# CURRICULUM VITAE

February, 2007


**Name:** John M. Tang

**Office Address:** Department of Molecular Biophysics and Physiology
Rush Medical College
1750 W. Harrison Street
Chicago, IL. 60612-3824
phone: (312) 942-8099
fax: (312) 942-8711
e-mail: jtang@rush.edu

**Home Address:** 2703 Millstone Lane
Rolling Meadows, IL. 60008-2152
(847) 397-6828


**Date of Birth:** September 8, 1949

**Place of Birth:** Hong Kong

**Nationality:** Citizen of the United States

**Marital Status:** Married, two children

**Education:**

| | |
|---|---|
| 1984-1991 | Ph.D. in Physiology, Rush Medical College, Chicago, IL.<br>Dissertation title: Studies on intact sarcoplasmic reticulum: patch clamp recording and tension measurement in split lobster muscle fibers. |
| 1978-1981 | D.D.S. program in Dentistry, University of Illinois at the Medical Center, Chicago, IL. |
| 1973-1977 | M.S. in Physiology, University of Illinois at the Medical Center, Chicago, IL.<br>Dissertation title: Effect of ascorbic acid on lipid metabolism in guinea pigs. |
| 1970-1973 | B.S. (Magna Cum Laude) in Biology, University of Charleston, Charleston, W. Va. |

**Professional Appointments:**

| | |
|---|---|
| 2003-Present | Department representative and member of Rush's Research and Academic Laboratory Safety Standing Committee (RALSC) |
| 1998-Present | Assistant Professor, Department of Molecular Biophysics and Physiology, Rush Medical College, Chicago, IL. |

| | |
|---|---|
| 1991-1998 | Instructor, Department of Physiology, Rush Medical College, Chicago, IL. |
| 1984-1991 | Research Associate/Laboratory Supervisor, Department of Physiology, Rush Medical College, Chicago, IL. |
| 1981-1984 | Research Assistant, Department of Physiology, Rush Medical College, Chicago, IL. |
| 1977-1978 | Instructor, Medical Dietetics Department, University of Illinois at the Medical Center, Chicago, IL. |
| 1973-1977 | Research and Teaching Assistant, Department of Physiology and Department of Medical Dietetics, University of Illinois at the Medical Center, Chicago, IL. |
| 1970-1973 | Teaching Assistant, Department of Biology, University of Charleston, Charleston, W. Va. |

**Professional Societies:** Chi Beta Phi Honorary Scientific Fraternity, Epsilon Chapter
Biophysical Society

**Honors:**

| | |
|---|---|
| 1992 | Outstanding graduate student award. Rush University, Chicago, IL. |
| 1985-1989 | National Institutes of Health traineeship |
| 1973-1977 | Teaching assistantship with full tuition waiver. University of Illinois at the Medical Center, Chicago, IL. |
| 1970-1973 | Dean's List. University of Charleston, Charleston, W. Va. |
| 1970-1973 | Full tuition scholarship. University of Charleston, Charleston, W. Va. |

**Publications:**

Nelson, D. J., **Tang, J. M.** and Palmer, L. G. (1984) Single-channel recording of apical membrane chloride conductance in A6 epithelial cells. Journal of Membrane Biology. 80:81-89.

Nelson, D. J., Jacobs, E. R., **Tang, J. M.**, Zeller, J. M. and Bone, R. C. (1985) Immunoglobulin G-induced single ionic channels in human alveolar macrophage membranes. Journal of Clinical Investigation. 76:500-507.

Cooper, K. E., **Tang, J. M.**, Rae, J. L. and Eisenberg, R. S. (1986) A cation channel in frog lens epithelia responsive to pressure and calcium. Journal of Membrane Biology. 93:259-269.

**Tang, J. M.**, Wang, J. and Eisenberg, R. S. (1989) $K^+$-selective channel from sarcoplasmic reticulum of split lobster muscle fibers. Journal of General Physiology. 94:261-278.

**Tang, J. M.**, Wang, J., Quandt F. N. and Eisenberg, R. S. (1990) Perfusing pipettes. Pflügers Arch. 416:347-350.

Wang, J., **Tang, J. M.** and Eisenberg, R. S. (1992) A calcium conducting channel a kin to a calcium pump. Journal of Membrane Biology. 130:163-181.

**Tang, J. M.**, Wang, J. and Eisenberg, R. S. (1992) Perfusing patch pipettes. In *Methods in Enzymology*. Chapter 10. Volume 207:176-181. B. Rudy and L.E. Iverson, editors. Academic Press, Florida.

