CURRICULUM VITAE

Nabil Dib, MD, MSc, FACC

Director, Clinical Cardiovascular Cell Therapy, University of California, San Diego Perlman Cardiovascular Clinic - Mail code 0986 9350 Campus Point Drive, Suite 1D, La Jolla, CA 92037

Director, Cardiovascular Research and New Devices, Catholic Healthcare West (Chandler Regional and Mercy Gilbert Medical Center) 3555 S. Val Vista Dr., Gilbert, AZ 85297

Director, Cardiovascular and Stem Cell Consultants, P.C. 3420 S. Mercy Rd., Suite 312, Gilbert, AZ 85297

Ndib@cardiostem.com

MEDICAL TRAINING

POSTGRADUATE	Investigational Interventional Cardiology Fellowship, FELLOWSHIP Harvard Medical School, Beth Israel-Deaconess	
	Medical Center, Boston, MA	1998-1999
	Master of Science in Epidemology and Research	
	Harvard School of Public Health.	1998-1999
	Interventional Cardiology, Harvard Medical School, Beth Israel-Deaconess Medical Center, Boston, MA.	1997-1998
	General Cardiology, University of Wisconsin, Milwaukee Clinical Campus at Sinai Samaritan Medical Center, Milwaukee, WI	1994-1997
RESIDENCY	Internal Medicine, Tufts University School of Medicine, St. Elizabeth's Hospital, Boston, MA	1992-1994
INTERNSHIP	Internal Medicine, Boston University School of Medicine, Carney Hospital, Boston, MA	1991-1992
	Pediatrics, Albert Einstein School of Medicine, Flushing Medical Center, New York, NY	1990-1991

EDUCATION

MEDICAL	Medical Degree: Damascus University School of	
	Medicine, Damascus, Syria	1985

LICENSES & CERTIFICATIONS

State of California permanent physician's license: 52510 – September 2006
State of Arizona permanent physician's license: 27731 - August 1999
State of Wisconsin permanent physician's license: 35741 – July 1994
State of Massachusetts permanent physician's license: 78649 – October 1993
TOEFL - 1989
Educational Commission for Foreign Medical Graduate - 1990
FLEX Exam - 1993
The American Board of Internal Medicine - 1994
The American Board of Cardiovascular Disease – 1998-2018
The American Board of Interventional Cardiovascular Disease – 1999-2008
California Depart of Health Services Fluoroscopy Operator Permit #165380 Feb 2007-2009

PROFESSIONAL EXPERIENCE

Proctor, NOGA Mapping Biologics Delivery Systems/Cordis Corporation a Johnson & Johnson Company 2008 - Present

President and Founder, International Society for Cardiovascular Translational Research 2007-Present

Co-Editor & Chief, Journal of Cardiovascular Translational Research 2007-Present

Director, Clinical Cardiovascular Cell Therapy, Associate Professor of Medicine, University of California, San Diego *February 1, 2007-Present*

Director, Cardiovascular Research and New Devices, Catholic Health Care (Chandler Regional and Mercy Gilbert Medical Center) *February 9, 2007-Present*

Director, Cardiovascular and Stem Cell Consultants, P.C. September 2006-Present

Adjunct Faculty Member, Arizona State University Bioengineering Department, Phoenix, Arizona 2006 - Present

Director of Interventional Cardiology Research, Arizona Heart Institute, Phoenix, Arizona, September 1, 1999-August, 2006

Director of Interventional Fellowship Program, Arizona Heart Institute, Phoenix, Arizona, September 1, 2000-August 2006

President of the International Society of Genomics, Proteomics and Cellular Therapy *February 10, 2006*

PROFESSIONAL AFFILIATIONS

Massachusetts Medical Society American College of Physicians American Heart Association American College of Cardiology International Society of Endovascular Intervention International Society for Cardiovascular Translational Research

ADVISORY BOARDS

RADI Medical Systems JOMED POSSIS Medical, Inc. – Steering Committee Schering/Berlex Johnson & Johnson/Cordis Neuronyx/Department of Tissue Engineering Guilford Pharmaceuticals, Inc. AngioMax Medicine Group International Society for Cardiovascular Research Cardiovascular System Inc. (CSI)

MAJOR RESEARCH INTERESTS

Biosense NOGA Mapping and Injection System, Laser, Growth Factor Injection, Stem Cell Therapy for Myocardial Regeneration, Methods of Translational Stem Cell Research, Methods of Stem Cell Delivery

INTERVENTIONAL CARDIOLOGY PROFICIENCY

Stent deployment, Doppler FloWire, Pressurewire, Intravascular Ultrasound, Valvuloplasty, Rotational Atherectomy, Directional Atherectomy, Beta-Radiation, Novoste, Possis Angiojet, PercuSurge GuardWire System, Angioseal, Perclose, Vasoseal

AWARDS

America's Top Doctors, Interventional Cardiology	2003
Annual Medical Staff Scientific Award "Detection of Cardiac Thrombi Using Magnetic Resonance Imaging: Clinicopatholo Correlation"	ogical
Tufts University School of Medicine	1994
Medical Scholarship, Damascus University School of Medicine, Damascus, Syria	1985

LANGUAGES

English Spanish Arabic

RESEARCH EXPERIENCE - CLINICAL

CELL THERAPY

2008	A Phase II Dose-escalation Study to Assess the Feasibility and Safety of Transendocardial Delivery of Three Different Doses of Allogeneic Mesenchymal Precursor Cells (MPCs)/Revascor [™] in Subjects with Heart Failure Sponsor: Angioblast Systems Inc. Role: Principal Investigator
2008	A Phase 1b/2a Dose-escalation Study to Assess the Safety and Feasibility of Transendocardial Delivery of 3 Different Doses of Allogeneic Mesenchymal Precursor Cells (MPCs) in Subjects with Recent Acute Myocardial Infarction Sponsor: Angioblast Systems Inc. Role: Principal Investigator
2006	Single site study to evaluate the safety of Human Adult Bone Marrow derived somatic cells administered by endocardial injection after acute myocardial infarction. Sponsor: Neuronyx Role: Single Site Principal Investigator
2005- 2007	A Phase I, Multicenter, Randomized, Double-Blind, Placebo-Controlled, Dose-Escalation Study to Determine the Safety of Intravenous Ex-vivo Cultured Adult Human Mesenchymal Stem Cells (Provacel TM) Following

