

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
Phone: +1 312 563 3228
FAX: +1 312 942 8711
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 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 IP₃-dependent Ca²⁺ signaling for excitation-contraction coupling, arrhythmias, and cardiac hypertrophy. Study of nuclear Ca²⁺ signaling and regulation of translocation of transcription factor NFAT. Investigation of redox regulation of SR Ca²⁺ release. Study of NO-dependent signaling pathways in cardiac cells. Study of cardiac energy metabolism and its effects on excitation-contraction coupling and Ca²⁺ 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 [Ca²⁺]_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 [Ca²⁺]_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 transporters, mitochondrial calcium signaling and the role of mitochondria for cellular calcium homeostasis and metabolism. 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, and the Seahorse flux analyzer to study mitochondrial respiration and metabolism.

Memberships

Swiss Physiological Society (1987-present)
American Association for the Advancement of Science (1989-2007)
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)
International Society for Heart Research (2009-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:

2007-2012 The Journal of Physiology
2010-date Frontiers in Mitochondrial Physiology
2013-date Cardiovascular Research

Manuscript referee for:

American Journal of Physiology
Antioxidants & Redox Signaling
Biophysical Journal
Cardiovascular Research
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, 2008, 2010, 2011, 2012, 2013 NIH, PPG review
2006 NIH ZRG1 MDCN-G 91, Calcium Channels and Calcium Signaling (Teleconference)

Departmental and university services

Loyola University

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

Rush University

2008 Review intramural grants Rush University Medical Center
 2012-date Advisory Committee to the Chair, Dept. Molecular Biophysics and Physiology, Rush University Medical Center

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
 1999 Cellular and Molecular Neurobiology Course
 1999 Introduction to Research
 2000 Cellular and Molecular Neurobiology Course
 2000 Introduction to Research
 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

Rush University Chicago, Medical School

2008/09 Cardiovascular and gastrointestinal physiology, lectures and workshops, UME (M1)
2009/10 Cardiovascular and gastrointestinal physiology, lectures and workshops, UME (M1)
2010/11 Cardiovascular and gastrointestinal physiology, lectures and workshops, UME (M1)
2011/12 Cardiovascular and gastrointestinal physiology, lectures and workshops, UME (M1)
2012/13 Cardiovascular and gastrointestinal physiology, lectures and workshops, UME (M1)
2013/14 Cardiovascular and gastrointestinal physiology, lectures and workshops, UME (M1)
2014/15 Cardiovascular and gastrointestinal physiology, lectures and workshops, UME (M1)

Personnel

Current laboratory personnel

Giedrius Kanaporis, Ph.D.; assistant professor (3/2012-present)
Jaime DeSantiago, M.D., Ph.D.; postdoctoral trainee (9/2014-present)
Stefanie Walther, M.D.; postdoctoral trainee (7/2010-present)

Past

Assistant professors

Elena N. Dedkova, Ph.D. (2/2008-12/2014)
Aleksy V. Zima, Ph.D. (2/2008-9/2009)

