

**Romain Harmancey, Ph.D.**

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**I) Education**

- 2006** **Doctor of Philosophy**, Pharmacology - Université Paul Sabatier (Toulouse, France)
- 2002** **Master of Science**, Biology & Genetics - Université Paul Sabatier (Toulouse, France)
- 2001** **Bachelor of Science**, Biology & Physiology - Université Paris XI (Orsay, France)

**II) Positions and Training**

- July 2021** **Associate Professor** (tenured): University of Mississippi Medical Center, Department of Physiology and Biophysics.  
*Research focus:* Identification of novel molecular mechanisms by which obesity and obesity-related metabolic disorders contribute to myocardial maladaptation under stress conditions.
- July 2020** **Associate Professor** (tenure track): University of Mississippi Medical Center, Department of Physiology and Biophysics.  
*Research focus:* Identification of novel molecular mechanisms by which obesity and obesity-related metabolic disorders contribute to myocardial maladaptation under stress conditions.
- 2015-present** **Associate Director** for Cardiac Metabolism Research, Mississippi Center for Heart Research, University of Mississippi Medical Center.  
*Role:* To educate the local scientific community on methods and techniques available to study myocardial metabolism and to foster collaborations in that domain.
- 2015-July 2020** **Assistant Professor** (tenure track): University of Mississippi Medical Center, Department of Physiology and Biophysics.  
*Research focus:* Identification of novel molecular mechanisms by which insulin resistance exacerbates impairment of myocardial functional recovery at reperfusion following ischemia.
- 2007-2014** **Postdoctoral Fellow:** The University of Texas Medical School at Houston, Department of Internal Medicine, Division of Cardiology  
*Advisor:* Heinrich Taegtmeyer, M.D., D.Phil.

*Research focus:* Determination of the cardiac metabolic and lipotoxic alterations caused by obesogenic diets and insulin resistance and of their impact on myocardial contractile function.

**2003-2006**      **Ph.D. Graduate Student:** Université Paul Sabatier, Institute of Molecular Medicine of Rangueil, Inserm Unit 858 (Toulouse, France)  
*Advisors:* Fatima Smih, Ph.D., and Jean-Michel Senard, M.D.  
*Research focus:* Biological and functional characterization of two proteins associated with obesity: apolipoprotein O and adrenomedullin.

### III) Honors and Awards

**2018**      UMMC Excellence in Research Early Career Investigator Award  
**2018**      UMMC Excellence in Research Gold Award (awarded for receiving >\$1,000,000 extramural funding)  
**2018**      APS-CV section Research Recognition Award (Mentor to Dr. Kristin Edwards)  
**2016**      UMMC Excellence in Research Silver Award (awarded for receiving >\$500,000 in extramural funding)  
**2015**      UMMC Excellence in Research Bronze Award (awarded for receiving >\$250,000 in extramural funding)  
**2013**      UTHealth postdoctoral association travel award  
**2005**      1<sup>st</sup> place best poster presentation award - French Pharmacological Society annual meeting  
**2003**      France-Canada youth exchange program travel award  
**2002**      French Ministry of Education excellence award

### IV) Education Mission

- Outreach Activities

**2016-2018**      American Heart Association Heart Walk. Team captain for UMMC Department of Physiology, and Biophysics/Mississippi Center for Obesity Research.  
**2017**      UMMC Discovery U. Clinton High School, Jackson MS. Introduction to biomedical research.  
**2015**      American Physiological Society PhUN Week. Mississippi Children's museum. Jackson, MS. Cardiac Physiology.

- Formal Teaching:

**2019-2021**      *Course:* Responsible Conduct in Research  
*Program:* UMMC School of Graduate Studies  
*Role:* Instructor on Data Acquisition & Management

**2018-2021**      *Course:* Advanced Endocrinology  
*Program:* Physiology Graduate Program, UMMC School of Graduate Studies  
*Role:* Director/Instructor

**2017-2021**     *Course:* Physiological Applications of Molecular Biology  
*Program:* Physiology Graduate Program, UMMC School of Graduate Studies  
*Role:* Instructor on Methods for Analyzing Mitochondrial Structure and Function

- Mentoring of Undergraduate & Medical Students:

- 2017**     Yassmin Hegazy, UMMC Medical Student Summer Research Program
- 2016**     Destiny Mitchell, Undergraduate Research Experience (SURE) student funded by an NIH/NHLBI (R25) grant, for a duration of 10 weeks.
- 2016**     Mohammed Pharaon, 4<sup>th</sup> year medical student from King Saud University (Saudi Arabia), performed 2 months of research training.
- 2015**     Ahmed Bux, 1<sup>st</sup> year medical student at Alfaisal University (Saudi Arabia), performed 2 months of research training.
- 2015**     Destiny Mitchell, Undergraduate Research Experience (SURE) student funded by an NIH/NHLBI (R25) grant, for a duration of 10 weeks. Destiny received the 1<sup>st</sup> place award for presentation of her work at the Emerging Researchers National Conference in STEM held on January 19 2016 in Washington D.C.
- 2013**     Derek Haight, 1<sup>st</sup> year Medical Students Summer Research Program at McGovern Medical School at The University of Texas Health Science Center at Houston. Derek received the 1<sup>st</sup> place award at the Webber Price poster competition of McGovern Medical School.
- 2012**     James Doan, 1<sup>st</sup> year Medical Students Summer Research Program at McGovern Medical School at The University of Texas Health Science Center at Houston.
- 2011**     Genna Lubrano, 1<sup>st</sup> year Medical Students Summer Research Program at McGovern Medical School at The University of Texas Health Science Center at Houston.
- 2008**     Nathan Wright, 1<sup>st</sup> year Medical Students Summer Research Program at McGovern Medical School at The University of Texas Health Science Center at Houston

