

CURRICULUM VITAE

David S. Marks MD

**Vice Chair, Professor
Department of Medicine
Division of Cardiology**

OFFICE ADDRESS:

The Hub for Collaborative Medicine
8701 Watertown Plank Road
Milwaukee, WI 53226

EDUCATION:

1984 - 1985 Teaching Assistant, Human Biology Core, Stanford University, Stanford
1985 - Present AB Stanford University, Stanford, CA (with distinction)
1989 - Present MD University of California, San Francisco, CA
2000 - Present Faculty Development Training Course, Medical College of Wisconsin, Milwaukee, WI
2004 - Present MBA Kellogg School of Management, Northwestern University, Chicago, IL

POSTGRADUATE TRAINING AND FELLOWSHIP APPOINTMENTS:

1989 - 1992 Assistant in Medicine, Brigham and Woman's Hospital, Boston, MA
1989 - 1990 Intern and Resident in Medicine, Brigham and Woman's Hospital, Boston, MA
1989 - 1995 Clinical and Research Fellow in Medicine and Cardiology, Harvard Medical School, Boston, MA
1994 - 1995 Interventional Cardiology Fellowship, Brigham and Women's Hospital, Boston, MA
1995 - 1996 Resident in Internal Medicine, Mayo Clinic, Rochester, MN
1995 - 1996 Advanced Interventional Cardiology Fellowship, Mayo Clinic, Rochester, MN
2000 - Present Advanced Peripheral Vascular Fellowship, Linder Center for Research and Education/ Christ Hospital, Cincinnati, OH

FACULTY APPOINTMENTS:

1984 - 1985 Teaching Assistant, Human Biology Core, Stanford University, Stanford, CA
1996 - 2000 Assistant Professor of Medicine, Medical College of Georgia, Augusta, GA
2000 Associate Professor of Medicine, Medical College of Georgia, Augusta, GA
2000 - 2007 Associate Professor of Medicine, Medical College of Wisconsin
2007 - 2011 Associate Professor of Medicine, Cardiovascular Medicine and Radiology, Medical College of Wisconsin, Milwaukee, WI
2011 - Present Professor of Medicine, Cardiovascular Medicine and Radiology, Medical College of Wisconsin, Milwaukee, WI

ADMINISTRATIVE APPOINTMENTS:

2006 - 2008 Director of Special Projects, Medical College Physicians, Medical College of Wisconsin, Milwaukee, WI
2008 - Present Vice Chair Clinical Programs, Department of Medicine, Medical College of Wisconsin, Milwaukee, WI
2018 - Present Department of Medicine, Interim Division Chief of Cardiovascular Medicine, Medical College of Wisconsin, Milwaukee, WI

HOSPITAL AND CLINICAL ADMINISTRATIVE APPOINTMENTS:

1996 - 2000 Physician, Augusta VA Medical Center, Augusta, GA
1996 - 2000 Physician, Medical College of Georgia Hospitals and Clinics, Augusta, GA
1996 - 2000 Director, Cardiac Catheterization Laboratories, Medical College of Georgia, Augusta, GA

2000 - Present Physician and Director, Cardiac Catheterization Laboratories, Froedtert Memorial Lutheran Hospital, Milwaukee, WI
 2000 - Present Physician, Clement J. Zablocki Veterans Affairs Medical Center
 2011 - Present Senior Medical Director, Inpatient Service, Froedtert Hospital, Milwaukee, WI
 Milwaukee, WI

RESEARCH ADMINISTRATIVE APPOINTMENTS:

2001 - 2015 Director, Clinical Trials, Medical College of, Division of Cardiology
 2006 - 2013 Member, Board of Directors (Secretary 2009 - 2013), INRange Systems, Inc., Altoona, PA
 2006 - 2010 Chief Medical Officer, Viacor, Inc., Wilmington, MA

HOSPITAL STAFF PRIVILEGES:

1996 - 2000 Medical College of Georgia Health Hospital, Augusta, GA
 1996 - 2000 Norwood Veterans Administration Hospital, Augusta, GA
 2000 - Present Froedtert Hospital, Milwaukee, WI
 2000 - Present Zablocki Veterans Administration Hospital, Milwaukee, WI
 2004 - 2006 Community Memorial Hospital, Menomonee Falls, WI
 2010 - Present St. Joseph's Hospital, West Bend, WI

SPECIALTY BOARDS AND CERTIFICATION:

<u>Board Certified</u>	<u>Issue Date</u>	<u>Expiration</u>
American Board of Internal Medicine	09/16/1992	12/31/2022
Subspecialty Board of Cardiovascular Disease	11/31/1999	12/31/2025
11/10/1995 12/31/2015 Subspecialty Certification in Interventional Cardiology		None
Meeting maintenance of certification requirements.		None

<u>Licensure</u>	<u>Number</u>	<u>Issue Date</u>	<u>Expiration</u>
Massachusetts	#74728	1989	None
Minnesota	#38247	09/16/1995	None
Georgia	#0118-2	1999	None
Wisconsin #	42189-020	06/06/2000	None
Ohio	#35-07-8175-M	06/29/2000	None
DEA	#BM2950992	12/03/2015	01/3120

AWARDS AND HONORS:

1984 American Heart Association Summer Research Award
 2009 Medical College of Wisconsin Outstanding Faculty Service Recognition
 2017 Faculty Vitality Award , Medical College of Wisconsin
 2017 Lee Biblo, MD Excellence in Professionalism Award, Medical College Physicians, Medical College of Wisconsin

MEMBERSHIPS IN HONORARY AND PROFESSIONAL SOCIETIES:

1995 - Present American College of Cardiology (Fellow)
 2001 - Present Society for Cardiac Angiography & Interventions (Fellow)
 2008 - Present Society of Cardiovascular Computed Tomography (Physician/Scientist Member)
 2010 - Present American College of Physicians (Fellow)
 2016 - Present Cardiovascular Center, Medical College of Wisconsin (Primary member)

