

The UCLA Comprehensive Stroke Center and Neurovascular Program present the

23<sup>RD</sup> ANNUAL

# UCLA BRAIN ATTACK! '18

Symposium on State-of-the-Art Stroke Management

SATURDAY · MAY 5 · 2018

UCLA Carnesale Commons | 251 Charles E. Young Drive, West • Los Angeles, California 90095

## UCLA COURSE DIRECTOR

**Sidney Starkman, MD**

*Director, Emergency Neurology, Departments of Emergency Medicine and Neurology*

## UCLA FACULTY PLANNING COMMITTEE

**Geoffrey P. Colby, MD, PhD**

*Director, Division of Cerebrovascular Neurosurgery, Department of Neurosurgery*

**Bruce H. Dobkin, MD**

*Director, Neurological Rehabilitation and Research Program, Department of Neurology*

**Gary R. Duckwiler, MD**

*Director, Division of Interventional Neuroradiology, Department of Radiology*

**Jeffrey L. Saver, MD**

*Director, Stroke Neurology, Department of Neurology*

**Paul Vespa, MD**

*Director, Neurocritical Care, Departments of Neurosurgery and Neurology*

Sponsored by:



DAVID GEFKEN SCHOOL OF MEDICINE at UCLA

In association with:



**Saturday, May 5, 2018**

7:30<sup>AM</sup> Registration and Continental Breakfast

8:00 **Welcome** - *S. Thomas Carmichael, MD, PhD*

8:10 **Stroke Prevention in Atrial Fibrillation: Medical and Device Therapies**  
*Noel G. Boyle, MD, PhD*

8:40 **Patent Foramen Ovale Closure and Medical Treatment: Decision-Making in the Era of Evidence-Based Device Therapy**  
*Jamil A. Aboulhosn, MD*

9:10 **Faster and Smarter at Primary Stroke Centers: Door to Needle, Door In Door Out, and Calibrated Patient Care**  
*Neal M. Rao, MD*

9:40 Break

10:00 **Thrombectomy – Magnitude of Benefit in Early and Late-Presenting Patients and New Devices**  
*Reza Jahan, MD*

10:45 **Using Neuroimaging to Identify Patients Who Will Benefit from Stroke Therapies**  
*Bryan Y. Yoo, MD*

11:15 **The Role of Collaterals in Determining Fast and Slow Progressors**  
*David S. Liebeskind, MD*

11:45 **Changing the Landscape of Stroke Pre-Hospital Care: In-Field Experience from California's First Mobile Stroke Unit**  
*May Nour, MD, PhD*

12:15<sup>PM</sup> Lunch

1:30 **Afternoon Remarks** - *Gregory W. Hendey, MD*

1:40 **Update on Brain Aneurysms: to Treat or Not to Treat**  
*Geoffrey P. Colby, MD, PhD*

2:10 **Advances in the Endovascular Treatment of Cerebral Aneurysms**  
*Satoshi Tateshima, MD, PhD*

2:40 **Moyamoya Disease and Pediatric Stroke**  
*Anthony C. Wang, MD*

3:10 Break

3:30 **Optimizing Recovery Beyond the First Three Months**  
*Bruce H. Dobkin, MD*

4:00 **Code Brain: Code Stroke Patients without Stroke**  
*Lucas Restrepo, MD, PhD*

4:30 **Ideal Stroke Prevention: PCSK9 Inhibitors, New Blood Pressure Goals, and the End of Atherosclerosis**  
*Jeffrey L. Saver, MD*

5:00 Adjourn

## COURSE OBJECTIVES

### At the conclusion of this program participants should be able to:

- Utilize recent advances in the treatment of atrial fibrillation and in the treatment of atherosclerosis
- Apply methods to accelerate time to thrombolysis and time to endovascular intervention
- Summarize recent developments in endovascular treatment of acute ischemic stroke
- Employ recent developments in management of intracranial aneurysms, Moyamoya disease, and pediatric stroke

