Battling stroke in Latin America

Myriam Fornage, MD, explores the association of specific FOXF2 variants with increased risk for lacunar stroke.

Genetic discoveries driving translational research

ears of stroke research into genetics are coalescing into novel drug development and outlines of individualized risk assessment and treatments based on genomic profiles. Clinical research and application are still in the future, but multiple genomic programs are moving into translational research.

“We have learned much about the role that genetic variation plays, not only in the risk of stroke but also in the biology of many of the concomitant conditions that contribute to stroke, such as atherosclerosis, atrial fibillation and coronary disease,” said Jonathan Rosand, MD, MSc, co-moderator of Wednesday’s presentation “Genetic Discoveries Are Finally Yielding Novel Treatments for Stroke: The Dawn of the Genomic Era for Stroke.”

“Genetics is a lens that is opening up the mystery of why we suffer a stroke and see GENETICS, page 13

Hypertension and stroke risk: Is lower better?

The linear relationship between blood pressure and the risk of cardiovascular events, including stroke, has long been recognized. It is less clear at what point the risk of adverse events begins to outweigh the benefits of lowering blood pressure.

"From epidemiological evidence, we might be able to conclude that lower is better," said Clive Rosendorff, MD, PhD, cardiologist at the Icahn School of Medicine at Mount Sinai in New York. "It is not that simple."

Rosendorff opened a Wednesday symposium examining the implications of the SPRINT trial. SPRINT, the Systolic Blood Pressure Intervention Trial, showed positive benefits from intensive blood pressure control as low as 120/80 mmHg. Current U.S. guidelines call for blood pressure of 140/90 or lower for most people, but guidelines in other countries set goals as low as 120/70.

Multiple studies and meta-analyses suggest that a systolic blood pressure target of 130 seems beneficial, Rosendorff said. But SPRINT found no stroke benefit from reducing blood pressure.

The problem is that SPRINT was stopped early because of efficacy, he said. Multiple trials have demonstrated significant reductions in stroke, but the benefit becomes apparent after about 3.5 years of treatment. SPRINT was stopped after a median follow-up of 3.26 years.

"The 11 percent relative risk reduction for stroke in SPRINT might have increased to significant levels with more time," he said. Emerging data on the benefits of blood pressure reduction on stroke have been approached different ways by different countries, said Paul Whelton, MD, MSc, Show Chwan professor of Global Public Health at Tulane University in New Orleans.

It is not as simple as concluding that lower blood pressure is better, said Clive Rosendorff, MD, PhD, during Wednesday’s implications of SPRINT symposium.

Canadian guidelines established a 120 mmHg or lower systolic target in 2016 for high-risk patients, 140 or lower for moderate-risk patients, 140 or lower for moderate-risk
JOIN US TODAY!

Thursday, Feb. 23
Expert Theater

12:10–12:40 p.m.
Exhibit Hall Floor
Booth #541

THE LINK BETWEEN CRYPTOGENIC STROKE AND ATRIAL FIBRILLATION

PROGRAM FACULTY
ELI FEEN, M.D.
Vascular Neurologist and Neurointensivist, WellStar Neurosciences
Marietta, GA

This event is not part of the official International Stroke Conference 2017 as planned by the International Stroke Conference Program Committee.
Researchers win first Dan Adams Award grant for brain study

n helping lead the Henrietta B. and Frederick H. Bugher Foundation’s unprecedented support of stroke research, Dan Adams always pushed people to think beyond traditional boundaries. So it was only fitting that his passing by creating the Bugher-American Heart Association Dan Adams Thinking Outside the Box Award.

The inaugural awardee was James Weyhenmeyer, PhD, the project investigator.

Outside the Box Award

The Bugher Foundation began in 1961 under the leadership of Nelson Adams, Dan’s father. The foundation began working with the American Heart Association in the mid-1980s and a decade later Dan Adams joined his dad as a trustee.

Dan Adams, whose career was in advertising and branding, helped champion the foundation’s focus on funding stroke research. He blended his professional expertise and his stroke knowledge to help the AHA/ASA develop branding and focus for stroke campaigns.

Dan died in June 2015, and months later, the Bugher Foundation — led by the remaining trustees: his sons Bryan and Bruce, and long-time fellow trustee Gayliss Ward — donated $675,000 to the AHA to establish this award. Its aim is to both recognize an individual who represents Dan’s commitment to new ways of thinking and to ensure the awardee directs funds toward an innovative research project.

