

BIOGRAPHICAL SKETCH

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NAME Tsaio, Philip S.	POSITION TITLE Associate Professor		
eRA COMMONS USER NAME TSAO.PHILIP			
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
Pennsylvania State Univ., State College, PA	B.S.	1983-87	Exercise Physiology
Thomas Jefferson Univ., Philadelphia, PA	Ph.D.	1987-91	Cardiovascular Physiol.
Stanford University, Stanford, CA	Post-doc	1991-95	Cardiovascular Medicine

A. Positions and Honors.**Positions and Employment**

1996-2002 Senior Research Scientist, Stanford University School of Medicine, Stanford, CA
 1999-pr. Lecturer, Cardiovascular Biomechanics (ME284), Stanford University
 2000-pr. Lecturer, Orthopedic/Cardiovascular Bioengineering and Medicine (ME281), Stanford University
 2002-05 Assistant Professor, Division of Cardiovascular Medicine, Stanford Univ. School of Medicine
 2006-pr. Associate Professor, Division of Cardiovascular Medicine, Stanford Univ. School of Medicine

Other Experience and Professional Memberships

1998-2001 Study Section Member, AHA Western Affiliates
 2001-pr. Study Section Member (Co-Chair), Molecular Signaling, AHA-National Center
 2001 Special Emphasis Panel Member, NIH-NIEHS RFA ES01-004 "Mechanisms of Environmental Oxidative Stress and Dietary Modulation"
 2001 External Reviewer, "Oxidative Stress, Inflammation, Ischemia, and Atherothrombosis", Belgian Office for Scientific, Technical, and Cultural Affairs
 2002 Special Emphasis Panel Member, NIH-DK-02-022 "Bench to Bedside Research on Type 1 Diabetes and its Complications"
 2002 External Reviewer, NSF PD 98-1136 MCB-Signal Transduction & Regulation
 2003 External Reviewer, Metabolism and Atherosclerosis, Research Funding & Health Board, Ireland
 2003 Ad hoc Reviewer, Metabolism Study Section, National Institutes of Health
 2003-pr Member, External Advisory Board, Animal Models of Diabetic Complications Consortium, NIH
 2005 Reviewer, CADO Study Section, National Institutes of Health
 2005 Special Emphasis Panel Member, NIH-DK-05-001 "Preventing Mitochondrial Oxidative Stress in Diabetes and Obesity"
 2005 Member, Special Emphasis Panel, NIH ZRG1 MOSS-E(02)M "Skeletal Muscle and Exercise Physiology"
 2006 Temporary Member, Myocardial Ischemia and Metabolism Study Section, NIH

Honors

1990 Distinguished Research Award, Philadelphia Physiological Society
 1992-95 National Research Service Award, NIH
 1994 Upjohn Excellence in Research Award, Stanford University
 1995 Young Investigator Award, AHA Circulation Council
 2001 Annual Mentorship Award, Department of Medicine, Stanford University School of Medicine
 2002-05 Associate, Donald W. Reynolds Cardiovascular Clinical Research Center at Stanford University
 2002-pr. Fellow, American Heart Association, ATVB Council
 2005-pr. Member, Scientific Advisory Board, Stanley Sarnoff Endowment for Cardiovascular Research

B. Selected peer-reviewed publications (in chronological order).

(Publications selected from 114 peer-reviewed publications)

