

# North American Artery 2018

co-sponsored by

University of Illinois at Chicago  
College of Applied Health Sciences

June 15-16



# NIHem USB



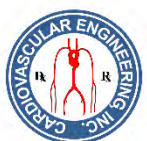
The ultimate noninvasive hemodynamic workstation for tonometry, blood pressure and comprehensive pressure-flow data acquisition and analysis

- Automatic or auscultatory blood pressure with playback and overread capability
- Carotid-femoral pulse wave velocity – the gold standard measure of aortic stiffness
- Doppler input and spectral analysis with signal averaging and automatic flow waveform extraction
- Central pressure-flow analysis
  - Characteristic impedance
  - Waveform separation from measured pressure and flow
  - True forward and backward wave amplitudes and global reflection coefficient
- Batch mode analysis facilitates high-throughput work flow
- For research only

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A compact solution for tonometry data acquisition and analysis

- WiFi link to laptop or tablet computer
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- Supports tonometry and ECG acquisition
- Carotid-femoral pulse wave velocity
- Central pressure waveform analysis
- For research only



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Norwood, MA 02062  
781-255-6930  
info@cardiovascularengineering.com

# GENERAL INFORMATION

## Meeting Venue

### *University of Illinois at Chicago (UIC)*

All sessions and food functions will take place in the Thompson Rooms at the Student Center West Building located on the UIC Campus.

## Meeting Registration

Registration includes attendance to all sessions, poster presentations, exhibit areas, and all food functions, except the Friday night reception and dinner. Registrants will receive a Program Syllabus and a supplemental program packet that include all accepted abstracts and PDF copies of available presentations.

Early Registration Fees (before May 17, 2018) are:

Members: \$180.00

Non-Members: \$280.00

Trainees/Students (validation may be required): \$115.00

Regular Registration Fees (after May 17, 2018):

Members: \$205.00

Non-Members: \$305.00

Trainees/Students (validation may be required): \$140.00

All conference materials including badges can be picked up from the registration desk during the following hours:

June 15, 2018 6:30 AM – 6:00 PM

June 16, 2018 6:30 AM – 2:00 PM

Badges are required for entry to all functions.

## Conference Sessions – Thompson Rooms A&B

All sessions will take place in Thompson Rooms A & B in the second floor of Student Center West, located on UIC's West Campus.

## Posters on Display – Thompson Room C

Posters will be on display throughout the conference. Presenters will be available to discuss their posters during the lunches on Friday and Saturday.

## Practical Hands-on Product Demonstrations

Exhibiting sponsors will provide practical hands-on demonstrations of their devices during the breaks on Friday, June 15 and Saturday, June 16.

### Friday, June 15

3:35 PM – 3:50 PM – **Cardiovascular Engineering:**  
NIHem USB system

3:50 PM – 4:05 PM – **Fukuda USA:** VaSera model  
VS-2000

5:45 – 6:00 PM – **Mobil-O-Graph/ALF  
Distribution GmbH:**  
Mobil-O-Graph®

6:00 – 6:15 PM – **Uscom Inc.:** Uscom BP+

### Saturday, June 16

10:50 – 11:05 AM – **Itamar**

11:05 – 11:20 AM – **Hitachi:** Diagnostic Imaging  
Devices

1:35 – 1:50 PM – **AtCor:** SphygmoCor® system

1:50 – 2:05 PM – **UNEX:** UNEX EF

## Exhibits, Refreshment Breaks and Lunch - Second Floor Lobby and Thompson Room C

All meal functions and refreshment breaks, except dinner, will take place in the hall as shown below.

### **Friday, June 15, 2018**

Refreshment Break AM 11:05 - 11:35 AM

Refreshment Break PM 3:10 - 4:05 PM

Lunch 12:35 - 1:45 PM

### **Saturday, June 16, 2018**

AM Refreshment Break 10:50 - 11:45 AM

Lunch/Poster Presentations 12:55 - 2:05 PM

## Participants' Reception – Friday, June 15, 2018

NAA's Participant Reception, co-hosted by the University of Illinois at Chicago, will take place from 7:10 – 7:40 PM in Michele Thompson Room C. All participants are invited to attend.

## Networking Dinner – Event Center, Third Floor, College of Nursing

NAA's Networking Dinner will take place from 7:40 to 9:10 PM at the UIC College of Nursing Event Center, which is less than a 5-minute walk away. There is an additional \$25.00 fee for members and non-members who wish to attend the reception and dinner on Friday evening. Your name badge will indicate your paid attendance at the dinner.

This is an excellent opportunity to network with leading experts in the field while enjoying the reception and a full, multi-course dinner served with beer, wine, and soft drinks.

## Headquarters Hotel - Chicago Marriott at Medical District/UIC

625 South Ashland Avenue at Harrison Street  
Chicago, Illinois 60607 USA  
Telephone: +1-312-491-1234

<http://www.marriott.com/hotels/travel/chidm-chicago-marriott-at-medical-district-uic/>

The hotel is located near the UIC Campus within walking distance of the conference location.

## Overnight Valet Parking

\$45 daily rate

## Shuttle service

Free shuttle service to UIC is provided by the hotel from 6:00am to 10:30 pm. Shuttles leave every 1/2 hour. Please see the Front Desk for more information.

## Conflict of Interest Disclosure

North American Artery strives to ensure balance, independence, objectivity, and scientific rigor in its educational activities. Faculty members have disclosed financial relationships, in existence over the past 12 months, with commercial interests or with manufacturers with products associated with or discussed in their presentation. All Disclosure Statements are available to meeting attendees in the Program Book.

## Eighth Annual Meeting Sponsors

North American Artery thanks the following Sponsors for their generous support of the meeting.

We encourage all participants to visit with our sponsors' exhibit booths during the breaks.

## Conference Co-Sponsor

University of Illinois at Chicago

## Platinum Breakfast Sponsors:

Cardiovascular Engineering, Inc.  
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## Gold Sponsors:

AtCor Medical, Inc. (USA)  
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Uscom Inc.

## Other supporters:

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# PRESIDENT'S WELCOME



Dear Colleagues,

It is with great pleasure that I invite you to participate in the Eighth Annual Meeting of North American Artery that will take place on June 15-16, 2018 at the University of Illinois at Chicago, Chicago, IL. The theme for the 2018 conference is 'LIFESTYLE, ARTERIAL FUNCTION AND CARDIOVASCULAR RISK.'