EDITORSHIPS/EDITORIAL BOARDS/JOURNAL REVIEWS:

Ad-Hoc Reviewer

1998 - Present Abstract referee, Journal of the American College of Cardiology

1999 - 2001 Manuscript review, American Heart Journal

2001 - 2006 Manuscript review, American Journal of Physiology

2003 - 2006 Abstract referee, American Heart Association Annual Scientific Meeting

LOCAL/REGIONAL APPOINTED LEADERSHIP AND COMMITTEE POSITIONS:

2000 - 2001 Medical Director, Wisconsin Society of Cath Lab Professionals

NATIONAL ELECTED/APPOINTED LEADERSHIP AND COMMITTEE POSITIONS:

2000 - 2002 Chairman, Cardiology Advisor Board, Novation Corporation

2005 - Present Member, Cardiovascular Council Steering Committee, University Health Systems/Vizient

RESEARCH GRANTS/AWARDS/CONTRACTS/PROJECTS:**Active****Peer Review**

Title:	RESPECT. IDE#: G990318. Randomized Evaluation of Recurrent Stroke comparing PFO Closure to Established Current Standard of Care Treatment
Source:	AGA, Inc. (ClinicalTrials.gov Identifier: NCT00465270)
Role & Effort:	Principal investigator
Dates:	2003 - Present
Title:	“PFO ACCESS Registry: Patent Foramen Ovale Closure with the Amplatzer PFO Occluder in Patients with recurrent Cryptogenic Stroke due to Presumed Paradoxical Embolism through a Patent Foramen Ovale who have Failed Conventional Drug therapy.” (ClinicalTrials.gov Identifier: NCT00583401)
Source:	AGA Medical, LLC
Role & Effort:	Sub-Investigator
Dates:	2007 - Present
Title:	“Interagency Registry of Mechanical Assisted Circulatory Support.” (INTERMACS) (ClinicalTrials.gov Identifier: NCT00119834)
Source:	NHLBI
Role & Effort:	Sub-Investigator
Dates:	2011 - Present
Title:	“GORE HELEX™ Septal Occluder / GORE® Septal Occluder and Antiplatelet Medical Management for Reduction of Recurrent Stroke or Imaging- Confirmed TIA in Patients with Patent Foramen Ovale (PFO). Study Protocol Number: HLX 06-03. (REDUCE)”. (ClinicalTrials.gov

Source:	Identifier: NCT00738894)
Role & Effort:	W.L.Gore & Associates, Inc.
Dates:	Principal-Investigator 2012 - Present
Title:	“Samurai Clinical Study ImageReady™ MR Conditional Pacing System.” (SAMURAI) (ClinicalTrials.gov Identifier: NCT01781078)
Source:	Boston Scientific
Role & Effort:	Sub-Investigator
Dates:	2013 - Present
Title:	AACVPR Registry. The American Association of Cardiovascular and Pulmonary Rehabilitation (AACVPR) Outpatient Cardiac Rehabilitation registry.
Source:	None
Role & Effort:	Sub-Investigator
Dates:	2013 - Present
Title:	Measurement of NonInvasive Blood Pressure in Neonates Through Adults and Special Populations (MISSION) (ClinicalTrials.gov Identifier: NCT02125331)
Source:	GE Healthcare
Role & Effort:	Principal Investigator
PI:	
Dates:	2014 - Present
Title:	A Phase II, Randomized, Double-Blind, Multicenter, Multinational, Placebo- Controlled, Parallel-Groups Study to Evaluate the Safety and Efficacy of Intramuscular Injections of Allogeneic PLX-PAD Cells for the Treatment of Subjects with Intermittent Claudication (IC). PLX-PAD 1204-01.” (ClinicalTrials.gov Identifier: NCT01679990)
Source:	Pluristem Ltd
Role & Effort:	Sub-Investigator
Dates:	2015 - Present
Title:	Targeted, Highly Sensitive, Non- Invasive Cardiac Transplant Rejection Monitoring.” (ClinicalTrials.gov Identifier: NCT 02109575)
Source:	NHLBI
Role & Effort:	Sub-Investigator
Dates:	2015 - Present
Title:	Medtronic AdaptResponse Study.” (ClinicalTrials.gov Identifier: NCT02205359)

Source: Medtronic, Inc.
Role & Effort: Sub-Investigator
Dates: 2015 - Present

Title: "A Phase IIB Randomized Double-Blind, Placebo Controlled - Study to Evaluate the Safety and Efficacy of JVS-100 Administered by Direct Intramuscular Injection as adjunct to revascularization of infrapopliteal lesions in subjects with advanced Peripheral Artery Disease (PAD) and tissue loss (ulceration and/or gangrene)." STOP-PAD. JTCS-007." (ClinicalTrials.gov Identifier: NCT02544204)

Source: Juventas
Role & Effort: Sub-Investigator
Dates: 2016 - Present

Title: A Phase 2/3, Randomized, Double-Blind, Placebo-Controlled Study to Evaluate the Effect of GS 6615 on Exercise Capacity in Subjects with Symptomatic Hypertrophic Cardiomyopathy. GS-US-361-1157." (ClinicalTrials.gov Identifier: NCT02291237)

Source: Gilead Sciences, Inc.
Role & Effort: Sub-Investigator
Dates: 2016 - Present

Title: LAAO Registry. American College of Cardiology Foundation Left Atrial Appendage Occlusion Registry.

