

October 10-12, 2019

Renaissance Columbus Downtown Hotel Columbus, Ohio

Program Chairman Prof. Kailash Prasad, MBBS (Hons), MD, PhD, DSc, FRCPC, FACC, FIACS, FICA

> Chairman, Local Organizing Committee Randall W. Franz, MD, FACS, FICA, RVT, RPVI

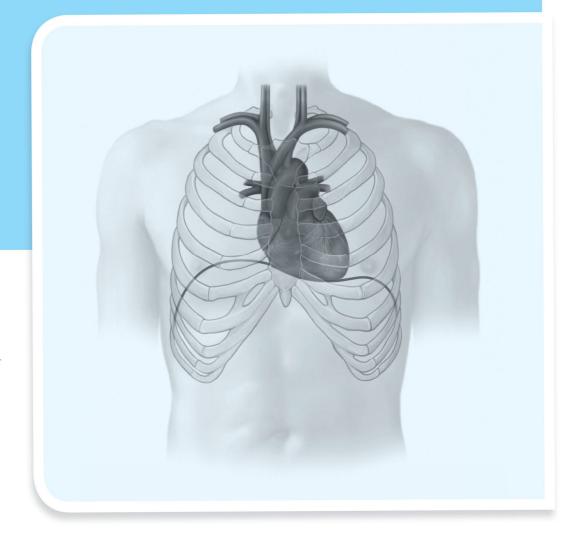
Chairman, Scientific Committee Prof. Otmar M. Pachinger, MD, FESC, FAHA, FICA

Scientific Program

International Journal of Angiology

Editor-in-Chief John A. Elefteriades, MD, FICA Number 2 • Volume 27 • Pages 57–120

ISSN 1061-1711





International College of Angiology An Official Journal of the

Official Journal of the

International College of Surgeons

An Official Journal of the Asian Society for Vascular Surgery

61th Annual World Congress - ICA 2019 International College of Angiology Jointly Provided by OhioHealth Continuing Medical Education OhioHealth Heart and Vascular

Renaissance Columbus Downtown Hotel Columbus, Ohio - October 10-12, 2019

Board of Directors

Kailash Prasad, MBBS (Hons), MD, PhD, DSc, *Chairman* Randall W. Franz, MD, RVT, *First Vice Chairman* John A. Elefteriades, MD, *Second Vice Chairman*

Pertti T. Aarnio, MD, PhD Elie D. Aboulafia, MD Lucy J. Chang, MD John D. Corson, MB, ChB Iwan Dakota, MD, PhD Ernesto P. Molmenti, MD, PhD, MBA nd Vice Chairman Takao Ohki, MD, PhD Otmar M. Pachinger, MD Sibu P. Saha, MD, MBA Rajinder P. Sharma, MD Josef Veselka, MD, PhD Wei Zhou, MD

Officers, Scientific Council

Ernesto P. Molmenti, MD, PhD, MBA, President Josef Veselka, MD, PhD, President-Elect Iwan Dakota, MD, PhD, Secretary General Wei Zhou, MD, Treasurer Vice Presidents

Andreia P. Andreev, MD Sofia, Bulgaria Nobuyoshi Azuma, MD, PhD Asahikawa, Japan Semih I. Barlas, MD Istanbul, Turkey Jürgen Falkensammer, MD Vienna, Austria Glenn R. Faust, MD East Meadow, New York Petr Hájek, MD, PhD Prague, Czech Republic

Michael C. Kim, MD New York, New York K.V. Krishnasastry, MD Lake Success, New York Frank Manetta, MD Bayshore, New York Ramdas P. Pai, MD Los Angeles, California Thomas Panetta, MD Great Neck, New York Anwar Santoso, MD, PhD Jakarta, Indonesia

Honorary Fellows

Eugene Braunwald, MD Alain F. Carpentier, MD Csaba Dzsinich, MD Michael Grimm, MD Larry H. Hollier, MD Pekka-T. Harjola, MD

Algy de Medeiros, MD (1965-1966) A. Michael Boyd, FRCS (1966-1967)

Angelo M. May, MD (1972-1975)

Albert Senn, MD (1976-1978)

Fritz Kaindl, MD (1979-1981) Robert Raskind, MD (1984-1985)

Earl R. Olsen, MD (1986-1989)

Hans J. Hachen, MD (1989-1990)

Kailash Prasad, MD, PhD (1995-1997)

John B. Chang, MD (1991-1995)

Ernesto Castro-Farinas, MD (1967-1968)

Francis Robicsek, MD, PhD Wilhelm Sandmann, MD Michael B. Silva, Jr., MD Frank J. Vieth, MD Stephen Westaby, BSc, PhD, MS

Past-Presidents

Tatsuki Katsumura, MD, PhD (1997-1999) Pertti T. Aarnio, MD, PhD (1999–2001) Jose Alemany, MD (2001-2003) Elie D. Aboulafia, MD (2003-2005) John A. Elefteriades, MD (2005-2007) John D. Corson, MB, ChB (2007-2009) Sibu P. Saha, MD, MBA (2009-2011) Takao Ohki, MD, PhD (2011-2013) Otmar M. Pachinger, MD (2013-2015) Rajinder Sharma, MD (2015-2017)

Executive Director Denise M. Rossignol, BS

International College of Angiology Scientific Committee

Responsible for review and selection of all scientific papers pro-offered for the Annual World Congress within budgetary and space limitations, responsible for the organization of special symposia and workshops. Otmar M. Pachinger, M.D., Chairman

Innsbruck, Austria

Scientific Committee Co-Chairpersons

Pertti T. Aarnio, M.D., Ph.D. Kauniainen, Finland Iwan Dakota, M.D., Ph.D. Jakarta, Indonesia John A. Elefteriades, M.D. New Haven, Connecticut Glenn R. Faust, M.D. East Meadow, New York Randall W. Franz, M.D. Columbus, Ohio Ernesto P. Molmenti, M.D., Ph.D., MBA Manhasset, New York Takao Ohki, M.D., Ph.D. Tokyo, Japan Sibu P. Saha, M.D., MBA Lexington, Kentucky Rajinder P. Sharma, M.D. West Bloomfield, Michigan Josef Veselka, M.D., Ph.D. Prague, Czech Republic Wei Zhou, M.D. Tucson, Arizona

Young Investigator Award Recipients

Robert N.A. Gasser, M.D., Ph.D. (1988) David Wilkinson, M.B., Ch.B. (1988) Simon Ashley, B.M., FRCS (1989) G. Galloni, M.D. (1989) Tony Katras, M.D. (1989) Dimitrios N. Psathakis, M.D. (1989) Joseph F. Polak, M.D. (1989) Daniel Duprez, M.D., Ph.D. (1991) Philippe Bull, M.D. (1992) Patricia Cristodor, M.D. (1992) Manfred Grisold, M.D. (1992) Bruno Papaleo, M.D. (1992) F.C. Rada, M.D. (1992) Patricia Amado, M.D. (1993) Jutta Berglöff, M.D. (1993) Claudia Dimofte, M.D. (1993) Antti Korpela, M.D. (1993) R.S. More, MRCP (1993) Antero Sahlman, M.D. (1993) I. Schafhalter, M.D. (1993) Nilanjana Maulik, Ph.D. (1994) J. Melichercik, M.D. (1994) Robert W. Chang, B.S. (1995) T. Ikonen, M.D. (1995) A.R.J. Rajakumar, M.B.B.S. (1995) Satoshi Sakai, M.D. (1996) Bernd Wolfgarten, M.D. (1996) Gernold Wozniak, M.D. (1996) Jalal Zamani, M.D. (1996) Sabine Horn, M.D. (1997) Roberto Baglini, M.D. (1997) Maziar Rahmani, M.D. (1997)

Sailaritta Vuorisalo, M.D., Ph.D. (1998) Atsushi Ishida, M.D., Ph.D. (1999) Dai Wangde, M.D. (1999) Wolf Drescher, M.D. (2000) Takashi Yamaki, M.D. (2000) Mitsuhiro Yamamura, M.D. (2000) Paul Lee, Ph.D. (2001) Thomas Zeller, M.D. (2001) Shoiji Fukuda, M.D., Ph.D. (2002) Rossella DiStefano, M.D. (2003) Randy A. Stevens, M.D. (2003) Nadia Cosentino, M.D. (2005) Erick McNair, M.Sc. (2005) Manika Das, Ph.D. (2006) Suresh Varma Penumathsa (2006) Mahesh Thirunavukkarasu (2006) Joseph F. Ndisang, PharmD, PhD (2007) Ramesh Vidavalur, M.D. (2007) Aruna Poduri, Ph.D. (2010) John Samas, M.D. (2010) Xuan Zhang, B.S. (2010) Jang Yong Kim, M.D. (2011) Ivy Cheng, B.S. (2013) Gautham Chitrigari, M.B.B.S. (2013) Brandon Sumpio (2013) Sisca Natalia Siagian, M.D. (2015) Jakub Honek, M.D. (2016) Pavol Tomasov, M.D. (2016) Denisa Jahnlova, M.D. (2016) Christopher F. Tanga, D.O. (2017) Cyril Štěchovský, M.D. (2017)

Professor John B. Chang Research Achievement Award Recipients

Kailash Prasad, M.D., Ph.D. (1995) Zhong Gao Wang, M.D. (1996) Vikrom S. Sottiurai, M.D., Ph.D. (1997) Pertti T. Aarnio, M.D., Ph.D. (1998) Kensuke Esato, M.D. (1999) Bauer E. Sumpio, M.D. (2000) Jose Alemany, M.D. (2001) Hendrick B. Barner, M.D. (2002) Tatsuki Katsumura, M.D., Ph.D. (2003) John A. Elefteriades, M.D. (2004) Francis Robicsek, M.D. (2005) John D. Corson, M.B., Ch.B. (2006) Sibu P. Saha, M.D., MBA (2009) Victor A. Ferraris, M.D., Ph.D. (2010) J. Ernesto Molina, M.D., Ph.D. (2011) Otmar M. Pachinger, M.D., Ph.D. (2012) Elie D. Aboulafia, M.D. (2013) Edward Ross, M.D.. (2014) Josef Veselka, M.D., Ph.D. (2016) Thomas F. Whayne, Jr., M.D., Ph.D. (2017) Takao Ohki, M.D., Ph.D. (2018) Randall W. Franz, M.D., RVT, RVPI (2019)

ICA Lifetime Achievement Award

Kailash Prasad, MBBS (Hons), M.D., Ph.D., D.Sc. (2015) John B. Chang, M.D. (Posthumously 2016) Otmar M. Pachinger, M.D. (2019)

International Journal of Angiology

Official Journal of the International College of Angiology An Official Publication of the International College of Surgeons An Official Publication of the Asian Society for Vascular Surgery

Editor-in-Chief

John A. Elefteriades, *Connecticut* Consulting Editor

Kailash Prasad, Canada

Editorial Advisory Board

Michael F. O'Rourke, Australia Stephen Westaby, United Kingdom

Senior Editors

Takao Ohki, *Japan* Otmar M. Pachinger, *Austria* Pravin M. Shah, *California* Josef Veselka, *Czech Republic*

Editorial Board

Stefan Müller-Hülsbeck, Germany H. Müller-Wiefel, Germany Aravinda Nanjundappa, West Virginia Takao Ohki, Japan Alexander N. Orekhov, Russia Ramdas G. Pai, California Thomas Panetta, New York Jeffrey Prem, Ohio Dinker B. Rai, New York Chand Ramaiah, Tennessee Sibu P. Saha, Kentucky Anwar Santoso, Indonesia Darren B. Schneider, New York Richard W. Schutzer, New York Nicolas W. Shammas, Iowa Rajinder P. Sharma, Michigan Hiroshi Shigematsu, Japan Ahmed S. Shoker, Canada Tahir Tak, Minnesota Eiji Tamiya, Japan Sanjay Tyagi, India Malka Yahalom, Israel Mitsuhiro Yamamura, Japan Wei Zhou, Arizona

External Reviewers

Paul Ganguly, Saudi Arabia Editors Emeritus K. Buyukozturk, Turkey Raymond A. Dieter, Jr., Illinois Hans O. Myhre, Norway Francis Robicsek, North Carolina

Managing Editor Denise M. Rossignol, Vermont

Eugene Braunwald, *Massachusetts* Peter P. Liu, *Canada*

Pertti T. Aarnio, *Finland* John D. Corson, *New Mexico* Victor A. Ferraris, *Kentucky* Larry H. Hollier, *Louisiana* Frank Manetta, *New York*

Elie D. Aboulafia, Michigan Andreia P. Andreev, Bulgaria Nobuyoshi Azuma, Japan Semih I. Barlas, Turkey Jeffrey S. Borer, New York Anthony J. Comerota, Ohio Iwan Dakota, Indonesia Gert J. DeBorst, The Netherlands Alik Farber, Massachusetts Glenn R. Faust, New York Randall W. Franz, Ohio Gary Giangola, New York Petr Hájek, Czech Republic Michael H. Hall, New York Hans M. Hoffmeister, Germany Thomas Jahnke, Germany Michael C. Kim, New York Mark Kissin, New York K.V. Krishnasastry, New York Sean Kwon, New York Gregg Landis, New York Byung-Boong Lee, Virginia J. Ernesto Molina, Minnesota Ernesto P. Molmenti, New York Debabrata Mukherjee, Texas



International College of Angiology 61st Annual World Congress Organizing Committee

Program Chairman

Kailash Prasad, MBBS (Hons), MD, PhD, DSc, FRCPC, FACC, FIACS, FICA

Professor Emeritus of Physiology, College of Medicine, University of Saskatchewan, Saskatoon, Canada Chairman, Board of Directors, International College of Angiology Consulting Editor, International Journal of Angiology Department of Physiology College of Medicine, University of Saskatchewan Saskatoon, Saskatchewan, Canada

Chairman, Scientific Committee

Otmar M. Pachinger, MD, FESC, FAHA, FICA

Professor Emeritus, Distinguished Professor of Cardiology, Medical University of Innsbruck, Innsbruck, Austria; Member, Board of Directors, International College of Angiology; Chairperson, Scientific Committee, International College of Angiology; Senior Editor, International Journal of Angiology; President, Austrian Heart Foundation, Innsbruck, Austria.

Executive Director

Denise M. Rossignol, BS

Executive Director and CME Program Administrator, International College of Angiology; Managing Editor, International Journal of Angiology, Jay, Vermont.

Chairman, Local Organizing Committee

Randall W. Franz, MD, FACS, FICA, RVT, RVPI

Chief, Vascular and Endovascular Surgery, Medical Director, Grant Vascular and Vein Center; Assistant Professor of Surgery, Ohio State University; Professor of Surgery, Ohio University, Columbus, Ohio, USA; First Vice Chairman and Member, Board of Directors, International College of Angiology; Chairman, Local Organizing Committee, 61st Annual World Congress-ICA 2019; Co-Chairperson, Scientific Committee, International College of Angiology; Editorial Board, *International Journal of Angiology*.

Co-Chairpersons, Local Organizing Committee

Greg Campbell, BSRT

Manager, Medical Imaging, OhioHealth Grant Medical Center, Columbus, Ohio

Chris Cornett, BS

Senior Accountant, OhioHealth Physicians Group, Columbus, Ohio

Pam Estell, MBA, BSN, BS, RN

Vascular Outcomes Manager, OhioHealth Grant Medical Center, Columbus, Ohio.

Jess Henry, aPHR

Consultant, Learning, OhioHealth Learning Continuing Medical Education, OSMA Volunteer CME Accreditation Site Surveyor, Columbus, Ohio

Paul Hilderbrant, BS

Interventional Radiology Technologist, OhioHealth Grant Medical Center, Columbus, Ohio

Tim Jaikissoon, BA

Communication Specialist, OhioHealth, Columbus, Ohio

Jed Karas, BSN, RN

Administrative Nurse Manager, Cardiovascular Unit, OhioHealth Grant Medical Center, Columbus, Ohio

Susan Polis, BSN, RN

Clinical Nurse Manager, Vascular Surgery and Anesthesia Specialist, OhioHealth Grant Medical Center, Columbus, Ohio

Kate Sarna, BA

Marketing Manager, Heart & Vascular, OhioHealth, Columbus, Ohio

Brittany Workman, BSN, RN

Nurse Educator, Cardiovascular Unit, OhioHealth Grant Medical Center, Columbus, Ohio

International College of Angiology

Founding Fathers and Past Congresses

The founding fathers of the International College of Angiology were Dr. Saul Simon Samuels and Dr. Rene LeRiche. It was Dr. Saul Samuels who in 1942 coined the name "Angiology" from the Greek words meaning the "science of the blood vessels." The International College of Angiology was organized and chartered in 1958, in order to encourage, support, and facilitate research and education in vascular diseases. It was the founding fathers of the International College of Angiology that have made our College unique, in that it integrates the discipline, knowledge, and skills of several specialties, which treat the many faceted illnesses that result from disorders of the vascular system.

	ted linesses that result from disord	
<u>Year</u> 1958	1 st Annual Meeting	Venue Atlantic City, New Jersey
1958	2 nd Annual Meeting	Mexico City, Mexico
1960	3 rd Annual Meeting	Mexico erry, Mexico
1961	4 th Annual Meeting	
1962	5 th Annual Meeting	Las Vegas, Nevada
1963	Caribbean Conference on Angiology	San Juan, Puerto Rico
1964	6 th Annual Meeting	San Juan, Puerto Nico
1965	7 th Annual Meeting	London, England
1966	8 th Annual Meeting	Madrid, Spain
1967	9 th Annual Meeting	Las Vegas, Nevada
1968	10 th Annual Meeting	Geneva, Switzerland
1969	11 th Annual Meeting	Rome, Italy
1909	12 th Annual Meeting	Dublin, Ireland
1970	13 th Annual Meeting	Copenhagen, Denmark
1972	14 th Annual Meeting	London, England
1972	15 th Annual Meeting	Lisbon, Portugal
1973	16 th Annual Meeting	Montreal, Canada
1974	French Scientific Congress	Paris, France
	17 th Annual Meeting	
1975 1976	18 th Annual Meeting	Herzalia, Israel Tucson, Arizona
1976	19 th Annual Meeting	Dublin, Ireland
1977	20 th Annual Meeting	Marbella, Spain
1978	21 st Annual Meeting	
1979	21 st Annual Meeting 22 nd Annual Meeting	St. Louis, Missouri Vienna, Austria
1980	23 rd Annual Meeting: Part I	Zurich, Switzerland
1981	23 rd Annual Meeting: Part I 23 rd Annual Meeting: Part II	Lisbon, Portugal
	,	
1982	24 th Annual Meeting 25 th Annual Meeting	Antwerp, Belgium
1983	<u>0</u>	Killarney, Ireland
1984 1985	26 th Annual Meeting 27 th Annual Meeting	San Antonio, Texas Hilton Head, South Carolina
1985	28 th Annual Meeting	Nice, France
1980	29 th Annual Meeting	Montreux, Switzerland
1987	30 th Annual Meeting	Amsterdam, The Netherlands
1988	31 st Annual Meeting	Rome, Italy
1989	32 nd Annual Meeting	Toronto, Canada
1990	33 rd Annual Meeting	Singapore
1991	34 th Annual Congress	Budapest, Hungary
1992	35 th World Congress	Copenhagen, Denmark
1993	36 th World Congress	New York, New York
1994	37 th World Congress	Helsinki, Finland
1995	38 th World Congress	Cologne, Germany
1997	39 th Annual World Congress	Istanbul, Turkey
1997	40 th Annual World Congress	Lisbon, Portugal
1998	40° Annual World Congress	Sapporo, Japan
2000	41 ^{er} Annual World Congress	Sapporo, Japan San Diego, California
2000	43 rd Annual World Congress	Berlin, Germany
2001	44 th Annual World Congress	New York, New York
2002	45 th Annual World Congress	Indianapolis, Indiana
2003	45 th Annual World Congress	Lexington, Kentucky
2005	47 th Annual World Congress 48 th Annual World Congress	Charlotte, North Carolina
2000	49 th Annual World Congress	Vancouver, Canada
2007	50 th Golden Anniversary Congress	Tokyo, Japan
2008	51 st Annual World Congress	Beijing, China
2009	52 nd Annual World Congress	Lexington, Kentucky
2010	53 rd Annual World Congress	Bali, Indonesia
2011	54 th Annual World Congress	Innsbruck, Austria
	55 th Annual World Congress	
2013 2014	56 th Annual World Congress	New Haven, Connecticut Columbus, Ohio
	57 th Annual World Congress	
2015	58 th Annual World Congress	Jakarta, Indonesia
2016	59 th Annual World Congress	Prague, Czech Republic
2017		Vienna, Austria
2018	60 th Anniversary World Congress	Tokyo, Japan
2019	61 st Annual World Congress	Columbus, Ohio

61st Annual World Congress—ICA 2019 Jointly Provided by OhioHealth Continuing Medical Education, OhioHealth Heart & Vascular General Program Information

Congress Description/Objectives

The overall mission of the 61st Annual World Congress of the International College of Angiology is to bring together basic and clinical scientists to share current knowledge and techniques in angiology to update the pathophysiology of disease, clinical diagnostic methods, and treatment for improved healthcare delivery and future research.