**Tang, J. M.**, Wang, J. and Eisenberg, R. S. (1992) Studies on intact sarcoplasmic reticulum: patch clamp recording and tension measurement in lobster split muscle fibers. In *Methods in Enzymology*. Chapter 48. Volume 207:692-699. B. Rudy and L.E. Iverson, editors. Academic Press, Florida.

**Tang, J. M.**, Quandt, F. N. and Eisenberg, R. S. (1995) Perfusion of patch pipettes. In *Patch Clamp Applications and Protocols.* Chapter 5. Volume 26. A.A. Boulton, G.B. Baker and W. Walz, editors. Humana Press, New Jersey.

van der Straaten T. A., **Tang, J. M.**, Eisenberg, R. S., Ravaioli, U. and Aluru, N. (2001) Three-dimensional Continuum Simulations of Biological Ion Channels, in Technical Proceedings of the 2001 International Conference on Computational Nanoscience and Nanotechnology, Hilton Head, SC, March 19-21, 2001, pp. 39-42.

van der Straaten, T. A., Varma, S., Chiu, S. W., **Tang**, **J. M.,** Aluru, N., Eisenberg, R. S., Ravaioli, U. and Jakobsson, E. (2002) Combining Computational Chemistry and Computational Electronics to Understand Protein Ion Channels, in Technical Proceedings of the 2002 International Conference on Computational Nanoscience and Nanotechnology, San Juan, Puerto Rico, April 21-25, 2002, pp. 60-63.

Chen, D., **Tang**, **J. M.** and Eisenberg, R. S. (2002) Structure-Function Study of Porins, in Technical Proceedings of the 2002 International Conference on Computational Nanoscience and Nanotechnology, San Juan, Puerto Rico, April 21-25, 2002, pp. 64-67.

van der Straaten, T. A., **Tang**, **J. M.,** Eisenberg, R. S., Ravaioli, U. and Aluru, N. (2002) Three-dimensional Continuum Simulations of Ion Transport Through Biological Ion Channels: Effect of Charge Distribution in the Constriction Region of Porin. Journal of Computational Electronics 1:335-340.

van der Straaten, T. A., **Tang**, **J. M.,** Ravaioli, U., Eisenberg, R. S. and Aluru, N. (2003) Simulating Ion Permeation Through the OmpF Porin Ion channel Using Three-Dimensional Drift-Diffusion Theory. Journal of Computational Electronics 2:29-47.

Goryll, M., Wilk, S., Laws, G. M., Goodnick S., Thornton T., Saraniti, M., **Tang, J. M.** and Eisenberg, R. S. (2003) Silicon-based ion channel sensor. Superlattices & Microstructures 34 (3-6), 451-457.

Goryll, M., Wilk, S., Laws, G. M., Goodnick S., Thornton T., Saraniti, M., **Tang, J. M.** and Eisenberg, R. S. (2004) Ion Channel Sensor on a Silicon Support Mat. Res. Soc. Symp. Proc. Vol. 820, O7.2.1-5 (2004). Proceedings Title: Nanoengineered Assemblies and Advanced Micro/Nanosystems Editors (Symposium O):Jun Liu, Jeffrey T. Borenstein, Piotr Grodzinski, Luke P. Lee, Zhong Lin Wang.

Wilk, S., Goryll, M., Laws, G. M., Thornton, T. J., Goodnick, S. M., Saraniti, M., **Tang**, **J. M.** and Eisenberg, R. S. (2004) Teflon coated silicon apertures for supported lipid bilayer membranes. Applied Physics Letters 85:3307-3309.

Miedema, H., Meter-Arkema, A., Wierenga, J., **Tang J. M.**, Eisenberg, R. S., Nonner, W., Hektor, H., Gillespie, D. and Meijberg, W. (2004) Permeation properties of an engineered bacterial OmpF porin containing the EEEE-locus of Ca2+ channels. Biophysical Journal 87:3137-3147.

Wilk, S. J., Petrossian, L., Goryll, M., Laws, G. M., Goodnick, S. M., Thornton, T. J., Saraniti, M., **Tang, J. M.** and Eisenberg, R. S. (2005) Ion Channels on Silicon. e-Journal of Surface Science and Nanotechnology. 3: p. 184-189.

Wilk, S. J., Petrossian, L., Goryll, M., **Tang, J. M.**, Eisenberg, R. S., Saraniti, M., Goodnick, S. M. and Thornton, T. J. (2005) Silicon-Based Ion Channel Platforms. in HCIS-14. 2005. Chicago, IL: Springer Proceedings in Physics Series.