Source: None
Role & Effort: Principal-Investigator
Dates: 2016 - Present

**Prior
Peer Review**

Title: Treat angina with Aggrastat and Determine the cost of therapy with invasive or conservative strategy (TIMI 18)

Source: Merck and Company
Role & Effort: Principal investigator
Dates: 1998 - 2000

Title: Prevention of restenosis by Tranilast and its Outcomes (PRESTO): A phase III double-blind, placebo controlled trial of three doses of Tranilast

Source: Bristol-Myers Squibb and Sanofi Research
Role & Effort: Principal investigator

Dates: 1999 - 2000
 Title: (The OPERA Trial): "Omapatrilat in persons with enhanced risk of atherosclerotic events."
 Source: Bristol-Myers Squibb
 Role & Effort: Principal investigator
 Dates: 2000 - 2001

Title: "Multi-center InSync™ Randomized Clinical Evaluation."
 Source: Medtronic
 Role & Effort: Sub-investigator
 Dates: 2000 - 2001

Title: "InSync?III / Attain? OTW Trial."
 Source: Medtronic, Inc.
 Role & Effort: Sub-investigator
 Dates: 2001 - 2003

Title: (REPLACE-2) Randomized Evaluation in PCI Linking Angiomax to Reduced Clinical Events
 Source: The Medicines Co.
 Role & Effort: Principal investigator
 Dates: 2001 - 2003

Title: (A-HeFT): The African American Heart Failure Trial.
 Source: Nitromed, Inc., and The Association of Black Cardiologists, Inc (ABC)
 Role & Effort: Sub-investigator
 Dates: 2001 - 2004

Title: A Double-Blind, Randomized, Placebo-Controlled Study to Evaluate Pharmacokinetics and Pharmacodynamics of a 6 Hour or 24 Hour Levosimendan Infusion in Subjects with New York Heart Association Class III/IV Congestive Heart Failure.
 Source: Abbott Laboratories
 Role & Effort: Sub investigator
 Dates: 2002 - 2003

Title: Oasis-5: An International, Randomized, Double- Blind Study Evaluating the Efficacy and Safety of Fondaparinux versus Enoxaparin in the Acute Treatment of Unstable Angina / Non ST-Segment Elevation MI Acute Coronary Syndromes.
 Source: Sanofi Synthelabo
 Role & Effort: Sub-investigator
 Dates: 2003 - 2005

Title: PERISCOPE: A Double-Blind,

Randomized Comparator-Controlled Study in Subjects with Type II Diabetes Mellitus Comparing the Effects of Pioglitazone HVL versus Glimepiride on the Rate of Progression of Atherosclerotic Disease as Measured by Intravascular Ultrasound.

Source: Takeda Pharmaceutical North America, Inc.
Role & Effort: Sub-investigator
Dates: 2003 - 2005

Title: LUNAR: A 12-week, Randomized, Open-Label, 3-Arm, Parallel Group, Multicenter, Phase IIIb Study Comparing the Efficacy and Safety of Rosuvastatin 20 mg and 40 mg with that of Atorvastatin 80 mg in Subjects with Acute Coronary Syndromes.

Source: AstraZeneca
Role & Effort: Sub-investigator
Dates: 2004 - 2005

Title: "Clinical Applicability, Correlation, and Modeling of Cardiac CT".

Source: GEHC, Investigator Initiated Trial
Role & Effort: Principal investigator
Dates: 2004 - 2016

Title: STEEPLE: An International Phase 2-3, Stratified, Randomized, Open-label, Parallel-group Clinical Trial to Evaluate the Safety and Efficacy of a Single Intravenous Bolus of Enoxaparin Versus Intravenous Unfractionated Heparin in Patients Undergoing Non-emergent Percutaneous Coronary Intervention.

Source: Stanofi-Aventis
Role & Effort: Principal investigator
Dates: 2004 - 2005

Title: SEPIA-PCI: A multinational, randomized, double-blind, double-dummy, exploratory, parallel-group, dose-ranging phase II Study to Evaluate the Pharmacodynamics, the safety and tolerability, and the pharmacokinetics of several Intravenous regimens of the factor Xa inhibitor otamixaban (XRP0673), in comparison to intravenous unfractionated heparin, in subjects undergoing non-urgent Percutaneous Coronary Intervention.

Source: Sanofi-Aventis
Role & Effort: Principal Investigator
Dates: 2004 - 2006

Title: APEX-AMI: (Assessment of PEXelizumab in Acute Myocardial Infarction). A Multicenter, Randomized, Double-Blind, Parallel-Group, Placebo-Controlled Study of Pexelizumab in Patients with Acute Myocardial Infarction Undergoing Primary Percutaneous Coronary Intervention.

Source: Alexion Clinical Research Studies
Role & Effort: Sub-investigator
Dates: 2004 - 2005

Title: PREMIUM: A Randomized Blinded Trial to Evaluate the Efficacy of Percutaneous Closure of Patent Foramen Ovale in Severe Intractable Migraine

Source: AGA, Inc. (ClinicalTrials.gov Identifier: NCT00355056)

Role & Effort: Principal Investigator
Dates: 2007 - 2015

Title: IMPEDE-HF: A Prospective, Non-randomized, Longitudinal Study to Determine if Thoracic Impedance When Measured by the Optivol® Algorithm Provides Diagnostic Predictive Value in Management of Congestive Heart Failure.

Source: Medtronic
Role & Effort: Sub-investigator
Dates: 2007 - 2011

Title: TAMARIS: A Randomized, Double-blind, Placebo-controlled Parallel Group Study of the Efficacy and Safety of 4 administrations of XRP0038/NV1FGF 4mg at 2 Week Intervals on Amputation or Any Death in Critical Limb Ischemia Patients With Skin Lesions. (ClinicalTrials.gov Identifier: NCT00566657)

Source: Sanofi Aventis
Role & Effort: Sub-investigator
Dates: 2008 - 2012

Title: DETECT AC-052-510: A two-stage prospective observational cohort study in scleroderma patients to evaluate screening tests and the incidence of pulmonary arterial hypertension and pulmonary hypertension – Early, simple and reliable DETECTION of PAH in SSc. (ClinicalTrials.gov Identifier: NCT00706082)

Source: Actelion Pharmaceuticals Ltd.
Role & Effort: Sub-Investigator
Dates: 2008 - 2012