This program will provide a forum for the synthesis of *State-of-the-Art* information that encompasses the pathophysiology, clinical diagnosis, and treatment of cardiovascular diseases as they are encountered by primary care physicians, vascular, general, thoracic, cardiothoracic, and cardiovascular surgeons, neurosurgeons, cardiologists, internists, and cardiology and vascular interventional radiologists. *The theme of the 61st Annual World Congress of the ICA is "A World of Opportunities in Vascular Medicine."*

This Congress is designed to meet the specific educational needs of medical professionals involved with the management and treatment of cardiovascular diseases as they are encountered by primary care physicians, vascular, general, thoracic and cardiovascular surgeons, cardiologists, interventional radiologists, neuroradiologists, fellows and residents of the above specialties, vascular biologists, their staff and nurses.

The objective is to offer a serious academic forum to those physicians and allied healthcare personnel interested in research, education and clinical investigation in the field of cardiovascular medicine and surgery.

The intention is to provide an in-depth review of the spectrum of topics related to the management and treatment of patients with cardiovascular and vascular disease. Special emphasis will be placed upon evolving trends, therapies, and minimally invasive treatment of cardiovascular disease. The congress will feature internationally renowned faculty, and recognized leaders will discuss state-of-the-art techniques in the management, diagnosis and treatment of vascular disease. The focus will be on surgical, percutaneous and medical management from peripheral vascular disease to coronary and cerebrovascular disease and abdominal aortic aneurysms offering a comprehensive review of what is new in management, techniques, approaches and prevention.

This Congress is designed to offer a serious academic forum to those physicians and allied healthcare personnel interested in research, education, and clinical investigation in the field of cardiovascular diseases. The congress is intended to provide an in-depth review of the spectrum of topics related to the management and new treatment modalities, including diagnosis, assessment, intervention, risk factors management and surgery.

At the conclusion of this activity, the attendees should be more confident in their ability to:

- 1. Examine concepts related to cardiovascular diseases.
- 2. Discuss strategies to improve patient outcomes in managing cardiovascular diseases.
- 3. Analyze treatment strategies that involve complex patient situations with multiple contributing risk factors.

Learning Objectives

After completion of this activity, participants will be able to:

- 1. Describe and apply the value of an integrated approach to the diagnosis and treatment of cardiac and vascular disease.
- 2. Assess and differentiate between competing technologies for vascular intervention.
- 3. Choose when and how to appropriately apply various interventional and non-interventional procedures in the treatment of vascular disease.
- 4. Describe new developments and techniques in the diagnosis, medical management, and treatment of cardiac, peripheral vascular and cerebrovascular disorders to make improved patient care decisions based on outcome and cost.
- 5. Enhance knowledge in the practice of treating vascular disease.
- 6. Identify and explore new research problems for future collaboration.

All presentations have a purpose while providing a balanced view of diagnostic and therapeutic options followed by constructive debate. These objectives are achieved through nationally and internationally recognized invited guest lectures, special symposia, oral and poster presentations and exhibits, highlighting the most challenging and controversial topics and procedures performed in interventional medicine. Submitted abstracts and invited guest lecturers serve as a major part of the overall program. A significant portion of the program is reserved for questions and answers between the presenters and the audience. **Disclaimer**

The information provided at this CME activity is for continuing education purposes only, and not meant to substitute for independent medical judgment of a physician relative to diagnostic and treatment options of a specific patient's medical condition. **Instruction to Speakers**

We remind speakers presenting **submitted** oral papers, their presentations are limited to ten (10) minutes with an invited discussion following the session. Speakers presenting submitted electronic poster presentations must limit their presentation to seven (7) minutes. **SPEAKERS MAY VIEW THEIR PRESENTATIONS UP TO 30-MINUTES PRIOR TO THEIR SESSION.**

Accreditation

AMA

This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Ohio State Medical Association (OSMA) through the joint providership of OhioHealth and the International College of Angiology. OhioHealth is accredited by the OSMA to provide continuing medical education to physicians.

OhioHealth designates this live activity for a maximum of 18.25 AMA PRA Category 1 Credit(s)^m. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

ASRT

OhioHealth will be submitting an application to the American Society of Radiologic Technologists (ASRT) to provide CE credits for this activity.

NURSING

The Ohio Board of Nursing recognizes events approved by a nationally recognized accreditation system of continuing education approval. This activity is awarded 18.25 AMA PRA Category 1 Credit(s) $^{\text{M}}$.

DISCLOSURE

As an accredited CME provider, OhioHealth must insure balance, independence, objectivity, and scientific rigor in all education activities we sponsor. Faculty and planners participating in sponsored activities must disclose any significant financial interests or other relationships. Any potential conflicts of interest will be resolved and revealed prior to the education start.

COMMERCIAL SUPPORT

This activity is commercially supported in part by Abbott, Boston Scientific Corporation, Medtronic, and Merit Medical. Name Badges

Please obtain your Congress name badge and all congress materials at the Registration Desk located in the Pre-Function West, East and South of the Renaissance Downtown Columbus Hotel. We ask that you wear your name badge at all group sponsored functions. It will help you get acquainted with your colleagues.

Venue Renaissance Columbus Downtown Hotel 50 N 3rd Street

Columbus, Ohio 43215

The Renaissance Hotel is conveniently located in the heart of the city so you can easily explore nearby attractions such as the Ohio Theatre, German Village and Columbus Convention Center. Delight in the charming hotel's whimsical design featuring local artwork, eclectic décor and upscale amenities. Take a dip in our rooftop pool or enjoy a moment of quiet at our Club Lounge. Savor a delicious bite at our signature eatery, Latitude 41, or plan your next adventure over cocktails at Bar 41, our own downtown hotspot. The guest rooms are complete with fashionable décor, sumptuous bedding, deluxe toiletries and inspiring views of the city skyline.

Registration Desk Hours

The registration desk for the duration of the congress will be located on the 2nd Floor of the meeting room area of the Renaissance Downtown Columbus Hotel. **PLEASE REFER TO THE FLOOR PLAN BELOW FOR REGISTRATION AREA AND MEETING ROOMS.**

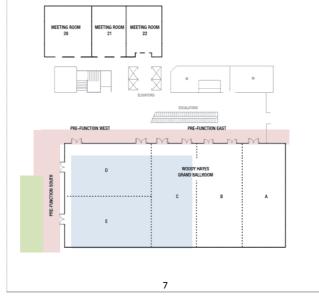
7.00 AM – 3:30 PM
7:00 AM – 3:30 PM
7:30 AM – 11:00 AM

Scientific Sessions

Please refer to the **"Schedule-At-A-Glance"** for room assignment of all Symposiums, Special Lectures, Oral Presentations and e-Poster Presentations. All congress sessions will be held at the Renaissance Downtown Columbus Hotel.

Messages

We request all meeting participants to the only off or lower their cellular telephones, or utilize their "vibrate" feature on the cellular telephone.



Boston Scientific Hands-On Exhibit

61st Annual World Congress • International College of Angiology 2019 Jointly Provided by OhioHealth Continuing Medical Education, OhioHealth Heart & Vascular

Local Organizing Committee—Welcome Address



Randall W. Franz, MD, FACS, FICA, RVT, RVPI Chief, Vascular and Endovascular Surgery, Medical Director, Grant Vascular and Vein Center; Assistant Professor of Surgery, Ohio State University; Professor of Surgery, Ohio University, Columbus, Ohio; First Vice Chairman and Member, Board of Directors, International College of Angiology; Chairman, Local Organizing Committee, 61st Annual World Congress-ICA 2019

Dear Colleagues,

It is my honor to welcome you to the 61st Annual World Congress of the International College of Angiology being held in Columbus, Ohio, from October 10-12, 2019 at the beautiful Renaissance Hotel. This academic forum is jointly sponsored by OhioHealth Continuing Medical Education in cooperation with Grant Medical Center for those physicians and allied healthcare personnel interested in research, education, and clinical investigation in the field of cardiovascular medicine and surgery.

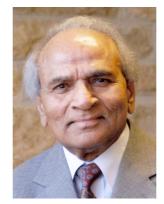
As the 15th largest city in the United States and the largest city in Ohio, Columbus has much to experience and enjoy. In addition to attending the meeting, I hope you take the time to explore. Downtown Columbus offers excellent restaurants and diverse entertainment venues. The capital city's incredible culinary scene features top-ranked chefs, one-of-a-kind restaurants and creative artisan desserts, beers, wines and spirits. Nationally acclaimed distilleries work together with brewers, coffee roasters, high-end cocktail bars, theatres, casinos, and music halls to deliver unforgettable nightlife.

If you love sports, Columbus is home to several major sports teams, including the NHL's Columbus Blue Jackets; MLS's Columbus Crew SC; Triple-A affiliate of the Cleveland Indians, the Columbus Clippers; and various The Ohio State University sports teams. You can catch a game no matter what the season!

I look forward to personally welcoming you to Columbus in October 2019. May you connect with old friends, create new friendships, enjoy this fabulous city, and leave with cutting edge knowledge that will benefit the patients that you serve.

Respectfully yours, Randall W. Franz, MD, FACS, FICA, RVT, RVPI

61st Annual World Congress • International College of Angiology 2019 Jointly Provided by OhioHealth Continuing Medical Education, OhioHealth Heart & Vascular Program Chairman's Welcome Address



Kailash Prasad, MBBS (Hons), MD, PhD, DSc, FRCPC, FACC, FIACS, FICA Professor Emeritus, Department of Physiology, College of Medicine University of Saskatchewan, Saskatoon, Canada

On behalf of the International College of Angiology, it gives me great pleasure to welcome all of you to the 61st Annual World Congress in Columbus. We are grateful to the participants who have come here to exchange their experience in the management of cardiovascular diseases.

This 2½ day congress will provide an excellent opportunity to discuss at length the latest development and emerging challenges in the field of angiology. We are pleased to have highly respected and world renowned speakers on the podium for this congress. During the congress, you will have ample opportunity to interact with fellow clinicians and scientists in an endeavour to advance the knowledge for patient care. This Annual World Congress will provide an opportunity for networking, as well as to renew old friendships and make new ones.

On your behalf of the ICA, it is my honor to give a hearty thanks to Dr. Randall W. Franz, Chairman of the Local Organizing Committee, along with his colleagues for their time, energy and dedication to make this congress a most successful event.

Again, it is with an esteemed sense of pride, I, on behalf of the International College of Angiology, welcome all of you and wish you a pleasant and stimulating time here in Columbus.

Sincerely, Kailash Prasad, MBBS (Hons), MD, PhD, DSc, FRCPC, FACC, FIACS, FICA Chairman, Board of Directors Program Chairman

61st Annual World Congress • International College of Angiology 2019 Jointly Provided by OhioHealth Continuing Medical Education, OhioHealth Heart & Vascular Message from the ICA President



Ernesto P. Molmenti, MD, PhD, MBA, FICA President, International College of Angiology Vice Chairman, Department of Surgery, Chief, Surgical Innovation Director, Kidney Transplantation North Shore University Hospital, Northwell Health Professor of Surgery, Medicine and Pediatrics Donald and Barbara Zucker School of Medicine at Hofstra/Northwell Northwell Health, Manhasset, New York

Dear Friends and ICA Fellows,

Together with our Program Chairman, Professor Kailash Prasad, our Local Organizing Committee Chairman, Dr. Randall W. Franz, and our Scientific Committee Chairman, Professor Otmar M. Pachinger, on behalf of the International College of Angiology, OhioHealth Continuing Medical Education, and OhioHealth Heart and Vascular, we are delighted to welcome you to Columbus, Ohio, to our 61st Annual World Congress "A World of Opportunities in Vascular Medicine."

This event is the continuation of an enormous collective effort that began in 1958 with the founding of the International College, was subsequently thoroughly invigorated by Drs. John and Lucy Chang, and is now brought into the forefront of the 21st Century by our current stellar leadership. We have evolved beyond isolated specialties into an integration of disciplines, guided by the vision of developing the most innovative technologies and the mission of providing unsurpassed care. As evidenced by our outstanding program, we once again demonstrate that our ideals are upheld by the strength of our actions.

I would finally like to express my sincere gratitude to all those who have transformed this meeting from the expression of a dream into the truth of a reality.

Sincerely,

Ernesto

	SCHEDULE AT-A-GLANCE	
THURSDAY, OCTOBER 10, 2019		
07:00 08:15	REGISTRATION, CONTINENTAL BREAKFAST & EXHIBITS Pre-Function West, East & South	
	OPENING CEREMONY/OPENING REMARKS	
08:15 08:30	Woody Hayes Rooms D & E	
00.50	Randall W. Franz, Ohio and Stephen Markovich, Ohio	
08:30	LOCAL ORGANIZING COMMITTEE CHAIRMAN'S ADDRESS	
08:45	Randall W. Franz	
08:45 09:45	MEMORIAL LECTURES Woody Haves Rooms D & F	
08:45	Woody Hayes Rooms D & E HbA1 _c —A Risk Factor for Cardiovascular Diseases—Professor John B. Chang Memorial Lecture	
09:00	Kailash Prasad, Canada	
09:00	Transcatheter Aortic Valve Implantation—From Evidence to Clinical Practice—Professor Hans J. Hachen Memorial Lecture	
09:15 09:15	Josef Veselka, Czech Republic New Directions in Vascular Surgery—Professor Albert Senn Memorial Lecture	
09:30	John D. Corson, New Mexico	
09:30	QUESTIONS & ANSWERS	
09:45 09:45	COFFEE BREAK & EXHIBITS	
10:00	Pre-Function West, East & South	
10:00	CENTRAL VENOUS DISEASE/PULMONARY EMBOLISM/IVC FILTERS	
10:45	Woody Hayes Rooms D & E	
	<i>Chairperson:</i> Michael Winkler, Kentucky	
10.00	Pulmonary Embolism	
10:15	Mitchell Silver, Ohio	
10:15	Implementing a Successful Program to Follow and Remove Temporary IVC Filters with Difficult Removal Cases	
10:30 10:30	Charles F. Botti, Jr., Ohio	
10:30	QUESTIONS & ANSWERS	
10:45	STRUCTURAL HEART	
12:00	Woody Hayes Rooms D & E Chairpersons:	
	Frank Manetta, New York	
	Rajinder P. Sharma, Michigan	
10:45	The Impella Device: Historical Background, Clinical Applications and Comparison with other Mechanical Support Devices	
11:00 11:00	James J. Glazier, Michigan Advanced Cardiac CT Visualizations for Structural Heart Disease—Procedural Planning	
11:15	Michael Winkler, Kentucky	
11:15	Aortic Valve Repair	
11:30 11:30	Geoffrey Blossom, Ohio TAVR	
11:45	Thomas Salamon, Ohio	
11:45	QUESTIONS & ANSWERS	
12:00 12:00	LUNCHEON BREAK & EXHIBITS	
12:30	Pre-Function West, East, South	
12:30	LUNCHEON LECTURES	
01:20	Woody Hayes Rooms D & E	
	<i>Chairpersons:</i> Iwan Dakota, Indonesia	
	Petr Hájek, Czech Republic	
12:30	Detection of Coronary Vulnerable Atherosclerotic Plaque—The Role of Biomarkers and Advanced Imaging	
12:40	Martin Horváth, Čzech Republic	
12:40 12:50	Intravascular Ultrasound and Near Spectroscopy of the Carotid Artery—From Stenosis to Vulnerable Plaque Cyril Štečhovský, Czech Republic	
12:50	Complete Atrioventricular Block in Pregnancy cause by SLE Exacerbation	
01:00	Maria Patricia Inggriani, Indonesia	
1:00 01:10	Giant Left Ventricular Thrombus with Concomitant Massive Hemoptysis due to Bronchiectasis—Management Dilemma Kristian Sudana Hartano, UK	
01:10	QUESTIONS & ANSWERS	
01:20		
01:20 02:00	ARCH AND CEREBRAL DISEASE Woody Hayes Rooms D & E	
	Chairpersons:	
	Randall W. Franz, Ohio	
01.20	Wei Zhou, Arizona Endovaccular Tachniques for Hoad and Nock Cancers and Carotid Blow Out	
01:20 01:35	Endovascular Techniques for Head and Neck Cancers and Carotid Blow-Out Michael Silva, Jr., Texas	
01:35	Endovascular Treatment of Stroke	
01:50	Nirav Vora, Ohio	
01:50 02:00	QUESTIONS & ANSWERS	
02.00		