The inaugural awardee was James Weyhenmeyer, PhD, the vice president for research and economic development at Georgia State University and the chairman of the Oversight Advisory Group for the American Stroke Association-Bugher Foundation Stroke Centers of Excellence, a $9.65 million, four-year project that involves teams of researchers at UCLA, the University of Colorado at Denver and the University of Miami. Weyhenmeyer held the same oversight role on the previous Bugher-ASA project.

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Alexa, ask American Heart how to do CPR.

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The Closing Main Event promises to end ISC 2017 with a bang, according to ISC Program Committee Chair Bruce Ovbiagele, MD, MSc. Three late-breaking science oral presentations and the inaugural ‘Crossfire Debates,’ breaking science.

The debates will cover three topics, with each lasting about 20 minutes. Audience members will vote their perspectives on each debate question before and after the debate. “We’ll have a final vote to see what impact the debate had on the opinion of the audience about each particular question,” he said.

The first debate will address the treatment of unruptured brain AVMs, or arteriovenous malformations. “The question is what to do with patients with small, treatable unruptured brain AVMs — treat them or leave them alone,” Ovbiagele said.

It springs from the results of the ARUBA trial, which compared medical management alone to medical management plus prophylactic interventional therapy. ARUBA concluded that intervention for unruptured cerebral AVMs carries significantly greater morbidity than observation. The results remain controversial, because “many in the stroke community would still recommend treatment for small, accessible, unruptured brain AVMs given their adverse long-term natural history and some data indicating low risks of treatment,” Ovbiagele said.

The second debate explores medical therapy for the treatment of symptomatic carotid artery stenosis. The landmark NASCET trial, which established the therapeutic benefit of carotid endarterectomy, was published 25 years ago.

“Over that time, there have been major advances in medical therapy, including use of statins, newer antiplatelet agents and more effective antihypertensive regimens, and promising lifestyle modification protocols,” Ovbiagele said. “The issue is whether it’s time for us to seriously assess the use of modern medical therapy as a treatment for symptomatic carotid artery stenosis.”

The third debate will examine whether tPA-eligible patients who have an emergent large occlusion should be treated directly with mechanical thrombectomy rather than giving them tPA followed by mechanical thrombectomy.

“We know that intravenous tPA is not as effective for these large vessel occlusions as mechanical thrombectomy can be, we know time is brain and that risk of systemic bleeding is higher with tPA, so should we just go ahead and directly administer mechanical thrombectomy in such patients?” Ovbiagele asked.

Following the Crossfire Debates, investigators of three late-breaking science oral abstracts will present data from their research. David J. Gladstone, MD, PhD, associate professor of medicine at the University of Toronto, Canada, will present “Randomized Trial of Hemostatic Therapy for ‘Spot Sign’ Positive Intracerebral Hemorrhage: Primary Results From the SPOTLIGHT/STOP-IT Study Collaboration.”

Shinichi Yoshimura, MD, clinical director of neurosurgery at Hyogo College of Medicine in Nishinomiya City, Japan, will examine “Randomized Controlled Trial of Early Versus Delayed Statin Therapy in Patients With Acute Ischemic Stroke.”

The final abstract presented will be “A Randomized Double-Blind Pilot Study Assessing Vagus Nerve Stimulation During Rehabilitation for Improved Upper Limb Motor Function After Stroke,” by Jesse Dawson, MD, of the Institute of Cardiovascular and Medical Sciences, University of Glasgow, United Kingdom.

Ovbiagele will co-moderate the session with Miguel A. Perez-Pinzon, PhD, director of the Cerebral Vascular Disease Research Center and professor of neurology/neurosurgery at the University of Miami Health System.
At Houston Methodist, we’re developing a revolutionary device to one day help patients recover from a stroke once traditional therapy ends. Using magnetic stimulation, our physicians are able to activate cells around damaged areas of the brain with the goal of improving motor function affected by the stroke. By pushing new boundaries, we’re bringing life-changing solutions to our patients.

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Visit us at booth #524 to see how magnetic stimulation is changing the way we approach patient care.
Asian stroke patients may respond differently to antithrombotics

Although most medications are effective across populations, there are important differences to consider in the risks and benefits of antithrombotic medications in different populations.

Thursday’s special joint session of the AHA/ASA and the Japan Stroke Society will focus on the differing responses to antithrombotic medications among Asian populations.

