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## BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.  
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

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NAME David E. Stec	POSITION TITLE Professor		
eRA COMMONS USER NAME DAVIDSTEC			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
University of Scranton, Scranton, PA	B.S.	1991	Biology
Medical College of Wisconsin, Milwaukee, WI	Ph.D.	1996	Physiology
University of Iowa, Iowa City, IA	Post-Doc	1996-2000	Molecular Genetics

Please refer to the application instructions in order to complete sections A, B, and C of the Biographical Sketch.

### A. Positions and Honors

#### Positions:

- 1991-1996: Graduate Student, Department of Physiology, Medical College of Wisconsin, Milwaukee, WI.
- 1996-2000: Research Fellow, Department of Internal Medicine, University of Iowa College of Medicine, Iowa City, IA.
- 2000-2001: Assistant Research Scientist, Department of Internal Medicine, University of Iowa College of Medicine, Iowa City, IA.
- 2001- 2009: Assistant Professor, Director, Transgenic Core, Department of Physiology & Biophysics, University of Mississippi Medical Center, Jackson, MS.
- 2007: Tenure
- 2009-2017: Associate Professor, Director, Transgenic Core, Department of Physiology & Biophysics, University of Mississippi Medical Center, Jackson, MS.
- 2017- : Professor, Director, Transgenic Core, Department of Physiology & Biophysics, University of Mississippi Medical Center, Jackson, MS.

#### Honors:

- 1994-1996: Predoctoral Fellowship, American Heart Association, Wisconsin Affiliate. Mechanism of salt-sensitive hypertension in Dahl S rats.
- 1995: Merck Young Investigator Award for Excellence in Cardiovascular Research, American Heart Association Council for High Blood Pressure Research, New Orleans, LA.
- 1996: Outstanding Dissertation Award, Friends of the Medical College of Wisconsin, Milwaukee, WI.
- 1996-1998: Iowa Cardiovascular Interdisciplinary Research Fellowship, Gene targeting of the renin-angiotensin system via the Cre-loxP recombinase system.
- 1998-2000: Individual National Research Service Award (NRSA), Department of Health and Human Services. Role of intrarenal renin-angiotensin system in blood pressure regulation.
- 1998: Young Investigator Travel Grant, International Society of Hypertension, Amsterdam, Netherlands.
- 1998: Outstanding Postdoctoral Poster, University of Iowa College of Medicine, Research Day, University of Iowa, Iowa, City.
- 2000: Young Investigator Travel Grant, International Society of Hypertension, Chicago, IL.
- 2003: Fellow, American Heart Association
- 2006: Co-Chair, AHA Cardiorenal Study Section
- 2009: Young Scholars Award- American Society of Hypertension, San Francisco, CA.

2010-11: Co-Chair, AHA National Cardiorenal 1 Study Section  
 2012-13: Chair, AHA National Cardiorenal 1 Study Section  
 2019: Intellectual Property Recognition Award, Office of Research, University of Mississippi Medical Center  
 2020: Co-Chair, American Physiology Society Endocrinology & Metabolism Section Featured Topic, "Nuclear Receptors in Metabolism", San Diego Convention Center, San Diego, CA April 5<sup>th</sup> 2020. (Cancelled due to COVID-19)  
 2020: Co-Organizer, Heme Oxygenase and Related Enzymes: From Physiology to Therapeutics, June 28-July 1, Los Angeles, CA. (Cancelled due to COVID-19)  
 2021: Chair, American Heart Association Hypertension Peer Review Fellowship Committee

