

BIOGRAPHICAL SKETCH (August 2007)

GERALD M. SAIDEL

Education

Rensselaer Polytechnic Institute	(9/56-5/60)	B.Ch.E.
Johns Hopkins University	(9/60-12/64)	Ph.D.
The City College, C.U.N.Y.	(1/65-8/66)	NSF Postdoctoral Fellow

Positions

7/02 - present	Director, Center for Modeling Integrated Metabolic Systems
7/87 -12/98	Chairman, Dept. of Biomedical Engineering, CWRU
7/81 - present	Professor, Dept. of Biomedical Engineering, CWRU
7/76 - 6/81	Associate Professor (with tenure), Dept. of Biomedical Eng, CWRU
7/73 - 6/76	Associate Professor, Dept. of Biomedical Engineering, CWRU
3/67 - 6/73	Assistant Professor, Dept. of Biomedical Engineering, CWRU

Major Research Interests

Mass & heat transport and metabolism in cells, tissues & organ systems
Mathematical modeling & analysis of dynamic and distributed systems
Nonlinear parameter estimation & optimal design of experiments

Major Teaching Activities

Modeling and analysis of biomedical system dynamics
Transport processes in biomedical systems
Parameter estimation for biomedical systems

Special Professional Activities

Honor Societies: Tau Beta Pi, Phi Lambda Upsilon, Sigma Xi
Postdoctoral Fellow: National Science Foundation (1965-66)
Section Editor: Annals of Biomedical Engineering (1979-1985)
President: Biomedical Engineering Society (1986-87)
Founding Fellow: American Institute of Medical and Biological Engineers (1992)
Chair: Council of Chairs of Bioengineering and Biomedical Engineering (1992-93)
Centennial Certificate: American Society of Engineering Education (1993)
Meritorious Service Award: Case Alumni Association (1994)
Chair: Academic Council, American Institute of Medical and Biological Engineers (1997-98)
Primary Organizer & Chair: Annual Meeting of the Biomedical Engineering Society (1998)
Associate Editor: Annals of Biomedical Engineering (1998-)
National Program Chair: Biomedical Engineering Society (1998-2000)
Primary Organizer & Chair: Meeting of the ASEE North Central Region (2001)
Distinguished Service Award: Biomedical Engineering Society (2002)
Inaugural Class Fellow of the Biomedical Engineering Society (2005)

Professional Societies

Biomedical Engineering Society
American Institute of Medical and Biological Engineers