“There are many universal aspects of biology, and most medications are effective regardless of the region of the world. At the same time, we have increasing evidence that certain populations have different responses to antithrombotic medications, and there are different risk-benefit profiles regarding bleeding versus stroke risk,” said session co-moderator Hooman Kamel, MD. “This session highlights the latest science on those differences so clinicians can be well-informed when treating their own specific patient population.”

The session features an international panel with speakers from Japan, South Korea, Hong Kong and Germany. They will discuss differences in responses to prothrombotic therapy, antiplatelet therapy, novel oral anticoagulants and anticoagulants for bleeding complications.

Differing responses to warfarin among patients with atrial fibrillation is one topic, Kamel said. Several recent studies have demonstrated that North American and European patients with atrial fibrillation who suffer a major hemorrhage or intracranial hemorrhage benefit, in terms of stroke prevention, from restarting warfarin. However, studies from Asia have had opposite findings, which suggests that restarting treatment may not be beneficial.

“These were observational studies, and there are many limitations to the data, but they give you a good idea of the types of considerations that go into selecting antithrombotic medications for individual patients,” said Kamel, assistant professor at Weill Cornell Medical Center in New York.

Unique center registries are emerging as useful resources in stroke research. Researchers are mining the internal registry systems maintained by large hospital systems to gain valuable insights into the overall quality of care, outcomes and the status of reperfusion therapy in real-world clinical practice. Comparisons across different populations and health systems are particularly valuable.

“Stroke patterns are different between different populations, and stroke care systems are different among countries,” said Ji Hoe Heo, MD, director of Severance Stroke Center at Yonsei University College of Medicine in Seoul, South Korea. “We need to understand each other’s care systems, care quality and outcome. Hospital-based registries are a nice source to understand many aspects of stroke.”

Heo is the president of the Korean Stroke Society and co-moderator of “Large Multicenter Hospital-Based Stroke Registry Study: What We Can Learn,” the first joint session between the KSS and the AHA/ASA. The U.S.-based co-moderator is Lee H. Schwamm, MD, chair of neurology, director of stroke services and director of TeleStroke Service at Massachusetts General Hospital in Boston.

“While stroke is a global health issue as stroke is one of the leading causes of death and disability worldwide, stroke patterns are different between Westerners and Asians,” Heo said. “This session will provide a good opportunity for stroke specialists from around the world to get some idea of the merits and weaknesses of different registry systems and different strategies to keep care quality high.”

Four presenters will compare and contrast different registry systems used in South Korea and North America. South Korea has a uniform registry system that covers the population of a single ethnicity from many hospitals in the country. U.S. and Canadian hospitals have a different registry system using the Get With The Guidelines-Stroke program and treat larger, more diverse populations.

Experience shows that different registry systems offer different advantages depending on populations, research needs and other factors. Beom Joon Kim, MD, assistant professor of neurology at the Cerebrovascular Center and Bundang Clinical Neuroscience Center in Seoul, will discuss population characteristics, quality of care and outcomes in South Korea. Steven R. Messe, MD, associate professor of neurology and director of the Vascular Neurology Fellowship at the Hospital of the University of Pennsylvania in Philadelphia, will present U.S. populations, quality of care and outcomes.

Keun-Sik Hong, MD, professor of neurology at Inje University, Goyang, South Korea, will address the current status of reperfusion therapy in his country. Eric E. Smith, MD, MPH, associate professor of neurology and medical director of the Cognitive Neurosciences, will discuss unique regional registries for both countries.
Africans and African-Americans: Do they share stroke risks?


Presentations will explore the burden of stroke, vascular risk factors, knowledge and care gaps in Africa; recent insights into the epidemiology of stroke in African-Americans; the state of clinical stroke research in Africa; and developing interventions to improve stroke outcome in African-Americans.

“We need to learn more about what is happening in native African populations and begin to compare and contrast the findings with populations of African ancestry who are living elsewhere,” said Philip B. Gorelick, MD, MPH, symposium co-moderator and medical director of the Hauenstein Neuroscience Center at Mercy Health Saint Mary’s in Grand Rapids, Michigan. “This symposium gives us an opportunity to get a firsthand glimpse at some of the risk factors and outcomes in people of black African ancestry who are living in Africa and similar information on African-Americans who are generations away from living in Africa.”