	Acute Myocardial Infarction. Sponsor: Osiris Therapeutics Role: Principal Investigator
2004-2007	Evaluation of the Safety and Feasibility of Myoblast Transplantation Using the Biosense Mapping and Injection System in Patients With Ischemic Cardiomyopathy. Sponsor: Mytogen, Inc. Role: Single site Principal Investigator
2001-2005	Multicenter Clinical Trial to Evaluate the Safety and Feasibility of Myoblast Transplantation During Coronary Bypass Surgery in Patients with Ischemic Cardiomyopathy. Sponsor: Mytogen, Inc. Role: National Principal Investigator
<u>GENOMICS</u>	
2009	Genetic Risk Factors for Coronary Heart Disease Sponsor: Ottawa Heart Institute Research Corporation Role: Principal Investigator
2008	Defining the Relationship between Framingham Risk Score and Genetic Risk Sponsor: Catholic Healthcare West Role: Principal Investigator
GENE THERAPY	
2008	Protocol Number: CVBT-CHD07-01 Human Recombinant Fibroblast Growth Factor-1 (FGF-1 ₁₄₁), for the Treatment of Subjects with Severe Coronary Heart Disease, A Double-blind, Placebo-controlled, Dose-varying Study Sponsor: Kendle –CardioVascular BioTherapeutics, Inc. Role: National Principal Investigator
2004 – 2007	Multicenter, Randomized, Double-Blind Study Evaluating pVGI.1 (VEGF2) Delivered Via the Boston Scientific Stiletto Endocardial Direct Injection Catheter in Patients With Stable Class III-IV Angina. Sponsor: GenVec, Inc. Role: Principal Investigator
2001 – 2003	A Phase 2, Multicenter Study to Assess the Efficacy and Safety of Ad _{GV} VEGF121.10 Delivered Through Minimally Invasive Surgery in Patients with Sever Angina and No Option for Revascularization. Sponsor: GenVec, Inc. Role: Principal Investigator

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2002-2003	A Multicenter, Randomized, Double-Blind Study to Assess the Safety and
	Efficacy of Ad _{GV} VEGF121.10 in Peripheral Arterial Disease Patients with
	Severe, Disabling Intermittent Claudication.
	Sponsor: GenVec, Inc.
	Role: Principal Investigator
2001-2003	A Multicenter, Randomized, Double-Blind Pilot Study of the
	Tolerability and Feasibility of Administering Ad _{GV} VEGF121.10 via
	the Biosense NOGA Mapping and Injection System in Patients With
	Advanced Coronary Artery Disease.
	Sponsor: GenVec, Inc.
	Role: Principal Investigator
2001-Current	A Multi-center, Randomized, Double-Blind Study to Evaluate the

2001-Current A Multi-center, Randomized, Double-Blind Study to Evaluate the Efficacy and Safety of Ad5FGF-4 in Patients with Stable Angina. Sponsor: Schering/Berlex Role: Principal Investigator

EMBOLIC PROTECTION

2005-Current	Assessment of the Medtronic AVE Inceptor Saphenous Vein Graft Filter System (AMETHYST). Sponsor: Medtronic Role: Principal Investigator
2004-Current	FilterWire EZ TM System Used in Treatment of an Acute Myocardial Infarction for Embolic Protection (FLAME). Sponsor: Boston Scientific Role: Principal Investigator
2003 - 2004	Embolic Protection Transluminally with the FilterWire EX Small Device in Saphenous Vein Grafts (BLAZE). Sponsor: Boston Scientific Role: Principal Investigator
2001-2002	FilterWire During Transluminal Intervention of Saphenous Vein Grafts (FIRE). Sponsor: Boston Scientific Role: Principal Investigator

CORONARY PHYSIOLOGY

2003-2004 Phase I and Phase II Studies Using SPECT Imaging and Coronary Flow Reserve to Compare BMS068045 and Adenosine. Sponsor: Bristol-Myers Squibb Role: Principal Investigator

2002-2004	Assessment of Coronary Flow to Compare Adenosine and Adenosine Derivatives. Sponsor: Medco Role: Principal Investigator
2001-2003	Interventional Physiology Assessment of Renal Artery Stenosis. Sponsor: Department of Interventional Research, Arizona Heart Institute. Role: Single Site Principal Investigator
2000-2002	Invasive Assessment of Renal Artery Stenosis. Sponsor: RADI Role: Principal Investigator
2000-2002	Multicenter Trial to Predict Graft Occlusion using the Pressure Wire. Sponsor: Based in the Netherlands Role: Principal Investigator
2000-2001	Invasive Assessment of Ischemia and Coronary Blood Flow Before and After Transmyocardial Laser Revascularization Using the Biosense NOGA Mapping System and Doppler FloWire. Sponsor: Department of Interventional Research, Arizona Heart Institute. Role: Single Site Principal Investigator
2000-2001	Multicenter Study to Compare Fractional Flow Reserve to Intravascular Ultrasound Guidance for Optimal Stent Deployment (FUSION). Role: Principal Investigator
1998-1999	FFR or RFVR Evaluation of Coronary Artery Stenosis vs Thallium (FORCAST) Sponsor: Harvard Medical School, Beth Israel Deaconess Medical Center Role: Interventional Cardiology Research Fellow under David Cohen, M.D. and Donald Baim, M.D.
1997-1998	Assessment of Coronary Artery Disease by Intravascular Ultrasound and Intracoronary Doppler FloWire. Sponsor: Harvard Medical School, Beth Israel Deaconess Medical Center Role: Interventional Cardiology Research Fellow and first author under David Cohen, M.D. and Donald Baim, M.D.
<u>HEART FAILURE</u>	
2008	Double-Blind, Placebo-Controlled, Multicenter Acute Study of Clinical Effectiveness of Nesiritide in Subjects With Decompensated Heart Failure – ASCEND-HF, Protocol # A 093 JNJ-27410084 (nesiritide) Sponsor: Scios, Inc. /Johnson & Johnson Pharmaceutical Research and Development, LLC Role: Sub-Investigator