LIST OF PUBLICATIONS

Articles in Refereed Journals

- Chen X, K.J. Barkauskas, S.G. Nour, J.L. Duerk, F.W. Abdul-Karim, G.M. Saidel GM (2007) Magnetic resonance imaging and model prediction for thermal ablation of tissue. J Magn Reson Imaging 26:123-32.
- Breen M.S, M. Breen, K. Butts, L. Chen, G.M.Saidel, D.L.Wilson (2007) MRI-guided thermal ablation therapy: model and parameter estimates to predict cell death from MR thermometry images. Ann Biomed Eng. 35:1391-403.
- Salinas, C., R.F. Muzic, Jr., G.M. Saidel (2007) Validity of model approximations for receptor-ligand kinetics in nuclear medicine. Med. Phys. 34:1693-1703.
- Lai N, Camesasca M, Saidel GM, Dash RK, Cabrera ME (2007) Linking pulmonary oxygen uptake, muscle oxygen utilization and cellular metabolism during exercise. Ann Biomed Eng. 35:956-69.
- Wang, F., G.M. Saidel, J. Gao (2007) Mechanistic model of controlled drug release from polymer millirods: effects of excipients and complex binding. J. Controlled Release 119:11-120.
- Zhou, H., G.M. Saidel, M.E. Cabrera (2007) Multi-organ system model of O₂ and CO₂ transport during isocapnic and poikilocapnic hypoxia. Resp. Physiol. & Neurobiol. 156:320-330.
- Salinas, C., R.F. Muzic, Jr., P. Ernsberger, G.M. Saidel (2007) Robust experiment design for estimating myocardial beta adrenergic receptor concentration using PET. Med. Phys. 34:151-165.
- Kim, J., G.M. Saidel, M.E. Cabrera (2007) Multi-scale computational model of fuel homeostasis during exercise: effect of hormonal control. Ann. Biomed. Eng. 35:69-90.
- Lai, N., R.K. Dash, M.M. Nasca, G.M. Saidel, M.E. Cabrera (2006) Relating pulmonary oxygen uptake to muscle oxygen consumption at exercise onset: *in vivo* & *in silico* studies. European J Appl. Physiol. 97:380-394.
- Zhou, L., W.C. Stanley, G.M. Saidel, X. Yu, M.E. Cabrera (2005) Regulation of lactate production at the onset of ischaemia is independent of mitochondrial NADH/NAD⁺: insights from *in silico* studies. J Physiol (London) 569:25-937.
- Lee, K., G.M. Saidel, M.S. Penn (2005) Macromolecular transport in the arterial wall: alternative models for estimating barriers. Ann. Biomed. Eng. 33:1491-1503.
- Lee, K., F. Forudi, G.M. Saidel, M.S. Penn (2005) Alterations in internal elastic lamina permeability as a function of age and anatomical site precede lesion development in apolipoprotein E-null mice. Circ. Res. 97:450-456.
- Zhou, L., J.E. Salem, G.M. Saidel, W.C. Stanley, M.E. Cabrera (2005) Mechanistic model of cardiac energy metabolism predicts localization of glycolysis to subdomain during ischemia. Am. J. Physiol. 288:H2400-2411.
- Qian, F., N. Stowe, G.M. Saidel, J. Gao (2004) Comparison of doxorubicin concentration profiles in radiofrequency-ablated rat livers from sustained- and dual-release PLGA millirods. Pharmaceutical Res. 21:394-399.
- Qian, F., N. Stowe, E.H. Liu, G.M. Saidel, J. Gao (2003) Quantification of *in vivo* doxorubicin transport from plga millirods in thermoablated rat livers. J. Controlled Release, 91: 157-166
- Liu, E.H., G.M. Saidel, H. Harasaki (2003) Model analysis of tissue responses to transient and chronic heating. Ann. Biomed. Eng. 31:1007-1014.
- Muzic, R.F., G.M. Saidel (2003) Distributed versus compartment models for PET receptor studies. IEEE Trans Med Imag. 22:11-21.
- Knepper, M.A., G.M. Saidel, V.C. Hascall, T. Dwyer (2003) Concentration of solutes in the renal inner medulla: interstitial hyaluronan as a mechano-osmotic transducer. Am J Physiol 282:F433-446.

- Johnson, P.C., G.M. Saidel (2002) Thermal model for RF tumor ablation under MRI guidance. Ann. Biomed. Eng. 30:1152-1161.
- Qian, F., G.M. Saidel, D.M. Sutton, A. Exner, J. Gao (2002) Combined modeling and experimental approach for the development of dual-release polymer millirods. J. Controlled Release 83:427-435.
- Salem, J.E., G.M. Saidel, W.C. Stanley, M.E. Cabrera (2002) Mechanistic model of myocardial metabolism under normal and ischemic conditions. Ann. Biomed. Eng. 30:202-216.
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- Kump, K.S., G.M. Saidel, D.L. Wilson (2001) Comparison of algorithms for combining X-ray angiography images. IEEE Trans Med Imag. 20:742-750.
- Saidel, G.M., C.R. Davies, E.H. Liu, H. Harasaki (2001) Temperature and perfusion responses of muscle and lung tissues during chronic heating in vivo. Med. & Biol. Eng. & Comput. 39:126-133.
- Muzic, R.F., G.M. Saidel, N. Zhou, A.D. Nelson, L. Zheng, M.S. Berridge (2000) Iterative optimal experiment design of PET experiments for estimating β -adrenergic receptor concentration. Med. & Biol. Eng. & Comput. 38:593-602.
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- Cabrera, M.E., G.M. Saidel, S.C. Kalhan (1999) Lactate metabolism during exercise: analysis by an integrative model. Am. J. Physiol. 277:R1522-1536.
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Saidel, G.M., H.E. Hoelscher (1965). Chemical reaction in the turbulent wake of a cylinder.

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