- Mentoring of Graduate Students:

- 2017-2020**     Tyler Lomax, Ph.D. candidate in Physiology Graduate Program, UMMC School of Graduate Studies in the Health Sciences.  
 Thesis: “Impact of Uncoupling Protein 3 Deficiency on High-Fat Diet-Induced Obesity and Insulin Resistance.”
- 2017-2020**     Yassmin Hegazy, UMMC Medical Student Research Program.  
 Project: “Role of Nuclear Receptor Subfamily 4 Group A Member 2 in Cardiac Adaptation to High-Calorie Feeding”

- Mentoring of fellows and physicians:

- 2019-present**     Xu Chen, postdoctoral research fellow
- 2018-2020**     Hannah Copeland, Assistant Professor, UMMC Department of Surgery
- 2018-2019**     Elena Mahmoudi, postdoctoral research fellow
- 2017-2018**     Kristin Edwards, postdoctoral research fellow
- 2016-present**     Sadia Ashraf, postdoctoral research fellow

## V) Service Mission:

- Institutional Service:
  - 2020** *Dissertation Advisory Committee Member*; Laura Coats, Ph.D. candidate, Physiology and Biophysics Graduate Program, UMMC School of Graduate Studies in the Health Sciences. Thesis: “Pathogenesis of Intrauterine Growth Restriction and the Developmental Programming of Cardiovascular Disease.”
  - 2019-2021** *Dissertation Advisory Committee Member*; Osvaldo Rivera-Gonzalez, Ph.D. candidate, Physiology and Biophysics Graduate Program, UMMC School of Graduate Studies in the Health Sciences. Thesis: “Endothelin-1 in Obesity and Insulin Resistance.”
  - 2019-present** *Dissertation Advisory Committee Member*; John Daseke, Ph.D. candidate, Physiology and Biophysics Graduate Program, UMMC School of Graduate Studies in the Health Sciences. Thesis: “Mapping Neutrophil Polarization over the Myocardial Infarction Time Continuum.”
  - 2019** *Ad Hoc Reviewer*; UMMC Institutional Research Support Program, Clinical Sciences Study Section.
  - 2018-2020** *Dissertation Advisory Committee Member*; Jeanne Ishimwe, Ph.D. candidate, Pharmacology and Toxicology Graduate Program, UMMC School of Graduate Studies in the Health Sciences. Thesis: “The Role of the Gut Microbiome in the Development of Preeclampsia.”
  - 2018** *Ad Hoc Reviewer*; UMMC Institutional Research Support Program, Basic Sciences Study Section.
  - 2018** *Ad Hoc Reviewer*; Mississippi Center for Heart Research pre-submission grant review committee.
  - 2017** *Ad Hoc Reviewer*; Center for Biomedical Research Excellence (COBRE), Mississippi Center of Excellence in Perinatal Research (MS-CEPR) Pilot Grant Program Review Committee.
  - 2017** *Ad Hoc Reviewer*; UMMC Institutional Research Support Program, Basic Sciences Study Section.
  - 2017-present** *Training Advisory Committee Member*; Dr. Alan Mouton, postdoctoral fellow/instructor, UMMC Department of Physiology and Biophysics
  - 2016-2017** *Training Advisory Committee Member*; Dr. Kelvin Ero, postdoctoral fellow, UMMC Department of Physiology and Biophysics
  - 2016-2019** *Admission Committee Member*; Physiology Graduate Program, UMMC School of Graduate Studies.
  - 2016** *Ad Hoc Faculty Search Committee Member*; UMMC Department of Physiology and Biophysics
  - 2015** *Ad Hoc Faculty Development Committee Member*; UMMC
  - 2015-2017** *Dissertation Advisory Committee Member*; Xiaochen He, Ph.D. candidate, Pharmacology and Toxicology Graduate Program UMMC School of Graduate Studies in the Health Sciences. Thesis: “The Role of Endothelial SIRT3 in Cardiac Hypertrophy and Heart Failure.”

- National and International Committees Service:
  - 2020** *Ad Hoc Reviewer* NIH/NHLBI Myocardial Ischemia and Metabolism Study Section
  - 2020** *Ad Hoc Reviewer*; American Heart Association Transformational Project Award Basic Cardiac Sciences 1 Review Committee.
  - 2019-2022** *Cardiovascular Section Awards Committee Member*; American Physiological Society
  - 2019** *APS Featured Topic co-chair*; “Cardiovascular Metabolism in Diabetes”. Experimental Biology 2019, Orlando, FL
  - 2019** *Ad Hoc Reviewer*; NIH/NHLBI Mentored Transition to Independence (K99/R00) Study Section
  - 2018** *Ad Hoc Reviewer*; University of Alabama at Birmingham Center for Clinical and Translational Science Pilot Funding Review Committee
  - 2016** *Session co-chair*; First International Meeting on Heart Diseases (IMOHD), Toulouse, France
  - 2016** *Ad Hoc Program Reviewer*; “Gene Expression/Molecular Biology”. American Heart Association Scientific Sessions
  - 2013-present** *Member*; American Physiological Society
  - 2013-present** *Member*; The Endocrine Society
  - 2011-present** *Member*; American Heart Association

- Scientific Editorial Service:

**Ad hoc reviewer for 37 peer-reviewed scientific journals:** AJP Heart and Circulatory Physiology; AJP Regulatory, Integrative and Comparative Physiology; Annals of Nutrition and Metabolism; Biology of Sex Differences; Biomedicine and Pharmacotherapy; BMJ Open; British Journal of Pharmacology; Cardiovascular Drugs and Therapy; Cardiovascular Diabetology; Cardiovascular Research; Cell Cycle; Circulation Research; Clinical Science; Comprehensive Physiology; Endocrinology; Heart and Vessels; Hypertension; International Journal of Cardiology; International Journal of Experimental Pathology; iScience; Journal of Cellular Biochemistry; Journal of Molecular and Cellular Cardiology; Journal of Nutrition; Journal of Proteomics; Journal of Visualized Experiments; Life Sciences; Medical Science Monitor; Molecular Nutrition and Food Research; Nutrition & Metabolism; Nutrition Research; Pharmacological Research; Physiological Genomics; PLOS ONE; Proteomics – Clinical Application; Scientific Reports; Theranostics; Therapeutics and Clinical Risk Management.