We have a great slate of national and international speakers who will be discussing work related to NUTRITION and arterial function, EXERCISE and FITNESS and arterial function, in addition to sessions on conditions that affect arterial health including CHRONIC KIDNEY DISEASE and INFLAMMATION. The top young investigators will be delivering their research and we will have tutorial lectures and hands on demonstrations of the most up-to-date devices for measuring vascular parameters. As always, we'll have a robust debate with this year's topic focusing on BP management.

I hope that you can join us this June in Chicago and invite your colleagues and trainees. This is the premier meeting to interact with international experts in the field of arterial health and disease.

Elaine M. Urbina, MD, MS  
President, North American Artery



# WELCOME FROM THE CO-CHAIRS



Dear Colleagues,

It is with great pleasure that we invite you to take part in the Eighth Annual Meeting of North American Artery that will take place June 15-16, 2018 at the University of Illinois at Chicago, Chicago, IL. The theme for this year's conference is "LIFESTYLE, ARTERIAL FUNCTION AND CARDIOVASCULAR RISK".

NAA 2018 will focus on the impact of lifestyle and arterial function on the risk of developing cardiovascular disease, with additional information on the effect of arterial function on risk in various clinical populations. The major Symposia will focus on arterial function in chronic kidney disease; nutrition and arterial function; exercise, fitness assessment, arterial function and CV risk; and inflammation and arterial function. This year's popular debate will feature the topic of BP management.

The meeting will continue to feature oral and poster abstract presentations by young investigators as an integral part of the Annual Meeting including presentations from the top young investigators from the 2017 ARTERY and LATAM meetings and keynote lectures by international leaders in the field. We will continue this year with an increased number of oral abstract presentations from trainees and young investigators -and practical hands-on the popular demonstrations given by sponsoring firms such as yours.

Our sessions and exhibit hall, located in the same meeting space as NAA 2017 on the west side of the UIC campus, will be hubs of discussion, with opportunities to network with academic and practicing physicians as well as clinical scientists and other professionals from the United States, Central and South America, Canada, Europe, and Asia, while visiting with firms displaying their new technologies, devices, and pharmaceutical products.

We encourage you to help make the NAA 2018 Annual Meeting a valuable and successful experience by actively taking part in the education of the participants while supporting our efforts to raise awareness of the importance of arterial and aortic stiffness as it relates to cardiovascular risk.

Sincerely,

A handwritten signature in black ink, appearing to read "Bo Fernhall".

Bo Fernhall, PhD  
Conference Co-chair

A handwritten signature in black ink, appearing to read "Gary L. Pierce".

Gary L. Pierce, PhD  
Conference Co-chair

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- Central blood pressure with Mobil-O-Graph<sup>®</sup> is superior compared to results measured with any other device according to “Validation of non-invasive central blood pressure devices: ARTERY Society task force consensus statement on protocol standardization”, Eur Heart J. 2017 Oct 1;38(37):2805-2812
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## Friday, June 15, 2018

- Breakfast Lecture**  
*Did central BP for the masses move a step closer?*  
**7:30-8:55 AM:** John Cockroft, MD, University of Wales College of Medicine  
Moderator: Bo Fernhall  
Sponsored by Mobil-O-Graph
- 8:55 AM:** **Opening Remarks**
- 9:00-9:45 AM:** **Opening Plenary: Lifestyle, Arterial Health, and CV Risk**  
Gary Mitchell, MD  
Cardiovascular Engineering, Inc.  
Moderator: Stanley Franklin
- 9:45-11:05 AM:** **Symposium: Arterial Function in Chronic Kidney Disease**  
Moderator: Julio Chirinos
- 9:45-10:05 AM *Arterial Function in Pre-end Stage CKD*  
Speaker: Jordana Cohen, MD, University of Pennsylvania
- 10:05-10:25 AM *Arterial Function in End-Stage CKD*  
Speaker: Mohsen Agharazii, MD, Laval University
- 10:25-10:45 AM *Arterial Function in Kidney Transplant patients*  
Speaker: Mark Mitsnefes, MD, Cincinnati Children's Hospital Medical Center
- 10:45-11:05 AM *Effect of Exercise on Arterial Function in CKD*  
Speaker: David Edwards, PhD, University of Delaware
- 11:05-11:35 AM:** **Coffee Break, Poster Session, Vendor Exhibit**
- 11:35 AM-12:35 PM:** **Tutorial Lectures**  
Moderator: Tina Brinkley
- 11:35 AM-12:05 PM *Wave Separation*  
Speaker: Julio Chirinos, MD, PhD, University of Pennsylvania
- 12:05-12:35 PM *Proteomics of the Arterial Wall*  
Speaker: David Herrington, MD
- 12:35-1:45 PM:** **Lunch, Poster session, Vendor Exhibits (Exhibit Hall)**
- 1:35-3:05 PM:** **Symposium: Nutrition and Arterial Function**  
Moderator: Gary Pierce



# AGENDA

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- 1:35-2:05 PM *Salt and Vascular Function*  
Speaker: William Farquhar, PhD, University of Delaware
- 2:05-2:30 PM *Salt and Neurogenic Mechanisms*  
Speaker: Sean Stocker, PhD, University of Pittsburgh
- 2:30-2:55 PM *Dietary Fat and Vascular Function*  
Speaker: Elaine M. Urbina, MD, MS, Cincinnati Children's Hospital
- 2:55-3:10 PM Panel and audience discussion
- 3:10-4:05 PM:** **Sponsor Presentations and Coffee/Refreshment Break, Vendor Exhibit, and Poster Viewing**  
Vendor Demonstrations:  
3:35 PM – 3:50 PM Cardiovascular Engineering  
3:50 PM – 4:05 PM Fukuda USA
- 4:05-5:35 PM:** **Oral Abstracts**  
Moderator: Ross Arena
- 5:35-6:15 PM:** **Sponsor Presentations and Coffee/Refreshment Break, Vendor Exhibit, and Poster Viewing**  
Vendor Demonstrations:  
5:45 – 6:00 PM Mobil-O-Graph/ALF Distribution GmbH  
6:00 – 6:15 PM Uscom, Inc.
- 6:15-7:05 PM:** **Debate: The Goal for BP Management: Should the Target be 130/80?**  
**Pro:** George Backris, MD, Northwestern University  
**Con:** Jordana Cohen, MD, University of Pennsylvania  
Moderator: Elaine Urbina
- 7:10-7:40 PM** **Pre-Dinner Reception**
- 7:40-9:10 PM** **Participants' Networking Dinner and President's Lecture:  
Facing future challenges: measuring blood pressure without a cuff and pulse wave velocity without distance**  
Alberto Avolio, PhD, Macquarie University, Australia  
Moderator: Bo Fernhall  
*Sponsored by the University of Illinois at Chicago*