Title: NIH, "A novel cardiovascular stent for the intrinsic reduction of restenosis and thrombus formation," Small Business Technology Transfer (STTR) Award - R41
 Source: Vascular Prolifix, LLC
 Role & Effort: Sub-Investigator
 Dates: 2008 - 2009
 Direct Funds: \$99,983

Title: ARISTOTLE: A Phase 3, Active (Warfarin) Controlled, Randomized, Double Blind, Parallel Arm Study to Evaluate Efficacy and Safety of Apixaban in Preventing Stroke and Systemic Embolism in Subject with Nonvalvular Atrial Fibrillation. (ClinicalTrials.gov Identifier: NCT00412984)
 Source: Bristol-Myers Squibb
 Role & Effort: Sub-investigator
 Dates: 2008 - 2011

Title: A multicenter, Randomized, Double-Blind, Placebo-Controlled Study to Evaluate the Safety and Efficacy of SCH 530348 in addition to Standard of Care in Subjects With Acute Coronary Syndrome: Thrombin Receptor Antagonist for Clinical Event Reduction in Acute Coronary Syndrome (TRACER) (ClinicalTrials.gov Identifier: NCT00527943)
 Source: Schering-Plough Research Institute
 Role & Effort: Sub-Investigator
 Dates: 2009 - 2012

Title: Clinical and Translational Science Institute of Southeastern Wisconsin, "Computational Cardiology: Translating theoretical and subject-specific computational fluid dynamics results into a specialized stent for coronary artery bifurcation lesions"
 Source: Translational Opportunity Grant of the Pilot and Collaborative Clinical and Translational Research Grants program
 Role & Effort: Principal Investigator
 Dates: 2009 - 2010
 Direct Funds: \$45,000

Title: A Placebo-Controlled , Double-Blind, Randomized, Multi-Center Study to Assess the Effects of Dronedarone 400 mg BID for 12 weeks on Atrial Fibrillation Burden in Subjects with

Permanent Pacemakers.
DRONE_L_04316. (HESTIA)
(ClinicalTrials.gov Identifier:
NCT01135017)
Source: Sanofi-Aventis U.S. Inc.
Role & Effort: Sub-Investigator
Dates: 2010 - 2012

Title: A Placebo-Controlled, Double-Blind,
Randomized, Multi-center Study to
Assess the Effects of Dronedarone 400
mg BID on Cardiac Geometry and
Function in Patients With Atrial
Fibrillation and Left Atrial Enlargement.
(ODY SSEUS) (ClinicalTrials.gov
Identifier: NCT01135017)
Source: Sanofi-Aventis U.S. Inc.
Role & Effort: Sub-Investigator
Dates: 2010 - 2012

Title: A multicenter, randomized, double-
blind, placebo-controlled, parallel group
study to evaluate the efficacy, safety, and
tolerability of ixmyelocel-T in subjects
with critical limb ischemia and no
options for revascularization
[PROTOCOL NUMBER: 55-1009-1].
REVIVE-CLI. (ClinicalTrials.gov
Identifier: NCT01483898)
Source: Aastrom Biosciences, Inc.
Role & Effort: Sub-Investigator
Dates: 2012 - 2013

Title: A randomized, double-blinded, placebo-
controlled, phase IIa dose-ranging study
to assess the safety, pharmacokinetics,
and tolerability of multiple doses of
sodium nitrite in diabetic patients with
peripheral arterial disease (PAD) –
SONIC TheraVasc-TV1001-002.
(ClinicalTrials.gov Identifier:
NCT01401517)
Source: Theravasc, Inc.
Role & Effort: Sub-Investigator
Dates: 2012 - 2013

Title: “Determining the Risks of Magnetic
Resonance Imaging in the Presence of
Pacemakers and Implantable
Cardioverter Defibrillators.”
(MagnaSafe Registry)
(ClinicalTrials.gov Identifier:
NCT00907361)
Source: Scripps Health
Role & Effort: Sub-Investigator
Dates: 2012 - 2014

Title:	CARTO® 3 System and Real-Time Intracardiac Ultrasound for Ablation of Drug Refractory Recurrent Symptomatic Paroxysmal AF: Acute Procedural Outcomes Study. (IUIAF) (ClinicalTrials.gov Identifier: NCT01716663)
Source:	Biosense Webster, Inc.
Role & Effort:	Sub-Investigator
Dates:	2012 - 2013
Title:	Amplatzer™ Cardiac Plug (ACP) Clinical Investigational Plan. (ClinicalTrials.gov Identifier: NCT01118299)
Source:	St. Jude Medical.
Role & Effort:	Sub-Investigator
Dates:	2013 - 2014
Title:	“A randomized, crossover design study of acute and chronic effects of sitagliptin on endothelial function in humans with type 2 diabetes on background metformin therapy”.(ClinicalTrials.gov Identifier: NCT01859793)
Source:	Merck Sharp &Dohme Corp., Investigator Initiated Trial
Role & Effort:	Sub- investigator
Dates:	2013 - 2016
Title:	SynCardia Freedom Driver System Study. (ClinicalTrials.gov Identifier: NCT00733447)
Source:	SynCardia Systems, Inc.
Role & Effort:	Sub-Investigator
Dates:	2013 - 2014
Title:	“Toward predictive personalized stenting to reduce restenosis and thrombosis” Proposed - A1
Source:	Marquette University
Role & Effort:	Sub-Investigator
Dates:	11/01/2014 - 2014
Direct Funds:	\$105,557
Title:	Study to Evaluate the Safety and Efficacy of JVS-100 Administered to Adults With Ischemic Heart Failure (RETRO-HF) (ClinicalTrials.gov Identifier: NCT01961726)
Source:	Juventas Therapeutics, Inc.
Role & Effort:	Principal Investigator
Dates:	2014 - 2015
Title:	Vascular Reactivity Assessment by a Novel Diagnostic Device, ANGIODEFENDER™, compared to using Brachial Artery Ultrasound