INTERVENTION

2009	RECOVER II Trial: A Prospective Randomized Trial Investigating the Use of the IMPELLA® RECOVER® LP 2.5 System in Patients with Acute Myocardial Infarction Induced Hemodynamic Instability Sponsor: ABIOMED Role: Principal Investigator
2008	PROTECT II: A prospective, multi-center, randomized controlled trial of the IMPELLA® RECOVER ® LP 2.5 System versus Intra Aortic Balloon Pump (IABP) in Patients Undergoing Non Emergent High Risk PCI IDE Number: G050017 Sponsor: ABIOMED Role: Principal Investigator
2008	Cardiovascular Outcomes in Renal Atherosclerotic Lesions Randomized and Multi-Center Two-Group Clinical Trial To Assess The Best Treatment for Patients with High Blood Pressure and Renal Artery Stenosis: Stenting with Anti-Hypertensive Medical Therapy, Compared to Medical Therapy Alone - Cardiovascular Outcomes in Renal Atherosclerotic Lesions: CORAL Sponsor: NHLBI/Cordis Corporation/AstraZeneca/Pfizer Role: Sub-Investigator
2008	Future REvascularization Evaluation in patients with Diabetes mellitus: Optimal management of Multivessel disease - FREEDOM Trial - IDE #G040164 Sponsor: National Heart, Lung and Blood Institute (NHLBI) · Eli Lilly, Boston Scientific, Cordis Corporation, Bristol-Myers Squibb/Sanofo Aventis Role: Principal Investigator
2004- 2007	Multicenter, Randomized, Double-Blind Trial to Assess TAXUS Paclitaxel-Eluting Coronary Stents, Slow-Release Formulation in the Treatment of High Risk De Novo Coronary Lesions (TAXUS). Sponsor: Boston Scientific Role: Sub-investigator
2003-2005	Angiojet Rheolytic Thrombectomy in Patients Undergoing Primary Angioplasty for Acute Myocardial Infarction (AIMI) Sponsor: Possis Role: Principal Investigator
2003-2004	Multicenter Randomized, Double-Blind, Study of the Efficacy and Safety of the ACAT Inhibitor CS-505 for Reducing the Progression of Atherosclerosis in Subjects with Coronary Artery Disease Using the Intravascular Ultrasound (ACTIVATE) Role: Sub-investigator

2002-Current	Randomized Trial Evaluationg the Symbiot III Covered Stent System in Sapheneous Vein Grafts (SYMBIOT) Sponsor: Boston Scientific Role: Sub-Investigator
2001	Multi-center Trial to Assess Acolysis During Treatment of Lesions Affecting Sapheneous Vein Bypass Role: Principal Investigator
1998-1999	Quantitative Coronary Angiography Core Laboratory Sponsor: Chiron Role: Interventional Cardiology Research Fellow under Jeffrey Popma
1998-1999	Effect of Peri-procedural Non-Q Wave Myocardial Infarction on Late Mortality: 3-Year Follow-Up From the Balloon Angioplasty vs. Optimal Atherectomy Trial (BOAT) Sponsor: Guidant DVI Role: Interventional Cardiology Fellow and first author under Richard Kuntz, M.D., Cardiac Data Analysis Center, Boston, MA

PHARMACOLOGY

2008A Multi-center, 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
(TRA•CER)
Sponsor: Schering-Plough Research Institute, A Division of Schering
Corporation
Role: Principal Investigator

VIRTUAL HISTOLOGY

2004-2005 Intravascular Ultrasound Based Technology for Diagnosing Coronary Artery Vessel Geography and Plaque Morphology Sponsor: Volcano Therapeutics, Inc. Role: Principal Investigator

RESEARCH EXPERIENCE - PRECLINICAL

2005 Study to Evaluate the Safety of Allogeneic Adult Derived Bone Marrow Somatic Cells (ABMSCs) to Naïve Pigs Sponsor: Neuronyx Role: Principal Investigator

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2004	Feasibility and Safety of Autologous Skeletal Myoblast Transplantation in the Coil-Infarcted Swine Myocardium Using the Biosense NOGA Mapping and Injection System Sponsor: Cordis Corporation and Mytogen, Inc. Role: Principal Investigator
2003	Biodistribution and Bioretention of Autologous Skeletal Myoblasts in the Coil-Infarcted Swine Myocardium Sponsor: Cordis Corporation and Mytogen, Inc. Role: Principal Investigator
2002	Biocompatability testing of Skeletal Myoblasts and the Biosense Myostar Needle Injection Catheter Sponsor: Cordis Corporation and Mytogen, Inc. Role: Principal Investigator
2000-2001	Endomyocardial Injection of Skeletal Myoblasts in the Porcine Model Sponsor: Doris Taylor, PhD, Duke University Role: Principal Investigator
1998-1999	Validation of the Biosense Needle Injection System in the Swine Model. Sponsor: Thomas Precopia, Vice President, Biosense Webster.

Nabil Dib, MD, MSc, FACC

LIVE CASES

Telecast Live Cases to the International Congress on Endovascular Intervention, Phoenix, AZ. Coronary and Renal Intervention with Interventional Physiology Assessment Using the Doppler FloWire and Pressure Wire Before and After Intervention. February 14-16, 2000.

Telecast Live Case, TCT Angiojet in Management of Acute Myocardial Infarction, Washington, DC, October 20, 2000.

Telecast Live Case to International Congress on Endovascular Intervention, Muscle Cell Transplantation in Infarct Pig Model Using the Biosense/NOGA Injection Catheter. Phoenix, AZ, February 12, 2001.

Telecast Live Case to International Congress on Endovascular Intervention, Muscle Cell Transplantation in Infarct Pig Model Using the BioHeart Injection Catheter. Phoenix, AZ, Feburary 12, 2001.

Telecast Live Case to International Congress on Endovascular Intervention, Coiling of Branch from the Left Internal Mammary Artery Causing Steel Measured by Doppler FloWire and Intravascular Ultrasound. Phoenix, AZ. February 13, 2001.

Telecast Live Case to the International Congress on Endovascular Intervention, Isolation of Left Anterior Descending Artery Aneurysms, Using the Jomed Coronary Stent Graft. Phoenix, AZ, February 14, 2001.

