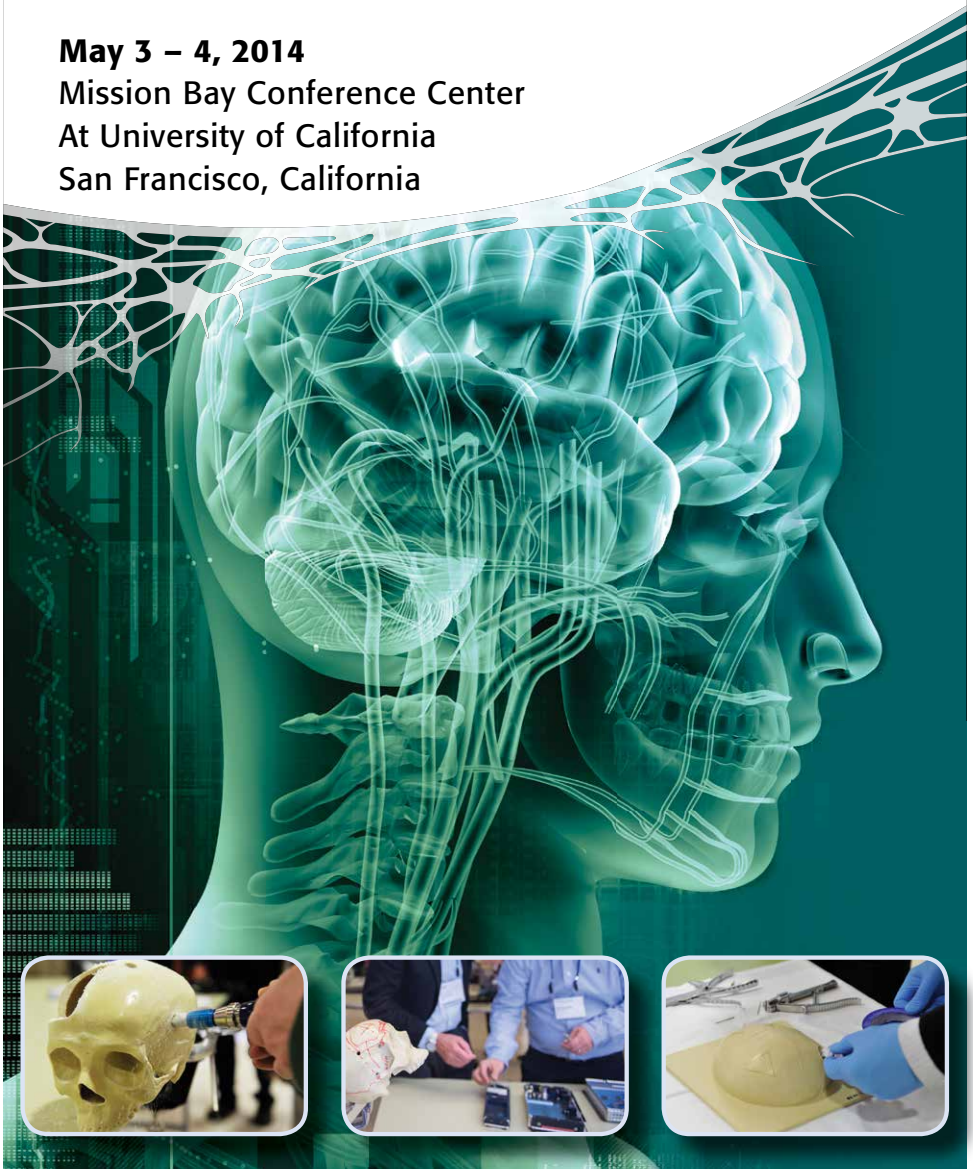
AONEURO
An Initiative of the AO Foundation

Preliminary Program

AONeuro Course – Management of Traumatic Brain and Spinal Cord Injuries

May 3 – 4, 2014
Mission Bay Conference Center
At University of California
San Francisco, California



Sponsored by AO North America

Welcome

Welcome to AONeuro! In AO North America's continued commitment to surgeon education, it is our distinct pleasure to announce a special educational offering for Neurotrauma which represents a collaborative effort between AOSpine North America and AONeuro North America. This unique course will provide residents with an outstanding opportunity to advance their knowledge and surgical skills in brain, spine and spinal cord trauma through didactic lectures, case-based discussions and hands-on practical exercises. Faculty selection includes recognized Neurotrauma leaders who are eager to share their knowledge and experience with you. We hope that you will consider registering for this course and sharing this opportunity with your colleagues.