## VI) Research Mission

### A- PUBLICATIONS

- Refereed Original Articles
  1. Philip-Couderc P, Smih F, Hall JE, Pathak A, Roncalli J, **Harmancey R**, Massabuau P, Galinier M, Verwaerde P, Senard JM, Rouet P (2004) Kinetic analysis of cardiac transcriptome regulation during chronic high-fat diet in dogs. *Physiological Genomics* 19:32-40. PMID 15226482

2. Philip-Couderc P, Pathak A, Smih F, Dambrin C, **Harmancey R**, Buys S, Galinier M, Massabuau P, Roncalli J, Senard JM, Rouet P (2004) Uncomplicated human obesity is associated with a specific cardiac transcriptome: Involvement of the wnt pathway. *FASEB Journal* 18:1539-40. PMID 15289443
3. **Harmancey R**, Senard JM, Pathak A, Desmoulin F, Claparols C, Rouet P, Smih F (2005) The vasoactive peptide adrenomedullin is secreted by adipocytes and inhibits lipolysis through no-mediated beta-adrenergic agonist oxidation. *FASEB Journal* 19:1045-47. PMID 15788445
4. Lamant M, Smih F, **Harmancey R**, Philip-Couderc P, Pathak A, Roncalli J, Galinier M, Collet X, Massabuau P, Senard JM, Rouet P (2006) Apoo, a novel apolipoprotein, is an original glycoprotein up-regulated by diabetes in human heart. *Journal of Biological Chemistry* 281:36289-302. PMID 16956892
5. **Harmancey R**, Senard JM, Rouet P, Pathak A, Smih F (2007) Adrenomedullin inhibits adipogenesis under transcriptional control of insulin. *Diabetes* 56:553-63. PMID 17327422
6. Roncalli J, Smih F, Desmoulin F, Dumonteil N, **Harmancey R**, Hennig S, Perez L, Pathak A, Galinier M, Massabuau P, Malet-Martino M, Senard JM, Rouet P (2007) Nmr and cDNA array analysis prior to heart failure reveals an increase of unsaturated lipids, a glutamine/glutamate ratio decrease and a specific transcriptome adaptation in obese rat heart. *Journal of Molecular and Cellular Cardiology* 42:526-39. PMID 17222424
7. Samudio I, **Harmancey R**, Fiegl M, Kantarjian H, Konopleva M, Korchin B, Kaluarachchi K, Bornmann W, Duvvuri S, Taegtmeier H, Andreeff M (2010) Pharmacologic inhibition of fatty acid oxidation sensitizes human leukemia cells to apoptosis induction. *The Journal of Clinical Investigation* 120(1):142-56. PMID 20038799
8. **Harmancey R**, Wilson CR, Wright NR, Taegtmeier H (2010) Western diet changes cardiac acyl-CoA composition in obese rats: A potential role for hepatic lipogenesis. *Journal of Lipid Research* 51(6):1380-93. PMID 20093477
9. Li MV, Chen W, **Harmancey R**, Nuotio-Antar AM, Imamura M, Saha P, Taegtmeier H, Chan L (2010) Glucose-6-phosphate mediates activation of the carbohydrate responsive binding protein (ChREBP). *Biochemical and Biophysical Research Communications* 395(3):395-400. PMID 20382127
10. Ballal K, Wilson CR, **Harmancey R**, Taegtmeier H (2010) Obesogenic high fat western diet induces oxidative stress and apoptosis in rat heart. *Molecular and Cellular Biochemistry* 344(1-2):221-30. PMID 20676734