The experience, treatment and outcome of stroke in developing nations can vary greatly based on geography as well as on the physical and genetic characteristics of stroke patients, said Yomi Ogun, MBChB, FWACP, FACP, president of the Nigerian Stroke Society.

“There are some important differences in stroke treatment in North America and in Africa,” said Ogun, professor of internal medicine at Lagos State University College of Medicine in Ikeja, Nigeria. “Clinicians in America talk about time from door to thrombolysis in terms of minutes. Over 80 percent of our stroke patients in Nigeria do not present until more than 24 hours after their strokes. Even if our centers had the facilities to administer early treatment, few of our patients arrive early. The lack of availability and affordability of neuroimaging, such as CT and MRI, in most centers are contributory challenges.”

Risk factors appear to be similar among native Africans and African-Americans. Hypertension, diabetes, dyslipidemia and metabolic syndrome are leading contributors to stroke in Nigeria, Ogun said. The 2010 InterStroke Study found that risk factors for stroke appear to be consistent by age, race, ethnic group and continent.

“One assumes that the risk factors are the same, although in a potentially more agrarian culture, we may be finding that there is less obesity because there is more physical activity and less caloric intake,” Gorelick said. “There may be dietary differences that could start to explain potential differences in stroke. And we know that major tobacco companies are moving into developing countries and providing easy access to tobacco, which increases stroke risk.”

Other potential differences include the availability of diagnostics, treatment or prevention modalities and interventional procedures, such as stenting and carotid endarterectomy. Differences in healthcare policy and healthcare delivery also may affect the delivery of stroke prevention and stroke care.

“There is a considerable amount to be learned about current trends and adapting/ applying them to local needs,” Ogun said. “We are hoping that the symposium serves as a catalyst to create publications making these comparisons and contrasts. We also hope that sharing lessons from both continents can help us all to improve stroke prevention as well as reduce disability, and improve the outcome of stroke in our patients.”

One-year results suggest flow diverter technology is safe and effective for treating unruptured, small/medium, wide-neck intracranial aneurysms. The Pipeline embolization device, which diverts blood flow around a brain aneurysm, is currently used to treat large wide-neck intracranial aneurysms. The PREMIER study enrolled 141 patients (average age 55, 88 percent female) at 22 centers from July 2014-February 2015. Technical success was achieved in 90 percent of patients. The 30-day rate of major stroke in the territory supplied by the treated artery or neurologic death was 1.4 percent.
THE POWER TO TREAT, BEAT AND PREVENT STROKE.

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A visit to the Science & Technology Hall can extend your clinical experience, learn new products and services and networking opportunities. Showcasing more than 100 companies from 10 a.m. to 4 p.m. on Thursday, the hall lets you investigate diagnostic and monitoring equipment, clinical reporting and support services, technology staff supporting services, education and more. Also, be sure to stop by the American Heart Association/American Stroke Association’s HeadQuarters in Booth 233. There, you can learn more about AHA/ASA initiatives, education, membership and publications.

**HEADQUARTERS THEATER SCHEDULE**

**Thursday, Feb. 23**

10:15-10:45 a.m. OSIO PhD, Cnoles JP

12:45-1:15 p.m. Stroke Systems of Care

2:15-2:45 p.m. Credit Claiming for ISC 2017 and Other On Demand Education Opportunities

**MORE CAN’T-MISS OPPORTUNITIES**

**HealthTech Pavilion:** The Center for Health Technology & Innovation (achatechnology.org), a new Center of Excellence for AHA, is focused on building and harnessing health technologies and in partnerships in pursuit of innovative and scalable solutions across the health continuum. Through the center, the AHA will work to apply expertise in science, health education and its powerful brand to help the health technology market fulfill a basic promise: that applying technology solutions to health care can improve outcomes, lower cost and increase engagement. Health tech companies with shared interests can join the Health Tech Collaborative, which helps companies align and integrate their technology with AHA resources to encourage development and adoption of digital healthcare solutions. These companies can participate in market partnerships, forums and knowledge-sharing platforms to research, share and collaborate on exciting healthcare solutions with established companies and startups.

**SIMULATION ZONE**

The Simulation Zone, Booth 815, features three interactive displays: Body Interact, NeuroVR™ and Apollo. Body Interact is a 3-D immersive training platform that virtualizes acute and chronic neurovascular disorders. Participants evaluate lifelike virtual patients and “treat” a variety of conditions in a clinical environment with dynamic monitoring, dialoging, diagnostic testing, imaging, drugs, intervention options and performance debriefing.