Telecast Live Case to the International Congress on Endovascular Intervention, Percutaneous Transplantation of Allogenic Skeletal Myoblast in Porcine Model of Myocardial Infarction Using The Biosense NOGA TM System, Phoenix, AZ, February 14, 2001.

Telecast Live Case to the International Congress on Endovascular Intervention, Physiological Assessment of Intermediate Renal Artery Stenosis Using the Radi Pressure Wire. Phoenix, AZ. February 14, 2001.

Live Case to the International Congress on Endovascular Intervention, Measurement of Abdominal Aortic Aneurysm Sac Pressure After Endoluminal Graft Placement Using the Wave Wire, Phoenix, AZ, February 14, 2001.

Telecast Live Case to the International Congress on Endovascular Intervention, One-Year Follow Up of Left Anterior Descending Artery Aneurysm Isolation Using PTFE Graft Stent (Angiography and IVUS) Phoenix, AZ, February 15, 2001.

Live Case Presentation. Boston Scientific/EPI Filterwire Randomized Trial Regional Training, Phoenix, AZ, January 26, 2002.

Live Case presentation to the International Congress on Endovascular Intervention, Jomed Jostent[®] Placement in a Sapheneous Vein Graft, Phoenix, AZ, February 11, 2002. Live Case presentation to the International Congress on Endovascular Intervention, Autologous Myoblast Transplantation for Treatment of Infarcted Myocardium During Coronary Artery Bypass Graft Surgery, Phoenix, AZ, February 13, 2002.

Live case presentation to the International Congress on Endovascular Intervention, Coiling left internal mammary artery-pulmonary vasculature fistula, Phoenix, AZ, February 11, 2003.

Discussant for live cases for TCT Presentation, "Three Year Follow-up of Autologous Skeletal Myoblast" Presentation, "Transplantation for Ischemic Cardiomyopathy: U.S. Experience" ComboMapTM Pressure and Doppler Flow Case presentation," The Use of Filter Wire in Challenging SVG" Washington, DC, September 26-30, 2004.

First US Case on Catheter Based Delivery Myoblast Transplantation Using 3-Dimensional Guidance (NOGA mapping, Cordis), Phoenix, AZ, November 30, 2004.

Live case presentation to the International Congress on Endovascular Intervention, "Virtual Histology and Fractional Flow Reserve," Phoenix, AZ, February 16, 2005.

Live case presentation to the International Society of Genomics, Proteomics, and Cellular Therapy, Corautus VEGF2 GENASIS Trial Endocardial Injection pVGI.1 (VEGF2) Gene Therapy, February 11, 2006.

Case presentation "Autologous Skeletal Myoblast Transplantation," Genomics, Proteomics, and Cellular Therapy, February 11, 2006

Case Presentation, Bone Marrow Derived Stem Cell Therapy, Genomics, Proteomics, and Cellular

Therapy, February 11, 2006.

INVITED SPEAKER REGIONAL, NATIONAL AND INTERNATIONAL

"Stem Cell Therapy for Cardiovascular Disease" University of San Diego Grand Rounds, November 2008

"BDS NOGA XP Cardiac Navigation System Electromagnetic Guidance for Catheter Based Transendocardial Injection" Johnson & Johnson, November 2008

"The Grupo Angelels Congress", "Role Stem Cells & Their Role in Medicine's Future" Stemedica/Mexico City, October 2008

"Molecular Cardiology Breakthroughs: Cell Therapy & Angiogenesis" Angioblast/Washington, DC, October 2008

"NOGA Maps & Injections. What it takes to make a "good map" or "The do's and don'ts." Cordis/Munich, Germany, September 2008

"On Routes of Administration", "I have a question for you Mr. Expert" 5th Symposium on Stem Cell Therapy and Applied Cardiovascular biology Madrid, Spain, April 2008

"IV. Live Cases Live Case Transmission Session IX: Monash", Panelist & "SEISMIC Trial" Commentator SCAI-ACCi2 2008 Chicago, IL, March 2008

"Stem Cell Therapy for the Treatment of Cardiovascular Disease" 5th Annual Regenerative Medicine Organization (RMO), Las Vegas, February 2008

"Review of the Randomized Trials Using Skeletal Myoblasts: The Genzyme Experience" Cardiovascular Revascularization Therapies (CRT 2008), Washington DC, February 2008

"Cardiovascular Translational Research: From Bench to Bedside" & Director for Symposium 1st Annual Symposium, International Society for Cardiovascular Translational Research (ISCTR), San Diego, CA, February 2008

"The Catheter-based Delivery of Autologous Skeletal Myoblasts in Ischemic Cardiomyopathy (CAuSMIC) Study : Functional Results" Fourth Annual International Conference on Cell Therapy for Cardiovascular Disease, New York, NY, January 2008

Invited Speaker Third International Summit with the Experts, Puerto Rico, November 2007

"Final One-Year Results of the CAUSMIC Trial" - Interview

ACCEL, Orlando, FL, November 2007

"Safety and Feasibility of Percutaneious Autologous Skeletal Myoblast Transplantation for Ischmeic Cardiomyopathy: One-Year Results of the CAUSMIC Trial" and Panelist for "No Holds Barred" Transcatheter Cardiovascular Therapeutics (TCT), Washington DC, October, 2007

Invited Speaker: 2007 Joint Conference, Minneapolis, MN, Septemeber 2007

"Physiological Assessment of Coronary Artery Disease," and "Stem Cell Implant in Heart Failure," Cardiac Diseases: Challenges of the Future, Riyadh, Saudi Arabia, May 2007

"Cell Therapy for Cardiovascular Disease," SCAI's 30th Annual Scientific Sessions, Orlando, FL, May 2007

"Myoblast in the Clinical Scenario. Is the USA experience different?" 4th International Symposium, Stem Cell Therapy and Applied Cardiovascular Biology, Madrid, Spain, April 2007

"First United States Randomized Controlled Trial Utilizing 3-Dimensional Guided, Catheter-Based Delivery of Autologous Skeletal Myoblasts for Ischemic Cardiomyopathy: Feasibility, Safety and Improvement in Cardiac Performance,"

Late Breaking Clinical Trials, American College of Cardiology 56th Annual Scientific Session i2 Summit 2007: Innovation in Intervention, New Orleans, LA, March 2007

"Stem Cell Therapy- Methods of Delivery," AABB Cellular Therapy Conference, San Diego, CA, March, 2007

