

**BIOGRAPHICAL SKETCH**

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NAME: Michele A. Hamilton

eRA COMMONS USER NAME (credential, e.g., agency login): HAMILTON\_A

POSITION TITLE: Director, Heart Failure Program

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE (if applicable)	Completion Date MM/YYYY	FIELD OF STUDY
Princeton University, Princeton, NJ	BA	1980	Biology
Harvard Medical School, Boston, MA	MD	1984	
UCLA Center for the Health Sciences, Los Angeles, CA		1985	Internship – Department of Medicine
UCLA Center for the Health Sciences, Los Angeles, CA		1987	Residency, Department of Medicine
UCLA Center for the Health Sciences, Los Angeles, CA		1989	Fellowship, Division of Cardiology

**A. Personal Statement**

I have been the Director of the Advanced Heart Failure Program at the Smidt Heart institute at Cedars-Sinai Medical Center. Previously, I held a similar position at UCLA Medical Center for over 10 years. I have had extensive research experience in the etiology, diagnosis and management of congestive heart failure and cardiomyopathy. One of my areas of research is the interface of psychiatry and heart failure, including depression, sleep disorders, and quality of life. I currently have 10% effort on our PCORI grant for treatment of depression in heart failure. I also have research interests in thyroid and other hormonal abnormalities and therapies in heart failure patients, as well as echocardiographic assessment of heart failure severity and hemodynamic treatment including percutaneous mitral valve interventions. At Cedars-Sinai Medical Center, I coordinate the outpatient Advanced Heart Disease Center and have established and serve as the Medical Director of a 56-bed inpatient heart failure unit. These serve as sites to study interventions in patient management designed to limit length of stay and reduce readmission rates as well as other translational projects. In this capacity, I look forward to contributing to the implementation of this study.

**B. Positions and Honors**Positions and Employment

2010-Present	Director, Advanced Heart Failure Program Smidt Heart Institute at Cedars-Sinai Medical Center, Los Angeles, CA
2013-Present	Professor, Medicine/Cardiology Cedars-Sinai Medical Center, Los Angeles, CA
2010-Present	Medical Director, Inpatient Heart Failure Unit Cedars-Sinai Medical Center

2003-Present	Clinical Professor of Medicine, Division of Cardiology David Geffen School of Medicine at UCLA, Los Angeles, CA
1993-2010	Co-Director, Clinical Heart Failure Program Ahmanson-UCLA Cardiomyopathy Center

#### Other Experience and Professional Memberships

2018-present	Fellow, Heart Failure Society of America
1991-present	Fellow, American College of Cardiology
1980-present	Sigma Xi Research Society
1989-present	American Federation of Medical Research
1989-present	American Heart Association, Kidney Council
1992-1997	Councilor, California Chapter American College of Cardiology
1998-present	International Society for Heart and Lung Transplantation

#### Current Committees at Cedars-Sinai Medical Center

2010-present	Heart Transplant Executive Committee
2010-present	Heart Team Readmissions Committee (Chair)
2010-2016	Readmissions Oversight Committee
2010-present	Heart Transplant Multidisciplinary Selection and Care Review Committee (co-chair)
2010-2017	Heart Failure CS Medicine Committee (co-chair)
2010-2012	Cardiology PIC Committee
2010-present	6S MD/RN Collaborative Committee (Champion)
2010-present	Heart Transplant/Heart Failure Operations Committee
2010-present	Comprehensive Transplant M & M Committee
2010-present	Heart Failure Research Steering Committee (chair)
2010-present	CS-Link Clinical Care Committee
2010-present	Preventive and Consultative COE

#### Board Certifications

Board Certified in Advanced Heart Failure and Transplant Cardiology  
 Board Certified in Echocardiography  
 Board Certified in Cardiovascular Disease  
 Board Certified in Internal Medicine

#### **C. Contributions to Science**

**1. Depression in heart failure patients.** Depression is highly prevalent in heart failure patients and is associated with poor outcomes, including quality of life and mortality. Detecting and treating depression effectively has great potential to prevent negative outcomes, enhance recovery and promote overall health. I currently serve as a co-investigator on a PCORI- funded study which is comparing the effectiveness of behavioral therapy versus antidepressant medication management in heart failure patients.