Pre- and postdoctoral trainees

Elena N. Dedkova, Ph.D.; postdoctoral trainee/research assistant professor (11/1999-1/2008)
Jörg Hüser, Ph.D.; postdoctoral trainee/research assistant professor (6/1995-5/1999)
Aleksy V. Zima, Ph.D.; postdoctoral trainee/research assistant professor (1/2001-1/2008)
Gias U. Ahmmed, M.D., Ph.D.; postdoctoral trainee (10/2000-6/2001)
Ademuyiwa A. Aromolaran, Ph.D.; postdoctoral trainee (9/2001-3/2006)
Elisa Bovo, Ph.D., postdoctoral trainee (10/2008-3/2010)
Fredy Cifuentes, Ph.D.; postdoctoral trainee (5/1997-4/1998)
Timothy L. Domeier, Ph.D.; postdoctoral trainee (6/2006-8/2010)
Joshua N. Edwards, Ph.D.; postdoctoral trainee (5/2011-9/2013)
Stela N. Florea, M.S.; predoctoral trainee (1/2002-4/2007)
Marcel D. Halbach, visiting student Univ. Cologne, Germany (8-9/2001)
Felix Hohendanner, M.D.; predoctoral trainee (1/2012-12/2014)
Jaclyn R. Holda, Ph.D.; predoctoral trainee (2/1995-5/1998), postdoctoral trainee (6/1998-7/1998)
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)
Christoph Littwitz, visiting student, Ruhr-University Bochum, Germany (10-12/2007), postdoctoral trainee (2/2009-12/2010)
Elisabeth Littwitz, visiting student, Ruhr-University Bochum, Germany (9/2010)
Joshua T. Maxwell, Ph.D.; postdoctoral trainee (7/2010-6/2014)
Kay Neumann, visiting student & Leducq fellow, Georg-August-Universität Göttingen, Germany (9/2010-3/2011)
Isaac Philip, summer research student (2013, 2014)
Andreas Rinne, Ph.D.; postdoctoral trainee (11/2006-3/2010)
Hiroshi Satoh, M.D., Ph.D.; postdoctoral trainee (8/1994-6/1996)
Marina Sedova, Ph.D.; postdoctoral trainee (9/1996-8/2000)
Lea Seidlmayer, M.D.; postdoctoral trainee (7/2009-12/2011)
Vyacheslav M. Shkryl, Ph.D.; postdoctoral trainee (2/2006-12/2011)
Katherine A. Sheehan, M.S.; predoctoral trainee (1/1998-12/2002).

Technical staff

Brian Danzer, M.Sc.; research technician (4/2012-1/2013)
Viktor Flaks, Biomedical Electronics Technician (1/2007-1/2008)
Holly R. Gray, Research Assistant (7/1999-3/2002)
Rachel L. Gulling, Research Assistant (12/1997-8/1999)
William Johnson, Research Assistant (8/2003-5/2004)
Anne Pezalla, Research Assistant (4/2002-9/2003)
Christine E. Rechenmacher, Research Assistant (6/1994-8/1997)
Vanessa Vullmahn, M.Sc., Research Technician (11/2011-8/2012)
Vezetter Whitaker, Research Machinist (1/1995-1/2008)

Dissertation supervision

Stela N. Florea (LUMC, Ph.D. Physiology, 2007)
Felix Hohendanner (Rush Graduate College, Ph.D. Molecular Biophysics & Physiology, 2014)
Jaclyn R. Holda (LUMC, Ph.D. Physiology, 1998)
Katherine A. Sheehan (LUMC, Ph.D. Physiology, 2003)

Dissertation/thesis committees

Kelly Aromolaran (LUMC, Ph.D. Neuroscience, 2009)
Eric Buss (Rush Graduate College, Ph.D. candidate Neuroscience)
John Fahrenbach (LUMC, Ph.D. Physiology, 2008)
Jon Paul Fiening (LUMC, master's degree, Physiology, 1997)
Stela N. Florea (LUMC, Ph.D. Physiology; 2007)
Frank R. Heinzel (Katholieke Universiteit Leuven, Belgium; Ph.D. Medical Sciences, 2010)
Felix Hohendanner (Rush Graduate College, Ph.D. Molecular Biophysics & Physiology, 2014)
Jaclyn R. Holda (LUMC, Ph. D. Physiology, 1998)
Seong-Woo Jeong (LUMC, Ph. D. Physiology, 1997)
Nidhi Kapur (LUMC, Ph.D. Physiology; 2008)
Li Li (LUMC, Ph. D. Physiology, 1998)
Joshua T. Maxwell (LUMC, Ph.D. Physiology, 2010)
Stefan R. Mazurek (LUMC, Ph.D. Physiology, 2014)
Naser Muja (LUMC, Ph. D. Neuroscience, 2001)
Michael Petr (LUMC, Ph. D. Neuroscience, 1998)
Leandro Royer (Rush University, Molecular Biophysics and Physiology, 2009)
Katherine A. Sheehan (LUMC, Ph. D. Physiology, 2003)
Stefanie Walther (Medizinische Universitaet Graz, Austria; Doktoratsstudium)
Wei Wang (SUNY Stony Brook, NY; Ph.D., 2006)
Xu Wu (LUMC, Ph.D. Physiology, 2006)

