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Address: Rush University Medical Center,
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EDUCATION:

1978-82	Physiology & Biophysics	BS	University of Illinois, Urbana
1982-84	Physiology & Biophysics	MS	University of Illinois, Urbana
1984-87	Physiology & Biophysics	PhD	University of Illinois, Urbana

PROFESSIONAL POSITIONS:

1987-1989 Postdoctoral Fellow; Baylor College of Medicine, Houston TX
1990-1994 Assistant Professor, Dept. Physiology, University of Texas, Galveston, TX
1994-1995 Associate Professor (tenured), Dept. Physiology, University of Texas, Galveston, TX
1995-1998 Associate Professor, Dept. Physiology, Loyola University Chicago, Maywood, IL
1998-2005 Associate Professor (tenured), Loyola University Chicago, Maywood, IL
2005-present Professor (tenured), Rush University Medical Center, Chicago, IL
2015-present Chairman and Francis & Catherine Bard Endowed Professor of Physiology

HONORS, DISTINCTIONS & ACTIVITIES:

USPHS Pre-doctoral Trainee (1984, 1985, 1986, 1987)
MDA & NIH Postdoctoral Fellowships (1988, 1989, 1990)
Sealy Foundation Research Grant (1991-1993; 1 award)
Guest Pathophysiology Lecturer, Stanford University ("Malignant Hyperthermia"; 1993)
Ad Hoc Review, CONICYT, "Biophysical Subjects" CHILE (1994)
Awarded Tenure at University of Texas, Galveston TX (1994)
AHA Established Investigator (1994-1999; 1 award as P.I.)
Member, AHA Transport & Metabolism Grant Review Committee (1993-1994)
Member, AHA Cardiovascular Physiology Grant Review Committee (1994-1998)
Member Loyola Research Funding Committee (1996-2004)
Member NIH Study Section (Physiology; 1997)
Ad Hoc Review, International Human Frontiers of Science Program (2000)
Member NIH Study Section (MDCN-4; 1998-2003)
Ad Hoc Member NIH Study Section (SMEP; 2005)
Invited Speaker, Gordon Research Conference (1991-present; 99 times)
Session Organizer, Gordon Research Conference (1994, 2006)
Awarded Tenure at Loyola University Chicago, Maywood IL (1998)
NATO Research Workshop Speaker on "Intracellular Ca Signaling", Il Ciocco, ITALY (2000)
Top Science Poster Award, Biophysical Society of Latin American (SOBLA), Alicante, SPAIN (2000)
Ad Hoc Review, MIUR grant program, ITALY (2002)
Advisory Committee Member, National Lab of Fluorescence Dynamics, Urbana, IL (2001-2002)

International Ca Signaling Workshop Organizer, Buenos Aries, ARGENTINA (2002)
 International Symposium on Muscle Ca Signaling Speaker, Mexico City, MEXICO (2003)
 International Workshop on Ca Signaling Speaker, Marbella, CHILE (2003)
 Parent Committee Member, NIH SCCOR grant program for Cardiac Dysfunction (2004)
 Awarded Tenure at Rush University Medical Center, Chicago, IL (2005)
 Ad Hoc reviewer NIH Study Section (NTRC, 2008-present)
 Member Journal General Physiology Editorial Advisory Board (2009-present)
 International Student Ca Signaling Workshop, Kyoto University, JAPAN (2011)
 Symposium presentation at 17th International Biophysics Congress, Beijing, CHINA (2011)
 International Fukuoka Muscle Research Colloquium, Fukuoka, JAPAN (2012)
 Symposium on Calcium Handling, ITESM, Monterrey, MEXICO (2012)
 Member NIH Director's Early Independence DP5 award panel (2014)
 Ad Hoc member NIH MOSS-C02 Study Section (2014)
 Awarded the Francis & Catherine Bard Endowed Chair of Physiology (2015)
 Chair of the NIH MOSS-V02 study section (2016)
(national and international research seminars not listed)

RESEARCH TRAINEES:

(1) Current Trainees

- Carlos Berti, Ph.D., Postdoctoral Fellow
- Alma Nani, Research Technician

(2) Past Postdoctoral Fellows (current position/affiliation if known)

