venue like this, how could the Annual Banquet be held anywhere else?

Join us on the lawn of the Gaylord for a traditional clam bake! You'll be greeted by the sounds of the 80s, 90s, and today courtesy of live bands Bubba's Taxi and The Codes, sprinkled with laughter and friendly but competitive banter. Enjoy a beer while admiring the views of the river, or get involved in exciting and entertaining activities such as a bocce ball, bean bag toss, ladder ball, and life-sized Jenga!

**Dunk Tank**

One of the highlights of this year's Annual Banquet is sure to be the NCS Dunk Tank! Just a few dollars will buy you the chance to dunk some of your favorite NCS leaders, including Gretchen Brophy, Michel Torbey, Sarah Livesay, Jose Suarez, David Greer, Ed Manno, Romer Geocadin, and JoAnn Taie. Is there another member you'd like to see in the tank? Bring your checkbook, because you'll have the opportunity to nominate a fellow member for the hot seat!

**Attire**

Pack your favorite sundress, shorts and a polo shirt, or the harbor attire of your choice. Dress for this event will be casual, but please be sure to bring footwear appropriate for an evening on the lawn!

## ***After Party***

When you've played all the lawn games you can handle, head to Gaylord National Resort and Convention Center's own Pose Nightclub for the After Party. You'll take the elevators up to the 18th floor for an escape unlike any other. With the best sips, sounds and scenes in the harbor, this modern lounge is the greatest place to enjoy a few late-night refreshments.

Relax on luxurious couches as you listen to the top music mixes or step out for some fresh air on the wraparound terrace and enjoy the skylines of D.C. and Alexandria. With floor to ceiling windows, you'll get lost in the beauty of National Harbor, and NCS attendees with appropriate tickets will enjoy access to the VIP lounge for the evening.

## ***Farewell Reception***

## ***Sunday, September 18th, 6:30pm – 10:00pm***

Please join us Sunday evening in the Atrium at Gaylord National Resort and Convention Center for a farewell party starting at 5:00pm. This year we will be celebrating with a Hawaiian-themed reception in anticipation of the 2017 Annual Meeting taking place at the Hilton Waikoloa Village, Hawaii, the Big Island. The reception is casual, so feel free to bring your most festive luau attire to dress the part!

As an added bonus, reception attendees will be eligible for the chance to win one of three half-price registrations to the 2017 Annual Meeting! Prize is non-transferable. Must be present to win.

# POSTERS & ABSTRACT INFORMATION

## Oral Platform Presentations

Sessions I and III platform presentations will take place in Prince George Exhibit Hall A. Session II will be in Maryland Ballroom B/D.

| | | |
|---|---|---|
| Session I | Friday, September 16 | 4:30pm – 5:30 pm |
| Session II | Saturday, September 17 | 11:00am – 12:00 pm |
| Session III | Saturday, September 17 | 4:30pm – 5:30 pm |

## Poster Receptions

All posters will be available for viewing Friday and Saturday. **Even** poster numbers will have stand-by times on Friday, **odd** poster numbers on Saturday.

| | | |
|---|---|---|
| Reception I | Friday, September 16 | 5:30pm – 6:30 pm (even posters) |
| Reception II | Saturday, September 17 | 5:30pm – 6:30 pm (odd posters) |

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## Late Breaking and Just-in-time Additions

### Oral Presentations- Session III Saturday, September 17

1. Bethany Young- *Comparison of a Nurse-Driven Mobility Protocol to Therapy-Driven Mobility Protocol for Subarachnoid Hemorrhage Patients with External Ventricular Devices (EVDs) in the Neurointensive Care Unit*

2. Silvia Schönenberger- *Sedation and Airway During Endovascular Treatment of Acute Ischemic Stroke: Results from the Randomized Trial Siesta (Sedation vs Intubation for Endovascular Stroke Treatment)*

### Poster Presentations

1. Robert D'Eramo- Poster 267- *IV versus PO Acetaminophen Use and Associated Outcomes in Febrile Neurocritical Care Patients*

2. Molly McNett- Poster 268- *Clinical Utility of Pupillometers: Correlations with ICP, Neurological Changes, and Outcomes*

3. Chethan Venkatasubba Rao- Poster 269- *Novel Noninvasive detection of increased intracranial blood volume induced by head-down tilt using Volumetric Induction Phase-shift Spectroscopy (VIPS).*

## ORAL PLATFORM PRESENTATIONS

**Platform Presentation Session 1- Friday, September 16● 4:30 pm – 5:30 pm; Prince George Exhibit Hall A**

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**4:30-4:42PM Santosh Murthy**
Factors Associated with Permanent Cerebrospinal Fluid Shunting in Patients With Spontaneous Intraventricular Hemorrhage- Results from the Clot Lysis: Evaluating Accelerated Resolution of Intraventricular Hemorrhage (CLEAR) III trial

**4:42-4:54PM Kyle Hobbs**
MRI Characteristics of Early Seizures After Intracerebral Hemorrhage

**4:54-5:06PM Stuart Fraser**
Race is a Predictor of Withdrawal of Life Support from Patients with Intracerebral Hemorrhage

**5:06-5:18PM Wesley Baker**
Noninvasive Monitoring of Critical Closing Pressure with Near-infrared Light

**5:18-5:30PM Lynze Franko**
Subdural Hematoma Patient Characteristics Associated with Unexpected 30-Day Readmission

## TOP ORAL PLATFORM PRESENTATIONS

**Platform Presentation Session 2- Saturday, September 17 ● 11:00 am – 12:00 pm; Maryland BD**

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**11:00-11:12AM Ivan da Silva- Best Abstract Award Winner**
Zika Virus Associated Neurological Complications in Adults

**11:12-11:24AM Vahid Eslami- Cristanne Wijman Young Investigator Award Winner**
Influence of Intracerebral Hemorrhage Location in Patients with Spontaneous Intraventricular Hemorrhage-Results from the Clot Lysis: Evaluating Accelerated Resolution of Intraventricular Hemorrhage (CLEAR) III trial

**11:24-11:36AM Stephen Trevick**
Decision Making and Palliative Care in the Neurosciences Intensive Care Unit: Family Experiences and Outcomes

**11:36-11:48AM Michael Reznik**
Long-Term Risk of Seizures in Survivors of Sepsis

**11:48-12:00PM Ava Puccio**
Comparison of Progesterone Cerebrospinal and Serum Levels in Severe TBI Enrolled in SyNAPSE Trial

## ORAL PLATFORM PRESENTATIONS

**Platform Presentation Session 3- Saturday, September 17● 4:30 pm – 5:30 pm; Prince George Exhibit Hall A**

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**4:30-4:40PM Thomas Quinn**
"The wrong decision is the one you can't live with." - A mixed-methods study of surrogate decision-making in the Neuro-ICU

**4:40-4:50PM Stefan Wolf**
Does Early Lumbar Cerebrospinal Fluid Drainage Lead To A Better Outcome In Aneurysmal Subarachnoid Hemorrhage?

**4:50-5:00PM Daniel Hanggii**
Safety, Tolerability, Pharmacokinetics and Efficacy of Intraventricular Sustained Released Nimodipine (EG-1962) for Subarachnoid Hemorrhage

**5:00-5:10PM Pitchaiah Mandava**
Modeling Outcome after Intracerebral Hemorrhage Indicates No Benefit and Potential Harm from Aggressive Blood Pressure Management

**5:10-5:20PM Bethany Young- Late Breaking**
Comparison of a Nurse-Driven Mobility Protocol to Therapy-Driven Mobility Protocol for Subarachnoid Hemorrhage Patients with External Ventricular Devices (EVDs) in the Neurointensive Care Unit

**5:20-5:30PM Silvia Schönenberger**
Sedation and Airway During Endovascular Treatment of Acute Ischemic Stroke: Results from the Randomized Trial Siesta (Sedation Vs Intubation for Endovascular Stroke Treatment)

## Thank you to our 2016 Poster Professors

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Kevin Sheth
Marie Baldisseri
Marion Buckwalter
Gisele Silva
Daryl Gress
Jordan Bonomo
David Seder
Corey Fehnel
Claude Hemphill
Mona Kumar
Bart Nathan
Terrance Kummer
Venkatakrishna Rajajee
Samuel Tisherman
Soojin Park
Nerissa Ko
Paul Nyquist
Romer Geocadin
Neeraj Badjatia
Panayiotis Vareles
Keith Dombrowski
Mohit Datta
Tim Lassiter
Arash Afshinnik
Jose Suarez
Joshua Goldstein
Anise Ardelt
Asma Moheet
Sherry Chou
Navaz Karanjia
Matthew Maas
Michel Torbey
Susan Yeager
Susanne Muehlschlegel
Masao Nagayama
Matt Koenig
Lori Shutter
Katharina Busl
Javier Provencio
Joshua Medow
Dave Greer
Jan Claassen
Ines Koerner
James Szalados
Diana Greene-Chandos
Eric Liotta
Ed Manno
David Hwang
Julian Bosel
Lori Madden
Michael Diringer
Rajat Dhar
Mark Wainwright
Ryan Hakimi

**Walk Around with the Professor**

Join industry experts and "Walk Around with the Professor" during this year's poster sessions. Below is a list of the Professors and the schedule. The walk arounds are scheduled for the full 60 minutes. Please feel free to join in wherever it interests you. Please know that full abstracts can be found in the abstract supplement which is distributed onsite.