## Saturday, June 16, 2018

- 7:00-8:15 AM:** **Breakfast Lecture**  
*Strategies for Achieving Healthy Vascular Aging*  
Douglas Seals, PhD, University of Colorado  
Moderator: Tina Brinkley  
*Sponsored by Cardiovascular Engineering, Inc.*

- 8:15-9:00 AM:** **Co-sponsored Symposium with Artery and Latin American Artery**  
 Victoria Garcia, Ph.D., Latin American Artery's Early Investigator winner - Centro Universitario de Investigación, Innovación y Diagnóstico Arterial CUiiDARTE Depto. de Fisiología, Facultad de Medicina, Universidad de la República, Uruguay
- Bart Spronck, PhD, Artery's Early Investigator winner - Yale University
- Moderator: Bo Fernhall
- 9:00-10:45 AM:** **Symposium: Exercise and Fitness Assessment, Arterial Function and CV Risk**  
 Moderator: Gary Pierce
- 9:00-9:25 AM *Use of CPX Data to Predict CV Risk*  
 Speaker: Ross Arena, PhD, University of Illinois at Chicago
- 9:25-10:00 AM *Exercise Blood Pressure: Prediction of Future Hypertension and Mortality/Morbidity*  
 Speaker: Sae Young Jae, PhD, University of Seoul, South Korea
- 10:00-10:25 AM *Changes in Arterial Function Following Exercise Testing: What Happens and Why?*  
 Speaker: Sushant Ranadive, PhD, University of Maryland
- 10:25-10:50 AM *Changes in Arterial Function with Resistance Exercise: Acute vs Chronic Effects*  
 Speaker: Bo Fernhall, PhD, University of Illinois at Chicago
- 10:50-11:45 AM:** **Sponsor Presentations, Coffee Break, and Poster Session**  
 Vendor Demonstrations:  
 10:50 – 11:05 AM Itamar Medical  
 11:05 - 11:20 AM Hitachi Healthcare
- 11:45 AM-1:00 PM:** **Symposium: Inflammation and Vascular Function**  
 Moderator: Julio Chirinos
- 11:45 AM-12:10 PM *Inflammation and Vascular Function*  
 Speaker: Thais de A. Coutinho, MD, University of Ottawa Heart Institute
- 12:10-12:35 PM *CV Complications of Pneumonia*  
 Speaker: Vicente Corrales-Medina, MD, MSc, University of Ottawa
- 12:35-12:55 PM *Anti-Inflammatory Therapy and Vascular Function*  
 Speaker: Ian Wilkinson, University of Cambridge< MRCP, DM, FRCP

# AGENDA

<b>12:55-2:05 PM:</b>	<b>Lunch, Sponsor Presentations, and Poster Session</b>
	Vendor Demonstrations:
1:35 – 1:50 PM	AtCor Medical
1:50 - 2:05 PM	UNEX Corporation
<b>2:05-3:35 PM:</b>	<b>Oral Abstracts</b>
	Moderator: Stella Daskalopoulou
<b>3:35-4:05 PM:</b>	<b>Closing Plenary: The Yin and Yang of Vascular Pulsatility</b>
	John Cockcroft, MD, University of Wales College of Medicine
	Moderator: Elaine Urbina
<b>4:05-4:15 PM:</b>	<b>Awards Presentations</b>
<b>4:15-4:20 PM:</b>	<b>Concluding Remarks</b>

## Your patients have questions

- Am I at risk of CVD?
- How should we treat my hyper/hypotension?
- Is the treatment I am on effective?
- Do I have stiff arteries and is that a problem?
- Is my central pulse pressure damaging my kidneys?

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# ORAL PRESENTATION ABSTRACTS

## Oral presentations Friday, June 15, 2018

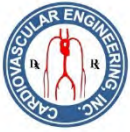
- OR-01** Levels Of Inactive Matrix Glycoprotein Are Increased In Heart Failure And Are Associated With Large Artery Stiffening
- OR-02** Alterations In Nocturnal Systolic Blood Pressure Dipping Is Associated With Aortic Stiffness And Inflammation Among Middle-Aged/Older Adults With Obesity
- OR-03** Obstructive Sleep Apnea Is Associated With Arterial Stiffness And Pre-Eclampsia In A High-Risk Pregnancy Population
- OR-04** Greater Aortic Stiffness Is Associated With Lower Hippocampal Cerebrovascular Reserve But Not Cerebral Blood Flow In Middle-Aged And Older Adults
- OR-05** Aerobic Capacity Is Associated With Vascular Function In Persons With Multiple Sclerosis
- OR-06** Altered Vessel Hemodynamics After Acute Maximal Exercise In Adults With Type 2 Diabetes

## Oral presentations Saturday, June 16, 2018

- OR-07** The Effects Whey Protein Supplementation On Aortic Stiffness And Central Hemodynamic Load In Community-Dwelling Older Adults: Preliminary Findings From The Anchors-A-Whey Randomized Controlled Trial
- OR-08** Hemodynamic Patterns Identified By Impedance Cardiography Predict Mortality In The General Population: The Prevention Study
- OR-09** Is The Minimal Recommendation Of Combined Training Enough To Reduce Cardio-Metabolic Risk In Hypertensive Elderly?
- OR-10** Systolic Brachial Pressure And Age As Determinants Of Pulse Wave Velocity Derived From Pulse Wave Analysis
- OR-11** Chronic Kidney Disease Is Associated With Increased Dp-Uc-Mgp, A Marker Of Vascular Vitamin K Deficiency
- OR-12** Arterial Stiffness Response To Acute Aerobic And Resistance Exercise In Older Patients With Coronary Artery Disease

- PO-01** Serum Aldosterone, Inactive Matrix Gla-Protein, And Large Artery Stiffness In Hypertension
- PO-02** Increased Dp-Uc-Mgp, A Marker Of Vitamin K Deficiency, Is Strongly Associated With Sarcopenia
- PO-03** Arginine-Vasopressin, Atrial Natriuretic Peptide And Cardiac Remodeling In Heart Failure With Preserved And Reduced Ejection Fraction
- PO-04** Potential Microvascular Compensation For The Reduction In Endothelial Function During Acute Inflammation: Preliminary Results
- PO-05** Sleep Quality Is Associated With Cerebrovascular Function In Individuals With Multiple Sclerosis
- PO-06** Peripheral Blood Flow Regulation In Response To Sympathetic Stimulation In Individuals With Down Syndrome
- PO-07** Hemodynamic Response Following Acute Moderate Intensity Aerobic Exercise In Individuals With Down Syndrome
- PO-08** The Impact Of Acute Central Hypovolemia On Cerebral Hemodynamics: Does Sex Matter?
- PO-09** Prevalence And Trends In Subtypes Of Stroke Among Pregnancy- Related Hospitalizations In The United States: 2002-2014
- PO-10** Effect Of Weight Loss Surgery On Blood Pressure And Bmi In Men And Women
- PO-11** Relation Between Functional Capacity And Level Of Physical Activity In Copd And Osa Overlap Syndrome: A Pilot Study
- PO-12** Relationship Between Cardiac Autonomic Modulation And Cardiorespiratory Response During The Six-Minute Walk Test In Heart Failure Patients.
- PO-13** Integrative Insight To Inter-Arm Differences In Pulse Wave Velocity
- PO-14** Excess Weight Loss (%Ewl), Body Mass Index (Bmi) And Use Of Hypertension Medication After Bariatric Surgery