- Tao Guo, Ph.D. Pathology Resident, University of Alabama, Birmingham, USA
- Haiyan Chen, Ph.D., Pathology Resident, Loyola University Chicago, USA
- Maura Porta, PhD. Assistant Professor (tenure track), Midwestern Univ, USA
- Julio A. Copello, PhD, Associate Professor (w/ tenure), Southern Illinois Univ., USA
- Paula Diaz-Sylvester, PhD, Research Assistant Professor, Southern Illinois Univ., USA
- Sandor Gyorke, PhD Professor (w/ tenure), Ohio State University, USA
- Rafael Mejia-Alvarez, MD-PhD Associate Professor (w/ tenure), Midwestern Univ, USA
- Josefina Ramos-Franco, MD-PhD Assistant Professor, Rush University Chicago, USA
- Patricio Velez, PhD Associate Professor (w/ tenure), Univ. Valparaiso, CHILE
- Xuande Li, PhD Assistant Professor, University Unknown, CHINA
- Elisa Bovo, Ph.D. Postdoctoral Fellow, Loyola University Chicago, USA
- Ariel Escobar, PhD (visiting) Professor (w/ tenure), Univ. California, Merced, USA
- Akira Uehara, Ph.D. (visiting) Associate Professor (w/ tenure), Fukuoka Univ., JAPAN
- Demetrio Santiago, Ph.D. (visiting) Postdoctoral Fellow, University of Leuven, BELGIUM

(3) Past Predoctoral Fellows (status when leaving my lab & current position/affiliation if known)

- Maura Porta, PhD. PhD Completed, Assistant Professor, Midwestern Univ, USA
- Janhavi Giri, Ph.D. PhD Completed, Research Engineer, Intel Corp., OR, USA
- Yiwie Liu, Ph.D. PhD Completed, Statistical Analyst, Eli Lilly and Co. USA
- Jia Qin, Ph.D. PhD Completed, Pathology Resident, SUNY-Brooklyn, USA
- Patricio Velez, PhD PhD Completed, Associate Professor, Univ. Valparaiso, CHILE
- Qiang Tu, PhD PhD Completed, Motorola, current location unknown
- Jimena Sierralta, PhD PhD Completed, Associate Professor, Univ. Chile, CHILE
- Jin Lu, PhD PhD. Completed, current location unknown
- Sean Caenepeel, MS MS. Completed, Research Scientist, Amgen-Oncology, USA
- Alois Sonnleitner, PhD (visiting) Graduate Student, CEO, Center Adv. BioAnalysis, AUSTRIA
- Mary Elena Zhogbi, PhD (visiting) Graduate Student, Post Doctoral Fellow, Texas Tech, USA
- Leticia Gomez, Ph.D. (visiting) Graduate Student, Professor, CINVESTAV, MEXICO
- Carlos Villalba-Galea, Ph.D. (visiting) Graduate Student, Assistant Professor, VCU, USA

EXTRAMURAL RESEARCH FUNDING:**(1) Current Funding**

- NIH R01-HL057832-18; "Control Mechanisms of Ca-induced Ca Release in Heart",
P.I. **Dr. Fill**, 06/1997 to 04/2022, \$245,000 (direct) per year
History: Funded 1st submission; Last competitive renewal (starting July, 2016) funded 2nd submission (7% rank)
- NIH R01-AR054098-06; "Sarcoplasmic Reticulum SR K Channel Function",
P.I. **Dr. Fill**, 06/2006-03/2018, \$212,500 (direct) per year
History: Funded 1st submission; Last competitive renewal funded 1st submission (9% rank)
- NIH R01-GM11397-02, "Control of IP3R-Mediated Ca Release",
Multi-PI: Drs. **Fill**, Ramos-Franco & Chen &, 06/2015-05/2019, \$300,000 (direct) per year
History: Funded after 2nd submission (14% rank)

(2) Pending Funding

- NIH R01-AA024769-01, "The stress-response kinase JNK and alcohol evoked atrial fibrillation",
Multi-PI: Drs. Ai, Chen & **Fill**, 04/2017-03/2022, \$377,709 (direct) per year
History: 2nd submission score (5% rank); waiting council review
- NIH R01-AR071381-01, "The HH: A large cohort of patients with congenital myopathies...",
Multi-PI: Drs. Rios, Riazi & **Fill**, 07/2017-06/2021, \$398,866 (direct) per year
History: 1st submission score (17% rank); now resubmitted & awaiting study section review
- NIH R01-GM124027-01, "Type-1 inositol trisphosphate receptor mutations and disease",
Multi-PI: Drs. Chen & **Fill**, 07/2017-06/2021, \$304,411 (direct) per year
History: Submitted & awaiting study section review