Michael G. Fehlings MD, PhD, FRCSC, FACS
Co-Chairman

Geoffrey Manley, MD, PhD
Co-Chairman

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Message from the Program Coordinator

On behalf of AO Foundation and your local and international faculty, I would like to welcome you to this AONeuro educational event.

AONeuro is a unique worldwide multi-specialty community that includes cranial Neurosurgeons, Neurologists, Neurointensivists, Neuro anesthesiologists, Neuro Traumatologists and Neurological professionals who are involved in cranial neurological trauma, cranial oncologic and cerebrovascular surgery, cranial reconstruction and cranial congenital anomalies surgery.

Our organization creates a forum for specialists from all over the world who have common interests and enthusiasm in these fields. It is our goal to encourage and inspire residents, fellows, and experienced practitioners by means of education, academic stimulation instruction and international communication to pursue more fulfilling, rewarding and productive careers in these fields.

Education has always been a major pillar in the AO Foundation. Currently, more than 46,000 surgeons participate in over 750 AO educational events worldwide per year. AONeuro is committed to communicating the latest advances, treatment information, protocols in education, equipment and new developments as we strive to improve your educational experience by providing you education at the forefront of your specialty.

Your cranial neurological colleagues are working diligently to bring you the latest in cranial neurological education, and most specifically have initiated programs in the area of traumatic brain injury. Cranial AO Neurosurgeons collaborate with their AOSpine colleagues to bring you the latest developments in combined brain and spinal cord trauma. For years, cranial neurological surgeons have cooperated with craniomaxillofacial colleagues in the areas of facial and cranial trauma, congenital craniofacial anomalies, and skull base trauma and surgery to provide the multidisciplinary perspective necessary to manage these areas.

AONeuro is a project of the AO Foundation, established to learn the needs and educational structure which cranial neurologists require to improve their worldwide educational efforts. AONeuro cooperates with AOSpine and AOCMF (Craniomaxillofacial) to provide multidisciplinary course education, and seeks to add a cranial dimension to existing AO Education in the present specialty areas of Orthopedics, Spine, Craniomaxillofacial and Veterinary surgery.

We hope that your experience with us over the next few days will result in the acquisition of new knowledge, skills and understanding that can directly translate into improved care for your patients.

We also hope that, as a result of this educational event, you will develop a longer term relationship with AOSpine and AONeuro, become a member of our communities, take advantage of our website www.AOFoundation.org, explore our comprehensive online medical reference tool and phone app AO Surgery Reference (www.AOSurgery.org), take up AO Membership, and participate in AONeuro and AOSpine courses and educational opportunities. You may also even wish to acquaint yourself with AOCMF educational events in the areas of congential anomalies surgery, craniofacial trauma and skull base surgery.

Make these organizations yours by bringing your opinions, ideas and contributions. Enjoy the camaraderie of our unique network, and help us maintain and expand the preeminent educational position that the AO Foundation enjoys worldwide.

