The Johns Hopkins Ciccarone Center for the Prevention of Heart Disease

Facing Off Against Heart Disease

24th Annual Update
2012-2013
The staff members and fellows of the Johns Hopkins Ciccarone Center for the Prevention of Heart Disease include:

(Top row, left to right) Thura Abd, MD; Arthur Agatston, MD; Hatham Ahmed, MD; Nivee Amin, MD; Dominique Ashen, PhD, CRNP; Kevin Billups, MD; Michael J. Blaha, MD

(Second row) Roger S. Blumenthal, MD; Chintan Desai, MD; Gary Gerstenblith, MD; Sherita Golden, MD; Rani Hasan, MD; Aaron Horne, MD; Steve Hsu, MD

(Third row) Steven Jones, MD; Parag H. Joshi, MD; Seth S. Martin, MD; J. William McEvoy, MD; Rebecca McKibben, MPH; Erin Michos, MD

(Fourth row) Evan Muse, MD; Khurram Nasir, MD; Chiadi Ndumele, MD; Shay Ojeifo, MD; Birju Patel, MD

(Fifth row) Wendy Post, MD; Elizabeth Ratchford, MD; Jonathan Rubin, MD; Michael G. Silverman, MD

(Sixth row) Rajesh Tota-Maharaj, MD; Seamus Whelton, MD; Omair Yousuf, MD

(Seventh row) Michelle Zikusoka, MD
This past year was a truly outstanding one for the Johns Hopkins Ciccarone Center for the Prevention of Heart Disease. In fact, when I look back on 2013, several key numbers literally stand out in my mind: **25, 10, 116,** and **39.**

For starters, it is hard for me to believe that **25 years** have passed since Henry Ciccarone, a legendary athlete and lacrosse coach at Hopkins, died of sudden cardiac death in 1988, after two previous heart attacks. During the 18 months following his death, I worked with Coach Ciccarone’s family, friends, and colleagues at Hopkins to develop a plan to establish a comprehensive clinical and research center, where the dedication and perseverance of the clinicians and researchers would embody the great work ethic and accomplishments of this university icon.

I know that Coach Ciccarone, who was a close friend of mine and someone I idolized, would be proud of what we’ve accomplished over the past quarter century and excited by all that is yet to come. His widow, Sue, and his four sons, Henry Jr., Brent, John, and Steve, have been loyal supporters of our efforts.

Irene’s philanthropy will also allow us to provide advanced educational training for some of our postdoctoral cardiology fellows in cardiovascular epidemiology and clinical trial design at the Bloomberg School of Public Health. **Drs. Parag Joshi, Seth Martin,** and **J. Bill McEvoy** were named the inaugural Pollin Cardiovascular Prevention fellows this year. They are committed to becoming academic medicine leaders in their chosen field of preventive cardiology. Irene’s magnificent generosity also will allow us to expand our educational and outreach efforts and play a lead role in implementing the new AHA/ACC/NHLBI prevention guidelines throughout the Hopkins medical system.

Irene’s gift is only the most recent example of her long-standing commitment to the Ciccarone Center. I first became aware of Irene’s dedication to combating cardiovascular disease through Sister to Sister (STS), an organization she formed in 1999 to provide free cardiovascular screenings and education for women. One of our early collaborations involved helping to analyze some of the data STS had collected. **Dr. Erin Michos** did a superb job working with Irene and her group, and the result was an influential paper published in the *Journal of Women’s Health* in 2008, with Irene serving as the first author and Erin as senior author.

This study found that many seemingly healthy women have suboptimal lifestyle habits that put them at increased risk for future heart attacks and strokes, despite having very low Framingham risk scores. It was an eye-opening study that could not have been done without the data collected at the STS health fairs — the brainchild of Irene Pollin.

Part of that gift was used to establish a professorship in the name of her late son, Kenneth, or “Jay Jay,” who died at the age of 13 months from congenital heart disease. And in July, I was installed as the inaugural Kenneth Jay Pollin Professor of Cardiology. To have my name forever associated with the Pollin family is indeed a fabulous honor, and one which I share with all of my dedicated colleagues in the great Hopkins Division of Cardiology.

Discovering that there are limitations to the traditional approaches to cardiovascular risk assessment also served as the basis for much of our subsequent clinical research projects at the Ciccarone Center. Which brings me to another outstanding number for 2013: **116.** As in, the number of articles co-authored by our staff in the past 12 months (please turn to page 8). That’s a record for us. Even better, two of the articles brought us national and international recognition.
Dr. Wendy Post — who was promoted to full professor in June — and former senior Ciccarone Center fellow Dr. Catherine Campbell led the first large-scale genome-wide association study to uncover a genetic link to aortic valve calcification. Understanding the biology of aortic valve stenosis and why the condition runs in families has long been a challenge. Drs. Post and Campbell, along with their colleagues, found that possessing a genetic variant in the LPA gene, which codes for the cholesterol particle lipoprotein(a) [Lp(a)], doubles the likelihood that patients will develop aortic valve calcification and increases the risk of developing aortic stenosis by greater than 50%. It is hoped that this discovery, published in the February 7, 2013, issue of the New England Journal of Medicine, will lead to the development of novel medications to slow the progression of aortic valve calcification. Moreover, these results provide clear evidence of the causal link between Lp(a) particles and aortic valve disease.

Another very impactful paper, led by first-year cardiology fellow Dr. Haitham Ahmed and Dr. Michael Blaha, was published in the American Journal of Epidemiology. We studied the association between lifestyle behaviors and intermediate measures of disease, such as coronary artery calcification (CAC), the hard clinical endpoints of cardiovascular disease (CVD) events and death, in 6,800 adults enrolled in the Multi-Ethnic Study of Atherosclerosis (MESA). The study showed that good lifestyle habits were associated with less progression of CAC, lower CVD risk, and lower total death rate over an eight-year period.

Moreover, study participants who followed several key lifestyle habits, such as smoking avoidance, regular exercise, maintenance of normal weight, and a Mediterranean-style diet, showed an 80% lower death rate than those with no healthy behaviors. In fact, the study indicated that the more healthy behaviors one displays, the better the clinical outcomes. And smoking negated the benefits of the other three healthy behaviors.

This was the first study to connect the benefits of a healthy lifestyle across baseline CAC, atherosclerosis progression, clinical CVD, and death in a single long-term investigation. The favorable findings in the CAC measurements gave added credibility to our findings, support the rationale for much of our atherosclerosis imaging research, and provide key evidence for the AHA's “Simple 7” approach to prevention. Not surprising, the study garnered quite a bit of media attention, both locally and nationally.

Finally, thanks in large part to the incredible research support over the past decade from individuals such as Nick and Suellen Paleologos, Ed and Marty Speno, Ginger and Irv Gomprecht (left), Paul and Vivian Schafer (and the P) Schafer Foundation, Richard and Katharine Amato, and Joe and Ozzie Cowan, we have created several large longitudinal research datasets and obtained the skills to analyze them effectively. This has led to our final outstanding number of the past year: the record-setting acceptance of 39 research papers co-authored by members of the Ciccarone Center being accepted for presentation at the November 2013 AHA Scientific Sessions (please turn to page 24).

I’d like to extend my thanks to all of our friends and supporters who have helped turn the 25-year-old dream of a dynamic and impactful clinical and research center for the prevention of heart disease into a reality. I am proud to say that we have fulfilled our mission, but there is so much more work to be done in combating the devastating impact of cardiovascular disease. I hope that you will join us as we set a course for the next 25 years.