Wilk, S. J., Aboud, S., Petrossian, L., Goryll, M., **Tang, J. M.**, Eisenberg, R. S., Goodnick, S. M. and Thornton, T. J. (2005) Ion Channel Conductance Measurements on a Silicon Based Platform. in NPMS6-SIMD4. 2005. Maui, Hawaii.

White, Ryan J., Zhang, Bo, Daniel, Susan, **Tang, J. M.**, Ervin, Eric N., Cremer, Paul S. and White, Henry S. (2006) The Ionic Conductivity of the Aqueous Layer Separating a Lipid Bilayer Membrane and a Glass Support. Langmuir 22:10777-10783.

Wilk, S.J., Petrossian, L., Goryll M., Thornton, T.J., Goodnick, S.M., **Tang, J.M.**, Eisenberg R.S. (2006) Integrated Electrodes on a Silicon Based Ion Channel Measurement Platform. Biosensors and Bioelectronics *(submitted)*.

Ervin, Eric N., White, Ryan J., Owens, Treggon G., **Tang, J. M.**, and White, Henry S. (2007) The Number of Charged Residue Counter-ions in Transmembrane Proteins from the Infinite Dilution AC/DC Conductance. *(submitted)*.

**Abstracts:**

Kamath, S., Bramante, P., **Tang, J. M.** and Aggarwal, U. (1976) Blood, carcass and hepatic lipids of guinea pigs fed ascorbic acid-cholesterol enriched diets. Federation Proceedings. 35:418.

Kamath, S., **Tang, J. M.**, and Bramante, P. (1977) Effect of dietary ascorbic acid on serum lipids and lipoprotein lipase activity of adipose and cardiac tissue in the guinea pigs. Federation Proceedings. 36:1114.

Kamath, S., **Tang, J. M.**, Smith, A., Moy, K., Wadhwa-Mehta, S. and Bramante, P. (1978) Ascorbic acid and cholesterol levels in tissues of guinea pigs fed graded doses of vitamin C. Federation Proceedings. 37:589.

Nelson, D. J. and **Tang, J. M.** (1983) Single Ach-activated channels recorded from cultured ciliary ganglion neurons with perfused patch clamp electrodes. Biophysical Journal. 41:66a.

Palmer, L. G., **Tang, J. M.** and Nelson, D. J. (1984) Single channel recordings of apical membrane chloride conductance in A6 epithelial cells. Biophysical Journal. 45:140a.

**Tang, J. M.** and Nelson, D. J. (1984) $Ca^{2+}$ mediated opening of $K^{+}$ channels in ciliary ganglion cells evoked by Ach. Biophysical Journal. 45:310a.

Jacobs, E. R., Nelson, D. J., **Tang, J. M.** and Bone, R. C. (1984) Human alveolar macrophage membrane channel currents as determined by extracellular patch clamp technique. Abstract for American College of Chest Physicians, Dallas.

Nelson, D. J., **Tang, J. M.**, Jacobs, E. R. and Bone, R. C. (1984) Immunoglobulin G-induced single ionic channels in human alveolar macrophage membrane. Abstract for Central Society for Clinical Research, Chicago.

Cooper, K. E., **Tang, J. M.**, Rae, J. L. and Eisenberg, R. S. (1985) Cation-selective channel in the epithelium of frog lens. Journal of General Physiology. 86:9a-10a.

Nelson, D. J., Jacobs, E. R., **Tang, J. M.** and Bone, R. C. (1985) Immunoglobulin-G induced single ionic channels in macrophage membranes. Biophysical Journal. 47:142a.

Cooper, K. E., **Tang, J. M.**, Rae, J. L. and Eisenberg, R. S. (1986) CAT-50: A cation-selective channel from frog lens epithelium. Biophysical Journal. 49:6a.

**Tang, J. M.**, Wang, J. and Eisenberg, R. S. (1987) Patch clamp of sarcoplasmic reticulum within muscle fibers. Biophysical Journal. 51:106a.

**Tang, J. M.**, Wang, J. and Eisenberg, R. S. (1987) Patch clamp of sarcoplasmic reticulum within muscle fibers. Abstract for Sigma Xi presentation Rush University Research Week, Chicago.

Hainsworth, A. H., **Tang, J. M.**, Wang, J., Levis, R. A. and Eisenberg, R. S. (1988) Open-channel noise in the K+ channel of the sarcoplasmic reticulum. Biophysical Journal. 53:151a.

Wang, J., **Tang, J. M**. and Eisenberg, R. S. (1989) $Ca^{2+}$ channels in the sarcoplasmic reticulum (SR) of skinned lobster muscle fibers: Patch clamp measurements. Journal of Cell Biology. 107:144a.