## **B. Publications**

1. McClung JA, Levy L, Garcia V, Stec DE\*, Peterson SJ, Abraham NG. Heme-oxygenase and lipid mediators in obesity and associated cardiometabolic diseases: Therapeutic implications. *Pharmacol Ther.* 2021 Sep 6:107975 \*=corresponding author
2. Stec DE, Weigel B, Hinds TD Jr. Editorial: Oxidative stress, antioxidants, transcription factors, and assimilation of signal transduction pathways in obesity-related disorders. *Frontiers in Pharmacology.* 12:759468. doi: 10.3389/fphar.2021.759468, 2021.
3. Stec DE and Abraham. NG. Pharmacological and clinical significance of Heme Oxygenase-1. *Antioxidants(Basel)* 10(6):854, 2021. PMID:PMC8227735
4. Creeden JF, Gordon DM, Stec DE, Hinds TD Jr. Bilirubin as a Metabolic Hormone: The Physiological Relevance of Low Levels. *Am. J. Physiol. Endocrinol. Metab.* 320(2):E191-E207, 2021. PMID:PC860361.
5. Braud L, Pini M, Stec DF, Manin S, Derumeaux G, Stec DE, Foresti R, Motterlini R. Increased Sirt1 secreted from visceral white adipose tissue is associated with improved glucose tolerance in obese Nrf2-deficient mice. *Redox Biology.* Jan;38:101805, 2021. PMID:PMC7721645.
6. Hinds TD Jr., Creeden JF, Gordon DM, Stec DF, Donald MC, Stec DE. Bilirubin nanoparticles reduce diet-induced hepatic steatosis, improve fat utilization, and increase plasma  $\beta$ -hydroxybutyrate. *Frontiers in Pharmacology.* Dec 18;11:594574, 2020. PMID:PMC775678.
7. Hinds TD Jr., and Stec DE. Natural product HO-1 inducers as treatment for nonalcoholic fatty liver disease. *Int. J. Mol. Sci.* 21(24) 9493, 2020. PMID: PMC7764878.
8. Shen HH, Alex R, Bellnar L, Raffaele M, Licari M, Vanella L, Stec DE\*, Abraham NG. Milk thistle seed cold press oil attenuates markers of the metabolic syndrome in a mouse model of dietary-induced obesity. *J. Food Biochem.* Oct 12;e13522, 2020. PMID:PMC7770619. \*=corresponding author
9. Hinds TD Jr., Creeden JF, Gordon DM, Spegele A, Britton SL, Koch L, Stec DE. Rats genetically selected for high aerobic exercise capacity have elevated plasma bilirubin by upregulation of hepatic biliverdin reductase-A (BVRA) and suppression of UGT1A1. *Antioxidants(Basel)* 9:889, 2020. PMID:PMC7554716.
10. Raffaele M, Licari M, Amin S, Alex R, Shen HH, Singh SP, Vanella L, Rezzani R, Bonomini F, Peterson SJ, Stec DE, Abraham NG. Cold press pomegranate seed oil attenuates dietary-obesity induced hepatic steatosis and fibrosis through antioxidant and mitochondrial pathways in obese mice. *Int. J. Mol. Sci.* 21(15) 5469, 2020. PMID:PMC7432301.

