



# **2019 North American Artery 9th Annual Meeting**

**Chronological vs. Vascular Aging:  
Biological, Clinical and Population Implications**

co-sponsored by  
**The University of Iowa**

**The University of Iowa, Iowa City, Iowa, USA  
May 17-18, 2019**

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# GENERAL INFORMATION

## MEETING VENUE

### *The University of Iowa (UI)*

All sessions and food functions will take place in the Main Lounge Ballroom of the Iowa Memorial Union (IMU) located on the East side of the UI Campus.

## MEETING REGISTRATION

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

Early Registration Fees (before May 10) are:

Members: \$180.00

Non-Members: \$280.00

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

Onsite Registration Fees (after May 10):

Members: \$200.00

Non-Members: \$300.00

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

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

May 17, 2019: 7:30 AM – 6:00 PM

May 18, 2019: 7:00 AM – 2:00 PM

Badges are required for entry to all functions.

## CONFERENCE SESSIONS

### *IMU Main Lounge*

All sessions will take place in the Main Lounge Ballroom, on the first floor of the Iowa Memorial Union on the East side of the UI Campus.

## POSTERS ON DISPLAY

### *IMU Main Lounge*

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

## PRACTICAL HANDS-ON PRODUCT DEMONSTRATIONS

Exhibiting sponsors will provide practical hands-on demonstrations of their devices during the breaks on Friday, May 17 and Saturday, May 18.

### Friday, May 17

3:20 – 3:30 **Cardiovascular Engineering**

3:30 – 3:40 **Fukuda Denshi USA**

3:40 – 3:50 **ALF Distribution GmbH**

5:30 – 5:40 **Uscom Limited**

### Saturday, May 18

10:55 – 11:05 **Softcare/Laser Speckle**

**Flowography**

11:05 – 11:15 **UNEX**

11:15 – 11:25 **Hitachi**

1:45 – 1:55 **MitoQ**

## EXHIBITS, REFRESHMENTS & LUNCH

### *IMU Main Lounge*

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

### Friday, May 17, 2019

Refreshment Break AM 11:10-11:45 AM

Lunch 12:45 - 1:35 PM

Refreshment Break Early PM 3:00 - 3:55 PM

Refreshment Break Late PM 5:25 - 5:45 PM

### Saturday, May 18, 2019

AM Refreshment Break 10:30-11:30 AM

Lunch/Poster Presentations 12:55-2:00 PM

## PARTICIPANTS' RECEPTION

### *Friday, May 17, 2019*

NAA's Participant Reception, co-hosted by the University of Iowa, will take place from 6:30-7:15 PM in the IMU Terrace overlooking the Iowa River. All participants are invited to attend.

# GENERAL INFORMATION

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## NETWORKING DINNER

***Kinnick Stadium, McCord Club  
Lounge, First Floor***

NAA's Networking Dinner will take place from 7:30 to 9:00 PM at the Kinnick Stadium Press-box. Transportation will be provided. There is an additional \$25.00 fee for members and non-members who wish to attend the 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

***The Iowa House Hotel***

125 North Madison Street  
Iowa City, IA 52245  
Telephone: +1-319-335-3513

The hotel is located inside the Iowa Memorial Union, where the conference is located.

## Overnight Parking

Parking is included for those staying at the Iowa House Hotel.

## 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 a separate handout.

## NINTH 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

The University of Iowa

## PLATINUM BREAKFAST SPONSORS

Cardiovascular Engineering, Inc.  
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## OTHER SUPPORT

Medtronic, Inc.

We would like to acknowledge the University of Iowa Department of Health and Human Physiology for their generous support.



Dear Colleagues,

It is with great pleasure that I invite you to participate in the Ninth Annual Meeting of North American Artery that will take place on May 17-18, 2019 at the University of Iowa, Iowa City, IA. The theme for the 2019 conference is 'CHRONOLOGICAL VS. VASCULAR AGING: BIOLOGICAL, CLINICAL AND POPULATION IMPLICATIONS.'

We have a great line-up of national and internationally renowned speakers who will be discussing cutting -edge basic, clinical and population research related to the rise in systolic blood pressure across the lifespan, biology of vascular aging, vascular aging in persons with disability, effects of intensive blood pressure lowering and vascular aging, cognition and carotid atherosclerosis, effects of inorganic nitrate supplementation on vascular function in heart failure, aging and disease. In addition, we welcome past president of the Artery Society Dr. Charalambos Vlachopoulos to give our closing Plenary lecture. Trainees will be delivering their research in oral abstract sessions and we will have tutorial lectures and hands on demonstrations by our sponsors 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 central vs peripheral blood pressure hemodynamics for predicting stroke prognosis.