## TARGET AUDIENCE

**Neurologists, Neurosurgeons, Interventional Neuroradiologists, Emergency Physicians, Family Practice Physicians, Internists, and other health care professionals who want to enhance their knowledge of the management of patients with cerebrovascular diseases.**

## FACULTY

### Jamil A. Aboulhosn, MD

Director, Ahmanson/UCLA Adult Congenital Heart Center  
Associate Professor of Clinical Medicine\*  
Divisions of Cardiology and Pediatric Cardiology

### Noel G. Boyle, MD, PhD

Professor of Clinical Medicine\*  
UCLA Cardiac Arrhythmia Center

### S. Thomas Carmichael, MD, PhD

Frances Stark Chair in Neurology and Professor of Neurology\*

### Geoffrey P. Colby, MD, PhD

Associate Professor of Neurosurgery and Radiology\*  
Director, Cerebrovascular Neurosurgery

### Bruce H. Dobkin, MD

Professor of Neurology\*  
Director, Neurologic Rehabilitation and Research Program

### Gregory W. Hendey, MD

Chair and Professor of Emergency Medicine\*

### Reza Jahan, MD

Professor and Director of Academic Affairs\*  
Division of Interventional Neuroradiology

### David S. Liebeskind, MD

Professor of Neurology\*  
Director, Neurovascular Imaging Research Core  
Director, Outpatient Stroke and Neurovascular Programs  
Associate Neurology Director,  
UCLA Comprehensive Stroke Center

### May Nour, MD, PhD

Medical Director, UCLA Mobile Stroke Rescue Program,  
Assistant Professor of Neurology and Radiology\*  
UCLA Comprehensive Stroke Center and  
Division of Interventional Neuroradiology

### Neal M. Rao, MD

Assistant Professor of Neurology\*  
Director, Olive View-UCLA Medical Center Stroke Program

### Lucas Restrepo, MD, PhD

Assistant Professor of Neurology\*

### Jeffrey L. Saver, MD

Professor and Senior Associate Vice Chair of Neurology\*  
Director, UCLA Comprehensive Stroke Center

### Sidney Starkman, MD

Clinical Professor of Emergency Medicine and Neurology\*  
Co-Director, UCLA Comprehensive Stroke Center  
Director, UCLA Stroke Network

### Satoshi Tateshima, MD, PhD

Associate Clinical Professor of Radiology\*  
Division of Interventional Neuroradiology

### Anthony C. Wang, MD

Assistant Professor of Neurosurgery\*

### Bryan Y. Yoo, MD

Assistant Clinical Professor of Radiology\*  
Division of Neuroradiology

\*David Geffen School of Medicine at UCLA

## ISCHEMIC STROKE:

### Medical & Endovascular Emergency Treatment, Prevention, and Rehabilitation

*The UCLA Comprehensive Stroke Center presents its annual Brain Attack symposium to review the practical, clinical aspects of stroke prevention, diagnosis, and treatment. The course will cover stroke risk factors, diagnostic testing, and medical and interventional therapy.*

*Intravenous tPA and neuroendovascular thrombectomy are now proven therapies for treatment of acute ischemic stroke. The results of recent studies indicate that neurointerventional techniques of thrombectomy are beneficial up to six hours after symptom onset in most patients, and beyond six hours in select patients. A highly coordinated team approach is required to provide these treatments safely and effectively.*

*Neuroimaging techniques are playing an increasingly important role in the evaluation of stroke patients. Faculty will provide an in-depth discussion of innovative MR and CT techniques.*

## THE UCLA COMPREHENSIVE STROKE CENTER

The UCLA Comprehensive Stroke Center maintains a comprehensive treatment and clinical trials program for patients with cerebrovascular disorders. The UCLA Comprehensive Stroke Center – the first Joint Commission certified stroke center in Los Angeles County, provides multidisciplinary care for patients with stroke and kindred disorders including prevention, acute brain rescue, interventional neuroradiological and surgical therapy, and multimodal rehabilitation. The UCLA Comprehensive Stroke Center's treatment approach includes emergency physicians, stroke neurologists, vascular neurosurgeons, vascular surgeons, diagnostic and interventional neuroradiologists, and rehabilitation physicians.