Sincerely yours,

Roger S. Blumenthal, MD, FACC, FAHA, FNLA
The Kenneth Jay Pollin Professor of Cardiology
Director, Johns Hopkins Ciccarone Center
for the Prevention of Heart Disease
This past year has been a momentous one for the Johns Hopkins Ciccarone Center for the Prevention of Heart Disease, in terms of accomplishing our goals and continuing our work in creating excellent clinical care, educating health care practitioners, and studying better ways to prevent heart disease. Following is a brief overview of some of what we achieved.

Congrats to Michael Blaha, MD, who was named Assistant Professor of Medicine, Director of Clinical Research — and, thus, became an official staff member of the Ciccarone Center — in January.

In July, Irene Pollin, a passionate health advocate and founder of a national organization devoted to heart disease prevention in women, donated $10 million to the Johns Hopkins Ciccarone Center for the Prevention of Heart Disease. Ms. Pollin’s transformational gift establishes the Kenneth Jay Pollin Professorship in Cardiology, expands the Center’s research efforts, and provides advanced educational training for some of our postdoctoral cardiology fellows in cardiovascular epidemiology and clinical trial design at the Bloomberg School of Public Health. “I see this gift to the Ciccarone Center as a way to make a powerful impact on the knowledge and behavior of people to improve their health,” commented Ms. Pollin, who established the Sister to Sister organization in 2000 to provide free cardiovascular screenings and education for women.

Heartfest Turns 20
On a cold Saturday evening in January 2013, members of the Johns Hopkins Heart and Vascular Institute had more than the start of a new year to celebrate. That night marked the return of “Heartfest,” the popular gala event and fundraiser. Featuring “heart-healthy” cuisine prepared by 20 local restaurants and caterers, complimentary wines and entertainment by The Heart Attackers, a rock band composed of local cardiologists, a cardiac surgeon and other medical specialists, the event was held at Martin’s Valley Mansion in Cockeysville.

The centerpiece of this year’s Heartfest—the 20th celebration of the event and the first since 2008—was a ceremony honoring two distinguished Hopkins officials: Edward Miller, MD, former dean and CEO of Johns Hopkins Medicine, and Jerome Schnydyman, past executive assistant to several Johns Hopkins University presidents, former Hopkins’ undergraduate admissions director, and a member of the National Lacrosse Hall of Fame. The evening featured a number of special guests, including Ron Peterson, president of Hopkins Hospital and Health System, Tim and Liz Rhode, cofounders of the MAC (Maryland Athletic Club), Steve Geppi, president and CEO of Diamond Comic Distributors. Steve Valenti, MD, a former band “regular,” performed with The Heart Attackers, who play hits from the 1960s to today and have been performing together since 1997. Proceeds from Heartfest raised more than $70,000 toward advances in clinical care, research, and education.

Congratulations to our own Roger Blumenthal, MD, professor of medicine at the Johns Hopkins University School of Medicine and director of the Ciccarone Center, who was named the inaugural endowed Kenneth Jay Pollin Professor of Cardiology. A nationally recognized expert on the development, treatment and prevention of heart disease, Blumenthal led the formation of the Ciccarone Center for the Prevention of Heart Disease at Johns Hopkins in 1990.
Kudos also to Parag Joshi, MD, Seth Martin, MD, and J. Bill McEvoy, MD, who were named the first Pollin Cardiovascular Prevention fellows. The endowment will support their continuing commitment to becoming academic medicine leaders in the field of preventive cardiology and allow all three to pursue specialized training at the Bloomberg School of Health and obtain master’s degrees in cardiovascular epidemiology and clinical trials.

In May, Sherita Golden, MD, an associate professor of medicine at the Johns Hopkins University School of Medicine, was appointed as the Hugh P. McCormick Family Professor of Medicine in Endocrinology and Metabolism.

Wendy Post, MD, whose areas of expertise include cardiovascular disease, coronary artery disease, echocardiography, hypertension, preventive cardiology, risk factor modification, and stress testing, was promoted to full professor in June.

Rebeccah McKibben, a medical student at Johns Hopkins who is being mentored by Dr. Post, was awarded a grant for a predoctoral award from the American Heart Association for funding to study subclinical atherosclerosis in persons with HIV infection who are elite controllers, long-term nonprogressors, and virologic suppressors.

Over the past year, Kevin Billups, MD, a urologist with joint appointments in both urology and medicine, has focused much of his efforts developing the Men’s Health & Vitality Program, a unique program that focuses on the connection between sexual health and chronic disease. Working closely with colleagues in the Ciccarone Center, Dr. Billups uses three gender-specific markers (erectile dysfunction, testosterone deficiency, and lower urinary tract symptoms, associated with benign prostate enlargement) to engage men as a means to persuade them to be more proactive about preventive health. These three conditions are all closely associated with both sexual health and increased cardiometabolic risk.

Seth Martin, MD, was chosen to present his research study, “HDL Cholesterol Subclasses and Outcomes in Secondary Prevention: the Lipoprotein Investigators Collaborative,” at the Northwestern Cardiovascular Young Investigators’ Forum, held September 2013 in Chicago.

Recently, Johns Hopkins cardiologists Chintan Desai, MD, and Roger Blumenthal, MD, were invited to provide expert commentary on preventing heart disease for “Raconteur,” a Times of London magazine. A benefit of having The Times publish the article, “Stay Healthy with the ABCs of Heart Disease,” beyond spreading the word about the steps everyone can take to assess and reduce the risk of heart disease, is to raise the visibility of Johns Hopkins Cardiology throughout Great Britain, commented Dr. Blumenthal.

Rewarding a Hard-working Alum
Khurram Nasir, MD, received the Distinguished Alumnus award from the Johns Hopkins Bloomberg School of Public Health. Dr. Nasir, who earned a master’s in public health in 2001, was honored for his efforts in publishing over 240 publications focusing on early detection of subclinical cardiovascular disease and the initiation of lifelong prevention therapies.
Stanley L. Blumenthal, MD, Preventive Cardiology Research Awards

Since 2004, the annual Stanley L. Blumenthal, MD, Preventive Cardiology Research Awards have been presented to the Hopkins postdoctoral fellows, graduate students, or residents submitting the best abstracts to major research meetings, such as the American Heart Association or American College of Cardiology Scientific Sessions. These awards are bestowed following the division’s yearly cardiovascular research retreat in May.

First place in the ORAL COMPETITION went to Sravanti Kusuma for her presentation entitled, “Engineered Clinically-relevant Vascular Networks from Human Pluripotent Stem Cells.” Tied for second place were Michael Silverman, MD, for “Coronary Artery Calcium and Cardiovascular Events in Diabetes - Implications for Primary Prevention Therapies: The Multi-Ethnic Study of Atherosclerosis (MESA),” and Mark Ranek, MD, for “Protein Kinase G Regulates Cardioprotection through Destruction.” Mohamed Elshazly, MD, took third for “Non-HDL Cholesterol, Guideline Targets, and Population Percentiles for Secondary Prevention in a Clinical Sample of 1.3 Million Adults.”

The top prize in the POSTER COMPETITION IN CLINICAL SCIENCE/EPIDEMIOLOGY went to Grant Chow, MD, for “Hemodynamic Effects of Cardiac Resynchronization Therapy in the Immediate Post-infarct Period: A Canine Model.” Kerunne Ketlogetswe, MD, picked up second for “Adiponectin Is Associated with Subclinical Coronary Atherosclerosis in the Multicenter AIDS Cohort Study (MACS).” And third place went to Deeptankar DeMazumder, MD, for his presentation “Entropy X of Cardiac Rhythm Predicts Mortality in Patients with Heart Failure.”