11. Smih F, Desmoulin F, Berry M, Turkieh A, **Harmancey R**, Iacovoni J, Trouillet C, Delmas C, Pathak A, Lairez O, Koukoui F, Massabuau P, Ferrieres J, Galinier M, Rouet P (2011) Blood signature of pre-heart failure: a microarrays study. *PLoS One* 6(6):e20414. PMID 21731613
12. **Harmancey R**, Lam TN, Lubrano GM, Guthrie PH, Vela D, Taegtmeier H (2012) Insulin resistance improves metabolic and contractile efficiency in stressed rat heart. *FASEB Journal* 26(8):3118-26. PMID 22611083
13. **Harmancey R**, Vasquez HG, Guthrie PH, Taegtmeier H (2013) Decreased long-chain fatty acid oxidation impairs post-ischemic recovery of the insulin resistant rat heart. *FASEB Journal* 27(10):3966-78. PMID 23825227
14. Turkieh A, Caubère C, Barutaut M, Desmoulin F, **Harmancey R**, Galinier M, Berry M, Dambrin C, Polidori C, Casteilla L, Koukoui F, Rouet P, Smih F (2014) Apolipoprotein O is mitochondrial and promotes lipotoxicity in heart. *The Journal of Clinical Investigation* 124(5):2277-86. PMID 24743151
15. Guzmán S, Marin S, Miranda A, Selivanov VA, Centelles JJ, **Harmancey R**, Smih F, Turkieh A, Durocher Y, Zorzano A, Rouet P, Cascante M (2014) 13 C metabolic flux analysis shows that resistin impairs the metabolic response to insulin in L6E9 myotubes. *BMC Systems Biology* 8(1):109. PMID 25217974
16. Kamel PI, Qu X, Geiszler AM, Nagrath D, **Harmancey R**, Taegtmeier H, Grande-Allen KJ (2014) Metabolic regulation of collagen gel contraction by porcine aortic valvular interstitial cells. *Journal of the Royal Society Interface* 11(101):20140852. PMID 25320066
17. Wu SP, Kao CY, Wang L, Creighton CJ, Yang J, Donti TR, **Harmancey R**, Vasquez HG, Graham BH, Bellen HJ, Taegtmeier H, Chang CP, Tsai MJ, Tsai SY (2015) Increased COUP-TFII expression in adult hearts induces mitochondrial dysfunction resulting in heart failure. *Nature Communications* 6:8245. PMID 26356605
18. **Harmancey R**, Haight DL, Watts KA, Taegtmeier H (2015) Chronic hyperinsulinemia causes selective insulin resistance and down-regulates Uncoupling Protein 3 (UCP3) through the activation of Sterol Regulatory Element-Binding Protein (SREBP)-1 transcription factor in the mouse heart. *Journal of Biological Chemistry* 290(52):30947-61. PMID 26555260
19. Lam T, **Harmancey R**, Vasquez H, Gilbert B, Patel N, Hariharan V, Lee A, Taegtmeier H (2016) Reversal of intramyocellular lipid accumulation by lipophagy and a p62-mediated pathway. *Cell Death Discovery* 2:16061. PMID 27625792
20. Karlstaedt A, Zhang X, Vitrac H, **Harmancey R**, Vasquez H, Wang JH, Goodell MA, Taegtmeier H (2016) Oncometabolite d-2-hydroxyglutarate impairs  $\alpha$ -ketoglutarate

- dehydrogenase and contractile function in rodent heart. *Proceedings of the National Academy of Sciences of the United States of America* 113(37):10436-41. PMID 27582470
21. Evaristi MF, Caubere C, **Harmancey R**, Desmoulin F, Peacock WF, Berry M, Turkieh A, Barutaut M, Galinier M, Dambrin C, Polidori C, Miceli C, Chamontin B, Mazon S, Roncalli J, Massabuau P, Smih F, Rouet P (2016) Increased mean aliphatic lipid chain length in left ventricular hypertrophy secondary to arterial hypertension: A cross-sectional study. *Medicine* 95(46):e4965. PMID 27861330
  22. Bakrania B, Granger JP, **Harmancey R** (2016) Methods for the determination of rates of glucose and fatty acid oxidation in the isolated working rat heart. *Journal of Visualized Experiments*. doi:10.3791/54497. PMID 27768055
  23. Altara R, **Harmancey R**, Didion SP, Booz GW, Zouein FA (2016) Cardiac STAT3 deficiency impairs contractility and metabolic homeostasis in hypertension. *Frontiers in Pharmacology* 7:436. eCollection 2016. PMID 27899891
  24. Bux AS, Lindsey ML, Vasquez HG, Taegtmeier H, **Harmancey R** (2017) Glucose regulates the intrinsic inflammatory response of the heart to surgically induced hypothermic ischemic arrest and reperfusion. *Physiological Genomics* 49(1):37-52. PMID 27940566
  25. Mouton AJ, DeLeon-Pennell KY, Rivera Gonzalez OJ, Flynn ER, Freeman TC, Saucerman JJ, Garrett MR, Ma Y, **Harmancey R**, Lindsey ML (2018) Mapping macrophage polarization over the myocardial infarction time continuum. *Basic Res Cardiol* 113(4):26. PMID 29868933
  26. Edwards KS, Ashraf S, Lomax TM, Wiseman JM, Hall ME, Gava FN, Hall JE, Hosler JP, **Harmancey R** (2018) Uncoupling protein 3 deficiency impairs myocardial fatty acid oxidation and contractile recovery following ischemia/reperfusion. *Basic Research in Cardiology* 113(6):47. PMID 30374710
  27. Ashraf S, Hegazy YK, **Harmancey R**. (2019) NR4A2 inhibits activation of ERK signaling and cell growth in response to beta-adrenergic stimulation in adult rat cardiomyocytes. *American Journal of Physiology: Cell Physiology* 317(3):C513-C524. PMID 31188636
  28. Ashraf S, Yilmaz G, Chen X, **Harmancey R**. (2020) Dietary fat and sugar differentially affect beta-adrenergic stimulation of cardiac ERK and AKT pathways in C57BL/6 male mice subjected to high-calorie feeding. *The Journal of Nutrition* 150(5):1041-1050. PMID 31950177
  29. Lomax TM, Ashraf S, Yilmaz G, **Harmancey R**. (2020) Loss of uncoupling protein 3 attenuates Western-diet induced obesity, systemic inflammation and insulin resistance in rats. *Obesity (Silver Spring)* 28(9):1687-1697. PMID 32716607