11. Shen HH, Peterson SJ, Bellnar L, Choudhary A, Levy L, Gancz L, Sasson A, Trainer J, Rezzani R, Resnick A, Stec DE, Abraham NG. Cold-Pressed *Nigella Sativa* Oil Standardized to 3% Thymoquinone Potentiates Omega-3 Protection Against Obesity-Induced Oxidative Stress, Inflammation, and Markers of Insulin Resistance Accompanied with Conversion of White to Beige Fat in Mice. *Antioxidants(Basel)* 9(6):489, 2020.PMCID:PMC7346210.
12. Gordon DM, Neifer KL, Hamoud AA, Hawk CF, Nestor-Kalinoski AL, Miruzzi SA, Morran M, Adeosun SO, Sarver JG, Erhardt PW, McCullumsmith RE, Stec DE, Hinds TD Jr. Bilirubin remodels murine white adipose tissue by reshaping mitochondrial activity and the coregulator profile of peroxisome proliferator-activated receptor  $\alpha$ . *J. Biol. Chem.* 295(29):9804-9822,2020. PMCID:PMC7380202.
13. Stec DE, Gordon DM, Nestor-Kalinoski AL, Donald MC, Mitchell ZL, Creeden JF, Hinds TD Jr. Biliverdin reductase A (BVRA) knockout in adipocytes induces hypertrophy and reduces mitochondria in white fat of obese mice. *Biomolecules*, 10(3), 2020. PMCID: PMC7175174
14. Surh YJ, Chung HT, Na HK, Dulak J, Stec DE. Progress in heme oxygenase research. *Archives of Biochemistry and Biophysics*, 685:108321, May 30, 2020. PMCID:PMC7344117.
15. Hinds TD Jr., Stec DE. Bilirubin safeguards cardiorenal and metabolic diseases: A protective role in health. *Curr Hypertens Rep.* 21(11), 2019.PMCID:PMC6938163
16. Stec DE, Gordon DM, Hipp JA, Hong S, Mitchell ZL, Franco NR, Robison JW, Anderson CD, Stec DF, Hinds TD Jr. The loss of hepatic PPAR $\alpha$  promotes inflammation and serum hyperlipidemia in diet-induced obesity. *Am. J. Physiol. Regul. Integr. Comp. Physiol.* 317(5), R733-R745, 2019. PMCID:PMC6879843.
17. Gordon DM, Adeosun SO, Ngwudike SI, Anderson CD, Hall JE, Hinds TD Jr., Stec DE. CRISPR Cas9-mediated deletion of biliverdin reductase A (BVRA) in mouse liver cells induces oxidative stress and lipid accumulation. *Archives of Biochemistry and Biophysics*, 672, 15 September, 2019. PMCID: PMC6718297.
18. Drummond HA, Mitchell ZL, Abraham NG, Stec DE. Targeting Heme Oxygenase-1 in Cardiovascular and Kidney Disease. *Antioxidants (Basel)* 8(6):181, 2019. PMCID:PMC6617021.
19. Peterson SJ, Rubinstein R, Farouqi M, Raza A, Boumaza I, Zhang Y, Stec D, Abraham NG. Positive effects of heme oxygenase upregulation on adiposity and vascular dysfunction: Gene targeting vs. Pharmacologic Therapy. *Int J Mol Sci.* 20(10): 2514-2527, 2019. PMCID:PMC6566770.
20. Gordon DM, Blomquist TM, Miruzzi SA, McCullumsmith R, Stec DE, Hinds TD Jr. RNA-sequencing in human HepG2 hepatocytes reveals PPAR $\alpha$  mediates transcriptome responsiveness of bilirubin. *Physiol Genomics* 51(6):234-240, 2019. PMCID: PMC6620644.
21. Stec DF, Henry C, Stec DE, Voziyan P. Changes in urinary metabolome related to body fat involve intermediates of choline processing by gut microbiota. *Heliyon* 5(4):e01497, 2019. PMCID:PMC6465582.
22. Bisht K, Canesin G, Cheytan T, Li M, Csizmadia E, Woodruff TM, Stec DE, Bulmer AC, Otterbein LE, Weigel B. Deletion of Biliverdin Reductase A in myeloid cells promotes cytokine expression and chemotaxis in part via a complement C5a-C5aR1 pathway. *J Immunol.* 202(10):2982-2990, 2019. PMCID:PMC6504595.
23. Hinds TD Jr., Stec DE. Bilirubin, a Cardiometabolic Signaling Molecule. *Hypertension.* 72(4):788-795, 2018. PMCID: PMC6205727.

