Curriculum Vitae

Lothar A. BLATTER, M.D., Dr. med.

Professor of Molecular Biophysics and Physiology (with tenure)

Department of Molecular Biophysics and Physiology
Rush University, Rush University Medical Center
1750 W. Harrison St.
Chicago, IL 60612
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E-mail: Lothar_Blatter@rush.edu

Date of Birth: August 30, 1956

Citizenship: Switzerland and USA

Education

Schools in Wabern and Bern, Switzerland.
University entrance ('Matura') at the Literargymnasium Bern-Kirchenfeld in 1975.

Study at the University of Bern

1975 Began the study of Medicine
1976 Natural Sciences Examination
1977 Anatomic-Physiological Examination
1978 Basic Clinical Sciences Examination
1982 Final Examination for Physicians and graduation from the Medical Faculty, University of Bern
1984 Dissertation (degree of Doctor of Medicine, Dr.med.)

During my studies I was a demonstrator in Physiology at the Department of Physiology in Bern.

Postgraduate Education and Career

From October 1981 (i.e. starting during my student elective) until spring 1984: collaboration on an epidemiological study on rheumatic diseases in the Canton of Bern, Switzerland, at the Institute for Research in Education and Evaluation (IAE), University of Bern.

In April 1984 this work was accepted as dissertation for the degree of Doctor of Medicine, Dr. med. (awarded April 30, 1984).

In 1982 and 1983 I attended selected lectures in statistics at the University of Bern.

1984/85 Participant in the Postgraduate Course in Experimental Medicine and Biology (with a stipend from the Swiss National Science Foundation) at the University of Zürich, Switzerland.

November 1984 to December 1987: Postdoctoral Research Fellow and Assistant at the Department of Physiology, University of Bern, Switzerland (laboratory of Prof. J.A.S. McGuigan) investigating factors influencing ion homeostasis in cardiac muscle cells with special regard to calcium, magnesium, sodium and pH, using various kinds of ion-selective microelectrodes.

July/August 1987 visiting scientist at the Department of Pharmacology, Mayo Foundation, Rochester, MN, USA (laboratory of Prof. J. R. Blinks).

January 1988 to June 1989: Postdoctoral Research and Senior Research Fellow at the Department of Pharmacology, Mayo Foundation, Rochester, MN, USA (laboratory of Prof. J. R. Blinks) working on the following projects: (1) comparative, simultaneous measurements of resting free calcium in single skeletal muscle fibers using ion-selective microelectrodes and the photoprotein aequorin, (2) investigation of the effect of stretch on the intracellular free calcium concentration in skeletal muscle, and (3) investigation of the regulation of intracellular free magnesium in frog skeletal muscle fibers using a novel type of magnesium-selective microelectrode.

July 1989 to June 1991 Research Associate (laboratory of Dr. W. G. Wier) and July 1991 to August 1993 Research Assistant Professor at the Department of Physiology, University of Maryland, Baltimore, MD, USA. The main research interest focussed on (1) the investigation of the temporal and spatial organization of oscillatory $[Ca^{2+}]_i$ changes in various cell types (cardiac muscle, smooth muscle, endothelial cells, neurons) and (2) on the study of vascular endothelium - smooth muscle interaction and the role of endothelium derived relaxing factor (nitric oxide) in the regulation of $[Ca^{2+}]_i$ in vascular smooth muscle including the direct measurement of nitric oxide by microelectrode techniques. The whole-cell voltage-clamp method and a high-temporal resolution calcium-imaging device were used to measure the intracellular $[Ca^{2+}]_i$ distribution and to investigate the underlying regulatory cellular mechanisms. Advanced techniques of image restoration, based on 'de-blurring' of fluorescence images by mathematical deconvolution of optical sections, were used to improve the spatial resolution of fluorescence images recorded from living cells.

September 1993 to June 1997: Assistant Professor on the tenure-track at the Department of Physiology, Stritch School of Medicine, Loyola University Chicago, Maywood, IL, USA.

July 1997-June 2002: Associate Professor at the Department of Physiology, Stritch School of Medicine, Loyola University Chicago, Maywood, IL, USA. Since July 1999 Associate Professor with Tenure.

July 2002-January 2008: Professor of Physiology at the Department of Physiology, Stritch School of Medicine, Loyola University Chicago, Maywood, IL, USA.

February 2008-date: Professor of Molecular Biophysics and Physiology at the Department of Molecular Biophysics and Physiology, Rush University, Rush University Medical Center, Chicago, IL, USA.

Current areas of research:

(1) Cardiac Physiology. Study of mechanisms of excitation-contraction coupling and calcium regulation in cardiac (ventricular and atrial) muscle with the combined use of confocal imaging techniques and voltage clamp methods. Investigation of the regulation of cardiac ryanodine receptor calcium release channel incorporated into lipid bilayer. Investigation of the mechanism of cardiac alternans and cellular mechanisms of arrhythmias in cardiac hypertrophy and heart failure. Study of the role of IP_3-dependent Ca^{2+} signaling for excitation-contraction coupling, arrhythmias, and cardiac hypertrophy. Study of nuclear Ca^{2+} signaling and regulation of translocation of transcription factor NFAT. Investigation of redox regulation of SR Ca^{2+} release. Study of NO-dependent signaling pathways in cardiac cells. Study of cardiac energy metabolism and its effects on excitation-contraction coupling and Ca^{2+} signaling. Study of intracellular pH and measurement of intracellular $[Na^+]$ with fluorescence 2-photon confocal microscopy. Study of the mechanism of pacemaker activity in cardiac cells.