Source: Imaging (Protocol A-1302).”
Role & Effort: Everist Health
Sub-Investigator
Dates: 2015 - 2016

Non-Peer Review

Title: Physician characteristics, costs, and outcomes related to patients undergoing coronary interventions. A cooperative study between Blue-Cross/Blue-Shield of Georgia and the Medical College of Georgia’s Center for Healthcare Improvement

Source: Medical College of Georgia’s Center for Healthcare Improvement

Role & Effort: Principal investigator

Dates: 1998 - 2000

Title: A prospective evaluation of continuous intra-arterial blood gas monitoring in patients undergoing complex coronary interventions

Source: Internal

Role & Effort: Principal investigator

Dates: 1998 - 1999

Title: The long-term follow-up of patients with microvascular disease

Source: Internal

Role & Effort: Principal Investigator

Dates: 1998 - 2000

Title: The formation of a retrospective database of coronary interventions

Source: Internal

Role & Effort: Principal investigator

Dates: 1998 - 2000

Title: Clinical and pharmacologic outcomes for use of Kytril (Granisetron Hydrochloride) in the cardiac catheterization laboratory

Source: Roche Laboratories

Role & Effort: Principal investigator

Dates: 1999 - 2000

Title: “Quantifying alterations in coronary artery hemodynamics using medical imaging data and computational fluid dynamics.”(Computational Modeling of Coronary Artery Blood Flow)

Source: Marquette University internal funding

Role & Effort: Principal investigator

Dates: 2009 - 2016

INVITED LECTURES/WORKSHOPS/PRESENTATIONS:

International

2008 Transcatheter Cardiovascular Therapeutics 2008, Washington, D.C. Viacor PTMA Case Presentation and Discussion.

National

1995 International Business Communications Restenosis Summit. Boston, MA, Nitric oxide as therapy for restenosis.

Washington, DC. Drug Eluting Stents: Medicine or Marketing?

RESPECT Investigators Meeting RESPECTful Experience

Current Effort with the Patent Foramen Ovale

2003 UHC Technology Assessment Symposium: Drug-eluting stents, Scottsdale, AZ. Drug-eluting stents and difficult patient subsets: what do we know?

2003 UHC Technology Assessment Update, Web Teleconference. Drug-eluting stent update.

2005 National Association of Health Data Organizations 20th Annual Meeting

2006 AGA Medical, Inc.

Regional

1997 Medical College of Georgia 29th Annual Internal Medicine Review, Sea Island, GA. Mitral valve prolapse--separating facts from fiction. Acute myocardial infarction--recognition and which therapy for which patient? Myocardial revascularization--rapidly evolving advances

1998 Stanford University, Cardiology Conference, Stanford, CA. Coronary

1995 American College of Cardiology, Georgia Chapter, Annual Meeting, Atlanta, GA. Beyond Syndrome X: the functional angiogram. Nitric oxide and interventional cardiology.

1996 32nd Annual Primary Care/Family Practice Symposium. Sea Island, GA. Acute myocardial infarction--recognition and therapy.

intervention in African-Americans: What do we really know?

1998 AAPA 27th Annual Conference, Atlanta, GA. Chest Pain.

2003 VHA Central Clinical Conference, Dayton OH. Drug-eluting stents: the changing frontier.

2003 VHA East Atlantic Interventional Cardiology Council, web conference

Milwaukee, WI. Drug-eluting stents.

2014 Seventh Annual Wisconsin Diabetes Symposium, Milwaukee, WI. Management of the patient with diabetes and coronary artery disease: macrovascular considerations.

Local

1994 Hewlett Packard Scientific Advisory Board, Andover, MA, 1994. Nitric oxide: a multifunctional vascular regulator.

2002 Medical College of Wisconsin, Department of Medicine Grand Rounds, Milwaukee, WI. Percutaneous approaches to peripheral vascular disease.

2002 St. Francis Hospital Clinical Conference, Milwaukee, WI. Current therapy for acute coronary syndrome.

Seminar, Milwaukee, WI. Catheterization laboratory update.

Current therapy for restenosis.

2004 AACN-GMAC Educational Program, Milwaukee, WI. New treatment modalities in the catheterization laboratory.

2005 Medical College of Wisconsin Congestive Heart Failure Symposium

2005 Medical College of Wisconsin Alumni Update, Milwaukee, WI. Disruptive

2006 Medical College of Wisconsin, Department of Medicine Grand Rounds, Milwaukee, WI. Drug-Eluting Stents: Evidence Based or Marketing?

2006 Medical College of Wisconsin Affiliated Hospital General Medical Education

2007 Medical College of Wisconsin Alumni Update, Milwaukee, WI. Coronary

2010 Medical College of Wisconsin, Department of Medicine New Faculty Orientation Program. Roles and goals for individual faculty and the DOM in the clinical enterprise.

2014 Froedtert Hospital, Community Education, Milwaukee, WI. Cardiovascular Clinical Trial Overview.

2014 Medical College of Wisconsin, Tech Terns Program, Milwaukee, WI. The importance of facilities for the future of medicine.