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Minneapolis, MN

Elaine M. Urbina, MD, MS  
Cincinnati, OH

David G. Edwards, PhD  
Newark, DE

Dean C. Winter, PhD  
Portland, OR

# FACULTY

---

**Mohsen Agharazii, MD**  
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**Alberto Avolio, PhD**  
Macquarie University  
Sydney, Australia

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Chicago, IL

**George Bakris, MD**  
Northwestern University  
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Winston-Salem, NC

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**Sae Young Jae, PhD**  
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**Gary Mitchell, MD**  
Cardiovascular Engineering, Inc.

**Gary L. Pierce, PhD**  
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Iowa City, IA

**Mark Mitsnefes, MD**  
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Cincinnati, OH

**Sushant Ranadive, PhD**  
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College Park, MD

**Douglas Seals, PhD**  
University of Colorado  
Boulder, Colorado

**Bart Spronck, PhD**  
Yale University  
New Haven, Connecticut

**Sean Stocker, PhD**  
University of Pittsburgh  
Pittsburgh, PA

**Elaine M. Urbina, MD, MS**  
Cincinnati Children's Hospital  
Cincinnati, OH

**Ian Wilkinson, MRCP, DM, FRCP**  
University of Cambridge  
Cambridge, United Kingdom

\*Faculty subject to change

**MOHSEN AGHARAZII, PhD** is a nephrologist and a clinician-scientist at Université Laval and Chu de Québec Hospital, from Quebec City, Canada. He has done his medical training at Université Laval, followed by research training in London at Guy's Hospital and in Paris at HEGP and Manhès Hospital under the supervision of Professors David Goldsmith, Stéphane Laurent, Pierre Boutouyrie and Gérard London. Over the past decade he has developed his research program which focuses on the mechanisms of large artery remodelling in the context of CKD, both in humans and in animal models. His research has been supported by the Canadian Foundation for Innovation, Canadian Institute of Health Research, Kidney Foundation of Canada, and Heart and Stroke Foundation. He has received research scholarships from Fonds de recherche du Québec – Santé and he has been awarded with the Université Laval-Amgen Research Chair in nephrology. He has mentored many young investigators and he is the author or co-author of 65 peer reviewed articles in the field of nephrology and hypertension.

**ROSS ARENA, PHD, PT, FAHA, FESC** is Professor and Head of the Department of Physical Therapy and Interim Head of Kinesiology and Nutrition at the University of Illinois at Chicago. Dr. Arena received his B.S. in Human Performance from Southern Connecticut State University in 1993. He went on to receive his M.S. in Physical Therapy in 1997 and Ph.D. in Physiology in 2001 from the Medical College of Virginia/Virginia Commonwealth University.

Dr. Arena is a Fellow and active member of the American Heart Association, and European Society of Dr. Arena's scholarly interests include: 1) Exercise testing and training in patients diagnosed with cardiopulmonary disease/dysfunction; and 2) Healthy lifestyle initiatives and policy across the lifespan. Dr. Arena has published extensively in these areas with over 760 peer-reviewed publications, abstracts and book chapters. For a list of

publications indexed on PubMed, please visit: <http://www.ncbi.nlm.nih.gov/pubmed?term=Ross%20Arena>

**JULIO A. CHIRINOS, MD, PhD** is an Associate Professor of Medicine and Adjunct Faculty, Center for Magnetic Resonance and Optical Imaging at the University of Pennsylvania Perelman School of Medicine. He is a Non-invasive Cardiologist with a subspecialty in non-invasive cardiac imaging. His research interests include the role of arterial hemodynamics in hypertensive heart disease, and the role of the arterial tree and Ventricular-Vascular Coupling in Heart Failure with Preserved Ejection Fraction and Aortic Stenosis. He is also a visiting Professor at the University of Ghent and serves as Associate Editor of Circulation Heart Failure.

**JORDANA COHEN, MD, MSCE** is an Assistant Professor of Medicine and Epidemiology at the University of Pennsylvania, Perelman School of Medicine, in the Renal-Electrolyte and Hypertension Division and the Center for Clinical Epidemiology and Biostatistics. Her primary clinical interest is complex hypertension management. She is an NHLBI-funded investigator whose ongoing research evaluates the interplay between hypertension, metabolic syndrome, and chronic kidney disease. Dr. Cohen's research interests include employing causal inference methodologies in observational data, and performing prospective studies evaluating the relationship between body composition and measures of vascular phenotypes, including pulse wave velocity, ambulatory blood pressure monitoring, and echocardiography.

**JOHN R. COCKCROFT, MD** is visiting Professor in the Department of Cardiology at Columbia Presbyterian Hospital New York and adjunct Professor in the Australian School of Advanced Medicine, Macquarie University, Sydney, Australia.



His major research interests focus on endothelial function and arterial stiffness in health and disease. Recently he has become interested in the mechanisms of vascular calcification especially in patients with renal disease. He is currently researching the relationship between osteoporosis and vascular calcification. Most recently with colleagues from Columbia Presbyterian he has been investigating the effects of decreased pulsatility on arterial haemodynamics and stiffness in subjects with continuous flow LVADs. He has published over a 250 peer reviewed articles and has co-authored books on hypertension and coronary heart disease. He is a founding member of the Association for Research into Arterial Structure and Physiology (ARTERY) and is co-organizer of

the Association's conferences. He gave the MacDonald Lecture at ARTERY 15. Currently, he is the past president of AR-TERY and Secretary of The European Association of Clinical Pharmacology and Therapeutics (EACPT). Professor Cockcroft is a member of the British, European, American and International societies of Hypertension the British Cardiac Society and also the European Association for the Study of Diabetes. Most recently, he has been elected Secretary of The European Association of Clinical Pharmacology and Therapeutics.