(2) Vascular Physiology. Investigation of cellular and molecular mechanisms of $[Ca^{2+}]_i$ regulation in vascular endothelial cells with high temporal and spatial resolution, using digital video fluorescence microscopy and laser scanning confocal microscopy. Study of the spatio-temporal regulation of capacitative calcium entry in vascular endothelial cells. Investigation of cellular mechanisms of the regulation of nitric oxide (NO) production and release from vascular endothelial cells. Study of the role of NO for $[Ca^{2+}]_i$ regulation in vascular endothelial cells. Ca-dependent regulation of translocation of transcription factor NFAT in vascular endothelial cells.

(3) Mitochondria. Study of the mechanisms governing mitochondrial membrane potential, mitochondrial ion channels, and the role of mitochondria for cellular calcium homeostasis. Study of mitochondrial NO synthase function and regulation. These studies involve optical measurements of membrane potential, pH, calcium and sodium in single isolated mitochondria as well as in mitochondria in permeabilized and intact cells.

Memberships

Swiss Physiological Society (1987-present)
American Association for the Advancement of Science (1989-present)
Biophysical Society (1989-present)
The New York Academy of Sciences (1991-2001)
The Physiological Society U.K. (1992-present)
American Heart Association, Basic Science Council (1995-present)
Society of General Physiologists (1996-present)
American Physiological Society (2003-present)

Honors

1990/91 Myron L. Weisfeldt, M.D., Fellow of the American Heart Association - Maryland Affiliate
1994/97 The Schweppe Foundation, Career Development Award
1995/2000 Established Investigator of the American Heart Association
2001 Received offer for the Chair position of the Department of Physiology, University of Bonn, Germany

Editorial tasks

Editorial Board Member:
The Journal of Physiology

Manuscript referee for:
American Journal of Physiology
Antioxidants & Redox Signaling
Biophysical Journal
Cell Calcium
Circulation Research
EMBO Journal
Hypertension
Journal of Biological Chemistry
Journal of Experimental Biology
Journal of General Physiology
Journal of Molecular and Cellular Cardiology
Journal of Muscle Research and Cell Motility
Journal of Neuroscience Methods
Journal of Pharmacology and Experimental Therapeutics
Journal of Physiology
Life Sciences
Pflügers Archiv/European Journal of Physiology
Proceedings of the National Academy of Sciences
Shock

Extramural research review committee activities

1992-1993 Research Peer Review Subcommittee, American Heart Association, Maryland Affiliate
1996-1999 Co-chair, Molecular Signaling I Study Committee, American Heart Association, National Center
Ad-hoc grant reviewer for Swiss National Science Foundation
Ad-hoc grant reviewer for Alberta Heritage Foundation for Medical Research, Edmonton, Alberta, Canada
Ad-hoc reviewer for the Austrian Science Fund (FWF)
Ad-hoc grant reviewer for Hong Kong Research Grants Council
1999, 2000 and 2003 NIH Cardiovascular (CVA) Study Section (temporary member)
2004, 2005 NIH, PPG review
2006 NIH ZRG1 MDCN-G 91, Calcium Channels and Calcium Signaling (Teleconference)

LUMC, Departmental and university services

1994	Faculty Recruitment Search Committee, Department of Physiology
1994	Local Area Network Committee, Department of Physiology
1994-1995	Departmental Graduate Program Committee
1994-1995	Organization of Departmental Research Seminar Series
10/1997-7/1999	Faculty Council Research Committee
1999	Organization of the Retreat of the Dept. of Physiology
1994-2008	Director of the Imaging Core Facility, Department of Physiology

1995-2008 Supervision of Research Machinist and Machine Shop, Department of Physiology
1995-2008 Cardiovascular Institute Research Committee
1995-2008 Medical Student Research Fellowship Selection Committee
12/1997-2008 LUMC Core Imaging Facility (CIF) Oversight Committee
7/1998-6/2007 LUMC Research Funding Committee (RFC)
8/1998-2008 Departmental Graduate Program Committee
7/1999-2008 Faculty Advisor of Loyola Medical School Running Club
2001 LCME Self Study Task Force, Basic Science Departments Subcommittee
2002-2008 LUMC Graduate Curriculum Committee
2005-2008 LUHS BSI Committee (chair)
2005 Faculty Recruitment Search Committee, Department of Physiology
2005-2008 Supervision of Computer and Electronics Shop, Department of Physiology

Teaching activities

1979-1981 Physiology course, Feusi-Rüedi School of Nursing, Bern, Switzerland
1985-1987 Laboratory courses in Physiology for medical, veterinary, dental and pharmaceutical students, Medical Faculty of the University of Bern, Switzerland
1989 Course Phar 8802: Pharmacology of Heart Muscle, Mayo Graduate School, Mayo Clinic, Rochester, MN.