2014 Medical College of Wisconsin, Department of Medicine New Faculty Orientation Program. Roles and

- goals for individual faculty and the DOM in the clinical enterprise.
- 2014 Hamilton High School, Milwaukee, WI. Next generation of health care workers.
- 2015 Medical College of Wisconsin, Cardiovascular Grand Rounds. Milwaukee, WI. Management of the Patient with Coronary Artery Disease and Diabetes: Macrovascular Considerations, "What Is Past Is Prologue"
- 1996 Medical College of Georgia Grand Rounds, Augusta, GA. Nitric oxide and interventional cardiology. Chest pain and normal coronary arteries.
- 1997 Medical College of Georgia Grand Rounds, Augusta, GA. Indications for angioplasty and stents.
- 1997 Central State Hospital CME Program, Milledgeville, GA. Acute myocardial Infarction. Chest pain in normal coronary arteries. Mitral valve prolapsed Update in interventional cardiology.
- 1998 Medical College of Georgia Cardiology Grand Rounds, Augusta, GA. Does practice make perfect?
- 2002 Milwaukee County Emergency Medical Services, Annual Educational Seminar, Milwaukee, WI. Catheterization laboratory update.
- 2002 Aurora Sinai Medical Center, Cardiology Conference, Milwaukee, WI.
- 2002 Medical College of Wisconsin, Milwaukee, Department of Surgery Grand Rounds, Milwaukee, WI. Current therapeutic options for myocardial infarction.
- 2003 Medical College of Wisconsin, Milwaukee, WI. MCW Council. Interventional cardiology in 2004.
- 2003 Medical College of Wisconsin, Milwaukee, WI. Symposium for Senior Physicians Interventional cardiology in 2003: Drug eluting stents and more.
- 2003 VA Medical Center, Milwaukee, VA Grand Rounds, Milwaukee, WI. Cardiovascular considerations in erectile dysfunction.
- 2005 Medical College of Wisconsin, Cardiology Grand Rounds. Milwaukee, WI. Drug eluting stents: Insights into complex medical progress. Milwaukee, WI. Medical economics of congestive heart failure. technology and cardiovascular medicine.
- 2006 Medical College of Wisconsin, Cardiac Stroke Symposium, Milwaukee Retreat Content Expert: Faculty Disclosure and Accountability
- 2007 Medical College of Wisconsin, Cardiovascular Fellows Core Curriculum. Intra-aortic Balloon Pumps: Use and Abuse. Introduction to Business Principles in Medicine for Fellows. Artery Disease: Angioplasty, Stents or Bypass Surgery?
- 2008 Medical College of Wisconsin, Cardiovascular Grand Rounds. Milwaukee, WI. Current Perspectives in Percutaneous Valve Repair: Marrying the Patient with the Technology.
- 2013 Medical College of Wisconsin, Department of Medicine New Faculty Orientation Program. Roles and goals for individual faculty and the DOM in the clinical enterprise.

COMMITTEE SERVICE:

Medical College of Wisconsin

- 2000 - Present Member/Interviewer, Intern Selection Committee, Medical College of Wisconsin
- 2000 - Present Member, Fellow Selection Committee, Medical College of Wisconsin
- 2004 - 2005 Director, Milwaukee EMS Cardiology Practicum, Medical College of Wisconsin
- 2005 - 2006 Member, Ad Hoc Advisory Committee for Professional and Institutional Practices in Human Research, Medical College of Wisconsin
- 2005 - 2007 Member, Compensation Committee, Cardiology, Medicine, Medical College of Wisconsin
- 2006 - 2008 Member, Nominations Committee, Medical College of Wisconsin
- 2007 - Present Member, Ad Hoc Research Conflict of Interest Committee, Medical College of Wisconsin
- 2007 - 2008 Member, Practice Planning Committee, Medical College Physicians
- 2009 - Present Member, MCP/FH Joint Marketing Committee, Medical College of Wisconsin
- 2012 - Present Chair, Ad Hoc Non-Cancer Center Clinical Trials Exploratory Committee, Medical College of Wisconsin
- 2013 - 2016 Patient Safety and Quality Officer, Medical College of Wisconsin
- 2013 - Present Senior Scientific Advisor, Research Strategy Cardiovascular Workgroup, Medical College of Wisconsin
- 2015 - 2017 Co-Chair, Search Committee for Chief of Cardiothoracic Surgery, Medical College of

Wisconsin
2015 - 2016 Co-Chair, Search Committee for Medical Director, Advanced Heart Failure, Medical College of Wisconsin
2016 - 2017 Search Committee for Chief of Cardiovascular Medicine, Medical College of Wisconsin

Hospital

2000 - 2018 Director, Cardiac Catheterization Laboratory Morbidity and Mortality Review, Froedtert Hospital
2003 - 2005 Member, Cardiovascular Steering Committee, (Joint), Froedtert Hospital
2003 - 2005 Member, Supply Cost Initiative Steering Committee, Froedtert Hospital
2006 - 2008 Member, Vascular Care Strategic Planning Committee (Joint), Froedtert Hospital
2006 - 2008 Member, Cardiac Care Strategic Planning Committee, (Joint), Froedtert Hospital
2009 - Present Member, Inpatient Services Operations Committee, Froedtert Hospital
2009 - 2013 Member, Readmission Steering Group (Joint), Froedtert Hospital
2009 - Present Member (Co-Chair 2013-present), SEAc PPI Sub-Committee, Froedtert Hospital
2009 - Present Member, Hospital Advisory Committee, Froedtert Hospital
2009 - Present Member, Inpatient Services Steering Committee, Froedtert Hospital
2009 - 2013 Member, Outpatient Business Process Team (Juran) (Joint), Froedtert Hospital
2010 - Present Member, Joint Quality Committee (Joint), Froedtert Hospital
2012 - Present Member, Capital Budget Committee, Froedtert Hospital
2013 - 2014 Member, Joint Organizational Excellence Committee (Joint), Froedtert Hospital
2014 - Present Member, Value Based Care Initiative Executive Committee, Froedtert Hospital

MCW TEACHING ACTIVITIES:

Medical Student Education

2008 - 2017 Lecturer, Introduction to Internship Course

Resident and Fellow Education

2000 - Present Cardiology ward and consult attending
2000 - Present Invasive/interventional cardiology instruction including coordination, curriculum, and education in the technical and intellectual arts of invasive and interventional cardiology.
2000 - Present Cardiology Ward and Consultation Attending
2000 - Present Lecturer, cardiology fellow core conference, cardiology grand round presentations, direct cardiology catheterization conference, clinical research advocate/advisor.
Emergency Medicine Grand Rounds Presentations

EXTRAMURAL TEACHING:

Medical Student Education

2002 - 2003 Second year physical diagnosis cardiology course director; Clinical Advisor for Clinical Education During Research (CEDR); Medical Scientist Training Program (MSTP); and ICE Clinical Teacher
2004 - 2006 Health Profession Undergraduate Students, Director, Milwaukee EMS Cardiovascular Practicum
2010 Health Profession Undergraduate Students, Shadowing experience for Summer Program for Undergraduate Research (SPUR).
2011 - Present Master Clinician Pathway Faculty Advisor

Continuing Medical Education

2005 - Present Tip-TV™ Training in Partnership Program Supplement for Imaging Professionals, XR: Cardiac Interventions. GE Healthcare, Waukesha, WI

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Refereed Journal Publications/Original Papers

1. Marks DS, Vita JA, Keaney JF Jr., Loscalzo J., *Journal of Clinical Investigation* 1995; 96:2630-2638, Complete Inhibition of Neointimal Hyperplasia Following Vascular Injury by a Unique Adduct of Nitric Oxide.
2. Burchenal JEB, Marks DS, Schweiger MJ, Mann JT, Rothman MT, Ganz P, Adelman B, Bittl JA, *American Journal of Cardiology* 1998;82:511-515, Effects of Direct Thrombin Inhibition with Bivalirudin (Hirulog) on Restenosis After Coronary Angioplasty.
3. Seligman RW, Robinson JBV, Marks DS, *Catheterization and Cardiovascular Interventions* 1999;46:218-222, Functional Assessment of Internal Mammary Artery Bypass Grafts.
4. Alla SR, Jagadesan M, Marks DS, *The Journal of Invasive Cardiology* 1999; 11:627-630, Dilutional Acidosis Complicating Rotational Atherectomy.
5. Marks DS, Mensah GA, Kennard ED, Detre K, Holmes DR. *The American Heart Journal* 2000;140(1):162-9, Race, Baseline Characteristics, and Clinical Outcomes After Coronary Intervention: The New Approaches in Coronary Interventions (NACI) Registry.
6. Robinson VJB, Corley JH, Marks DS, Eberhardt LW, Eubig C, Burke GJ, Prisant LM. *American Journal Roegenology* 2000;174(5):1349-52, Causes of Transient Dilation of the Left Ventricle During Myocardial Perfusion Imaging.
7. East MA, Jollis JG, Nelson CL, Marks D, Peterson ED. *Journal of the American College of Cardiology* 2003;41(6):949-54, The Influence of Left Ventricular Hypertrophy on Survival in Patients With Coronary Artery Disease: Do Race and Gender Matter?
8. Naidu SS, Selzer F, Jacobs A, Faxon D, Marks DS, Johnston J, Detre K, Wilensky RL. *American Journal of Cardiology* 2003;92(10):1160-4, Renal Insufficiency is an Independent Predictor of Mortality After Percutaneous Coronary Intervention.
9. Marks DS, Gudapati S, Prisant LS, Weir B, diDonato-Gonzalez C, Waller JL, Houghton JL. *Journal of Clinical Hypertension* 2004;6(6):304-309. Mortality in Patients with Microvascular Disease.
10. Mehta RH, Marks DS, Califf RM, Sohn S, Pieper KS, Van de Werf F, Peterson ED, Ohman EM, White HD, Topol EJ, MD, Granger CB. *American Journal of Medicine* 2006;119:70.e1-70e8. Differences in the Clinical and Angiographic Features and Outcomes in African American and Caucasians with Acute Myocardial Infarction.
11. Mannebach PC, Dieter RS, Marks DS. *Angiology* 2006;57:526-529. Use of Gadolinium-Based Angiography for Renal Artery Stenting in a Patient with Renal Insufficiency.
12. Sack S, Kahlert P, Bilodeau L, Pièrard LA, Lancellotti P, Legrand V, Bartunek J, Vanderheyden M, Hoffmann R, Schauerte P, Shiota T, Marks DS, Erbel R, Ellis SG. *Circulation: Cardiovascular Interventions* 2009, 2:277-284. Percutaneous Transvenous Mitral Annuloplasty: Initial Human Experience with a Novel Coronary Sinus Implant Device.
13. Timothy J. Gundert TJ, Marsden AJ, Yang W, Marks DS, LaDisa JF Jr. *IEEE Transactions on Biomedical Engineering* 2012, 59:1992-2002. Identification of Hemodynamically Optimal Coronary Stent Designs Based on Vessel Diameter.
14. Singh S, Tarima S, Rana V, Marks DS, Conti M, Idstein K, Biblo LA, Fletcher KE. *Journal of Hospital Medicine (Online)* 2012, 7(7);551-6. Impact of Localizing General Medicine Teams to a Single Nursing Unit.
15. Caroll JD, Saver JL, Thaler DE, Smalling RW, Berry S, MacDonald LA, Marks DS, Tirschwell DL. *New England Journal of Medicine* 2013, 368:1092-100. Closure of Patent Foramen Ovale versus Medical Therapy after Cryptogenic Stroke
16. Karn D, Marks DS, Wein M, Kong AL. *J Womens Health* 2015, 24(10); 795-800. Benign Arterial Calcification on Screening Mammogram: A Marker for Coronary Artery Disease?
17. Ellwein L, Marks DS, Migrino R, Foley W, Sherman S, LaDisa J. *Catheterization and Cardiovascular Interventions* 2016, 87(7):1244-1255. Image-Based Quantification of 3D Morphology for Bifurcations in the Left Coronary Artery: Application to Stent Design.
18. Saver J, Carroll J, Thaler D, Smalling R, MacDonald L, Marks DS, Tirschwell D. *New England Journal of Medicine*; 2017, 377:1022-1032. Long-Term Comparison of Closure of Patent Foramen Ovale versus Medical-Therapy after Cryptogenic Stroke.
19. Tirschwell DL, Turner M, Thaler D, Chouleron J, Marks D, Carroll J, MacDonald L, Smalling RW, Koullick M, Gu NY, Dhoble A, Saver J. *Journal of Medical Economics*. Cost-effectiveness analysis of percutaneous device closure as secondary stroke prevention in patients with a patent foramen ovale who survived a prior cryptogenic stroke. <https://doi.org/10.1080/13696998.2018.1456445> (Accepted).