"Recent Progress in Gene Therapy (Including HGF-Gene Therapy) and Cell Regeneration," 9th JCC-ACC Joint Symposium, Kagoshima, Japan 2006

"Electromechanical Guiding for Intramyocardial Transplantation of Myoblasts to Treat Left Ventricular Dysfunction,"

Workshop and Preclinical Session Chair for the 3rd International Symposium on Gene & Stem Cell Therapy, Valladolid, Spain 2006

"Clinical Experiences: An Overview of the Results and Status of Cell Therapy Clinical Trials for Myogenesis," CRT 2006

"Stem Cells: Application in Clinical Practice," Federation of American Societies for Experimental Biology 2006

"Four-Year Follow-Up of the Feasibility and Safety of Autologous Myoblast Transplantation for Ischemic Cardiomyopathy in Patients Undergoing Coronary Artery Bypass Grafting," Vascular Biology Working Group US Chapter Meeting 2006

"Interventional Approaches for Angiogenesis and Myogenesis,"

Panelist I2 Summit 2006

"Stems Cells in Acute MI," Chair ACC 2006

"Myoblast Transplantation: Lessons Learned From the Clinical Trials," Genomics, Proteomics and Cellular Therapy Symposium 2006

"Autologous Skeletal Myoblast Transplantation in CABG: 4-Year Follow-Up," 2nd International Conference on Cell Therapy for Cardiovascular Diseases 2006

"Stem Cell Therapy for Myocardial Infarction and Heart Failure," Symposium on the Advancement of Acute Coronary Syndrome Evaluation and Strategy, Beijing, China 2005

"Stem Cell Therapy for Myocardial Regeneration: Steps in Translational Research," Busan Interventional Meeting, Busan, Korea 2006

"Cell Therapy for Chronic Heart Failure: Skeletal Myoblasts," and "Xenogeneic and Allogeneic Adult Bone Marrow-Derived Stem Cell Transplantation in a Porcine Model of Myocardial Infarction Using 3-Dimensional NOGATM Guidance," TCT 2005

"Stem Cell Transplantation for the Treatment of Myocardial Infarction and Congestive Heart Failure,"

5th Annual Somatic Cell Therapy Symposium 2005

"Stem Cell Therapy for the Treatment of Myocardial Infarction and Congestive Heart Failure," Mayo Clinic, University of San Diego, Blue Cross Blue Shield, Syrian American Medical Society 2005

"Myoblast Transplantation Comes of Age-From Bench to Bedside and into Asia, The Final Results of the First U.S. Multi-Center Clinical Trial of Myoblast Transplantation," Davos, Switzerland 2005

"Stem Cell Therapy for the Treatment of Heart Disease, Myoblast Therapy for Cardiac Repair: Steps in Translational Research"

Texas Heart Institute, 2nd International Symposium Gene and Stem Cell Therapy for Heart Failure, Valladolid, Spain 2005

"Three-Year Follow-Up of the Feasibility and Safety of Autologous Myoblast Transplantation for Ischemic Cardiomyopathy in Patients Undergoing Coronary Artery Bypass Grafting," Late Breaking Clinical Trial Sessions ACC 2005

Director of Program, International Congress of Endovascular Intervention, 2001, 2002, 2003, 2004, 2005

Training Site for Boston Scientific, FilterWire and Stilleto Catheter (angiogenic gene delivery) 2005

"Two-Year Follow-Up of the Feasibility and Safety of Autologous Myoblast Transplantation for Ischemic Cardiomyopathy in patients Undergoing Coronary Artery Bypass Grafting," AHA Scientific Sessions 2004

"The Long Term Feasibility and Safety of Patients with Ischemic Cardiomyopathy Undergoing Bypass Grafting," Late Breaking Clinical Trial Session ACC 2004

"Myoblast Transplantation in Patients Undergoing Coronary Bypass Surgery," World Congress on Heart Failure 2003

"First U.S. Experiment with Skeletal Myoblast Transplantation," TCT 2003

"Myoblast Cell Transplantation: Surgical and Percutaneous Delivery," Japanese Society for Regenerative Medicine 2003

"Safety and Feasibility of Autologous Myoblast Transplantation in Patients with Ischemic Cardiomyopathy: Interim Results from the U.S. Experience," AHA 2002

"Physiologic Lesion Assessment in Complex Patients, Multilesion and Multivessel Disease, AMI and More, Induction of Hyperemia and Other Tips and Tricks, Insights and Guidance From IVUS and Physiologic Lesion Assessment," TCT 2002

"Experimental Findings and Initial U.S. Clinical Experience after Intra-Operative and Transendocardial Skeletal Myoblast Transplantation in Ischemic Cardiomyopathy," TCT 2002

"Mechanisms and Management of Myoblast Cell Transplantation to Repair Myocardial Infarction, Percutaneous and Surgical Delivery," 8th World Congress on Heart Failure 2002

"Percutaneous Transplantation of Skeletal Myoblasts in a Porcine Model of Myocardial Infarction Using the Biosense NOGATM Endoventricular Mapping and Injection System," Nice, France, Cardiostim 2002

"Invasive Assessment of Renal Artery Stenosis Using the Pressure Wire," Paris, France, EURO PCR 2002

"AD_{GV}VEGF_{121.10} vs. Placebo in Patients with Advanced Coronary Artery Disease, Angiojet in Management of Acute Myocardial Infarction and Post-procedure Doppler FloWire Assessment, FilterWire Distal Protection Device During Transluminal Intervention of Saphenous Vein Grafts, Assessment of Left Main Artery Stenosis Using the Pressure Wire Evaluation of Fractional Flow Reserve and Intravascular Ultrasound," – Case Presentations International Society of Endovascular Intervention, 2002 "Intravascular Ultrasound, Doppler FloWire and Pressure Wire Applications Training Course," Instructor 2001

"The Effect of Peri-Procedural Non-Q Wave MI on Late Mortality: 3-Year Follow-Up From the Balloon Angioplasty vs. Optimal Atherectomy Trial (BOAT)," AHA Scientific Sessions 1999

"Amniotic Fluid Embolism and Left Ventricular Dysfunction," 2nd International Congress on Coronary Artery Disease From Prevention to Intervention, Florence, Italy 1998