Yours sincerely,

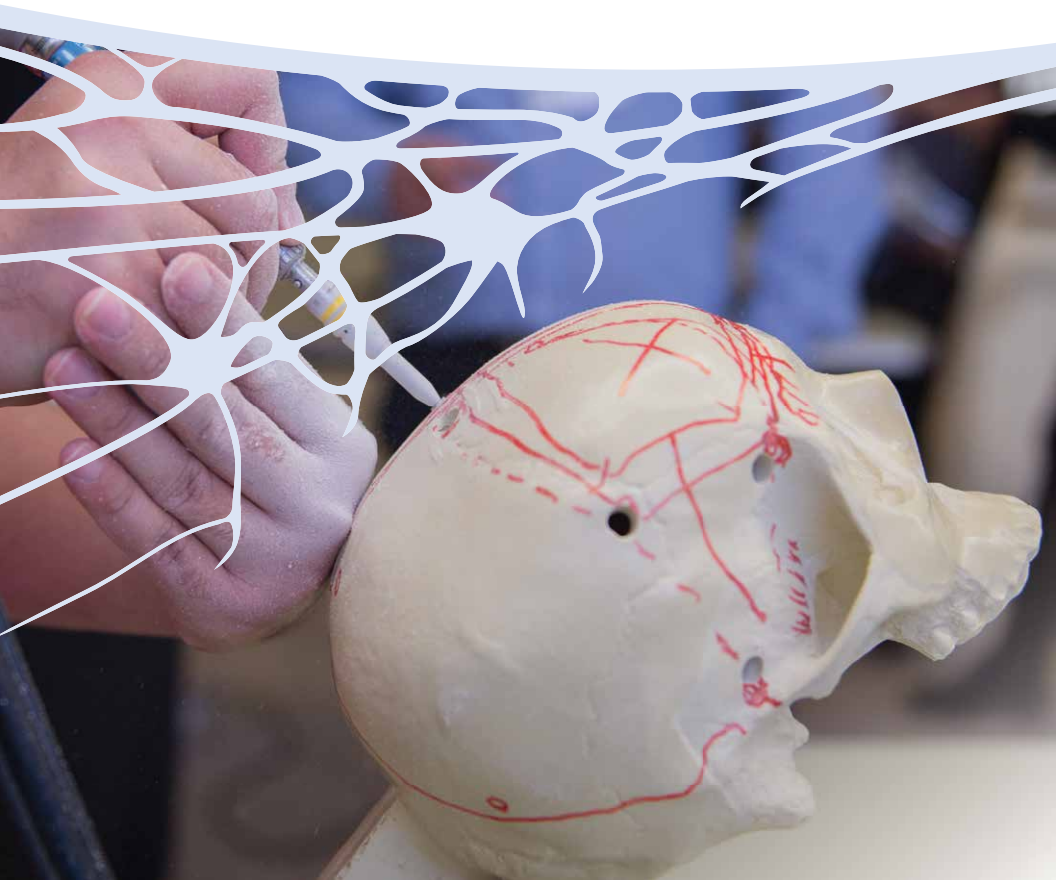
Paul Manson, MD
Coordinator, AONeuro Pilot Program

CME Mission Statement

The Continuing Medical Education (CME) mission of AO North America (AONA®) is to provide comprehensive multidisciplinary needs based education to surgeons, fellows, and residents in the specialties of orthopedic, hand, craniomaxillofacial, spine, and veterinary surgery in the areas of trauma (i.e., operative reduction and fixation), degenerative disorders, deformities, tumors, and reconstruction.

Expected results of AONA's CME activities for surgeons, fellows, and residents are to:

- Increase their knowledge base and surgical skill level
- Apply and document competencies in areas of relevant advances in knowledge in the areas of trauma, degenerative disorders, deformities, tumors, and reconstructive surgical techniques into patient care resulting in improved competence
- Address practice performance gaps by improving management of all aspects of musculoskeletal injuries and disorders (i.e., pre-operative planning to post-operative care)



Course Overview

Managing patients with neurotrauma is challenging for neurosurgical residents. It is critical to be able to classify injuries according to fracture morphology, instability, and neurological status. Choosing the best operative and non-operative treatment options for each patient according to current guidelines and best available evidence is key in clinical decision making.

Course participants will have a unique opportunity to advance their knowledge and surgical skills in brain and spinal cord trauma through didactic lectures, case-based discussions, and hands-on practical exercises with renowned neurotrauma thought leaders. Systematic, skeletal, and soft tissue considerations in managing patients with traumatic brain and spinal cord injuries will be addressed.

Target Audience

Enrollment in the Course is open to neurological surgery residents.

Learner Objectives

At the conclusion of this Course, the participant should be able to:
- Recognize clinically relevant pathophysiology and pathomechanisms of traumatic brain and spinal cord injuries
- Classify injuries according to fracture morphology, instability, and neurological status
- Apply evidence-based decision making to the management of the patient
- Assess the neurological status of the patient and utilize the injury severity score
- Apply guidelines to managing adult and pediatric neurotrauma patients
- Recognize key principles of critical care management of neurotrauma patients
- Apply methods and techniques for neuromonitoring
- Reduce/decompress/stabilize neurotrauma patients appropriately

Accreditation

AO North America is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

Designation Statement

AO North America designates this *live* educational activity for a maximum of 14.5 *AMA PRA Category 1 Credits*™. Physicians should only claim credit commensurate with the extent of their participation in the activity.