30. Gava FN, da Silva AA, Dai X, **Harmancey R**, Ashraf S, Omoto ACM, Salgado MC, Moak SP, Li X, Hall JE, do Carmo JM. (2021) Restoration of cardiac function after myocardial infarction by long-term activation of the CNS leptin-melanocortin system. *JACC Basic to Translational Science* 6(1):55-70. PMID 33532666
  31. Ashraf S, Ashraf N, Yilmaz G, **Harmancey R**. (2021) Crosstalk between beta-adrenergic and insulin signaling mediates mechanistic target of rapamycin hyperactivation in liver of high-fat diet-fed male mice. *Physiological Reports*. (in press)
  32. Chen X, Ashraf S, Ashraf N, **Harmancey R**. (2021) UCP3 insufficiency exacerbates left ventricular diastolic dysfunction during angiotensin II-induced hypertension. *In revision*
  33. Ashraf S, Ashraf N, **Harmancey R**. (2021) Chronic cardiac NR4A2 activation causes mitogenic cardiomyopathy in mice. *In preparation*
- Review Articles and Editorials
1. Guha A, **Harmancey R**, Taegtmeyer H (2008) Non-ischemic heart failure in diabetes mellitus. *Current Opinion in Cardiology* 23:241-8. PMID 18382213
  2. **Harmancey R**, Taegtmeyer H (2008) The complexity of diabetic cardiomyopathy: Lessons from patients and animal models. *Current Diabetes Reports* 8(3):243-8. PMID 18625124
  3. **Harmancey R**, Wilson CR, Taegtmeyer H (2008) Adaptation and maladaptation of the heart in obesity. *Hypertension* 52:1-7. PMID 18574077
  4. Taegtmeyer H, **Harmancey R** (2008) Virchow's metamorphosis revealed: Triglycerides in the heart. *Journal of American College of Cardiology* 52: 1013-1014. PMID 18786483
  5. **Harmancey R**, Taegtmeyer H (2009) Non ischemic heart failure in diabetes mellitus: still incompletely understood. *Heart and Metabolism* 45:5-9
  6. Thomas SY, **Harmancey R**, Taegtmeyer H (2010) Fat around the heart. *Journal of American College of Cardiology Cardiovascular Imaging* 3(7):786-787; PMID 20633860
  7. Wilson CR, **Harmancey R**, Taegtmeyer H (2010) Western diet - too much fuel for the heart. *The Biochemist* 32(6)
  8. Taegtmeyer H, Beauloye C, **Harmancey R**, Hue L (2013) Insulin resistance protects the heart from fuel overload in dysregulated metabolic states. *American Journal of Physiology Heart and Circulatory Physiology* 305(12):H1693-7. PMID 24097426
  9. Rouet P, **Harmancey R**, Turkieh A, Caubère C, Barutaut M, Koukoui F, Dambrin C, Galinier M, Smih F (2015) A matter of fat: APOO regulates mitochondrial function in the heart. *Medecine Science. (Paris)* 31(1):31-4. PMID 25658728

10. Hall ME, **Harmancey R**, Stec DE (2015) Lean heart: Role of leptin in cardiac hypertrophy and metabolism. *World Journal of Cardiology* 7(9): 511-524. PMID 26413228
  11. Lindsey ML, Hall ME, **Harmancey R**, Ma Y (2016) Adapting extracellular matrix proteomics for clinical studies on cardiac remodeling post-myocardial infarction. *Clinical Proteomics* 13:19. PMID 27651752
- Abstracts Presented at International Scientific Meetings
1. **Harmancey R**, Smih F, Pathak A, Philip-Couderc P, Rouet P, Senard JM (2003) Adrenomedullin: A new vasoactive peptide synthesized and secreted by human adipocytes. 5<sup>th</sup> European Federation of Autonomic Societies (EFAS) meeting (Toulouse, France)
  2. Philip-Couderc P, Pathak A, Smih F, Regulus P, **Harmancey R**, Galinier M, Massabuau P, Senard JM, Rouet P (2003) Non complicated obesity is associated with specific cardiac transcriptome regulations. 3<sup>rd</sup> International Symposium on Obesity and Hypertension ISOH'03 (Berlin, Germany)
  3. **Harmancey R**, Smih F, Pathak A, Rouet P, Senard JM (2004) Adrenomedullin: synthesis, release and putative roles in adipocytes. 15<sup>th</sup> International Symposium on Regulatory Peptides REGPEP (Toulouse, France)
  4. **Harmancey R**, Smih F, Pathak A, Desmoulin F, Claparols C, Rouet P, Senard JM (2005) Adrenomedullin is secreted by adipocytes and inhibits lipolysis through NO-mediated isoproterenol oxidation. 7<sup>th</sup> European Federation Autonomic Societies (EFAS) meeting (Bled, Slovenia)
  5. Lamant M, Smih F, **Harmancey R**, Seraphin MG, Pathak A, Roncalli J, Collet X, Galinier M, Senard JM, Rouet P (2005) Localization and regulation of a new apolipoprotein in human heart: A possible protective mechanism to lipotoxicity? European Society of Cardiology Annual Congress (Stockholm, Sweden)
  6. Lamant M, Seraphin G, Smih F, **Harmancey R**, Roncalli J, Galinier M, Pathak A, Perez L, Dumonteil N, Massabuau P, Senard JM, Rouet P (2005) Obesity and hypertension regulate lipid metabolism and apoptosis genes expression in human heart. 4<sup>th</sup> International Symposium on Obesity and Hypertension ISOH'05 (Berlin, Germany)
  7. Lamant M, Smih F, **Harmancey R**, Pathak A, Roncalli J, Galinier M, Collet X, Massabuau P, Senard JM, Rouet P (2006) Cloning and characterization of a novel apolipoprotein that is induced by diabetes in human heart. American Heart Association 2006 Scientific Sessions (Chicago, IL)