	SCHEDULE AT-A-GLANCE		
	THURSDAY, OCTOBER 10, 2019 (Continued)		
02:00	CAROTID DISEASE		
02.45	02:45 Woody Hayes Rooms D & E Chairperson:		
02.00	Jürgen Falkensammer, Austria 02.00 Identifying High Risk Asymptomatic Carotid Stenosis		
02:15 02:15	Wei Zhou, Arizona Local and National Experience of Trans-Carotid Arterial Revascularization Technique		
02:30	Robert Schwartz, Ohio		
02:45	QUESTIONS & ANSWERS		
02:45 03:15	SURGICAL INNOVATIONS—SPECIAL LECTURE Wood Hayes Rooms D & E		
	Surgical Innovations in Transplant Surgery Ernesto P. Molmenti, New York		
03:15	COFFEE BREAK & EXHIBITS		
03:30 03:30	Pre-Function West, East & South VENOUS		
04:30	Woody Hayes Rooms D & E Chairpersons:		
	Pertti T. Aarnio, Finland Jon Henry, Ohio		
03:30 03:45	Endovenous Laser Ablation Therapy to Treat Varicose Veins—Mid-Term Results Iwan Dakota, Indonesia		
03:45	New Technology in Venous Insufficiency		
04:00 04:00	Raghu Kolluri, Ohio Venous Compression Syndrome		
04:15 04:15	Samih Bittar, Ohio		
04:30 04:30	QUESTIONS & ANSWERS ADJOURNMENT		
04:45	Randall W. Franz, Ohio WELCOME RECEPTION, DINNER & DANCING		
10:30	Ohio Statehouse		
	FRIDAY, OCTOBER 11, 2019		
07:00 08:00	REGISTRATION, CONTINENTAL BREAKFAST & EXHIBITS Pre-Function West, East & South		
08:00 09:30	CORONARY ARTERY DISEASE Wood Hayes Rooms D & E		
05.50	Chairpersons:		
	James J. Glazier, Michigan Josef Veselka, Czech Republic		
08:00 08:15	Impact of Stress on Cardiovascular Health Sibu P. Saha, Kentucky		
08:15 08:30	On the Road to the Optimal TAVI Valve Petr Hájek, Czech Republic		
08:30	Chest Pain in the ED—Role of Patient Centered Testing, New Troponin Assay and New Imaging Technology		
08:45 08:45	Karanvir Grewal, Ohio The New Era of PCI without Surgical Back-Up		
09:00 09:00	Kevin Stiver, Ohio IFR and FFR—Physiological Assessment of Arterial Flow		
09:15 09:15	Michael Tempelhof, Ohio		
09:30 09:30	QUESTIONS & ANSWERS COFFEE BREAK & EXHIBITS		
09:45	Pre-Function West, East & South		
09:45 11:00	THORACIC AORTIC DISEASE Woody Hayes Rooms D & E		
	Chairpersons: Ernesto P. Molmenti, New York		
09:45	Sibu P. Saha, Kentucky TEVAR for Type B Aortic Dissection—A Single Center Experience		
10.00	Iwan Dakota, Indonesia Aortic Dissection Management		
10:15	Frank Manetta, New York		
10:15 10:30	Genetics of Thoracic Aortic Aneurysm Disease John A. Elefteriades, Connecticut		
10:30 10:45	Mycotic Aortic Aneurysms—Presentation of a Case and Review of Strategies Richard W. Schutzer, New York		
10:45	QUESTIONS & ANSWERS		
11:00			

	SCHEDULE AT-A-GLANCE		
	FRIDAY, OCTOBER 11, 2019 (Continued)		
11:00 11:30	THORACIC AORTA TRAUMA AT A LEVEL 1 TRAUMA CENTER—PROFESSOR JOHN B. CHANG RESEARCH ACHIEVEMENT AWARD Randall W. Franz, Ohio		
11:30 12:30	PAD #1 Woody Hayes Rooms D & F		
12:30	12:30 Woody Hayes Rooms D & E Chairperson:		
	John D. Corson, New Mexico		
11:30 11:45	Update on the Use of Drug Eluting Stents in Femoral Popliteal Occlusive Disease Jeffrey T. Prem, Ohio		
11:45	The Paclitaxel Controversy: Where Do We Stand?		
12:00 12:00	Gary Ansel, Ohio Open Surgery for Common Femoral Occlusive Disease		
12:15	Sibu P. Saha, Kentucky		
12:15 12:30	QUESTIONS & ANSWERS		
12:30	LUNCHEON POSTER PRESENTATIONS		
02:00	Wood Hayes Rooms D & E LUNCHEON BREAK & EXHIBITS		
01:00	Pre-Function West, East & South		
	<i>Chairpersons:</i> Kailash Prasad, Canada		
	Robert Brightwell, Ohio		
01:00 01:07	Effects of Ficus Auriculata L. Toward Oxidative Stress-Related Biomarkers in Blood and Cardiac Tissue due to Prolonged Exposure to Systemic Hypoxia		
01:07	Mohammad Galih Pratama, Indonesia Successful Treatment of Recurrent Thrombosis Associated with Malignancy with Apixaban and Follow-up for 1.5 Years		
01:07	Roland Boey, Singapore		
01:14	Challenges in Treating Extensive Deep Vein Thrombosis with Severe Thrombocytopenia in Patients with Antiphospholipid Syndrome—A Follow-up of 2 Years		
01:21	Kui Ting Teong, Singapore		
01:21 01:28	Successful Resolution of Thrombosis in Patients Treated with Apixaban Following Stenting for May-Thurner Syndrome (MTS) Erickson Calapatia Tenorio, Singapore		
01:28	Association between Soluble ST2 and Infarct Location within 12-24 Hours of STEMI		
01:35	Sem David Timothy Sitanggang, Indonesia		
01:35 01:42	Oral Vitamin C vs. Intravenous Vitamin C for Improving Outcomes of CHD Asevano Christobed, Indonesia		
01:42 01:49	Association of Soluble ST2 and Lillip Class within 24-Hours of STEMI		
01:49	Rachelle Betsy, Indonesia QUESTIONS & ANSWERS		
02:00	PAD #2		
03:15	Woody Hayes Rooms D & E		
	Chairpersons: David Epstein, Ohio		
	Jeffrey T. Prem, Ohio		
02:00 02:15	Endovascular Management of Aorto-Iliac Occlusions—Sticks in the Mud Michael Silva, Jr., Texas		
02:15	Bypass versus Endovascular Intervention for Healing Ischemic Foot Wounds in Patients with Tibial Disease		
02:30 02:30	Jon Henry, Ohio Critical Limb Ischemia		
02:45	John Phillips, Ohio		
02:45 03:00	Economical Treatment of Fempop Disease Gary Ansel, Ohio		
03:00	QUESTIONS & ANSWERS		
03:15 03.15	COFFEE BREAK & EXHIBITS		
03:30	Pre-Function West, East & South		
03:30 04:00	VASCULAR IMAGING Woody Hayes Rooms D & E		
	Chairperson:		
03:30	Rajinder P. Sharma, Michigan		
03:45	Point of Care Ultrasound: Why Should We Care? George Meier, III, Ohio		
03:45	QUESTIONS & ANSWERS		
04:00 04:00	ADJOURNMENT		
04:15	Randall W. Franz, Ohio		
04:15 05:00	ICA BUSINESS MEETING—BOARD OF DIRECTORS (Private) Woody Hayes Rooms D & E		
05:00 07:00	COCKTAIL RECEPTION Mitchell's Steakhouse		
07.00			