## Poster Session I ● Prince George Exhibit Hall A

Friday, September 16 ● 5:30 – 6:30 p.m.

| Professors | | Poster Numbers |
|---|---|---|
| Marion Buckwalter | Marie Baldisseri | 2-20 Evens Only |
| Nerissa Ko | James Szalados | 22-40 Evens Only |
| Keith Dombrowski | Mohit Datta | 42-60 Evens Only |
| Arash Afshinnik | Tim Lassiter | 62-80 Evens Only |
| Jose Suarez | Joshua Goldstein | 82-100 Evens Only |
| Gisele Silva | Daryl Gress | 104-122 Evens Only |
| David Seder | Jordan Bonomo | 124-142 Evens Only |
| Claude Hemphill | Corey Fehnel | 144-162 Evens Only |
| Bart Nathan | Monisha Kumar | 164-182 Evens Only |
| Venkatakrishna Rajajee | Terrance Kummer | 184-202 Evens Only |
| Soojin Park | Samuel Tisherman | 204-222 Evens Only |
| Romer Geocadin | Paul Nyquist | 224-244 Evens Only |
| Panayiotis Vareles | Neeraj Badjatia | 248-268 |

## Poster Session II ● Prince George Exhibit Hall A

Saturday, September 17 ● 5:30 – 6:30 p.m.

| Professors | | Poster Numbers |
|---|---|---|
| Anise Ardelt | Asma Moheet | 1-19 Odds only |
| Dave Greer | Jan Claassen | 21-39 Odds only |
| Julian Bosel | Lori Madden | 41-59 Odds only |
| Rajat Dhar | Michael Diringer | 61-79 Odds only |
| Mark Wainwright | Ryan Hakimi | 81-99 Odds only |
| Sherry Chou | Navaz Karanjia | 101-119 Odds only |
| Michel Torbey | Matthew Maas | 121-139 Odds only |
| Susan Yeager | Susanne Muehlschlegel | 141-159 Odds only |
| Masao Nagayama | Matt Koenig | 161-179 Odds only |
| Lori Shutter | Katharina Busl | 181-199 Odds only |
| Javier Provencio | Joshua Medow | 201-219 Odds only |
| Ines Koerner | James Szalados | 221-239 Odds only |
| Eric Liotta | Diana Greene-Chandos | 241-255 Odds only |
| David Hwang | Ed Manno | 257-269 Odds only |

# Top Posters Featured on Kiosk Near Registration (If submitted)

| Poster Number | Presentation Date | First Name | Last Name | Abstract Title |
|---|---|---|---|---|
| 1 | Saturday, 9/17/16 | Jeroen | Hermanides | Cerebral blood flow thresholds for supply dependent glucose utilisation in traumatic brain injury: A multi-tracer 15Oxygen and [18F]-fluorodeoxyglucose positron emission tomography study |
| 2 | Friday, 9/16/16 | Yasuhiko | Ajimi | Reliability and utility of a clip type electrode for recording an electroencephalogram non-invasively from scalp hair |
| 5 | Saturday, 9/17/16 | Neel | Singhal | Resilience to Reperfusion injury in Arctic Ground Squirrel Neural Stem Cells: Insights into novel pathways from a hibernating mammal |
| 10 | Friday, 9/16/16 | Rebecca | Hammond | Preclinical Pharmacology and Pharmacodynamic Interactions of SAGE-547: Relevance to Super Refractory Status Epilepticus (SRSE). |
| 11 | Saturday, 9/17/16 | Jennifer | Kim | Epileptiform Abnormalities and Delayed Cerebral Ischemia in Subarachnoid Hemorrhage |
| 12 | Friday, 9/16/16 | Prashanth | Krishnamohan | Spectral Analysis of Continuous EEG for Outcome Prediction in Post-Cardiac Arrest Coma |
| 19 | Saturday, 9/17/16 | Vijay | Krishnamoorthy | Incidence and Longitudinal Trajectory of Early Systolic Dysfunction After Traumatic Brain Injury |
| 20 | Friday, 9/16/16 | Sophie | Samuel | Detecting the Frequency and Severity of Paroxysmal Sympathetic Hyperactivity Symptoms in Acute Traumatic Brain Injury |
| 21 | Saturday, 9/17/16 | Halinder | Mangat | Hypertonic Saline Is Superior To Mannitol In The Combined Effects On Intracranial Pressure And Cerebral Perfusion Pressure In Patients With Severe Traumatic Brain Injury |
| 60 | Friday, 9/16/16 | Lauren | Peck | Comparison of the Efficacy of 4-Factor and 3-Factor Prothrombin Complex Concentrate for Reversing Warfarin in Patients with Intracranial Hemorrhages |
| 61 | Saturday, 9/17/16 | Mario | Kofler | Brain Temperature But Not Core Temperature Increases During Cortical Spreading Depolarizations In Patients With Spontaneous Intracerebral Hemorrhage |
| 62 | Friday, 9/16/16 | Chandan | Mehta | Anticoagulation reversal: Time is of the Essence |
| 86 | Friday, 9/16/16 | Yahia | Lodi | Primary Acute Stroke Thrombectomy within 3 Hours for Large Artery Occlusion (PAST3-LAO) - A Pilot Study |
| 87 | Saturday, 9/17/16 | Christopher | Melinosky | Early Prediction of Cerebral Herniation in Patients Presenting with Large Hemispheric Infarction |
| 124 | Friday, 9/16/16 | Karen | Lane | African American Enrollment in CLEAR III |
| 125 | Saturday, 9/17/16 | Edilberto | Amorim | Dynamic quantitative EEG signatures predict outcome in cardiac arrest |
| 126 | Friday, 9/16/16 | Haroon | Majoka | Impact of Secondary Brain Injury on Functional Outcome in ECMO-treated Adults after Potentially Reversible Cardio-respiratory Failure |
| 165 | Saturday, 9/17/16 | Stephen | Kanes | Hemodynamic properties of SAGE-547 in patients with super-refractory status epilepticus: results from a phase 1/2 clinical trial |
| 181 | Saturday, 9/17/16 | Daniel | Hanggii | Pharmacokinetics and Health Economics of Intraventricular Sustained Release Nimodipine (EG-1962) For Subarachnoid Hemorrhage |
| 182 | Friday, 9/16/16 | Robin | Bush | Total Radiation Exposure during Initial Hospitalization in Patients with Aneurysmal Subarachnoid Hemorrhage: A Retrospective Observational Study |
| 183 | Saturday, 9/17/16 | Sungho | Ahn | The Subarachnoid Hemorrhage Early Brain Injury Score (SEBIS) Predicts Outcome after SAH |
| 184 | Friday, 9/16/16 | Halinder | Mangat | Biphasic Cerebral Blood Flow Response In Cerebral Hypoperfusion After Aneurysmal Subarachnoid Hemorrhage |

# SUPPORTERS & EXHIBITS

*The Neurocritical Care Society gratefully acknowledges support from the following companies:*

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SAGE Therapeutics

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Portola Pharmaceuticals

Chiesi USA

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Arbor Pharmaceuticals LLC

NeurOptics

NICO Corporation

Pfizer-Bristol-Myers Squibb

UCB

ZOLL

**Silver Level**

Decisio

Genentech

Integra Foundation

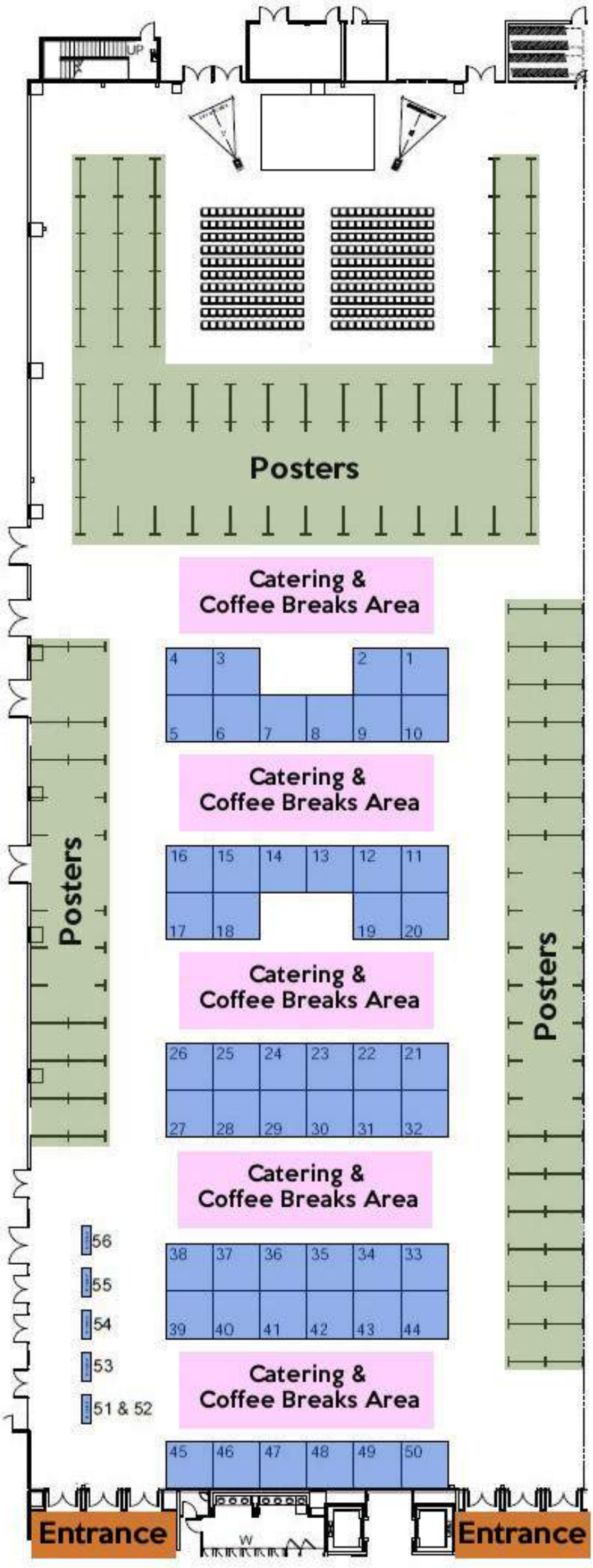
# Annual Meeting Exhibitors

*Premier Exhibitor Booths are located in the Maryland Ballroom Foyer September 16-17 from 7:00am-6:30pm.
Regular Exhibitor Booths in the Prince George Exhibit Hall A September 16-17 from 11:00am-6:30pm.
A Welcome Reception with Exhibitors will be held September 15 from 5:00pm-6:30pm.