8. **Harmancey R**, Desmoulin F, Smih F, Tavernier G, Alieva M, Andriamihafy T, Lamant M, Galinier M, Rouet P (2007) Lipids levels in murine transgenic mice are correlated with ApoO expression level. European Society of Cardiology World Congress (Vienna, Austria)
9. **Harmancey R**, Smih F, Eddiry S, Andriamihafy T, Alieva M, Desmoulin F, Galinier M, Rouet P (2007) Overexpression of Apolipoprotein O in cardiomyocytes protects from lipoapoptosis. European Society of Cardiology World Congress (Vienna, Austria)
10. Samudio IJ, Fiegl M, Konopleva M, Kaluarachchi K, McMurray JS, Korchin B, Dwyer KC, **Harmancey R**, Guthrie P, Taegtmeier H, Andreeff M (2008) Targeting Anaplerotic Pathways That Support Fatty Acid Metabolism as a Therapeutic Strategy for Hematological Malignancies: The Achilles' Heel of the Warburg Effect. American Society of Hematology (ASH) 50th Annual Meeting (San Francisco, CA)
11. **Harmancey R**, Wilson CR, Algham MF, Taegtmeier H (2008) Dramatic changes of function and fatty acid composition in hearts from rats fed a Western diet. 6<sup>th</sup> Annual Conference of Society for Heart and Vascular Metabolism (Boston, MA)
12. **Harmancey R**, Wright NR, Algham MF, Wilson CR, Taegtmeier H (2009) Obesogenic Western diet changes fatty acid composition in failing rat heart. Experimental Biology (New Orleans, LA)
13. Andreeff M, Fiegl M, Konopleva M, Korchin B, Kaluarachchi K, Bornmann WG, Guthrie P, **Harmancey R**, Taegtmeier H, Samudio IJ (2009) Pharmacological Inhibition of Fatty Acid Oxidation as a Novel Therapeutic Concept for Acute Myeloid Leukemia. American Society of Hematology (ASH) 51st Annual Meeting and Exposition (New Orleans, LA)
14. Sen S, **Harmancey R**, Guthrie P, Vela D, Taegtmeier H (2010) Hexose 6-phosphates regulate activation of the mTOR pathway in rat heart. 7th Annual American Heart Association Basic Cardiovascular Sciences Scientific Sessions (Rancho Mirage, CA)
15. **Harmancey R**, Lubrano G, Lam T and Taegtmeier H (2011) Reduced substrate uptake preserves metabolic flexibility of the stressed heart: A critique of the Randle cycle. American Diabetes Association 71<sup>st</sup> Scientific Sessions (San Diego, CA)
16. **Harmancey R**, Lam T, Lubrano G, Vela D and Taegtmeier H (2011) Simultaneous decrease in glucose uptake, increase in glucose oxidation, and improved contractile function by stressed hearts from sucrose-fed, insulin-resistant rats. American Heart Association Basic Cardiovascular Sciences Scientific Sessions (New Orleans, LA)
17. **Harmancey R**, Lubrano G, Lam T and Taegtmeier H (2012) Chronic hyperinsulinemia sensitizes myocytes to hyperglycemia-induced cell death. Experimental Biology (San Diego, CA)

18. **Harmancey R**, Lam T and Taegtmeyer H (2012) Uncoupling protein 3 inhibits glucose oxidation in muscle cells. ENDO 2012 (Houston, TX)
19. **Harmancey R**, Vasquez HG, Guthrie PH and Taegtmeyer H (2013) Decreased fatty acid oxidation impairs contractile recovery of the insulin-resistant heart post-ischemia. Experimental Biology (Boston, MA)
20. Kamel P, Qu P, Nagrath D, **Harmancey R**, Taegtmeyer H, Grande-Allen KJ (2013) Collagen gel contraction assay for evaluation of porcine aortic valve interstitial cell glycolytic metabolism. USCAP annual meeting (Baltimore, MD)
21. **Harmancey R**, Haight DL, Taegtmeyer H (2014) Chronic hyperinsulinemia impairs insulin signalling and downregulates uncoupling protein 3 in mouse heart. Experimental Biology (San Diego, CA)
22. Lam TN, **Harmancey R**, Vasquez HG, Patel N, Gilbert B, Taegtmeyer H (2015) Reversal of intramuscular lipotoxicity is mediated by a novel p62-lipophagy pathway. American Heart Association Basic Cardiovascular Sciences Scientific Sessions (New Orleans, LA)
23. Lam TN, **Harmancey R**, Vasquez HG, Gilbert B, Patel N, Taegtmeyer H (2015) Intramuscular lipid accumulation is reversed by a p62-lysosomal-independent lipophagy pathway. American Heart Association Scientific Sessions (Orlando, FL)
24. Bux A, Vasquez H, Taegtmeyer H, **Harmancey R** (2016) Glucose Promotes Metabolic Reprogramming of Male Rat Hearts in the Early Stress Response Following Hypothermic Ischemic Arrest and Reperfusion. Experimental Biology (San Diego, CA)
25. Bux A, Vasquez H, Taegtmeyer H, **Harmancey R** (2016) Glucose Promotes M2-Related Transcriptional Reprogramming of Resident Cardiac Macrophages in Response to Hypothermic Ischemic Arrest and Reperfusion. American Heart Association Basic Cardiovascular Sciences Scientific Sessions (Phoenix, AZ)
26. Lomax TM, Wiseman JM, Edwards K, Ashraf S, **Harmancey R** (2018) Lack of Uncoupling Protein 3 Protects from High-Fat Diet-Induced Insulin Resistance and Glucose Intolerance in Rats. Experimental Biology 2018 (San Diego, CA)
27. Edwards K, Ashraf S, Lomax TM, Wiseman JM, Gava FN, Hall JE, Hosler JP, **Harmancey R** (2018) Uncoupling Protein 3 Deficiency Impairs Cardiac Energetics and Contractile Recovery After Ischemia/Reperfusion. Experimental Biology 2018 (San Diego, CA)
28. Ashraf S, **Harmancey R** (2018) The Nuclear Receptor NR4A2 Coordinates Transcriptional Remodeling of Metabolic, Calcium, and Growth Signaling Networks in Adult Rat Ventricular Myocytes. Experimental Biology 2018 (San Diego, CA)