For the POSTER COMPETITION IN BASIC SCIENCE, the top prize went to Peter Anderson for his presentation, “Precardiac Deletion of Numb and Numblike Identities Renewing Cardiac Progenitors and their Microenvironment.” Second place went to Peter Rainer, for “Targeted Inhibition of Cardiomyocyte-Transforming Growth Factor Beta Induces a Protective Endoplasmic Reticulum Stress Response and Prevents from Left Ventricular Rupture after Myocardial Infarction.” Kinya Seo took home third place for “cGMP-PKG Modulation of Myocyte Mechanical Response to Stretch: Role of TRPC6 Channel Modulation in Dystrophic Heart Failure.”

Congratulations to all the winners!

Staff Spotlight: Haitham Ahmed, MD, MPH

This past year, Haitham Ahmed, MD, MPH, began his cardiology fellowship by working with Michael Blaha, MD, and Roger Blumenthal, MD, to promote the findings of one of the most important papers we have published. The study, “Low-Risk Lifestyle, Coronary Calcium, Cardiovascular Events and Mortality: Results from MESA,” which appeared in the July issue of the American Journal of Epidemiology, investigated which of the most common healthy lifestyle habits provide the most protection from heart disease and how these habits prevent disease progression over the years. Dr. Ahmed looked at the associations of four habits — smoking avoidance, regular exercise, maintenance of normal weight, and a healthy Mediterranean-style diet — with coronary artery calcium (CAC) incidence and progression, coronary heart disease (CHD) events and total mortality in a single large study (MESA), with a mean follow-up of almost eight years. Subjects who adopted all four of these behaviors had an 80% lower death rate than those with no healthy behaviors; benefits were cumulative (i.e., the more healthy behaviors the better); and smokers, even if they exercised, ate healthy, and maintained normal weight, were worse off than people who did nothing else right but stayed away from cigarettes. “All the factors we looked at are things you can change,” commented Dr. Ahmed, who was the lead author. “You can’t pick your family history or change your age, but you have the ability to improve your own wellness and health.”
**P.J. Schafer Cardiovascular Research Award**

The P.J. Schafer Cardiovascular Research Award funds the efforts of clinical investigators seeking a better understanding of how to diagnose premature heart disease and prevent sudden cardiac death. Previous recipients of this prestigious award, which is given to a junior faculty member, include Drs. Erin Michos, Richard George, Saman Nazarian, Rhondalyn McLean, Oscar Cingolani and Chiadi Ndumele.

The 2013-2014 P.J. Schafer award winner is Michael J. Blaha, MD MPH, for his research in the prevention of heart attacks and sudden cardiac death. The award will help Dr. Blaha continue his primary work with the Ciccarone Center, improving cardiovascular risk prediction through novel methods of early detection of atherosclerosis, including the use of cardiac computed tomography.

Dr. Blaha, who represents the fourth generation of physicians in his family, received his medical degree and a master’s in clinical epidemiology and biostatistics from Vanderbilt University. Dr. Blaha completed his internal medicine residency at Johns Hopkins in 2009 before completing a fellowship in cardiology at Johns Hopkins in 2012. He is a preventive cardiologist and researcher in clinical epidemiology and has faculty appointments in both cardiology in the School of Medicine and in epidemiology at the Johns Hopkins Bloomberg School of Public Health. Dr. Blaha currently serves as the Director of Clinical Research for the Ciccarone Center. He also holds positions with both the Statistics and Fellow-in-Training/Early Career Committees of the American Heart Association and the Cardiometabolic Alliance through the American College of Cardiology.

For five years, Dr. Blaha has worked on the Multi-Ethnic Study of Atherosclerosis (MESA), an NIH-funded study that seeks to explain the distribution and progression of early atherosclerosis amongst healthy people. He received two Young Investigator Research Awards from the MESA steering committee for his work that was published in the *Lancet* and *Circulation* journals. His work with MESA motivated his plans to construct a consortium of institutions committed to understanding the appropriate use of cardiac computed tomography in clinical practice. This consortium will produce data that should guide the appropriate, cost-effective use of imaging in clinical practice. Dr. Blaha also runs the Heart-Smart Living blog on Yahoo! Health ([http://health.yahoo.net/experts/heartsmartliving](http://health.yahoo.net/experts/heartsmartliving)), which helps spread the word nationally about living healthy lifestyles.

**More Than 110**

The Ciccarone Center continues to publish important original research articles, editorials, and review articles in many of the world’s top cardiology, internal medicine, epidemiology, endocrinology, and genetics journals.

From October 2012 to September 2013, the Center showed some amazing productivity, publishing more than 110 articles of significant basic and clinical research findings, commentaries, and review articles in several leading medical journals, including:

- **American Heart Journal** (2 publications)
- **American Journal of Cardiology** (6)
- **American Journal of Epidemiology** (1)
- **American Journal of Hypertension** (6)
- **Arteriosclerosis, Thrombosis & Vascular Biology** (2)
- **Atherosclerosis** (6)
- **Circulation** (2)
- **Circulation: Arrhythmias & Electrophysiology** (1)
- **Circulation: Cardiovascular Genetics** (3)
- **Clinical Cardiology** (5)
- **Diabetes Care** (4)
- **European Heart Journal** (1)
- **European Journal of Preventive Cardiology** (2)
- **Heart** (1)
- **Hypertension** (1)
- **International Journal of Cardiovascular Imaging** (1)
- **Journal of the American College of Cardiology** (10)
- **Journal of the American College of Cardiology: Cardiovascular Imaging** (2)
- **Journal of the American Medical Association** (3)
- **Journal of the American Medical Association: Internal Medicine** (2)
- **Journal of Clinical Endocrinology and Metabolism** (1)
- **Journal of Hypertension** (1)
- **Mayo Clinic Proceedings** (1)
- **New England Journal of Medicine** (1)
- **PLoS One** (3)
Thank You!
The Ciccarone Center is indebted to the following individuals for their extraordinary assistance to and support of our clinical research activities over the past year:

Irene Pollin, MSW, Ph.D. (Hon)
Mr. and Mrs. Nicholas G. Paleologos
Mr. Mario Manuli
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Mr. and Mrs. Carter C. Shepherd
Dr. Caprice M. Uhlhorn

Much of the Ciccarone Center’s remarkable success over the past year — including the creation of several large longitudinal research datasets and the record-setting 39 research papers co-authored by our staff accepted for presentation at the November 2013 AHA Scientific Sessions — could not happen without their very generous support.

In August, Atherotech Diagnostics Lab, a leading clinical reference laboratory specializing in cardiometabolic testing and disease management solutions, announced it had formed a strategic research collaboration with the Johns Hopkins Ciccarone Center for the Prevention of Heart Disease. The partnership pairs Atherotech’s Very Large Database of Lipids (VLDL) with the Ciccarone Center’s cardiac research capabilities. The project’s goal is to generate new knowledge through research, and translate that knowledge into clinical practice in the fight against cardiovascular disease. Atherotech is reportedly one of the few companies to consistently assess cholesterol-rich risk with directly measured LDL, HDL and subclasses; triglyceride-rich risk in remnant lipoproteins; and hereditary risk with Lp(a) — all of which are represented in the total VLDL database of 8 million samples. The current research VLDL dataset has 1.4 million data points representing unique individuals, with more than 3 million data points anticipated. Steven R. Jones, MD, Director of Inpatient Cardiology at Johns Hopkins, believes the company’s mission blends nicely with his work at the Ciccarone Center: “Our research group’s emphasis is on high-impact, clinically relevant research.”