**STELLA S. DASKALOPOULOU, MD, MSc, DIC, PhD** is an Internist with special interest in Vascular Medicine. She is a tenured Associate Professor of Medicine, Department of Medicine

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(Divisions of Internal Medicine and Experimental Medicine), Faculty of Medicine, McGill University. Dr. Daskalopoulou's research program centers around the identification of early markers of vascular impairment and maintenance of vascular health, with a focus on cardio-metabolic diseases, women's health, and vascular disease prevention.

She performs research in hypertension, arterial stiffness in subjects with different cardiovascular risk factors, including pre-eclampsia, hypertension, diabetes, and smoking, as well as in atherosclerotic disease where she is working towards the identification of novel pathways of atherosclerotic plaque instability. She has over 200 high-quality peer-reviewed journal publications, and over 4000 citations of her

work, with an h-index of 38. She has received research funding from several agencies, including Canadian Institutes of Health Research, Heart and Stroke Foundation of Canada, and Fonds de recherche du Québec - Santé (> \$8 million as a Principal/co-Principal Investigator).

She is the Chair of the Central Review Committee of the Hypertension Canada Guidelines and the co-Chair of the Hypertension Canada Guidelines. She is also the treasurer of the North American Artery Society. She holds several personal awards, including, among others: the Heart and Stroke Foundation of Quebec Award of Excellence - John J. Day M.D., the Department of Medicine Early Career Staff Research Award; the Hypertension Canada Jacques-de-Champlain New Investigator Award for significant

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dedication and contributions to research and health services in Canada; the Department of Medicine, McGill University Early Career Staff Research Award; the Young Researcher Award of Excellence from the HSFQ; the Canadian Foundation for Women's Health Research Award; the Bourse FRSQ - La Société Québécoise d'Hypertension Artérielle Jacques-de-Champlain; and the Canadian Society of Internal Medicine New Investigator Award.

**DAVID G. EDWARDS, PhD** is a Professor in the Department of Kinesiology and Applied Physiology at the University of Delaware in Newark, DE. He also directs the recently launched Center for Cardiovascular Health at the University of Delaware. His research focus is in the area of vascular physiology and is funded by the National Institutes of Health. His current work is focused on studying vascular function in patients with chronic kidney disease as well as studying the effects of dietary sodium on vascular function in normotensive adults.

**BO FERNHALL, PhD** started his career with a focus on physical fitness and cardiac rehabilitation, and he spent over 20 years directing university based cardiac rehabilitation programs. This shaped his current research interests in exercise physiology with a specialization in cardiovascular function and health throughout the lifespan. He currently has an active, funded research program on the effect of exercise and physical activity on heart and arterial health. He is especially interested in the how exercise impacts the interaction of heart, arterial and autonomic function and how these factors are affected by inflammation. Dr. Fernhall's research program has a special focus on aging, racial and ethnic health disparities and cardiovascular health and function in individuals with disabilities or chronic disease conditions. Dr. Fernhall is currently Dean of the College of Applied Health Sciences and Professor of Kinesiology and Nutrition at the University of Illinois at Chicago. Together with several other

faculty, he founded the Integrative Physiology Laboratory in the College of Applied Health Sciences at UIC in 2012.

**STANLEY S. FRANKLIN, MD, FACP, FACC** is Clinical Professor of Medicine at the University of California, Irvine and Investigator with the Framingham Heart Study. His main research interests are the epidemiology of hypertension in the elderly and the value of ambulatory BP monitoring with more than 220 peer-reviewed original articles and chapters. The European Society for Artery Research has honored him with their 2013 "Lifetime Research Achievement Award."

**DAVID HERRINGTON, M.D., M.H.S.** is the Dalton McMichael Chair and Tenured Full Professor of Cardiovascular Medicine and Vice-Chair for Research in Internal Medicine, as well as co-director of the Cardiovascular Sciences Center at Wake Forest School of Medicine. For more than 25 years Dr. Herrington's research has focused on the atherogenesis and prevention of atherosclerosis and clinical cardiovascular disease. Dr. Herrington served as a study PI, Executive Committee member, DSMB member or co-investigator for most of the multi-center clinical trials of hormone therapy and heart disease in the US, including PI of the Estrogen Replacement and Atherosclerosis (ERA) trial, the first multi-center angiographic progression trial of hormone therapy in postmenopausal women with coronary disease. Dr. Herrington also lead the development and patented state-of-the art image processing techniques for angiographic and ultrasound images, and his image processing lab served as the core lab for numerous clinical trials and population based studies of progression of coronary disease and non-invasive evaluation of endothelial function. More recently his research has focused on use of molecular epidemiologic tools to shed new light on the pathogenesis of atherosclerosis and explore the role of molecular biomarkers for risk prediction. He has lead or participated in several

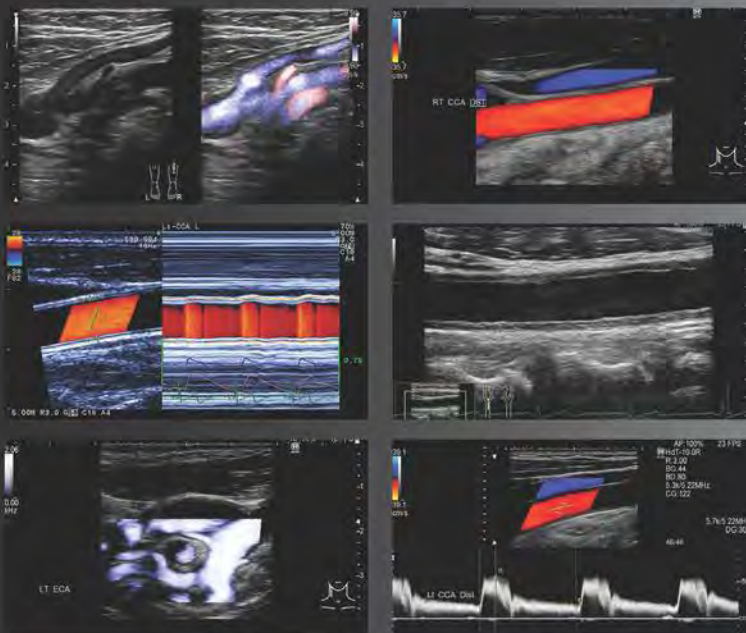
NIH-funded multi-center projects, seeking to identify genomic, transcriptomics, proteomic and metabolomic signatures for coronary heart disease and has separately held R01 funding to support the development of novel analytic strategies for detection of genetic epistatic effects. He currently leads an U01 working in collaboration with five other universities on a project to identify variants in the human genome and corresponding changes in the arterial proteome that correlate with premature atherosclerosis. He has served as Chair or member of numerous DSMB committees and Scientific Advisory Boards for both NIH- and industry-funded clinical trials, Chaired or served on numerous NIH, AHA, VA and international

grant review committees, served as the first Chair of the AHA Council on Functional Genomics and Translational Biology and served for many years on the Leadership Cabinet for the AHA Council on Epidemiology and Prevention. He also has served as PI of a T32-supported CVD Epidemiology Training Program for six cardiology fellows and/or post-doctoral research fellows per year.