29. Gava FN, da Silva AA, Ashraf S, Omoto A, Dai X, Moak SP, Pullman M, Wang Z, **Harmancey R**, Hall JE, do Carmo JM (2019) Chronic Intracerebroventricular Leptin Infusion Attenuates Cardiac Dysfunction After Myocardial Infarction. *Experimental Biology 2019 (Orlando, FL)*
30. da Silva AA, **Harmancey R**, Dai X, Moak SP, Roy CN, Wang Z, Hall JE, do Carmo JM (2019) Differential Regulation of Cardiac Substrate Utilization in Response to Chronic Central Administration of Leptin and Melanotan II in Rats with Myocardial Infarction. *Experimental Biology 2019 (Orlando, FL)*
31. Mahmoudi E, Lomax TM, **Harmancey R** (2019) Uncoupling Protein 3 Deficiency Impairs Contractile Recovery in a Rat Model of Myocardial Infarction and Reperfusion. *Experimental Biology 2019 (Orlando, FL)*
32. Lomax TM, Ashraf S, Wiseman JM, Edwards KS, **Harmancey R** (2019) Uncoupling Protein 3 Deficiency Prevents Whitening of Brown Fat and Preserves Insulin Sensitivity in High-Fat Fed Rats. *Experimental Biology 2019 (Orlando, FL)*
33. Ashraf S, Hegazy Y, **Harmancey R** (2019) NR4A2 Inhibits ERK-Mediated Protein Synthesis and Cell Growth in Response to Beta-Adrenergic Stimulation in Cardiomyocytes. *Experimental Biology 2019 (Orlando, FL)*
34. Huffman AM, Syed M, Rezaq S, Anderson CD, Smith SV, **Harmancey R**, Yanes Cardozo LL, Romero DG (2020) MicroRNA-21 Ablation Attenuates Acetaminophen-Induced Hepatotoxicity in Male Mice. *Experimental Biology 2020.*
35. Ashraf S, Yilmaz G, Chen X, **Harmancey R** (2020) Dietary Fat and Sugar Differentially Affect Beta-Adrenergic Stimulation of Cardiac ERK and AKT Pathways in Mice Subjected to High-Calorie Feeding. *Experimental Biology 2020.*
36. Lomax T, Ashraf S, Yilmaz G, **Harmancey R** (2020) Lack of Uncoupling Protein 3 Protects from High-Fat Diet-Induced Obesity, Systemic Inflammation and Insulin Resistance in Rats. *Experimental Biology 2020.*

## B- INVITED LECTURES AND PRESENTATIONS

- International Scientific Meetings
 

June 24, 2011	<u>Reduced Substrate Uptake Preserves Metabolic Flexibility of the Stressed Heart: A Critique of the Randle Cycle</u> , American Diabetes Association 71 <sup>st</sup> Scientific Sessions, San Diego, CA
November 14, 2011	<u>Myocardial Insulin Resistance Preserves Metabolic Responsiveness in the Stressed Rat Heart</u> , part of Hot Topics in Cardiac Metabolism American Heart Association 2011 Scientific Sessions, Orlando, FL

- June 25, 2016 Novel Roles for UCP3 in Maladaptation of the Heart in Obesity and Diabetes, 1<sup>st</sup> International Meeting on Heart Diseases (IMOH), Toulouse, France.
- April 9, 2019 Molecular Basis of Postischemic Maladaptation in the Insulin Resistant Heart, APS Featured Topic on “Cardiovascular Metabolism in Diabetes”, Experimental Biology 2019, Orlando, FL.
- Medical School and University Lectures
- February 15, 2009 Obesity and the Heart: From Adipose Tissue Metabolism to Cardiac Lipotoxicity, Weiner Family Cardiovascular Research Seminar, Mount Sinai School of Medicine, New York, NY
- April 6, 2011 Cardiac Metabolism in Obesity and Diabetes: A Matter of Fuel Supply, Institute of Cardiovascular and Metabolic Diseases (I2MC), Toulouse, France
- January 17, 2013 Insulin Resistance: Friend and Foe of the Heart, Grand Rounds, Division of Endocrinology, Baylor College of Medicine, Houston, TX
- February 7, 2013 Networking for Success, Part of the BioCareer Seminar Series, Graduate School of Biomedical Sciences, The University of Texas Medical School at Houston, Houston, TX
- October 1, 2013 Taking Control of Your Career: Obtaining a K99/R00, Part of the UTHealth Postdoctoral Association Seminar Series, The University of Texas Medical School at Houston, Houston, TX
- February 12, 2014 Insulin Resistance: Friend and Foe of the Heart, Physiology Seminar Series, Department of Physiology and Biophysics, The University of Mississippi Medical Center, Jackson, MS
- March 11, 2015 Diabetic Cardiomyopathy: More Than a Matter of Fat, Physiology Seminar Series, Department of Physiology and Biophysics, The University of Mississippi Medical Center, Jackson, MS
- February 8, 2016 Role and Regulation of Uncoupling Protein 3 (UCP3) in the Rodent Heart, Pharmacology Departmental Seminar, Department of Pharmacology, The University of Mississippi Medical Center, Jackson, MS
- February 10, 2016 Effects of Hyperglycemia and Insulin Resistance on Cardiac Stress Response to Surgery, Physiology Seminar Series, Department of Physiology and Biophysics, The University of Mississippi Medical Center, Jackson, MS