Congrats to J. Bill McEvoy, MD, who upon completing his clinical fellowship period earlier this year, was awarded the 2013 Johns Hopkins Medicine Osler Housestaff–Fellow Teaching Award. Also, over the summer, Dr. McEvoy presented at Medical Grand Rounds at his alma mater, the National University of Ireland, Cork Campus, as well as the Irish Cardiac Society meeting, and was invited to give a lecture to the Irish Atherosclerosis Society.
What Is the Ciccarone Center?

Since 1990, the mission of the Ciccarone Center for the Prevention of Heart Disease has been three-fold:

- To create excellent clinical care for people at risk of developing heart disease
- To educate health care practitioners about how to better identify and care for patients at risk of developing heart disease
- To establish rigorous research programs to study better prevention of heart disease

Relentless pursuit of these goals over the past two decades has led to the creation of one of the fastest growing clinical and research programs at Johns Hopkins, which is highly regarded for its innovative and effective approaches to cardiovascular disease prevention and treatment.

Clinical Care
The trademark of the Ciccarone Center is its comprehensive approach, which involves both global assessment and aggressive management of multiple risk factors (not just single risk factors, such as high blood pressure or high cholesterol) contributing to the development and progression of atherosclerosis. Our clinical center is dedicated to:

- The detection and management of individuals at risk for accelerated atherosclerosis (primary prevention) to prevent or delay the onset of cardiovascular disease, and
- The management of patients with established vascular disease (secondary prevention) to reduce recurrent cardiovascular events and decrease mortality.

Education
Our educational efforts are aimed at the medical community and the general public. The Ciccarone Center also serves as a model for teaching the art of prevention of cardiovascular disease to fellows, residents, and students at the Johns Hopkins School of Medicine and the Bloomberg School of Public Health.

Our physicians and nurse practitioner are also lecturers for medical and nursing students and physicians at Hopkins and at national meetings. Hopkins Medicine also organizes meetings to address educational issues for the public.

Research
As part of Johns Hopkins, the Ciccarone Center for the Prevention of Heart Disease is committed to conducting cutting-edge research on atherosclerosis and risk factors for heart disease. We conduct research on two levels:

- Clinical research studies of cardiovascular disease involving informed, consenting adults, and
- Basic research and experiments at the cellular and subcellular levels to decipher the molecular reactions leading to atherosclerosis.

A Personalized, Comprehensive Approach
The Ciccarone Center specializes in managing adults who are at high risk for future cardiovascular disease because of the presence of multiple cardiac risk factors (such as hypertension, dyslipidemia, diabetes, smoking, sedentary lifestyle, or overweight status) or a history of known cardiovascular or peripheral arterial disease.

The Ciccarone Center’s personalized, comprehensive approach to lifestyle and medical management can slow the progression of cardiovascular disease and decrease one’s future risk of a heart attack, stroke, bypass surgery, angioplasty, or stenting. We also sponsor research that includes both clinical trials and basic molecular studies.

Several groups of patients have been of particular interest to the Ciccarone Center:

- Women and ethnic minorities
- Patients with metabolic disorders, in particular inherited dyslipidemias, the metabolic syndrome, and diabetes
- Patients with the accelerated atherosclerosis
- Persons with a family history of coronary heart disease or stroke
- Persons with recurrent chest pain but no established cardiovascular disease
- Heart and renal transplant patients

State-of-the-Art Testing
We are especially interested in individuals who develop cardiovascular disease before the age of 65. We have special expertise in the screening and management of asymptomatic family members of persons with premature atherosclerotic disease. Our team may selectively employ state-of-the-art testing to help identify factors contributing to heart disease clustering in families.
For an individual patient, we may use the latest assessment techniques to measure lipoproteins (total cholesterol, high-density lipoprotein-cholesterol [HDL-C], LDL-C, and triglyceride levels) and apolipoproteins (Lp[a], apolipoprotein B) as well as nontraditional risk factors, such as high-sensitivity C-reactive protein (hsCRP), and measurements of lipoprotein size and number. However, for many individuals these emerging risk factors are often not needed to optimize their management in a cost-effective manner.

**Advanced Diagnostic Tools**
Among asymptomatic adults with no history of cardiovascular disease, we may use a 64-slice or a 320-slice multidetector computed tomography (MDCT) scan of the chest to measure the amount of coronary artery calcification. The presence of elevated coronary artery calcification (e.g. >75th percentile for one’s age and gender) or thickened carotid arteries is a sign of accelerated atherosclerosis for one’s age and may lead to more aggressive attempts at comprehensive risk factor changes through both medical management and lifestyle modification. Occasionally, a cardiac CT angiogram may also be indicated in patients with atypical chest pain and inconclusive stress test results. After an initial comprehensive evaluation, we can inform a patient whether his/her management might be changed by some of the more sophisticated laboratory and diagnostic testing that we can provide.

**Improving Lifestyle Habits**
Dominique Ashen, PhD, CRNP, a nurse practitioner who specializes in helping people improve their lifestyle habits, assists patients with behavior changes such as:
- Following healthier diets
- Maintaining a prudent body weight
- Smoking cessation
- Maintaining a regular aerobic program
- Coping better with stress

We also refer patients to the *Johns Hopkins Clinical Exercise Center* as well as to the state-of-the-art *Maryland Athletic Club (MAC) Healthy Start program* to optimize their lifestyle habits. We encourage all individuals with known cardiovascular disease, peripheral arterial disease, diabetes, or congestive heart failure to participate in a supervised exercise program.

**Our Mission**
We have built The Johns Hopkins Ciccarone Center for the Prevention of Heart Disease with the following goals in mind:

1. **Provide a center dedicated to clinical patient care and the global assessment of risk factors for cardiovascular disease, which enables patients to receive:**
   - the latest information on the prevention of atherosclerotic vascular disease,
   - comprehensive management of risk factors for cardiovascular disease, and
   - high-quality care that is integrated into the other health promotional resources of Johns Hopkins.

2. **Create a center at Johns Hopkins for the education of health care providers in the area of prevention of cardiovascular disease. Teaching by our physicians and nurse practitioner broadly targets Hopkins nurses, medical students, fellows, and physicians as well as the community at large.**

3. **Foster cardiovascular research, including both clinical trials and basic molecular studies.**

What is the Ciccarone Center?
A listing of the publications by the staff of The Johns Hopkins Ciccarone Center for the Prevention of Heart Disease, from October 2012 through September 2013


**Summary:** Unhealthy lifestyle habits are a major contributor to coronary artery disease (CAD). The purpose of the study was to investigate the associations of smoking, weight maintenance, physical activity, and Mediterranean-style diet with coronary calcium, cardiovascular events, and mortality. We discovered that, over the course of nearly 8 years, a combination of regular exercise, healthy diet, smoking avoidance, and weight maintenance contributed to lower coronary calcium incidence, slower calcium progression, and lower all-cause mortality.


**Summary:** Over the past 25 years, lipid-lowering therapies have been developed that are proven to not only lower cholesterol, but also to decrease adverse cardiovascular events and CVD mortality. This review highlights some key clinical trials encompassing several classes of lipid-lowering medications that have provided clinicians with an evidence-based framework for managing their patients’ cardiovascular risk.