NeuroVR™ is a virtual reality neurosurgery simulator allowing attendees to practice open cranial and endoscopic brain surgery procedures in a realistic training environment. Options range from essential skills to advanced procedures. The program technology provides lifelike renderings of brain tissue, blood vessels and tumors, realistic sounds and tactile feedback. And Apollo is a technology-advanced, mannequin-based simulation that sets the standard in appearance, realism and physiology. It uses preprogrammed clinical experiences containing evidence-based training scenarios that include acute stroke and other neurovascular conditions.

**SIMULATION ZONE SCHEDULE**

**Thursday, Feb. 23**

Body Interact Moderated Sessions

12:30 p.m. 1 p.m. 2 p.m.

Apollo Moderated Sessions

1 p.m. 2:30 p.m.

NeuroVR™ Moderated Sessions

1:10 p.m. 1:30 p.m.

**EXPERT THEATER, BOOTH 541**

The Expert Theater offers targeted educational programs and features products and therapeutic treatments from industry supporters. Enjoy a complimentary lunch provided by the American Heart Association/American Stroke Association.

**SCIENCE & TECHNOLOGY HALL HOURS**

**Thursday, Feb. 23**

10 a.m.-4 p.m.

**POSTER HALL**

Be sure to visit the Poster Hall, located adjacent to the Science & Technology Hall, in Hall E, Level 1, to see more than 500 posters.

**SCIENCE & TECHNOLOGY HALL EXHIBITORS**

**2017 ISC EXHIBITORS**

Bristol Myers Squibb / Pfizer

Pfizer and Bristol-Myers Squibb are partners in the development and commercialization of Bristol-Myers Squibb’s and Pfizer’s long-acting renin inhibitor candidates for the treatment of chronic heart failure, diabetes and hypertension.

Chiesi

Chiesi USA Inc., with headquarters in Cary, NC, specializes in respiratory, neuromuscular and other rare diseases. The company is dedicated to the development and commercialization of a portfolio of innovative treatments for chronic respiratory conditions, including Duchenne muscular dystrophy. For more information, please visit chiesi.com.

**Centre for Neuro Skills**

Centre for Neuro Skills has been recognized as a world leader for providing innovative neuro-rehabilitation for individuals and organizations. The Centre offers programs and services for the treatment of traumatic brain injury, spinal cord injury, stroke and other neurological conditions. For more information, please visit centreneuroskills.com.

**Clinical Data Management**

Clinical Data Management provides database management services for clinical research studies. For more information, please visit cdm-services.com.

**Cedars-Sinai**

Cedars-Sinai is one of the nation’s largest non-profit academic health centers focused on transforming the health of the community and the world. Cedars-Sinai’s mission is to improve the lives of our patients and families and the communities we serve through the highest quality and most advanced medical care.

**Corazon, Inc.**

Corazon, Inc. is a national leader in neurosurgical device development. Corazon’s mission is to design and develop innovative, evidence-based neurovascular devices and therapies to improve the quality of life for individuals affected by acute neurological emergencies, neurological disorders and other conditions treated by neurovascular surgeons.

**Elanever**

Elanever, a medical technology company, develops innovative devices and services that provide precise, safe, cost-effective, and highly effective therapies to patients suffering from disease, pain, and dysfunction.

**Edge Therapeutics, Inc.**

Edge Therapeutics is a clinical-stage biotechnology company focused on advancing novel, highly-selective, orally-delivered products for the treatment of serious conditions for which there are unmet medical needs. The company’s lead product candidate, ET-743, has been granted Fast Track designation by the U.S. Food and Drug Administration for the treatment of moderate to severe GERD.

**Frasier Medical**

Frasier Medical, a global strategic consulting firm specializing in health care, has helped companies across the globe with research and development, strategic planning and other services to improve the health care system. Frasier Medical has provided medical and science communications, clinical development and medical writing services to leading life sciences companies.

**Objectifs Neuro**

Objectifs Neuro is a medical device company that develops and commercializes a novel technology for the treatment of acute and chronic pain and other painful conditions. The company’s lead product, Implanted-POD System, provides a minimally invasive, durable and easily adjustable system for the treatment of chronic pain.

**Pfizer**

Pfizer is a leading global pharmaceutical company focused on developing and bringing to market the breakthrough healthcare solutions that have the potential to improve and prolong life. Pfizer’s portfolio includes more than 200 products in over 130 countries. Through its global research and development capability, Pfizer is dedicated to discovering and bringing forward innovative new medicines, biologics, and vaccines for some of the world’s most serious diseases.