### Acute Treatment

For patients with new onset stroke symptoms, a "Brain Attack" rapid care program provides:

- immediate evaluation by emergency physicians and neurologists
- CT / MRI scan within minutes of emergency department arrival
- prompt neurovascular intensive/intermediate level care
- trials of novel therapies for ischemic and hemorrhagic stroke and acute interventional and surgical therapies.

### Stroke in Children and Young Adults

Experts in pediatric neurology, neurosurgery, interventional and diagnostic neuroradiology, and stroke neurology work together at the UCLA Comprehensive Stroke Center to provide comprehensive evaluation and treatment for pediatric and young adult patients with cerebrovascular disorders including Moyamoya syndrome, sickle cell anemia, hyper-coagulable states, cardioembolic stroke, arteriovenous malformations, and aneurysms.

### Rehabilitation

The newly opened California Rehabilitation Institute is a 138 bed free-standing acute rehabilitation hospital in Century City that is a joint venture with UCLA and Cedars-Sinai, and provides state-of-the-art care to maximize recovery for patients with stroke.

### Carotid Endarterectomy

Microneurosurgical endarterectomy, with intraoperative brain monitoring, is available for asymptomatic and symptomatic carotid artery stenosis.

### Reperfusion

For patients eligible to receive intravenous tPA, thrombolysis is rapidly administered. In addition, neurointerventionalist teams are available around the clock to perform emergency endovascular neurothrombectomy procedures.

### Carotid and Intracranial Angioplasty and Stenting

UCLA provides angioplasty and stenting for selected patients with intracranial and extracranial carotid or vertebrobasilar stenoses.

### NIH Studies

The UCLA Comprehensive Stroke Center is a co-lead center for the NIH Los Angeles-Southern California StrokeNET, one of twenty-five regional networks in the country for performing studies of stroke prevention, acute treatment, and recovery. In addition, UCLA is the coordinating center for the Los Angeles Neurological Emergency Treatment Trials (LA-NETT), which is a network conducting a number of clinical trials in emergency neurology, including acute stroke and status epilepticus.

### Prevention

The Stroke Clinic provides comprehensive evaluation and treatment recommendations for individuals at increased risk for ischemic and hemorrhagic stroke, including those with atrial fibrillation, carotid artery stenosis, transient ischemic attacks, and newly diagnosed unruptured aneurysms or vascular malformations.

**One Call, Immediate Accept**

**NEUROCRITICAL CARE RAPID TRANSFER**

**310-825-0909 - Press 1**

**Stroke Neurology** 310-794-6379

**Vascular Neurosurgery** 310-825-5111

Geoffrey Colby, MD, PhD; Anthony Wang, MD

**Interventional Neuroradiology** 310-267-8761

gduckwiler@mednet.ucla.edu

**Emergency Neurology** 310-794-0600

UCLA Comprehensive Stroke Center: [www.stroke.ucla.edu](http://www.stroke.ucla.edu)

UCLA TeleStroke: [www.telestroke.ucla.edu](http://www.telestroke.ucla.edu)

UCLA Interventional Neuroradiology: [www.aneurysm-stroke.com](http://www.aneurysm-stroke.com)

California Rehabilitation Institute: [www.californiarehabinstitute.com](http://www.californiarehabinstitute.com)

## Cerebral Aneurysms, Moyamoya Disease, and Pediatric Stroke

*Tremendous strides have been made in the management of complex vascular lesions of the brain and spinal cord. This symposium will provide a review of the basic principles of clinical and interventional management of cerebral aneurysms and subarachnoid hemorrhage. Developments in microsurgical and endovascular techniques will be discussed. Also, Moyamoya disease and pediatric stroke will be reviewed.*