"Amniotic Fluid Embolism and Left Ventricular Dysfunction," Heart Failure Symposium 1997

"Validation of Doppler FloWire in Measuring Coronary Flow Reserve in Humans,: International Cardiology Conference" Tel Aviv, Israel 1997

EDITORIAL CONSULTANT

Catheterization and Cardiovascular Diagnosis Journal, 1996-Present Cell Transplant Journal, 2003-Present The Journal of Endovascular Therapy, 2001-Present American Heart Hospital Journal, 2005-Present Journal of Cardiovascular Translational Research, Co-Editor & Chief 2007-Present

MANUSCRIPT REVIEWER

JACC #102208-3535 "Endothelial Progenitor Cells May Inhibit Apoptosis of Pulmonary Microvascular Endothelial Cells: New Insight into Cells Therapy for Pulmonary Arterial Hypertension" by Xing-xiang wang, Liang Xia, Jin-xiu Yang, Furong Zhang, Qian-min Tao, jianhua zhu, JunZhu Chen, and You-yang Zhao

Cell Therapy Journal: Bone Marrow Transplantation for Patients Undergoing Cell Transplantation *Myoblast Transplantation*

Catheter Based Cell Transplantation

Circulation: Tissue Cardiomyoplasty for Ischemic Myocardium

Circulation: Autologous Transplantation of CSF-1 Transfected Myoblasts into Rat

Myocardium Attenuates Ischemia-Induced Heart Failure

Circulation: Different Effects of Atenolol and Nebibolol on Coronary Flow Reserve

Journal of the American College of Cardiology: Intramyocardial Injection of Autologous Bone Marrow-Derived Mononuclear Cells in Patients with Severe Angina Pectoris and Stress-Induced Ischemia

American Heart Hospital Journal: Cell Sources for Cardiac Regeneration Which Cells and Why?

Circulation: A Randomized Controlled Clinical Trial of Autologous Bone-Marrow Transplantation by Direct Intramyocardial Injection for Myocardial Regeneration

REVIEWER

Contributor for reviewing and writing questions for the American Board of Internal Medicine, Cardiovascular Disease Section

International Academy of Cardiology 8th World Congress on Heart Failure – Mechanisms and Management, Washington, DC, July 13-16, 2002

A *Star Biomedical Research Council (BRMC) - Grant

Contributor for reviewing and grading abstracts for the American Heart Association Scientific Sessions June 2008

Contributor for reviewing and grading abstracts for American College of Cardiology 2009 November 2008

BOOKS AND BOOK CHAPTERS

Dib N, Taylor D, Diethrich E. Stem Cell Therapy and Tissue Engineering for Cardiovascular Repair: From Basic Research to Clinical Applications. September 2005

Dinsmore J, **Dib N.** Myocardial Regeneration Via Myoblast Transplantation. Braunwald's Heart Disease: A Textbook of Cardiovascular Medicine e-dition 2006

MANUSCRIPTS PUBLISHED IN PEER-REVIEWED JOURNALS

1. Hodgson J, **Dib N**, Kern M. J., Bach R, and Barrett R.J. Coronary Circulation Responses to *Binodenoson*, a Selective Adenosine A2A Receptor Agonist. *The American Journal of Cardiology*, June 2007, Volume 99, Issue 11, Pages 1485-1622.

2. J Dinsmore, **Dib N**. Myoblast transplantation can repair heart damage. *Journal of Geriatric Cardiology*, September 2006.

3. **Dib N,** J Dinsmore. The future of cell therapy for myocardial regeneration. AM Heart Hospital J. 2006 Summer.

4. S Fuchs, **Dib N**, BM Cohen, P. Okubagzi, EB Dietrich, A. Campbell, J. Macko, PD Kessler, HS Rasmussen, SE Epstein, R. Kornowski. A randomized, double-blind, placebo-controlled, Multi-center, pilot study of the safety and feasibility of catheter-based intramyocardial injection of AdVEGF121 in patients with refractory advanced coronary artery disease. Catheter Cardiovasc Interv. 2006 Aug 4: 68(3):372-378.

5. A. Ali, D. Cox, **Dib N**, B. Brodie, D. Berman, N. Gupta, K. Browne, R. Iwaoka, M. Azrin, D. Stapleton, C. Setum, J. Popma; AIMI Investigators. Rheolytic thrombectomy with percutaineous coronary intervention for infarct size reduction in acute myocardial infarction: 30-day results from a multi-center randomized study. J Am Coll. Cardiol. 2006 July 18; 48.

6. Stewart J, Hilton J, Arnold J, Gregoire J, Rivard A, Archer S, Charbonneau F, Cohen E, Curtis M, Buller C, Meldelsohn F, **Dib N**, Page P, Ducas J, Plante S, Sullivan J, Macko J, Rasmussen C, Kessler P, Rasmussen H. Angiogenic Gene Therapy in Patients with Nonrevascularizable Ischemic Heart Disease: A Phase 2 Randomized, Controlled Trial of AdVEGF₁₂₁ (AdVEGF₁₂₁) Versus Maximum Medical Treatment. *Gene Therapy*. June 2006

7. **Dib N**, Opie S, McGarry M, Gahramanpour A, Campbell A, Miedzybrocki B, Diethrich EB. A Percutaneous Swine Model of Myocardial Infarction. *Journal of Pharmacological and Toxicological Methods*.

8. Opie S, **Dib N**. Surgical and Catheter Delivery of Autologous Skeletal Myoblasts in Patient with Congestive Heart Failure. *Nature Clinical Practice*. March 2006

9. **Dib N**, Michler R, Pagani F, Wright S, Kereiakes D, Lengerich R, Binkley P, Buchele D, Anand I, Swinger C, Di Carli, M, Thomas, J, Jaber W, Opie S, Campbell A, McCarthy P, Yeager M, DilsizianV, Griffith B, Korn R, Kreuger S, Ghazoul M, MacLellan R, Fonarow G, Eisen H, Dinsmore J,Diethrich E. Safety and Feasibility of Autologous Myoblast Transplantation in Patients with Ischemic Cardiomyopathy: 4 Year follow-up. *Circulation*, Sept. 2005, Volume 12, Pages 1748-1755.