- January 11, 2017 How to Compete for the Perfect Tenure-Track Faculty Position in Academia, Part of the Career Opportunity & Professional Development lecture series, UMMC School of Graduate Studies in the Health Sciences, Jackson, MS
- February 08, 2017 Role of UCP3 in the Control of Systemic and Myocardial Metabolism, Physiology Seminar Series, Department of Physiology and Biophysics, The University of Mississippi Medical Center, Jackson, MS
- July 31, 2017 Molecular Basis of Postischemic Maladaptation in the Insulin Resistant Heart, Department of Biochemistry Seminar Series, The University of Mississippi Medical Center, Jackson, MS
- January 9, 2018 NIH Pathway to Independence Award, UMMC Office of Research and Sponsored Projects Grant Writing Workshop, Jackson, MS
- February 07, 2018 Consequences of UCP3 Deficiency for Cardiac and Systemic Metabolism, Physiology Seminar Series, Department of Physiology and Biophysics, The University of Mississippi Medical Center, Jackson, MS
- January 23, 2019 Role of UCP3 in Cardiac Protection from Ischemia/Reperfusion Injury, Physiology Seminar Series, Department of Physiology and Biophysics, The University of Mississippi Medical Center, Jackson, MS
- February 25, 2019 Mitochondrial Dysfunction and Ischemia/Reperfusion Injury in Diabetes, Department of Cell and Molecular Biology Seminar Series, The University of Mississippi Medical Center, Jackson, MS
- May 22, 2019 Mitochondrial Dysfunction and Ischemia/Reperfusion Injury in Diabetes, Department of Cellular & Integrative Physiology, University of Nebraska Medical Center, Omaha, NE
- October 18, 2019 Know Your Enemy: Role of Insulin Resistance in Cardiovascular Disease, Department of Chemistry and Biochemistry, Millsaps College, Jackson, MS.
- January 22, 2020 Role of Hyperinsulinemia in Cardiovascular Complications Associated with Diabetes, Physiology Seminar Series, Department of Physiology and Biophysics, The University of Mississippi Medical Center, Jackson, MS.
- August 12, 2020 Role of Uncoupling Protein 3 Insufficiency in Cardiac Maladaptation during Obesity and Diabetes, Center for Metabolic & Degenerative Diseases, The Brown Foundation Institute of Molecular Medicine for the Prevention of Human Diseases, Houston, TX.

April 7, 2021 Cardiac Metabolism in Heart Failure: Novel Regulators and Therapeutic Perspectives, Department of Internal Medicine, McGovern Medical School at UTHealth, Houston, TX

## C- RESEARCH FUNDING

- Current awards

**NIH R01 HL136438-01A1** 04/01/2018-03/31/2023 total direct costs: \$1,250,000  
“Molecular Basis of Postischemic Maladaptation in the Insulin Resistant Heart”

Harmancey (PI)

The goals of this project are to identify the mechanisms by which UCP3 deficiency may impair contractile recovery of the insulin resistant heart after myocardial infarction and to apply this knowledge to develop therapeutic strategies for improving the recovery of diabetic patients at reperfusion.

**NIH P20 GM104357** 07/01/2018 – 04/30/2023 total direct costs: \$2,283,522  
“Cardiorenal and Metabolic Diseases Research Center”

Hall JE (PI)

The long-term goal is to develop the Cardiorenal and Metabolic Diseases Research Center and provide infrastructure for a multidisciplinary, diverse group of basic, clinical and population scientists working on the common synergistic theme of obesity, cardiorenal and metabolic diseases and to facilitate their collaborations.

Role: Sub-Core co-Director, Basic Science

- Completed awards

**Mississippi Center for Clinical and Translational Research Pilot Project Program**

08/01/18 – 07/31/19 total direct costs: \$38,450

“Adipose Tissue Effects on Cardiac Surgery Outcomes (ATECO)”

Copeland H (PI)

The goal of this study is to describe and test the predictive power of a more informative definition of obesity using a prospective trial of all consecutive patients aged 18-80 undergoing elective and urgent cardiac surgery at the University of Mississippi Medical Center.

Role: Co-Principal Investigator

**NIH R00 HL112952** 02/01/2015-01/31/2019 total direct costs: \$500,000  
“Unexpected Consequences of Insulin Resistance for the Heart”

Harmancey (PI)

This work aims to identify the molecular mechanisms involved in metabolic and functional remodeling of the heart subjected to a hyperglycemic and hyperinsulinemic milieu.

**NIH P20GM104357** Pilot Grants Program-Center of Biomedical Research Excellence (COBRE)  
“Obesity, Cardiorenal and Metabolic Disease Center” total direct costs: \$40,000

Harmancey (PI)

04/01/2017-03/31/2018

Molecular Basis of Postischemic Maladaptation in the Insulin Resistant Heart



The goals of this project were to generate the preliminary data to submit a R01 application aiming to identify the mechanisms by which insulin resistance contributes to poor prognosis of type 2 diabetic individuals following myocardial infarction and reperfusion.

**NIH K99 HL112952** 07/22/2013-01/31/2015 total direct costs: \$164,304

“Unexpected Consequences of Insulin Resistance for the Heart”

Harmancey (PI)

The goal of this project was to investigate the role of myocardial insulin resistance in metabolic remodeling of the heart and its impact on cardiac adaptation to stress conditions.

**American Heart Association** 07/09-07/11 total direct costs: \$86,000

09POST2060155 (Postdoctoral fellowship)

“Cardioprotective Effects of Insulin Resistance”

Harmancey (PI)

The aim of this project was to determine whether myocardial insulin resistance preserves contractile function of the heart subjected to acute hyperglycemia and pressure overload.

**French Ministry of Education** 10/03-09/06 total direct costs: €70,000

Advanced Instruction and Research Predoctoral Fellowship

“Characterization of two proteins associated with obesity”

Harmancey (PI)

The aim of this work was to identify in rodent models and in patients 1- The function of a new apolipoprotein expressed in the heart and upregulated by diabetes (ApoO) and 2- The autocrine/paracrine effects of adrenomedullin secreted by white adipose tissue.