Grant support

Active

National Institutes of Health (NIH), Program Project Grant P01 HL080101
CaMKII and IP₃-mediated signaling in cardiac myocytes
Principal Investigator: Donald M. Bers
12/2005-5/2016

Project 2
Principal Investigator: Lothar A. Blatter
Ca and InsP₃ receptor signaling in cardiac myocytes

National Institutes of Health (NIH), R01 HL101235

Multiple Principal Investigators:

Lothar A. Blatter (Rush University)
Brian O'Rourke, Jennifer Van Eyk, Natalia Trayanova (Johns Hopkins University)
Donald M. Bers (UC Davis)

Mitochondrial dysfunction in cardiac hypertrophy and failure.
5/2010-3/2015

Fondation Leducq Transatlantic Network of Excellence on "Redox and Nitrosative Regulation of Cardiac Remodeling: Novel Therapeutic Approaches for Heart Failure"

Coordinators: David A. Kass (Johns Hopkins Medical Institutions, Baltimore, MD), Ajay M. Shah (King's College London, UK)

Associate Member: Lothar A. Blatter
1/2010-12/2015

Pending

National Institutes of Health (NIH), R01 HL126730

Multiple Principal Investigators:

Lothar A. Blatter, Michael Fill, Eduardo Rios (Rush University)

Intracellular Ca Release Termination: Mechanisms Underlying Heart Disease
(submitted June 2014)

National Institutes of Health (NIH), R01 HL128323

Principal Investigator: Lothar A. Blatter

Pathophysiological regulation of atrial myocyte excitation-contraction coupling and calcium signaling
(submitted October 2014)

National Institutes of Health (NIH), R01 HL057832

Multiple Principal Investigators:

Michael Fill, Lothar A. Blatter, Sui Rong Wayne Chen

Limited pathological calcium induced calcium release in heart
(submitted November 2014)

American Heart Association (AHA), Midwest Affiliate, Grant-In-Aid 15GRNT25080185

Principal Investigator: Lothar A. Blatter

Atrial excitation-contraction coupling and calcium signaling in heart failure
(submitted January 2015)

Completed

National Institutes of Health (NIH), R01 HL62231
Principal Investigator: Lothar A. Blatter
E-c coupling and Ca^{2+} regulation in atrial myocytes
9/1999-5/2014

National Health and Medical Research Council, Australia, Early Career Fellowship
Recipient: Joshua N. Edwards
Sponsor: Lothar A. Blatter
Mitochondrial dysfunction in heart failure
1/2012-9/2013

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
Recipient: Timothy L. Domeier
Sponsor: Lothar A. Blatter
IP₃R-dependent signaling in excitation-contraction coupling during heart failure
9/2007-8/2009

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

NIH, 1S10RR024707-01, Shared Instrumentation Grant (SIG)
Principal Investigator: Eduardo Rios
Co-Investigator: Lothar A. Blatter
Dual confocal microscopic scanner
3/2008-3/2009

AHA, Midwest Affiliate post-doctoral fellowship
Recipient: Timothy L. Domeier
Sponsor: Lothar A. Blatter
IP₃ 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
Ca²⁺ 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 InsP₃ 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
Ca²⁺-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: Jaelyn 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: Ca²⁺ and nitric oxide
1994-1997

The Schwappe Foundation Chicago, Career Development Award
Principal Investigator: Lothar A. Blatter
Signal transduction in vascular endothelial and smooth muscle cells: Ca²⁺ 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).