**MARK MITSNEFES, MD, MS** is pediatric nephrologist and co-director of multidisciplinary hypertension clinic at Cincinnati Children's Hospital, Division of Nephrology and Hypertension. He is Professor of Pediatrics and Program Director of Clinical Translational Research Center at University of Cincinnati. Dr.

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Mitsnefes is an established clinical investigator with expertise in understanding the development of risk factors for cardiovascular disease in children with kidney disease. He is a co chair of cardiovascular committee for the CKiD study, NIH-funded the multicenter study of children with CKD. He has published more than 130 articles and 14 chapters on cardiovascular health and hypertension in children and adolescents.

**GARY F. MITCHELL, MD** is a cardiologist and internationally acknowledged leader in the field of vascular stiffness and pulsatile hemodynamics. He received his medical degree from Washington University in St. Louis and completed his training in Medicine and Cardiology at Brigham and Women's Hospital in Boston, where he served as a staff cardiologist until 1998. He left the Brigham in 1998 to become founder and president of Cardiovascular Engineering, Inc., which is an NIH-funded small business that designs and develops innovative devices that measure arterial stiffness and uses those devices to examine genetic and environmental correlates of arterial stiffness and the role that arterial stiffness plays in the pathogenesis of hypertension and target organ damage.

He joined the Framingham Heart Study as a Framingham Investigator in 1999 and became a collaborator on the AGES-Reykjavik study in 2006 and the Jackson Heart Study in 2010. Using devices designed and built by Cardiovascular Engineering, Dr. Mitchell has performed detailed assessments of arterial stiffness and pulsatile hemodynamics in more than 20,000 research participants, including participants in all 3 generations of the Framingham Heart Study as well as participants in the AGES-Reykjavik study, the REFINE study and the Jackson Heart Study.

**GARY L. PIERCE, PhD, FAHA** is an Assistant Professor in the Department of Health and

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Human Physiology at the University of Iowa with secondary faculty appointments in the Abboud Cardiovascular Research Center, Center for Hypertension Research and the Fraternal Order of Eagles Diabetes Research Center. Dr. Pierce obtained his Ph.D. in Applied Physiology and Kinesiology at the University of Florida in 2005 with an emphasis in cardiovascular exercise physiology. At the University of Florida, he worked with Dr. Wilmer Nichols and Randy Braith investigating effects of chronic exercise training on vascular endothelial function, arterial stiffness and central blood pressure hemodynamics in patients with heart failure and heart transplantation.

Dr. Pierce performed postdoctoral research training in the lab of Dr. Doug Seals in the Department of Integrative Physiology at the University of Colorado Boulder where he studied the mechanisms by which select pharmacological interventions or habitual aerobic exercise improved vascular endothelial function in middle aged and older adults. Dr. Pierce's current research examines the integrative mechanisms by which aging, obesity,

hypertension, COPD, chronic anxiety and preeclampsia contributes to large and small artery dysfunction in humans and pharmacological and lifestyle interventions to improve arterial function and hemodynamics. Dr. Pierce is a member of the North American Artery Society, American Physiological Society and a Fellow of the American Heart Association.

**BART SPRONCK, PhD** is a Postdoctoral Associate at the laboratory of professor Jay D. Humphrey at Yale University. He completed his PhD in 2016 at Maastricht University, the Netherlands, after which he was a visiting fellow at the laboratory of Professor Alberto P. Avolio in Sydney, Australia.

Dr. Spronck is a multidisciplinary researcher in the field of arterial biomechanics and aims to integrate clinical and engineering research. He is committed to disentangling the problem of arterial stiffening by combining pre-clinical and clinical research. He combines state-of-the-art measurement techniques — computer controlled bi-axial mechanical testing; high-frequency ultrasound; two-photon microscopy; arterial applanation tonometry; and echo wall tracking — with constitutive computer modeling in order to mechanically understand the changes occurring in the aging artery wall. Dr. Spronck has received generous funding in the form of two Kootstra Talent Fellowships (Maastricht University) and an Endeavour Research Fellowship (Australian Government). He is currently being funded by a Rubicon Fellowship (Netherlands Organisation for Scientific Research) and a Marie Curie Global Fellowship (European Commission). At the 2017 European ARTERY meeting, he received the Career Development Award.

**SEAN D. STOCKER, PhD** is a Professor of Medicine in the Renal-Electrolyte Division and Director of Basic and Translational Research at the University of Pittsburgh Hypertension Center. His research has been continually funded

by the National Institutes of Health and American Heart Association for >15 years including an AHA Established Investigator Award. Ongoing work in Dr. Stocker's laboratory examines the impact of excess dietary salt intake on aberrant blood pressure regulation in both salt-sensitive and salt-resistant subjects. Two general themes focus on 1) how specialized hypothalamic neurons detect changes in extracellular NaCl concentrations to activate the sympathetic nervous system in salt-sensitive subjects, and 2) how dietary salt intake alters sympathetic reflexes, cardiovascular reactivity, and blood pressure variability in salt-resistant subjects. As Director of the University of Pittsburgh Hypertension Center, Dr. Stocker has implemented and directs a new clinical hypertension program in 200,000 patients focused on the standardization of blood pressure measurements and novel treatment algorithms in primary care clinics.

**ELAINE M. URBINA, MD, MS** is Director of Preventive Cardiology at Cincinnati Children's Hospital Medical Center. Dr. Urbina's clinical activities focus on prevention (obesity, hypertension and dyslipidemias) while her research grants (AHA, NIH) and masters in epidemiology training concentrate on new non-invasive methods of assessing atherosclerotic CV target organ damage in youth related to CV risk factors especially those that cluster with obesity. She has over 25 years of experience in non-invasive imaging of CV structure and function in large epidemiologic studies such as the Bogalusa Heart Study. She was PI of a National Institutes of Health (NHLBI R01) following the cardiac and vascular effects of obesity and type 2 diabetes on adolescents and is currently a Co-PI of the International Childhood CV Cohorts Consortium grant that is completing 40-year follow-up on subjects enrolled as children in multiple cohorts including Bogalusa, Muscatine, Young Finns and the National Growth and Health study of which she is PI.

