Assistant Professor

Oklahoma State University

School of Mechanical and Aerospace Engineering

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Academic Background

Ph.D., Biomedical Engineering, State University of New York at Stony Brook

M.S., Biomedical Engineering, The University of Akron

B.E., Biomedical Engineering, Tianjin University, China

B.A., English, Tianjin University, China

Areas of Interest

Cardiovascular dynamics and computational fluid dynamics

Platelet and endothelial cell functions under physiological and pathological flow conditions

Cardiovascular disease related inflammatory responses, especially complement activation

Effects of secondhand smoke on the development of cardiovascular diseases

Biomarker identification in cardiovascular diseases

Biomedical applications of aerogels

Teaching Interests

Basic Physiology and physiological System Analysis for Engineers (MAE 5013)

Design of Engineering Experiments (MAE 5053)

Biomechanics (MAE 4623)

Measurements and Instrumentation (MAE 3113)

Professional Experience

Assistant professor, Mechanical and Aerospace Engineering Department, Oklahoma State University, 2007 - present

Post doctoral research fellow, Department of Pathology and Laboratory Medicine, Weill Medical College of Cornell University, 2005-2007

Professional Affiliations

American Heart Association member

Biomedical Engineering Society

Select Publications

Books and book chapters

Biofluid Mechanics: An Introduction to Fluid Mechanics, Macrocirculation, and Microcirculation. David A. Rubenstein, Wei Yin and Mary D. Frame. Academic Press: Boston, MA; 2011. (http://www.elsevierdirect.com/ISBN/9780123813831/Biofluid-Mechanics).

Wei Yin and David A. Rubenstein. Chapter 30, Biomedical Applications of Aerogels. Aerogels Handbook. Editors: Michel A. Aegerter, Nicholas Leventis, and Matthias M. Koebel. Springer:

New York; 2011.

Peer Reviewed Articles

Rubenstein, D.A., Maria, Z. and Yin, W. Glycated albumin modulates endothelial cell thrombogenic and inflammatory responses. Journal of Diabetes Science and Technology, May 2011; Volume 5, Issue 3: 703-713.

Shanmugavelayudam, S.K., Rubenstein, D.A. and Yin, W. Effects of physiologically relevant dynamic shear stress on platelet complement activation. Platelets. 2011 Jun 16 [Epub ahead of print]. doi:10.3109/09537104.2011.585257.

Characterization of the Physical Properties and Biocompatibility of Polybenzoxazine Based Aerogels for use as a Novel Hard Tissue Scaffold. David A. Rubenstein, Hongbing Lu, Shruti S. Mahadik, Nicholas Leventis and Wei Yin. Journal of Biomaterials Science: Polymer Edition.

Yin, W. Shanmugavelayudam, S.K. Rubenstein, D.A. The effect of physiologically relevant dynamic shear stress on platelet and endothelial cell activation. Thrombosis Research. 2011; 127 (3): 235-41.

Shaw, J.H., Xiang, L., Shah A., Yin, W. and Lloyd P.G. Placenta growth factor expression is regulated by hydrogen peroxide in vascular smooth muscle cells. American Journal of Physiology. 2011; 300(2): C349-55.

Rubenstein, D.A., Morton, B.E. and Yin, W. The combined effects of sidestream smoke extracts and glycated serum albumin on endothelial cells and platelets. Cardiovascular diabetology. 2010, 9:28.

Shanmugavelayudam, S.K., Rubenstein, D.A. and Yin, W. Effect of geometrical assumptions on numerical modeling of coronary blood flow under normal and disease conditions. ASME Journal of Biomechanical Engineering. 132: 061004-1-061004-8; 2010.

Rubenstein, D.A., Venkitachalam, S.M., Zamfir, D., Wang F., Lu, H., Frame, M.D. and Yin, W. In vitro biocompatibility of sheath-core cellulose-acetate-based electrospun scaffolds towards endothelial cells and platelets. Journal of Biomaterials Science. 21 (2010): 1716-1736.

Rubenstein D.A. and Yin W. Quantifying the Effects of Shear Stress and Shear Exposure Duration Regulation on Flow Induced Platelet Activation and Aggregation. Journal of Thrombosis and Thrombolysis.30(1): 36-45;2010.

Peerschke EI, Yin, W. and Ghebrehiwet, B. Complement activation on platelets: implication for vascular inflammation and thrombosis. Molecular Immunology. 47 (13): 2170-5; 2010.

Peerschke EIB, Andemariam MD, Yin W and Bussel JB. Complement activation on platelets correlates with a decrease in circulating platelets in patients with immune thrombocytompenic purpura. British Journal of Hematology. British Journal of Haematology. 148 (4): 638-45; 2010.