Loyola University Chicago, Graduate School

1993/1994 Cell and Molecular Physiology I
1994/1995 Cell and Molecular Physiology I
1995/1996 Cell and Molecular Physiology I
1996 Cellular and Molecular Neurobiology Course
1996 Introduction to Research
1997 Cellular and Molecular Neurobiology Course
1997 Introduction to Research
1998 Cellular and Molecular Neurobiology Course
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2001 Cellular and Molecular Neurobiology Course
2001 Introduction to Research
2002 Cellular and Molecular Neurobiology Course
2002 Introduction to Research
2003 Cellular and Molecular Neurobiology Course
2003 Introduction to Research
2004 Biomedical Science Core Curriculum: Methods in Biomedical Science
2004 Introduction to Research
2005 Cellular and Molecular Neurobiology Course
2005 Introduction to Research
2006 Cellular and Molecular Neurobiology Course
2006 Introduction to Research
2007 Cellular and Molecular Neurobiology Course
2007 Membrane Protein Structure and Function Course
2007 Introduction to Research

Loyola University Chicago, Medical School

1994 Laboratory courses in Physiology
1995 Laboratory courses in Physiology
1995 Physiology of the gastro-intestinal system
1996 Physiology of the gastro-intestinal system
1997 Function of the Human Body: Physiology of the gastro-intestinal system
1998 Function of the Human Body: laboratory courses
1998 Function of the Human Body: Physiology of the gastro-intestinal system
1999 Function of the Human Body: Physiology of the gastro-intestinal system
2000 Function of the Human Body: Physiology of the gastro-intestinal system
2001 Function of the Human Body: Physiology of the gastro-intestinal system
2002 Function of the Human Body: Physiology of the gastro-intestinal system
2003 Function of the Human Body: Physiology of the gastro-intestinal system
2004 Function of the Human Body: Physiology of the gastro-intestinal system
2005 Function of the Human Body: Physiology of the gastro-intestinal system
2006 Function of the Human Body: Physiology of the gastro-intestinal system
2007 Function of the Human Body: Physiology of the gastro-intestinal system

Personnel supervised

Jörg Hüser, Ph.D.; postdoctoral trainee/research assistant professor (6/1995-5/1999).
Aleksey V. Zima, Ph.D.; postdoctoral trainee/research assistant professor (1/2001-1/2008).
Elena N. Dedkova, Ph.D.; postdoctoral trainee/research assistant professor (11/1999-1/2008).
Gias U. Ahmmed, M.D., Ph.D.; postdoctoral trainee (10/2000-6/2001).
Ademuyiwa A. Aromolaran, Ph.D.; postdoctoral trainee (9/2001-3/2006)
Fredy Cifuentes, Ph.D.; postdoctoral trainee (5/1997-4/1998).
Timothy L. Domeier, Ph.D.; postdoctoral trainee (6/2006-present).
Andrey Klishin, Ph.D.; postdoctoral trainee (2/1996-5/1999).
Jens Kockskämper, Ph.D.; predoctoral trainee/visiting scientist (9-10/1997), postdoctoral trainee (4/2000-3/2002)
Andreas Rinne, Ph.D.; postdoctoral trainee (11/2006-present).
Hiroshi Satoh, M.D., Ph.D.; postdoctoral trainee (8/1994-6/1996).
Marina Sedova, Ph.D.; postdoctoral trainee (9/1996-8/2000).
Vyacheslav Shkryl, Ph.D.; postdoctoral trainee (2/2006-present).
Stela N. Florea, M.S.; predoctoral trainee (1/2002-present)
Jaclyn R. Holda, Ph.D.; predoctoral trainee (2/1995-5/1998), postdoctoral trainee (6/1998-7/1998).
Katherine A. Sheehan, M.S.; predoctoral trainee (1/1998-12/2002).
Marcel D. Halbach, visiting student Univ. Cologne, Germany (8-9/2001).
Christoph Littwitz, visiting student, Ruhr-University Bochum, Germany (10-12/2007)
Christine E. Rechenmacher, Research Assistant (6/1994-8/1997)
Rachel L. Gulling, Research Assistant (12/1997-8/1999)
Holly R. Gray, Research Assistant (7/1999-3/2002)
Anne Pezalla, Research Assistant (4/2002-9/2003)
William Johnson, Research Assistant (8/2003-5/2004)
Vezetter Whitaker, Research Machinist (1/1995-1/2008)
Viktor Flaks, Biomedical Electronics Technician (1/2007-1/2008).

Dissertation supervision

Jaclyn R. Holda (LUMC, Ph. D. Physiology, 1998)
Katherine A. Sheehan (LUMC, Ph. D. Physiology, 2003)
Stela N. Florea (LUMC, Ph. D. Physiology 2007)

Dissertation/thesis committees

Jon Paul Fiening (LUMC, master's degree, Physiology, 1997)
Jaclyn R. Holda (LUMC, Ph. D. Physiology, 1998)
Seong-Woo Jeong (LUMC, Ph. D. Physiology, 1997)
Li Li (LUMC, Ph. D. Physiology, 1998)
Michael Petr (LUMC, Ph. D. Neuroscience, 1998)
Naser Muja (LUMC, Ph. D. Neuroscience, 2001)
Katherine A. Sheehan (LUMC, Ph. D. Physiology, 2003)
Xu Wu (LUMC, Ph.D. Physiology, 2006)
Wei Wang (SUNY Stony Brook, NY; Ph.D., 2006)
Stela N. Florea (LUMC, Ph.D. Physiology; 2007)
Kelly Aromolaran (Ph.D., LUMC Neuroscience, present)
John Fahrenbach (Ph. D. LUMC Physiology, present)
Nidhi Kapur (LUMC Physiology; present)

Grant support

Active

National Institutes of Health (NIH), R01 HL62231
Principal Investigator: Lothar A. Blatter
E-c coupling and Ca^{2+} regulation in atrial myocytes
9/1999-8/2008

NIH, Program Project Grant P01 HL080101
CaMKII and IP_3-mediated signaling in cardiac myocytes
1/2006-11/2010

Project 2
Principal Investigator: Lothar A. Blatter
Ca and $InsP_3$ receptor signaling in cardiac myocytes