This is the premier meeting to interact with international experts in the field of arterial structure and function in health and disease. Thank you for joining us.

A handwritten signature in blue ink that reads "E. Urbina".

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 Ninth Annual Meeting of North American Artery that will take place May 17-18, 2019 at the University of Iowa in Iowa City, IA. The theme for this year's conference is "CHRONOLOGICAL VS. VASCULAR AGING: BIOLOGICAL, CLINICAL AND POPULATION IMPLICATIONS".

NAA 2019 will feature Plenary Lectures, Keynote lectures, Symposia and Tutorial lectures by international leaders in the field and oral and poster presentations by young investigators and trainees. Our sessions and exhibits will be hubs of discussion, with opportunities to network with leading basic, clinical and population scientists, practicing physicians and other professionals from North America, Europe, Asia and Central and South America including members of our sister societies ARTERY (Europe), Pulse of Asia (Asia) and LATAM (Latin/South America). The major Symposia will focus on a wide variety of topics related to vascular aging and cardiovascular disease risk.

The meeting will continue to feature the popular debate session this year between two international experts Drs. Ernesto Schiffrin and Alberto Avolio on whether central or peripheral blood pressure is a better predictor of stroke with aging. We will continue with an increased number of oral abstract presentations from trainees and young investigators and the popular practical hands-on demonstrations given by sponsoring firms. All sessions, poster presentations and exhibit hall will take place in a single location, the Iowa Memorial Union Main Lounge, which will facilitate networking and interactions with vendors displaying their technologies, devices, and nutraceutical products.

We encourage you to help make the NAA 2019 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 function as it relates to vascular aging and cardiovascular disease risk. You can follow us on Twitter @NAASociety or [www.naartery.org](http://www.naartery.org) for updates on the meeting.

Sincerely,

Gary L. Pierce, PhD  
Conference Co-Chair

Bo Fernhall, PhD  
Conference Co-chair



THANK YOU TO OUR CONFERENCE SUPPORTERS

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NINTH ANNUAL MEETING  
CHRONOLOGICAL VS. VASCULAR AGING: BIOLOGICAL, CLINICAL AND POPULATION IMPLICATIONS



# AGENDA

## Friday, May 17, 2019

7:30 - 8:45 AM	<b>Breakfast (IMU Main Lounge Ballroom)</b>
8:00-8:45 AM	*Sponsored Breakfast Lecture Sponsored by Cardiovascular Engineering, Inc., Norwood, MA
<b>8:45-9:00 AM</b>	<b>Opening Remarks</b> Gary Pierce, PhD and Bo Fernhall, PhD: Co-Chairs, NAA Meeting Program Committee Julio Chirinos, MD, PhD, NAA Vice-President
<b>9:00-9:45 AM</b>	<b>Opening Plenary Lecture</b> Moderator: Ray Townsend, MD, University of Pennsylvania <i>Vascular vs. Chronological Aging: Effect of Rise in Systolic Blood Pressure Across the Lifespan</i> Stanley Franklin, MD, UC Irvine
<b>9:45-11:10 AM</b>	<b>Symposium: <i>Biology of Vascular Aging</i></b> Moderator: Gary Pierce, PhD, The University of Iowa
9:45-10:10 AM	<i>Time and Metrics of Biological Aging</i> Luigi Ferrucci, PhD, National Institute on Aging
10:10-10:35 AM	<i>Arterial Senescence, DNA Damage and Telomere Dysfunction: Implications for Arterial Aging</i> Anthony Donato, PhD, University of Utah
10:35-11:00 AM	<i>Molecular Causes of Increased Vascular Smooth Muscle Stiffness with Aging</i> Kathleen Morgan, PhD, Boston University
11:00-11:10 AM	Panel Discussion
<b>11:10-11:45 AM</b>	<b>Coffee Break, Poster Session, Vendor Exhibit</b>
<b>11:45-12:45 PM</b>	<b>Tutorial Lectures</b> <i>Contemporary Methods for Measuring Aortic Pulse Wave Velocity</i> Moderator: Stella Daskalopoulou, MD, PhD, McGill University
11:45 AM-12:05 PM	<i>Tonometry vs. Cuff-Based Methods for Aortic PWV</i> Daniel Duprez, MD, PhD, University of Minnesota
12:05 PM-12:25 PM	<i>MRI Methods for Measuring Aortic PWV</i> Gary Mitchell, MD, Cardiovascular Engineering, Inc.