She is also Director and PI of an AHA Strategically Focused Network in HTN grant that is exploring population, clinical and epigenetic determinants of target organ damage in hypertensive youth. Her CV core also supplies training for many multi-center pediatric studies including CKiDs (chronic kidney disease) and serves as the CV Imaging Core for a variety of cohorts including TODAY2 (type 2 diabetes), SEARCH 3 (type 1 diabetes), FUEL (single ventricle congenital heart disease), Do IT (dyslipidemia) and TIDES (environmental exposures).

**IAN WILKINSON** is a Clinical Pharmacologist and Professor of Therapeutics in the University of Cambridge. He leads the division of

Experimental Medicine and Immunotherapeutics and the Cambridge Clinical Trials Unit. His main research interests are clinical/experimental studies designed to understand the mechanisms causing hypertension and cardiovascular disease, and to develop new treatments.

He is lead investigator on the MRC/BHF-funded AIMHY-INFORM trial, which will determine the most effective antihypertensive treatment for different ethnic groups in the UK, and a number of early phase trials run in collaboration with Industry partners. He also leads the Cambridge Experimental Medicine Training Initiative – which aims to create the next generation of clinical researchers to develop the medicines of the future.

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No conflict of interest to disclose

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No conflict of interest to disclose

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Other: Named as inventor in patent application for the use of inorganic nitrates in HFPEF

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No conflict of interest to disclose

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No conflict of interest to disclose

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Consultant: Servier (for a phase 4 study) - not directly relevant

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No conflict of interest to disclose

**Bo Fernhall, PhD**

No conflict of interest to disclose

**Stanley S. Franklin, MD**

No conflict of interest to disclose

**William Farquhar, PhD**

No conflict of interest to disclose

**Victoria Garcia, PhD**

No conflict of interest to disclose

**David Herrington, MD, MHS**

No conflict of interest to disclose

**Sae Young Jae**

No conflict of interest to disclose

**Gary F. Mitchell, MD**

Consultant: Novartis, Servier  
Grant/Research Support: NIH, Novartis  
Stock Shareholder (self-managed): Cardiovascular Engineering Inc.  
Honoraria: Servier, Novartis  
Full-time/part-time employee: Cardiovascular Engineering Inc.

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No conflict of interest to disclose

**Gary L. Pierce, PhD**

Grant/Research Support: NIH, AHA

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TBD

**Douglas Seals, PhD**

No conflict of interest to disclose

**Bart Spronck, PhD**

No conflict of interest to disclose

**Sean D. Stocker, PhD**

Grant/Research Support: NIH, AHA

**Elaine Urbina, PhD**

No conflict of interest to disclose

**Ian Wilkinson**

No conflict of interest to disclose



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AtCor Medical develops SphygmoCor for central arterial pressure waveform analysis and arterial stiffness assessments, providing critical information that is not available from brachial blood pressure. SphygmoCor is a clinical tool that is supported by more than 1,000 publications, used by more than 4,400 providers and reimbursable by regional and national payers.

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# ABOUT NORTH AMERICAN ARTERY

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## Mission Statement

The Mission of North American Artery Society is to:

- Support education on arterial structure and function appropriate to the various medical communities, such as scientific researchers, clinical specialists, primary care specialists, medical students, and pharmaceutical researchers, as well as the patient community;
- Develop mechanisms and venues for disseminating information on the understanding and application of arterial structure and function and its measurement among the various medical communities;
- Participate in and encourage the study of improved application of technologies in the measurement of arterial structure and function;
- Participate in and encourage clinical trials that develop the understanding of how arterial structure and function and its measurement can guide and inform patient selection and treatment;
- Guide and support efforts to standardize arterial structural and functional measurements for clinical practice and clinical/scientific studies;
- Direct efforts to include arterial structure and function measurements in appropriate national guidelines;
- Formulate a consensus statement regarding what is known in regards to arterial structure and function.

## Society Objectives

North American Artery is a non-profit, non-partisan professional society dedicated to the encouragement, support, and understanding of vascular structure and function and its application to clinical medicine, research and pharmaceutical and medical device development. The Society Objectives are to:

- Support education on arterial mechanics appropriate to the various medical communities, such as scientific researchers, clinical specialists, primary care specialists, and pharmaceutical researchers, as well as the patient community;
- Develop mechanisms and venues for disseminating information on the understanding and application of arterial mechanics and its measurement among the various medical communities;
- Participate in and encourage the study of arterial mechanics in basic and applied research to further especially the clinical applications derived from an improved understanding of arterial mechanics;
- Participate in and encourage clinical trials that develop the understanding of how arterial mechanics and its measurement can guide and inform patient treatment;
- Guide and support efforts to standardize arterial mechanics measurements for clinical practice and clinical/scientific studies;
- Direct efforts to include arterial mechanics measurements in appropriate national guidelines;
- Provide the knowledge for the critical understanding and application of technologies to measure arterial mechanics.

## JOIN OUR ORGANIZATION TODAY!

An active membership to this growing and influential research community is extremely beneficial to anyone associated with or interested in arterial research. As a member of North American Artery, you can view our member database, participate in our forum, as well as enjoy a host of other benefits.

Membership is open to all individuals and organizations that have a research, clinical, or scientific interest in arterial mechanics and hemodynamics. There are three (3) classes of membership:

- Individual Voting Members - \$60.00
  - All dues-paying individuals are voting members.
- Sponsor Member Organizations - \$500.00
  - This membership permits an organization to identify up to five (5) individuals from its organization be Individual Voting Members. Additional members may be added according to guidelines developed by the Executive Committee. An organization may have an unlimited number of members.
- Student Members – Free
  - This membership is open to all individuals who are currently still in training (residents, fellows, post-doctoral candidates). Student Members are non-voting members. A letter from the training director is required to be submitted with the application for membership.

Membership in NAA is based on a calendar year (July 1 – July 30). Payments of dues at any time during the year are considered dues for that calendar year. Membership renewal invoices are sent on June 1 and due by July 1.

## MEMBERSHIP BENEFITS

**Here are seven specific reasons why you should join North American Artery Society (NAA) today**

### **On-line subscription to ARTERY RESEARCH.**

ARTERY, the Association for Research into Arterial Structure and Physiology, is a European society with similar goals and objectives to NAA; ARTERY RESEARCH is its peer-reviewed journal featuring articles, case studies, meeting abstracts and other relevant publications on arterial structure and function. The on-line subscription comes with NAA membership. Without a membership, the purchase price of the journal on-line is \$31.50 per article.