**Steelhead Medical**

Steelhead Medical Technologies is a medical device company with headquarters in Rochester, NY, along with facilities in Ontario, Canada, and Shenzhen, China. The company develops and manufactures devices for the treatment of acute and chronic pain, as well as other medical conditions. Steelhead Medical Technologies is committed to developing innovative solutions that improve the quality and safety of patient care.

**Theodore Medical**

Theodore Medical, a company of the global Theodore Medical Group, provides cutting-edge medical and surgical devices for the treatment of acute and chronic pain. Theodore Medical’s product portfolio includes the Theradisc System, a minimally invasive procedure for the treatment of lumbar disc herniation.

**TheraNova**

TheraNova is a medical device company that develops and commercializes innovative solutions for the treatment of acute and chronic pain. The company’s lead product candidate, TheraNova’s BioDisc, is designed to provide long-term pain relief by reducing intervertebral disc pressure and promoting disc healing.

**TomTec Imaging Systems**

TomTec Imaging Systems is a leading medical technology company that develops and commercializes innovative solutions for the treatment of acute and chronic pain. The company’s lead product candidate, TomTec’s Interspinous Core Device, is a minimally invasive procedure for the treatment of lumbar disc herniation.

**VitroCell**

VitroCell is a medical device company that develops and commercializes innovative solutions for the treatment of acute and chronic pain. The company’s lead product candidate, VitroCell’s Cervical Disc Herniation System, is designed to provide long-term pain relief by reducing intervertebral disc pressure and promoting disc healing.

**WY Laboratories**

WY Laboratories is a global medical technology company that develops and commercializes innovative solutions for the treatment of acute and chronic pain. The company’s lead product candidate, WY’s Lumbar Disc Herniation System, is designed to provide long-term pain relief by reducing intervertebral disc pressure and promoting disc healing.

**Zeal Medical**

Zeal Medical is a medical device company that develops and commercializes innovative solutions for the treatment of acute and chronic pain. The company’s lead product candidate, Zeal Medical’s DiscRepair System, is designed to provide long-term pain relief by reducing intervertebral disc pressure and promoting disc healing.
constant monitoring, a powerful analytical algorithm and uniquely combines patient-friendly, beat-to-beat clinical care to any patient, at any time, while care providers to deliver care when and where it is needed. Our technology is designed to detect and monitor stroke by creating interventions that allow for access through smaller openings and resection of soft tissue abnormalities.

Nicos Corporation 325

Nico Corporation is a leader in developing technology solutions for the field of cardiac surgery, including central, heart, and peripheral vascular surgery, where access to surgical site is critical. Our technology is designed to detect and monitor stroke by creating interventions that allow for access through smaller openings and resection of soft tissue abnormalities.

Olea Medical Solutions, Inc. 932

Olea Medical Solutions, Inc. is a leading developer of software applications for acute stroke diagnosis, including detection of cardiac arrest and stroke, without any human operator, from the routinely ECGs to save the real-time monitoring.

Omegabite 804

Omegabite is a 30-year-old parent company of Omegavision, which provides high resolution, high frame-rate imaging for the life sciences and medical imaging. Omegabite's products include the world's leading x-ray imaging systems, with over 2.5 million x-ray systems in use today. Omegabite's products are used in a wide range of applications, from medical imaging to industrial inspection.

Parker Hannifin Indigo 320

Indigo is a revolution that allows clinicians to diagnose and treat stroke in an emergency setting. Indigo's technology is designed to detect and monitor stroke by creating interventions that allow for access through smaller openings and resection of soft tissue abnormalities.

Portola Pharmaceuticals Inc. 124

Portola Pharmaceuticals Inc. is a research-based biopharmaceutical company focused on developing and commercializing transformative new treatments for serious medical conditions. Our mission is to develop and deliver innovative treatments for patients in need.

Rainer Medical 305

Rainer Medical is a leading developer of software solutions for the field of vascular surgery, including central, heart, and peripheral vascular surgery, where access to surgical site is critical. Our technology is designed to detect and monitor stroke by creating interventions that allow for access through smaller openings and resection of soft tissue abnormalities.