Wang, J., **Tang, J. M.** and Eisenberg, R. S. (1989) $Ca^{2+}$ channels from sarcoplasmic reticulum (SR) of split lobster muscle fibers. Biophysical Journal. 55:207a.

**Tang, J. M.**, Wang, J. and Eisenberg, R. S. (1990) Contractures and reloading in skinned lobster muscle fibers. Biophysical Journal. 57:171a.

**Tang, J. M.**, Wang, J. and Eisenberg, R. S. (1990) Perfusing pipettes quietly and easily. Biophysical Journal. 57:171a.

**Tang, J. M.**, Wang, J. and Eisenberg, R. S. (1990) Contractures and reloading in skinned lobster muscle fibers. Abstract for Sigma Xi presentation Rush University Research Week, Chicago.

**Tang, J. M.**, Wang, J. and Eisenberg, R. S. (1990) Perfusing pipettes quietly and easily. Abstract for Sigma Xi presentation Rush University Research Week, Chicago.

Eisenberg, R. S., **Tang, J. M.** and Wang, J. (1991) Ionic channels of the sarcoplasmic reticulum of lobster remotor muscle. Biophysical Journal. 59:177a.

Wang, J., **Tang, J. M.** and Eisenberg, R. S. (1992) Calcium conducting channel in SR: calcium pump without occlusion? Biophysical Journal. 61:A433.

**Tang, J. M.**, Levis, R. A., Lynn, K. G. and Eisenberg, R. S. (1995) Opening and closing transitions of a large mitochondrial channel with microsecond time resolution. Biophysical Journal. 68:A145.

**Tang, J. M.**, Chen, D., Saint, N., Rosenbusch, J. and Eisenberg, R. S. (1997) Permeation through porin and its mutant G119D. Biophysical Journal. 72:A108.

**Tang, J. M.**, Saint, N., Rosenbusch, J. and Eisenberg, R. S. (1997) Currents through single channels of maltoporin. Biophysical Journal. 72:A108.

van der Straaten T. A., Eisenberg, R. S., **Tang, J. M.**, Ravaioli, U. and Aluru, N. (2001) Three-dimensional Poisson-Nernst-Planck simulation of OmpF porin. Biophysical Journal. 80:115A.

Van der Straaten, T. A., **Tang, J. M**., Eisenberg, R. S., Ravaioli, U., Aluru, N., Varma, S. and Jakobsson, E. (2002) A study of mutations of OmpF porin using Poisson-Nernst-Planck theory. Biophysical Journal. 82:207A.

Chiu, S. W., Varma, S., Jakobsson, E., **Tang, J. M**., van der Straaten, T. A. and Eisenberg, R. S. (2002) Molecular dynamics of permeation in porin and its mutant G119D. Biophysical Journal. 82:208A.

Goryll, M., Wilk, S., Laws, G. M., Thornton, T., Goodnick, S., Saraniti, M., **Tang, J. M.** and Eisenberg R.S. (2003) Ion Channel Sensor on a Silicon Support. in Nanoengineered Assemblies and Advanced Micro/Nanosystems, Mater. Res. Soc. Symp. Proc. 2003. San Francisco, CA.

Mediema, H., Meter-Arkema, A., Wierenga, J., Hektor, H., **Tang, J. M.**, Eisenberg, R.S. and Meijberg W. (2004) Permeation properties of an engineered OmpF containing the EEEE locus of $Ca^{2+}$ channels. Biophysical Journal 86:260a.

**Tang, J. M.**, Goryll, M., Eisenberg, R. S., Wilk, S., Thornton, T. and Goodnick, S. (2004) Silicon-based ion channel sensor. Abstract for Forum for Research and Clinical Investigation, Sigma Xi presentation Rush University Research Week, Chicago.

Goryll, M., Wilk, S., Laws, G. M., Thornton, T., Goodnick, S., Saraniti, M., **Tang, J. M.** and Eisenberg, R.S.. (2005) Integrated Sensor Design Using Ion Channels Inserted into Lipid Bilayer Membranes. in Nanotechnology, 2004. 4th IEEE Conference on. 2004. Munich, Germany.

Wilk, S.J., Petrossian, L., Goryll, M., Laws, G. M., Goodnick, S. M., Thornton, T. J., Saraniti, M., **Tang, J. M.** and Eisenberg, R. S. (2005) Microfabricated Silicon Aperture for Ion Channel Measurement. in Nanotech 2005.

Wilk, S.J., Petrossian, L., Goryll, M., Laws, G. M., Goodnick, S. M., Thornton, T. J., **Tang, J. M.** and R.S. Eisenberg. (2005) Integrated Platform for Ion Channel Sensing. in IEEE Sensors 2005. Irvine, CA.