| Exhibiting Company | Booth Number |
|---|---|
| Advance Cooling Therapy | 7 |
| Akorn | 25 |
| Ambu Inc. | 6 |
| American Association of Neuroscience Nurses (AANN) | 18 |
| American Board of Neuroscience Nursing (ABNN) | 17 |
| *Arbor Pharmaceuticals, LLC | 53 |
| BARD Medical | 33 |
| Cadwell Industries, Inc. | 21 |
| Chiesi USA | 34 & 35 |
| Cincinnati Sub-Zero | 24 |
| Codman Neuro | 47 |
| Corticare | 5 |
| CSL Behring | 27 |
| Cumberland Pharmaceuticals | 8 |
| Decisio Health | 48 |
| DWL USA Inc | 36 |
| Edge Therapeutics, Inc. | 39 |
| *Edwards Lifesciences | 56 |
| Genetech | 41 |
| Hemedex, Inc. | 28 |
| Integra LifeSciences | 40 |
| IntraDiagnostics | 22 |
| Janssen | 10 |
| M Dialysis, Inc. | 30 |
| Mallinckrodt Pharmaceuticals, Inc | 13 |
| Medtronic | 14 |
| Mizuho America Inc. | 19 |
| Moberg ICU Solutions | 29 |
| Möller Medical GmbH | 9 |
| Natus Neurology | 12 |
| NeurOptics | 49 & 50 |
| *NICO Corporation | 54 |
| Nihon Kohden | 26 |
| Niveus Medical | 37 |
| Ornim Inc. | 46 |

| | |
|---|---|
| Otsuka Pharmaceutical Development & Commercialization | 45 |
| Pfizer-Bristol Myers Squibb | 42 |
| *Portola Pharmaceuticals | 51 & 52 |
| RAUMEDIC, Inc. | 11 |
| Rhythmlink International, LLC | 23 |
| Rimed USA Inc | 38 |
| RosmanSearch Inc. | 20 |
| Sage Therapeutics | 43 & 44 |
| Synapse Biomedical | 16 |
| The American Society of Neuroimaging (ASN) | 15 |
| UCB | 31 & 32 |
| *Zoll Medical Corporation | 55 |

# 2016 NCS Annual Meeting Exhibitor Layout




**Exhibitor Booth Locations:**

5- Corticare
6- Ambu Inc.
7 - Advance Cooling Therapy
8 - Cumberland Pharmaceuticals
9 - Möller Medical GmbH
10 - Janssen
11 - RAUMEDIC, Inc.
12 - Natus Neurology
13 - Mallinckrodt Pharmaceuticals, Inc
14 - Medtronic
15 – The American Society of Neuroimaging (ASN)
16 - Synapse Biomedical
17 - American Board of Neuroscience Nursing (ABNN)
18 - American Association of Neuroscience Nurses (AANN)
19 - Mizuho America Inc.
20 - RosmanSearch Inc.
21 - Cadwell Industries, Inc.
22 - IntraDiagnostics
23 - Rhythmlink International, LLC
24 - Cincinnati Sub-Zero
25 - Akorn
26 - Nihon Kohden
27 - CSL Behring
28 - Hemedex, Inc.
29 - Moberg ICU Solutions
30 - M Dialysis, Inc.
31 & 32 UCB
33 - BARD Medical
34 & 35 - Chiesi USA
36 - DWL USA Inc
37 - Niveus Medical
38 - Rimed USA Inc
39 - Edge Therapeutics, Inc.
40 - Integra LifeSciences
41 - Genetech
42 - Pfizer
43 & 44 - Sage Therapeutics
45 - Otsuka Pharmaceutical Development & Commercialization
46 - Ornim Inc.
47 - Codman Neuro
48 - Decisio Health
49 & 50 - NeurOptics
51 & 52 – Portola Pharmaceuticals
53 - Arbor Pharmaceuticals, LLC
54 - NICO Corporation
55 - Zoll Medical Corporation
56 - Edwards Lifesciences

## Exhibitor Hours:

**Thursday, September 15:**

**8:00am – 2:00pm**
Exhibitor Build Time

**5:00pm – 6:30pm**
Welcome Reception
Kick-off with Exhibitors

**Friday, September 16:**

**11:00am – 6:30pm**
Exhibit Hall Open

**Noon – 1:15pm**
A la Carte Cash Lunch in Hall

**3:00pm – 3:45pm**
Coffee & Dessert with Exhibitors

**5:30pm – 630pm**
Reception in Exhibit Hall

**Saturday, September 17:**

**11:00am – 6:30pm**
Exhibit Hall Open

**Noon – 1:15pm**
A la Carte Cash Lunch in Hall

**3:00pm – 3:45pm**
Coffee & Dessert with Exhibitors

**5:30pm – 630pm**
Reception in Exhibit Hall

**6:30pm**
Exhibit Tear Down

Join this year's exhibitors in the *Maryland Ballroom Foyer and Prince George Exhibit Hall A.
Thursday, September 15th from 5:00pm-6:30pm during the Welcome Reception
Friday, September 16th from 11:00am-6:30pm *(coffee service 3:00pm)*
Saturday, September 17th from 11:00am-6:30pm *(coffee service 3:00pm)*

**The Neurocritical Care Society thanks the following sponsors for their support!**

## Advanced Cooling Therapy — Booth 7

3440 S. Dearborn Street, 215-South
Chicago, IL 60616
Phone: (888) 534-4873
info@advancedcoolingtherapy.com
www.advancedcoolingtherapy.com

Advanced Cooling Therapy develops innovative temperature management products. The ECD is a single use, fully enclosed triple lumen system that is inserted into the esophagus as quickly as an orogastric tube to warm or cool patients. Patient temperature is regulated by the chiller machine's Foley or rectal temperature probe.

## Akorn, Inc. — Booth 25

1925 West Field Court, Suite 300
Lake Forest, IL 60045
Phone: (800) 932-5676
www.akorn.com

Akorn Inc. is a specialty generics leader with a comprehensive line of hard-to-source generic pharmaceuticals for use in acute care, dermatology, ophthalmology, respiratory, and other specialty settings. In addition to its specialty generics, Akorn offers a niche portfolio of branded products focused on the acute care and ophthalmology settings.

## Ambu, Inc. — Booth 6

6230 Old Dobbin Lane, Suite 250
Columbia, MD 21045
Phone: (800) 262-8462
www.ambuUSA.com

Since 1937, breakthrough ideas have fueled Ambu's work bringing efficient healthcare solutions to life. This is what we create within our fields of excellence – Anesthesia, Patient Monitoring & Diagnostics, and Emergency Care. Millions of patients and healthcare professionals worldwide depend on the functionality and performance of Ambu products.

## American Association of Neuroscience Nurses (AANN) — Booth 18

8735 West Higgins, Suite 300
Chicago, IL 60631
Phone: (888) 557-2266
info@aann.org
www.aann.org

The American Association of Neuroscience Nurses is committed to working for the highest standard of care for neuroscience patients by advancing the science and practice of neuroscience nursing. AANN is the leading authority in neuroscience nursing.

## American Board of Neuroscience Nursing (ABNN) Booth 17

8735 West Higgins, Suite 300
Chicago, IL 60631
Phone: (888) 557-2266
info@ abnncertification.org
www.abnncertification.org

The American Board of Neuroscience Nursing (ABNN) is the independent, not-for-profit corporation established to design, implement, and evaluate a certification program for professional nurses. The CNRN and SCRN certification and recertification programs are overseen by ABNN.

## *Arbor Pharmaceuticals, LLC Booth 53

6 Concourse Parkway, Suite 1800
Atlanta, GA 30328
Phone: (866) 516-4950
info@arborpharma.com
www.arborpharma.com

Arbor Pharmaceuticals is a specialty pharmaceutical company headquartered in Atlanta, GA. The portfolio of products marketed in the U.S. by Arbor includes Nymalize® (nimodipine) Oral Solution. Nymalize® is the first and only FDA-approved nimodipine oral solution.

## BARD Medical Booth 33

8195 Industrial Boulevard
Covington, GA 30014
Phone: (770) 784-6100
www.bardmedical.com

The ARCTIC SUN® Temperature Management System provides noninvasive core targeted temperature management with precision. The system translates sophisticated science into a few simple steps, managing the therapy so you can manage the patient. Advanced cooling without cutting.

## Cadwell Industries, Inc. Booth 21

909 North Kellogg Street
Kennewick, WA 99336
Phone: (509) 735-6481
info@cadwell.com
www.cadwell.com

Established. Focused. Global. At Cadwell®, we are passionate about enabling quality, informed outcomes for your patient care by delivering efficient, quality neurodiagnostic and neuromonitoring solutions. We take pride in combining customer input with our employees' expertise and USA-made components to provide the best solutions in the industry.

## Chiesi USA — Booths 34 and 35

1255 Crescent Green Drive, Suite 250
Cary, NC 27518
Phone: (888) 466-6505
julianne.sutton@chiesiusa.com
www.chiesiusa.com

Chiesi USA, Inc., headquartered in Cary, NC, is a specialty pharmaceutical company focused on commercializing products for the hospital and adjacent specialty markets. Chiesi USA, Inc. is a wholly-owned subsidiary of Chiesi Farmaceutici S.p.A. For more information, please visit www.chiesiusa.com or call our customer service department at (888) 466-6505.

## Cincinnati Sub-Zero — Booth 24

12011 Mosteller Road
Cincinnati, OH, 45241
Phone: (513) 772-8810
adoviak@cszinc.com
www.cszmedical.com

Cincinnati Sub-Zero has been delivering patient temperature management systems to healthcare professionals since 1963; we design with the patient in mind. Our complete line of products include therapeutic heating and cooling therapy units along with a complete line of warming and cooling blankets for body temperature regulation and hyper-hypothermia treatment.

## Codman Neuro — Booth 47

325 Paramount Drive
Raynham, MA, 02767
Phone: (508) 828-3440
JSaltis@its.jnj.com
www.depuysynthes.com/about/codman-neuro

Codman Neuro is a global neurosurgery and neurovascular company that offers a broad portfolio of devices for hydrocephalus management, neuro intensive care and cranial surgery, as well as aneurysm coils, vascular reconstruction devices and other technologies used in the endovascular treatment of cerebral aneurysms and stroke.