## THE UCLA NEUROVASCULAR PROGRAM

The UCLA Neurovascular Program has developed management protocols for the diagnosis and treatment of cerebrovascular disorders which incorporate diagnostic and interventional neuroradiology, microneurosurgery, stereotactic radiosurgery, neuroanesthesiology, neurocritical care, and intensive medical management. The members of the UCLA Neurovascular team have worked cooperatively for three decades with all of the management components available on-site at UCLA, allowing for efficient coordination of the various techniques.

### Neurovascular Disorders Treated at UCLA:

#### **Intracranial Aneurysms**

Ruptured intracranial aneurysms may be treated either surgically or by endovascular technique. Postoperatively, transcranial Doppler and cerebral blood flow studies are available to assess for the development of vasospasm. Severe, medically refractory vasospasm is treated using balloon dilation angioplasty and/or pharmacologic intra-arterial infusion, performed by the interventional neuroradiology team. Giant and complex aneurysms often require treatment using new endovascular techniques of flow diversion or extracranial-intracranial arterial bypass.

#### **Arteriovenous Malformations (AVMs)**

The Neurovascular Program has extensive experience in the management of large and complex AVMs in children and adults, which are generally treated with embolization followed by microneurosurgical resection. Functional brain mapping for surgical planning is a critical component of management of AVMs. Deep and critically located AVMs are treated with stereotactic radiosurgery which is combined with embolization in larger lesions. Dural arteriovenous malformations are usually treated definitively by embolization alone, but in some complex cases, surgery or combined techniques are necessary. Spinal AVMs are treated by microsurgical excision, endovascular therapy, or most commonly, a combination of the two techniques. UCLA is also a designated HHT (hereditary hemorrhagic telangiectasia) Center of Excellence, and provides treatment for the whole range of lesions, including brain AVMs, that are seen in families.

#### **Cavernous Angiomas of the Brain, Brain Stem, and Spinal Cord**

Cavernous angiomas are generally treated by microsurgical excision when they have caused significant symptoms. Lesions of the brain stem and spinal cord can now be treated successfully using microneurosurgical techniques, when appropriate, usually in combination with intraoperative electrophysiologic monitoring.

#### **Vein of Galen Malformations**

Transarterial and transvenous endovascular approaches are employed to reduce flow through the fistula, combined in some cases with neurosurgical treatment.

#### **Intracranial Arterial Stenosis**

Stroke due to narrowing of the brain arteries carries one of the highest rates of recurrent stroke, as much as 25 percent. Treatment of narrowing of the intracranial arteries is performed by a multidisciplinary team of experts in both medical management and novel endovascular and surgical revascularization techniques, including angioplasty, stenting, bypass, and indirect revascularization surgeries.

UCLA Comprehensive Stroke Center website: [www.stroke.ucla.edu](http://www.stroke.ucla.edu)

**Stroke Neurology** 310-794-6379

**Interventional Neuroradiology** 310-267-8761

**Neurocritical Care** 310-267-9448

**Emergency Neurology** 310-794-0600

### UCLA Medical Center Facilities:

#### **Stroke Unit**

UCLA's Acute Stroke Unit, one of the first in the nation, offers comprehensive, cutting edge acute inpatient care for patients suffering from cerebral infarction, hemorrhage or other cerebrovascular diseases.

#### **UCLA Neurocritical Care**

The UCLA Neurocritical Care program is an internationally acclaimed center of excellence in patient care, training, and research. The 24-bed Singleton Neuro-ICU features numerous state-of-the-art technologies including continuous EEG monitoring, cerebral microdialysis, brain oximetry, transcranial doppler, the world's first ICU Robot (InTouch Health), and a comprehensive ICU Supercomputing System.