**Summary:** This study reveals that the addition of coronary artery calcium to the Framingham risk score provides superior discrimination, especially in intermediate-risk individuals, compared with the addition of several computed tomography risk markers.


**Summary:** As part of an initiative that aims to prevent 1 million myocardial infarctions and strokes over the next 5 years, we present the simply organized “ABCDE” approach for guiding a consistent comprehensive approach to managing cardiovascular risk in daily clinical practice. We summarize recommendations related to each topic and reference landmark trials and data that support our approach.

**Summary:** Family history of coronary artery disease is associated with markers of subclinical atherosclerosis, and this relationship remains statistically significant after adjusting for traditional risk factors. Our data suggest these individuals should be considered strongly as candidates for assessment of subclinical CVD to further refine risk and treatment goals.


**Summary:** This study discovered that, compared with direct measurement, the Friedewald equation tends to underestimate low-density lipoprotein cholesterol (LDL-C) and, therefore, warrants additional evaluation in high-risk patients. Achieving non-high-density lipoprotein cholesterol (HDL-C) targets are important to reach in the secondary prevention setting.


**Summary:** This study concluded that progression of coronary artery calcium (CAC) is associated with an increased risk for future heart disease events, even after controlling for other potentially confounding factors.


**Summary:** Because appropriate use of statins in primary prevention remains a matter of debate, we reviewed several strategies for statin allocation, including strict “evidence-based” adherence to randomized controlled clinical trial entry criteria and more “personalized” risk assessments.


**Summary:** This study found that, after adjustment for multiple metabolic risk factors, adiposity, and measures of insulin resistance, there may be a link between nonalcoholic fatty liver disease and dyslipidemia.

**Summary:** Although fitness and obesity are independently associated with cardiometabolic risk, and their effects are additive, obesity is more strongly associated with this risk when fitness and obesity are discordant. These findings underscore the need for weight loss in obese patients and suggest an unmeasured benefit of fitness.


**Summary:** Despite some minor disagreements on the weight of recommendations in certain areas, CVD prevention experts across two continents agree on one thing: prevention works in halting the progression of atherosclerosis and decreasing disease burden over a lifetime.


**Summary:** In this review, we examine the effect of non-pharmacologic therapy — i.e., diet and lifestyle modification — on lipids as part of the secondary prevention strategy of cardiovascular disease in women.


**Summary:** Among individuals with obesity and insulin resistance syndromes, apolipoproteins did not provide prognostic information regarding CHD risk beyond that provided by non-HDL-C and HDL-C.


**Summary:** This comprehensive review article provides recommendations, based on current data, for a therapeutic approach with noninsulin, glucose-lowering agents for the prevention of cardiovascular events in patients with type 2 diabetes.


**Summary:** This study found that the addition of CAC scores contributed significantly in predicting mortality, in addition to traditional risk factors alone, among those with and without hypertension.


**Summary:** Available data suggest that in low-to-intermediate risk symptomatic patients, CAC scanning may serve as an appropriate gatekeeper to further testing with either coronary computed tomographic angiography, functional imaging, or invasive coronary angiography.


**Summary:** This study found that smokers with any CAC had significantly higher mortality than smokers without CAC; however, the absence of CAC might not be as useful a “negative risk factor” in active smokers, because this group has mortality rates similar to nonsmokers with mild-to-moderate atherosclerosis.

**Summary:** High uric acid levels were associated with increased triglycerides, high-density lipoprotein cholesterol, and hepatic steatosis, independent of metabolic syndrome and obesity, and with increased hsCRP independently of metabolic syndrome.


**Summary:** Findings from this study suggest that many patients with an elevated hsCRP level may not receive the benefits of statins if hsCRP is not incorporated into the NCEP screening strategy.


**Summary:** The value of CAC for predicting mortality extends to both elderly patients and those < 45 years old. Elderly persons with no CAC have a lower mortality rate than younger persons with high CAC.


**Summary:** Although further research is needed, carefully selected patients presenting to the emergency department with a normal electrocardiogram, normal cardiac biomarkers, and no CAC may be considered for early discharge without further testing.


**Summary:** We evaluated four large population-based cohort studies regarding the net reclassification index (NRI) among intermediate risk patients. We concluded that the coronary artery calcium score was the strongest marker for clinical risk prediction and is the most likely to influence future clinical outcomes.


**Summary:** We reviewed the strengths and limitations of LDL-C, non-HDL-C, apolipoprotein B, and advanced lipoprotein testing in cardiovascular risk prediction.


**Summary:** This comprehensive review goes over the evidence base for the upcoming National Cholesterol Education Program guidelines.


**Summary:** This article reviews the strengths and limitations of the various types of vegetarian diets and variations of them.

Summary: We present a state-of-the-art review of the use of blood-based biomarkers to refine cardiovascular risk prediction.


Summary: This chapter examines the evidence base for selective use of lipid-lowering agents in adults over the age of 65.


Summary: There is significant patient-level discordance between non-HDL-C and LDL-C percentiles at lower values of LDL-C and higher triglycerides. Current non-HDL-C cut-points for high-risk patients should be lowered to match percentiles of LDL-C cut-points. Relatively small absolute reductions in non-HDL-C cut-points result in substantial reclassification of patients to higher treatment categories with potential implications for risk assessment and treatment.


Summary: This article reviews the extensive evidence supporting the selective use of lipid-lowering therapy in intermediate to high-risk individuals.

31. Martin SS, Blaha MJ, Jones SR. Nonfasting lipids: there is the population and then there is the patient. JAMA Internal Medicine. 2013 May 27;173(10):936-7.

Summary: This article reviews the rationale for the measurements of lipids in the non-fasting state.


Summary: This study found that symptomatic women have a lower prevalence of obstructive coronary artery disease and are less likely to have mixed coronary plaque compared to symptomatic men. Future studies are needed to determine the prognostic implications of these findings.

Staff Spotlight: Chiadi E. Ndumele, MD, MHS

In July 2013, Chiadi E. Ndumele, MD, MHS, a faculty member in the Division of Cardiology and a PhD candidate in the Cardiovascular Epidemiology program at the Johns Hopkins Bloomberg School of Public Health, was selected as a recipient of a Robert Wood Johnson Foundation’s Amos Medical Faculty Development Program award. This outstanding career development award (only eight are given out nationwide each year) will fund salary and project support for a period of four years. The Harold Amos Medical Faculty Development Program, formerly known as the Minority Medical Faculty Development Program, was created to increase the number of faculty from historically disadvantaged backgrounds who can achieve senior rank in academic medicine and who will encourage and foster the development of succeeding classes of such physicians and dentists. Four-year postdoctoral research awards are offered to physicians who are committed to developing careers in academic medicine and to serving as role models for students and faculty of similar background.

“I am grateful to my outstanding research mentors and career advisers, including Drs. Joseph Coresh, Gary Gerstenblith, Roger Blumenthal and Wendy Post, for their wonderful guidance and support,” commented Dr. Ndumele.

**Summary:** Recent multicenter trials have reported that coronary CT angiography is safe, reduces time to diagnosis, facilitates discharge, and may lower overall cost compared with routine care. This study provides a 10-step approach for establishing a successful coronary CT angiography program in the emergency department.