## Corticare — Booth 5

2237 Faraday Avenue, Suite 120
Carlsbad, CA 92011
Phone: (888) 482-2334
tinnes@corticare.com
http://www.corticare.com

CortiCare provides continuous EEG Services for Neurocritical Care patients using a robust, remote infrastructure of monitoring personnel and reading neurophysiologists. We are the only nationwide network of on-call registered technologists (R.EEG.T and CLTM) and neurophysiologists that are available 24/7 and 365 days a year. Our clinical team provides immediate notification of patient events so physicians can interpret neurocritical care data in real-time.

## CSL Behring — Booth 27

1020 First Avenue
King of Prussia, PA 19406
Phone: (610) 878-4000
www.cslbehring.com

CSL Behring is a leading global biotherapeutics company with a broad range of innovative plasma-derived and recombinant therapies. For over a century, we have been driven by our promise to save lives. Today, our therapies include those to treat coagulation disorders, primary immune deficiencies, and hereditary angioedema among others.

## Cumberland Pharmaceuticals — Booth 8

2525 West End Avenue
Nashville, TN 37203
Phone: (615) 225-0068
apopham@cumberlandpharma.com
www.cumberlandpharma.com

Cumberland Pharmaceuticals is a specialty pharmaceutical company whose mission is to acquire currently marketed and late-stage development pharmaceutical products and grow them through marketing to targeted, underserved physician segments. Cumberland is dedicated to providing high quality products which address unmet medical needs. For more information, please visit www.cumberlandpharma.com.

## Decisio Health — Booth 48

8 Greenway Plaza, Suite 800
Houston, TX 77046
Phone: (703) 216-7815
aswick@decisiohealth.com
www.decisiohealth.com

Decisio Health's Clinical Intelligence Platform is a revolutionary product designed for the clinical care team. The FDA cleared platform provides unprecedented clinical decision support for clinical care teams, right where they need that support: at the bedside. And its Clinical Care Modules help reduce variability of care in hospitals.

*Stop by Decisio's booth and sign-up for their 30 minute product demo on Saturday, September 17 from 12pm-12:30pm!*
*The first 25 to sign-up receive a free lunch!*

## DWL USA Inc. — Booth 36

30320 Rancho Viejo Road, Suite 105
San Juan Capistrano, CA 92675
Phone: (888) 757-5351
sales@dwl.us
www.dwl.us

Currently more than 8000 DWL transcranial Doppler Systems are installed in more than 120 countries. They perform Neurosonology reliably every single day of the week for many different specialists. If you have a need for TCD stop by and see all we have to offer at DWL USA, Inc.

## Edge Therapeutics, Inc. Booth 39

200 Connell Drive, Suite 1600
Berkeley Heights, NJ 07922
Phone: (800) 208-3343
info@edgetherapeutics.com
www.edgetherapeutics.com

Edge Therapeutics is a clinical stage biotechnology company. EG-1962, our lead product candidate, is being studied to potentially improve outcomes after aneurysmal subarachnoid hemorrhage. Edge's second candidate, EG-1964, is being developed to prevent recurrence of chronic subdural hematoma. Both products utilize Edge's PrecisaTM technology enabling site specific, sustained drug exposure.

## *Edwards Lifesciences Booth 56

One Edwards Way
Irvine, CA 92614
Phone: (952) 567-3453
Tina_Abdelnour@edwards.com
www.edwards.com

Experience the clarity to make proactive clinical decisions earlier to help improve patient care. Edwards provides a choice of advanced hemodynamic monitoring solutions, including the ClearSight, FloTrac, PreSep and Swan-Ganz systems to meet your clinical and patient needs, including sepsis and blood conservation. To lean more, visit booth # 56!

## Genentech Booth 41

1 DNA Way
South San Francisco, CA 94080
Phone: (650) 225-1000
www.gene.com

Genentech is a leading biotechnology company that discovers, develops, manufactures and commercializes medicines to treat patients with serious or life-threatening medical conditions. We are among the world's leading biotech companies, with multiple products on the market and a promising development pipeline.

## Hemedex Inc. Booth 28

222 Third Street, Suite 0123
Cambridge, MA 02142
Phone: (617) 577-1759
salesteam@hemedex.com
www.hemedex.com

Hemedex's technology provides early warning of tissue ischemia, helps target therapy, monitors real-time response to intervention, and provides prognostic information. Hemedex provides a complete solution for continuous, real-time measurement of cerebral perfusion in absolute units by offering the Bowman Perfusion Monitor, perfusion probe, titanium bolts and cranial drill bits.

## Integra LifeSciences — Booth 40

311 Enterprise Drive
Plainsboro, NJ 08536
Phone: (609) 275-0500
custsvcnj@integralife.com
www.integralife.com

Integra LifeSciences, a world leader in medical devices, is dedicated to limiting uncertainty for surgeons, so they can concentrate on providing the best patient care. Integra offers a vast portfolio of implants, devices, instruments and systems used in neurosurgery and neuro critical care.

## IntraDiagnostics, Inc. — Booth 22

13 South Tejon Street, Suite 501
Colorado Springs, CO 80903
Phone: (866) 226-8576
info@intradiagnostics.com
www.intradiagnostics.com

IntraDiagnostics (IDI) provides eyes on, real-time continuous EEG (cEEG) monitoring 24/7/365. cEEG reduces patient mortality and shortens ICU lengths of stay. Our organization provides customizable cEEG care with highly qualified registered EEG technologists and board certified epileptologists. Innovate with IDI to improve your patient outcomes through continuous brainwave monitoring.

## Janssen Pharmaceuticals — Booth 10

1000 US Highway 202
Raritan, NJ 08869
Phone: (650) 316-8811
www.janssen.com

## M Dialysis, Inc. — Booth 30

73 Princeton Street, Suite 302
North Chelmsford, MA 01863
Phone: (978) 251-1940
usa@mdialysis.com
www.mdialysis.com

M Dialysis, Inc. develops and markets clinical microdialysis solutions for advanced clinical research and general intensive care usage. Our microdialysis solutions monitor tissue chemistry and diagnosis based on changes in the local metabolism, offering windows of opportunity that may lead to improved quality of life.

## Mallinckrodt Pharmaceuticals, Inc. — Booth 13

675 McDonnell Blvd.
St. Louis, MO 63042
Phone: (314) 654-2000
http://www.mallinckrodt.com/

Mallinckrodt Pharmaceuticals is an industry leader in providing specialty biopharmaceutical products used in the treatment of autoimmune and rare disease specialty areas, respiratory therapies, pain and related conditions, and diagnostic procedures. The company's three segments include branded medicines and devices, generic drugs and medical imaging. Visit www.mallinckrodt.com to learn more.

## Medtronic — Booth 14

9775 Toledo Way
Irvine, CA 92618
Phone: (949) 837-3700
www.medtronic.com

As a global leader in medical technology, services and solutions, Medtronic improves the lives and health of millions of people each year. We use our deep clinical, therapeutic, and economic expertise to address the complex challenges faced by healthcare systems today. Let's take healthcare Further, Together. Learn more at Medtronic.com.

## Mizuho America, Inc. — Booth 19

30057 Ahern Avenue
Union City, CA 94587
Phone: (510) 324-4500
mizuho@mizuho.com
www.mizuho.com

Mizuho America, Inc. is a cerebrovascular focused instrumentation company whose main products include Sugita T2 Aneurysm Clips, 7201B Operating Table, Cranial Stabilization Systems, Micro lnstruments, Kelly Endonasal Set, Lawton Neurovascular Bypass Set, Evans Rotatable Set, Day---Bailes Suction Tubes, NSK Surgical Drill System, ICP---Monitoring System, and lntracranial & Vascular Dopplers. Mizuho. Confidence.

## Moberg ICU Solutions — Booth 29

224 South Maple Way
Amblee, PA 19002
Phone: (215) 283-0860
sales@moberg.com
www.moberg.com

The Moberg Component Neuromonitoring System (CNS) integrates physiological and medical information to support decision-making that transforms neurocritical care. Using time-synchronized multimodal monitoring to collect, display and store data from multiple sources, including Moberg cEEG, our system shows the dynamic functioning of the brain enabling precise, individualized care of brain-injured patients.

## Möller Medical GmbH — Booth 9

Wasserkuppenstraße 29
Fulda, Germany 36043
Phone: +49 661 941950
info@moeller-medical.com
www.moeller-medical.com/en.html

Moeller Medical Devices USA, distributes LiquoGuard® 7, the only CSF Management tool worldwide that simultaneously measures pressure and drains CSF. Controlled-flow drainage in ventricular and lumbar procedures enhances patient safety by preventing life-threatening over-drainage and under-drainage of CSF, a common and difficult-to-control problem inherent with other CSF drainage systems.

## Natus Neurology — Booth 12

3150 Pleasant View Road
Middleton, WI 53562
Phone: (800) 356-0007
www.natus.com
neurology.marketing@natus.com

Natus Neurology is a leading provider of instrumentation for diagnosis and monitoring of neurological conditions: epilepsy, sleep disorders, cerebral vascular disorders and stroke, neuropathies, neuromuscular diseases, myopathies; neurosurgical procedures; neurophysiologic research; and offers a complete line of supplies and accessories for use in settings from private practice to hospital.

## NeurOptics — Booths 49 and 50

18101 Von Karman Avenue, Suite 1940
Irvine, CA 92612
www.neuroptics.com

NeurOptics®– Pupillometry: Accurate…Trendable…EMR-Ready

NeurOptics NPi®-200 Pupillometer System provides trendable, accurate and objective measurement of pupil size and reactivity in the neurocritical care patient. The NPi-200 is EMR-ready, saving valuable nursing time, eliminating potential charting errors and providing an important clinical assessment tool to remove subjectivity from the pupillary evaluation.

## *NICO Corporation — Booth 54

250 E. 96th Street, Suite 125
Indianapolis, IN 46420
Phone: (317) 660-7118
hollyn.crubaugh@niconeuro.com
www.niconeuro.com

NICO Corporation is dedicated to developing technology for the field of corridor surgery, including Cranial, ENT, Spinal and Otolaryngology where access to the surgical site is limited. Our technology and products are designed to progress corridor surgery by creating instruments that allow for access through smaller openings and resection of soft tissue abnormalities.