Core C: Biological imaging
Core leader: Lothar A. Blatter

NIH, R01 HL079038
Principal Investigator: Stephen L. Lipsius
Co-Investigator: Lothar A. Blatter
Beta-Adrenergic Receptor Function in Atrial Myocytes
6/2005-5/2009

AHA, Midwest Affiliate post-doctoral fellowship
Recipient: Andreas Rinne
Sponsor: Lothar A. Blatter
Modulation of the calcium-sensitive transcription factor NFAT in cardiac myocytes.
1/2008-12/2009

NIH, F32 HL090211, NRSA fellowship application
Applicant: Timothy L. Domeier
Sponsor: Lothar A. Blatter
IP_3R-dependent signaling in excitation-contraction coupling during heart failure
9/2007-8/2009

NIH, Shared Instrumentation Grant (SIG)
Principal Investigator: Eduardo Rios
Co-Investigator: Lothar A. Blatter
Dual confocal microscopic scanner

Pending

National Institutes of Health (NIH), RENEWAL of R01 HL62231
Principal Investigator: Lothar A. Blatter
E-c coupling and Ca^{2+} regulation in atrial myocytes
9/2008-8/2013
Priority score 123, percentile ranking 2.2 (ESTA 2/18/2008)

Completed

AHA, Midwest Affiliate post-doctoral fellowship
Recipient: Timothy L. Domeier
Sponsor: Lothar A. Blatter
IP_3 receptor-dependent signaling in excitation-contraction coupling during heart failure.
7/2007-8/2008 (this fellowship was returned because NIH F32 application HL090211 was funded)

NIH, T32 HL07692
Training grant ("training in Cellular Signaling in the Cardiovascular System; Principal Investigator: R. John Solaro, University of Illinois Chicago)
Recipient: Timothy L. Domeier
Sponsor: Lothar A. Blatter (Subcontract to Loyola University Chicago, Dept. Physiology)
8/2006-7/2007

NIH, R01 HL071741
Principal Investigator: Josefina Ramos-Franco
Local intracellular calcium release in neonate heart
Co-Investigator/Consultant: Lothar A. Blatter
8/2003-5/2007

AHA, Midwest Affiliate pre-doctoral fellowship
Recipient: Stela M. Florea
Sponsor: Lothar A. Blatter
Ca^{2+} alternans modulation in atrial cells: the role of beta-adrenergic system and mitochondria
1/2005-12/2006

AHA, Midwest Affiliate post-doctoral fellowship
Recipient: Elena N. Dedkova
Sponsor: Lothar A. Blatter
Contractile activity stimulates nitric oxide production in cat ventricular myocytes through cytoskeletal-dependent mechanisms
7/2004-6/2006

American Heart Association (AHA), Midwest Affiliate, Grant-In-Aid AHA0550170Z
Principal Investigator: Lothar A. Blatter
Ca and $InsP_3$ receptor signaling in cardiac hypertrophy and heart failure
1/2005-2/2006 (returned after 1 year).

AHA, Midwest Affiliate post-doctoral fellowship
Recipient: Eckard Picht
Co-Sponsor: Lothar A. Blatter
Local SR Ca release in atrial and ventricular muscle
1/2004-12/2005

AHA, Midwest Affiliate post-doctoral fellowship
Recipient: Ademuyiwa A. Aromolaran
Sponsor: Lothar A. Blatter
Modulation of calcium signaling by protein kinases in bovine vascular endothelial cells
7/2003-6/2005

NIH, R01 HL063753
Principal Investigator: Stephen L. Lipsius
Co-Investigator: Lothar A. Blatter
Ca^{2+}-mediated mechanisms of atrial pacemaker activity
7/2000-6/2005

NIH, R01 HL062571
Principal Investigator: R. Mejia-Alvarez
Co-Investigator: Lothar A. Blatter
Development of cardiac excitation-contraction coupling
2/2000-1/2004

Arthur J. Schmitt Dissertation Fellowship, Loyola University Chicago
Recipient: Katherine A. Sheehan
Sponsor: Lothar A. Blatter
2001-2002

Lilly Graduate Student Fellowship in Cardiovascular Research, Eli Lilly Co.
Recipient: Katherine A. Sheehan
Sponsor: Lothar A. Blatter
2000-2001

Falk Cardiovascular Fellowship, Loyola University Chicago
Recipient: Jens Kockskämper
Sponsor: Lothar A. Blatter
Mechanisms underlying Ca^{2+}_i alternans in cat atrial myocytes
2000/2001

AHA, National Center, Established Investigator Award
Principal Investigator: Lothar A. Blatter
Signal transduction in vascular endothelial and smooth muscle cells: Ca^{2+} and nitric oxide
7/1995-6/2000

NIH, First Independent Research Support and Transition Award (FIRST-R29)
Principal Investigator: Lothar A. Blatter
Endothelium-smooth muscle signalling: calcium and NO
1/1995-12/1999

AHA, National Center, Grant-In-Aid.
Principal Investigator: Lothar A. Blatter
Excitation-contraction coupling and mechanisms of Ca^{2+} release in atrial myocytes
1/1999-12/1999 (returned after 1 year).