#### **California Rehabilitation Institute**

The California Rehabilitation Institute provides acute rehabilitation during the initial time of complex medical and neurological recovery post-stroke with the goal of reducing the impairments and disability associated with stroke and maximizing recovery.

#### **UCLA Clinical Image Processing Laboratory**

The laboratory is equipped with a full spectrum of 3D, image fusion, and post-processing software for cerebrovascular structural and perfusion study analysis.

#### **Neurosurgical Operating Rooms**

The state-of-the-art neurosurgical operating rooms at UCLA, which accommodate more than 1,200 cases annually, include video systems for viewing microsurgical procedures, electrophysiologic equipment for brain monitoring, intraoperative angiography, and a frameless stereotactic imaging workstation (BrainLAB).

#### **UCLA Cerebral Blood Flow Laboratory (Clinical)**

This facility provides comprehensive transcranial Doppler evaluations and cerebral blood flow testing on inpatients and outpatients.

#### **Interventional Neuroradiology Suites**

The interventional angiography suites are equipped with the latest digital equipment, including 3-D rotational angiography designated for the performance of endovascular procedures. More than 400 such procedures are performed annually at UCLA.

#### **Stereotactic Radiosurgery**

The stereotactic radiosurgery section at UCLA utilizes state-of-the-art instrumentation for the treatment of vascular malformations of the brain. This multidisciplinary effort of neurosurgeons, physicists, radiologists, and radiation oncologists is planned on a three-dimensional and multiplanar computerized model using high resolution brain mapping imaging techniques.

#### **Henry and Arline Gluck Mobile Stroke Rescue Program**

UCLA has developed a Mobile Stroke Unit (mobile CT ambulance) for advanced diagnosis, triage, and treatment of prehospital patients, including prehospital thrombolysis for acute ischemic stroke and prehospital reversal of anticoagulation for acute intracranial hemorrhage.



## Selected Advances in Stroke Care and Research from THE UCLA COMPREHENSIVE STROKE CENTER

- **First device therapy for acute ischemic stroke**
  - Coil Retriever, Stent Retriever
  - Invented/Developed at UCLA
- **Leading device therapies for cerebral aneurysms**
  - Guglielmi detachable coil, Matrix coil
  - Invented at UCLA
- **Leading catheter therapy for intracranial arteriovenous malformations and fistulae**
  - Onyx liquid embolic agent
  - Developed at UCLA
- **First MRI demonstration of successful reversal of advanced stroke injury in humans**
- **First validated instrument for paramedic recognition of stroke**
  - Los Angeles Prehospital Stroke Screen (LAPSS)
- **First validated instrument for paramedic recognition of large vessel occlusion (LVO)**
  - Los Angeles Motor Scale (LAMS)
- **First prehospital neuroprotective treatment of stroke trial**
  - Field Administration of Stroke Therapy - Magnesium (FAST-MAG)
- **First stroke device studied utilizing FDA approved exception from informed consent under emergency circumstances**
- **First multi-center trial of body weight-supported treadmill training and drug therapies for stroke**
- **First clinical cellphone PACS system for remote review of CT and MRI scans in acute stroke**
  - Developed at UCLA
- **First US multicenter trial of endoscopic treatment for acute intracerebral hemorrhage**
- **First trial of indirect revascularization for patients with intracranial atherosclerosis**
- **First routine use of intraoperative digital subtraction angiography for evaluation after surgical aneurysm and AVM treatment**
- **First Neuro ICU-adjacent comprehensive stroke imaging center with CT, PET, 3T MRI**
- **First ICU and ED robot for remote monitoring of stroke patients**
- **First cerebral blood flow laboratory to use bedside xenon CBF studies and TCD for stroke critical care and research**
- **First clinical information system with acute stroke management dashboard**
- **First to deploy write-once, write-everywhere stroke note for clinical documentation and automated quality and research database completion**
- **First systematic secondary prevention program for cerebral atherosclerosis**
  - Preventing Recurrence of Thromboembolic Events through Coordinated Treatment (Stroke PROTECT Program)
- **First accredited undergraduate program for Student Stroke Research**
  - UCLA Student Stroke Team
- **First accredited undergraduate program for Stroke Community Education and Research**
  - UCLA Stroke Force
- **First confirmation that stroke diagnosis in the field by paramedics and neurologists by cell phone is highly accurate**
  - Field Administration of Stroke Therapy - Magnesium (FAST-MAG)
- **First validation of wearable, remote wireless health monitoring for stroke**
  - Developed by UCLA Wireless Health Institute faculty and students
- **First medical system in the Western United States to operate a Mobile Stroke Unit**
  - UCLA Arline and Henry Gluck Stroke Rescue Program