**Summary:** Dense LDL phenotypes are associated with increased atherogeneity, and are commonly evaluated for the purposes of atherosclerosis research and cardiovascular risk discrimination. In this study we examined the ability of LDL subclasses, expressed as a ratio of dense-to-buoyant subclass (LLDR), to predict LDL density phenotype. Further research is needed to investigate the relationship between lipoprotein density and size, and whether LLDR provides more cardiovascular risk discrimination than LDL density phenotype.


**Summary:** In patients without baseline cognitive dysfunction, short-term data are most compatible with no adverse effect of statins on cognition, while long-term data appear to support a beneficial role in the prevention of dementia.


**Summary:** This editorial examines the extent to which measurements of vascular inflammation can improve cardiovascular risk prediction.


**Summary:** We examine the role of certain genetic polymorphisms in affecting the response to statin therapy.


**Summary:** We discuss the key components of various types of preventive cardiology centers that can be put together in academic and private practice settings.


**Summary:** This study looked at the predictors on non-calcified plaque in persons with mild coronary calcification.

Summary: We examined measures of inflammation and subclinical atherosclerosis in persons with successful cardiovascular aging.


Summary: Results from this study suggest that a higher resting heart rate is associated with an increased arterial stiffness independent of atrioventricular nodal blocker use and physical activity level, with a stronger association for a peripheral (carotid) compared with a central (aorta) artery.


Summary: Variation in thyroid hormone levels in the general population, even within the normal range, was associated with various changes in electrocardiograms.


Summary: This study concluded that, with the inclusion of cystatin C in the estimated glomerular filtration rate assessment, hypertension was an important predictor of chronic kidney disease progression in a multi-ethnic cohort with stage 3 of the disease.


Summary: Common genetic variation in platelet endothelial aggregation receptor-1 may be a determinant of platelet response and cardiovascular events in patients on aspirin alone or in combination with clopidogrel.

Staff Spotlight: Sherita Golden, MD

Highlights of the 2012-2013 academic year for Sherita Golden, MD, can be summed up in three words: selection, election, and recollection. In May, Dr. Golden, an associate professor of medicine at the Johns Hopkins University School of Medicine, was appointed as the Hugh P. McCormick Family Professor of Medicine in Endocrinology and Metabolism. The professorship, funded by a former executive of McCormick & Co., supports research efforts to find a cure for diabetes. In addition, Dr. Golden was elected to the American Society for Clinical Investigation, along with four other female physician-scientists from Johns Hopkins. In March, Dr. Golden delivered the James A. Pulliam Memorial Lecture during the 57th Annual Student Research Day at Meharry Medical College School of Graduate Studies and Research, Nashville, TN, entitled “Multiple Facets of A Diabetologist’s Career: A 20 Year Journey.” Also, Dr. Golden traveled to Sao Paulo, Brazil, to present the implementation model for the Johns Hopkins Inpatient Diabetes Management Program at an international inpatient diabetes management conference. She presented the Endocrine Society Scientific Statement on Health Disparities in Endocrine Disorders at the Society’s inaugural health disparities conference in Houston in June of 2012.

Summary: Genetic variation in the lipoprotein(a) locus, mediated by lipoprotein(a) levels, is associated with aortic valve calcification across multiple ethnic groups and with incident clinical aortic stenosis.


Summary: Although the G574R variant is associated with moderately elevated plant sterol levels, carriers of the 574R allele had modestly lower levels of carotid wall thickness compared with non-carriers.


Summary: Our findings suggest that the genetic underpinnings of mean lipoprotein diameter differ by race/ethnicity. As lipoprotein diameters are modifiable, this may lead new strategies to modify lipoprotein profiles during the reduction of insulin resistance that are sensitive to race/ethnicity.


Summary: This study concluded that cardiac CT angiography may serve as a reference for use in future epidemiology studies aiming to assess coronary atherosclerosis and cardiac anatomy in low-risk populations while minimizing radiation exposure.


Summary: This study tested the hypotheses that African ancestry and common genetic variants are associated with prolonged duration of cardiac repolarization, a central pathophysiological determinant of arrhythmia. However, no difference in duration of cardiac repolarization with global genetic indices of African-American ancestry was noted.


Summary: This large meta-analysis of lipid phenotypes with the use of a dense gene-centric approach identified multiple single nucleotide polymorphisms not previously described in established lipid genes and several previously unknown loci, suggesting that a focused genotyping approach can further increase the understanding of heritability of plasma lipids.

**Summary:** In the largest genome-wide association study of cardiac structure and function to date in African-Americans, researchers identified 4 genetic loci related to left ventricular mass, interventricular septal wall thickness, left ventricular internal diastolic diameter, and ejection fraction, which reached genome-wide significance.


**Summary:** Evaluating disparities in health care is an important aspect of understanding differences in disease risk. The purpose of this study is to describe the methodology for estimating such disparities, to provide improved disparity estimation in a large multi-ethnic cohort study.


**Summary:** QT is a risk factor for sudden cardiac death. This study used the Multi-Ethnic Study of Atherosclerosis to examine association of QT with NOS1AP variants in an ethnically diverse cohort.


**Summary:** Meta-analyses of European populations has successfully identified genetic variants in over 100 loci associated with lipid levels. This study seeks to expand our knowledge in other ethnicities, which remains limited.


**Summary:** These data suggest that, in order to reduce the risk for coronary artery disease in HIV-infected African-Americans, vitamin D levels should be closely monitored. These data also suggest that clinical trials should be conducted to examine whether vitamin D supplementations reduce the risk of CAD in this population.


**Summary:** This study found there was no significant difference between patients with nonstrict left bundle-branch block and non-left bundle-branch block. The greater observed LV dyssynchrony may explain why patients with strict left bundle-branch block have a better response to cardiac resynchronization therapy.

**Summary:** This study concluded that right bundle branch block patients have significantly greater scar size than left bundle branch block patients.


**Summary:** This study describes the diagnostic performance of electrocardiographic criteria based on the Selvester QRS scoring system, first in localizing myocardial scar and second in screening for any non-septal scar in patients with strictly defined left bundle branch block.


**Summary:** This study showed that coronary endothelial function does not change with repeated isometric handgrip stress in CAD patients or healthy subjects.


**Summary:** The findings from this study, which showed that the extent of myocardial scar is less in women than men, may have important implications for the future study of gender disparities in outcomes from implantable cardioverter-defibrillators and cardiac resynchronization therapy.


**Summary:** This study showed that, in aggregate, an injection of mesenchymal stem cells as a therapy for patients with ischemic cardiomyopathy favorably affected their functional capacity, quality of life, and ventricular remodeling.


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**Staff Spotlight: Elizabeth V. Ratchford, MD**

In addition to managing her many duties at Johns Hopkins, Elizabeth Ratchford, MD, spent much of the past year directing the development of the Johns Hopkins Center for Vascular Medicine, which provides clinical, research, and teaching collaborations, as well as vascular ultrasound laboratory services, to the Ciccarone Center and its patients. A recent joint venture between the centers was “Prevention of Cardiovascular Disease in Operational Firefighters after 40,” a pilot study to develop a cost-effective program for cardiovascular disease (CVD) risk assessment and risk reduction for firefighters. CVD accounts for 45% of deaths among on-duty firefighters, and early detection and treatment of CVD risk factors may prevent death and disability. Working with Dominique Ashen, PhD, CRNP, Dr. Ratchford focused on the detection of subclinical atherosclerosis (CVD without symptoms) and primary prevention of CVD (avoiding its initial occurrence) in firefighters through risk assessment and risk reduction, which are two of the cornerstones of the Johns Hopkins Ciccarone Center for the Prevention of Heart Disease. The study, funded by the National Fallen Firefighters Foundation, includes measurement of carotid intimal-medial thickness in the vascular laboratory, as well as a coronary artery calcium scan and blood tests. Firefighters then participated in a 6-month comprehensive lifestyle-modification program with Dr. Ashen to learn the keys to controlling CVD risk factors and the importance of a healthy diet, aerobic exercise, maintenance of a normal weight, and tobacco cessation. The initial results of the study were presented at the Society for Vascular Medicine 2013 Annual Meeting and Scientific Sessions held in June 2013.