SATURDAY 22, 2019 GESTRATION, CONTINUENTA, BREAKRAST & EXHIBITS DESCRIPTION CONTINUENTA, DESCRIPTION DESCRIPTION CONTINUENTA, DESCRIPTION CONTINUENTA, DESCRIPTION CONTINUENTA, DESCRIPTION DESCRIPTION CONTINUENTA, DESCRIPTION DESCRIPTION DESCRIPTION DESCRIPTION DESCRIPTIONDESCRIPTION <th colsp<="" th=""><th colspan="3">SCHEDULE AT-A-GLANCE</th></th>	<th colspan="3">SCHEDULE AT-A-GLANCE</th>	SCHEDULE AT-A-GLANCE		
08:00 Pre-Function West, East & South 08:00 MEDICAL MARARGEMENT 09:30 Woody Hoyes Rooms D & E 00:00 Charlingersons 10:00 ECMO and Acute Lung Injury 10:01 Frank Manetta, New York 08:03 ECMO and Acute Lung Injury 10:01 Frank Manetta, New York 08:03 Monoclonal Antibuo Trail for Peripheral Vascular Disease 08:04 Treatment of Peripheral Vascular Disease 09:05 Randall W. Franz, Ohio 09:06 Randall W. Franz, Ohio 09:07 Medical Management of Peripheral Acterial Disease (Compass and Voyager) 09:08 Randall W. Franz, Ohio 09:09 Medical Management of Peripheral Acterial Disease (Compass and Voyager) 09:00 Medical Management of Peripheral Acterial Disease (Compass and Voyager) 09:01 Comparative Clinical and Economical Analysis of Pethways Rooms D & E 09:30 Othorperson: 10:00 Management of Aortic Infections with Cryopreserved Homografts 00:00 Management of Aortic Infections with Cryopreserved Homografts 00:01 Compertalexet Results after Forestrate	SATURDAY 12, 2019			
08:30 MEDICAL MANAGEMENT 09:30 Woody Hoyes Rooms D & E 09:30 Chairpersons: Ishen D. Corson, New Mexico BC Chemy, Ohio 08:11 Chairpersons: Ishen D. Corson, New Mexico BC Chemy, Ohio 08:30 Ferrark Manetta New York 08:31 What's Happening with Vascular Rehab? 08:33 Monoclonal Antibody Trial for Peripheral Vascular Disease 08:45 Treatment of Peripheral Vascular Disease via Percutaneous Brachial Artery Access 08:46 Treatment of Peripheral Vascular Disease via Percutaneous Brachial Artery Access 08:47 Treatment of Peripheral Vascular Disease via Percutaneous Brachial Artery Access 09:48 Treatment of Peripheral Vascular Disease via Percutaneous Brachial Artery Access 09:40 Medical Management of De Manella V. Travis 09:30 ABDOMINAL AORTA 09:30 BADOMINAL AORTA 09:30 BADOMINAL AORTA 09:30 Pattway In Treats 09:31 Comparative Clinical and Economical Analysis OP Perutaneous 09:32 Comparative Clinical and Economical Analysis OP Pure Endoleaks 09:45 Comparative Clinical and Economical Analysis OP Pure Endoleaks 09:45				
99:30 Woody Hoyes Rooms D.& E Chaippersons: John D. Corson, New Mexico Jon C. Henry, Ohio 08:30 ECMO and Acute Lung Injury 08:31 What's Knik Maret, New York. 08:32 What's Knik Maret, New York. 08:33 What's Knik Maret, New York. 08:34 What's Knik Maret, New York. 08:35 Monoclonal Antity Rev York. 08:36 Monoclonal Antity Rev York. 08:37 Monoclonal Antity Rev York. 08:38 Treatment of Peripheral Vascular Disease Use Peripheral Vascular Disease (Compass and Voyager) 09:30 Medical Management of Peripheral Vascular Disease (Compass and Voyager) 09:31 OutStort S & ANSWERS 09:33 AbDONINIAL AORTA 09:34 Comparative Clinical and Economical Analysis of Peripheral Vascular Disease (Compass and Voyager) 09:35 John A.: Eleftraidet, Connecticut Michael B, Silva, Jr., Texas Michael B, Silva, Jr., Texas 09:35 Comparative Clinical and Economical Analysis of Peri-face Vascular Acrts Repair – A Protective Handoux of Pol 10:00 Management of Acrtify Peri I Endoleaks 09:45 Comparative Clinical and Economical Analysis of Peri-face Vascular Acrts Repair – A Protective Handoux of Pol 10:00 Management of Acrtify Peri I Endoleaks 09:45 Comparative Clinical and Economi				
Chargersions: John D. Corson, New Mexico Jon C. Henry, Ohio 08:00 ECMO and Acute Lung Injury 68:13 Frank Manetta, New York 08:14 Frank Manetta, New York 08:15 What's Hapening with Vascular Rheab? 08:16 Monocional Antibody fina Frank Manetta, New York 08:45 Treatment of Peripheral Vascular Disease Wascular Disease 09:00 Medical Management of Peripheral Arterial Disease (Compass and Voyager) 09:15 QuestroNs & Answers 09:30 Medical Management of Peripheral Arterial Disease (Compass and Voyager) 09:31 QuestroNs & Answers 09:32 QuestroNs & Compass Rooms D & E 09:30 Monocional Antibody, France, Concellow 09:30 Monocional Antibody, France 09:45 Comparative Clinical and Economical Analysis of Percutaneous vs. Open Access for Endovascular Aorta Repair—A Protective Randomized Trial 09:45 Comparative Clinical and Economical Analysis of Percutaneous vs. Open Access for Endovascular Aorta Repair—A Protective Randomized Trial 10:00 Management of Areit Resonamer, Austria 10:00 Management of Areit Resonamer, Austria 10:01				
John D. Carsiny, New Mexico Jon C. Henry, Ohio 08:00 ECMO and Acute Lung Injury 08:15 Frank Manetts, New York 08:30 Lean Starr, Ohio 08:30 Monoclonal Antibody Trial for Peripheral Vascular Disease 08:43 Treatment of Peripheral Vascular Disease 09:40 Randall W. Franz, Ohio 09:43 Treatment of Peripheral Vascular Disease Brachal Artery Access 09:45 Medical Management of Peripheral Arterial Disease (Compass and Voyager) 09:45 Onder Start 09:41 QUESTIONS & ANSWERS 09:30 ABDOMINAL ACRTA 09:30 Chairperson: Chairperson: John A. Elefteriades, Connecticut Michael B. Silva, Jr., Texas Openative Clinical and Economical Analysis of Percutaneous vs. Open Access for Endovascular Aorta Repair – A Protective 09:30 Management of Aortic Infections with Cryopreserved Homografts 01:00 Management of Aortic Infections with Cryopreserved Homografts 01:00 Management of Aortic Infections with Cryopreserved Homografts 01:01 Charles Pugar, Ohio 01:30 QUESTIONS & ANSWERS	09.30			
OBS:00 ECMO and Acute Long Injury 08:15 Frank Manetta, New York 08:15 What's Happening with Vascular Rehab? 08:30 Monoclonal Antibody Trial for Peripheral Vascular Disease 08:43 Experiment of Peripheral Vascular Disease via Percutaneous Brachial Artery Access 08:45 Treatment of Peripheral Vascular Disease via Percutaneous Brachial Artery Access 09:50 Medical Management of Peripheral Arteri Disea (Compass and Voyager) 09:15 Samih Bittar, Ohio 09:30 QUESTIONS & ANSWERS 09:30 ABDOMINAL AORTA 09:30 Modody Hoyes Rooms D & E Chargerson: John A. Elefteriades, Connecticut Michael B. Silva, Jr. Feass Medical Bandaysis of Peripheral Access for Endovascular Aorta Repair—A Protective Bandoxi Actoria 09:30 Comparative Clinical and Economical Analysis of Perfunction Web Zious, Atoria 00:00 Jürgen Failkensammer, Austria 01:00 Management of Aortic Infections with Cryopreserved Homografts 01:03 QUESTIONS & ANSWERS 01:04 Per-function Webz, Eost & South 01:35 QUESTIONS & ANSWERS 01:36 QUESTIONS & ANSWER				
08:15 Frank Manetta, New York ' 08:15 What's Happening with Vascular Rehab? 08:30 Wonclonal Attributory Trial for Peripheral Vascular Disease 08:45 Lucy LaPerna, Ohio 08:46 Treatment of Peripheral Vascular Disease (Compass and Voyager) 09:00 Randall W. Franz, Ohio 09:01 Medical Management OP Peripheral Attrial Disease (Compass and Voyager) 09:13 Samh Bittar, Ohio 09:30 QUESTONS & ANSWERS 09:30 ABDOMINAL AORTA 10:30 Woody Hayer Rooms D & E Charperson: Librare Rooms D & E 09:30 Pathway to Treating Type II Endolasks 09:45 Comparative Clinical and Economical Analysis of Percutaneous vs. Open Access for Endovascular Aorta Repair—A Protective Randomized Trial 10:50 Management of Aortic Infections with Cryopreserved Homografts 10:50 Charler Roles & Esouth 10:50 Comparative Clinical and Economical Sectory Sectory Sectory Sectory Sectory 10:50 Comparative Clinical and Economical Sectory Sectory Sectory Sectory 10:50 Comparative Clinical and Economical Analysis of Percutaneous Vs. Open Access for Endovascular Aorta Repair—A Protective Randomized Trial 10:50 Compa				
08:30 What's Happening with Vascular Rehab? 08:30 Monoclonal Antibody Trial for Peripheral Vascular Disease 08:45 Treatment of Peripheral Vascular Disease via Percutaneous Brachial Artery Access 09:00 Randall W. Franz, Ohio 09:01 Samh Bitra, Ohio 09:02 Medical Management of Peripheral Arterial Disease (Compass and Voyager) 09:13 QUESTIONS & ANSWERS 09:30 ABDOMINAL AORTA 09:30 ABDOMINAL AORTA 09:30 ABDOMINAL AORTA 09:30 ABDOMINAL AORTA 09:30 Comparative Citotit 1001 Athal S. Silva, Jr., Texas 1001 Comparative Citotit 1001 Athal S. Silva, Jr., Texas 1002 Pathway to Treating Type II Endoleaks 1003 Comparative Clinical and Economical Analysis of Percutaneous vs. Open Access for Endovascular Aorta Repair—A Protective Randomized Trial 10:00 Juirgen Falkensammer, Austria 10:01 Juirgen Falkensammer, Austria 10:30 COFFEE BRAX & ExHIBITS 10:45 Ortacite Mections & Assoures 10:45 Ortacite Mections Assoures 10:45 Ortacite				
08:30 Construction 08:30 Monoclonal Alvacular Disease 08:45 Lucy LaPerna, Ohio 08:45 Randall W. Franz, Ohio 09:00 Medical Management of Peripheral Arterial Disease (Compass and Voyager) 09:15 Samih Bittar, Ohio 09:15 QUESTIONS & ANSWERS 09:30 ABDONINAL AORTA 09:30 ABDONINAL AORTA 09:30 ABDONINAL AORTA 09:41 John A. Elefteriades, Connecticut Michael B. Silva, Jr., Texas Choipreson: 09:43 Comparative Clinical and Economical Analysis of Percutaneous vs. Open Access for Endovascular Aorta Repair – A Protective Randomized Trial 10:00 Management of Aortic Infections with Cryopreserved Homografts 10:30 Comparative Clinical and Economical Analysis A RAVERS 10:30 Management of Aortic Infections with Cryopreserved Homografts 10:30 Charles page, Chino 10:31 QUESTIONS & ANSWERS 10:32 QUESTIONS & ANSWERS 10:33 QUESTIONS & Answers 10:34 One-Fee Brack & EvrilleTS 10:35 QUESTIONS & Answers 10:36 QUESTIONS & Answers				
08:30 Monoclonal Antibody Trial for Peripheral Vascular Disease 08:45 Treatment of Peripheral Vascular Disease via Percutaneous Brachial Artery Access 09:00 Randall W.Franz, Ohio 09:15 QUESTIONS & ANSWERS 09:30 ABDOMINAL AORTA 09:30 Pathway Velocitation 09:45 Comparative Clinical and Economical Analysis of Percutaneous sc. Opera Access for Endovascular Aorta Repair—A Protective Randomized Trial 10:00 Management of Aortic Infections with Cryporeservel Homografts 10:15 QUESTIONS & ANSWERS 10:30 COFFEE BREAK & EXHIBITS 10:30 COFFEE BREAK & South 10:34 Perc-function West, East & South 10:35 QUESTIONS & ANSWERS 10:36 COFFEE BREAK & EXHIBITS 10:37 QUESTIONS & ANSWERS 10:38 Dowad Hore				
08:46 Treatment of Peripheral Vascular Disease via Percutaneous Brachial Artery Access Randall W. Franz, Ohio 09:00 Medical Management of Peripheral Arterial Disease (Compass and Voyager) Samih Bittar, Ohio 09:15 QUESTIONS & ANSWERS 09:30 ABDOMINAL AORTA 09:30 ABDOMINAL AORTA 09:30 ABDOMINAL AORTA 09:30 ABDOMINAL AORTA 09:30 Chairperson: John A. Elefteriades, Connecticut Michael B. Silva, Jr., Texas Pathway to Treating Type II Endoleaks 09:45 Comparative Clinical and Economical Analysis of Percutaneous vs. Open Access for Endovascular Aorta Repair—A Protective Randomized Trial 10:00 Management of Aortic Infections with Cryopreserved Homografts 10:15 QUESTIONS & ANSWERS 10:30 CORFEE BREAK & KHIBITS 10:30 Cong-Term Results after Penestrated EVAR—Professor Kallash Prasad Oration Lecture John A. Elefteriades, Connecticut 11:30 Wood Mayes Rooms D & E 11:30 Wood Mayes Rooms D & E 11:30 Cong-Term Results after Penestrated EVAR—Professor Kallash Prasad Oration Lecture John A. Elefteriades, Connecticut 11:30 YOUNG INVESTIGATOR AWARD COMPETITION Woody Hayes Rooms D & E 11:30 YOUNG INVESTIGATOR AWARD COMPETITION				
Bandall W. Franz, Ohio 09:00 Medical Management of Peripheral Arterial Disease (Compass and Voyager) 09:15 Samih Bittar, Ohio 09:15 QUESTIONS & ANSWERS 09:30 ABDOMINAL AORTA 10:30 Woody Hayes Rooms D & E Chalperson: John A. Elefteriades, Connecticut Michael B. Silva, Jr., Texas Michael B. Silva, Jr., Texas 09:30 Pathway to Treating Type II Endoleaks 09:45 Comparative Clinical and Economical Analysis of Percutaneous vs. Open Access for Endovascular Aorta Repair—A Protective Rulenaka 10:00 Lüngen Falkensammer, Austria 10:00 Uitgen Falkensammer, Austria 10:01 Management of Aortic Infections with Cryopreserved Homografts 10:13 Charles Pagar, Ohio 10:30 COFFEE BEAK & EXHIBITS 10:30 COFFEE BEAK & EXHIBITS 10:45 Long-Term Results after Fenestrated EVAR—Professor Otmar M. Pachinger Oration Lecture 11:30 Wood Hayes Rooms D & E 11:30 QUESTIONS & ANSWERS 11:30 QUESTIONS & ANSWERS 11:30 QUESTIONS & ANSWERS 12:30 Cardioprotective Potency of Alabash due to Cardiac Hypoxia Consequences<				
09:00 Medical Management of Peripheral Arterial Disease (Compass and Voyager) 09:15 QUESTIONS & ANSWERS 09:30 ABDOMINAL AORTA 09:30 ABDOMINAL AORTA 09:30 ABDOMINAL AORTA 09:30 Chairperson: John A. Eleferinades, Connecticut 09:30 Pathway to Treating Type II Endoleaks 09:34 Comparative Clinical and Economical Analysis of Percutaneous vs. Open Access for Endovascular Aorta Repair—A Protective Randomized Trial 09:45 Comparative Clinical and Economical Analysis of Percutaneous vs. Open Access for Endovascular Aorta Repair—A Protective Randomized Trial 10:00 Management of Aorti Infections with Cryopreserved Homografts 10:15 Cutesting Stage 10:30 COFFEE BREAK & EXHIBITS 10:45 Pere-function West, East & South 10:45 Long-Term Results after Fenestrated EVAR—Professor Otmar M. Pachinger Oration Lecture Jirgen Faikensammer, Austria 11:00 Is it Time for a "Left-Shift" Toward Earlier Surgery of the Ascending Aorta? Pressad Oration Lecture John A. Eleftraides, Connecticut 11:30 YOUNG INVESTIGATOR AWARD COMPETITION 11:30 YOUNG INVESTIGATOR AWARD COMPETITION 11:30 YOUNG INVESTIGATOR AWARD COMPETITION 11:30 YOUNG INVES				
99:15 Samih Bittar, Ohio 99:30 QUESTIONS & ANSWERS 99:30 ABDOMINAL AORTA 10:30 Woody Hayes Rooms D & E 09:30 Chripperson: John A. Elefteriades, Connecticut Michael B. Silva, Jr., Texas 99:45 Comparative Clinical and Economical Analysis of Percutaneous vs. Open Access for Endovascular Aorta Repair—A Protective Randomized Trial 10:00 Wei Zhou, Arizona 09:45 Comparative Clinical and Economical Analysis of Percutaneous vs. Open Access for Endovascular Aorta Repair—A Protective Randomized Trial 10:00 Management of Aortic Infections with Cryopreserved Homografts 10:15 Charles Pugar, Ohio 10:30 QUESTIONS & ANSWERS 10:30 COFFEE BREAK & EMBITS 10:45 Pre-Function West, East & South 10:45 Long-Term Results after Fenestrated EVA Professor Otmar M. Pachinger Oration Lecture 11:30 Long-Term Results after Fenestrated EVA Professor Otmar M. Pachinger Oration Lecture 11:30 QUESTIONS & ANSWERS				
09:15 QUESTIONS & ANSWERS 09:30 ABDOMINAL AORTA 10:30 Woody Hoyes Rooms D & E Chairperson: John A. Elefteriades, Connecticut Michael B. Silva, Jr., Texas Michael B. Silva, Jr., Texas 09:30 Pathwar to Treating Type I Endoleaks 09:45 Wel Zhou, Arizona 09:45 Comparative Clinical and Economical Analysis of Percutaneous so, Open Access for Endovascular Aorta Repair—A Protective Randomized Trial 10:00 Jürgen Falkensammer, Austria 10:00 Gomparative Clinical and Economical Analysis of Percutaneous so, Open Access for Endovascular Aorta Repair—A Protective Randomized Trial 10:00 Management of Aortic Infections with Cryopreserved Homografts 10:15 Charles Pugar, Ohio 10:30 QUESTIONS & ANSWERS 10:30 COFFEE BREAK & EXHIBITS 10:45 ORATION LECTURES 11:30 Wood Hoyes Rooms D & E 11:30 UUESTIONS & ANSWERS 11:30 YOUNG INVESTIGATOR MARD COMPETITION 11:30 YOUNG INVESTIGATOR AWARD COMPETITION 11:30 YOUNG INVESTIGATOR AWARD COMPETITION 11:30 YOUNG INVESTIGATOR AWARD COMPETITION 11:30				
09:30 ABDOMINAL AORTA 10:30 Woody Hayes Rooms D & E Chaingerson: John A. Elefteriades, Connecticut 09:30 Pathway to Treating Type II Endoleaks 09:45 Comparative Clinical and Economical Analysis of Percutaneous vs. Open Access for Endovascular Aorta Repair—A Protective Randomized Trial 09:45 Comparative Clinical and Economical Analysis of Percutaneous vs. Open Access for Endovascular Aorta Repair—A Protective Randomized Trial 10:00 Management of Aortic Infections with Cryopreserved Homografts 10:15 QUESTIONS & ANSWERS 10:30 COFFEE BREAK & EXHIBITS 10:45 Pre-Function West, East & South 10:45 ORATION LECTURES 11:30 Wood Hayes Rooms D & E 11:00 Is it Time for a "Left-Shift" Toward Earlier Surgery of the Ascending Aorta? Professor Kailash Prasad Oration Lecture 11:10 Is it Time for a "Left-Shift" Toward Earlier Surgery of the Ascending Aorta? Professor Kailash Prasad Oration Lecture 11:30 QUESTIONS & ANSWERS 11:30 VOUNG INVESTIGATOR ANARD COMPETITION 12:30 Youdy Hayes Rooms D & E 13:45 Cardioprotective Potency of Alabash due to Cardiac Hypoxia Consequences 13:45 Cardioprotective Potency of Alabash due to C				
Woody Hayes Rooms D.& E Chairperson: John A. Elefteriades, Connecticut Michael B. Silva, Jr., Texas 09:30 Pathway to Treating Type II Endoleaks 09:45 Comparative Clinical and Economical Analysis of Percutaneous vs. Open Access for Endovascular Aorta Repair—A Protective Randomized Trial 10:00 Management of Aortic Infections with Cryopreserved Homografts 10:15 Current Rakensammer, Austria 10:30 COFFEE BREAK & EXHIBITS 10:30 COFFEE BREAK & EXHIBITS 10:31 QUESTIONS & ANSWERS 10:32 ORATION LECTURES 11:30 Cong-Term Results after Fenestrated EVAR—Professor Othmar M. Pachinger Oration Lecture 11:30 Long-Term Results after Fenestrated EVAR—Professor Kailash Prasad Oration Lecture 11:30 USETIONS & ANSWERS 11:30 QUESTIONS & ANSWERS 11:30 QUESTIONS & ANSWERS Interm Results after Fenestrated EVAR—Professor Mailash Prasad Oration Lecture 11:31 QUESTIONS & ANSWERS 11:32 QUESTIONS & ANSWERS Interm for a "Left-Shift" Toward Earlier Science, Connecticut John A. Elefteriades, Connecticut <				
Chainperson: John A. Elefteriades, Connecticut Michael B. Silva, Jr., Texas 09:30 Pathway to Treating Type II Endoleaks Wei Zhou, Arizona 09:45 Comparative Clinical and Economical Analysis of Percutaneous vs. Open Access for Endovascular Aorta Repair—A Protective Randomized Trial 10:00 Management of Aortic Infections with Cryopreserved Homografts Charles Pugar, Ohio 10:15 QUESTIONS & ANSWERS 10:30 COFFEE BREAK & KHIBITS Pre-Function West, East & South 10:45 ORATION LECTURES Wood Hoyes Rooms D & E 10:45 ORATION LECTURES 10:45 ORATION LECTURES 11:30 Long-Term Results after Fenestrated EVAR—Professor Kailash Prasad Oration Lecture John A. Elefteriades, Connecticut 11:30 Is it Time for a "Left-Shift" Toward Earlier Surgery of the Ascending Aorta? Professor Kailash Prasad Oration Lecture John A. Elefteriades, Connecticut 11:30 QUESTIONS & ANSWERS 11:30 YOUNG INVESTIGATOR AWARD COMPETITION 12:30 YOUNG INVESTIGATOR AWARD COMPETITION 12:30 YOUNG INVESTIGATOR AWARD Consequences 12:30 Cardioprotective Potency of Alabash due to Cardia Hypoxia Consequences 12:45 Cardioprotective Potency of Alabash due to Cardia Hypoxia Consequences				
John A., Elefteriades, Connecticut Michael B., Sika, Jr., Texas 09:30 Pathway to Treating Type II endoleaks 09:45 Comparative Clinical and Economical Analysis of Percutaneous vs. Open Access for Endovascular Aorta Repair—A Protective Randomized Trial 10:00 Management of Aortic Infections with Cryopreserved Homografts 10:15 Charles Puga, Ohio 10:30 COFFEE BREAK & EXHIBITS 10:30 COFFEE BREAK & EXHIBITS 10:45 Pre-Function West, East & South 10:45 Cong-Term Results after Fenestrated EVAR—Professor Othana M. Pachinger Oration Lecture 11:30 Long-Term Results after Fenestrated EVAR—Professor Constraines Pugatore 11:30 John A. Elefteriades, Connecticut 11:31 QUESTIONS & ANSWERS 11:30 VOUNG INVESTIGATOR AWARD COMPETITION 11:30 VOUNG INVESTIGATOR AWARD COMPETITION 11:30 VOUNG INVESTIGATOR AWARD Consequences 11:45 Cardioprotective Potency of Alabash due to Cardia Hypoxia Consequences 11:30 Evaluation of Upper Extremity Arterial Injuries at an Urban Level Trauma Center: 10 Years of Experience Sito Alabash due to Cardia Hypoxia Consequences 11:45 Cardioprotective Potency of Alabash	10:30			
Michael B. Silva, Jr., Texas OP:30 Pathway to Treating Type II Endoleaks Wel Zhou, Arizona OP:30 Comparative Clinical and Economical Analysis of Percutaneous vs. Open Access for Endovascular Aorta Repair—A Protective Randomized Trial Jürgen Falkensammer, Austria 10:00 Management of Aortic Infections with Cryopreserved Homografts Charles Pugar, Ohio 10:30 CPETEB REAK & EXHIBITS 10:45 Comparative Clinical and Economical Analysis of Percuration West, East & South 10:30 CPETEB REAK & EXHIBITS 10:45 Long-Term Results after Fenestrated EVAR—Professor Otage 10:45 Long-Term Results after Fenestrated EVAR—Professor Kailash Prasad Oration Lecture 10:45 10:45 10:46 Long-Term Results after Fenestrated EVAR—Professor Mailash Prasad Oration Lecture 10:45 10:46 10:46<				