- a) Dracup, K., C. Westlake, V. S. Erickson, D. K. Moser, M. L. Caldwell and **M. A. Hamilton** (2003). "Perceived control reduces emotional stress in patients with heart failure." *Journal of Heart and Lung Transplantation* 22(1): 90-93.
- b) IsHak WW, Edwards G, Herrera N, Lin T, Hren K, Peterson M, Ngor A, Liu A, Kimchi A, Spiegel B, Hedrick R, Chernoff R, Diniz M, Mirocha J, Manoukian V, Ong M, Harold J, Danovitch I, and

**Hamilton M.** Depression in Heart Failure: A Systematic Review. *Innovations in Clinical Neuroscience*, Mar/Apr 2020

- c) IsHak WW, Korouri S, Darwish T, Vanle B, Dang J, Edwards G, Black JT, Aronow H, Kimchi A, Spiegel B, Hedrick R, Chernoff R, Diniz MA, Mirocha J, Manoukian V, Harold J, Ong MK, Wells K, **Hamilton M**, Danovitch I. Personalized treatments for depressive symptoms in patients with advanced heart failure: A pragmatic randomized controlled trial. *PLoS One*. 2021 Jan 7;16(1):e0244453. PMID: 33412562; PMCID: PMC7790529.
- d) de la Rosa A, Singer-Englar T, **Hamilton MA**, IsHak WW, Kobashigawa JA, Kittleson MM. The impact of depression on heart transplant outcomes: A retrospective single-center cohort study. *Clin Transplant*. 2021 Mar;35(3):e14204. Epub 2021 Jan 5. PMID: 33368675.

## **2. Diagnostic tools and therapeutic interventions focused on hemodynamic parameters in heart failure.**

Treatment of hemodynamic abnormalities has been known to be critically important in the functional capacity and survival of heart failure patients. I have conducted several studies demonstrating the role of noninvasive diagnostic tools for assessing hemodynamics as well and have participated in medical and device-based studies of hemodynamically guided treatments for advanced heart failure patients.

- a) **Hamilton MA**, Stevenson LW, Child JS, Moriguchi JD, Woo M. Acute reduction of atrial overload during vasodilator and diuretic therapy in advanced congestive heart failure. *Am J Cardiol* 1990; 65:1209-1212.
- b) Beigel R, Cercek B, Siegel RJ, **Hamilton MA**. Echo-Doppler hemodynamics: an important management tool for today's heart failure care. *Circulation*. 2015 17;131 (11):1031-4. Doi:10.1161/CIRCULATIONAHA.114.011424. Review. PubMed PMID: 25779543
- c) Cheng R, Dawkins S, **Hamilton MA**, Makar M, Hussaini A, Azarbal B, Patel JK, Kobashigawa JA, Trento A, Makkar RR, Kar S. Percutaneous Mitral Repair for Patients in Cardiogenic Shock Requiring Inotropes and Temporary Mechanical Circulatory Support. *JACC Cardiovasc Interv*. 2019 Dec 9;12(23):2440-2441. doi: 10.1016/j.jcin.2019.05.042. PMID: 31806229.
- d) Zern EK, Cheng S, Wolfson AM, **Hamilton MA**, Zile MR, Solomon SD, Kittleson MM. Angiotensin Receptor-Nepriylsin Inhibitor Therapy Reverses Pulmonary Hypertension in End-Stage Heart Failure Patients Awaiting Transplantation. *Circ Heart Fail*. 2020 Feb;13(2):e006696. doi: 10.1161/CIRCHEARTFAILURE.119.006696. Epub 2020 Feb 14. PMID: 32059634; PMCID: PMC7027923.

**3. Hormonal and metabolic abnormalities in advanced heart failure patients.** I have studied the effects of endocrine and metabolic abnormalities, particularly abnormal thyroid hormone function and obesity, on cardiac function. In addition, I have looked at the use of thyroid hormone as an intervention to improve cardiac function in these patients. I have studied the role of the treatment of obesity in heart failure and am currently the PI for a study on the safety and efficacy of bariatric surgery in this high-risk population.