10. Dinsmore J, **Dib N** An Overview of Myoblast Transplantation. *American Heart Hospital Journal*, 2005 Volume 3, Pages 146-152.

11. **Dib N**, McCarthy P, Campbell A, Yeager M, Pagani F, Wright S, MacLellan, WR, Fonarow G, Eisen H, Michler RE, Binkley P, Buchele D, Korn R, Ghazoul M, Dinsmore J, Opie S, Diethrich E.

Feasibility and Safety of Autologous Myoblast Transplantation in Patients with Ischemic Cardiomyopathy. *Cell Transplantation*, 2005 Volume 14, Pages 11-19.

12. Carlier S, Kakadiaris IA, **Dib N**. Vavuranakis M, Stefanadis C, O'malley SM, Hartley CJ, Metcalfe R, Mehran R, Falk E, Gul K, Naghavi M. Vasa vasorum imaging: a new window to the clinical detection of vulnerable atherosclerotic plaques. *Curr Atheroscler Rep.* 2005 Mar;7(2):164-9.

13. Opie S, **Dib N.** Can Stem Cell Transplantation Mend a Broken Heart? *Business Briefing: US Cardiology* August 2004, Pages 158-160.

14. Opie S, **Dib N.** Endovascular Delivery, Cell Transplantation, and Gene Therapy for Peripheral Arterial Disease. *Journal of Endovascular Therapy*. Volume 11: (6 Supplement II) 113-124, 2004.

15. **Dib N**, Opie S: Endoventricular Cell Transplantation for the Treatment of Myocardial Infarction. *The Circulation Frontier* 2004. Volume 8 No. 1:1-3.

16. **Dib N,** Diethrich, E, Goodwin, N, Robinson, B, Gilbert J, Hobohm D, Taylor, D. Endoventricular Transplantation of Allogenic Skeletal Myoblasts in a Porcine Model of Myocardial Infarction. *Journal of Endovascular Therapy*, 2002;9:313-319.

17. Paydarfar D, Krieger D, **Dib N**, Blair RH, Pastore JO, Stetz JJ Jr, Symes JF. In Vivo Magnetic Resonance Imaging and Surgical Histopathology of Intracardiac Masses: Distinct Features of Subacute Thrombi. *Cardiology*. 2001;95(1): 40–7.

18. Fearon W, Luna J, Samady H, Powers E, Feldman T, **Dib N**, Tuzcu E, Cleman M, Choe T, Cohen D, Ragosta M, Takagi A, Jeremias A, Fitzgerald P, Yeung A, Kern M, Yock P. Fractional Flow Reserve Compared with Intravascular Ultrasound Guidance For Optimizing Stent Deployment: *Circulation*, Oct. 2001. 16:1917-22.

19. Shubrooks SJ Jr, Nesto RW, Leeman D, Waxman S, Lewis SM, Fitzpatrick P, **Dib N**. Urgent Coronary Bypass Surgery for Failed Percutaneous Coronary Intervention in the Stent Era: Is Back up Still Necessary? *American Heart Journal*, 2001 Jul; 142(1): 190 – 6.

20. Paydarfar D, Krieger D, **Dib N**, Blair R, Pastore J, Stetz Jr. J, Symes J. The Heart as a Nest for Emboli: Tissue Analysis of Intracardiac Thrombi and Myxomas by Magnetic Resonance Imaging and Histopathology. Manuscript submitted to *The Stroke Journal*, August 1998.

21. **Dib N**, Shalev J, Bajwa T, Nesto R, Schmidt D. Validation of Doppler FloWire In Measuring Coronary Flow Reserve In Humans. *Catheterization and Cardiovascular Diagnosis Journal*, 1998;45:382-385.

22. Shalev J, Dib N, Goupta A: Stent like Angioplasty Result versus Stenting. Two Years Clinical Follow-up. *Invasive Cardiology. Journal.* June 1997.

23. **Dib N**, Shalev J, Bajwa T, Schmidt D. Validation of Doppler Flowire for Measuring Coronary Flow Reserve in Humans. *The Journal of Invasive Cardiology*. Volume 9/Supplement C/42C,1997.

24. Dib N, Bajwa T. Amniotic Fluid Embolism Causing Severe Left Ventricular Dysfunction and

Death. Journal of Catheterization and Cardiovascular Diagnosis 39:177-180,1996.

25. Paydarfar D, Krieger D, **Dib N**, Blair R, Pastore J, Stetz J, Symes. Magnetic Resonance Iaging of the Cardiac Chambers: Clinicopathological Correlation. *Stroke Journal* 27: 1; P-4, 1996.

26. Krieger D, Paydarfar D, Kauffman D, **Dib N**, Pastore J, Blair R. Thrombus Detection by Cardiac Magnetic Resonance Imaging. A New Approach to Embolic Stroke. *Annals of Neurology* 1993; 34:253.

27. **Dib N**, Dinsmore J: Stem Cells and Cardiac Repair: A Critical Review, *Journal of Cardiovascular Translational Research*, Volume 1, Number 1, January 2008.

28. **Dib, N**, Dinsmore J, Lababidi Z, White B, Moravec S, Campbell A, Rosenbaum A, Seyedmadani K, Jaber W, Rizenhour C, Diethrich E: One Year follow-up of Feasibility and Safety of the First U.S., Randomized, Controlled Study Using 3-Dimensional Guided Catheter-based Delivery of Autologous Skeletal Myoblasts for Ischemic Cardiomyopathy (CAuSMIC Study). *Journal of the American College of Cardiology*, November 2008.

ABSTRACTS

1. **Dib, N.,** J. Dinsmore, R. Mozak, B. White, S. Moravec, E. B. Diethrich. (2007) First United States Randomized Controlled Trial Utilizing 3-Dimensional Guided, Catheter-Based Delivery of Autologous Skeletal Myoblasts for Ischemic Cardiomyopathy: Feasibility, Safety and Improvement in Cardiac Performance. 56th Annual Scientific Sessions: American College of Cardiology Annual Meeting, Mar. 24 – 27, 2007.

2. **Dib N**, Dinsmore J, Mozak R, White B. Moravec, S, Diethrich E: Safety and Feasibility of Percutaneous Autologenous Skeletal Myoblast Transplantation for Ischemic Cardiomyopathy: Six-Month Interim Analysis. Poster Presentation AHA Scientific Session 2006, Chicago, IL, November 12-15, 2007.