Faculty

Course Chairmen

Michael G. Fehlings, MD, PhD, FRCSC, FACS
Professor of Neurosurgery, University of Toronto
Halbert Chair in Neural Repair and Regeneration
Director Krembil Neuroscience Centre
Toronto Western Hospital
University of Toronto
Toronto, Ontario

Geoffrey Manley, MD, PhD
Professor of Neurological Surgery
Chief of Neurotrauma, San Francisco General Hospital
Co-Director, UCSF Brain & Spinal Injury Center
San Francisco, California

Education Advisor

Laurence Rhines, MD
Professor
Director, Spine Program
Department of Neurosurgery
UT MD Anderson Cancer Center
Houston, Texas

AO Foundation Special Guest

Suthorn Bavonratanavech, BSc, MD
Department of Orthopaedics
Bangkok, Thailand

Invited Faculty

P. David Adelson, MD, FACS, FAAP
Director, Barrow Neurological Institute at Phoenix Children's Hospital
Chief, Pediatric Neurosurgery/ Children's Neurosciences
Diane and Bruce Halle Endowed Chair for Pediatric Neurosciences
Professor and Chief Neurological Surgery
Department of Child Health University of Arizona College of Medicine-Phoenix
Adjunct Professor Ira A. Fulton School of Biological and Health Systems Engineering Arizona State University
Phoenix, Arizona

Sanjay Dhall, MD
Director of Spinal Neurotrauma
San Francisco General Hospital,
University of California San Francisco
Department of Neurologial Surgery
San Francisco, California

Gerald Grant, MD
Associate Professor
Neurosurgery
Stanford University
Stanford, California

Gregory Hawryluk, MD, PhD, FRCSC
Neurotrauma and Complex Spine Fellow
HS Clinical Instructor
University of California, San Francisco
San Francisco, California

Faculty (continued)

Invited Faculty (continued)

J. Claude Hemphill III, MD
Professor of Neurology
University of California, San Francisco
Chief of Neurology and Director of Neurocritical Care
San Francisco General Hospital
President
Neurocritical Care Society
San Francisco, California

Michael Huang, MD
Assistant Clinical Professor
Department of Neurological Surgery
University of California, San Francisco
Chief of Neurosurgery Clinical Services, San Francisco General Hospital
San Francisco, California

Daniel C. Lu, MD, PhD
Assistant Professor
Department of Neurosurgery
University of California-Los Angeles
Los Angeles, California

Paul N. Manson, MD
Distinguished Service Professor
Plastic, Reconstructive and Maxillofacial Surgery
Johns Hopkins University School of Medicine
Professor of Surgery
University of Maryland Shock Trauma Unit
Baltimore, Maryland

Pratik Mukherjee, MD, PhD
Professor in Residence
University of California
San Francisco
Radiology and Biomedical Imaging

Andres M. Rubiano, MD, PhD Candidate
Professor
Neurosciences
Neiva University Hospital
South Colombian University
Neiva, Colombia

Phiroz Tarapore, MD
Assistant Professor
Department of Neurological Surgery
University of California, San Francisco
San Francisco, California

Shelly D. Timmons, MD, PhD, FACS, FAANS
Director of Neurotrauma, Geisinger Health System
Neurosurgery Residency Program Director, Geisinger Health System
Associate Director for Neurosciences Adult ICU
Geisinger Medical Center
Clinical Associate Professor, Temple University
Department of Neurosurgery
Danville, Pennsylvania

Eve C. Tsai, MD, PhD, FRCSC
The Ottawa Hospital
Ottawa Hospital Research Institute
University of Ottawa
Ottawa, Ontario

Faculty list subject to change.