- a) **Hamilton MA**, Stevenson LW, Fonarow GC, Steimle AE, Goldhaber JI, Child JS, Chopra IJ, Moriguchi JD, Hage A. Safety and hemodynamic effects of intravenous triiodothyronine in advanced congestive heart failure. *Am J Cardiol*, 1998;81:443-447.
- b) Effect of weight loss on renal function in overweight and obese patients with heart failure. Motie M, Evangelista LS, Lombardo D, Hoi J, Horwich TB, **Hamilton MA**, Fonarow GC. *Diabetes Metab Syndr*. 2016 Jun 23. pii: S1871-4021(16)30072-8. PMID: 27381968
- c) Miller RJH, Cadet S, Pournazari P, Pope A, Kransdorf E, **Hamilton MA**, Patel J, Hayes S, Friedman J, Thomson L, Tamarappoo B, Berman DS, Slomka PJ. Quantitative Assessment of Cardiac Hypermetabolism and Perfusion for Diagnosis of Cardiac Sarcoidosis. *J Nucl Cardiol*. 2020 May 27. doi: 10.1007/s12350-020-02201-5. Epub ahead of print. PMID: 32462631.
- d) Evangelista LS, Jose MM, Sallam H, Serag H, Golovko G, Khanipov K, **Hamilton MA**, Fonarow GC. High-protein vs. standard-protein diets in overweight and obese patients with heart failure and diabetes mellitus: findings of the Pro-HEART trial. *ESC Heart Fail*. 2021 Apr;8(2):1342-1348. doi: 10.1002/ehf2.13213. Epub 2021 Jan 27. PMID: 33502122; PMCID: PMC8006643.

**4. Exercise physiology in heart failure and transplantation.** Impaired functional capacity is commonly a major factor in the quality of life in patients with HF and is often the principal reason for seeking medical care. This limitation in exercise capacity is felt to be related to both cardiac and peripheral (neurologic and muscular)

factors. I have participated in both basic and clinical studies to better understand the mechanisms involved in this exercise capability limitation in heart failure patients.

- a) Dracup K, Evangelista LS, **Hamilton MA**, Erickson V, Hage A, Moriguchi J, Canary C, MacLellan R, Fonarow GC. Effects of a Home-Based Exercise Program on Clinical Outcomes in Advanced Heart Failure. *Am Heart J* 2007.
- b) Middlekauff HR, Vigna C, Verity MA, Fonarow GC, Horwich TB, **Hamilton MA**, Shieh P, Tupling AR. Abnormalities in calcium handling in skeletal muscle mirror those of the heart in humans with heart failure: a shared mechanism? *J Card Fail.* 2012 Sep;18(9):724-33
- c) Middlekauff HR, Verity MA, Horwich TB, Fonarow GC, **Hamilton MA**, Shieh P. Intact skeletal muscle mitochondrial enzyme activity but diminished exercise capacity in advanced heart failure patients on optimal medical and device therapy. *Clin Res Cardiol.* 2013Aug; 102(8): 547-54
- d) Kobashigawa JA, Leaf DA, Lee N, Gleeson M, Liu H, **Hamilton MA**, Moriguchi JD, Kawata N, Einhorn K, Herlihy E, Laks H. A controlled trial of exercise rehabilitation after heart transplantation. *N Engl J Med* 1999;340:272-277.

**5. Understanding, preventing, and treating rejection and cardiac allograft vasculopathy (CAV).** The long-term survival of cardiac transplant recipients is adversely affected by CAV which remains a leading cause of death. Our center has conducted many studies guiding the therapy for both rejection and transplant coronary artery disease, including a prospective, randomized control trial to show the effectiveness of pravastatin in reducing the incidence of CAV and increasing the survival of heart transplant recipients.