**NINTH ANNUAL MEETING**

**CHRONOLOGICAL VS. VASCULAR AGING: BIOLOGICAL, CLINICAL AND POPULATION IMPLICATIONS**

# AGENDA

12:25 PM-12:45 PM	<i>Doppler Ultrasound Methods for Measuring Aortic PWV</i> Julio Chirinos, MD, PhD, University of Pennsylvania
<b>12:45-1:35 PM</b>	<b>Lunch, Poster Session, Vendor Exhibits</b>
<b>1:35-3:00 PM</b>	<b>Symposium: Early Vascular Aging in Persons with Disabilities</b> Moderator: Bo Fernhall, PhD, University of Illinois Chicago
1:35-2:00 PM	<i>Spinal Cord Injury and Early Vascular Aging</i> Aaron Phillips, PhD, University of Calgary
2:00-2:25 PM	<i>Multiple Sclerosis and Early Vascular Aging</i> Rob Motl, PhD, University of Alabama Birmingham
2:25-2:50 PM	<i>Down Syndrome and Arterial Aging</i> Andrea Kelly, MD, University of Pennsylvania
2:50-3:00 PM	Panel Discussion
<b>3:00-3:55 PM</b>	<b>Coffee/Refreshment Break, Vendor Exhibit, &amp; Poster Viewing, (3) Vendor Demonstrations</b> 3:20-3:30 PM: Cardiovascular Engineering, Inc. 3:30-3:40 PM: Fukuda Denshi USA 3:40-3:50 PM: ALF Distribution GmbH
<b>3:55-5:25 PM</b>	<b>(6) Oral Abstracts Sessions sponsored in part by award from the American Physiological Society</b> Moderators: Bo Fernhall, PhD; Stanley Franklin, MD
3:55-4:10 PM	<b>Joshua Bock, The University of Iowa</b> <i>Microvascular Endothelial Function is Inversely Related to HBA1C &amp; Plasma Glucose Responsiveness in Patients with Type2 Diabetes.</i> <u>Abstract #OR-01</u>
4:10-4:25 PM	<b>Michelle Harbin, University of Minnesota.</b> <i>Relation of Secondhand Smoke Exposure to Vascular Phenotypes in Children and Adolescents.</i> <u>Abstract #OR-02</u>
4:25-4:40 PM	<b>Seth Holwerda, The University of Iowa</b> <i>Sex Differences in the Association Between Greater Common Carotid Artery Wall Thickness and Muscle Sympathetic Nerve Activity with Age.</i> <u>Abstract #OR-03</u>
4:40-4:55 PM	<b>Michael Nelson, University of Texas at Arlington</b> <i>Reactive Hyperemia is Coupled to the Magnitude of Tissue Desaturation: Implications for Past, Present and Future Microvascular Assessment.</i> <u>Abstract #OR-04</u>

# AGENDA

4:55-5:10 PM	<b>Chueh-Lung Hwang, University of Illinois at Chicago</b> <i>Type 2 Diabetes Exacerbates Age-Related Arterial Stiffening and Diminished Exercise-Induced Destiffening in Older Adults.</i> <u>Abstract #OR-05</u>
5:10-5:25 PM	<b>Elise Kronquist, University of Oregon.</b> <i>High Pulse Pressure Impairs Endothelium-Dependent Dilation in Cerebral Arteries from Young, but Not Old, Mice.</i> <u>Abstract #OR-06</u>
<b>5:25-5:45 PM</b>	<b>Refreshment Break, Vendor Exhibit, and Poster Viewing,</b> (1) 10-Minute Vendor Demonstration 5:30-5:40 PM Uscom Limited
<b>5:45-6:30 PM</b>	<b>Debate: Central blood pressure hemodynamics are better predictors of stroke incidence and stroke prognosis than brachial blood pressure?</b> Moderator: John Crockcroft, MD, Cardiff University 'Pro' position: Alberto Avolio, PhD, Macquarie University 'Con' position: Ernesto Schiffrin, MD, PhD, Sir Mortimer B. Davis-Jewish General Hospital, McGill University
<b>6:30-7:15 PM</b>	<b>Pre-Dinner Reception (Complimentary Bar): IMU Terrace on Iowa River</b>
<b>7:15 PM</b>	<b>Catch UI Cambus Shuttle outside IMU to Kinnick Stadium for Dinner</b>
<b>7:30-9:00 PM</b>	<b>Dinner - Kinnick Stadium McCord Club Lounge (Level 1)</b> <i>NAA Lifetime Achievement Awards in Hemodynamics &amp; Hypertension</i> Wilmer Nichols, PhD, University of Florida Stanley Franklin, MD, University of California-Irvine