24. Sundararaghavan VL, Binopal S, Stec DE, Sindhwani P, Hinds TD Jr. Bilirubin, a new therapeutic for kidney transplant? *Transplant Rev (Orlando)*. 32(4):234-40, 2018. PMID: PMC6535229.
25. Adeosun SO, Gordon DM, Weeks MF, Moore KH, Hall JE, Hinds TD Jr., Stec DE. Loss of biliverdin reductase-A (BVRA) promotes lipid accumulation and lipotoxicity in mouse proximal tubule cells. *Am. J. Physiol. Renal Physiol.* 315(2):F323-F331, 2018. PMID: PMC6139518.
26. Weaver L, Hamoud AA, Stec DE, Hinds TD Jr. Biliverdin Reductase and Bilirubin in Hepatic Disease. *Am. J. Physiol. Gastrointest Liver Physiol.* 314(6):G668-G676, 2018. PMID: PMC6032063.
27. Hamoud AR, Weaver L, Stec DE, Hinds TD Jr. Bilirubin in the liver-gut signaling axis. *Trends in Endocrinology and Metabolism*. 29(3):140-150, 2018. PMID: PMC5831340.
28. Adeosun SO, Moore KH, Lang DM, Nwaneri AC, Hinds TD Jr., Stec DE. A novel fluorescence-based assay for the measurement of biliverdin reductase activity. *Reactive Oxygen Species*, 5(13):35-45, 2018. PMID: PMC5785779.
29. Bakrania BA, Spradley FT, Satchell SC, Stec DE, Rimoldi JM, Gadepalli RS, Granger JP. Heme oxygenase-1 is a potent inhibitor of placental ischemia-mediated endothelin-1 production in cultured human glomerular endothelial cells *Am. J. Physiol. Regul. Integr. Comp. Physiol.* 314(3):R427-R43, 2018. PMID: PMC5899255
30. George EM, Cockrell K, Arany M, Stec DE, Rimoldi JM, Gadepalli RS, Granger JP. Carbon monoxide releasing molecules blunt placental ischemia-induced hypertension. *Am. J. Hypertens.* 30(9):931-937, 2017. PMID: PMC5861582.
31. Hosick PA, Weeks MF, Hankins MW, Moore KH, Stec DE. Sex-dependent effects of HO-1 deletion from adipocytes in mice. *Int. J. Mol. Sci.* 18(3):E611, 2017. PMID: PMC5372627.
32. Adeosun SO and Stec DE. Bilirubin protects the aging heart. *Acta Physiol (Oxf)*, 220(4):402-403, 2017. PMID: PMC5522653.
33. Hinds TD Jr., Hosick PA, Chen S, Tukey RH, Hankins MW, Nestor-Kalinoski A, Stec DE. Mice with hyperbilirubinemia due to Gilbert's Syndrome polymorphism are resistant to hepatic steatosis by decreases serine 73 phosphorylation of PPAR $\alpha$ . *Am. J. Physiol. Endocrinol. Metab.*, 312(4):E244-E252, 2017. PMID: PMC5406988.
34. Marino JS, Stechschulte LA, Stec DE, Nestor-Kalinoski A, Coleman S, Hinds TD Jr. Glucocorticoid receptor  $\beta$  induces hepatic steatosis by augmenting inflammation and inhibition of the peroxisome proliferator-activated receptor (PPAR)  $\alpha$ . *J. Biol. Chem.* 291(50):25776-25788, 2016. PMID: PMC5203696.
35. Hinds TD Jr., Burns KA, Hosick PA, McBeth L, Nestor-Kalinoski A, Drummond HA, AlAmodi AA, Hankins MW, Vanden Heuvel JP, Stec DE. Biliverdin reductase A attenuates hepatic steatosis by inhibition of glycogen synthase kinase (GSK) 3 $\beta$  phosphorylation of serine 73 of peroxisome proliferator-activated receptor (PPAR)  $\alpha$ . *J. Biol. Chem.* 291(48):25179-25191, 2016. PMID: PMC5122784.
36. Hinds TD Jr., Adeosun SO, AlAmodi AA, Stec DE. Does bilirubin prevent hepatic steatosis through activation of the PPAR $\alpha$  nuclear receptor? *Medical Hypotheses*. 95:54-57, 2016. PMID: PMC5433619.
37. Stec DE, John K, Trabbic CJ, Luniwal A, Hankins MW, Baum J, Hinds TD Jr. Bilirubin binding to PPAR $\alpha$  inhibits lipid accumulation. *PloS ONE* 11(4):e0153427. Doi:10.1371/journal.pone.0153427, 2016. PMID: PMC4829185.