## NIHON KOHDEN — Booth 26

15353 Barranca Parkway
Irvine, CA 92618
Phone: (949) 580-1555
dan_mills@nkusa.com
www.nihonkohden.com

Nihon Kohden is dedicated to providing a comprehensive multimodality solution integrating vital sign data with EEG monitoring and quantitative trends to enhance the neurological assessment and care of critically ill patients. Please visit our booth to learn more about our cEEG monitoring products that provide you maximum flexibility without compromise.

## Niveus Medical — Booth 37

3698 Haven Avenue, Suite C
Redwood City, CA 94063
Phone: (650) 365-3983
www.ati-spg.com

Niveus Medical a leading innovator in inpatient rehabilitation, develops solutions with the goal of improving patient care and reducing hospital costs. The Muscle Stimulation System 110, is a simple intervention that can be deployed daily to prevent or reduce the onset of muscle atrophy that develops during periods of patient bedrest.

## Ornim — Booth 46

125 Washington Street, Suite 7
Foxboro, MA 02035
Phone: (855) 328-7841
moran@ornim.com
www.ornim.com

Ornim is a bio-medical high-technology company, specializing in clinical research, development, and distribution of the highest quality medical devices in the field of tissue and cerebral blood flow and perfusion monitoring. Its leading product, the c-FLOW™, is a bedside patient monitor based on the patented UTLight™ technology that provides physicians with unique monitoring solutions, revolutionizing individualized and personalized patient care.

## Otsuka Pharmaceutical Development & Commercialization — Booth 45

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Princeton, NJ 08540
www.otsuka-us.com

OPDC is a leader in discovering and creating new compounds that advance human health from discovery through each product's life cycle. OPDC has numerous compounds in development to treat disorders in the neuroscience, oncology, and cardio-renal therapeutic areas and global strategies that ultimately will lead to the registration and marketing of these products.

## Pfizer-Bristol Myers Squibb — Booths 42

235 East 42nd Street
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Phone: (212) 733-2323
www.pfizer.com

Pfizer and Bristol-Myers Squibb are partners in a worldwide collaboration. This global alliance combines both Bristol-Myers Squibb's and Pfizer's long-standing strengths in drug development and commercialization.

## *Portola Pharmaceuticals, LLC — Booths 51 and 52

270 E. Grand Avenue
South San Francisco, CA 94080
Phone: (650) 246-7000
info@portola.com
www.portola.com

Portola Pharmaceuticals, Inc. is headquartered in San Francisco, California. Our goal is to build an enduring biopharmaceutical company with compounds from our own research efforts that represent significant advances in the fields of thrombosis and other hematologic diseases. We are advancing our candidates [Betrixaban, Andexanet alfa, Cerdulatinib] using novel biomarker and genetic approaches.

## RAUMEDIC, Inc. — Booth 11

235 Broadpointe Drive
Mills River, NC 28759
Phone: (888) 647-0070
carma.connely@raumedic.com
www.raumedic.com

RAUMEDIC supplies precision neuromonitoring products for rapid, safe and accurate ICP, temperature and oxygen partial pressure measurements. NEUROVENT-PTO integrates ICP, temperature and oxygen partial pressure into 1 catheter, with no catheter calibration or refrigeration necessary. NEUROVENT ventricular ICP catheters can simultaneously drain CSF and monitor ICP and temperature.

## Rhythmlink International, LLC — Booth 23

P.O. Box 2045
Columbia, SC 29202
Phone: (866) 633-3754
sales@rhythmlink.com
www.rhythmlink.com

Rhythmlink International is a medical device manufacturing company specializing in devices that help connect patients to machines to record or elicit physiologic information. Rhythmlink offers an array of monitoring devices including the first FDA cleared disposable MR Conditional EEG products on the market.

## Rimed USA Inc. — Booth 38

347 Fifth Ave.
New York, NY 10016
Phone: (646) 205-2186
usa@rimed.com
www.rimed.com

Rimed has been leading the Transcranial Doppler (TCD) system market for over 30 years. TCD is an invaluable examination, allows real-time monitoring of cerebral blood flow velocity changes. Our products help clinicians improve patient care in over 100 countries, with over 5,000 installations in Neurocritical Care, Stroke, Neurology, Neurosurgery and more.

## RosmanSearch, Inc. Booth 20

30799 Pinetree Road, Suite 250
Pepper Pike, OH 44124
Phone: (216) 906-8188
bdery@rosmansearch.com
www.rosmansearch.com

RosmanSearch, Inc. is a targeted physician recruitment firm that serves the needs of the neurosurgical and neurological communities. Our mission is to place quality physicians with quality practices, academic departments and hospitals nationwide. We are the only search firm in the country with teams specializing solely in neurosurgery and neurology.

## Sage Therapeutics Booth 43 & 44

215 First Street, Suite 220
Cambridge, MA 02142
Phone: (617) 299-8380
ryan.arnold@sagerx.com
www.sagerx.com

Sage Therapeutics is committed to discovering and developing life-changing therapies to treat central nervous system (CNS) disorders, and we are dedicated in our pursuit to deliver new medicines with the goal of making life better for patients and their families.

## Synapse Biomedical Booth 16

300 Artino Street
Oberlin, OH 44074
Phone: (440) 774-2488
sbrisbin@synapsebiomedical.com
www.synapsebiomedical.com

Synapse Biomedical Inc., markets the NeuRx Diaphragm Pacing System® a surgically implanted neurostimulator. The system is FDA approved for treating ventilator dependency from high spinal cord injury and chronic hypoventilation from ALS (Lou Gehrig's disease). The system is CE marked for treating respiratory insufficiency outside the US.

## The American Society of Neuroimaging (ASN) Booth 15

5841 Cedar Lake Road, Suite 204
Minneapolis, MN 55416
Phone: (952) 545-6291
asn@llmsi.com
www.asnweb.org

The American Society of Neuroimaging (ASN) is an international, professional organization representing neurologists, neurosurgeons, neuroradiologists and other neuroscientists who are dedicated to the advancement of techniques used to evaluate the nervous system. The ASN supports clinical and basic science research by neuroimagers through educational programs, an annual meeting and a scientific journal.

## UCB — Booths 31 & 32

1950 Lake Park Drive SE
Smyrna, GA 30030
Phone: (844) 599-2273
ucbcares@ucb.com
www.ucb-usa.com

At UCB, we have a passionate, long-term commitment to discovering and developing innovative medicines that transform the lives of people living with severe immunological diseases and central nervous system disorders. With 8,500 employees in 40 countries, we invest approximately 28% of revenue in cutting-edge scientific research to meet unmet patient needs. For more information, visit www.ucb-usa.com.

## *ZOLL Medical Corporation — Booth 55

269 Mill Road
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ZOLL Medical Corporation, a leader in medical products and software solutions, offers Intravascular Temperature Management (IVTM™) solutions, which provide healthcare professionals with the power and control needed to rapidly, safely, and more effectively manage the core body temperature of critically ill or surgical patients with warming and cooling applications.

## Win Cash Prizes!

Don't forget to have your raffle card punched at each exhibitor booth to be entered for a chance to win one of three cash prizes! Cards are available at the take-one materials table. Once you have received a punch from each vendor, drop your completed card in the raffle box near the registration desk any time before the final poster session on Saturday, September 17th at 4:30pm. Winners will be announced at the final poster reception. Must be present to win.

# Thank You to the 2016

# Sponsors of the

# TCD Course

FEVER MANAGEMENT AND HYPERTHERMIA
Dr. Stephan A. Mayer
Director, Neurocritical Care
Mount Sinai Health System
New York, NY
Space is limited.
Complimentary breakfast will be provided to the first 150 attendees
Sunrise Session
Maryland Ballroom C - 7:00-8:00am
Saturday, September 17, 2016
The Neurocritical Care Society did not take part in the content planning of this symposium.
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Please join us for a lunch symposium at the
14th Annual Neurocritical Care Society Meeting
NEW DEVELOPMENTS IN THE REVERSAL OF FACTOR Xa INHIBITORS
DATE: Thursday, September 15, 2016
TIME: 12:00 PM – 1:00 PM
PLACE: Gaylord National Resort and Convention Center
Maryland Ballroom A
National Harbor, MD
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This event does not qualify for continuing medical education (CME), continuing nursing (CNE), or continuing education (CE) credit. In accordance with the PhRMA Code on Interactions with Healthcare Professionals, attendance at this promotional program is limited to healthcare professionals only. We ask that all healthcare professionals abide by all relevant restrictions on attending off-site, company-sponsored meals. The states of Minnesota, Louisiana, and Colorado have restrictions on meals provided to healthcare professionals. Healthcare professionals licensed in Vermont may not attend a meal program.
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# Contemporary Medication Safety Issues in Neurocritical Care: It is Everyone's Responsibility

**Friday, September 16, 2016 6:30pm-8:00pm Maryland C**

***Presenters:***


Ryan Hakimi, DO, MS
Director, Neuro ICU, Director Inpatient Neurology, Clinical Associate Professor
University of South Carolina-Greenville
Greenville Health System, SC
Greenville, SC

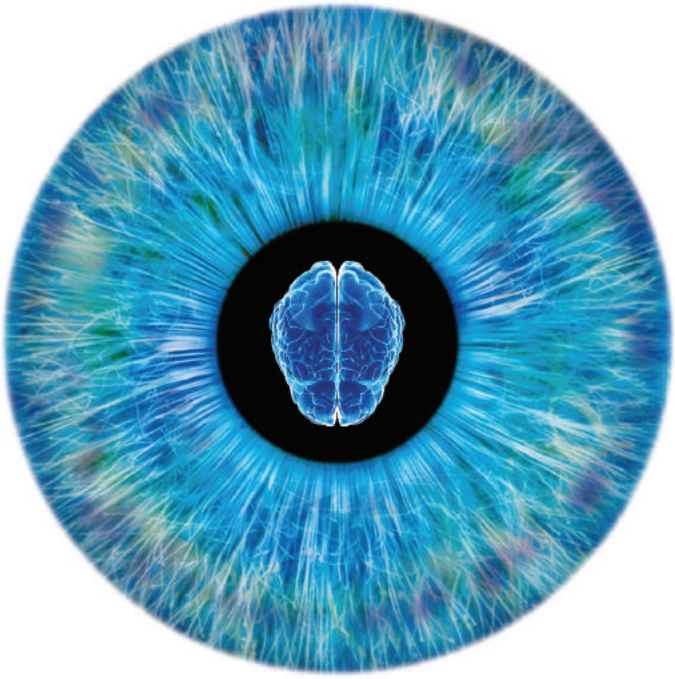
Michael Armahizer, PharmD, BCPS
Clinical Specialist, Neurocritical Care
University of Maryland Medical Center