- a) Kobashigawa JA, Moriguchi JD, Laks H, Wener L, Hage A, **Hamilton MA**, Cogert G, Marquez A, Vassilakis ME, Patel J, Yeatman L. Ten-year follow-up of a randomized trial of pravastatin in heart transplant patients. *J Heart Lung Transplant.* 2005 Nov 30;24(11):1736-40.
- b) Tang Z, Kobashigawa J, Rafiei M, Stern LK, **Hamilton M**. The natural history of biopsy-negative rejection after heart transplantation. *Journal of Transplantation.* 2013. Vol. 2013, Article ID 236720.
- c) Sato T, Azarbal B, Cheng R, Esmailian F, Patel J, Kittleson M, Czer L, Thottam M, Levine R, Dimbil S, Olymbios M, Anzai T, **Hamilton MA**, Khayal T, Kobashigawa J. Does ex vivo perfusion lead to more or less intimal thickening in the first-year post-heart transplantation? *Clin Transplant.* 2019:e13648. Epub 2019/06/24. doi: 10.1111/ctr.13648. PubMed PMID: 31230384. 2019 Jun 23.
- d) Sato T, Cheng R, Azarbal B, Kittleson M, Patel J, Czer L, Levine R, Dimbil S, Olymbios M, Anzai T, Kransdorf E, Chang DH, **Hamilton MA**, Esmailian F, Kobashigawa J. Combined heart and kidney transplantation-Is there a protective effect against cardiac allograft vasculopathy using intravascular ultrasound? *J Heart Lung Transplant.* 2019 Sep;38(9):956-962. doi: 10.1016/j.healun.2019.06.012. Epub 2019 Jun 19. PMID: 31301966.

#### **D. Additional Information: Research Support and/or Scholastic Performance**

##### **Ongoing Research Support**

**Bariatric Surgery in Heart Failure Patients**                      Hamilton (PI)    07/01/13-Present  
Prospective analysis of outcomes of bariatric surgery in patients with reduced LVEF and chronic heart failure at our institution  
Role: PI

**V-Wave**    Hamilton (PI)    09/01/19 - Present  
Relieve-HF Study, a landmark randomized, controlled, double-blinded multicenter trial evaluating the safety and effectiveness of a novel interatrial shunt device in NYHA Class III or ambulatory Class IV heart failure patients with either preserved or reduced ventricular function.  
Role: PI

**PCORI - SMPAI-2017C2-7716**    IsHak (PI)    10/01/18 -Present  
Personalized Treatments for Depressive Symptoms in Patients with Advanced Heart Failure. The goal of the proposed research is to generate scientific evidence to help patients, caregivers, and providers, make decisions about how best to manage depressive symptoms in advanced heart failure. This real-world

randomized pragmatic trial will compare the effectiveness of two evidence-based treatment approaches for enhancing patient care plans: (1) Behavioral Activation (BA), a patient-centered psychotherapy which emphasizes engagement in enjoyable and valued personalized activities as selected by the patient; (2) Antidepressant Medication Management (MEDS)

Role: Co-I (10% effort)

**Bio Cardia, Inc**

Chang (PI)

09/01/19 - Present

CardiAMP Heart Failure Trial: Randomized Controlled Pivotal Trial of Autologous Bone Marrow Mononuclear Cells Using the CardiAMP Cell Therapy in Patients with Post Myocardial Infarction Heart Failure

Role: Co-I

**Eidos Therapeutics**

Patel (PI)

06/01/19 - Present

A Phase 3, Randomized, Double-Blind, Placebo-Controlled Study of the Efficacy and Safety of AG10 in Subjects with Symptomatic Transthyretin Amyloid Cardiomyopathy

Role: Co-I

**Anylam Pharmaceuticals**

Patel (PI)

02/01/20 - Present

APOLLO-B: A Phase 3, Randomized, Double-blind, Placebo-controlled Multicenter Study to Evaluate the Efficacy and Safety of Patisiran in Patients with Transthyretin Amyloidosis with Cardiomyopathy

Role: Co-I

**IONIS Pharmaceuticals**

Patel (PI)

11/01/20 - Present

ATTR CM - A Phase 3 Global, Double-Blind, Randomized, Placebo-Controlled Study to Evaluate the Efficacy and Safety of ION-682884 in Patients with Transthyretin-Mediated Amyloid Cardiomyopathy

Role: Co-I

**Boehringer Ingelheim**

Patel (PI)

09/01/20 - Present

EMPULSE: A multicentre, randomized, double-blind, 90-day superiority trial to evaluate the effect on clinical benefit, safety and tolerability of once daily oral EMPagliflozin 10 mg compared to placebo, initiated in patients hospitalized for acute heart failure (de novo or decompensated chronic HF) who have been

Stabilized

Role: Co-I

**Pending Research Support:**