**Summary:** This study concludes that beta receptor gene variants significantly influence inotropic and chronotropic responses to beta-agonist exposure in patients on beta blocker therapy.


**Summary:** This study quantitatively examined the association of patient- and trial-specific factors with participation in cardiovascular randomized clinical trials.


**Summary:** Findings from this study support targeted interventions in the transition of acute myocardial infarction care to promote affordable statin prescription at discharge, medication persistence and adherence, and cardiac rehabilitation participation.


**Summary:** This study shows that the consistent lack of association of vitamin D and parathyroid hormone with carotid intima-media thickness or plaque is found in the Multi-Ethnic Study of Atherosclerosis.


**Summary:** These findings support a mechanism of upstream pulmonary causes of under-filling of the left ventricle in COPD and in patients with emphysema on computed tomography.


**Summary:** Results of this study show that altering the residential environment so that healthier behaviors and lifestyles can be easily chosen may be a precondition for sustaining existing healthy behaviors and for adopting new healthy behaviors.


**Summary:** Pulmonary hyperinflation, as measured by residual lung volume or residual lung volume to total lung capacity ratio, is associated with greater left ventricular mass, an important predictor of heart failure and cardiovascular mortality.


**Summary:** This review summarizes evidence of the relationship between vitamin D, calcium supplements, and cardiovascular disease, and comments on the recent Institute of Medicine recommendations regarding use of these nutrients.


78. Bays HE, Toth PP, Kris-Etherton PM, Abate N, Aronne LJ, Brown WV, Gonzalez-Campoy JM, Jones SR, Kumar R, La Forge R, Samuel VT. Obesity, adiposity, and dyslipidemia: A consensus statement from the National Lipid Association. Journal of Clinical Lipidology. 2013 Jul-Aug;7(4):304-83. Summary: The goal of this statement is to better define the effect of adiposity on lipoproteins, how the pathos of excessive body fat (adiposopathy) contributes to dyslipidemia, and how therapies such as appropriate nutrition, increased physical activity, weight-management drugs, and bariatric surgery might be expected to impact dyslipidemia.


81. Joshi PH, Rinehart S, Vazquez G, Qian Z, Sharma A, Anderson H, Murrieta L, Flockhart N, Karmpaliotis D, Kalynych A, Asztalos B, Elashoff M, Blanchard J, Rosenberg S, Brown C, Voros S. A peripheral blood gene expression score is associated with plaque volume and phenotype by intravascular ultrasound with radiofrequency backscatter analysis: Results from the ATLANTA Study. Cardiovascular Diagnosis and Therapy. 2013 Mar; 3(1):5-14. Summary: This study found that plaque characteristics that are thought to be associated with higher risk (ie, “vulnerable plaques”) were associated with higher gene expression scores, probably due to the inflammatory nature of the genes included in the score.


**Summary:** Findings from this study showed that elevated hemoglobin A1c is associated with measures of increased arterial stiffness, even after accounting for arterial wall thickness, which is consistent with the hypothesis that hyperglycemia contributes to arterial stiffness beyond its effects on atherosis and suggests that hyperglycemia is associated with altered material within the arterial wall.


**Summary:** Researchers for this study conclude that bedtime cortisol showed the strongest correlation with total cortisol area under the curve, suggesting it may be a marker of daily cortisol exposure.


**Summary:** This paper outlines eight aspects of inpatient glucose management (four as system-based issues and four as patient-based issues) in which randomized clinical trials are needed, and urges further progress in the science of inpatient diabetes management.


**Summary:** This study found that diabetic patients with depression are more likely to have cardiovascular events, and different factors can determine this high association.

**Summary:** Researchers showed that higher body mass index and waistline circumference are associated with neuroendocrine dysregulation, which is present in a large population sample, and only partially explained by other covariates.


**Summary:** This study found that a small but significant cross-sectional association was observed between depression and insulin resistance, despite heterogeneity between studies.


**Summary:** Diabetes is considered a risk equivalent for coronary heart disease (CHD). The use of statins for primary and secondary prevention in patients with diabetes is well established and supported by robust data from randomized, controlled trials and national guidelines. It is reasonable to match the intensity of statin therapy with patients’ baseline CVD risk.

Summary: This study examined the strengths and limitation of various cardiovascular risk prediction algorithms.


Summary: Researchers examined a study linking statins to fatigue and found that it lacked several elements expected of a high-quality randomized controlled trial and suffered from multiple potential sources of bias.


Summary: Erectile dysfunction is a marker of increased cardiovascular risk in younger men and in men with diabetes. Lifestyle improvements and treatment of dyslipidemia and hypertension are very important to lower cardiovascular risk.


Summary: Endothelial dysfunction appears to be the physiologic link between erectile dysfunction and cardiovascular disease. Appropriate control of risk factors can lower the risk of both conditions.


Summary: This longitudinal cohort analysis suggests that brief asymptomatic runs of exercise-induced non-sustained ventricular tachycardia, in the absence of clinical heart disease, are not uncommon in men, older adults, and those with hypertension, but are not associated with increased mortality after adjusting for baseline risk factors. These findings do not necessarily apply to patients with known structural heart disease.


113. Aneni E, Roberson LL, Shaharyar S, Blaha MJ, Agatston A, Blumenthal RS, Meneghelo RS, Conceiçao RD, Nasir K, Santos RD. Delayed heart rate recovery is strongly associated with early and late stage prehypertension during exercise stress testing. *American Journal of Hypertension*. Forthcoming 2013. **Summary:** Among asymptomatic patients undergoing stress testing delayed HRR was independently associated with early and late stages of prehypertension. Further studies are needed to determine the usefulness of HRR measure in the prevention and management of hypertension.


116. Martin SS, Blaha MJ, Elshazly MB, Toth PP, Kwiterovich PO, Blumenthal RS, Jones SR. Comparison of a novel method vs the Friedewald equation for estimating low-density lipoprotein cholesterol levels from the standard lipid profile. *Journal of the American Medical Association*. 2013;310(19):2061-2068. **Summary:** This study sought to develop a new method for calculating low-density lipoprotein cholesterol, the so-called “bad” form of blood fat that can lead to hardening of the arteries, that would be more accurate than the standard profile for measuring a person’s risk for heart attack and stroke."
A listing of the late-breaking clinical research data presented at major cardiology meetings by the faculty and fellows of the Johns Hopkins Ciccarone Center for the Prevention of Heart Disease, during the course of 2013.

Presentations at the 2013 Scientific Sessions of the American Heart Association (AHA), November 16-20; Dallas, TX.


7. Al-Hijji M, Martin SS, Blaha MJ, Joshi PH, Blumenthal RS, Toth PP, Jones SR. Lipid phenotypes at the extremes of HDL cholesterol: The Very Large Database of Lipids Study 9 (VLDL-9).