Joseph B. Haymore, DNP
Senior Nurse Practitioner, NCCU
University of Maryland Medical Center


***Moderator:***


A. Shaun Rowe, Pharm.D., BCPS, BCCCP, FNCS
Pharmacist Specialist, Neurocritical Care, Associate Professor of Clinical Pharmacy, UTHSC
University of Tennessee Medical Center


PP-NYM-US-0157



NEUROPTICS

Please join us for a
## LUNCH SYMPOSIUM

**Friday, September 16, 2016, 12 pm–1 pm**

*"Pupillometry in the Neurocritical Care Unit"*

**Guest Speaker**

**Gregory Hawryluk, MD, Ph.D., FRCSC**

Assistant Professor
Director, Neurosurgical Critical Care
University of Utah Medical Center

NeurOptics is a proud
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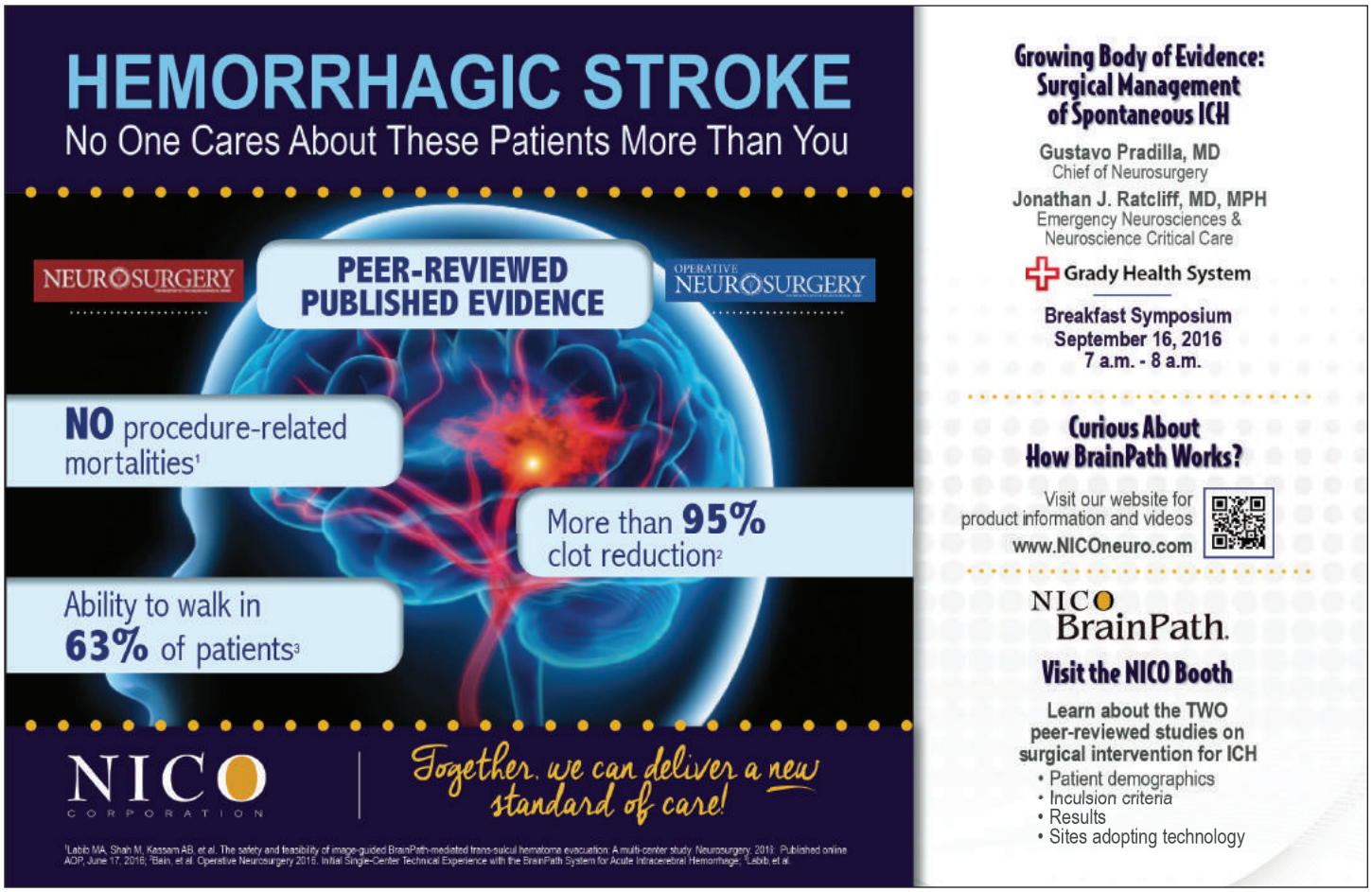


## Symposium Sponsored by:

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**Date:** September 17, 2016

**Time:** 7:00-8:00 AM

**Location:** Maryland A

**Title:** Reducing Stroke and Thromboembolic Risk in Patients With Nonvalvular Atrial Fibrillation (NVAF) and Treating Venous Thromboembolism (VTE)

**Presenter:** Dr. Mark Alberts, Vice Chair of Hospital Neurology, UT Southwestern Medical Center

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## Learn what's new in targeted temperature management

**TOPIC**
Practical aspects of therapeutic temperature management

**SPEAKER**
Kees H. Polderman, MD, PhD
Professor of Critical Care Medicine
Department of Critical Care Medicine
University of Pittsburgh Medical Center

**WHEN**
Friday, September 16

**TIME**
12:00 p.m. – 1:00 p.m. (lunch provided)

**WHERE**
Maryland Ballroom A

This is a non-CME event. The Neurocritical Care Society (NCS) was not involved in the planning of the content for this symposium.

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# SOCIETY INFORMATION

# 2016 Awards

## Cristianne Wijman Young Investigator Award

An award will be given at the 14th Annual 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 required to attend the annual meeting.

This year's winner is ***Vahid Eslami*** for the abstract titled *"Influence of Intracerebral Hemorrhage Location in Patients with Spontaneous Intraventricular Hemorrhage- Results from the Clot Lysis: Evaluating Accelerated Resolution."*

## Best Scientific Abstract Award

An award will be given at the 14th Annual 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 required to attend the annual meeting.

This year's winner is ***Ivan R. da Silva*** for the abstract titled *"Zika Virus Associated Neurological Complications in Adults."*

## Congratulations to the 2016 Travel Grant Awardees

The 2016 NCS Travel Grant, supported by the Integra Foundation, provided financial assistance to neuroscience critical care nurses, pharmacists, and resident/fellow physicians in order for them to attend the 2016 NCS Annual Meeting.

**Anand Venkatraman**

**Diana Jean Serondo, RN**

**Jesse Moskowitz**

**Johnnie Dillinger, NP, CCRN**

**Maighdlin Anderson**

**Melissa Ellis, NP**

**Michele Paul, NP**

**Michelle Hill, RN, CNS**

**Tara Tehan, RN, MBA, MSN**

**Valerie Musolf, RN**

## ***Fellow of Neurocritical Care Society (FNCS)***

The Neurocritical Care Society recognizes members who have demonstrated exceptional service, academic excellence, and leadership in the field of Neurocritical care by awarding them the Fellow of Neurocritical Care Society (FNCS) status. Individuals who meet the requirements of this Fellowship can be identified with the letters, FNCS, after their respective titles. This year's recipients are:

**Anthony Shaun Rowe, PharmD, BCPS, FNCS**
*The University of Tennessee Health Science Center*

**Soojin Park, MD, FNCS**
*Columbia University College of Physicians & Surgeons*

**Panayiotis N. Varelas, MD, PhD, FNCS**
*Henry Ford Hospital*

**Geoffrey Ling, MD, PhD, Col. (Ret), FNCS**
*Johns Hopkins*

**Liping Liu, MD, PhD, FNCS**
*Beijing Tiantan Hospital*

**Julian Bösel, MD, FNCS**
*University Hospital Heidelberg, Department of Neurology*

**Herbert Fried, MD, FNCS**
*Denver Health Medical Center, University of Colorado*

**Nerissa Ko, MD, MAS, FNCS**
*University of California, San Francisco*

# NCS Committee Meetings

** Breakfast will be served for all morning meetings.*
*A Boxed lunch will be provided for all midday meetings. **

## Thursday, September 15th, 2016

| | | |
|---|---|---|
| ENLS Committee | 7:00 am - 8:00 am | Eastern Shore 1 |
| Fundraising Committee | 7:00 am - 8:00 am | Chesapeake F |
| Communications Committee | 10:30 am - 11:30 am | Chesapeake F |
| 2017 Annual Program Committee | 12:00 pm - 1:00 pm | Chesapeake E |
| Research Committee | 12:00 pm - 1:00 pm | Chesapeake F |
| Global Partners Committee | 12:00 pm - 1:00 pm | Mezzanine 4 |
| TTM Group | 1:00 pm – 5:00 pm | Camilla 1 |
| NCS Research Fellowship Grant Task Force | 6:45 pm - 8:00 pm | Private Dining Room at the National Pastime Sports Bar and Grill in the Gaylord Convention Center |

## Friday, September 16th, 2016

| | | |
|---|---|---|
| Nursing Committee | 7:00 am - 8:00 am | Chesapeake F |
| SETPOINT Investigators | 10:00 am - 11:00 am | Chesapeake E |
| Finance Committee | 12:00 pm - 1:00 pm | Chesapeake E |
| Pharmacy Committee | 12:00 pm - 1:00 pm | Chesapeake F |
| Resident Fellow Task Force | 12:00 pm - 1:00 pm | Mezzanine 4 |
| Ethics Committee | 12:00 pm - 1:00 pm | Fort Washington Board |