OP:45 Comparative Clinical and Economical Analysis of Percutaneous vs. Open Access for Endovascular Aorta Repair—A Protective Randomized Trial 10:00 Management of Aortic Infections with Cryopreserved Homografts Charles Pugar, Ohio 10:15 Current of Aortic Infections with Cryopreserved Homografts Charles Pugar, Ohio 10:30 QUESTIONS & ANSWERS 10:43 Pre-Function West, East & South 10:45 ORATION LECTURES 11:30 Long-Term Results after Fenestrated EVAR—Professor Otmar M. Pachinger Oration Lecture Joingen Falkensammer, Austria 11:00 Is it Time for a "Left-Shiff" Toward Earlier Surgery of the Ascending Aorta? Professor Kailash Prasad Oration Lecture John A. Elefteriades, Connecticut 11:30 QUESTIONS & ANSWERS 11:30 YOUNG INVESTIGATOR AWARD COMPETITION Woody Hayes Rooms D & E 11:30 YOUNG INVESTIGATOR AWARD COMPETITION John A. Elefteriades, Connecticut John A. Elefteriades, Connecticut John A. Elefteriades, Connecticut John A. Elefteriades, Connecticut Josef Veselka, Czech Republic 11:30 Evaluation of Upper Extremity Arterial Injuries at at an Urban Level 1 Trauma Center: 10 Years of Experience Simon Fraser, Ohio 11:45 Cardioprotective Potency of Alabash due to Cardiac Hypoxia Consequences Rio Alexsandro, Indonesia 12:00 QUESTIONS & ANSWERS 12:15 AWARDS CE				
Og:45 10:00 Comparative Clinical and Economical Analysis of Percutaneous vs. Open Access for Endovascular Aorta Repair—A Protective Randomized Trial Jürgen Falkensammer, Austria 10:00 Management of Aortic Infections with Cryopreserved Homografts Charles Pugar, Ohio 10:15 QUESTIONS & ANSWERS 10:30 COFFEE BREAK & EXHIBITS 10:45 Pre-Function West, Eost & South 10:45 ORATION LECTURES 11:30 Wood Hayes Rooms D & E 11:30 USENTIONS & ANSWERS 11:30 ORATION LECTURES 11:30 USENTIONS & ANSWERS 11:30 USENTIONS & ANSWERS 11:31 QUESTIONS & ANSWERS 11:32 Long-Term Results after Fenestrated EVAR—Professor Otmar M. Pachinger Oration Lecture Jürgen Falkensammer, Austria 11:30 QUESTIONS & ANSWERS 11:31 QUESTIONS & ANSWERS 11:32 QUESTIONS & ANSWERS 11:33 QUESTIONS & ANSWERS 11:34 QUESTIONS & ANSWERS 11:35 QUESTIONS & ANSWERS 11:36 QUESTIONS & ANSWERS 11:37 John A. Elefteriades, Connecticut Josef Veselka, Czech Republic <t< th=""><th></th><th>Pathway to Treating Type II Endoleaks</th></t<>		Pathway to Treating Type II Endoleaks		
03-03 Randomized Trial 10:00 Jürgen Falkensammer, Austria 10:00 Management of Aortic Infections with Cryopreserved Homografts 10:15 Charles Pugar, Ohio 10:30 QUESTIONS & ANSWERS 10:30 COFFEE BREAK & EXHIBITS 10:45 Pre-Function West, East & South 10:45 ORATION LECTURES 11:30 Wood Hayes Rooms D & E 10:45 Long-Term Results after Fenestrated EVAR—Professor Chara M. Pachinger Oration Lecture 11:30 Is it Time for a "Left-Shift" Toward Earlier Surgery of the Ascending Aorta? Professor Kallash Prasad Oration Lecture 11:15 QUESTIONS & ANSWERS 11:30 YOUNG INVESTIGATOR AWARD COMPETITION 12:30 YOUNG INVESTIGATOR AWARD COMPETITION 12:30 YOUNG INVESTIGATOR AWARD COMPETITION 13:30 YOUNG INVESTIGATOR AWARD COMPETITION 14:45 Cardioprotective Potence of Alabash due to Cardiac Hypoxia Consequences 11:30 Evaluation of Upper Extremity Arterial Injuries at an Urban Level 1 Trauma Center: 10 Years of Experience 11:45 Cardioprotective Potency of Alabash due to Cardiac Hypoxia Consequences 12:00 QUESTIONS & ANSWERS 12:120 QUESTIO	09:45			
10:00 Jürgen Falkensammer, Austria 10:00 Management of Aortic Infections with Cryopreserved Homografts Charles Pugar, Ohio 10:15 QUESTIONS & ANSWERS 10:30 COFFEE BREAK & KHIBITS 10:45 Pre-Function West, East & South 10:45 ORATION LECTURES 10:45 ORATION LECTURES 11:30 Wood Hayes Rooms D & E 10:45 Long-Term Results after Fenestrated EVAR—Professor Otmar M. Pachinger Oration Lecture 11:00 Jürgen Falkensammer, Austria 11:00 Is it Time for a "Left-Shift" Toward Earlier Surgery of the Ascending Aorta? Professor Kailash Prasad Oration Lecture 11:15 QUESTIONS & ANSWERS 11:30 QUESTIONS & ANSWERS 11:31 QUESTIONS & ANSWERS 11:30 YOUNG INVESTIGATOR AWARD COMPETITION 11:30 YOUNG INVESTIGATOR AWARD Consecticut 11:31 John A. Elefteriades, Connecticut 11:32 Cardioprotective Potency of Alabash due to Cardia Hypoxia Consequences 11:30 Evaluation of Upper Extremity Arterial Injuries at an Urban Level 1 Trauma Center: 10 Years of Experience 11:45 Cardioprotective Potency of Alabash due to Cardia Hypoxia Consequences 12:00 Ri				
10:00 Management of Aortic Infections with Cryopreserved Homografts 10:15 Charles Pugar, Ohio 10:30 QUESTIONS & ANSWERS 10:30 COFFEE BREAK & EXHIBITS 10:45 Pre-function West, East & South 10:45 ORATION LECTURES 10:45 Wood Hayes Rooms D & E 10:46 Uong-Term Results after Fenestrated EVAR—Professor Otmar M. Pachinger Oration Lecture 11:00 Is it Time for a "Left-Shift" Toward Earlier Surgery of the Ascending Aorta? Professor Kailash Prasad Oration Lecture 11:15 QUESTIONS & ANSWERS 11:30 QUESTIONS & ANSWERS 11:31 QUESTIONS & ANSWERS 11:30 QUESTIONS & ANSWERS 11:31 QUESTIONS & ANSWERS 11:32 QUESTIONS & ANSWERS 11:33 QUESTIONS & Competition 12:30 Woody Hayes Rooms D & E Chairpersons: John A. Elefteriades, Connecticut Josef Veselka, Czech Republic 1 Trauma Center: 10 Years of Experience 11:45 Cardioprotective Potency of Alabash due to Cardiac Hypoxia Consequences 12:00 Rio Alexsandro, Indonesia 12:15 QUESTIONS & ANSWERS 12:16	10:00			
10:15 QUESTIONS & ANSWERS 10:30 COFFEE BREAK & EXHIBITS 10:45 Pre-Function West, East & South 10:45 ORATION LECTURES 11:30 Wood Hayes Rooms D & E 10:45 Long-Term Results after Fenestrated EVAR – Professor Otmar M. Pachinger Oration Lecture 11:00 Using Falkensammer, Austria 11:00 Is it Time for a "Left-Shift" Toward Earlier Surgery of the Ascending Aorta? Professor Kailash Prasad Oration Lecture 11:15 John A. Elefteriades, Connecticut 11:15 QUESTIONS & ANSWERS 11:30 YOUNG INVESTIGATOR AWARD COMPETITION 12:30 Woody Hayes Rooms D & E Chairpersons: John A. Elefteriades, Connecticut 13:30 YOUNG INVESTIGATOR AWARD COMPETITION 12:30 Woody Hayes Rooms D & E Chairpersons: John A. Elefteriades, Connecticut Josef Veselka, Zech Republic Ister Fause of Experience 11:45 Cardioprotective Potency of Alabash due to Cardiac Hypoxia Consequences 12:00 Rio Alexandro, Indonesia 12:01 QUESTIONS & ANSWERS 12:15 AWARDS CEREMONY 12:16 AWARDS CEREMONY <td col<="" th=""><th>10:00</th><th></th></td>	<th>10:00</th> <th></th>	10:00		
10:30 COFFEE BREAK & EXHIBITS 10:45 Pre-Function West, East & South 10:45 ORATION LECTURES 10:45 ORATION LECTURES 10:45 Long-Term Results after Fenestrated EVAR—Professor Otmar M. Pachinger Oration Lecture 10:45 Long-Term Results after Fenestrated EVAR—Professor Otmar M. Pachinger Oration Lecture 11:00 Is it Time for a "Left-Shift" Toward Earlier Surgery of the Ascending Aorta? Professor Kailash Prasad Oration Lecture 11:15 John A. Elefteriades, Connecticut 11:15 QUESTIONS & ANSWERS 11:30 YOUNG INVESTIGATOR AWARD COMPETITION 12:30 Woody Hayes Rooms D & E Chaingersons: John A. Elefteriades, Connecticut Josef Veselka, Czech Republic 11:30 Evaluation of Upper Extremity Arterial Injuries at an Urban Level 1 Trauma Center: 10 Years of Experience 11:45 Cardioprotective Potency of Alabash due to Cardiac Hypoxia Consequences 12:00 Rio Alexsandro, Indonesia 12:01 QUESTIONS & ANSWERS 12:15 AWARDS CEREMONY 12:30 Woody Hayes Rooms D & E 12:01 CLOSE OF THE SCIENTIFIC MEETING Randall W. Franz, Ohio 12:13 CLOSE OF THE SCIENTIFIC MEETING Randall W. Franz, Ohio </th <th></th> <th></th>				
10:30 COFFEE BREAK & EXHIBITS 10:45 Pre-Function West, East & South 10:45 ORATION LECTURES 11:30 Wood Hayes Rooms D & E 10:45 Long-Term Results after Fenestrated EVAR—Professor Otmar M. Pachinger Oration Lecture 11:00 Is it Time for a "Left-Shift" Toward Earlier Surgery of the Ascending Aorta? Professor Kailash Prasad Oration Lecture 11:15 John A. Elefteriades, Connecticut 11:15 QUESTIONS & ANSWERS 11:30 YOUNG INVESTIGATOR AWARD COMPETITION 12:30 Woody Hayes Rooms D & E Chairpersons: John A. Elefteriades, Connecticut Josef Veselka, Zeach Republic 11:30 Evaluation of Upper Extremity Arterial Injuries at an Urban Level 1 Trauma Center: 10 Years of Experience 11:45 Cardioprotective Potency of Alabash due to Cardiac Hypoxia Consequences 12:00 QUESTIONS & ANSWERS 12:15 AWARDS CEREMONY 12:15 AWARDS CEREMONY 12:16 CLOSE OF THE SCIENTING Randall W. Franz, Ohio ICA BUSINESS MEETING 12:30 Woody Hayes Rooms D & E 12:15 AWARDS CEREMONY 12:30 Woody Hayes		QUESTIONS & ANSWERS		
10:45 Pre-Function West, East & South 10:45 ORATION LECTURES 11:30 Wood Hayes Rooms D & E 10:45 Long-Term Results after Fenestrated EVAR—Professor Otmar M. Pachinger Oration Lecture 11:00 Is it Time for a "Left-Shift" Toward Earlier Surgery of the Ascending Aorta? Professor Kailash Prasad Oration Lecture 11:15 Juirgen Falkensammer, Austria 11:15 QUESTIONS & ANSWERS 11:30 YOUNG INVESTIGATOR AWARD COMPETITION 12:30 YOUNG INVESTIGATOR AWARD COMPETITION 12:30 YOUNG INVESTIGATOR AWARD COMPETITION 12:30 YOUNG INVESTIGATOR AWARD COMPETITION 13:30 John A. Elefteriades, Connecticut Josef Veselka, Czech Republic Josef Veselka, Czech Republic 11:30 Evaluation of Upper Extremity Arterial Injuries at an Urban Level 1 Trauma Center: 10 Years of Experience 11:45 Cardioprotective Potency of Alabash due to Cardiac Hypoxia Consequences 12:00 QUESTIONS & ANSWERS 12:15 QUESTIONS & ANSWERS 12:16 QUESTIONS & MAWERS 12:17 QUESTIONS & MARDS CEREMONY 12:30 Woody Hayes Rooms D & E CLOSE OF THE SCIENTIFIC MEETING <t< th=""><th></th><th>COFFEE BREAK & EXHIBITS</th></t<>		COFFEE BREAK & EXHIBITS		
10:45 ORATION LECTURES 11:30 Wood Hayes Rooms D & E 10:45 Long-Term Results after Fenestrated EVAR—Professor Otmar M. Pachinger Oration Lecture 11:00 Is it Time for a "Left-Shift" Toward Earlier Surgery of the Ascending Aorta? Professor Kailash Prasad Oration Lecture 11:10 Is it Time for a "Left-Shift" Toward Earlier Surgery of the Ascending Aorta? Professor Kailash Prasad Oration Lecture 11:11 John A. Elefteriades, Connecticut 11:12 QUESTIONS & ANSWERS 11:130 YOUNG INVESTIGATOR AWARD COMPETITION 12:30 Woody Hayes Rooms D & E Chairpersons: John A. Elefteriades, Connecticut Josef Veselka, Czech Republic 11:30 Evaluation of Upper Extremity Arterial Injuries at an Urban Level 1 Trauma Center: 10 Years of Experience Sino Fraser, Ohio 11:45 Cardioprotective Potency of Alabash due to Cardiac Hypoxia Consequences 12:00 QUESTIONS & ANSWERS 12:15 AWARDS CEREMONY Woody Hayes Rooms D & E CLOSE OF THE SCIENTING Randall W. Franz, Ohio Randall W. Franz, Ohio 12:30 Woody Hayes Rooms D & E CLOSE OF THE SCIENTIFIC MEETING Randall W. Franz, Ohio<				
10:45 Long-Term Results after Fenestrated EVAR—Professor Otmar M. Pachinger Oration Lecture Jürgen Falkensammer, Austria 11:00 Is it Time for a "Left-Shift" Toward Earlier Surgery of the Ascending Aorta? Professor Kailash Prasad Oration Lecture John A. Elefteriades, Connecticut 11:15 QUESTIONS & ANSWERS 11:30 YOUNG INVESTIGATOR AWARD COMPETITION Woody Hayes Rooms D & E Chairpersons: John A. Elefteriades, Connecticut Josef Veselka, Czech Republic 11:30 Evaluation of Upper Extremity Arterial Injuries at an Urban Level 1 Trauma Center: 10 Years of Experience Simon Fraser, Ohio 11:45 Cardioprotective Potency of Alabash due to Cardiac Hypoxia Consequences Rio Alexsandro, Indonesia 12:00 QUESTIONS & ANSWERS 12:15 AWARDS CEREMONY Woody Hayes Rooms D & E CICOSE OF THE SCIENTIFIC MEETING Randall W. Franz, Ohio 12:30 ICASUN RESTING Woody Hayes Rooms D & E CICOSE OF THE SCIENTIFIC MEETING Randall W. Franz, Ohio 12:30 ICASUN RESTING Woody Hayes Rooms D & E CICOSE OF THE SCIENTIFIC MEETING Randall W. Franz, Ohio 12:30 ICA BUSINESS MEETING Woody Hayes Rooms D & E CICOSE OF THE SCIENTIFIC MEETING Randall W. Franz, Ohio ICA BUSINESS MEETING Woody Hayes Rooms D & E 01:30 Officers, Editorial Board & Membership Meeting		ORATION LECTURES		
11:00 Jürgen Falkensammer, Austria 11:00 Is it Time for a "Left-Shift" Toward Earlier Surgery of the Ascending Aorta? Professor Kailash Prasad Oration Lecture 11:15 John A. Elefteriades, Connecticut 11:30 QUESTIONS & ANSWERS 11:30 YOUNG INVESTIGATOR AWARD COMPETITION 12:30 Woody Hayes Rooms D & E Chairpersons: John A. Elefteriades, Connecticut Josef Veselka, Czech Republic 11:30 Evaluation of Upper Extremity Arterial Injuries at an Urban Level 1 Trauma Center: 10 Years of Experience Simon Fraser, Ohio Simon Fraser, Ohio 11:45 Cardioprotective Potency of Alabash due to Cardiac Hypoxia Consequences 12:00 Rio Alexsandro, Indonesia 12:15 QUESTIONS & ANSWERS 12:15 QUESTIONS & ANSWERS 12:30 Woody Hayes Rooms D & E 12:15 QUESTIONS & CEREMONY 12:30 Woody Hayes Rooms D & E 12:30 CLOSE OF THE SCIENTIFIC MEETING Randall W. Franz, Ohio Randall W. Franz, Ohio 12:30 Officers, Editorial Board & Membership Meeting				
11:00 Is it Time for a "Left-Shift" Toward Earlier Surgery of the Ascending Aorta? Professor Kailash Prasad Oration Lecture John A. Elefteriades, Connecticut 11:15 QUESTIONS & ANSWERS 11:30 QUESTIONS & ANSWERS 11:30 YOUNG INVESTIGATOR AWARD COMPETITION Woody Hayes Rooms D & E Chairpersons: John A. Elefteriades, Connecticut Josef Veselka, Czech Republic Chairpersons: 11:30 Evaluation of Upper Extremity Arterial Injuries at an Urban Level 1 Trauma Center: 10 Years of Experience Simon Fraser, Ohio 11:45 Cardioprotective Potency of Alabash due to Cardiac Hypoxia Consequences Rio Alexsandro, Indonesia 12:00 QUESTIONS & ANSWERS 12:15 AWARDS CEREMONY Woody Hayes Rooms D & E CLOSE OF THE SCIENTIFIC MEETING Randall W. Franz, Ohio CLOSE OF THE SCIENTIFIC MEETING Randall W. Franz, Ohio 12:30 Officers, Editorial Board & Membership Meeting				
11:15 John A. Elefteriades, Connecticut 11:15 QUESTIONS & ANSWERS 11:30 YOUNG INVESTIGATOR AWARD COMPETITION 12:30 Woody Hayes Rooms D & E Chairpersons: John A. Elefteriades, Connecticut Josef Veselka, Czech Republic 11:30 Evaluation of Upper Extremity Arterial Injuries at an Urban Level 1 Trauma Center: 10 Years of Experience Simon Fraser, Ohio 11:45 Cardioprotective Potency of Alabash due to Cardiac Hypoxia Consequences Rio Alexsandro, Indonesia 12:00 Rio Alexsandro, Indonesia 12:15 QUESTIONS & ANSWERS 12:15 AWARDS CEREMONY Woody Hayes Rooms D & E CLOSE OF THE SCIENTIFIC MEETING Randall W. Franz, Ohio 12:30 OGenes De MEETING Woody Hayes Rooms D & E CLOSE OF THE SCIENTIFIC MEETING Randall W. Franz, Ohio 12:30 Officers, Editorial Board & Membership Meeting				
11:30 YOUNG INVESTIGATOR AWARD COMPETITION 12:30 Woody Hayes Rooms D & E Chairpersons: John A. Elefteriades, Connecticut Josef Veselka, Czech Republic 11:30 Evaluation of Upper Extremity Arterial Injuries at an Urban Level 1 Trauma Center: 10 Years of Experience Simon Fraser, Ohio 11:45 Cardioprotective Potency of Alabash due to Cardiac Hypoxia Consequences Rio Alexsandro, Indonesia 12:00 QUESTIONS & ANSWERS 12:15 AWARDS CEREMONY 12:15 CLOSE OF THE SCIENTIFIC MEETING Randall W. Franz, Ohio ICA BUSINESS MEETING Woody Hayes Rooms D & E CLOSE OF THE SCIENTIFIC MEETING Randall W. Franz, Ohio 12:30 Officers, Editorial Board & Membership Meeting				
11:30 YOUNG INVESTIGATOR AWARD COMPETITION 12:30 Woody Hayes Rooms D & E Chairpersons: John A. Elefteriades, Connecticut Josef Veselka, Czech Republic 11:30 Evaluation of Upper Extremity Arterial Injuries at an Urban Level 1 Trauma Center: 10 Years of Experience 11:45 Cardioprotective Potency of Alabash due to Cardiac Hypoxia Consequences 12:00 Rio Alexsandro, Indonesia 12:15 QUESTIONS & ANSWERS 12:15 AWARDS CEREMONY 12:30 Woody Hayes Rooms D & E CLOSE OF THE SCIENTIFIC MEETING Randall W. Franz, Ohio ICA BUSINESS MEETING ICA BUSINESS MEETING 12:30 Officers, Editorial Board & Membership Meeting	-			
12:30 Woody Hayes Rooms D & E Chairpersons: John A. Elefteriades, Connecticut Josef Veselka, Czech Republic 11:30 Evaluation of Upper Extremity Arterial Injuries at an Urban Level 1 Trauma Center: 10 Years of Experience Simon Fraser, Ohio 11:45 Cardioprotective Potency of Alabash due to Cardiac Hypoxia Consequences Rio Alexsandro, Indonesia 12:00 QUESTIONS & ANSWERS 12:15 AWARDS CEREMONY Woody Hayes Rooms D & E 12:30 CLOSE OF THE SCIENTIFIC MEETING Randall W. Franz, Ohio 12:30 ICA BUSINESS MEETING Woody Hayes Rooms D & E 12:30 ICA BUSINESS MEETING Woody Hayes Rooms D & E 12:30 Officers, Editorial Board & Membership Meeting				
Chairpersons: John A. Elefteriades, Connecticut Josef Veselka, Czech Republic 11:30 Evaluation of Upper Extremity Arterial Injuries at an Urban Level 1 Trauma Center: 10 Years of Experience Simon Fraser, Ohio 11:45 Cardioprotective Potency of Alabash due to Cardiac Hypoxia Consequences Rio Alexsandro, Indonesia 12:00 QUESTIONS & ANSWERS 12:15 AWARDS CEREMONY Woody Hayes Rooms D & E 12:30 CLOSE OF THE SCIENTIFIC MEETING Randall W. Franz, Ohio 12:30 ICA BUSINESS MEETING Woody Hayes Rooms D & E 12:30 Officers, Editorial Board & Membership Meeting				
John A. Elefteriades, Connecticut Josef Veselka, Czech Republic 11:30 Evaluation of Upper Extremity Arterial Injuries at an Urban Level 1 Trauma Center: 10 Years of Experience Simon Fraser, Ohio 11:45 Cardioprotective Potency of Alabash due to Cardiac Hypoxia Consequences Rio Alexsandro, Indonesia 12:00 QUESTIONS & ANSWERS 12:15 CLOSE OF THE SCIENTIFIC MEETING Randall W. Franz, Ohio 12:30 ICA BUSINESS MEETING Woody Hayes Rooms D & E 12:30 ICA BUSINESS MEETING Woody Hayes Rooms D & E 12:30 ICA BUSINESS MEETING Woody Hayes Rooms D & E 12:30 Woody Hayes Rooms D & E 12:30 ICA BUSINESS MEETING 12:30 Woody Hayes Rooms D & E 12:30 Officers, Editorial Board & Membership Meeting	12:30			
11:30 Evaluation of Upper Extremity Arterial Injuries at an Urban Level 1 Trauma Center: 10 Years of Experience Simon Fraser, Ohio 11:45 Cardioprotective Potency of Alabash due to Cardiac Hypoxia Consequences Rio Alexsandro, Indonesia 12:00 QUESTIONS & ANSWERS 12:15 AWARDS CEREMONY 12:30 Woody Hayes Rooms D & E CLOSE OF THE SCIENTIFIC MEETING Randall W. Franz, Ohio 12:30 ICA BUSINESS MEETING 12:30 Woody Hayes Rooms D & E Officers, Editorial Board & Membership Meeting				
11:45 Simon Fraser, Ohio 11:45 Cardioprotective Potency of Alabash due to Cardiac Hypoxia Consequences 12:00 Rio Alexsandro, Indonesia 12:00 QUESTIONS & ANSWERS 12:15 AWARDS CEREMONY 12:30 Woody Hayes Rooms D & E CLOSE OF THE SCIENTIFIC MEETING Randall W. Franz, Ohio 12:30 ICA BUSINESS MEETING 12:30 Woody Hayes Rooms D & E Officers, Editorial Board & Membership Meeting		Josef Veselka, Czech Republic		
11:45 Cardioprotective Potency of Alabash due to Cardiac Hypoxia Consequences Rio Alexsandro, Indonesia 12:00 Rio Alexsandro, Indonesia 12:10 QUESTIONS & ANSWERS 12:15 AWARDS CEREMONY 12:30 Woody Hayes Rooms D & E CLOSE OF THE SCIENTIFIC MEETING Randall W. Franz, Ohio 12:30 ICA BUSINESS MEETING Woody Hayes Rooms D & E 12:30 Officers, Editorial Board & Membership Meeting				
12:00 Rio Alexsandro, Indonesia 12:00 QUESTIONS & ANSWERS 12:15 AWARDS CEREMONY 12:30 Woody Hayes Rooms D & E CLOSE OF THE SCIENTIFIC MEETING Randall W. Franz, Ohio 12:30 ICA BUSINESS MEETING 12:30 Woody Hayes Rooms D & E Officers, Editorial Board & Membership Meeting				
12:00 12:15 QUESTIONS & ANSWERS 12:15 AWARDS CEREMONY 12:30 Woody Hayes Rooms D & E CLOSE OF THE SCIENTIFIC MEETING Randall W. Franz, Ohio ICA BUSINESS MEETING Woody Hayes Rooms D & E 12:30 Woody Hayes Rooms D & E 01:30 Officers, Editorial Board & Membership Meeting				
12:15 AWARDS CEREMONY 12:15 AWARDS CEREMONY 12:30 Woody Hayes Rooms D & E CLOSE OF THE SCIENTIFIC MEETING Randall W. Franz, Ohio ICA BUSINESS MEETING 12:30 Woody Hayes Rooms D & E 01:30 Officers, Editorial Board & Membership Meeting				
12:15 AWARDS CEREMONY 12:30 Woody Hayes Rooms D & E CLOSE OF THE SCIENTIFIC MEETING Randall W. Franz, Ohio 12:30 ICA BUSINESS MEETING 12:30 Woody Hayes Rooms D & E 01:30 Officers, Editorial Board & Membership Meeting		QUESTIONS & ANSWERS		
CLOSE OF THE SCIENTIFIC MEETING Randall W. Franz, Ohio ICA BUSINESS MEETING 12:30 Woody Hayes Rooms D & E 01:30 Officers, Editorial Board & Membership Meeting	12:15			
Randall W. Franz, Ohio ICA BUSINESS MEETING 12:30 Woody Hayes Rooms D & E 01:30 Officers, Editorial Board & Membership Meeting	12:30			
ICA BUSINESS MEETING 12:30 Woody Hayes Rooms D & E 01:30 Officers, Editorial Board & Membership Meeting				
12:30 Woody Hayes Rooms D & E 01:30 Officers, Editorial Board & Membership Meeting	- T			
01:30 Officers, Editorial Board & Membership Meeting	12:30			
(Private)		Officers, Editorial Board & Membership Meeting		
		(Private)		