8. Toth PP, Massaro JM, Jones SR, Griswold M, Lirette S, Martin SS, Joshi PH, and D'Agostino RA. High-density lipoprotein cholesterol subfractions and risk for cardiovascular events in the Framingham Offspring and Jackson heart studies: A meta-analysis.


10. Toth PP, Hamon S, Jones SR, Joshi PH, Martin SS, Pordy R, Hanotin C. Alirocumab, a proprotein convertase Subtilisin/Kexin Type 9 (PCSK9) monoclonal antibody reduces cholesterol concentrations of serum remnant lipoprotein fractions, very low-density lipoproteins and triglycerides.


29. Basra SS, Nambi V, Nasir K, Martin SS, Vogel RA, Roberts AJ, Ballantyne CM, Virani SS. Do retired National Football League linemen have a higher prevalence and severity of subclinical atherosclerosis compared with non-linemen?


Presentations at the 2013 Scientific Sessions of the American College of Cardiology (ACC), March 9-11, 2013; San Francisco, CA.


3. Abid T. Incidence and clinical characteristics of Takotsubo’s Cardiomyopathy among patients with aneurysmal subarachnoid hemorrhage: Retrospective analysis of 2,276 patients.

4. Hasan RK, Nassery N, Bennett N, Miller J. Radial versus femoral access for coronary angiography and/or PCI: A systematic review and meta-analysis.


13. Michos ED, Martin SS, Jones SR. 25-hydroxyvitamin D levels and lipoprotein cholesterol subfractions: The Very Large Database of Lipids-Vitamin D Study (VLDL-3).


**Presentations at the American Heart Association’s Quality of Care and Outcomes Research in Cardiovascular Disease and Stroke 2013 Scientific Sessions, May 15-17, 2013; Baltimore, MD.**


**Presentations at the 2013 Scientific Sessions of the Society for Vascular Medicine, June 13-15, 2013; Cleveland, OH.**

1. Ratchford EV, Carson KA, Ashen MD. Cardiovascular risk assessment in operational firefighters.

**Presentations at the European Society of Cardiology (ESC) 2013 Scientific Sessions, Aug 31 - September 4, 2013; Amsterdam**


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**Sister to Sister Featured in ‘Million Hearts’**

The efforts of Sister to Sister to promote women’s heart disease prevention were prominently featured in the U.S. government’s new “Million Hearts: Building Strong Partnerships for Progress Report for 2012.” Million Hearts is a national initiative developed by the U.S. Department of Health and Human Services and the Centers for Disease Control to prevent 1 million heart attacks and strokes by 2017.

According to officials from Sister to Sister, a health advocacy organization founded in 1999 by Irene Pollin, a leading authority on chronic illness and a major supporter of the Ciccarone Center, the government report contains numerous references to the group and “Smart for the Heart,” its free online cardiac risk assessment and personal wellness program designed to help women identify and manage their risk for heart disease.

In fact, the report concludes with the admission that data collected from “Smart for the Heart” is evaluated by researchers at the Pollin Cardiovascular Wellness Program at Brigham and Women’s Hospital, and has been published by the *Journal of Women’s Health, Journal of the American College of Cardiology, AHA* and the *Health Journal.*

Other highlights for Sister to Sister over the past year include:

- Increasing the offerings of international materials, including the recent release of “Signs of a Heart Attack for Women,” an infographic produced in nine languages. The infographic also was featured at the 2013 National Conference on Health Care, Marketing, and Medicine.

- Developing several new partnerships, including an alliance with the Black Women’s Heath Imperative and other health related organizations.

As the nation’s leading provider of free heart-health evaluations, Sister to Sister has performed 100,000 cardiovascular screenings with immediate results and counseling sessions to women of all ages, ethnicities and socio-economic backgrounds. Sister to Sister works together with Johns Hopkins Medicine, Brigham and Women’s Hospital, Cedars-Sinai Medical Center, and the Hadassah Medical Center in Israel to provide health education worldwide. For more information, visit [www.sistertosister.org](http://www.sistertosister.org).
The Ciccarone Center for the Prevention of Heart Disease was founded in 1989 in memory of Henry A. “Chic” Ciccarone, a legendary athlete and lacrosse coach at Johns Hopkins who died at age 50 after his third heart attack.

But he was more than that. In the way he led his teams and his life, Chic embodied all that Johns Hopkins itself represents: dedication, excellence, leadership.

With intense, energetic competitiveness, pride, and engaging, infectious humor, Chic compiled an extraordinary record of achievements in athletics. As a three-time All-American midfielder and team captain, he won nearly every major Hopkins lacrosse award and was named to the All-Time Hopkins lacrosse team upon his graduation in 1962.

In 1989, the friends and former players of Coach Ciccarone began raising funds for the development of a comprehensive program geared toward the prevention of coronary heart disease events. The Ciccarone Center sought to unite the proud traditions of Hopkins lacrosse and Hopkins Medicine.

We all have a stake in winning the battle against heart disease. By joining the team at the Ciccarone Center, by sharing our enthusiasm and dedication to it, your support of coronary disease prevention will protect your life and the lives of those you love.

Coach Henry Ciccarone (center), with his sons, Henry Jr. (left) and Brent.
How to Contact the Center

We see patients Monday through Friday at the Johns Hopkins Ciccarone Center at Green Spring Station and on Mondays at the Johns Hopkins Outpatient Center. Dr. Michos also sees patients at Odenton. At each location we can perform exercise stress tests, treadmill stress echo tests, echo Doppler tests, EKG’s, Holter monitors and refer patients for cardiac CT scans. Vascular ultrasound testing and consultations are available in White Marsh, Columbia, Odenton, and at Green Spring Station.

Appointments at the Johns Hopkins Ciccarone Center at Green Spring Station, 10755 Falls Road, Pavilion I Suite 360, Lutherville, MD 21093 location can be scheduled at 443-997-0275. (Drs. Blumenthal, Post, Ashen, Ratchford, Billups and Blaha)

Appointments at the Johns Hopkins Outpatient Center, 601 North Caroline Street, Baltimore, Maryland 21287, can be scheduled at 443-997-0270. (Drs. Jones, Ndumele, Blumenthal, and Martin)

Appointments at the Johns Hopkins Cardiology Center at Odenton, 1132 Annapolis Road, Suite 104, Odenton, MD 21113, can be scheduled at 410-874-1520. (Drs. Michos and Ratchford)

Appointments for Vascular Medicine consultations or vascular ultrasound testing can also be scheduled through Dr. Ratchford's office at 443-997-0275.

Support the Prevention of Heart Disease

Heart disease is America’s #1 killer – more than cancer and accidents combined. Our goal at the Ciccarone Center is to stop heart disease before it develops, through an aggressive program of risk assessment and comprehensive lifestyle and medical management.

Like all pioneering medical programs, however, we are in constant pursuit of funding to accelerate our progress. We depend on the support of generous donors to thrive.

The Johns Hopkins Ciccarone Center for the Prevention of Heart Disease has just completed its 22nd year of service and is going strong. When you give to the Ciccarone Center, you’re ensuring that, if you or a loved one is at risk for heart disease or stroke, you’ll have a program to help prevent it. Or if you already have heart disease, you’ll maximize your opportunity for an active and enjoyable life.

You can help support this program by contributing to the future of heart disease research, education, and patient care. Make a tax-deductible donation to the Ciccarone Center today and help save lives tomorrow.

Gifts may be made in the form of cash, check, credit card, securities, real estate or personal property. For more information, please call the development office at 443-287-7384.