### **Be an active participant.**

NAA is active in developing a multidisciplinary approach to research in and applications of arterial structure and function. We recognize the value of many voices, opinions, and disciplines, and invite you to get involved.

### **Enjoy reduced fees.**

Membership in NAA provides you with significant savings on registration fees for all NAA sponsored events.

### **Join the Forum.**

Membership in NAA makes you part of the conversation on artery research and applications. You can contribute to and learn from presentation sin workshops, seminars, on-line videos, and other avenues of sharing information.

### **Make key connections.**

Participation in NAA provides a focal point for developing working relationships with others active in the field.

### **Lead the pack.**

NAA will be leading the development of consensus positions on a number of related issues, and participating in the design of upcoming studies in the field of artery research.

### **Become a decision maker.**

NAA is an organized voice in the development of clinical applications of arterial research, including setting validation standards and application guidelines. As a member, you can be part of our voice to both the pharmaceutical as well as device manufacturing industries.

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| <input type="checkbox"/> Nephrology        | <input type="checkbox"/> Physician Assistant        |
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Membership Category

- Individual Voting Member - \$60.00
- Sponsor Member Organization - \$500.00 (Includes up to five (5) Voting Members. List names below.)

If applying for Sponsor Member Organization membership, please include up to four (4) additional individuals who will also be Voting Members.

1) Name: \_\_\_\_\_ Email Address: \_\_\_\_\_

2) Name: \_\_\_\_\_ Email Address: \_\_\_\_\_

3) Name: \_\_\_\_\_ Email Address: \_\_\_\_\_

4) Name: \_\_\_\_\_ Email Address: \_\_\_\_\_

Payment Information: No CASH or BANK TRANSFERS. Membership dues may be paid with VISA, MasterCard,

American Express, Check or Money Order. Checks and money orders must be drawn on American Banks and must be in

US Dollars.

Payment Method:  VISA  MasterCard  American Express  Check payable to North American Artery

Cardholder's Name: \_\_\_\_\_ Exp. Date: \_\_\_\_\_

Credit Card Number Card: \_\_\_\_\_ Verification Code: \_\_\_\_\_

Cardholder's Billing Address: \_\_\_\_\_

Cardholder's Signature: \_\_\_\_\_

Return this form to: North American Artery Society, c/o Hai Vu, University of Illinois at Chicago - College of Applied Health Sciences, 808 S Wood St, Suite 169 CMET, MC 518, Chicago, Illinois 60612  
Contact Hai Vu with any questions at 312-996-5260 or via email to hvu7@uic.edu

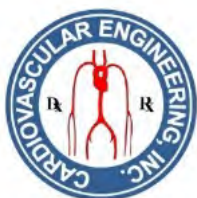






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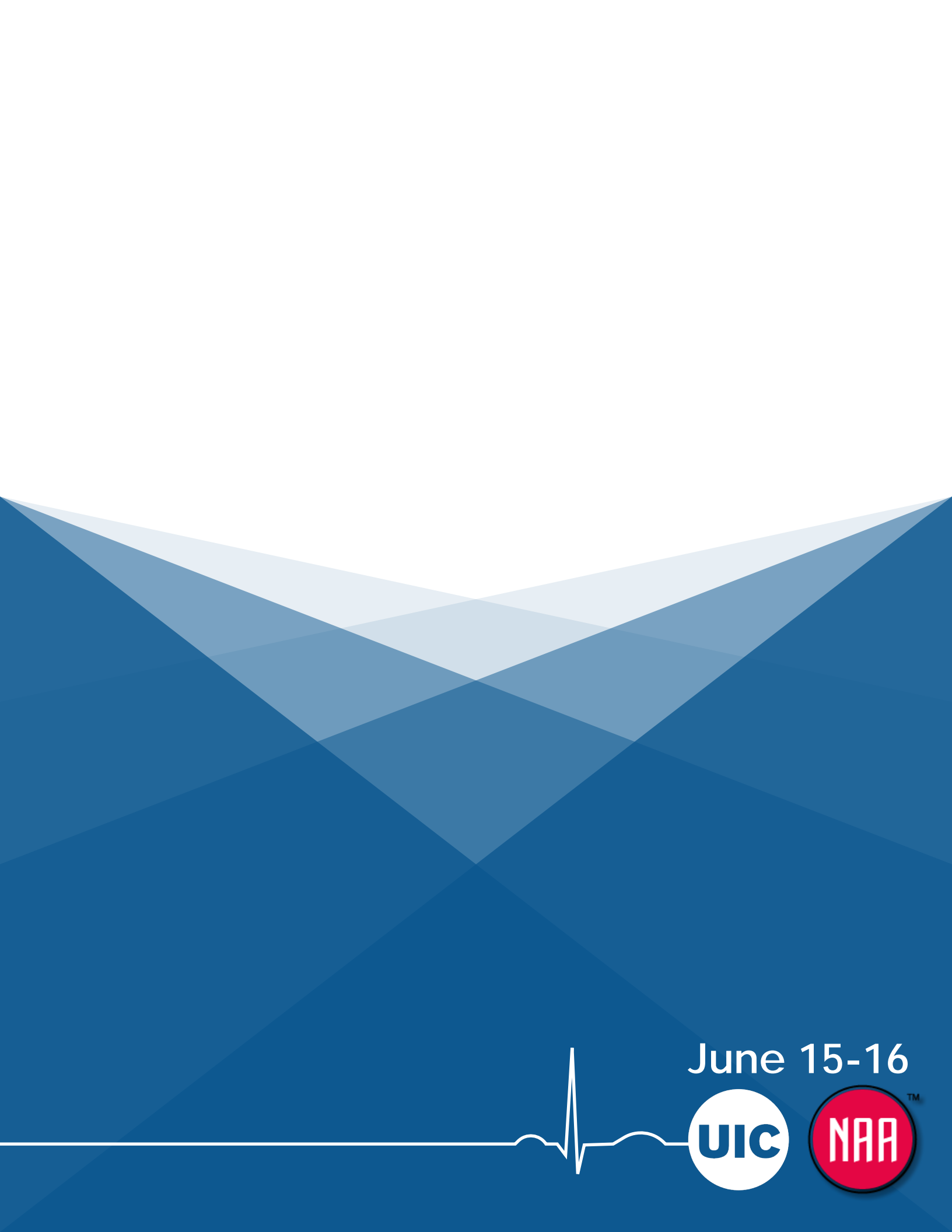
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June 15-16