## Saturday, May 18, 2019

<b>7:30 - 8:30 AM</b>	<b>Breakfast (IMU Main Lounge Ballroom)</b>
8:00-8:30 AM	<b>Meet the Experts at Breakfast</b> Trainee opportunity to meet and talk with select experts
<b>8:30-9:00 AM</b>	<b>NAA Co-Sponsored Symposium with Artery Society</b> Moderator: Julio Chirinos, MD, PhD, University of Pennsylvania <i>Regulatory Role of Coagulation Factors in Vascular Function</i> Jeremy LaGrange, PhD Center for Thrombosis and Hemostasis, Johannes Gutenberg-University, Mainz, Germany <b>Young Investigator Award Winner- ARTERY 18 Meeting</b>



<b>9:00-10:30 AM</b>	<b>Symposium: Intensive BP Lowering &amp; Vascular Aging in SPRINT</b> <u>Moderator:</u> Mahboob Rahman, MD, Case Western Reserve University
	9:00-9:25 AM <i>Cognitive Function, Arterial Stiffness and Intensive BP Lowering</i> Mark Supiano, MD, University of Utah
	9:25-9:50 AM <i>Carotid Atherosclerotic Plaque Morphology, Chronic Kidney Disease and CV Outcomes: A SPRINT Ancillary Study</i> Srini Beddhu, MD, University of Utah
	9:50-10:05 AM Panel Discussion
	<b>10:05-10:30 AM</b> <b>NAA Past-President's Lecture</b> Moderator: Gary Pierce, PhD, The University of Iowa <i>Renal Denervation: Arterial Stiffness DOES NOT Predict the Expected Outcome</i> Ray Townsend, MD, University of Pennsylvania (Sponsored in part from an unrestricted grant from Medtronic, Inc.)
<b>10:30-11:30 AM</b>	<b>Coffee Break, Poster Session, Vendor Exhibit,</b> (3) 10-Minute Vendor Demonstrations 11:00-11:10 AM: Softcare/Laser Speckle Flowgraphy 11:10-11:20 AM: UNEX Corp 11:20-11:30 AM: Hitachi Aloka
<b>11:30-12:55 PM</b>	<b>Symposium:</b> <b>Inorganic Nitrate and Treatment of Vascular Aging</b> Moderator: Demetra Christou, PhD, University of Florida
	11:30-11:55 AM <i>Nitrate and Vascular Function in Heart Failure</i> Julio Chirinos, MD, PhD, University of Penn
	11:55 AM - 12:20 PM <i>Inorganic Nitrate and Regulation of Blood Flow/Vascular Function in Aging and Disease</i> Darren Casey, PhD, University of Iowa
	12:20-12:45 PM <i>Nitrate &amp; Cerebrovascular Function/Blood Flow in Aging or Disease</i> Kevin Heffernan, PhD, Syracuse University
	12:45 - 12:55 PM Panel Discussion
<b>12:55-2:00 PM</b>	<b>Lunch, Poster Session</b> <b>Poster Presenters 1:10-2:00 PM</b> (1) 10 Minute Vendor Demonstration 1:45-1:55 PM: MitoQ