38. Ryan MJ, Coleman TT, Sasser JM, Pittman KM, Hankins MW, Stec DE. Vascular smooth muscle specific deletion of the leptin receptor attenuates leptin induced vascular relaxation. *Am. J. Physiol. Regul. Integr. Comp. Physiol.* 310(10):R960-7, 2016. PMID:PMC4896083.
39. Stec DE, Juncos LA, Granger JP. Renal Intramedullary Infusion of Tempol Normalizes the Blood Pressure Response to Intrarenal Blockade of Heme Oxygenase-1 in Angiotensin II-Dependent Hypertension. *J. Am. Soc. Hypertens.* 10(4):346-351, 2016. PMID:PMC4829442.
40. Hosick PA, AlAmodi AA, Hankins MW, Stec DE. Chronic treatment with a carbon monoxide releasing molecule reverses dietary induced obesity in mice. *Adipocyte* 5:1-10, 2015. PMID:PMC4836479.
41. Lu Y, Wei J, Stec DE, Roman RJ, Ge Y, Cheng L, Liu EY, Zhang Z, Laerkegaard Hansen PB, Fan F, Juncos LA, Wang L, Pollock J, Huang PL, Fu Y, Wang S, Liu R. Macula densa nitric oxide synthase 1 $\beta$  protects against salt-sensitive hypertension. *J Am Soc Nephrol* 27(8):2345-56, 2016. PMID:PMC4829442.
42. Hall ME, Harmancey R, Stec DE. Lean heart: Role of leptin in cardiac hypertrophy and metabolism. *World Journal of Cardiology* 7(9):511-524, 2015 . PMID:PMC4577678.
43. George EM, Stout JM, Stec DE, Granger JP. Heme oxygenase induction attenuates TNF- $\alpha$ -induced hypertension in pregnant rodents. *Front. Pharmacol.* 6:165 doi: 10.3389/fphar.2015.00165. PMID:PMC4538306.
44. Drummond HA and Stec DE.  $\beta$ ENaC acts as a mechanosensor in renal vascular smooth muscle cells that contributes to renal myogenic blood flow regulation, protection from renal injury and hypertension. *J. of Nephrology Res* 1(1):1-9, 2015. PMID:PMC5138029.
45. O'Brien L, Hosick PA, John K, Stec DE, Hind Jr., TD. Biliverdin reductase isozymes in metabolism. *Trends in Endocrinology and Metabolism.* 26(4):212-220, 2015. PMID: PMC4380527.
46. Gannon KP, McKey SE, Stec DE, Drummond HA. Altered myogenic vasoconstriction and regulation of whole kidney blood flow in the ASIC2 knockout mouse. *Am. J. Physiol. Renal Physiol.* 308(4), F339-F348, 2015. PMID:PMC4329487.
47. Hall ME, Maready MW, Hall JE, Stec DE. Rescue of cardiac leptin receptors in db/db mice prevents myocardial triglyceride accumulation. *Am. J. Physiol. Endocrinol. Metab.*, 307(3), E316-25, 2014. PMID:PMC4121577.
48. Hosick PA, Ahmed EK, Gousset MU, Granger JP, Stec DE. Inhalation of carbon monoxide is ineffective as a long-term therapy to reduce obesity in mice fed a high fat diet. *BMC Obesity.* 1:6, 2014. PMID:PMC4511028.
49. Warrington JP, Coleman K, Skaggs C, Hosick PA, Stec DE, Ryan MJ, Granger JP, Drummond HA. Heme oxygenase-1 promotes migration and beta epithelial Na<sup>+</sup> channel expression in cytotrophoblasts and ischemic placentas. *Am. J. Physiol. Regul. Integr. Comp. Physiol.* 306(9), R641-6 2014. PMID:PMC4010664.
50. Hosick PA, AlAmodi AA, Storm MV, Gousset MU, Pruett BE, Gray III W, Stout J, Stec DE. Chronic carbon monoxide treatment attenuates development of obesity and remodels adipocytes in mice fed a high-fat diet. *Int. J. Obesity* 38(1):132-139, 2014. PMID:PMC3760985.
51. Stout JM, Gousset MU, Drummond HA, Gray III W, Pruett BE, Stec DE. Sex-specific effects of heme oxygenase-2 deficiency on renovascular hypertension. *J. Am. Soc. Hypertens.* 7(5):328-35, 2013. PMID: PMC3783623.