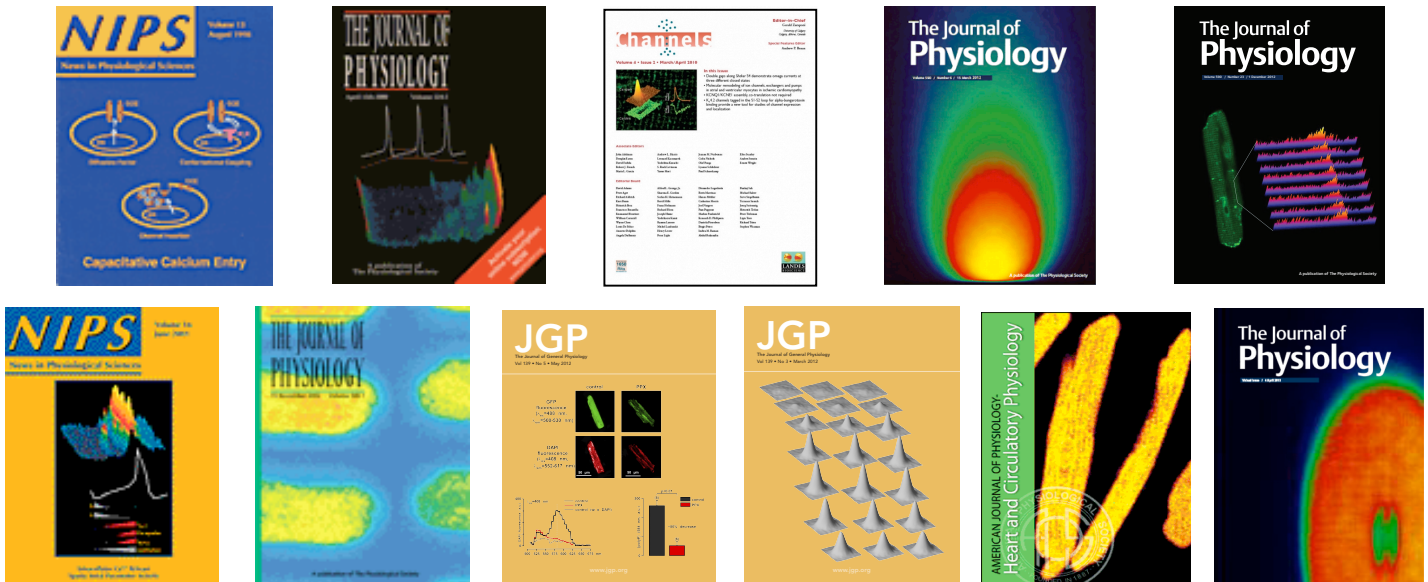
AHA, Maryland Affiliate, Beginning Grant-In-Aid
Principal Investigator: Lothar A. Blatter
7/1991-6/1993

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 covers



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. PMID: PMC1281101.
- 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 $[\text{Ca}^{2+}]_i$ 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. PMID: PMC1160666.
- 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. PMID: PMC1225076.
- 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. PMID: PMC20594.
- 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 $[\text{Ca}^{2+}]_i$, 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.
- Blatter L. A. & Niggli E. (1998) Confocal near-membrane detection of calcium in cardiac myocytes. *Cell Calcium* 23, 269-279.
- Holda J.R., Klishin A., Sedova M. Hüser J. & Blatter L.A. (1998). Capacitative calcium entry. *News in Physiological Sciences* (invited review) 13, 157-163.