1. Tsao PS, McEvoy LM, Drexler H, Butcher EC, Cooke JP. Enhanced endothelial-monocyte interaction in hypercholesterolemia is attenuated by L-arginine. *Circulation* 1994;99:2176-2182.
2. Tsao PS, Lewis NP, Alpert SA, Cooke JP. Exposure to shear stress alters endothelial adhesiveness: Role of nitric oxide. *Circulation* 1995;92:3513-3519.
3. Tsao PS, Buitrago R, Chan JR, Cooke JP. Fluid flow inhibits endothelial adhesiveness: NO and transcriptional regulation of VCAM-1. *Circulation* 1996;94:1682-1689.
4. Tsao PS, Wang B-y, Buitrago R, Cooke JP. Nitric oxide regulates the expression of monocyte chemotactic protein-1. *Circulation* 1997;96:934-940.
5. McEvoy LM, Sun H, Tsao PS, Cooke JP, Berliner JA, Butcher EC. Novel vascular molecule involved in monocyte adhesion to aortic endothelium in models of atherogenesis. *J Exp Med* 1997; 85: 2069-2077.
6. Tsao PS, Buitrago R, Chang H, Chen YDI, Reaven G. Effect of experimental diabetes on monocyte-endothelial interactions. *Arterioscl Thromb Vasc Biol* 1998;18(6):947-953.
7. Matsushita H, Lee K-h, Tsao PS. Cyclic strain induces expression of the p22phox component of an endothelial NAD(P)H oxidase. *J Cell Biochem* 2001: 81(S36); 99-106.
8. Uemura S, Matsushita H, Asagami T, Li W, Glassford G, Lee KH, Tsao PS. Diabetes mellitus enhances vascular matrix metalloproteinase activity: Role of oxidative stress. *Circ Res*;88:1291-1298.
9. Matsushita H, Chang E, Glassford AJ, Cooke JP, Chiu C-p, Tsao PS. eNOS Activity is Reduced in Senescent Human Endothelial Cells. *Circ Res* 2001;89:793-798.
10. Abbasi F, Asagami T, Cooke JP, Lamendola C, McLaughlin T, Reaven G, Stuelinger M, Tsao PS. Plasma concentrations of asymmetric dimethylarginine are increased in patients with type 2 diabetes mellitus. *Am J Cardiol* 2001; 88: 1201-1203.
11. Wang D, Proffitt D, Tsao PS. Mechanotransduction of endothelial oxidative stress induced by cyclic strain. *Endothelium* 2001; 8: 283-291.
12. Stuelinger M, Abbasi F, Asagami T, Cooke JP, Lamendola C, McLaughlin T, Reaven G, Tsao PS. Relationship between Insulin Resistance and Plasma Levels of ADMA. *JAMA* 2002; 287: 1420-1426
13. Asagami T, Abbasi F, Cooke JP, Lamendola C, McLaughlin T, Reaven G, Stuelinger M, Tsao PS. Elevated levels of ADMA in type2 diabetes are reduced by metformin. *Metabolism* 2002; 51: 843-846.
14. Nakahashi TK, Hoshina K, Tsao PS, Sho E, Sho M, Karwowski JK, Yeh C, Yang RB, Topper JN, Dalman RL. Flow loading induces macrophage anti-oxidative gene expression in experimental aneurysms. *Arterioscl Thromb Vasc Biol* 2002; 22: 2017-2022.
15. Ho M, Yang E, Matcuck G, Deng D, Sampas N, Tsalenko A, Tabibiazar R, Zhang Y, Chen M, Talbi S, Ho YD, Wang J, Tsao PS, Ben-Dor A, Yakhini Z, Bruhn L, Quertermous T. Identification of endothelial cell genes by combined database mining and microarray analysis. *Physiol Genomics* 2003 13: 249-262.
16. Chen MM, Ashley EA, Deng DX, Tsalenko A, Deng A, Tabibiazar R, Ben-Dor A, Fenster B, Yang E, King JY, Fowler M, Robbins R, Johnson FL, Bruhn L, McDonagh T, Dargie H, Yakhini Z, Tsao PS, Quertermous T. Novel role for the potent endogenous inotrope apelin in human cardiac dysfunction. *Circulation*. 2003; 108:1429-32.
17. Tabibiazar R, Wagner RA, Spin JM, Ashley EA, Narasimhan B, Rubin EM, Efron B, Tsao PS, Tibshirani R, Quertermous T. Mouse strain-specific differences in vascular wall gene expression and their relationship to vascular disease. *Arterioscler Thromb Vasc Biol* 2005; 25: 302-308.
18. Sista AK, O'Connell M, Hinohara T, Oomen S, Fenster B, Glassford AJ, Schwartz EA, Taylor CA, Reaven GM, Tsao PS. Increased aortic stiffness in the insulin resistant Zucker fa/fa Rat. *Am J Physiol* 2005; 289: H845-51.
19. Tabibiazar R, Wagner RA, Ashley EA, King JY, Ferrara R, Spin JM, Sanan DA, Narasimhan B, Tibshirani R, Tsao PS, Efron B, Quertermous T. Signature patterns of gene expression in mouse atherosclerosis and their correlation to human coronary disease. *Physiol Genomics* 2005; 22: 213-26/
20. Schwartz EA, Reaven E, Topper JN, Tsao PS. Transforming growth factor-beta receptors localize to caveolae and regulate endothelial nitric oxide synthase in normal human endothelial cells. *Biochem J* 2005; 390:199-206.
21. McLaughlin T, Stühlinger M, Lamendola C, Abbasi F, Reaven GM, Tsao PS. Plasma asymmetric dimethylarginine concentrations are elevated in insulin-resistant women and fall with weight loss. *J Clin Endocrinol Met* 2006(In Press PMID: 16507636)
22. Sonmez A, Dogru T, Yilmaz MI, Tasci I, Ocal R, Ozgurtas T, Kilic S, Erbil K, Eriksi S, Tsao PS. Adiponectin and insulin resistance in young and healthy smokers. *Endocr J* 2006 (In Press PMID 16960399)
23. Yue P, Arai T, Terashima M, Sheikh AY, Cao F, Charo DN, Hoyt G, Robbins RC, Ashley EA, Wu J, Yang PC, Tsao PS. Magnetic resonance imaging of progressive cardiomyopathic changes in the db/db mouse. *Am J Physiol Heart Circ Physiol* 2006 (In Press PMID 17122193)