Oleal Medical Solutions, Inc. 932

Olea Medical Solutions, Inc. is a leading developer of software applications for acute stroke diagnosis, including detection of cardiac arrest and stroke, without any human operator, from the routinely ECGs to save the real-time monitoring.

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SC 2017 offers two types of poster sessions: professor-led poster tours and one-on-one individual Q&A poster presentations. Choose from 10 Professor-Led Poster Tours from 5:15 p.m. to 6:15 p.m. today in Hall E. Expert moderators will lead these tours, which are organized by category, and will provide a short presentation and Q&A with each of the poster authors in that section. To take part, simply review the Poster Abstracts section of the Final Program (page 82) or view the Moderated Poster Sessions on the Mobile Meeting Guide app. Decide which section/category of posters you would like to attend. At 5:10 p.m., arrive at the correspondingly numbered “Section” sign for your selected section/category. Headsets will be available for ease of listening to the presenters.

During the Regular Poster Sessions, presenters will be at their posters for informal Q&As with attendees from 6:15 p.m. to 6:45 p.m. today in Hall E. These one-on-one posters are not a part of the earlier Professor-Led Poster Tours. To see the posters featured in today’s Regular Poster Sessions, go to page 89 of the Poster Abstracts section of the Final Program or view the Poster Sessions on the Mobile Meeting Guide app. Posters also will be available for viewing in the Poster Hall (Hall E) from 8 a.m. to 6:45 p.m. today. Please see page 49 of the Final Program for the Poster Hall map.

**GENETICS continued from page 1**

how we can prevent and treat these strokes more effectively,” Rosand said.

The most exciting discoveries in the biology of stroke are happening in genetics precisely because the discoveries originate in the people who are affected, rather than in models designed to replicate human disease, said Rosand, a professor of neurology at Harvard Medical School and Massachusetts General Hospital in Boston. Genetic studies open a new window into the physiology and pathophysiology of the human cerebral circulatory system. Gene variants are natural experiments in human populations. Genome-wide association studies, whole-genome sequencing studies, whole-genome sequencing studies and other genetic tools allow researchers to explore disease mechanisms in natural populations in ways that have not been possible before.

Every new mechanism and clue about the natural history of stroke that human genetics yields is an opportunity to develop a new treatment strategy.

Martin Dichgans, MD, professor of neurology and director of the Institute for Stroke and Dementia Research at Ludwig Maximilians University in Munich, discussed the transformation of research on the histone deacetylase gene into a highly targeted search for pharmacologic agents to prevent stroke. Variants of the HDAC gene are associated with ischemic stroke as well as other conditions. At least four HDAC inhibitors are being used for oncologic indications. HDAC inhibitors also are being studied in neurodegenerative diseases, psychiatric disorders, addiction and inflammatory disease states, and now, in stroke. Research into the Forkhead Box F2 gene is moving toward therapeutic targets for cerebral small-vessel disease. Myriam Fornage, PhD, Laurence & Johanna Favrot Distinguished Professor in Cardiology at the University of Texas Health Science Center in Houston, discussed the association of specific FOXF2 variants with smooth muscle and pericyte maturation defects. These defects increase risk for lacunar stroke. Douglas Gould, PhD, associate professor of ophthalmology and anatomy at the University of California School of Medicine in San Francisco, explored the role of hereditary small-vessel diseases in developing therapeutic strategies. Gould focused on the COL4A1 and COL4A2 genes, which play major roles in the formation and function of basement membranes. These extracellular matrices act as dynamic and versatile signaling platforms that regulate tissue development, function and repair. Rare variants in these genes cause hereditary stroke. More common but less potent variants contribute only slightly to stroke risk. “Because these genes seem to be involved in both the development of familial stroke and more common forms of stroke, what we learn in hereditary stroke might allow us to develop treatments for more common disease more quickly,” Rosand said.

The final presentation investigated the use of genetic testing for stroke survivors to assess their risk of recurrent stroke. Alessandro Biffi, MD, recipient of this year’s Robert G. Siekert New Investigator Award, discussed the latest findings linking specific variants of the APOE gene in stroke survivors at increased risk for a second stroke. Biffi is an instructor in neurology at Harvard Medical School and an assistant in neurology at Massachusetts General Hospital in Boston.

“With genetic testing, we can now assign individual scores based on disease-related gene variants and consider treating them differently, perhaps more aggressively, because they are at higher risk for a recurrent stroke,” Rosand said.