Preliminary Program

Saturday, May 03, 2014

Time	Agenda Item
07:00 – 07:35	Welcome and Introduction to AONeuro
07:35 – 08:40	**SESSION 1:**
	KEYNOTE STATE OF THE ART
07:35 – 08:05	State of the Art — Traumatic Brain Injury
08:05 – 08:10	Discussion
08:10 – 08:35	State of the Art — Traumatic Spinal Cord Injury
08:35 – 08:40	Discussion
08:40 – 09:00	**Coffee Break**
09:00 – 10:25	**SESSION 2:**
	SPINAL CORD INJURY
09:00 – 09:20	Evaluation and Management of Spinal Cord Injury
09:20 – 09:40	Guidelines Update
09:40 – 10:00	Timing of Surgical Intervention for Acute SCI
10:00 – 10:25	Discussion of Lectures and Case Discussion with AIRS
10:25 – 10:35	**Transition to Lab**
10:35 – 12:35	**SESSION 3:**
	SAWBONES LAB — CERVICAL TECHNIQUES:
	T1 Pedicle Screws; Anterior Cervical Plating;
	Posterior Occipitocervical; C1-C2 Fixation Lateral Mass Screw
12:35 – 13:25	**Lunch**

Preliminary Program

Saturday, May 03, 2014 (continued)

Time	Agenda Item
13:25 – 14:35	**SESSION 4:** **SPINAL CORD INJURY**
13:25 – 13:50	Thoracolumbar Spine Trauma Classification and Management
13:50 – 14:10	Minimally Invasive Spine Options for Trauma
14:10 – 14:35	Discussion of Lectures and Case Discussion with AIRS
14:35 – 14:45	**Transition to Lab**
14:45 – 16:45	**SESSION 5:** **SAWBONES LAB — THORACOLUMBAR:** Posterior Pedicle Screws; Anterior Fixation
16:45 – 17:00	**Coffee Break and Transition to Lecture**
17:00 – 18:00	**SESSION 6:** **TOPICS IN NEUROTRAUMA**
17:00 – 17:25	Neurotrauma as a Career: Perspectives of a Recent Neurosurgery Graduate
17:25 – 17:55	Neurotrauma as a Career: Panel Discussion with Audience Participation
17:55 – 18:00	End of Day Wrap-up and AIRS Course Questions
18:00 – 19:00	**Reception**

Preliminary Program

Sunday, May 4, 2014

Time	Agenda Item
07:00 – 07:10	Welcome and Introduction to Day 2 — AONeuro
07:10 – 09:10	**SESSION 7:**
	TRAUMATIC BRAIN INJURY
07:10 – 07:25	TBI Pathomechanisms
07:25 – 07:40	Guidelines for Managing Severe TBI
07:40 – 08:05	Pediatric Considerations for TBI
08:05 – 08:20	Discussion of Lectures and Case Discussion with AIRS
08:20 – 08:35	Surgical Decision Making in TBI
08:35 – 08:50	Decompressive Craniectomy
08:50 – 09:10	Discussion of Lectures and Case Discussion with AIRS
09:10 – 09:30	**Coffee Break and Transition to Lab**
09:30 – 10:30	**SESSION 8:**
	SAWBONES LAB — CRANIUM:
	Decompressive Craniectomy; Cranioplasty Techniques
10:30 – 10:40	**Travel to Lecture**
10:40 – 11:45	**SESSION 9:**
	SPECIAL TOPICS
10:40 – 11:00	Ballistics and Explosives
11:00 – 11:25	Craniofacial Reconstruction and Frontal Sinus Fractures
11:25 – 11:45	ICU and Critical Care Management
11:45 – 12:00	**Pick up Boxed Lunch**
12:00 – 13:00	**SESSION 10:**
	INTERACTIVE CASE DISCUSSIONS WITH LUNCH
12:00 – 12:45	Brain and Spine Injuries: Panel Discussion with AIRS
12:45 – 13:00	End of Course Wrap-up and AIRS Questions

Preliminary program subject to modification.

Presentation Information

Faculty Disclosure

It is the policy of AO North America to abide by the Accreditation Council for Continuing Medical Education Standards for Commercial Support. Standard 2: "Disclosures Relevant to Potential Commercial Bias and Relevant Financial Relationships of Those with Control over CME Content," requires all planners, including course directors, chairs, and faculty, involved in the development of CME content to disclose their relevant financial relationships prior to participating in the activity. Relevant financial relationships will be disclosed to the activity audience. The intent of the disclosure is not to prevent a faculty with a relevant financial or other relationship from teaching, but to provide participants with information that might be of importance to their evaluation of content. All potential conflicts of interest have been resolved prior to the commencement of this activity.