(3) Previous Funding

- NIH R01-HL075210-08, 08/2009-04/2015; Total Award:~\$1,479,260; P.I.: Chen, Co-I.: Fill
"Molecular Basis and Treatment of Cardiac Arrhythmias",
History: Supports Dr. Chen's USA (at Rush) lab supervised by Dr. Fill, Dr. Chen's primary lab is in Canada.
- NIH R01-HL071741, 07/2003 to 07/2008; Total Award:~\$1,532,520; P.I.: Ramos-Franco, Co-I.: Fill
"Local Intracellular Calcium Release in Neonate Heart"
History: Funded 1st submission; Dr. Ramos-Franco was a Research Assistant Professor in Dr. Fill's lab
- AHA SDG Grant (#0120142N), 01/2001 to 12/2004; Award:~\$260,000; P.I.: Copello, Co-I.: Fill
"Role of Ryanodine Receptor Functional Heterogeneity in EC coupling in Striated Muscle"
History: Funded 1st submission ; Dr. Copello was a Research Assistant Professor in Dr. Fill's lab.
- MDA RG Grant, 01/2004 to 12/2006, Total Award:~\$240,000; P.I.: Copello, Co-I.: Fill
"Coordinated Gating of Ryanodine Receptor Channels"
History: Funded 1st submission; Dr. Copello was a Research Assistant Professor in Dr. Fill's lab.
- NIH R01-HL64210, 02/2000 to 01/2005, Total Award: ~\$1,767,837; P.I.: Fill
"Regulation of Single Calcium Release Channels in Heart"
History: Funded 1st submission.
- NIH R01-MH53367, 07/1995 to 06/2003, Total Award:~\$1,497,820; P.I.: Mignery, Co-I: Fill
"Molecular Analysis of InsP₃R Structure Function",
History: Funded 1st submission; Competitive renewal funded 1st submission
- NIH R01-HL58851, 09/1997 to 08/2001, Total Award: \$1,496,610; P.I.: Mignery, Co-I: Fill
"Isoform Specific Function of InsP₃R Receptor Channels",
History: Funded 1st Submission
- AHA, National Grant-in-Aid, 01/1999 to 12/2002, Total Award: \$150,000; P.I.: Mejia-Alvarez, Co-I: Fill
"Development of Cardiac E-C Coupling",
History: Funded 1st Submission; Dr. Mejia-Alvarez was a Research Assistant Professor in Dr. Fill's lab
- AHA Established Investigatorship, 07/1994 to 06/1999, Total Award: \$265,000; P.I.: Fill
"Regulation of SR Ca²⁺ Release"
History: Funded 2nd Submission
- MDA, National Grant-in-Aid, 07/1994 to 06/1997, Total Award: \$145,000; P.I.: Fill
"Calcium Control of SR Calcium Release"
History: Funded 1st Submission
- AHA, National Grant-in-Aid, 07/1994 to 06/1997, Total Award: \$125,000; P.I.: Fill
"Calcium Regulation of Cardiac SR Ca²⁺ Release"

History: Funded 1st Submission

NIH R29-AR41197, 07/1992 to 06/1997, Total Award: \$488,729; P.I.: Fill
"Calcium-Dependent Regulation of SR Calcium Release"

History: Funded 2nd Submission

NIH R01-NS29640, 04/1992 to 03/1996, Total Award: \$1,322,903; P.I.: Christianson, Co-I.: Fill
"Calcium Release Stores in Cerebellar Purkinje Cells"

History: Funded 1st Submission, 33% direct costs supported Dr. Fill's lab

MDA, National Grant-in-Aid, 01/1992 to 12/1995, Total Award: \$135,000; P.I.: Fill
"Regulation of SR Ca²⁺ Release Channels"

History: Funded 1st Submission

SEALY Foundation Grant, 08/1991 to 07/1993, Total Award: \$30,000; P.I.: Fill
"Regulation of Cardiac SR Ca⁺² Release Channel"

History: Funded 1st Submission

TEACHING:

1) Medical School Teaching

1991-1995	Cardiovascular/Membrane-Muscle Lectures, University of Texas (UTMB)
1992-1995	Cardiovascular/Muscle Small Groups, University of Texas (UTMB)
1993	Malignant Hyperthermia Pathology Lecture, Stanford University
1993-1995	Malignant Hyperthermia Pathology Lecture, University of Texas (UTMB)
1996	Endocrinology Small Groups, Loyola University Chicago
1996	Malignant Hyperthermia Pathology Lecture, Loyola University Chicago
1997-2002	Gastrointestinal Small Groups, Loyola University Chicago
1997	Membrane Excitability & Ion Channel Lectures, Chicago Medical School
1998-2001	Muscle & Calcium Signaling Lectures, Chicago Medical School
2001	Membrane Excitability Lecture, Loyola University Chicago
2001	Membrane Excitability Small Group, Loyola University Chicago
1995-2005	Muscle Lectures, Loyola University Chicago
1999-2005	Synapse & Nervous System Lectures, Loyola University Chicago
1995-2005	Membrane & Cardiovascular Small Groups, Loyola University Chicago
2006-2010	Course Director; Physiology 452, Rush University Medical School
2006-2010	Renal Physiology Lectures, Physiology 451, Rush University Med School
2010-present	Renal Lectures, Genital Uninary Block, Rush University Med School

2) Graduate School Teaching

1992-1995	Electrophysiological Method Lectures, University of Texas (UTMB)
1992-1995	Ion Channel Structure-Function Lectures, University of Texas (UTMB)
1994-1995	Seminar Presentation Skills Lectures, University of Texas (UTMB)
1996	Gastrointestinal Physiology Lectures, Loyola University Chicago
1995-2005	Introduction to Research Lectures, Loyola University Chicago
1995-2005	Membrane Excitability & Muscle Lectures, Loyola University Chicago
1995-2005	Structure-Function of Ion Channel Lectures, Loyola University Chicago
1997-2005	Membrane Composition & Transport Lectures, Loyola University Chicago
2001-2005	Cellular Molecular Neurobiology Lectures, Loyola University Chicago
1992-2005	MS & PhD Student Lab Rotations, University of Texas (UTMB) & Loyola
1992-present	PhD Thesis Research Mentoring, Univ.Texas (UTMB), Loyola & Rush

3) Student Teacher Evaluations

1993-1995	Excellent Level, Medical School, University of Texas (Human Physiology Course)
1997-2001	Excellent Level, Invited Lectures, Chicago Medical School (Membrane Excitability)
2001	Excellent Level, Medical School, Loyola (Cellular & Molecular Biology Course)
2000-2002	Excellent Level, Graduate School, Loyola (Core Biochemistry Course)
1997-2005	Excellent Level, Medical School, Loyola (Function of Human Body Course)
2006-present	Excellent Level, Medical School, Rush (Renal Physiology & GU block)

FULL-LENGTH PUBLISHED WORKS:

1. Best, P.M. and **M. Fill**. Calcium release rate in skinned skeletal muscle fibers measured with arsenazo III. *American Journal of Physiology* 250(19): C245-255, 1986.
2. **Fill, M.** and P.M. Best. Contractile activation and recovery in skinned frog muscle stimulated by ionic substitution. *American Journal of Physiology* 254(23): C107-114, 1988.
3. **Fill, M.** and R. Coronado. Ryanodine receptor channel of sarcoplasmic reticulum. *Trends in Neuroscience* 11(10): 453-457, 1988.
4. Ma J., **M. Fill**, C. Knudson, K.P. Campbell, R. Coronado. Ryanodine receptor of skeletal muscle is a gap junction-type channel. *Science* 242:99-102, 1988.
5. Pizarro, G., G. Brum, **M. Fill**, R. Fitts, M. Rodríguez, I. Uribe, and E. Rios. Voltage sensor of excitation-contraction coupling in skeletal muscle: A comparison with Ca channels. *The Calcium Channel*, Ed. Kusche, Springer-Verlag, Berlin, 1988.
6. Smith, J.S., T. Imagawa, J. Ma, **M. Fill**, K. Campbell, and R. Coronado. Purified ryanodine receptor from rabbit skeletal muscle is the calcium-release channel of the sarcoplasmic reticulum. *Journal of General Physiology* 92(1): 1-26, 1988.
7. **Fill, M.** and P.M. Best. Block of Contracture in Skinned Frog Skeletal Muscle Fibers by Calcium Antagonists. *Journal of General Physiology* 93(3): 429-449, 1989
8. **Fill, M.**, J. Ma, C.M. Knudson, T. Imagawa, K.P. Campbell, and R. Coronado. Role of the ryanodine receptor of skeletal muscle in Excitation- Contraction coupling. *Calcium Channels: Structure and Function*, Ed. Wray-Norman-Hess, The New York Academy of Sciences, New York, 1989
9. Hamilton, S.L., R. Mejía-Alvarez, **M. Fill**, M.J. Hawkes, K. Brush, W.P. Schilling, and E. Stefani. PN200-110 and ryanodine binding and reconstitution of ion channel activity with skeletal muscle membranes. *Analytical Biochemistry*, 183: 31-41, 1989.
10. **Fill, M.**, R. Coronado, J.R. Mickelson, J.R. Vilven, J.J. Ma, B.A. Jacobson, and C.F. Louis. Abnormal ryanodine receptor channels in malignant hyperthermia. *Biophysical Journal* 57(3): 471-475, 1990.
11. **Fill, M.** and P.M. Best. Effects of perchlorate on contractile activation in skinned skeletal muscle fibers. *Pflügers Archive* 415(6): 688-692, 1990.
12. García, J., **M. Fill**, L. Toro, and E. Stefani. Functional studies of calcium channels from plasmalemma and sarcoplasmic reticulum membranes in muscle cells. *Seminars in Cell Biology*, Vol. 1, W.B. Saunders Co., pgs. 225-264, 1990.
13. Mejía-Alvarez, R., **M. Fill** and E. Stefani. Voltage dependent inactivation of skeletal muscle T-tubular calcium channels in planar lipid bilayers. *Journal of General Physiology* 97: 393-412, 1991.
14. **Fill, M.**, R. Mejía-Alvarez, P. Volpe, F. Zorzato, and E. Stefani. Antibodies as probes for ligand gating of single sarcoplasmic reticulum calcium release channels. *Biochemical Journal* 273: 449-457, 1991.
15. **Fill, M.**, E. Stefani, and T. Nelson. Abnormal human ryanodine receptor channels in malignant hyperthermia. *Biophysical Journal* 59: 1085-1090, 1991.
16. Shomer, N.H., C.F. Louis, **M. Fill**, L.A. Litterer, and J. Mickelson. Reconstitution of abnormalities in the malignant hyperthermia-susceptible pig ryanodine receptor. *American Journal of Physiology* 264: C125-C135, 1993.
17. Chu, A., **M. Fill**, E. Stefani, and M. Entman. Calcium sensitivity of ryanodine receptor channels from cardiac sarcoplasmic reticulum. *Journal of Membrane Biology* 135: 49-59, 1993.
18. Györke, S., and **M. Fill**. Ryanodine receptor adaptation: Control mechanism of Ca²⁺-induced Ca²⁺ release in heart. *Science* 260: 807-809, 1993.
19. Györke, S., and **M. Fill**. Ca²⁺-induced Ca²⁺ release in response to flash photolysis. *Science* 263: 987-988, 1994.
20. Tu, Q., P. Vélez, M. Cortes-Gutierrez and **M. Fill**. Surface charge at the luminal mouth of the cardiac ryanodine receptor channel. *Journal of General Physiology* 103: 1-15, 1994.
21. Györke, S., P. Vélez, B. Suárez-Isla, and **M. Fill**. Activation of cardiac and skeletal SR Ca²⁺ release channels by flash photolysis of caged-Ca²⁺. *Biophysical Journal* 66: 1879-1886, 1994.
22. Tu, Q., P. Vélez, M. Brodwick, and **M. Fill**. Streaming potentials reveal a short ryanodine sensitive selectivity filter in cardiac Ca²⁺ release channel. *Biophysical Journal* 67: 2280-2285, 1994.