AHA, Metropolitan Chicago, Junior Fellowship
Recipient: Andrey Klishin
Sponsor: Lothar A. Blatter
Anion- and calmodulin-dependent regulation of $[Ca^{2+}]_i$-oscillations and capacitative Ca^{2+} entry in vascular endothelium.
1998-1999

Falk Cardiovascular Fellowship, Loyola University Chicago
Recipient: Andrey Klishin
Sponsor: Lothar A. Blatter
Calmodulin-dependent regulation of $[Ca^{2+}]_i$-oscillations and capacitative Ca^{2+} entry in vascular endothelial cells.
1997/1998

Arthur J. Schmitt Dissertation Fellowship, Loyola University Chicago
Recipient: Jaclyn R. Holda
Sponsor: Lothar A. Blatter
1997/1998

AHA, National Center, Grant-In-Aid
Principal Investigator: Lothar A. Blatter
Signal transduction in vascular endothelial and smooth muscle cells: Ca^{2+} and nitric oxide
1994-1997

The Schweppe Foundation Chicago, Career Development Award
Principal Investigator: Lothar A. Blatter
Signal transduction in vascular endothelial and smooth muscle cells: Ca^{2+} and nitric oxide
1994-1997

Loyola University Medical Center, Research Committee of the Council Intramural Grant
Principal Investigator: Lothar A. Blatter
1993-1994

1992: Foundation Max Cloetta Award/Stipend, Switzerland (this award would have provided 5 years salary support as a faculty member at an University in Switzerland (Dept. Pharmacology, Univ. of Bern); I have returned this award because I accepted a faculty position at Loyola University Chicago, USA).

AHA, Maryland Affiliate, Beginning Grant-In-Aid
Principal Investigator: Lothar A. Blatter
7/1991-6/1993

AHA, Maryland Affiliate, 1990/91 Research Fellowship
Principal Investigator: Lothar A. Blatter
7/1990-6/1991

1984/85 Stipend from the Swiss National Science Foundation to participate in the Postgraduate Course in experimental Medicine and Biology at the University of Zürich, Switzerland.

Publications

Journal articles and book chapters

Blatter L., Cloetta B., Schaufelberger H.-J. & Schlatter T. (1983). Die Situation behinderter Rheumakranker im Kanton Bern. Teil I: Inzidenz und Prävalenz von IV-Leistungen an Rheumakranke. Projektbericht. ISBN 3-85720-009-X. IAE Bern.

Blatter L., Cloetta B., Schaufelberger H.J. & Schlatter T. (1983). Inzidenz und Prävalenz von IV-Leistungen an Rheumakranke im Kanton Bern. Sozial- und Präventivmedizin 28, 232-233.

Blatter L.A. & Schlatter T. (1984). Invalide Rheumatiker im Kanton Bern: Eine Studie zur Epidemiologie und zur Krankheitsbewältigung. Dissertation (thesis), Bern.

Blatter L., Schaufelberger H.-J. & Schlatter T. (1984). Die Situation behinderter Rheumakranker im Kanton Bern. Teil II: Rheumatische Erkrankungen: Probleme und Bewältigungsversuche. Projektbericht. ISBN 3-85720-010-3. IAE Bern.

Blatter L.A. & Cloetta B. (1985). Inzidenz und Prävalenz behinderter Rheumakranker - eine sozialepidemiologische Studie über IV-Leistungen im Kanton Bern. Schweiz. med. Wschr. 115, 768-775.

Blatter L.A. & Cloetta B. (1986). Incidence and prevalence of muskuloskeletal disorders in insured persons. Orthopedics/Rheumatology Digest 4, 5-6.

Blatter L.A. & McGuigan J.A.S. (1986). Free intracellular magnesium concentration in ferret ventricular muscle measured with ion selective micro-electrodes. Q. Jl exp. Physiol. 71, 467-473.

Blatter L.A., McGuigan J.A.S. & Reverdin E.C. (1986). Sodium/calcium exchange and calcium buffering in mammalian ventricular muscle. Jap. Heart J. 27 Supplement I, 93-107.

McGuigan J.A.S. & Blatter L.A. (1987). Sodium/calcium exchange in ventricular muscle. Experientia 43, 1140-1145.

Blatter L.A. & McGuigan J.A.S. (1988). Estimation of the upper limit of the free magnesium concentration measured with Mg sensitive micro-electrodes in ferret ventricular muscle. I. Use of the Nicolsky-Eisenman equation. II. In calibrating solutions of the appropriate concentration. Magnesium 7, 154-165.

McGuigan J. A. S. & Blatter L. A. (1989). Measurement of free magnesium using magnesium selective microelectrodes. Magnesium Bulletin 11, 139-142.

Blatter L.A. (1990). Intracellular free magnesium in frog skeletal muscle studied with a new type of magnesium-selective microelectrode: Interactions between magnesium and sodium in the regulation of $[Mg]_i$. Pflügers Arch. 416, 238-246.

Blatter L. A. & Wier W. G. (1990). Intracellular diffusion, binding and compartmentalization of the fluorescent calcium indicators indo-1 and fura-2. Biophys. J. 58, 1491-1499.

Fry C.H., Hall S.K., Blatter L.A. & McGuigan J.A.S. (1990). Analysis and presentation of intracellular measurements obtained with ion selective microelectrodes. Experimental Physiology 75, 187-198

Blatter L. A. & Blinks J.R. (1991). Simultaneous measurement of Ca^{2+} in muscle with Ca electrodes and aequorin: Diffusible cytoplasmic constituent reduces the Ca^{2+}-independent luminescence of aequorin. J. Gen. Physiol. 98, 1141-1160.

Blatter L. A. & McGuigan J.A.S. (1991). Intracellular pH regulation in ferret ventricular muscle: The Role of Na-H exchange and the influence of metabolic substrates. Circ. Res. 68, 150-161.

McGuigan J. A. S., Blatter L. A. & Buri A. (1991). Use of ion selective microelectrodes to measure intracellular free Mg^{2+}. In: Mg^{2+} and Excitable Membranes; P. Strata & E. Carbone (Eds.), pp. 1-19; Berlin: Springer-Verlag.