C. Research Support.

Ongoing Research Support

1P50HL083800-01 Tsao (PI) 05/01/06-04/30/11
National Institutes of Health
AAA Disease Mechanism, Stratification and Treatment
Project 2: Signature Protein Profiles to Identify AAAs
The goal of this project is to identify serum protein biomarker patterns indicative of AAA and to determine if these patterns are predictive of aneurysm expansion and risk for rupture.
Role: PI of Project 2

1 RO1 DK071333 Tsao (PI) 05/01/05-05/31/09
National Institutes of Health
Integrating the Metabolic and Genetic Faces of Obesity
The goal of this study is to use microarray analysis of human tissue to investigate transcriptional mechanisms that serve the basis for obesity-induced insulin resistance.
Role: PI

1 RO1 HL078678 McConnell (PI) 09/22/04-08/31/08
National Institutes of Health
Multi-modality Cellular Imaging of Vascular Inflammation
The goal of this study is to identify and develop novel cellular imaging modalities aimed at atherosclerosis.
Role: Co-Investigator

5 RO1 HL073084 Tsao (PI) 06/01/03-05/31/08
National Institutes of Health
Adipose tissue production of the NOS inhibitor, ADMA
The goal of this study is to investigate the underlying mechanisms that regulate the elaboration of asymmetric dimethylarginine in adipose tissue, and their effects on vascular disease.
Role: PI

R21AT003465 (PI: Christopher D. Gardner) 09/30/06 - 08/31/08
National Institutes of Health
"ALA & EPA/DHA (w-3) Effects On Inflammatory Markers in Insulin Resistant Adults"
The major goal of this project is to test the effect of omega three fatty acids on inflammatory markers among a population of insulin resistant adults.
Role: Co-Investigator
Overlap: None

R21AT003245 (PI: Christopher D. Gardner) 09/30/06 - 08/31/08
National Institutes of Health
"Dietary Antioxidants and Markers of Atherosclerosis"
The goal of this study is to conduct a preliminary/feasibility trial that will lead to full-scale study of the impact of popular dietary antioxidants on several surrogate markers of atherosclerosis including novel inflammatory markers, oxidative markers of vascular injury, and brachial artery reactivity.
Role: Co-Investigator
Overlap: None