

Maria Giovanna Trivieri MD, PhD, FRCPC, FACC

APPOINTMENTS

Assistant Professor Department of Medicine, Division of Cardiology Heart Failure and Transplant Icahn School of Medicine at Mount Sinai New York, New York	09/01/2017-present
The Mount Sinai Hospital- Attending Physician Icahn School of Medicine at Mount Sinai New York, New York	09/01/2017-present
Assistant Professor Diagnostic, Molecular and Interventional Radiology-Secondary Appointment The BioMedical Engineering and Imaging Institute (BMEII) Icahn School of Medicine at Mount Sinai New York, New York	10/01/2021-present
Associate Professor Department of Medicine, Division of Cardiology Heart Failure and Transplant Icahn School of Medicine at Mount Sinai New York, New York	01/01/2024-present
Associate Professor Diagnostic, Molecular and Interventional Radiology-Secondary Appointment The BioMedical Engineering and Imaging Institute (BMEII) Icahn School of Medicine at Mount Sinai New York, New York	01/01/2024-present

GAPS IN EMPLOYMENT

N/A

EDUCATION

Postgraduate

PhD in Cardiovascular Physiology Scuola Superiore S. Anna” CREAS- CNR (National Research Council, Institute of Clinical Physiology)	02/1998-12/2001
Research fellow Department of Medicine, Division of Cardiology Richard Lewar Center, Heart and Stroke Foundation University of Toronto Toronto, Ontario, Canada	01/2002-05/2007
Residency in Internal Medicine Department of Medicine University of Toronto Toronto, Ontario, Canada	06/2007-12/2010
Residency in Cardiology Department of Medicine, Division of Cardiology University of Toronto Toronto, Ontario, Canada	01/2011-02/2014
Heart Failure Clinical and Research Fellowship, Mt Sinai, New York	06/2014-08/2017

Department of Medicine, Division of Cardiology
The BioMedical Engineering and Imaging Institute (BMEII), Division of Radiology
Icahn School of Medicine at Mount Sinai
New York, New York

Graduate:

MD Degree “Magna Cum Laude”	09/1991-10/1997
University of Pisa Medical School and “The Scuola Superiore Sant’Anna”	
Pisa, Italy	

CERTIFICATION

Certification in Internal Medicine	12/2010
Royal College of Physician and Surgeons of Canada	
ECFMG certification #0-690-542-6	06/2010
Certification in Internal Medicine	08/2011
American Board of Internal Medicine	
Certification in Cardiology	2/2014
Royal College of Physician and Surgeons of Canada	
Certification in General Cardiology	12/2019
American Board of Internal Medicine	
Board of Nuclear Cardiology, Diplomate	12/2013-03/01/2024
Certification in Heart Failure and Transplantation	12/2022
American Board of Internal Medicine	

LICENSURE

Albo dei Medici Chirurghi della Povincia di Crotone, Italy, #958	06/1998-to present
Ontario Medical License (CPSO) #86933	01/2012-to present
New York State Medical License #273905	02/2014-to present

AWARDS/HONOR

Scholarship Award- 1 st prize	09/1992-10/1997
“Scuola Superiore di Studi e Perfezionamento S. Anna”	
Finalist in a National Competition, (3 positions/year, nationwide)	
University of Pisa	
Faculty of Medicine Finalist Award- 1 st prize	04/1998
University of Pisa	
“Cardiovascular Scientific Day” Finalist Award- 1 st prize	02/2002
Heart and Stroke/ Richard Lewar Centre of Excellence	
Department of Medicine and Physiology, University of Toronto	
Ursula Bangs Competition for Clinical and Basic Research in Cardiology- 1 st prize	05/2002
Division of Cardiology, University of Toronto	
“The Annual Frontiers in Physiology (FIP) Research Symposium”- Postdoctoral Fellow Award	03/2003
University of Toronto	
Department of Medicine Fellowship Award	02/2002-05/2003
University of Toronto	
Advisors : Prof. Peter H. Backx and Prof D.H.MacLennan	

Heart and Stroke/Richard Lewar Center of Excellence Fellowship Award Department of Medicine, University of Toronto Advisors : Prof. Peter H. Backx and Prof D.H.MacLennan	05/2003-05/2004
Heart and Stroke/Richard Lewar Center of Excellence TACTICS, Award University of Toronto	05/2004-05/2005
Heart and Stroke Foundation of Canada, Junior Personnel Award	09/2004-04/2006
<i>Sigma XI</i> Scientific Research Honor Society	04/2023- To date