61st Annual World Congress • International College of Angiology 2019 Jointly Provided by

OhioHealth Continuing Medical Education, OhioHealth Heart & Vascular

Renaissance Columbus Downtown Hotel



Columbus, Ohio October 10-12, 2019



Scientific Program Thursday, October 10, 2019 7:00 AM – 8:15 AM

Registration, Continental Breakfast and Exhibits

Woody Hayes Rooms D and E 8:15 AM – 8:30 AM

Opening Ceremony and Welcome Address

Master of Ceremonies

Introduction By:

Randall W. Franz, MD, FACS, FICA, RVT, RVPI

Chief, Vascular and Endovascular Surgery, Medical Director, Grant Vascular and Vein Center; Assistant Professor of Surgery, Ohio State University; Professor of Surgery, Ohio University, Columbus, Ohio; First Vice Chairman and Member, Board of Directors, International College of Angiology; Chairman, Local Organizing Committee, 61st Annual World Congress-ICA 2019; Co-Chairperson, Scientific Committee, International College of Angiology; Editorial Board, International Journal of Angiology.

Program Chairman and Chairman, Board of Directors

Kailash Prasad, MBBS (Hons), MD, PhD, DSc, FRCPC, FACC, FIACS, FICA

Professor Emeritus, Department of Physiology, College of Medicine, University of Saskatchewan, Saskatoon, Canada; Chairman, Board of Directors, and Program Chairman, 60th Anniversary World Congress, International College of Angiology; Consulting Editor, *International Journal of Angiology*. **President**

Ernesto P. Molmenti, MD, PhD, MBA, FICA

Member and President, Board of Directors, International College of Angiology; Editorial Board, *International Journal of Angiology;* Vice Chairman, Department of Surgery; Director, Chief, Surgical Innovation; Director, Kidney Transplantation, Professor of Surgery, Medicine and Pediatrics, Donald and Barbara Zucker School of Medicine at Hofstra/Northwell, Transplant Center, Manhasset, New York.

Chairman, Scientific Committee

Otmar M. Pachinger, MD, FESC, FAHA, FICA

Professor Emeritus, Distinguished Professor of Cardiology, Medical University of Innsbruck, Innsbruck, Austria; Member, Board of Directors, International College of Angiology; Chairperson, Scientific Committee, International College of Angiology; Senior Editor, International Journal of Angiology; President, Austrian Heart Foundation, Innsbruck, Austria. Opening Remarks

Stephen Markovich, MD

President and Chief Executive Officer, OhioHealth, Columbus, Ohio.

8:30 AM – 9:45 AM

Local Organizing Committee Chairman's Address

Randall W. Franz, MD, FACS, FICA, RVT, RVPI

Chief, Vascular and Endovascular Surgery, Medical Director, Grant Vascular and Vein Center; Assistant Professor of Surgery, Ohio State University; Professor of Surgery, Ohio University, Columbus, Ohio; First Vice Chairman and Member, Board of Directors, International College of Angiology; Chairman, Local Organizing Committee, 61st Annual World Congress-ICA 2019; Co-Chairperson, Scientific Committee, International College of Angiology; Editorial Board, International Journal of Angiology.

8:45 AM – 9:45 AM MEMORIAL LECTURES

8:45 AM - 9:00 AM

HBA1_c—A RISK FACTOR FOR CARDIOVASCULAR DISEASES PROFESSOR JOHN B. CHANG, MD MEMORIAL LECTURE Introduction By:

Randall W. Franz, MD, FACS, FICA, RVT, RVPI

Chief, Vascular and Endovascular Surgery, Medical Director, Grant Vascular and Vein Center; Assistant Professor of Surgery, Ohio State University; Professor of Surgery, Ohio University, Columbus, Ohio; First Vice Chairman and Member, Board of Directors, International College of Angiology; Chairman, Local Organizing Committee, 61st Annual World Congress-ICA 2019; Co-Chairperson, Scientific Committee, International College of Angiology; Editorial Board, International Journal of Angiology.

Presentation By:

Kailash Prasad, MBBS (Hons), MD, PhD, DSc, FRCPC, FACC, FIACS, FICA

Professor Emeritus, Department of Physiology, College of Medicine, University of Saskatchewan, Saskatoon, Canada; Chairman, Board of Directors, and Program Chairman, 60th Anniversary World Congress, International College of Angiology; Consulting Editor, *International Journal of Angiology*.

Woody Hayes Rooms D & E

Thursday, October 10, 2019 **MEMORIAL LECTURES (CONTINUED)**

9:00 AM - 9:15 AM

TRANSCATHETER AORTIC VALVE IMPLANTATION—FROM EVIDENCE TO CLINICAL PRACTICE **PROFESSOR HANS H. HACHEN MEMORIAL LECTURE**

Introduction By:

Kailash Prasad, MBBS (Hons), MD, PhD, DSc, FRCPC, FACC, FIACS, FICA

Professor Emeritus, Department of Physiology, College of Medicine, University of Saskatchewan, Saskatoon, Canada; Chairman, Board of Directors, and Program Chairman, 60th Anniversary World Congress, International College of Angiology; Consulting Editor, International Journal of Angiology. **Presentation By:**

Josef Veselka, MD, PhD, FICA

Professor of Internal Medicine; Member and President-Elect, Board of Directors, International College of Angiology; Editor, International Journal of Angiology; Chief, Department of Cardiology, 2nd School of Medicine, Charles University, University Hospital Motol, Prague, Czech Republic.

9:15 AM - 9:30 AM **NEW DIRECTIONS IN VASCULAR SURGERY PROFESSOR ALBERT SENN MEMORIAL LECTURE** Introduction By:

John A. Elefteriades, MD, PhD (Hon), FACS, FICA

William W.L. Glenn Professor of Cardiothoracic Surgery; Second Vice Chairman and Member, Board of Directors, International College of Angiology; Co-Chairperson, Scientific Committee, International College of Angiology; Editor-in-Chief, International Journal of Angiology; Director, Aortic Institute at Yale-New Haven, Yale University School of Medicine, New Haven, Connecticut.

Presentation By:

John D. Corson, MB, ChB, FRCS(Eng), FRCS(Edin), FACS, FICA

Clinical Professor of Surgery, University of New Mexico (UNM), Albuquerque, New Mexico; Member, Board of Directors, International College of Angiology; Senior Editor, International Journal of Angiology.

> 09:30 AM - 09:45 AM **Questions & Answers**

09:45 AM - 10:00 AM - BREAK **Pre-Function West, East and South**

10:00 AM - 10:45 AM

CENTRAL VENOUS DISEASE/PULMONARY EMBOLISM/IVC FILTERS LECTURES

Chairperson:

Michael Winkler, MD, FSCCT, FICA

Associate Professor of Radiology and Cardiovascular Medicine, Thoracic and Cardiovascular Radiology, University of Kentucky, UK HealthCare Enterprise, Lexington, Kentucky.

10:00 Pulmonary Embolism: Mitchell Silver, DO, FACC, FSVM, RPVI, Interventional Cardiology and Vascular Medicine, OhioHealth Heart & Vascular Physicians, Columbus, Ohio; Director, Center for Critical Limb Care, McConnell Heart and Vascular Hospital, Riverside Methodist Hospital, Columbus, Ohio; Director, Section of Cardiovascular Medicine and Cardiac Catheterization Laboratory, O'Bleness Memorial Hospital, Athens, Ohio.

10:15 Implementing a Successful Program to Follow and Remove Temporary IVC Filters with Difficult Removal Cases: Charles F. Botti, Jr., MD, FACC, RPVI, Interventional Cardiovascular Medicine, OhioHealth Heart & Vascular Physicians, Columbus, Ohio; Medical Director, Hyperbaric Oxygen Center, Riverside Methodist Hospital, Columbus, Ohio; Chair, Heart and Vascular Clinical Operations Council, Columbus, Ohio.

> 10:30 AM - 10:45 AM **Questions & Answers**

10:45 AM – 12:00 PM Thursday, October 10, 2019 STRUCTURAL HEART Chairpersons:

Frank Manetta, MD, FICA

Program Director, Independent and Integrated Thoracic Surgery Residencies, Surgical Director, Acute Lung Injury Program; Medical Director, Perfusion Medicine Program at Hofstra University, Uniondale, New York; Associate Professor of Surgery, Donald and Barbara Zucker School of Medicine at Hofstra/Northwell, Uniondale, New York; Department of Cardiovascular and Thoracic Surgery, Manhasset, New York; Vice President, Scientific Council, International College of Angiology; Senior Editor, *International Journal of Angiology*.

Rajinder P. Sharma, MD, FSIR, FICA

Clinical Associate Professor of Radiology, Wayne State University School of Medicine; Former Senior Staff, Interventional Radiology, Henry Ford Hospital, Detroit, Michigan; Member, Board of Directors, International College of Angiology; Editor, *International Journal of Angiology*.

- 10:45 The Impella Device: Historical Background, Clinical Applications and Comparison with Other Mechanical Support Devices: James J. Glazier, MD, FRCPI, FRCP (London), FACP, VACC, FSCAI, CCDS, <u>RPVI, FICA</u>, Clinical Professor of Medicine, Wayne State University, Department of Medicine, Division of Cardiology, Detroit Medical Center, Detroit, Michigan.
- 11:00 Advanced Cardiac CT Visualizations for Structural Heart Disease—Procedural Planning: <u>Michael</u> <u>Winkler, MD, FSCCT, FICA</u>, Associate Professor of Radiology and Cardiovascular Medicine, Thoracic and Cardiovascular Radiology, University of Kentucky, UK HealthCare Enterprise, Lexington, Kentucky.
- 11:15 Aortic Valve Repair: <u>Geoffrey Blossom, MD, FACC</u>, Clinical Assistant Professor, University of Toledo Medical Center, Toledo, Ohio; Chief, Division of Cardiothoracic & Vascular Surgery, Riverside Methodist Hospital, Columbus, Ohio; Director, Cardiovascular Quality, OhioHealth, Columbus, Ohio; Assistant Program Director, General Surgery Residency Program and Critical Care Committee Member, Riverside Methodist Hospital, Columbus, Ohio.

11:30 TAVR: <u>Thomas Salamon, MD</u>, Medical Director, Structural Heart Disease Program, OhioHealth Grant Medical Center, Columbus, Ohio.

11:45 AM – 12:00 PM Questions & Answers

12:00 PM – 12:30 PM LUNCHEON BREAK 12:30 PM – 1:20 PM

LUNCHEON LECTURES

Chairpersons:

Iwan Dakota, MD, PhD, FACC, FESC, FICA

Secretary General and Member, Board of Directors, International College of Angiology; Member, Editorial Board, International Journal of Angiology; Head, Peripheral Vascular Intervention, Vascular Division, Department of Cardiology and Vascular Medicine, University of Indonesia, School of Medicine, Jakarta, Indonesia; Director of General Affairs and Human Capital, National Cardiovascular Center, Harapan Kita Hospital, Jakarta, Indonesia.

Petr Hájek, MD, PhD, FICA

Professor of Internal Medicine; Vice President, Scientific Council, International College of Angiology; Editor, International Journal of Angiology; Department of Cardiology, 2nd School of Medicine, Charles University, University Hospital Motol, Prague, Czech Republic.

- 12:30 Detection of Coronary Vulnerable Atherosclerotic Plaque—The Role of Biomarkers and Advanced Imaging: <u>Martin</u> <u>Horváth, MD</u>; Cyril Štěchovský, MD; Petr Hájek, MD, PhD, FICA, Vice President, Scientific Council, International College of Angiology; Editor, *International Journal of Angiology*; Josef Veselka, MD, PhD, FICA, Professor of Internal Medicine; President-Elect and Member, Board of Directors, International College of Angiology; Senior Editor, *International Journal of Angiology*; Chief, Department of Cardiology, 2nd School of Medicine, Charles University, University Hospital Motol, Prague, Czech Republic.
- 12:40 Intravascular Ultrasound and Near-Infrared Spectroscopy of the Carotid Artery—From Stenosis to Vulnerable Plaque: <u>Cyril Štěchovský, MD</u>; Petr Hájek, MD, PhD, FICA, Vice President, Scientific Council, International College of Angiology; Editor, *International Journal of Angiology*; Martin Horváth, MD; Josef Veselka, MD, PhD, FICA, Professor of Internal Medicine; President-Elect and Member, Board of Directors, International College of Angiology; Senior Editor, *International Journal of Angiology*; Chief, Department of Cardiology, 2nd Faculty of Medicine, Charles University, University Hospital Motol, Prague, Czech Republic.
- 12:50 Complete Atrioventricular Block in Pregnancy caused by SLE Exacerbation—A Case Report: Rio Alexsandro, MD, FICA^{1,5}; <u>Maria Patricia Inggriani, MD</u>²; Rachelle Betsy, MD¹; Putu Aditya, MD³; Erika Maharani, MD, FIHA⁴; Mustika Mahbubi, MD, FIHA⁵; ¹Department of Biochemistry, Faculty of Medicine, University of Tarumanagara, Jakarta, Indonesia; ²Public Health and Nursing and ⁴Department of Cardiology and Vascular Medicine, Faculty of Medicine, University of Gadjah Mada, Yogyakarta, Indonesia; ³Cardiology Resident, University of Diponegoro, Semarang, Indonesia; ⁵Department of Cardiology and Vascular Medicine, Soewondo Hospital District, Pati, Central Java, Indonesia.

Woody Hayes Room D & E

October 10, 2019 LUNCHEON LECTURES (Continued)

1:00 Giant Left Ventricular Thrombus with Concomitant Massive Hemoptysis due to Bronchiectasis: Management Dilemma: Grace Juniaty, MD¹; Rio Alexsandro, MD, FICA^{2,6}; Maria Patricia Inggriani, MD³; <u>Kristian Sudana,</u> <u>Hartano, MD⁴</u>; Made Indra Dwi Putra, MD¹; Gilbert Renardi Kusila, MD³; Putu Ayu Diah Puspita Sari, MD⁵; I Putu Gede Budiana, MD, FIHA¹; ¹Department of Cardiovascular Medicine, Mangusada Regional Hospital, Badung, Bali, Indonesia; ²Department of Biochemistry and Molecular Biology, Faculty of Medicine, University of Tarumanagara, Jakarta, Indonesia; ³Public Health and Nursing, University of Gadjah Mada, Yogyakarta, Indonesia; ⁴Institute of Cardiovascular Science, University College, London, UK; ⁵Department of Pulmonology, Mangusada Regional Hospital, Bali, Indonesia; ⁶Faculty of Medicine, Pelita Harapan University, Jakarta, Indonesia.

1:10 PM – 1:20 PM Questions & Answers

1:20 PM – 2:00 PM ARCH AND CEREBRAL DISEASE Chairpersons:

Randall W. Franz, MD, FACS, FICA, RVT, RVPI

Chief, Vascular and Endovascular Surgery, Medical Director, Grant Vascular and Vein Center; Assistant Professor of Surgery, Ohio State University; Professor of Surgery, Ohio University, Columbus, Ohio; First Vice Chairman and Member, Board of Directors, International College of Angiology; Chairman, Local Organizing Committee, 61st Annual World Congress-ICA 2019; Co-Chairperson, Scientific Committee, International College of Angiology; Editorial Board, International Journal of Angiology.

Wei Zhou, MD, FACS, FICA

Professor of Surgery; Treasurer and Member, Board of Directors, International College of Angiology; Co-Chairperson, Scientific Committee, International College of Angiology; Editor, International Journal of Angiology; Chief, Vascular Surgery, Department of Surgery, University of Arizona, Tucson, Arizona.