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1. Marks DS and Loscalzo J.: Vasoreactive Diseases; Molecular Approach in Molecular Interventions and Local Drug Delivery in Cardiovascular Disease. Edelman ER, ed. WB Saunders, LTD., London, 1995.
2. Cummings JP, Carroll JD, Marks DS, Matuszewski KA, Ratko TA, Skiles D. Technology Report: Drug-Eluting Stents. UHC Clinical Practice Advancement Center Monograph. University Health System Consortium, Oak Brook, IL, 2002.
3. Ratko TA, Cummings JP, Marks DS, Matuszewski KA. UHC High-Impact Technology Brief: Transcatheter Closure of Atrial Septal Defects. University Health System Consortium, Oak Brook, IL, 2005.

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1. Simpson JB, Johnson DE, Thapliyal HV, Marks DS, Braden LJ :Transluminal Atherectomy: A New Approach to Atherosclerotic Vascular Disease. *Circulation* ; 72:111-146, 1985.
2. Marks DS, Osborne JA, Daley WL, Keaney JF, Scharfstein J, Himmel K, Loscalzo J, Vita JA. Regression Diet Produces a Hypercontractile State in the Coronary Arteries of Miniature Swine. *Clinical Research*; 40(2):274A, 1992.
3. Daley WL, Keaney JF, Scharfstein J, Marks DS, Himmel K, Loscalzo J, Vita JA, Improvement in Endothelial Vasomotor Function Precedes Physical Regression of Atherosclerosis in Swine Iliac Arteries. *Clinical Research*; 40(2):150A 1992.
4. Marks DS, Osborne JA, Himmel KS, Vita JA, Vasomotor Consideration in the Choice of Contrast Media, *Journal of the American College of Cardiology*, 21(2Suppl A);208A, 1993.
5. Marks DS, Vita JA, Keaney JF Jr., Loscalzo J, Complete Inhibition of Neointimal Hyperplasia Following Vascular Injury by a Unique Adduct of Nitric Oxide. *Circulation*; 90 (4Pt2): 1-298, 1994.
6. Meckel CR, Ahmed W, Ferguson JJ, Strony J, Marks DS, Manuelian D, Adelman B, Bittl J, on behalf of the Hirulog Angioplasty Study Investigators. Angiographic Predictors of Severe Dissection During Balloon Angioplasty A report from the Hirulog Angioplasty Study. *Circulation*; 90(4Pt2):I-64, 1994.
7. Marks DS, Vita JA, Keaney JR, Jr., Loscalzo J, Inhibition of Coronary Vasospasm Following Balloon Injury by a Unique Adduct of Nitric Oxide. *Circulation*; 92(8):1-392, 1995.
8. Burchenal JEB, Marks DS, Schweiger MJ, Mann JT, Rothman MT, Adelman B, Bittle JA., Direct Thrombin Inhibition with Hirulog Does Not Prevent Restenosis After Coronary Angioplasty. *Circulation*; 92(8): 1-608, 1995.
9. Davis SF, Marks DS, Wang F, Ganz P, Mudge GH. Cytomegalovirus Accelerates Allograft Arteriosclerosis in Cardiac Transplant Recipients. *Journal of the American College of Cardiology*; 27(2 Suppl A):283A, 1996.
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12. Robinson VJB, Gunter LE, Marks DS, Raibon SA, Ohdav AC, Corley JH, Eubig J, Yoder H, Burke GJ, Localized Transient Ischemic Dilation as a Marker of Severe Coronary Artery Stenosis. *Journal of Investigative Medicine*; 46:30a, 1998.
13. Marks DS, Mensah GA, Kennard ED, Holmes DR. Importance of Gender in Predicting Long-term Clinical Outcomes in African-Americans Undergoing Coronary Interventions. *Journal of the American College of Cardiology*; 33:2A, 1999.
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 37. Jacob S, Goyal A, Presberg K, Csuka ME, Kleczka J, Siegel R, Marks DS, Soto FJ. Prevalence of Elevated Left Ventricular End-Diastolic Pressure (LVEDP) in Patients With Connective Tissue Disease (CTD)

- and Pulmonary Hypertension (PH) Accepted for Poster presentation, ATS Meeting, Toronto, Canada May 2008.
38. Sack S, Kahlert P, Hoffman R, Pierard L, Lancellotti P, Legrand V, Bartunek J, Vanderheyden M, Bilodeau L, Shiota T, Marks DS, Ellis S. Percutaneous Transvenous Mitral Annuloplasty: Clinical Development of a Novel Coronary Sinus Device. *Journal of the American College of Cardiology* 51 (10 Supp A), A75, 2008.
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 60. Saver JL, Thaler D, Smalling R, Carroll J, Berry S, MacDonald L, Marks D, Tirschwell D, Book D, Goldstein LB. Qualifying and Outcome Strokes in the RESPECT PFO Trial: Additional Evidence of Treatment Effect. Presented at International Stroke Conference, February 2013.
 61. Thaler D, Saver J, Smalling R, Carroll J, Berry S, MacDonald L, Marks D, Tirschwell D, Book D, Goldstein L for the RESPECT Trialists. Further Analysis of Confirmed Endpoint Recurrent Strokes in PFO patients in the RESPECT Trial. Presented at Euro PCR, May 2013.
 62. Thaler D, Saver J, Smalling R, Carroll J, Berry S, MacDonald L, Marks D, Tirschwell D, Book D, Goldstein L for the RESPECT Trialists. Effect of Having an Amplatzer Patent Foramen Occlusion Device in Place in the RESPECT Trial. Presented at European Stroke Conference May 2013. *Cerebrovascular Dis* 2013, 35(Supp 3) 106.
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