Wier W. G. & Blatter L. A. (1991). Ca^{2+}-oscillations and Ca^{2+}-waves in mammalian cardiac and vascular smooth muscle cells. Cell Calcium 12, 241-254, 1991.

Blatter L. A. (1992). Estimation of intracellular free magnesium using ion-selective microelectrodes: Evidence for a Na/Mg exchange mechanism in skeletal muscle. Magnesium and Trace Elements 10, 67-79.

Blatter L. A. & Wier W. G. (1992). Agonist-induced $[Ca^{2+}]_i$-waves and Ca^{2+}-induced Ca^{2+} release in mammalian vascular smooth muscle cells. Am. J. Physiol. 263, H576-H586.

Murphy T. H., Blatter L. A., Wier W. G. & Baraban J. M. (1992). Spontaneous synchronous synaptic calcium transients in cultured cortical neurons. J. Neurosci. 12, 4834-4845.

Murphy T. H., Blatter L. A., Wier W. G. & Baraban J. M. (1993). Rapid communication between neurons and astrocyte syncytia in primary cortical cultures. J. Neurosci. 13, 2672-2679.

Blatter L. A. & Wier W. G. (1994). Nitric oxide decreases $[Ca^{2+}]_i$ in vascular smooth muscle by inhibition of the calcium current. Cell Calcium 15, 122-131.

Murphy T. H., Baraban J. M., Wier W. G. & Blatter L. A. (1994). Visualization of quantal synaptic transmission by dendritic calcium imaging. Science 263, 529-532.

Murphy T. H., Blatter L. A., Bhat R. V., Fiore R. S., Wier W. G. & Baraban J. M. (1994). Differential regulation of calcium calmodulin dependent protein kinase II and p42 MAP kinase by synaptic transmission. J. Neurosci. 14, 1320-1331.

Blatter L. A. (1995). Depletion and filling of intracellular calcium stores in vascular smooth muscle. Am. J. Physiol. 268, C503-C512.

Blatter L. A., Taha Z., Mesaros S., Shacklock P. S., Wier W. G. & Malinski T. (1995). Simultaneous measurements of Ca^{2+} and nitric oxide in bradykinin-stimulated vascular endothelial cells. Circ. Res. 76, 922-924.

Tsugorka A., Rios E. & Blatter L.A. (1995). Imaging elementary events of calcium release in skeletal muscle cells. Science 269, 1723-1726.

Holda J. R., Oberti C., Perez-Reyes E. & Blatter L. A. (1996). Characterization of an oxytocin-induced rise in $[Ca^{2+}]_i$ in single human myometrium smooth muscle cells. Cell Calcium 20, 43-51.

Hüser J., Lipsius S. L. & Blatter L. A. (1996). Calcium gradients during excitation-contraction coupling in cat atrial myocytes. J. Physiol. 494.3, 641-651.

McCall E., Li L., Satoh H., Shannon T. R., Blatter L A. & Bers D. M. (1996). Effects of FK-506 on contraction and Ca transients in rat cardiac myocytes. Circ. Res. 79, 1110-1121.

Satoh H., Delbridge L. M. D., Blatter L. A. & Bers D. M. (1996). Surface:volume relationship in cardiac myocytes studied with confocal microscopy and membrane capacitance measurements: species-dependence and developmental effects. Biophys. J. 70, 1494-1504.

Blatter L. A., Hüser J. & Rios E. (1997). Sarcoplasmic reticulum Ca^{2+} release flux underlying Ca^{2+} sparks in cardiac muscle. Proc. Natl. Acad. Sci. 94, 4176-4181.

Holda J. R. & Blatter L. A. (1997). Capacitative calcium entry is inhibited in vascular endothelial cells by disruption of cytoskeletal microfilaments. FEBS Lett. 403, 191-196.

Hüser J. & Blatter L. A. (1997). Elementary events of agonist-induced Ca^{2+} release in vascular endothelial cells. Am. J. Physiol. 273, C1775-C1782.

Satoh H., Blatter L. A. & Bers. D. M. (1997.) Effects of $[Ca^{2+}]_i$, SR Ca^{2+} load and rest on Ca^{2+} spark frequency in ventricular myocytes. Am. J. Physiol. 272, H657-H668.

Wang Y. G., Hüser J., Blatter L. A. & Lipsius S. L (1997). Withdrawal of acetylcholine elicits Ca^{2+}-induced delayed after-depolarizations in cat atrial myocytes. Circulation 96, 1275-1281.

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Zima A.V., Bare D.J., Mignery G.A. & Blatter L.A. (2005). $InsP_3$-dependent nuclear Ca signaling in the heart . Biophys. J. 88, 87a.

Zima A.V. & Blatter L.A. (2005). Local control of sarcoplasmic reticulum Ca^{2+} release by glycolysis in cat ventricular myocytes. Biophys. J. 88, 86a.

Aromolaran A.A. & Blatter L.A. (2006). Role of CaMKII and glycolysis for the regulation of intracellular calcium signaling in vascular endothelial cells. Biophys. J. 90, 523a.

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Florea S.M. & Blatter L.A. (2006). Modulation of Ca^{2+} alternans by specific $beta_1$- and $beta_2$-adrenergic signaling pathways. Biophys. J. 90, 521a.

Grichting N.L., Kapur N., Blatter L.A. & Banach K. (2006). Intercellular Signaling between Stem Cell Derived Cardiomyocytes and Adult Cardiomyocytes. Biophys. J. 90, 78a.