- 1:20 Endovascular Techniques for Head and Neck Cancers and Carotid Blow-Out: <u>Michael B. Silva, Jr., MD, FACS,</u> FICA (Hon), Chief, Division of Vascular Surgery and Endovascular Therapies, The University of Texas Medical Branch, Galveston, Texas.
- **1:35** Endovascular Treatment of Stroke: <u>Nirav Vora, MD</u>, Department of Neurology, OhioHealth Riverside Methodist Hospital, Columbus, Ohio; Riverside Interventional and Radiology Associates at Riverside Methodist Hospital, Columbus, Ohio.

1:50 PM – 2:00 PM Questions & Answers

2:00 PM – 2:45 PM CAROTID DISEASE Chairperson:

Jürgen Falkensammer, MD, FEBVS, FICA

Vice President, Scientific Council, International College of Angiology; Department of Vascular and Endovascular Surgery, Wilhelminenspital Vienna, Austria; Medical Faculty of the Sigmund Freud University, Vienna, Austria.

- 2:00 Identifying High Risk Asymptomatic Carotid Stenosis: <u>Wei Zhou, MD, FACS, FICA</u>, Professor of Surgery; Treasurer and Member, Board of Directors, International College of Angiology; Co-Chairperson, Scientific Committee, International College of Angiology; Editor, *International Journal of Angiology*; Chief, Vascular Surgery, Department of Surgery, University of Arizona, Tucson, Arizona.
- 2:15 Local and National Experience of Trans-Carotid Arterial Revascularization Technique: <u>Robert Schwartz, MD</u>, FACS, RVT, Department of Vascular Surgery, OhioHealth, Mansfield, Ohio.

2:30 PM – 2:45 PM Questions & Answers

Thursday, October 10, 2019 2:45 PM – 3:15 PM

SURGICAL INNOVATIONS IN TRANSPLANT SURGERY—SPECIAL LECTURE

Introduction By:

Randall W. Franz, MD, FACS, FICA, RVT, RVPI

Chief, Vascular and Endovascular Surgery, Medical Director, Grant Vascular and Vein Center; Assistant Professor of Surgery, Ohio State University; Professor of Surgery, Ohio University, Columbus, Ohio; First Vice Chairman and Member, Board of Directors, International College of Angiology; Chairman, Local Organizing Committee, 61st Annual World Congress-ICA 2019; Co-Chairperson, Scientific Committee, International College of Angiology; Editorial Board, International Journal of Angiology.

Presentation By:

Ernesto P. Molmenti, MD, PhD, MBA, FICA

Member and President, Board of Directors, International College of Angiology; Editorial Board, *International Journal of Angiology;* Vice Chairman, Department of Surgery; Director, Chief, Surgical Innovation; Director, Kidney Transplantation, Professor of Surgery, Medicine and Pediatrics, Donald and Barbara Zucker School of Medicine at Hofstra/Northwell, Transplant Center, Manhasset, New York.

Pre-Function West, East and South

3:30 PM – 4:30 PM VENOUS Chairpersons:

Pertti T. Aarnio, MD, PhD, FICA

Emeritus Professor of Surgery, University of Turku, Pori, Finland; Emeritus, Chief, Department of Surgery, Satakunta Central Hospital, Pori, Finland; Member, Board of Directors and Co-Chairperson, Scientific Committee, International College of Angiology, Senior Editor, International Journal of Angiology.

Jon C. Henry, MD, MS, RPVI, FICA

Attending Vascular Surgeon, OhioHealth Heart & Vascular, Grant Medical Center, Columbus, Ohio.

- 3:30 Endovenous Laser Venous Ablation Therapy to Treat Varicose Veins: Mid-Term Results: <u>Iwan Dakota, MD,</u> <u>PhD, FACC, FESC, FICA</u>, Secretary General and Member, Board of Directors, International College of Angiology; Member, Editorial Board, *International Journal of Angiology;* Head, Peripheral Vascular Intervention, Vascular Division, Department of Cardiology and Vascular Medicine, University of Indonesia, School of Medicine, Jakarta, Indonesia; Director of General Affairs and Human Capital, National Cardiovascular Center, Harapan Kita Hospital, Jakarta, Indonesia.
- 3:45 New Technology in Venous Insufficiency: <u>Raghu Kolluri, MD, MS, RVT, RPVI, FACC, FACP, FSVM, FSCAI,</u> President, The Society for Vascular Medicine; System Medical Director, Syntropic CoreLab, OhioHealth Research and Innovation Institute, Columbus, Ohio; System Medical Director, Vascular Medicine, OhioHealth Heart and Vascular, Columbus, Ohio; Administrative Medical Director for Vascular Medicine and Medical Director, Vascular Laboratories, OhioHealth, Columbus, Ohio.
- **4:00** Venous Compression Syndrome: <u>Samih Bittar, MD, FACP, FSVM, RPVI</u>, Consultant Physician, Vascular Medicine, Staff Physician, Vein Center, Wound Medicine and Critical Limb Center, OhioHeath Heart & Vascular Institute and Riverside Methodist Hospital, Columbus, Ohio.

4:15 PM – 4:30 PM Questions & Answers

4:30 PM – 4:45 PM ADJOURNMENT

Randall W. Franz, MD, FACS, FICA, RVT, RVPI

Chief, Vascular and Endovascular Surgery, Medical Director, Grant Vascular and Vein Center; Assistant Professor of Surgery, Ohio State University; Professor of Surgery, Ohio University, Columbus, Ohio; First Vice Chairman and Member, Board of Directors, International College of Angiology; Chairman, Local Organizing Committee, 61st Annual World Congress-ICA 2019; Co-Chairperson, Scientific Committee, International College of Angiology; Editorial Board, International Journal of Angiology.

Friday, October 11, 2019 7:00 AM - 8:00 AM REGISTRATION, CONTINENTAL BREAKFAST AND EXHIBITS

Scientific Sessions

Woody Hayes Room D & E

8:00 AM – 9:30 AM CORONARY ARTERY DISEASE

Chairpersons:

James J. Glazier, MD, FRCPI, FRCP (London), FACP, VACC, FSCAI, CCDS, RPVI, FICA

Clinical Professor of Medicine, Wayne State University, Department of Medicine, Division of Cardiology, Detroit Medical Center, Detroit, Michigan. Josef Veselka, MD, PhD, FICA

Professor of Internal Medicine; Member and President-Elect, Board of Directors, International College of Angiology; Editor, International Journal of Angiology; Chief, Department of Cardiology, 2nd School of Medicine, Charles University, University Hospital Motol, Prague, Czech Republic.

- 8:00 Impact of Stress on Cardiovascular Health: <u>Sibu P. Saha, MD, MBA, FICA</u>, Professor of Surgery and Bioengineering; Member, Board of Directors and Scientific Committee, International College of Angiology; Editorial Board, International Journal of Angiology; Chief, Division of Cardiovascular and Thoracic Surgery, University of Kentucky, Lexington, Kentucky.
- 8:15 On the Road to the Optimal TAVI Valve: <u>Petr Hájek, MD, PhD, FICA</u>, Professor of Internal Medicine; Vice President, Scientific Council, International College of Angiology; Editor, *International Journal of Angiology;* Department of Cardiology, 2nd School of Medicine, Charles University, University Hospital Motol, Prague, Czech Republic.
- 8:30 Chest Pain in the ED—Role of Patient Centered Testing, New Troponin Assay and New Imaging Technology: <u>Karanvir S. Grewal, MD, FACC, FASE, FASNC</u>, System Chief, Cardiovascular Imaging, OhioHealth Heart & Vascular Physicians, Columbus, Ohio; Cardiologist, OhioHealth Heart & Vascular Physicians, Columbus, Ohio; Investigator, OhioHealth Research Institute, Columbus, Ohio.
- 8:45 **Performing STEMI without Surgical Back-Up: <u>Kevin Stiver, MD, MS</u>, Interventional Cardiologist, OhioHealth Doctor's Hospital, Medical Director of Patient Experience Heart and Vascular Service Line and OhioHealth Physician Envoy, Columbus, Ohio;**
- 9:00 IFR and FFR: Physiological Assessment of Arterial Flow: <u>Michael Tempelhof, MD, MSc, FACC, FSCAI, FPVI</u>, Interventional Cardiologist, OhioHealth Heart and Vascular Specialists, Grant Medical Center, Columbus, Ohio.

9:15 AM – 9:30 AM Questions & Answers

9:30 AM – 9:45 AM – BREAK and EXHIBITS

Pre-Function West, East and South

9:45 AM – 11:00 AM THORACIC AORTIC DISEASE Chairpersons:

Ernesto P. Molmenti, MD, PhD, MBA, FICA

Member and President, Board of Directors, International College of Angiology; Editorial Board, International Journal of Angiology; Vice Chairman, Department of Surgery; Director, Chief, Surgical Innovation; Director, Kidney Transplantation, Professor of Surgery, Medicine and Pediatrics, Donald and Barbara Zucker School of Medicine at Hofstra/Northwell, Transplant Center, Manhasset, New York.

Sibu P. Saha, MD, MBA, FICA

Professor of Surgery and Bioengineering; Member, Board of Directors and Scientific Committee, International College of Angiology; Editorial Board, International Journal of Angiology; Chief, Division of Cardiovascular and Thoracic Surgery, University of Kentucky, Lexington, Kentucky.

- 9:45 **TEVAR for Type B Aortic Dissection—A Single Center Experience:** <u>Iwan Dakota, MD, PhD, FACC, FESC, FICA,</u> Secretary General and Member, Board of Directors, International College of Angiology; Member, Editorial Board, *International Journal of Angiology;* Head, Peripheral Vascular Intervention, Vascular Division, Department of Cardiology and Vascular Medicine, University of Indonesia, School of Medicine, Jakarta, Indonesia; Director of General Affairs and Human Capital, National Cardiovascular Center, Harapan Kita Hospital, Jakarta, Indonesia.
- **10:00** Aortic Dissection Management: <u>Frank Manetta, MD, FICA</u>, Program Director, Independent and Integrated Thoracic Surgery Residencies, Surgical Director, Acute Lung Injury Program; Medical Director, Perfusion Medicine Program at Hofstra University, Uniondale, New York; Associate Professor of Surgery, Donald and Barbara Zucker School of Medicine at Hofstra/Northwell, Uniondale, New York; Department of Cardiovascular and Thoracic Surgery, Manhasset, New York; Vice President, Scientific Council, International College of Angiology; Senior Editor, *International Journal of Angiology*.
- **10:15** Genetics of Thoracic Aortic Aneurysm Disease: John A. Elefteriades, MD, PhD (Hon), FACS, FICA, William W.L. Glenn Professor of Cardiothoracic Surgery; Second Vice Chairman and Member, Board of Directors, International College of Angiology; Co-Chairperson, Scientific Committee, International College of Angiology; Editor-in-Chief, International Journal of Angiology; Director, Aortic Institute at Yale-New Haven, Yale University School of Medicine, New Haven, Connecticut.
- 10:30 Mycotic Aortic Aneurysms—Presentations of a Case and Review of Strategies: <u>Richard W. Schutzer, MD, FACS,</u> <u>FICA</u>, Department of Cardiovascular Surgery, New York Presbyterian Hospital, Columbia University Medical Center, New York, New York; Editor, International Journal of Angiology.

10:45 AM – 11:00 AM Questions & Answers 20

Woody Hayes Rooms D & E

Friday, October 11, 2019

11:00 AM – 11:30 AM

THORACIC AORTA TRAUMA AT A LEVEL 1 TRAUMA CENTER—PROFESSOR JOHN B. CHANG RESEARCH ACHIEVEMENT AWARD

Introduction By:

Kailash Prasad, MBBS (Hons), MD, PhD, DSc, FRCPC, FACC, FIACS, FICA

Professor Emeritus, Department of Physiology, College of Medicine, University of Saskatchewan, Saskatoon, Canada; Chairman, Board of Directors, and Program Chairman, 60th Anniversary World Congress, International College of Angiology; Consulting Editor, *International Journal of Angiology*.

Presentation By:

Randall W. Franz, MD, FACS, FICA, RVT, RVPI, Chief, Vascular and Endovascular Surgery, Medical Director, Grant Vascular and Vein Center; Assistant Professor of Surgery, Ohio State University; Professor of Surgery, Ohio University, Columbus, Ohio; First Vice Chairman and Member, Board of Directors, International College of Angiology; Chairman, Local Organizing Committee, 61st Annual World Congress-ICA 2019; Co-Chairperson, Scientific Committee, International College of Angiology; Editorial Board, *International Journal of Angiology*.

11:30 AM – 12:30 PM PAD #1

Chairperson:

John D. Corson, MB, ChB, FRCS(Eng), FRCS(Edin), FACS, FICA

Clinical Professor of Surgery, University of New Mexico (UNM), Albuquerque, New Mexico; Member, Board of Directors, International College of Angiology; Senior Editor, International Journal of Angiology.

- 11:30 Update on the Use of Drug Eluting Stents in Femoral Popliteal Occlusive Disease: Jeffrey Prem, MD, FACS, FICA, Associate Professor of Surgery, Department of Surgery, Northeast Ohio Medical University, Rootstown, Ohio; Medical Director, Vascular and Endovascular Services, Aultman Hospital, North Canton, Ohio; Regional Surgical Specialists, Inc., Regional Vascular & Vein Institute, North Canton, Ohio; Editorial Board, International Journal of Angiology.
- **11:45** The Paclitaxel Controversy: Where Do We Stand? <u>Gary Ansel, MD, FACC, FSCAI</u>, System Medical Chief, Vascular Program, OhioHealth Heart & Vascular Physicians, Columbus, Ohio; Co-Director, OhioHealth Research Institute, Columbus, Ohio.
- **12:00** Open Surgery for Common Femoral Occlusive Disease: <u>Sibu P. Saha, MD, MBA, FICA</u>, Professor of Surgery and Bioengineering; Member, Board of Directors and Scientific Committee, International College of Angiology; Editorial Board, International Journal of Angiology; Chief, Division of Cardiovascular and Thoracic Surgery, University of Kentucky, Lexington, Kentucky.

12:15 PM – 12:30 PM Questions & Answers

12:30 PM – 2:00 PM LUNCHEON BREAK, POSTER PRESENTATONS & EXHIBITS

12:30 PM – 1:00 PM LUNCHEON BREAK Chairpersons:

Kailash Prasad, MBBS (Hons), MD, PhD, DSc, FRCPC, FACC, FIACS, FICA

Professor Emeritus, Department of Physiology, College of Medicine, University of Saskatchewan, Saskatoon, Canada; Chairman, Board of Directors, and Program Chairman, 60th Anniversary World Congress, International College of Angiology; Consulting Editor, *International Journal of Angiology*. **Robert Brightwell, DO, FACOS, RPVT, FICA**

Clinical Assistant Professor of Surgery, Ohio University of Osteopathic Medicine, Athens, Ohio; OhioHealth Heart & Vascular, Columbus, Ohio.

- 1:00 Effect of *Ficus auriculata* L. towards Oxidative Stress-Related Biomarkers in Blood and Cardiac Tissue due to Prolonged Exposure to Systemic Hypoxia: Alexsandro Rio, MD, FICA^{1,3}; <u>Mohammad Galih Pratama, MD²</u>; David Limanan, MD, MSc¹; Eni Yulianti¹; Kurnia Halim¹; Melanie Salim¹; Michael Chen¹; Renny Benettan, MD¹; Rizal Helmi, Dra, MSc, PhD¹; Frans Ferdinal, MD, MSc, PhD¹; ¹Department of Biochemistry and Molecular Biology, Faculty of Medicine, University of Tarumanagara, Jakarta, Indonesia; ²Faculty of Medicine, Public Health and Nursing, University of Gadjah Mada, Yogyakarta, Indonesia; ³Soewondo District Hospital, Pati, Central Java, Indonesia.
- 1:07 Successful Treatment of Recurrent Thrombosis Associated with Malignancy with Apixaban and Follow-up for 1.5 Years: Timothy Boey¹; Ashita Ashish Sule²; Ashish Anil Sule, MBBS, MD, MRCP, FAMS, FICA, FRCP³; <u>Roland</u> <u>Boey, MD⁴</u>; ¹Student Attachment, Anglo Chinese Junior College, Singapore; ²Student Attachment, Raffles Girl's School, Singapore; ³Senior Consultant, Associate Professor, Regional Secretary, Membership Committee, International College of Angiology; ⁴Senior Consultant, Associate Professor; Department of General Medicine, Vascular Medicine and Hypertension, Tan Tock Seng Hospital, Singapore.

12:30 PM – 2:00 PM Friday, October 11, 2019 LUNCHEON BREAK, POSTER PRESENTATONS & EXHIBITS (Continued)

- 1:14 Challenges in Treating Extensive Deep Vein Thrombosis with Severe Thrombocytopenia in Patients with Antiphospholipid Syndrome—A Follow-Up of 2 Years: <u>Kui Ting Teong, MBBS, MRCP</u>¹; Ashish Anil Sule, MBBS, MD, MRCP, FAMS, FICA, FRCP²; ¹Senior Resident; ²Senior Consultant, Associate Professor, Department of General Medicine, Subspecialty of Vascular Medicine and Hypertension, Tan Tock Seng Hospital, Singapore; Regional Secretary, Membership Committee, International College of Angiology.
- 1:21 Successful Resolution of Thrombosis in Patients Treated with Apixaban Following Stenting for May-Thurner Syndrome (MTS): <u>Erickson Calapatia Tenorio, MD</u>¹; Annamarie Pineda Borja, MD¹; Ashish Anil Sule, MBBS, MD, MRCP, FAMS, FICA, FRCP², Senior Consultant, Associate Professor, Regional Secretary, Membership Committee, International College of Angiology; ¹Department of General Medicine, ²Division of Vascular Medicine and Hypertension, Tan Tock Seng Hospital, Singapore.
- 1:28 Association of Soluble ST2 and Infarct Location within 12-24 Hours in Stemi: <u>Sem David Timothy Sitanggang</u>, <u>MD</u>¹; Vita Yanti Anggraeni, MD, MSc, PhD²; Maria Patricia Inggriani, MD¹; Rio Alexsandro, MD, FICA³; Anggoro Budi Hartopo, MD, MSc, PhD²; ¹Faculty of Medicine, ²Department of Cardiology and Vascular Medicine, Public Health and Nursing, Universitas Gadjah Mada and Dr. Sardjito Hospital, Jalan Farmako Sekip Utara, Yogyakarta, Indonesia; ³Department of Biochemistry and Molecular Biology, Faculty of Medicine, University of Tarumanagara, Jakarta, Indonesia.
- 1:35 Oral Vitamin C vs Intravenous Vitamin C for Improving Outcomes in Coronary Heart Disease: Yeni Purnamasari, MD, M. Biomed¹; <u>Asevano Christobed Panjaitan, MD²</u>; B.A. Mahdi, MD³; J.K. Fajar, MD⁴; Rachelle Betsy, MD⁵; Nesha Tabita Rachel, MD²; Rio Alexsandro, MD, FICA^{5,6}; ¹Faculty of Medicine, University of Brawijaya, Malang, Indonesia; ²Faculty of Medicine, Diponegoro University, Semarang, Indonesia; ³Emergency Department, Aisyah Islamic Hospital, Malang, Indonesia; ⁴Faculty of Medicine, Syiah Kuala University, Banda Aceh, Indonesia; ⁵Department of Biochemistry, Faculty of Medicine, University of Tarumanagara, Jakarta, Indonesia; ⁶Soewondo District Hospital, Pati, Central Java, Indonesia.
- 1:42 Association of Soluble ST2 and Killip Class within 24-Hours of Stemi: Maria Patricia Inggriani, MD¹; Vita Yanti Anggraeni, MD, MSc, PhD²; <u>Rachelle Betsy, MD³</u>; Sem David Timothy Sitanggang, MD¹; Rio Alexsandro, MD, FICA^{3,4}; Anggoro Budi Hartopo, MD, MSc, PhD²; ¹Faculty of Medicine, Public Health and Nursing, Universitas Gadjah Mada, Yogyakarta, Indonesia; ²Department of Cardiology and Vascular Medicine, Universitas Gadjah Mada and Dr. Sarjito Hospital, Jalan Farmako Sekip Utara, Yogyakarta, Indonesia; ³Department of Biochemistry and Molecular Biology, Faculty of Medicine, University of Tarumanagara, Jakarta, Indonesia; ⁴Soewondo District Hospital, Pati, Central Java, Indonesia.