# SYMPOSIUM INFORMATION

## ENROLLMENT - *Extremely Limited.*

**\*\*EARLY ENROLLMENT IS ADVISED\*\***

We accept American Express, MasterCard, Visa, and Discover.

## Online Registration

Please follow registration procedures located at [www.cme.ucla.edu/courses](http://www.cme.ucla.edu/courses) and click on "UCLA Brain Attack! '18".

**By Phone:** Call **(310) 794-2620**.

## ENROLLMENT FEES

Includes course registration, syllabus, continental breakfast, break refreshments, and lunch.

**\$200 Early Enrollment**

**\$225 (After April 6th)**

**\$150 UC Faculty/Staff**

## LOCATION

### UCLA Carnesale Commons

251 Charles E. Young Drive, West  
Los Angeles, CA 90095

*(see next page for map and directions)*

## PARKING

**From 7:00 AM to 1:00 PM, a \$12 pre-paid parking permit will be supplied by the course and provided to you at the Sunset Village parking structure entrance for non-UCLA attendees.**

Please convey that you are attending the UCLA Brain Attack! Symposium and the attendant will issue you the pre-paid parking permit.

If you arrive outside the specified time frame, you may purchase a parking permit at the Westwood parking kiosk off Westwood Boulevard at your own expense of \$12, cash only.

## ACCREDITATION

The Office of Continuing Medical Education, David Geffen School of Medicine at UCLA is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

The Office of Continuing Medical Education, David Geffen School of Medicine at UCLA designates this live activity for a maximum of **7.00 AMA PRA Category 1 Credits™**. Physicians should only claim credit commensurate with the extent of their participation in the activity.

### Disclosure

The FDA has issued a concept paper which classifies commercial support of scientific and educational programs as promotional unless it can be affirmed that the program is "truly independent" and free of commercial influence. In addition to independence, the FDA requires that non-promotional, commercially supported education be objective, balanced, and scientifically rigorous. The policy further states that all potential conflicts of interest of the CME staff and faculty be fully disclosed to the program's participants. In addition, Accreditation Council for Continuing Medical Education policy mandates that the provider adequately manages all identified potential conflicts of interest prior to the program. We at UCLA fully endorse the letter and spirit of these concepts.

### Refunds

Cancellations must be received in writing by April 6, 2018, and will be subject to a \$75 processing fee. No refunds will be given after that date. If, for any reason, the course must be canceled, discontinued, or rescheduled by the Office of Continuing Medical Education, a full refund will be provided. You may fax your refund request to 310-794-2624.