## Saturday, September 17th, 2016

| | | |
|---|---|---|
| Educational Products Committee | 7:00 am - 8:00 am | National Harbor 1 |
| Membership Committee | 7:00 am - 8:00 am | National Harbor 10 |
| FNCS Credentialing Committee | 7:00 am - 8:00 am | Mezzanine 2 |
| Global Partners Committee | 12:00 pm - 1:00 pm | National Harbor 10 |
| Advocacy Committee | 12:00 pm - 1:00 pm | National Harbor 1 |
| WINCC Committee | 12:00 pm - 1:00 pm | Mezzanine 2 |
| Guidelines Committee | 12:00 pm - 1:00 pm | Fort Washington Board |

## Sunday, September 18th, 2016

| | | |
|---|---|---|
| TTM Group | 1:00 pm – 5:00 pm | Camilla 1 |
| PCRNG | 10:00 am - 5:00 pm | Azealia 2 |

# Annual Meeting Planning Committees and Subcommittees

We would like to acknowledge the following individuals for their time and dedication in making this meeting possible.

| Overall Plenary Program |
|---|
| **Meeting Chair**: Michel Torbey, MD |
| Anise Ardelt, MD |
| Arash Afshinnik, MD |
| Christopher Morrison, PharmD, BCCCP |
| David Greer, MD |
| Edward Manno, MD |
| Geoff Ling, MD, PhD |
| Gisele Silva, MD |
| Gretchen Brophy, PharmD, BCPS, FCCP, FCCM, FNCS |
| Guiseppe Citerio, MD |
| James Szalados, MD, JD, MBA, MHA |
| Joshua Medow, MD |
| Julian Boesel, MD |
| Kevin Sheth, MD |
| Kristine O'Phelan, MD |
| Lori Madden, CNS, NP, RN, PhD |
| Lori Shutter, MD, FNCS, FCCM |
| Marie Baldisseri, MD |
| Marion Buckwalter, MD |
| Mark Wainwright, MD |
| Masao Nagayama, DO, MD, PhD, FAAN |
| Mohit Datta, MD |
| Nerissa Ko, MD |
| Panayiotis Varelas, MD |
| Patricia Blissitt, CNS, PhD, RN |
| Richard Riker, MD |
| Romer Geocadin, MD |
| Ryan Hakimi, DO |
| Sam Tisherman, MD |
| Soojin Park, MD |
| Wendy Ziai, MD |

| Science Subcommittee |
|---|
| Chair: Kevin Sheth, MD |
| Co-Chair: Wendy Ziai, MD |
| Matthew Maas, MD |
| Nerissa Ko, MD |
| Michael (Luke) James, MD |
| Sam Tisherman, MD |
| Anise Ardelt, MD |
| Rajat Dhar, MD |
| Brad Molyneaux, MD, PhD |

| Workshop Subcommittee |
|---|
| Chair: Kristine O'Phelan, MD |
| Soojin Park, MD |
| William T. McGee, MD, MHA, FCCP, FCCM |

| Practice Update Chairs |
|---|
| Gretchen Brophy, PharmD, BCPS, FCCP, FCCM, FNCS |
| Panayiotis Varelas, MD, PhD |

| Fundraising Committee |
|---|
| Chair: Arash Afshinnik, MD |
| Co-Chair: Ryan Hakimi, DO, MS |
| Safdar Ansari, MD |
| Farrukh Chaudhry, MD |
| Sherry Chou, MD, CM, MMSc |
| Emily Gilmore, MD |
| Luke James, MD |
| Bill Knight, MD |
| Manoj Mittal, MD |
| Panayiotis Varelas, MD, PhD |
| Olabisi Falana, PharmD |
| Gretchen Brophy, PharmD, BCPS, FCCP, FCCM, FNCS |

# Check out what's new at NCS OnDemand.

*Your online education & training site.*

NCS OnDemand is a hub for education and training programs designed to help health care professionals improve outcomes for patients with life-threatening neurological illnesses.

## To Access NCS OnDemand, go to:

www.pathlms.com/ncs-ondemand

### Publications ▶

- Traumatic Brain Injury Guide for Families
- The Practice of Neurocritical Care Textbook
- Brain Death Toolkit
- TTM in Acute Neurologic Injury
- Emergency Neurological Life Suport iBook

### Courses & Training ▶

- TTM in Acute Neurologic Injury
- Emergency Neurological Life Support

### NCS Annual Meetings ▶

- 2014 Main Programing
- 2014 Workshops
- 2015 Main Programming
- 2015 Workshops

### Virtual Events ▶

- Webinars
- Recordings
- Podcasts

- Webinar: Thermoregulation: Fundamentals for Therapeutic Hypothermia and TTM
- Webinar: Under Pressure: Managing Blood Pressure in the Neuro ICU
- Podcast: Shivering and TTM: No Need to Sweat it!
- Pharmacotherapy of Neurocritical Care Series

### NCS Guidlines ▶

- Multimodality Monitoring
- Large Hemispeheric Infarction
- Status Epilepticus
- Subarachnoid Hemorrhage

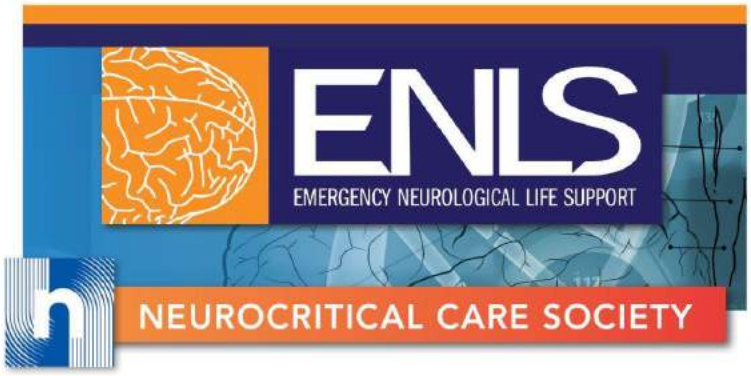
### Family & Patient Resources ▶

- Traumatic Brain Injury Guide for Families
- Stories of Hope
- Patient/Family Information and Resource Guide
- Patient and Family Support Sites

***Publish your next book, course or virtual event with NCS!***

Neurocritical Care Society

www.neurocriticalcare.org




**Emergency Neurological Life Support (ENLS)** is designed to help healthcare professionals improve patient care and outcomes during the most crucial time-the critical first hours of the patient's neurological emergency. ENLS covers a collaborative, multi-disciplinary approach that outlines a consistent set of protocols, practical checklists, decision points, and suggested communication to use during patient management. *Completion of this course provides ENLS Certification and 15 hours of Level 1 CME, ACPE, ANCC and CECBEMS credit.* ENLS Certification is valid for two years.

**ENLS offers:**

- Advanced knowledge
- Ability to be up to date/current on advancements in treatment
- Topics that are directly relevant to neurocritical care
- Improved patient care

**Topics:**

- Acute Non-Traumatic Weakness
- Acute Stroke
- Airway and Ventilation and Sedation
- Coma
- Intracerebral Hemorrhage
- Ischemic Stroke
- Meningitis/Encephalitis
- Resuscitation following Cardiac Arrest
- Spinal Cord Compression
- Status Epilepticus
- Subarachnoid Hemorrhage
- Traumatic Brain Injury
- Traumatic Spin Injury
- Pharmacology

**Sub -Topics:**

- Elevated ICP and Herniation
- Glasgow Coma Scale (GCS)
- Hunt Hess Classification of SAH
- World Federation Neurological Scale

**Pricing**

Individual and group rates are available as well as special rates for those residing outside the US. For those interested in classroom training, please contact NCS at info2@neurocriticalcare.org

**Individuals – *US Pricing***

- Physicians - $300
- Non-Physicians - $150
- In-Training (residents/fellows/students) - $100

**Groups – *US Pricing***

Designed for institutions, conferences, and bundled online units of 25 or more. Residency programs can use the Group Pricing structure with a minimum of five resident codes purchased. Access codes are good for one year from the date of purchase.

- Physicians - $150
- Non-Physicians - $75
- In-Training (residents/fellows/students) - $50

*For more information on ENLS including how to register and begin taking courses, visit:*
**http://www.neurocriticalcare.org/enls**

# THE PRACTICE OF NEUROCRITICAL CARE TEXTBOOK

***"The Practice of Neurocritical Care represents a new approach to medical textbooks."***

## 25 CHAPTERS

**INCLUDING CLINICAL CASES AND ASSESSMENT QUIZZES FOR EACH CHAPTER**

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- Intracerebral Hemorrhage
- Seizures and Epilepsy
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- Coma and Brain Death
- Pediatric Neurocritical Care
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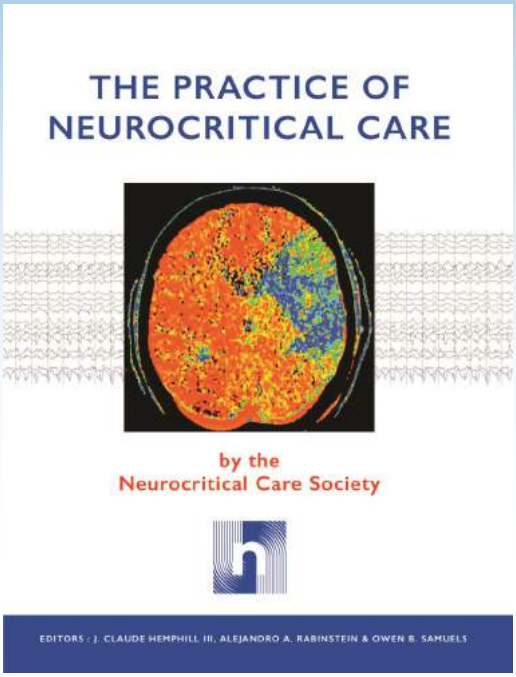
- Cardiovascular Monitoring and Complications
- Endocrine Disorders in Neurocritical Care
- Quality Metrics in NCC
- Subarachnoid Hemorrhage
- And 14 more topics!