23. Cheng, H., **M. Fill**, H. VAaldivia and J. Lederer. Models of calcium release channel adaptation. *Science* 267: 2009-2010, 1995.
24. Uehara, A., **M. Fill***, P.Velez, M. Yasukochi and I. Imanaga. Rectification of Rabbit Cardiac Ryanodine Receptor Current by Endogenous Polyamines. *Biophysical Journal* 71(2): 769-777, 1996. (*major contributor)
25. Sierralta, J., B. Suárez-Isla and **M. Fill**. Functionally heterogeneous ryanodine receptor channels in Avian Cerebellum. *Journal of Biological Chemistry* 271(29): 17028-17034, 1996.
26. Velez P., A.L. Escobar, S. Gyorke, J. Vergara and **M. Fill**. Adaptation of single ryanodine receptor channels. *Biophysical Journal* 72(2): 691-697, 1997.
27. Minn, A.J., P. Velez, S.L. Schendel, H. Liang, S.W. Muchmore, S.W. Fesik, C.B. Thompson* and **M. Fill***. Bcl-x1 forms an ion channel in synthetic lipid membranes. *Nature* 385:353-357, 1997. (*co-corresponding senior authors)
28. Escobar, A.L., P. Vélez, F. Cifuentes, **M. Fill**, and J. Vergara. Kinetic properties of DM-Nitrophen and calcium indicators: rapid transient response to flash photolysis. *Pflügers Archive* 434(5): 615-631, 1997.
29. Perez, P.J., J. Ramos-Franco, **M. Fill** and G.A. Mignery. Identification and functional reconstitution of the type-2 InsP₃ receptor from ventricular cardiac myocytes. *Journal of Biological Chemistry* 272(38): 23961-23969, 1997.
30. Velez, P., R. Mejia-Alvarez and **M. Fill**. Ryanodine Receptor Adaptation. *Structure and Function of Ryanodine Receptors*, Imperial College Press, Ed. A. Williams & R. Sitsapesan, Chapter 13, pgs. 253-267, 1997.
31. Ramos-Franco, J., **M. Fill** and G.A. Mignery. Isotype Specific Function of Single InsP₃ Receptor Channels. *Biophysical Journal* 75: 834-839, 1998.
32. Ramos-Franco, J., S. Caenepeel, S., **M. Fill** and G.A. Mignery. Single Channel Function of Recombinant Type Inositol 1,4,5-Trisphosphate Receptor Ligand Binding Domain Splice Variants. *Biophysical Journal* 75(6): 2783-2793, 1998.
33. Bers, M.D. and **M. Fill**. Coordinated Feet and the Dance of the Ryanodine Receptors. *Science* 281: 790-791, 1998.
34. Satoh, H., H. Katoh, P. Velez, **M. Fill** and D.M. Bers. BayK 8644 increases resting Ca spark frequency in ferret ventricular myocytes independent of Ca influx: contrast with caffeine and ryanodine effects. *Circulation Research* 83(12): 1192-1204, 1998.
35. Mejia-Alvarez, R., E. Rios, M. Stern, C. Kettlun and **M. Fill**. Unitary Ca current through cardiac ryanodine receptor channels under quasi-physiological ionic conditions. *Journal of General Physiology* 113(2): 177-186, 1999.
36. Minn, A.J., C. Kettlun, H. Liang, A. Kelekar, M.G. Vander Heiden, B.S. Chang, S.W. Fesik, **M. Fill** and C.B. Thompson. Bcl-x1 regulates apoptosis by heterodimerization-dependent and -independent mechanisms. *EMBO Journal* 18(3): 632-643, 1999.
37. **Fill, M.**, R. Mejia-Alvarez, C. Kettlun and A. Escobar. Ryanodine receptor permeation and gating: Glowing cinders that underlie the Ca spark. *Journal of General Physiology* 114: 159-161, 1999.
38. Ramos-Franco, J., D. Galvan, G.A. Mignery and **M. Fill**. Location of the Permeation Pathway in the Recombinant Type-1 Inositol 1,4,5-trisphosphate Receptor. *Journal of General Physiology* 114(2):243-250, 1999.
39. Zoghbi, M.E., P. Balanos, C. Villalba-Galea, A. Marcano, E. Hernandez, **M. Fill** and A. Escobar. Spatial Ca²⁺ Distribution in Contracting Striated Muscle Cells. *Biophysical Journal* 78(1): 164-173, 2000.
40. Ramos-Franco, J., D. Bare, S. Caenepeel, A. Nani, **M. Fill**, and G.A. Mignery. Single Channel Function of Recombinant Type-2 Inositol 1,4,5-Trisphosphate Receptor. *Biophysical Journal* 79: 1388-1399, 2000.
41. **Fill, M.**, A. Zahradníková*, C.A. Villalba-Galea, I. Zahradník*, A.L. Escobar and S. Györke. Ryanodine Receptor Adaptation. *Journal of General Physiology* 116:1-11, 2000.
42. Olson, R.D., X. Li, P. Palade, S.E. Shadle, P.S. Mushlin, H.A. Gambliel, **M. Fill**, R.J. Boucek and B.J. Cusack. Sarcoplasmic Reticulum Calcium Release Is Stimulated and Inhibited by Daunorubicin and Daunorubicinol. *Toxicology and Applied Pharmacology* 169:168-176, 2001.
43. **Fill, M.**, J. Ramos-Franco and G.A. Mignery. Inositol Trisphosphate Receptor Type-2: The Other Calcium Release Channel in Heart. *Calcium Signaling*, Series I: Life & Behavioral Sciences – Vol. 331, Eds. Morad & Kostyuk, ISO Press, Washington DC, pgs. 53-61, 2001.