3. Kern M, Hodgson J, **Dib N**, Mittleman R, Crane P: Effects of Apadenoson, a Selective Adenosine A2 Receptor Agonist for Myocardial Perfusion Imaging, on Coronary Blood Flow Velocity In Conscious Patients: Poster Presentation AHA Scientific Session 2006, Chicago, IL, November 12-15, 2006.

4. **Dib N**, Opie S, Campbell A, Gahremanpour A, Miedzybrocki B, London S, Ragaglia V, Wagner J, Yang J, Lark M, Alonso A, Macon N, Diethrich E Xenogeneic and Allogeneic Adult Bone Marrow-Derived Stem Cell Transplantation in a Porcine Model of Myocardial Infarction Using 3-Dimensional NOGA Guidance. *The American Journal of Cardiology*. October 2005, Supplement to Volume 96, Number 7.

5. Opie S, **Dib N**: Poster Presentation, Arizona Bio Expo, Phoenix, AZ, March 29-30, 2005. Henry T, Grines C, **Dib N**, Ghali J, Levine G, Watkins M, Karlsberg R, Kleiman N. Agent-3 Final Results, Late Breaking Clinical Trials, March 8, 2005.

6. Dib N, Kereiakes D, McCarthy P, MacLellan R, Fonarow G, Michler R, Campbell A, Buchele

D, Binkley P, Dinsmore J, Gahremanpour A, Gazhoul M, Netterville L, Diethrich E. Three-Year Follow-Up of the Feasibility and Safety of Autologous Myoblast Tranplantation for Ischemic Cardiomyopathy in Patients Undergoing Coronary Artery Bypass Grafting. Poster Presentation, ACC, March 8, 2005.

7. **Dib N**, Campbell A, Mattioni T, Swarup V, Gahremanpour A, Beidzybrocki B, Dayoub A, Opie S, Goodwin N, Diethrich E. Safety and Feasibility of Endocardial Autologous Skeletal Myoblast Transplantation in a Porcine Model of Myocardial Infarction. Poster Presentation, ACC, March 6, 2005.

8. **Dib N,** Campbell A, Gahremanpour A, Opie S, Meidzybrocki B, Dayoub A, Diethrich E, Dinsmore J. Biodistribution and Bioretention of Autologous Skeletal Myoblast After Percutaneous Transplantation in a Coil-Infarcted Swine Myocardium Using the Biosense System. Poster Presentation, ACC, March 6, 2005.

9. **Dib N,** McCarthy P, Dinsmore J, Yeager M, MacLellan WR, Fonarow G, Michler RE, Buchele D, Ghazoul M, Diethrich E. Safety and Feasibility of Autologous Myoblast Transplantation in Patients Undergoing Coronary Artery Bypass Grafting: Results From the United States Experience. *Journal of the American College of Cardiology* March 19, 2003 Volume 41, Number 6 (Supplement A), Page 380A.

10. Fuchs S, **Dib N**, Cohen B, Okubagzi PG, Diethrich E, Campbell A, Macko J, Rasmussen H, Epstein S. A Randomized Double Blind Placebo Controlled Multicenter Pilot Study of the Safety and Feasibility of Ad_{GV}VEGF121.10 via an Intramyocardial Injection Catheter in Patients With Advanced Coronary Artery Disease. *Journal of the American College of Cardiology* March 19, 2003 Volume 41, Number 6 (Supplement A), Page 21A.

11. **Dib N,** McCarthy P, Dinsmore J, Yeager M, Pagani F, Wright S, MacLellan R, Fonarow G, Eisen H, Furukawa S, Michler R, Buchele D, Ghazoul M, Diethrich E. Safety and Feasibility of Autologous Myoblast Transplantation in Patients with Ischemic Cardiomyopathy: Interim Results from the United States Experience. *Circulation* November 5, 2002 Volume 106, Number 19, Page II-463.

12. **Dib N.** Myoblast Cell Transplantation to Repair Myocardial Infarction, Percutaneous and Surgical Delivery. *The Journal of Heart Failure* July 2002, Volume 7, Number 1, Page 2.

13. **Dib N,** Diethrich E, Goodwin N, Robinson B, Taylor D. Percutaneous Transplantation of Skeletal Myoblasts in a Porcine Model of Myocardial Infarction Using A Transmyocardial Injection System. Abstract Accepted for Poster Presentation for Cardiovascular Revascularization Therapy Conference February 6-8, 2002.

14. **Dib N,** Diethrich E, Goodwin N, Robinson B, Taylor D. Percutaneous Transplantation of Skeletal Myoblasts in a Porcine Model of Myocardial Infarction. Abstract Presented at the Cell Transplant Society Meeting, October 14, 2001.

15. Fearon W, Samady H, Powers E, Feldman T, **Dib N**, Tuzcu E, Cleman M, Chou T, Cohen D, Takagi A, Luna J, Jeremias A, Yeung A, Kern M, Yock P. Higher Doses of Intracoronary Adenosine are Necessary for FFR-Based Stent Optimization, Institution: Stanford University Medical Center,

Stanford, CA, American College of Cardiology, Supplement, Feb 2001, Vol. 7, No. 3, Supp A, 12a.

16. Fearon W, Takagi A, Luna J, Jeremias A, Samady H, Powers E, Feldman T, **Dib N**, Tuzcu E, Cleman M, Chou T, Cohen D, Yeung A, Kern M, Yock P. Fractional Flow Reserve Compared to Intravascular Ultrasound Guidance for Optimal Stent Deployment: Final Results of the FUSION Study, *American College of Cardiology*, Supplement, Feb 2001, Vol. 7, No. 3, Supp. A, 85a.

17. **Dib N**, Cutlip D, Ho K, Senerchia C, O'Neil B, Sharma S, Hauser T, Chauhan M, Popma J, Baim D, Kuntz R. The Effect of Peri-procedural Non-Q MI on Late Mortality: 3-Year Follow-up >From the Balloon Angioplasty vs. Optimal Atherectomy Trial (BOAT). Abstract Presented at the American Heart Association, 72nd scientific sessions, November 10, 1999. *Circulation* November 2,1999;100:18 (l-779)