- Hüser J., Bers D. M. & Blatter L. A. (1998). Subcellular properties of $[Ca^{2+}]_i$ -transients in phospholamban-deficient mouse ventricular cells. *Am. J. Physiol.* 274, H1800-1811.
- Hüser J., Rechenmacher C. E. & Blatter L. A. (1998). Imaging the permeability pore transition in single mitochondria. *Biophys. J.* 74, 2129-2137. PMID: PMC1299554.
- Klishin A., Sedova M. & Blatter L.A. (1998). Time-dependent modulation of capacitative Ca^{2+} entry signals by plasma membrane Ca^{2+} pump in endothelium. *Am. J. Physiol.* 274, C1117-C1128.
- Blatter L. A. (1999). Cell volume measurements by fluorescence confocal microscopy: theoretical and practical aspects. In: *Confocal Microscopy*. P. M. Conn (Ed.). *Methods in Enzymology* 307, 274-295.
- Hüser J. & Blatter L.A. (1999). Fluctuations of mitochondrial membrane potential caused by repetitive gating of the permeability transition pore. *Biochem. J.* 343, 311-317. PMID: PMC1220555.
- Hüser J., Holda J.R., Kockskämper J. & Blatter L.A. (1999). Focal agonist stimulation results in spatially restricted Ca^{2+} release and capacitative Ca^{2+} entry in vascular endothelial cells. *J. Physiol.* 514.1, 101-109. PMID: PMC2269050.
- Sedova M. & L.A. Blatter. (1999). Dynamic regulation of $[Ca^{2+}]_i$ by plasma membrane Ca^{2+} -ATPase and Na^+/Ca^{2+} exchange during capacitative Ca^{2+} entry in bovine vascular endothelial cells. *Cell Calcium* 25, 333-343.
- Blatter L. A. (2000). Confocal imaging of cardiovascular cells. *The Circulation Frontier* 4, 26-34.
- Hüser J., Blatter L.A. & Lipsius S. L. (2000). Intracellular Ca^{2+} release contributes to automaticity in cat atrial pacemaker cells. *J. Physiol.* 524, 415-422. PMID: PMC2269880.
- Hüser J., Blatter L.A. & Sheu S.-S. (2000). Mitochondrial calcium in heart cells: Beat-to-beat oscillations or slow integration of cytosolic transients? *J. Bioenergetics & Biomembranes* 32, 27-33.
- Hüser J., Wang Y.G., Sheehan K.A., Cifuentes F., Lipsius S.L. & Blatter L.A. (2000). Functional coupling between glycolysis and excitation-contraction coupling underlies alternans in cat heart cells. *J. Physiol.* 524.3, 795-806. PMID: PMC2269904.
- Sedova M., Klishin A., Hüser J. & Blatter L. A. (2000). Capacitative Ca^{2+} entry is graded with the degree of intracellular Ca^{2+} store depletion in bovine vascular endothelial cells. *J. Physiol.* 523.3, 549-559. PMID: PMC2269830.
- Sedova M. & Blatter L.A. (2000). Intracellular sodium modulates mitochondrial calcium signaling in vascular endothelial cells. *J. Biol. Chem.* 275, 35402-35407.
- Kockskämper J., Sheehan K.A., Bare D.J., Lipsius S.L., Mignery G.A. & Blatter L.A. (2001). Activation and propagation of Ca^{2+} release during excitation-contraction coupling in atrial myocytes. *Biophysical Journal* 81, 2590-2605. PMID: PMC1301727.
- Lipsius S. L., Hüser J. & Blatter L. A. (2001). Intracellular Ca^{2+} release sparks atrial pacemaker activity. *News in Physiological Sciences* (invited review) 16, 101-106.
- Wang Y.G., Benedict W.J., Hüser J., Samarel A.M., Blatter L.A. & Lipsius S.L. (2001). Brief rapid

pacing depresses contractile function via Ca^{2+} /PKC-dependent signaling in cat ventricular myocytes. *Am. J. Physiol.* 280, H90-H98.

Blatter L.A., Sheehan K.A. & Kockskämper J., (2002) Subcellular calcium signalling in cardiac cells revealed with fast two-dimensional confocal imaging. *Proceedings of SPIE* 4626, 453-463.

Dedkova E.N. & Blatter L.A. (2002). Nitric oxide inhibits capacitative Ca^{2+} entry and enhances endoplasmic reticulum Ca^{2+} uptake in bovine vascular endothelial cells. *J. Physiol.* 539.1, 77-91. PMID: PMC2290138.

Dedkova E.N., Wang Y.G., Blatter L.A. & Lipsius S.L. (2002). Nitric oxide signalling by selective β_2 -adrenoceptor stimulation prevents ACh-induced inhibition of β_2 -stimulated Ca^{2+} current in cat atrial myocytes. *J. Physiol.* 542.3, 711-723. PMID: PMC2290448.

Kockskämper J. & Blatter L.A. (2002). Subcellular Ca^{2+} alternans represents a novel mechanism for the generation of arrhythmogenic Ca^{2+} waves in cardiac myocytes. *J. Physiol.* 545, 65-79. PMID: PMC2290652.

Wang Y.G., Dedkova E.N., Steinberg S.F., Blatter L.A. & Lipsius S.L. (2002). β_2 -adrenergic receptor signaling acts via NO release to mediate ACh-induced activation of ATP-sensitive K^+ current in cat atrial myocytes. *J. Gen. Physiol* 119, 69-82. PMID: PMC2233856.