52. Stec DE, Storm MV, Pruett BE, Gousset MU. Antihypertensive actions of moderate hyperbilirubinemia: Role of superoxide inhibition. *Am. J. Hypertens.* 26(7):918-23, 2013. PMID:PMC3731819.
53. George EM, Hosick PA, Stec DE, Granger JP. Heme oxygenase inhibition increases blood pressure in pregnant rats. *Am. J. Hypertens.* 26(7):924-30, 2013. PMID:PMC3731822.
54. Hall ME, Smith G, Hall JE, Stec DE. Cardiomyocyte-specific deletion of leptin receptors causes lethal heart failure in Cre-recombinase mediated cardiotoxicity. *Am. J. Physiol. Regul. Integr. Comp. Physiol.* 303(12):R1241-50, 2012. PMID:PMC03532590
55. Stec DE, Ishikawa K, Sacerdoti D, Abraham NG. Emerging role of heme oxygenase and its metabolites in the regulation of cardiovascular function. *Int. J. Hypertens.* 2012;2012:593530. Epub Oct 22, 2012. PMID:PMC3485519
56. Stec DE, Hosick PA, Granger. Bilirubin, renal hemodynamics, and blood pressure. *Front. Pharmacol.* 3:18, 2012 (Epub Feb 14, 2012) PMID: PMC3278997
57. Stec DE, Drummond HA, Gousset MU, Storm MV, Abraham NG, Csongradi E. Expression of heme oxygenase-1 in thick ascending loop of Henle attenuates angiotensin II-dependent hypertension. *J Am Soc Nephrol* 23(5): 834-841, 2012. PMID:PMC3338287.
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62. George EM, Aranay M, Cockrell K, Storm MV, Stec DE, Granger JP. Induction of heme oxygenase-1 attenuates sFlt-1 induced hypertension in pregnant rats. *Am. J. Physiol. Regul. Integr. Comp. Physiol.* 301(5):R1495-500, 2011. PMID: PMC3213946
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65. Csongradi E, doCarmo JM, Dubinion JH, Vera T, Stec DE. Chronic HO-1 induction with cobalt protoporphyrin (CoPP) treatment increases oxygen consumption, activity, heat production and lowers body weight in obese melanocortin-4-receptor-deficient mice. *Int. J. Obesity* 36(2):244-53, 2012. PMID: PMC3139690
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69. Cao J, Sodhi K, Inoue K, Quilley J, Rezzani R, Rodella L, Vanella L, Germinario L, Stec DE, Abraham NG, Kappas A. Lentiviral human heme oxygenase targeting endothelium improved vascular function in Ang II model of hypertension. *Hum Gene Ther*. 22:1-12, 2011. PMID: PMC3057195
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71. Vera T and Stec DE. Moderate hyperbilirubinemia improves renal hemodynamics in angiotensin II dependent hypertension. *Am. J. Physiol. Regul. Integr. Comp. Physiol*. 299(4):R1044-9, 2010. PMID:PMC2957382
72. Csongradi E, Vera T, Rimoldi JM, Gadepalli RS, Stec DE. In Vivo Inhibition of Renal Heme Oxygenase with an Imidazole-Dioxolane Inhibitor. *Pharmacol Res*. 61(6):525-30, 2010. PMID: PMC2859119
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75. Young SC, Storm MV, Speed JS, Kelsen S, Tiller CV, Vera T, Drummond HA, Stec DE. Inhibition of biliverdin reductase increases ANG II-dependent superoxide levels in cultured renal tubular epithelial cells. *Am. J. Physiol. Regul. Integr. Comp. Physiol*. 297(5):R1546-53, 2009. PMID: PMC2777783
76. Vera T, Granger JP, Stec DE. Inhibition of bilirubin metabolism induces moderate hyperbilirubinemia and attenuates angiotensin-II dependent hypertension in mice. *Am. J. Physiol. Regul. Integr. Comp. Physiol*. 297(3):R738-43, 2009. PMID: PMC2739796
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82. Asija A, Peterson SJ, Stec DE, Abraham NG. Targeting endothelial cells with heme oxygenase-1 gene using VE-Cadherin promoter attenuates hyperglycemia-mediated cell injury and apoptosis. *Antioxidants & Redox Signaling* 9(12):2065-73, 2007.

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86. Stec DE, Bishop C, Rimoldi JM, Poreddy SR, Vera T, Salahudeen AK. Carbon monoxide (CO) protects renal tubular epithelial cells against cold-rewarm apoptosis. *Renal Failure.* 29:1-6, 2007.
87. Vera T and Stec DE. Heme Oxygenase-1: A potential anti-hypertensive target. *Current Hypertension Reviews.* 3(1): 75-82, 2007.
88. Stec DE, Gannon KP, Beaird JS, Drummond HA. 20-Hydroxyeicosatetraenoic Acid (20-HETE) stimulates migration of vascular smooth muscle cells. *Cell Physiol Biochem.* 19:121-128, 2007.
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91. Grifoni SD, Gannon KA, Stec DE, Drummond HA. ENaC proteins contribute to VSMC migration. *Am. J. Physiol. Heart Circ Physiol.* 291(6):H3076-86, 2006.
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### **C. Research Support**

#### ACTIVE:

1R01DK121748-01A1- DE Stec 4/1/2020-3/30/2025

NIH-NIDDK

“Integrative Role of Bilirubin on Obesity”

Role: Principal Investigator-1.8 person months per year.

1R01DK121748-01A1 -TD Hinds 7/1/2020-6/30/2025

NIH-NIDDK

“Novel Liver Signaling Pathways Controlling Adiposity”

Role: Co-Investigator-1.2 person months per year