**ANTITHROMBOTICS continued from page 6**

Differences in responses to novel oral anticoagulants are not as clear, and the available data will be reviewed in “Differences in Impact of Novel Oral Anticoagulants Among Races/Regions,” by Edward Wong, MD, chief of Neurology at the Chinese University of Hong Kong.

“In terms of antiplatelet agents, discerning differences can be difficult given the large number of studies and sometimes conflicting findings,” Ketel said. “It can be a question of how to extrapolate North America-based data to Asian populations and, likewise, Asia-based trials, such as the CHANCE trial [Clopidogrel in High-Risk Patients With Acute Nondisabling Cerebrovascular Events], to North American populations.

“It is these types of challenges, which are routinely confronted by clinicians, that are the focus of this important session. The data presented will be useful to the broad community of providers who treat patients with stroke, including stroke neurologists and nurses, stroke team coordinators, emergency department physicians, and others,” he said. “Treating and preventing stroke is a multidisciplinary effort, and this session is for everybody taking care of stroke patients.”

The session’s other moderator, speakers and topics are:

• Co-moderator: Terry Hirano, Kyorin University, Mitaka, Japan

• Differences in Prothrombotic States Among Races/Regions, Toshiyuki Miyata, MD, PhD, National Cerebral and Cardiovascular Center, Osaka, Japan

• Differences in Antiplatelet Choice Among Races/Regions, Oh Young Bung, MD, PhD, Samsung Medical Center, Seoul, South Korea

• Differences in Bleeding Risk and Antidotes Among Races/Regions, Thorsten G. Steiner, MD, professor of neurology and neurointensive care, and vice director of the department of neurology, University of Heidelberg, Germany

**REGISTRIES continued from page 6**

Clinic, and Kathy Taylor, chair of vascular dementia at the University of Calgary, Canada, will examine the status of reperfusion in North America.

The symposium is a groundbreaking opportunity to explore the characteristics of existing registries and share outcomes, Heo said. The risk factors for stroke appear to be consistent around the world by age, race and ethnic group. But the ways those risk factors translate around the world by age, race and ethnic group. But the ways those risk factors translate around the world by age, race and ethnic group. But the ways those risk factors translate around the world by age, race and ethnic group. But the ways those risk factors translate around the world by age, race and ethnic group. But the ways those risk factors translate around the world by age, race and ethnic group. But the ways those risk factors translate around the world by age, race and ethnic group. But the ways those risk factors translate around the world by age, race and ethnic group. But the ways those risk factors translate around the world by age, race and ethnic group. But the ways those risk factors translate around the world by age, race and ethnic group. But the ways those risk factors translate around the world by age, race and ethnic group. But the ways those risk factors translate around the world by age, race and ethnic group. But the ways those risk factors translate around the world by age, race and ethnic group. But the ways those risk factors translate around the world by age, race and ethnic group. But the ways those risk factors translate around the world by age, race and ethnic group. But the ways those risk factors translate around the world by age, race and ethnic group. But the ways those risk factors translate around the world by age, race and ethnic group. But the ways those risk factors translate different in different groups. Large hospital-based registries are emerging as useful tools to explore those patterns and the effects on outcomes.

“We expect that this session will help to promote collaborative work and projects at the national or stroke society level to help us understand more about the best ways to use registry systems,” Heo said. “Our common goal is to improve clinical practice and outcomes for our patients.”

**Poster tours, sessions continue today**
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STRATIS STROKE REGISTRY

Systematic Evaluation of Patients TReated with Neurothrombectomy Devices for AcuTe Ischemic Stroke (STRATIS) Registry

Come hear the results of this large, real-world system of care study – including transfer distances, referral patterns, times and location of stroke onset to ultimate interventional treatment.

LIVE AT ISC: Thursday / 2:42 p.m.
GRAND BALLROOM B

DON’T MISS:

Interhospital transfer prior to thrombectomy is associated with delayed treatment and worse outcome in the STRATIS registry
THURSDAY
2:42 p.m. - 2:54 p.m.
ABSTRACT PRESENTATION
Grand Ballroom B

Serial ASPECTS from Baseline to 24 hours: Impact of Endovascular Therapy in STRATIS
THURSDAY
5:30 p.m. - 5:35 p.m.
POSTER PRESENTATION
Hall E

Collateral Negate Time: Topography and Determinants of Baseline ASPECTS in STRATIS
THURSDAY
6:15 p.m. - 6:45 p.m.
POSTER PRESENTATION
Hall E
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