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- CASE PRESENTATIONS
- CRITICAL REFERENCES
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***Authored and published exclusively by leaders in the field from the Neuro-critical Care Society, the first and largest international medical society focused on neurocritical care.***

***Practitioners interested in a current update on neurocritical care will find this textbook to be a valuable resource.***

***Can also be a resource to those preparing for the neurocritical care certification exam, or for the neurocritical care portion of other boards.***

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NEUROCRITICAL CARE SOCIETY

# PONS Pharmacotherapy Of Neurocritical Care Series

## WHAT IS PONS?

PONS is a curriculum-based eLearning series comprised of various neuropharmacotherapy topics presented by experts in the field of Neurocritical care. PONS presentations are 60 minute webinar recordings that can be viewed at your own pace. Presentations can be purchased individually or bundled.

PONS can be used as a review for healthcare professionals, to facilitate topic discussions among trainees, or as a group educational lecture series. Each session includes a library of annotated references used during the presentation.

## AUDIENCE

PONS targets a wide range of disciplines including physicians, nurses, pharmacists and more. The series benefits individuals practicing in all medical disciplines, particularly those who want to further their neuropharmacotherapy knowledge. It is also an innovative tool to help educate trainees.

**ACCREDITED FOR CONTINUING EDUCATION FOR PHARMACISTS, NURSES AND PHYSICIANS!**

## TOPICS INCLUDE:

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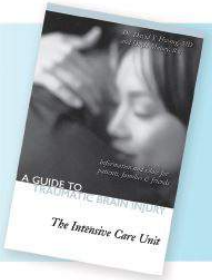
- Antithrombotic Reversal in Patients with Intracranial Hemorrhage: A Review of the Guidelines
- Diabetes Insipidus
- Get it in your head! Introduction to Intraventricular and Intrathecal Drug Delivery
- Hyponatremia
- ICU Management of Myasthenia Gravis: This Weakness is Getting on My Nerves
- Management of Status Epilepticus: Breaking Bad!
- Osmotic Therapy for Elevated Intracranial Pressure
- Paroxysmal Sympathetic Hyperactivity
- Targeted Temperature Management (TTM) Effects on Drugs and Shiver Control
- Venous Thromboembolism Prophylaxis: Translating Evidence into Clinical Practice
- Wading in the Weeds: Cannabis Use in the Hospital

**Access PONS at:** www.pathlms.com/ncs-ondemand/courses/1622

PONS

# Two Invaluable Resource Guides for Patients and Families

Not only are the first hours of a patient's neurological emergency critical to the patient, it is a time of fear and anxiety for the families. NCS is proud to announce the release of two publications to assist during this time: *Patient/ Family Information & Resource Guide*, and *A Guide To Traumatic Brain Injury: The Intensive Care Unit*.




### *Patient/ Family Information & Resource Guide*

This guide provides information on the following:

- Overview of the Neurocritical care setting
- Members of the Neurocritical Care Team
- Descriptions of various diseases treated
- Links to valuable patient and family resources

Free download is available for viewing or printing at your institution. You may also purchase color brochures for your waiting rooms and patient packets in sets of 25 brochures for $40. Available through NCS OnDemand.

### *A Guide To Traumatic Brain Injury: The Intensive Care Unit*

This unique book is intended to help families of patients with severe traumatic brain injury in your neuroscience intensive care unit navigate their personal crises by delivering comprehensive medical, technical, and practical information in a compassionate, empathetic, and reassuring way.

This book is available in print or iBook format and can be purchased on NCS OnDemand for $10 USD/book + shipping and handling.

*"This book is comprehensive, meaningful, informative, and far from being over-whelming. It can be referred to over and over again at any point of the journey. The book has been an inspiration and guiding light of insight."* — Family Member, British Columbia

**https://www.pathlms.com/ncs-ondemand**

Neurocritical Care Society www.neurocriticalcare.org

**This toolkit, published by the Neurocritical Care Society, is a straightforward, easily accessible set of resources for anyone who may be involved in the determination of brain death.**

**WHAT IS INCLUDED:**

- Sample Brain Death Policy for Hospital Adaptation
- Sample Brain Death Policy Checklist
- Death by Neurological Criteria Online Course
- Webinar: Setting the Bar Higher for Brain Death Education
- Brain Death Examination Video
- Apnea Testing in Brain Death Video
- FAQs for Healthcare Professionals
- FAQs for General Public
- Helpful Reference Articles

**Access for FREE at: https://www.pathlms.com/ncs-ondemand/courses/1223**

*This content was developed by the NCS Brain Death Task Force as an educational tool and not as a guideline or a policy. The principles of this content are based on the American Academy of Neurology guideline which is generally accepted by the NCS as valid and appropriate. Practitioners should refer to local ordinances that apply to the diagnosis of death in the regions in which they practice.*

# CONTINUING MEDICAL EDUCATION (CME) INFORMATION

## 14th Annual Neurocritical Care Society Meeting

**Target Audience**
This activity is designed for physicians, nurses, pharmacists and other healthcare specialists, including residents/fellows, who care for patients requiring neurocritical care.

**Learning Objectives**
- Describe optimal medical management of blood pressure in intracerebral hemorrhage.
- Describe the approach to fever management in the Neurocritical care unit.
- Illustrate the techniques needed to define and detect burnout in the NCCU.
- Recognize the role of and complications associated with organ-assist devices in the Neurocritical care unit.
- Summarize the roles of the different Neurocritical care team members needed for the development of a successful Neurocritical care unit.
- Compare and contrast approaches to end of life care across the world.

**Activity Goal**
This activity is designed to address the following core and team competencies:
*Patient Care, Medical Knowledge, Practice-based Learning, System-based Practice, Interdisciplinary Teams, Quality Improvement, Utilize Informatics, and Employee evidence-based practice.*

**Faculty / Speakers with Titles**
*Please refer to the "Faculty/Speakers" Tab.*

**Disclosure**
Cine-Med adheres to accreditation requirements regarding industry support of continuing medical education. Disclosure of the planning committee and faculty's commercial relationships will be made known at the activity. Speakers are required to openly disclose any limitations of data and/or any discussion of any off-label, experimental, or investigational uses of drugs or devices in their presentations.

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**Faculty Disclosure Summary**
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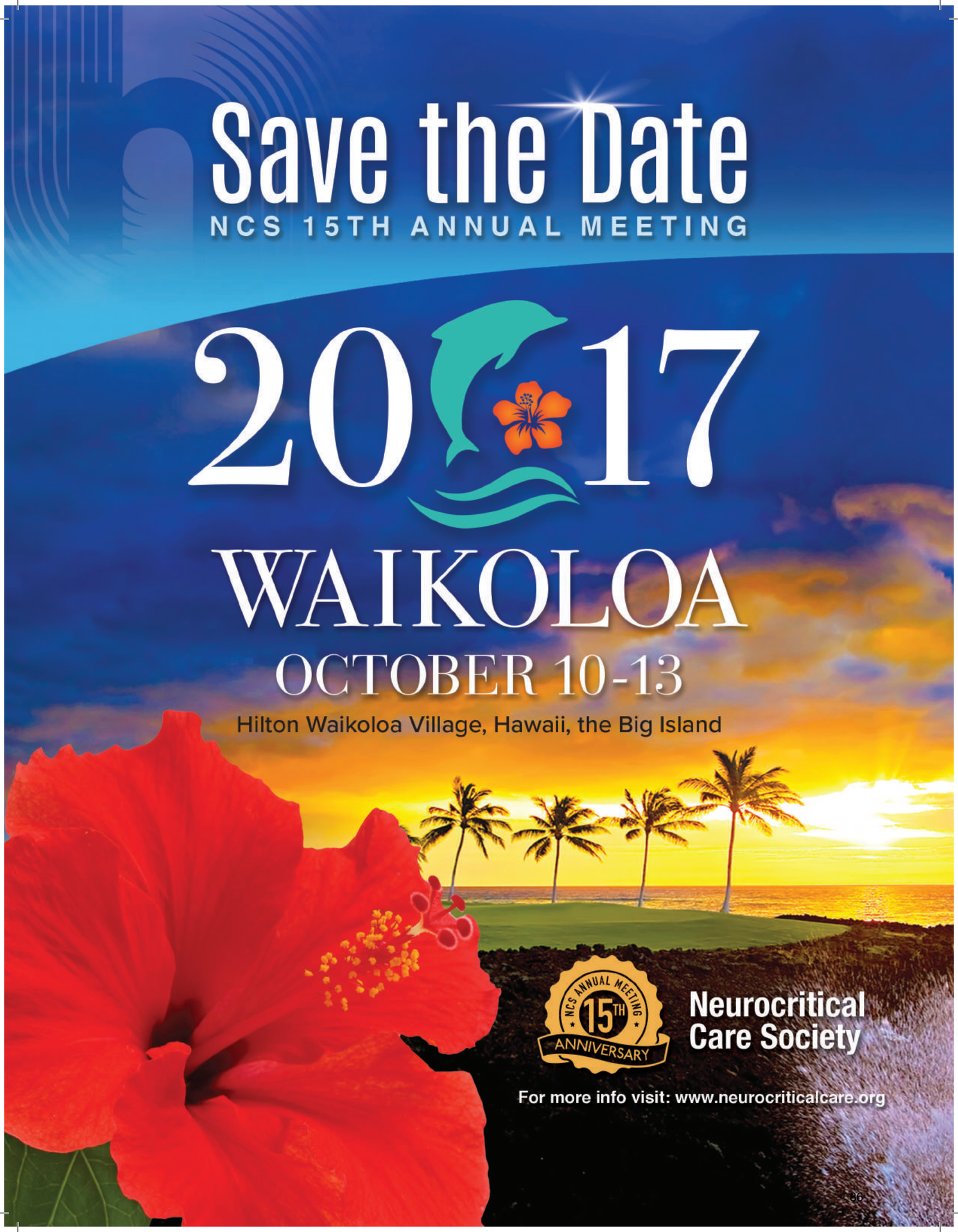
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