Conflict of Interest Resolution Statement

When individuals in a position to control or influence the development of the content have reported financial relationships with one or more commercial interests, AO North America utilizes a process to identify and resolve potential conflicts to ensure that the content presented is free of commercial bias.

Off-Label / Experimental Discussions

Some medical devices used for teaching purposes and/or discussed in AO North America's educational activities may have been cleared by the FDA for specific uses only or may not yet be approved for any purpose. Faculty may discuss off-label, investigational, or experimental uses of products/devices in CME certified educational activities. Faculty have been advised that all recommendations involving clinical medicine in this CME activity are based on evidence that is accepted within the profession of medicine as adequate justification for their indications and contraindications in the care of patients. All scientific research referred to, reported or used in this CME activity in support or justification of a patient care recommendation conforms to the generally accepted standards of experimental design, data collection and analysis.

Presentation Information (continued)

Liability Statement

AO North America faculty and staff assume no personal liability for the techniques or the use of any equipment and accessories used for teaching purposes in the laboratory. The certificate provided pertains only to the participants' completion of the course and does not, in any way, attest to the proficiency of the participants' clinical experience.

Disclaimer

AONA does not endorse nor promote the use of any product/device of commercial entities. Equipment used in this course is for teaching purposes only with the intent to enhance the learning experience.

AO North America gratefully acknowledges in-kind support for equipment and technical staff from DePuy Synthes, DePuy Synthes PowerTools

Course Tuition and Registration

Tuition: AONA is offering this course free of charge to all participants. You will be asked to provide a credit card that will only be charged a $100.00 processing fee in the event you do not cancel prior to the start of the course.

Tuition Includes: Laboratory materials, breakfasts, coffee breaks and lunch will be provided

Registration is available online only at www.aona.org

We encourage early registration, as seating is limited.
Upon receipt of your online registration, you will be sent via email a confirmation of your registration in the Course, along with hotel and travel information to assist you in making your arrangements.

PLEASE NOTE: Registration deadline is April 3, 2014.

ADA Statement
AO North America fully intends to comply with the legal requirements of the Americans with Disabilities Act. If any registrant is in need of accommodation, please do not hesitate to submit a written request at least one month prior to this activity.

Until an email confirmation is received, please do not consider yourself registered in this Course.

For Information:
Contact AONA Customer Service Department
Phone: (800) 769-1391
(610) 695-2459
Fax: (610) 695-2420
Email: customerservice@aona.org

Hotel and Travel

Resident Hotel Accommodations and Travel

Residents and Fellows travelling from out-of-town (distance greater than 60 miles) will be provided a standard hotel room for two nights (Friday and Saturday). Upon check-in at the hotel you will be required to provide a credit card to cover individual incidentals. Check in is Friday, May 2 and checking out Sunday, May 4. Please complete the reservation information during registration at www.aona.org. If you register for the course but do not attend, your credit card will be charged one night's hotel room rate plus tax.

Hotel Information:

Marriott Courtyard San Francisco Downtown
299 2nd Street
San Francisco, California 94105-3123
Phone:(800) 321-2211

Travel

The Marriott Courtyard San Francisco Downtown Hotel is located approximately 13.8 miles from San Francisco International Airport (SFO). Traffic can be heavy and should be factored adequately into arrival and departure times.

Ground transportation is available through an independent shuttle service, SuperShuttle, at approximately $30 one way. Reservations are required. Contact SuperShuttle directly at www.supershuttle.com or at 415-558-8500 and 800-258-3826 for additional information or reservations. Bus service is available at approximately $20 one way; subway service at approximately $8 one way; and taxi service at approximately $40 each way.

Parking at the hotel is valet-only, at $52 per day for standard size vehicles ($57/day for oversized vehicles).

Mission Bay Conference Center
At University of California
1675 Owens Street
Fisher Banquet Room
San Francisco, CA 94143-3008

Please visit our website:
www.aona.org to register for this Course
and for other course offerings.

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AO North America
Department of Continuing Medical Education
1700 Russell Road
Paoli, PA 19301

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Hotel and Registration deadline: April 3, 2014

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