PATENTS

N/A

OTHER ENTREPRENEURIAL ACTIVITIES

N/A

OTHER PROFESSIONAL ROLES

Editorial Board Member- <i>European Journal of Heart Failure</i>	May 2024-to present
FACC	Mar 2022-to present
Fellow of the "Societa' Italiana Di Cardiologia"	Jan 2014-to present
Fellow of the Royal College of Physician and Surgeons of Canada	Jan 2012-to present
NIH Ad-Hoc Reviewer for the MPPA - Integrative Myocardial Physiology Study Section	Feb 2022, Feb 2023
NIH Ad-Hoc Reviewer – MTI Study Section	March 2024
NIH Reviewer- Fellowship in Vascular, Hematological, Biomedical Imaging and Bioengineering	July 2024
MD/PhD Selection Committee, Icahn School of Medicine	Academic Years 2022-to date
MD/PhD Advisor and Thesis Committee Member	Academic Years 2022-2024
Regular Reviewer for:	
<ul style="list-style-type: none"> • Circulation: Cardiovascular Imaging • JACC Cardiovascular Imaging • Journal of Cardiovascular Magnetic Resonance-<i>Gold Reviewer 2017 and 2018</i> • JACC • International Journal of Cardiology • BMJ Best Practice- Peer reviewer for the Idiopathic Pulmonary Arterial Hypertension Chapter • European Heart Journal - Cardiovascular Imaging • Canadian Journal of Cardiology • PloS • Trend in Cardiovascular Medicine • JACC-Heart Failure • Respiratory Medicine 	

RESEARCH PROFILE

My career has a strong academic foundation based on broad-based and international training. During my tenure at the Icahn School of Medicine and with the support of federal and non-federal awards, I have had the opportunity to fully commit to a varieties of successful research endeavors and to develop a multidisciplinary and translational research program centered on the identification of key molecular mechanisms responsible for the onset and progression of pulmonary hypertension (PH) as well as acquired and hereditary cardiomyopathies.

As a basic scientist within the Cardiovascular Research Institute (CVRI), I use state of the art techniques of stem cell biology and genetic engineering to recapitulate cardiac diseases and vascular remodeling seen in PH. Briefly, my goal is to use genome editing tools such as CRISPR to generate induced pluripotent stem cells (iPSC) derived cardiomyocytes (CMs), smooth muscle (SMCs) and endothelial cells (ECs) as well as vascular organoids harboring common mutations associated to heart failure and PH (namely Phospholamban, BMPRII and ALK1). The objective is to create a faithful in-vitro model of cardiac and pulmonary vascular diseases, to dissect molecular mechanisms and for "trials on a dish". The significance of my work has been recognized by the American Heart Association, with a Career Development Award ("*Mechanisms underlying Phospholamban L39Stop (PLN L39X)-cardiomyopathy*"). In addition, my novel approach to model PH using iPSC-SMCs and vascular organoids, has enabled me to become the recipient of the prestigious "Bayer Innovation in PH" Award ("*cGMP-mediated regulation of Smooth Muscle Cells (SMC) function in Induced Pluripotent Stem Cell-SMCs*") , and to obtain grant support from United Therapeutic and the Department of Defense as Independent Investigator ("*Vascular organoids to model inherited vascular diseases*").

As a physician scientist and member of "The Biomedical Engineering and Imaging Institute (BMII)" led by Dr. Fayad, I have spearheaded various projects that have put Mount Sinai at the forefront of landmark studies using

PET/MR to characterize patients with cardiac sarcoid, amyloid, mitral valve and more recently COVID-19 related cardiovascular diseases. Specifically, the work that I lead on mitral valve prolapse, where we identified a previously unrecognized link between metabolic abnormalities in the mitral valve and deadly arrhythmias has been recognized as one of the key innovations of the Icahn School of Medicine and featured in the Frontiers of Medical Research published in Science. Furthermore, as result of this this collective work, many grant proposals, with national and international collaborators, have been submitted or awarded.

My long-term objective is to continue to lead cutting edge research in the field of vascular disease and heart failure.

CLINICAL PROFILE

As a clinician scientist with a deep and keen interest toward elucidating the mechanisms of Heart Failure and PH, I have spearheaded a variety of initiatives that have significantly impacted patient care, contributed to a deeper understanding of various disease mechanisms and ultimately allowed our institution to be at the forefront of innovative diagnostic and management approaches, with international resonance.

As Medical Director of the PH Program, my team has actively participated in several clinical trials, with record number of recruitments in some of those studies. In addition, I have worked in collaboration with nursing/pharmacy leadership, to implement new system wide PH policies on the management of parenteral therapies (namely Remodulin and Flolan) that have resulted in smooth and safe transition of these patients within the hospital.

As a member of BMII, I have successfully built a network of clinicians engaged in imaging research and routinely facilitate translational research across all aspects of cardiovascular disease. In particular, I have integrated in the routine workup of patients new and state of the art imaging modalities that have benefited patient but most importantly allowed our institution to be a leader in the field of sarcoidosis, amyloidosis, mitral valve prolapse, device-related infection, allograft rejection and COVID-19 related cardiovascular diseases. As an expert in the interpretation of these novel imaging studies, I have not only disseminated the findings of my research work in peer-reviewed publication, but my expertise is routinely sought across various discipline within the Mount Sinai System. The seamless integration between my research work and the bedside have enabled timely recognition of various risk features and resulted in proper evaluation and management of patients with advanced cardiomyopathies.