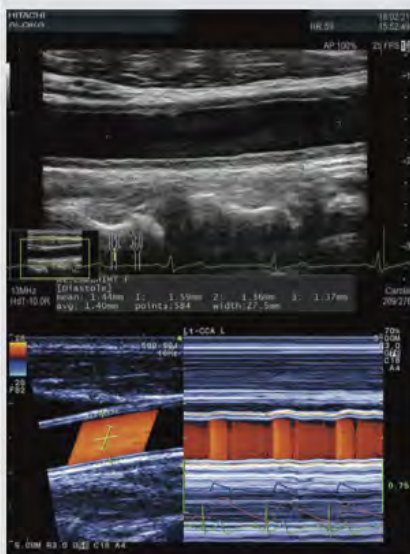
# AGENDA

2:00 - 3:30 PM	<b>(6) Oral Abstract Presentations for Trainees and Faculty</b> Moderators: Kevin Heffernan, PhD; Kerrie Moreau, PhD
	<b>Trainees:</b>
2:00-2:15 PM	<b>Martin Schultz, University of Tasmania</b> <i>The Accuracy of Form-Factor Derived Mean Arterial Pressure is Dependent on Systolic Blood Pressure Amplification</i> Abstract #OR-07
2:15-2:30 PM	<b>Lyndsey DuBose, The University of Iowa</b> <i>Education Selectively Moderates the Effects of Age-Related Increases in Blood Pressure on Cognition in Men</i> Abstract #OR-08
2:30-2:45 PM	<b>Vienna Brunt, University of Colorado Boulder</b> <i>Passive Heat Therapy Lowers Systolic Blood Pressure and Improves Vascular Endothelial Function and Oxidative Stress in Older Adults: Role of Circulating Factors</i> Abstract #OR-09
2:45-3:00 PM	<b>Brooks Hibner, University of Illinois at Chicago</b> <i>Effects of Cardiorespiratory Fitness on Ventricular-Vascular Coupling During Acute Inflammation in Young Healthy Adults</i> Abstract #OR-11

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		<b>Faculty:</b>
	3:00-3:15 PM	<b>Randy Kardon, The University of Iowa</b> <i>Laser Speckle Ocular Blood Flow and Pulsatility in Heart Failure Patients Implanted with a Left Ventricular Assistive Device</i> <u>Abstract #OR-10</u>
	3:15-3:30 PM	<b>Ryuya Hashimoto, The University of Iowa</b> <i>Light Evoked Retinal Activation is Metabolically Coupled to Increases in Human Retinal, Choroidal and Optic nerve Head Blood Flow</i> <u>Abstract #OR-12</u>
<b>3:40 - 4:10 PM</b>		<b>Closing Plenary Lecture</b> Moderator: Gary Pierce, PhD, The University of Iowa <i>Should We Measure Pulse Wave Velocity in All Hypertensive Patients?</i> Charalambos Vlachopoulos, MD, University of Athens Medical School, Hippokration Hospital, Athens, Greece; Past President, Artery Society
<b>4:10 - 4:15 PM</b>		<b>Award Presentations (for students/fellows only)</b> Oral Abstract Presentation Awards (1st and 2nd place)
<b>4:15-4:20 PM</b>		<b>Concluding Remarks and Adjourn Meeting</b>

# MOBIL O GRAPH®



- Central blood pressure with Mobil-O-Graph® 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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# ORAL PRESENTATION ABSTRACTS

## Oral Presentations Friday, May 17

<b>OR-01</b>	Microvascular Endothelial Function is Inversely Related to HBA1C and Plasma Glucose Responsiveness in Patients with Type 2 Diabetes
<b>OR-02</b>	Relation of Secondhand Smoke Exposure to Vascular Phenotypes in Children and Adolescents
<b>OR-03</b>	Sex Differences in the Association Between Greater Common Carotid Artery Wall Thickness and Muscle Sympathetic Nerve Activity with Age
<b>OR-04</b>	Reactive Hyperemia is Coupled to the Magnitude of Tissue Desaturation: Implications for Past, Present and Future Microvascular Assessment
<b>OR-05</b>	Type 2 Diabetes Exacerbates Age-Related Arterial Stiffening and Diminished Exercise-Induced Destiffening in Older Adults
<b>OR-06</b>	High Pulse Pressure Impairs Endothelium-Dependent Dilation in Cerebral Arteries from Young, but Not Old, Mice

## Oral Presentations Saturday, May 18

<b>OR-07</b>	The Accuracy of Form-Factor Derived Mean Arterial Pressure is Dependent on Systolic Blood Pressure Amplification
<b>OR-08</b>	Education Selectively Moderates the Effects of Age-Related Increases in Blood Pressure on Cognition in Men
<b>OR-09</b>	Passive Heat Therapy Lowers Systolic Blood Pressure and Improves Vascular Endothelial Function and Oxidative Stress in Older Adults: Role of Circulating Factors
<b>OR-10</b>	Laser Speckle Ocular Blood Flow and Pulsatility in Heart Failure Patients Implanted with a Left Ventricular Assistive Device
<b>OR-11</b>	Effects of Cardiorespiratory Fitness on Ventricular-Vascular Coupling During Acute Inflammation in Young Healthy Adults
<b>OR-12</b>	Light Evoked Retinal Activation is Metabolically Coupled to Increases in Human Retinal, Choroidal and Optic nerve Head Blood Flow