## ACCOMMODATIONS

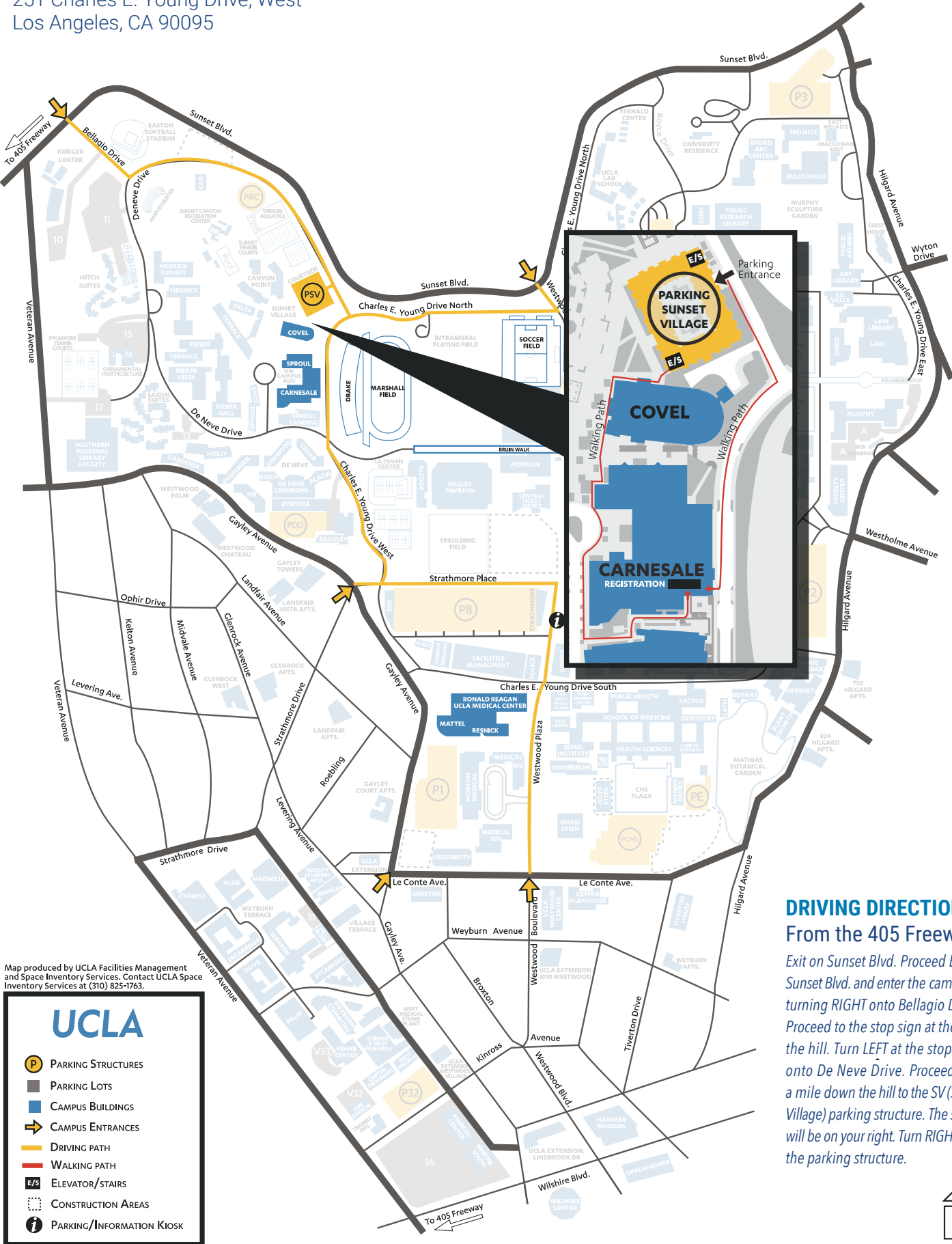
Although not specifically endorsed by this conference, a list of hotels conveniently located to UCLA is available here:  
<http://www.uclahealth.org/Pages/patients/lodging.aspx>

## For additional information

UCLA Office of Continuing Medical Education  
David Geffen School of Medicine  
10920 Wilshire Blvd., Suite 1060  
Los Angeles, CA 90024-6512

Phone: 310-794-2620

**UCLA Carnesale Commons**  
251 Charles E. Young Drive, West  
Los Angeles, CA 90095



Map produced by UCLA Facilities Management and Space Inventory Services. Contact UCLA Space Inventory Services at (310) 825-1763.