Picht E., DeSantiago J., Blatter L.A. & Bers D.M. (2006). Cardiac Alternans Does Not Rely On Sarcoplasmic Reticulum Calcium Content Fluctuations. Biophys. J. 90, 6a.

Remus T.P., Zima A.V., Bossuyt J., Bare D.J., Martin J.L., Blatter L.A., Bers D.M. & Mignery G.A. (2006). Biosensors to measure $InsP_3$ concentration in living cells with spatio-temporal resolution. Biophys. J. 90, 518a.

Zima A.V. & Blatter L.A. (2006). Role of mitochondrial and glycolytical ATP production for regulation calcium signaling in cat atrial myocytes. Biophys. J. 90, 220a.

Zima A.V. & Blatter L.A. (2006). Sarcoplasmic reticulum Ca^{2+} load controls duration and termination of Ca^{2+} sparks in cardiac myocyte. Biophys. J. 90, 322a.

Blatter L.A., Kapur N. & Banach K. (2007). Calcium-dependent nuclear NFAT translocation in cardiac myocytes. Biophys. J. 92, 588a.

Dedkova E.N. & Blatter L.A. (2007). Cardioprotection by trimetazidine is mediated by inhibition of mitochondrial permeability transition pore (PTP) through decreasing fatty acid-induced oxidative stress. Biophys. J. 92, 589a.

Domeier T.L., Zima A.V., Florea S.M. & Blatter L.A. (2007). IP_3-dependent calcium signaling in rabbit ventricular myocytes. Biophys. J. 92, 446a.

Shkryl V.M., Zima A.V. & Blatter L.A. (2007). Mechanisms of mitochondrial Ca extrusion in intact atrial myocytes. Biophys. J. 92, 137a.

Zima A.V., Picht E., Bers D.M. & Blatter L.A. (2007). Sarcoplasmic reticulum Ca^{2+} depletion contributes to termination of cardiac myocyte Ca^{2+} sparks. Biophys. J. 92, 343a.

Zima A.V., Qin J., Fill M. & Blatter L.A. (2007). Effects of amitriptyline on sarcoplasmic reticulum Ca^{2+} regulation in ventricular myocytes. Biophys. J. 92, 77a.

Dedkova E.N. & Blatter L.A. (2008). Trimetazidine rescues calcium transient and mechanical alternans in cardiac myocytes from the failing heart. Biophys. J. 94, 314a.

Domeier T.L. & Blatter L.A. (2008). Intra-SR [Ca] measurements in rabbit cardiomyocytes during Ca transients and waves. Biophys. J. 94, 104a.

Rinne A., Banach K. & Blatter L.A. (2008). Capacitative Ca entry (CCE) is required to activate nuclear factor of activated T-cells (NFAT) in endothelial cells. Biophys. J. 94, 584a.

Rinne A., Kapur N., Bossuyt J., Bers D.M., Blatter L.A. & Banach K. (2008). Pharmacological characterization of nuclear NFAT translocation in cardiac myocytes. Biophys. J. 94, 585a.

Shkryl V.M. & Blatter L.A. (2008). Spatial properties of Ca sparks and Ca transients in atrial and ventricular myocytes recorded with high-speed 2-dimensional confocal microscopy. (2008). Biophys. J. 94, 103a.

Zima A.V. & Blatter L.A. (2008). The role of mitochondria in generation of spontaneous Ca^{2+} waves in cat atrial myocytes. Biophys. J. 94, 103a.

Zima A.V., Picht E., Bers D.M. & Blatter L.A. (2008). Spark and non-spark mediated SR calcium leak in rabbit ventricular myocytes. Biophys. J. 94, 104a.

Invited seminar presentations

Dept. of Physiology, University of Bern, Bern, Switzerland; June 15, 1987

Dept. of Pharmacology, Mayo Clinic, Rochester, Minnesota; July 24, 1987

Dept. of Pharmacology, Mayo Clinic, Rochester, Minnesota; April 28, 1989

Dept. of Physiology, Loyola University Chicago, Maywood, Illinois; December 7, 1992

Dept. of Pharmacological and Physiological Science, Saint Louis University Medical Center, St. Louis, Missouri; December 14, 1993

Cardiac Electrophysiology Laboratories, The University of Chicago, Chicago, Illinois, June 6, 1994.

Department of Pharmacology, Rush Medical College, Chicago, Illinois, June 17, 1994.

Dept. of Physiology and Biophysics, Finch University of Health Sciences/The Chicago Medical School, North Chicago, Illinois, October 6, 1994.

Department of Pharmacology, The University of Illinois at Chicago, Chicago, Illinois, October 21, 1994.

Dept. of Physiology, University of Freiburg, Freiburg, Switzerland, January 26, 1995.

School of Medicine, University of Connecticut Health Center, Farmington, Connecticut, April 13, 1995.

Dept. of Physiology, Loyola University Chicago, Maywood, Illinois; June 7, 1995.

Dept. of Physiology and Biophysics, The University of Illinois at Chicago, January 23, 1996.

The Cardiovascular Institute, Loyola University Chicago, Maywood, Illinois; January 16, 1997.

Department of Pharmacology, The University of Illinois at Chicago, Chicago, Illinois; February 14, 1997.

The Burn and Shock Trauma Institute, Loyola University Chicago, Maywood, Illinois; May 14, 1997.

Department of Physiology, University of Wisconsin Medical School, Madison, Wisconsin; January 22, 1998.

Dept. of Physiology, University of Bern, Bern, Switzerland; May 8, 1998.

Section of Nephrology, University of Chicago; January 7, 1999.

Hamamatsu University, School of Medicine, Hamamatsu, Japan; May 13, 1999.