<b>PO-14</b>	Augmentation of Exercise Diastolic Function and Blood Pressure May Underpin Physiological Increases in Healthy Young
<b>PO-15</b>	Low-dose Sildenafil Reduces Aortic and Carotid Artery Stiffness in Current Cigarette Smokers
<b>PO-16</b>	Association between At-home Blood Pressure and Vascular Target-Organ Damage in Middle-Aged Adults with and without Hypertension
<b>PO-17</b>	Increased Arterial Stiffness with Repeated Binge Drinking in Healthy Young Adults
<b>PO-18</b>	Acute Systemic Inflammation Reduces both Carotid and Aortic Wave Reflection in Young Healthy Adults
<b>PO-19</b>	Central Hemodynamic Response to Lower Body Negative Pressure in Individuals with Down Syndrome
<b>PO-20</b>	Endothelial Glycocalyx Microvascular Function in Human Pregnancy & Preeclampsia
<b>PO-21</b>	Inducible Knockdown of Trf2 Leads to Endothelial Cell Dysfunction Ex Vivo
<b>PO-22</b>	Static Handgrip Exercise Increases Wave Reflection in Healthy Young, But Not Older Adults
<b>PO-23</b>	Postpartum Cognitive Function in Women with a History of Preeclampsia: Association with Blood Pressure But Not Aortic Stiffness
<b>PO-24</b>	Blunted Blood Pressure and Baroreflex Sensitivity to Sympathoexcitation Among Individuals with Intellectual Disability
<b>PO-25</b>	Sex Differences in Microvascular Reperfusion During Acute Inflammation
<b>PO-27</b>	The Role of Inflammatory Signaling in Vascular Endothelial Cells in Cerebral Cavernous Malformation (CCM): A Dual Role of Lipopo
<b>PO-28</b>	Similar Effects of Acute Aerobic Exercise on Hemodynamics in Breast Cancer Survivors: Preliminary Results
<b>PO-29</b>	Exercise Hypertension and Aortic Stiffness in Adult Survivors of Prematurity
<b>PO-30</b>	Sleep Quality, Anxiety, and Cardiovascular Disease Risk in Humans
<b>PO-31</b>	A Novel Method to Exercise Mice That Avoids Electrical Shock is Less Stressful and Demonstrates Altered Behavioral Responses
<b>PO-32</b>	Reductions in Cerebral Perfusion Following Oral Glucose Tolerance Test Associate with Lower Cognitive Abilities in Adolescents

# 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.



# ABOUT NORTH AMERICAN ARTERY

## 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 six specific reasons why you should join North American Artery Society (NAA) today

### **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.

## NINTH ANNUAL MEETING

## CHRONOLOGICAL VS. VASCULAR AGING: BIOLOGICAL, CLINICAL AND POPULATION IMPLICATIONS

# NAA MEMBERSHIP APPLICATION

Name & Principal Mailing Address  
(please type or print legibly and complete ALL information requested)

Last Name: \_\_\_\_\_ First Name: \_\_\_\_\_ MI: \_\_\_\_\_ Degree: \_\_\_\_\_

Affiliation: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State/Province: \_\_\_\_\_ Postal Code: \_\_\_\_\_

Country (if not U.S.): \_\_\_\_\_ Telephone: \_\_\_\_\_ Fax: \_\_\_\_\_

E-mail: \_\_\_\_\_

Please indicate Specialty

Physician Specialty:

- |   |  |
|---|--|
| <input type="checkbox"/> Cardiology                 | <input type="checkbox"/> Physiologist (Exercise) |
| <input type="checkbox"/> Allied Health Professional | <input type="checkbox"/> Scientist               |
| <input type="checkbox"/> Physician Assistant        | <input type="checkbox"/> Family Practice         |
| <input type="checkbox"/> Endocrinology              | <input type="checkbox"/> Nephrology              |
| <input type="checkbox"/> Internal Medicine          | <input type="checkbox"/> Other _____             |

Membership Category

- Individual Voting Member - \$60.00
- Sponsor Member Organization - \$500.00 (Includes up to 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 Gary Pierce, PhD  
275 Knowling Drive  
Coralville, IA 52241

Contact Gary Pierce with any questions at (319) 335-9487 or via email at [gary-pierce@uiowa.edu](mailto:gary-pierce@uiowa.edu)



**Thank you  
for joining us in  
Iowa City for  
NAA 2019!**