Yin, W. and Rubenstein, D.A. Dose effect of shear stress on platelet complement activation in a dynamic cone and plate shearing device. Cellular and Molecular Bioengineering. 2009; 2(2):274-280.

Yin, W., Venkitachalam, S., Jarrett, E., Staggs,S., Leventis, N., Lu, H., Rubenstein, D.A. Biocompatibility of Polyurea Nanoencapsulated Templated Silica Aerogel. Journal of biomedical materials research part A, 92A:1431-1439, 2010..

Rubenstein, D. A. and Yin, W. Glycated albumin modulates platelet susceptibility to flow induced activation and aggregation. Platelets, 2009; 20(3): 206-215.

Peerschke, E.I., Yin, W., Alpert, D.R., Roubey, R.A.S., Salmon, J.E. Serum complement activation on heterologous platelets is associated with arterial thrombosis in patients with systemic lupus erythematosus and antiphospholipid antibodies. LUPUS, 2009; 18(6):530-8.

Peerschke EI, Yin W and Ghebrehiwet B. Platelet mediated complement activation. Adv Exp Med Biol. 2008; 632:81-91.

Yin, W., Czuchlewski, D., Leonard, D. and Peerschke, EIB. Development of proteomic signatures of platelet activation using surface enhanced laser desorption/ionization technology in a clinical setting. American Journal of Clinical Pathology. 2008; 129:862-869.

Yin, W., Ghebrehiwet, B., Peerschke, EI. Expression of complement components and inhibitors on platelet microparticles. Platelets, 2008;19:225-233.

Yin, W., Ghebrehiwet, B., Weksler, B., Peerschke, EI. Regulated complement deposition on the surface of human endothelial cells: effect of tobacco smoke and shear stress. Thrombosis Research, 2008; 122:221-228.

Alpert, D., Mandl, L., Erkan, D., Yin, W., Peerschke, E.I., Salmon, J.E. Anti-heparin platelet factor 4 antibodies in systemic lupus erythematosus are associated with IgM antiphospholipid antibodies and the antiphospholipid syndrome. Ann Rheum Dis, 67(3): 395-401, 2008.

Peerschke EI, Silver RT, Weksler BB, Yin, W, Bernhardt B, Varon D. Examination of platelet function in whole blood under dynamic flow conditions with the cone and plate(let) analyzer: effect of erythrocytosis and thrombocytosis. Am J Clin Pathol. 2007 Mar; 127(3):422-428.

Yin, W., Ghebrehiwet, B., Weksler, B. and Peerschke, E. Classical Pathway Complement Activation on Human Endothelial Cells. Molecular Immunology 2007 Mar; 44(9): 2228-34.

Peerschke, E.I.B., Yin, W., Grigg, S.E. and Ghebrehiwet, B. Blood platelets activate the

classical pathway of human complement. Journal of thrombosis and Haemostasis, 2006; 4: 2035-42.

Yin, W., Krukenkamp, I.B., Gaudette, G, Jesty, J. and Bluestein, D. The thrombogenic performance of a St. Jude Bileaflet MHV in a sheep model. ASAIO Journal, Jan/Feb 2006; 52(1): 28-33.

Yin, W., Gallocher, S., Pinchuk, L., Schoephoerster, R., Jesty, J. and Bluestein, D. Flow induced platelet activation in a St. Jude MHV, a trileaflet polymeric heart valve and a St. Jude tissue valve. Artificial Organs, 29(10): 826-31, Oct 2005.

Yin, W. , Yared, A., Jesty, J., Affeld, K., Bluestein, D. Flow induced platelet activation in bileaflet and monoleaflet mechanical heart valves in a left ventricular assist device. Annals of biomedical eng. 32 :8 :1058-1066, 2004.

Bluestein, D., Yin, W., Affeld, K., Jesty, J. Flow-induced platelet activation in a mechanical heart valve. J. Heart valve disease. 13(3): 501-508, May 2004.

Jesty, J., Yin W., Perrotta, P., Bluestein, D. Platelet activation in a circulating flow loop: combined effects of shear stress and exposure time. Platelets, 12: 11-17. 2003.

Reviewer for

Platelets

Annals of Biomedical Engineering

ASAIO Journal

American Heart Association - Biomedical Engineering Panel

Other Information

Dr. Yin is in charge of a major research instrument funded by National Science Foundation; a SELDI ProteinChip Reader. You can visit the MAE core facility website for more information. If you have any questions about this instrument, please contact Dr. Yin through email.