Research Institute of Environmental Medicine, Nagoya University, Nagoya, Japan; May 14, 1999.

Dept. of Pharmacology, Rush Presbyterian St. Luke's Medical Center, Chicago, Illinois; June 4, 1999.

Laboratorium voor Fysiologie, K. U. Leuven, Leuven. Belgium; October 8, 1999.

Institute of Neurophysiology, University of Cologne, Cologne, Germany; October 11, 1999.

Loyola University Chicago, Neuroscience Graduate Program Seminar Series, Maywood, Illinois; November 19, 1999.

Dept. of Physiology and Biophysics, The University of Illinois at Chicago, Chicago, Illinois. February 1, 2000.

Dept. of Pharmacology and Physiology, UMDNJ, Newark, New Jersey. December 11, 2000.

Northwestern University, Confocal User Group. Chicago, Illinois. January 12, 2001.

Dept. Physiology, Texas Tech University, Health Sciences Center, Lubbock, TX. May 22, 2001.

Lake Forest College, Lake Forest, IL, October 24, 2001.

Dept. of Pharmacology and Toxicology, University of Graz, Graz, Austria. November 26, 2001.

University of Chicago. Mitochondria Interest Group. Chicago, Illinois. January 9, 2002.

State University of New York (SUNY) at Stony Brook. Dept. of Physiology and Biophysics. Stony Brook, New York. April 17, 2002.

University of Nevada School of Medicine. Department of Physiology & Cell Biology. Reno, Nevada. June 6, 2002.

Dept. of Molecular Biophysics and Physiology, Rush Presbyterian St. Luke's Medical Center, Chicago, Illinois. November 11, 2002.

Ohio State University Medical Center, Davis Heart and Lung Research Institute Discovery Series Lecture. Columbus, Ohio. October 25, 2006.

The Chicago Mitochondria and Cell Death Seminar Series. Northwestern University, Feinberg School of Medicine. December 11, 2006.

Department of Pharmacology, UC Davis. Davis, California. June 1, 2007.

Invited presentations at symposia

Gordon Research Conference on "Magnesium in biochemical processes and medicine", Oxnard, California, USA, February 26 - March 2, 1990

Magnesium in Clinical Medicine & Therapeutics - Workshop on assessment of magnesium levels in body fluids and tissues, La Jolla, California, USA, May 2-4, 1991

Trace Metal Ions in the CNS: Dynamics and Regulation - Workshop at the Meeting of the American Society of Neurochemistry, Richmond, VA, USA - March 21-25, 1993

8th Annual Scientific Meeting of the American Society of Pharmacology and Experimental Therapeutics, Chicago, IL, USA, June 16, 1995.

XVIII Annual Meeting of the International Society for Heart Research on “Cellular signaling in the cardiovascular system”, Chicago, IL, USA; June 9-13, 1996.

Gordon Research Conference on "Muscle: Excitation-contraction coupling", New London, NH, USA, June 8-13, 1997. Invited speaker.

International Symposium On New Developments In Smooth Muscle And Endothelial Cell Signaling, Nagoya, Japan, May 16-19, 1999.

University of Bern, Switzerland. Symposium: recruitment of chair for the Department of Pharmacology, University of Bern. December 1, 1999.

University of Zürich, Switzerland. Symposium ‘Nachfolge Prof. E. A. Koller’. March 10, 2000.

Rheinische Friedrich-Wilhelms-Universität, Medizinische Fakultät, Bonn, Germany. ‘Vortrag C4-Professur Physiologie (Nachfolge Prof. Dr. Dr. J. Grote)’. April 10, 2000.

5th Annual Meeting of Midwest Physiological Societies. North Chicago, IL, USA. June 5-6, 2000.

FASEB Summer Research Conferences 2000 on “Smooth Muscle”. Snowmass, CO, USA. July 22-27, 2000.

Photonics West, Conference on " Molecular Probes and Dyes: Development, Application, and Detection". San Jose, CA, USA. January 19-25, 2002.

Symposium sponsored by The Journal of Physiology on "Normal and pathological excitation-contraction coupling in the heart" at the Joint Meeting of The Physiological Society, the Scandinavian Physiological Society and the Deutsche Physiologische Gesellschaft, Tübingen, Germany; March 15, 2002.

University of Zürich, Switzerland. Symposium ‘Berufung Physiologie, Nachfolge Prof. Bauer’. June 27, 2002.

American Heart Association, Scientific Sessions 2003; Cardiovascular Seminar 4 on "Cardiac Alternans: From Subcellular Mechanisms to the Whole Heart". Orlando, FL, USA. November 9, 2003.

Institut d'Etudes Scientifiques de Cargèse, Corsica, France. Symposium on “Oscillations and waves in cells and cell networks”, May 12, 2004.

Gordon Research Conference on "Calcium signalling", Oxford, UK, July 24-29, 2005.

American Heart Association, Scientific Sessions 2005; Cardiovascular Seminar on "Calcium and Arrhythmias". Dallas, TX, USA. November 14, 2005.

Keystone Symposium on "Cardiac Arrhythmias: Linking Structural Biology to Gene Defects"; Granlibakken Resort, Tahoe City, CA; 1/29 -2/3, 2006.

World Congress of Cardiology 2006; Symposium on "Microdomain signalling in cardiac muscle cells - new insights into small spaces". Barcelona, Spain; 9/2-6, 2006.

ISHR 2007, North American Section; Symposium on "Maintaining metabolic balance in the cytosol". Bologna, Italy; 6/ 21-22, 2007.

February 25, 2008