1:49 PM – 2:00 PM Questions & Answers

2:00 PM – 3:15 PM PAD #2 Chairpersons:

David Epstein, MD, FACS, RVPI, FICA

OhioHealth Heart and Vascular Surgeons, Grant Medical Center, Columbus, Ohio. Jeffrev Prem. MD. FACS. FICA

Associate Professor of Surgery, Department of Surgery, Northeast Ohio Medical University, Rootstown, Ohio; Medical Director, Vascular and Endovascular Services, Aultman Hospital, North Canton, Ohio; Regional Surgical Specialists, Inc., Regional Vascular & Vein Institute, North Canton, Ohio; Editorial Board, International Journal of Angiology.

- 2:00 Endovascular Management of Aorto-Iliac Occlusions: Sticks in the Mud: <u>Michael B. Silva, Jr., MD, FACS,</u> <u>FICA(Hon)</u>, Chief, Division of Vascular Surgery and Endovascular Therapies, The University of Texas Medical Branch, Galveston, Texas.
- 2:15 Bypass versus Endovascular Intervention for Healing Ischemic Foot Wounds in Patients with Tibial Disease: Jon C. Henry, MD, MS, RPVI, FICA, Attending Vascular Surgeon, OhioHealth Heart & Vascular, Grant Medical Center, Columbus, Ohio.
- 2:30 Critical Limb Ischemia: John Phillips, MD, Interventional Cardiology, OhioHealth Heart and Vascular Physicians, Columbus, Ohio.
- 2:45 Economical Treatment of Fempop Disease: <u>Gary Ansel, MD, FACC, FSCAI</u>, System Medical Chief, Vascular Program, OhioHealth Heart & Vascular Physicians, Columbus, Ohio; Co-Director, OhioHealth Research Institute, Columbus, Ohio.

3:00 PM – 3:15 PM Questions & Answers 3:15 AM – 3:30 AM – BREAK and EXHIBITS Pre-Function West, East and South

Woody Hayes Rooms D & E

3:30 PM – 4:00 PM Friday, October 11, 2019 VASCULAR IMAGING Chairperson:

Rajinder P. Sharma, MD, FSIR, FICA

Clinical Associate Professor of Radiology, Wayne State University School of Medicine; Former Senior Staff, Interventional Radiology, Henry Ford Hospital, Detroit, Michigan; Member, Board of Directors, International College of Angiology; Editor, *International Journal of Angiology*.

3:30 Point of Care Ultrasound—Why Should We Care? <u>George H. Meier III, MD, RVT, FACS</u>, Professor of Surgery, Chief and Program Director, Department of Vascular Surgery, University of Cincinnati School of Medicine, Cincinnati, Ohio.

3:45 PM – 4:00 PM Questions & Answers

4:00 PM – 4:15 PM ADJOURNMENT

Randall W. Franz, MD, FACS, FICA, RVT, RVPI

Chief, Vascular and Endovascular Surgery, Medical Director, Grant Vascular and Vein Center; Assistant Professor of Surgery, Ohio State University; Professor of Surgery, Ohio University, Columbus, Ohio; First Vice Chairman and Member, Board of Directors, International College of Angiology; Chairman, Local Organizing Committee, 61st Annual World Congress-ICA 2019; Co-Chairperson, Scientific Committee, International College of Angiology; Editorial Board, International Journal of Angiology.

4:15 PM – 5:00 PM ICA BUSINESS MEETING ICA BOARD OF DIRECTORS MEETING (PRIVATE)

Pre-Function West, East & South

7:30 AM – 8:00 AM

Saturday, October 12, 2019 Registration, Continental Breakfast and Exhibits

Scientific Sessions

Woody Hayes Rooms D & E

8:00 AM – 9:30 AM MEDICAL MANAGEMENT

Chairpersons:

John D. Corson, MB, ChB, FRCS(Eng), FRCS(Edin), FACS, FICA

Clinical Professor of Surgery, University of New Mexico (UNM), Albuquerque, New Mexico; Member, Board of Directors, International College of Angiology; Senior Editor, International Journal of Angiology.

Jon C. Henry, MD, MS, RPVI, FICA

Attending Vascular Surgeon, OhioHealth Heart & Vascular, Grant Medical Center, Columbus, Ohio.

- 8:00 ECMO and Acute Lung Injury: <u>Frank Manetta, MD, FICA</u>, Program Director, Independent and Integrated Thoracic Surgery Residencies, Surgical Director, Acute Lung Injury Program; Medical Director, Perfusion Medicine Program at Hofstra University, Uniondale, New York; Associate Professor of Surgery, Donald and Barbara Zucker School of Medicine at Hofstra/Northwell, Uniondale, New York; Department of Cardiovascular and Thoracic Surgery, Manhasset, New York; Vice President, Scientific Council, International College of Angiology; Senior Editor, *International Journal of Angiology*.
- 8:15 What's Happening with Vascular Rehab? Jean Starr, MD, RPVI, FACS, Director, Endovascular Services, Ohio State University Medical Center, Columbus, Ohio; Program Director, Vascular Surgery, Professor of Clinical Surgery, Division of Vascular Diseases and Surgery, Ohio State University Wexner Medical Center, Columbus, Ohio.
- 8:30 Monoclonal Antibody Trial for Peripheral Vascular Disease: <u>Lucy LaPerna, DO, RVT, RPVI, FSVM</u>, Director, Vascular Laboratory, Riverside Radiology and Interventional Associates, Columbus, Ohio.
- 8:45 Treatment of Peripheral Vascular Disease via Percutaneous Brachial Artery Access: <u>Randall W. Franz, MD,</u> <u>FACS, FICA, RVT, RVPI</u>, Chief, Vascular and Endovascular Surgery, Medical Director, Grant Vascular and Vein Center; Assistant Professor of Surgery, Ohio State University; Professor of Surgery, Ohio University, Columbus, Ohio; First Vice Chairman and Member, Board of Directors, International College of Angiology; Chairman, Local Organizing Committee, 61st Annual World Congress-ICA 2019; Co-Chairperson, Scientific Committee, International College of Angiology; Editorial Board, *International Journal of Angiology*.
- 9:00 Medical Management of Peripheral Arterial Disease (Compass and Voyager): <u>Samih Bittar, MD, FACP, FSVM,</u> <u>RPVI</u>, Consultant Physician, Vascular Medicine, Staff Physician, Vein Center, Wound Medicine and Critical Limb Center, OhioHeath Heart & Vascular Institute and Riverside Methodist Hospital, Columbus, Ohio.

9:15 AM – 9:30 AM Questions & Answers

9:30 AM – 10:30 AM ABDOMINAL AORTA Chairpersons:

John A. Elefteriades, MD, PhD (Hon), FACS, FICA

William W.L. Glenn Professor of Cardiothoracic Surgery; Second Vice Chairman and Member, Board of Directors, International College of Angiology; Co-Chairperson, Scientific Committee, International College of Angiology; Editor-in-Chief, *International Journal of Angiology;* Director, Aortic Institute at Yale-New Haven, Yale University School of Medicine, New Haven, Connecticut.

Michael B. Silva, Jr., MD, FACS, FICA (Hon)

Chief, Division of Vascular Surgery and Endovascular Therapies, The University of Texas Medical Branch, Galveston, Texas.

- **9:30** Pathway to Treating Type II Endoleaks: <u>Wei Zhou, MD, FACS, FICA</u>, Professor of Surgery; Treasurer and Member, Board of Directors, International College of Angiology; Co-Chairperson, Scientific Committee, International College of Angiology; Editor, *International Journal of Angiology;* Chief, Vascular Surgery, Department of Surgery, University of Arizona, Tucson, Arizona.
- 9:45 Comparative Clinical and Economic Analysis of Percutaneous vs. Open Access for Endovascular Aortic Repair— A Protective, Randomized Trial: Jürgen Falkensammer, MD, FEBVS, FICA, Vice President, Scientific Council, International College of Angiology; Department of Vascular and Endovascular Surgery, Wilhelminenspital Vienna, Austria; Medical Faculty of the Sigmund Freud University, Vienna, Austria.
- **10:00** Management of Aortic Infections with Cryopreserved Homografts: <u>Charles Pugar, DO, RPVI</u>, OhioHealth Doctors Hospital and Riverside Methodist Hospital, Columbus, Ohio; Department of Vascular Surgery, OhioHealth Heart & Vascular Institute, Columbus, Ohio.

10:15 AM – 10:30 AM Questions & Answers

10:30 AM – 10:45 AM – BREAK and EXHIBITS Pre-Function West, East and South

Woody Hayes Rooms D & E

Saturday, October 12, 2019 10:45 AM - 11:30 PM **ORATION LECTURES**

10:45 AM - 11:00 AM

LONG-TERM RESULTS AFTER FENESTRATED EVAR—PROFESSOR OTMAR M. PACHINGER ORATION LECTURE Introduction By:

Kailash Prasad, MBBS (Hons), MD, PhD, DSc, FRCPC, FACC, FIACS, FICA Professor Emeritus, Department of Physiology, College of Medicine, University of Saskatchewan, Saskatoon, Canada; Chairman, Board of Directors, and Program Chairman, 60th Anniversary World Congress, International College of Angiology; Consulting Editor, International Journal of Angiology.

Presentation By:

Jürgen Falkensammer, MD, FEBVS, FICA Vice President, Scientific Council, International College of Angiology; Department of Vascular and Endovascular Surgery, Wilhelminenspital Vienna, Austria; Medical Faculty of the Sigmund Freud University, Vienna, Austria.

11:00 AM - 11:15 AM IS IT TIME FOR A "LEFT-SHIFT" TOWARD EARLIER SURGERY OF THE ASCENDING AORTA? **PROFESSOR KAILASH PRASAD ORATION LECTURE**

Introduction By:

Pertti T. Aarnio, MD, PhD, FICA

Emeritus Professor of Surgery, University of Turku, Pori, Finland; Emeritus, Chief, Department of Surgery, Satakunta Central Hospital, Pori, Finland; Member, Board of Directors and Co-Chairperson, Scientific Committee, International College of Angiology, Senior Editor, International Journal of Angiology.

Presentation By:

John A. Elefteriades, MD, PhD (Hon), FACS, FICA

William W.L. Glenn Professor of Cardiothoracic Surgery; Second Vice Chairman and Member, Board of Directors, International College of Angiology; Co-Chairperson, Scientific Committee, International College of Angiology; Editor-in-Chief, International Journal of Angiology; Director, Aortic Institute at Yale-New Haven, Yale University School of Medicine, New Haven, Connecticut.

11:15 AM - 11:30 AM **QUESTIONS & ANSWERS**

11:30 AM - 12:15 PM

YOUNG INVESTIGATOR AWARD COMPETITION

Chairpersons:

John A. Elefteriades, MD, PhD (Hon), FACS, FICA

William W.L. Glenn Professor of Cardiothoracic Surgery; Second Vice Chairman and Member, Board of Directors, International College of Angiology; Co-Chairperson, Scientific Committee, International College of Angiology; Editor-in-Chief, *International Journal of Angiology;* Director, Aortic Institute at Yale-New Haven, Yale University School of Medicine, New Haven, Connecticut.

Josef Veselka, MD, PhD, FICA

Professor of Internal Medicine; Member and President-Elect, Board of Directors, International College of Angiology; Editor, International Journal of Angiology; Chief, Department of Cardiology, 2nd School of Medicine, Charles University, University Hospital Motol, Prague, Czech Republic.

- 11:30 Evaluation of Upper Extremity Arterial Injuries at an Urban Level 1 Trauma Center—10-Years of Experience: Simon R. Fraser, DO, Surgical Resident, OhioHealth Doctors Hospital, Columbus, Ohio.
- 11:45 Cardioprotective Potency of Alabash due to Cardiac Hypoxia Consequences: Rio Alexsandro, MD, FICA^{1,5}; Alfred H. Alphanto¹; David Limanan, MD, MSc¹; Eny Yulaianti, BSc¹; Michelle Arviani¹; Daniel F. Poso¹; Rachelle Betsy, MD¹; Melissa A. Chionardes²; Asevano Christobed Panjaitan, MD²; Maria P. Inggriani, MD³; Sem David Timothy Sitanggang, MD³; Mohammad G. Pratama, MD³; Vita Y. Anggraeni, MD, MSc, PhD³; Kristian S. Hartanto, MD⁴; Frans Ferdinal, MD, MSc, PhD¹; ¹Department of Biochemistry and Molecular Biology, Faculty of Medicine, University of Tarumananagara, Jakarta, Indonesia; ²Faculty of Medicine, Diponegoro University, Semarang, Indonesia; ³Department of Cardiology and Vascular Medicine, Faculty of Medicine, Public Health and Nursing, University of Gadjah Mada, Yogyakarta, Indonesia; ⁴Institute of Cardiovascular Science, University College, London, United Kingdom; ⁵Soewondo District Hospital, Pati, Central Java, Indonesia.

12:00 AM - 12:15 AM **Questions & Answers**

Woody Hayes Rooms D & E

12:15 PM – 12:30 PM AWARDS CEREMONY

AWARDS PRESENTATION

12:30 PM

CLOSE OF THE SCIENTIFIC MEETING

Randall W. Franz, MD, FACS, FICA, RVT, RVPI

Chief, Vascular and Endovascular Surgery, Medical Director, Grant Vascular and Vein Center; Assistant Professor of Surgery, Ohio State University; Professor of Surgery, Ohio University, Columbus, Ohio; First Vice Chairman and Member, Board of Directors, International College of Angiology; Chairman, Local Organizing Committee, 61st Annual World Congress-ICA 2019; Co-Chairperson, Scientific Committee, International College of Angiology; Editorial Board, International Journal of Angiology.

12:45 PM – 1:30 PM ICA BUSINESS MEETING ICA OFFICERS, VICE PRESIDENTS, EDITORIAL BOARD MEMBERS & ICA GENERAL MEMBERSHIP MEETING (PRIVATE)

ACKNOWLEDGMENTS

The International College of Angiology in joint providership with OhioHealth Continuing Medical Education, OhioHealth Heart and Vascular, gratefully acknowledges the educational grants provided in support of this CME activity. Without the support of all of the following companies, this program would not have been possible:

PLATINUM LEVEL SPONSORS

BOSTON SCIENTIFIC CORPORATION MEDTRONIC W.L. GORE & ASSOCIATES, INC. **GOLD LEVEL SPONSOR** PHILIPS **BRONZE LEVEL SPONSORS BD BARD** COOK MEDICAL, INC. **GE HEALTHCARE** HANGER, INC. JANSSEN PHARMACEUTICALS, INC. **MPOWER OPTIMUS PROSTHETICS** PENUMBRA, INC. SANOFI-AVENTIS U.S., LLC **ALL OTHER SPONSORS** ABBOTT ABIOMED ANGIODYNAMICS, INC. **ASTELLAS PHARMA, INC.** ATRICURE, INC. BAXTER **BRISTOL-MYERS SQUIBB BSN MEDICAL** CORDIS, A CARDINAL HEALTH COMPANY **CRYOLIFE, INC.** EDWARDS LIFESCIENCES CORPORATION ETHICON, INC. **GMA/NICKEL MEDICAL, LLC INTACT VASCULAR, INC. KARL STORZ** LE MAITRE VASCULAR, INC. **OSBORNE MEDICAL** PORTOLA PHARMACEUTICALS, INC. SHOCKWAVE MEDICAL, INC. SONOSITE FUJI FILM **VASORUM MEDICAL DEVICE RESEARCH & DEVELOPMENT**



www.thieme.com/journals/car Institutional Subscribers: esales@thieme.com





62nd Annual World Congress • ICA 2020 International College of Angiology

Joint congress with



Austrian Society of Vascular Surgery (ÖGG) Jahrestagung der Österreichischen Gesellschaft für Gefäßchirurgie "Individualisierte Gefäßmedizin – Von Immuntherapie bis zur chirurgischen Maßanfertigung"

SAVE THE DATE



October 6 – 9, 2020

Parkhotel Schönbrunn · Vienna, Austria

PROGRAM CHAIRMAN Prof. Kailash Prasad, MBBS (Hons), MD, PhD, DSc, FRCPC, FIACS, FICA

> CHAIRMAN, LOCAL ORGANIZING COMMITTEE Prof. Jürgen Falkensammer, MD, FEBVS, FICA

Visit ICA Website for Additional Information and Abstract Submission http://www.intlcollegeofangiology.org

Announcing the

2020 YOUNG INVESTIGATORS AWARD COMPETITION RESIDENTS/FELLOWS/YOUNG FACULTY If you are a resident or fellow in a training program, consider applying for our Young Investigator Award Competition

Visit ICA Website: http://www.intlcollegeofangiology.org



Kailash Prasad, MBBS (Hons), MD, PhD, DSc, FRCPC, FACC, FIACS, FICA Program Chairman Prof. Otmar M. Pachinger, MD, FESC, FAHA, FICA, Chairman, Scientific Committee Denise M. Rossignol, BS, Executive Director

> International College of Angiology, Inc. Member, Council for International Organizations of Medical Sciences (CIOMS) Executive Office: 161 Morin Drive • Jay, Vermont 05859-9283 USA +802.988.4065 • Fax: +802.988.4066 Email: denisemrossignol@cs.com or ica@intlcollegeofangiology.org Website: http://www.intlcollegeofangiology.org

> > Printed in USA