44. Uehara, A., M. Yasukochi, R. Mejia-Alvarez, **M. Fill** and I. Imanaga. Gating kinetics and ligand sensitivity modified by phosphorylation of cardiac ryanodine receptors. *Pflügers Archive* 444(1):202-212, 2002.
45. Copello, J., S. Barg, A. Sonnleitner, M. Porta, P. Diaz-Sylvester, **M. Fill**, H. Schindler and S. Fleischer. Differential activation by calcium, ATP and caffeine of cardiac and skeletal muscle ryanodine receptors after block by magnesium. *Journal Membrane Biology* 187:51-64, 2002.
46. **Fill, M.**, and J. Copello. Ryanodine receptor calcium release channels. *Physiological Reviews* 82(4):893-922, 2002.
47. Mejia-Alvarez, C. Manno, C.A. Villalba-Galea, L.V. Fernandez, R.R. Costa, **M. Fill**, T. Gharbi and A. Escobar. Pulsed local-field fluorescence microscopy: A new approach for measuring cellular signals in beating heart. *Pflügers Archive* 445(6):747-58, 2003.
48. **Fill, M.** Mechanisms that turn-off intracellular calcium release channels. *Front. Bioscience* 8:46-54, 2003.
49. Ramos, J., W. Jung, J. Ramos-Franco, G.A. Mignery and **M. Fill**. Single Channel Function of Inositol 1,4,5-trisphosphate Receptor Type-1 and -2 Isoform Domain-Swap Chimeras. *Journal of General Physiology* 121(5):399-411, 2003.
50. Kettlun, C., A. Gonzalez, R. Rios and **M. Fill**. Unitary Ca²⁺ current through mammalian and amphibian skeletal muscle ryanodine receptor channels under near physiological ionic conditions. *Journal of General Physiology* 122(4):407-417, 2003.
51. **Fill M.** and J. Ramos. Calcium regulation of single cardiac ryanodine receptor channels. *J Muscle Res Cell Motil* 25(8):603-4, 2004.
52. Rosales R., A. Escobar and **M. Fill**. Calcium Regulation of Single Ryanodine Receptor Channel Gating Analyzed Using HMM/MCMC Statistical Methods. *Journal of General Physiology* 123(5):533-553, 2004.
53. Zoghbi M.E., J. Copello, V. Villalba-Galea, P. Velez, P.L. Diaz Sylvester, P. Bolanos, A. Marcano, **M. Fill** and A.L. Escobar. Differential Ca and Sr regulation of intracellular divalent cations release in ventricular myocytes. *Cell Calcium* 36(2):119-134, 2004.
54. Perez C.G., J. Copello, L., Y. Li, K.L. Karko, L. Gomez, J. Ramos-Franco, **M. Fill**, , A. Escobar and R. Mejia-Alvarez. Ryanodine receptor function in new born rat heart. *American Journal of Physiology* 288(5):2527-40, 2005.
55. Garcia, M.C., E.D. Carrillo, J.M. Galindo, A. Hernandez, J. Copello, **M. Fill** and J.A. Sanchez. Short-term regulation of excitation-contraction coupling by the {beta}1a subunit in adult mouse skeletal muscle. *Biophysical Journal* 89(6):3976-84, 2006.
56. Copello, J.A., A.V. Zima, P.L. Diaz-Sylvester, **M. Fill** and L.A. Blatter. Calcium entry-independent effects of L-type calcium channel modulators on calcium sparks in ventricular myocytes. *American Journal of Physiology* 292 (6): 2129-40, 2007.
57. Qin J., G. Valle, A. Nani, A. Nori, N. Rizzi, S.G. Priori, P. Volpe and **M. Fill**. Luminal calcium regulation of single cardiac ryanodine receptors: insights provided by calsequestrin and its mutants. *Journal of General Physiology* 131(4):325-34. 2008.
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