Blatter L.A., Kockskämper J., Sheehan K.A., Zima A.V, Hüser J. & Lipsius S.L. (2003). Local calcium gradients during excitation-contraction coupling and alternans in atrial myocytes. *J. Physiol.* 546: 19-31. PMID: PMC2342467.

Dedkova E.N., Ji X., Wang Y.G., Blatter L.A. & Lipsius S.L. (2003). Signaling mechanisms that mediate NO production induced by ACh exposure and withdrawal in cat atrial myocytes. *Circ. Res.* 93, 1233-1240.

Sheehan K.A. & Blatter L.A. (2003). Regulation of junctional and non-junctional sarcoplasmic reticulum calcium release in excitation-contraction coupling in cat atrial myocytes. *J. Physiol.* 546: 119-135. PMID: PMC2342474.

Wang Y.G., Dedkova E.N., Fiening J.P., Ojamaa K., Blatter L.A. & Lipsius S.L. (2003). Acute exposure to thyroid hormone increases Na^+ current and intracellular Ca^{2+} in cat atrial myocytes. *J. Physiol.* 546.2, 491-499. PMID: PMC2342523.

Zima A.V., Copello J.A. & Blatter L.A. (2003). Differential modulation of cardiac and skeletal muscle ryanodine receptors by NADH. *FEBS Lett.* 547, 32-36.

Zima A.V., Kockskämper J., Mejia-Alvarez R. & Blatter L.A. (2003). Pyruvate modulates cardiac sarcoplasmic reticulum Ca^{2+} release via mitochondria-dependent and -independent mechanisms. *J. Physiol.* 550, 765-783. PMID: PMC2343083.

Cherednichenko G., Zima A. V., Feng W., Schaefer S., Blatter L. A. & Pessah I. N. (2004). NADH Oxidase Activity of Rat Cardiac Sarcoplasmic Reticulum Regulates Calcium-Induced Calcium Release. *Circ. Res.* 94, 478-486.
(Editorial comment in *Circ. Res.* 94: 418, 2004.)

Dedkova E.N., Ji X., Lipsius S.L. & Blatter L.A. (2004). Mitochondrial calcium uptake stimulates nitric

- oxide production in mitochondria of bovine vascular endothelial cells. *Am. J. Physiol.* 286: C406 - C415.
- Despa S., Kockskämper J., Blatter L.A. & Bers D.M. (2004). Na/K Pump-Induced $[Na]_i$ Gradients in Rat Ventricular Myocytes Measured with Two-Photon Microscopy. *Biophys. J.* 87, 1360-1368. PMID: PMC1304474.
- Kockskämper J., Ahmmed G.U., Zima A.V., Sheehan K.A., Glitsch H.G. & Blatter L.A. (2004). Palytoxin disrupts cardiac excitation-contraction coupling through interactions with P-type ion pumps. *Am. J. Physiol.* 287, C527-C538.
- Zima A. V. & Blatter L.A. (2004). Inositol-1,4,5-trisphosphate-dependent Ca^{2+} signaling in atrial excitation-contraction coupling and arrhythmias. *J. Physiol.* 555: 607-615. PMID: PMC1664857. (Reprinted in "The Journal of Physiology: Classic papers in cardiovascular physiology"; November 1, 2013).
- Zima A. V., Copello J.A. & Blatter L.A. (2004). Effects of cytosolic NADH/NAD⁺ levels on sarcoplasmic reticulum Ca^{2+} release in permeabilized rat ventricular myocytes. *J. Physiol.* 555: 727-741. PMID: PMC1664876.
- Aromolaran A. A. S. & Blatter L. A. (2005). Modulation of intracellular Ca^{2+} release and capacitative Ca^{2+} entry by CaMKII inhibitors in bovine vascular endothelial cells. *Am. J. Physiol.* 289, C1426-C1436.
- Blatter L. A., Kockskämper J. & Zima A. V. (2005). Glycolysis has many ways to regulate cardiac function. *Physiology News* 61, 36-37.
- Dedkova E. N. & Blatter L. A. (2005). Modulation of mitochondrial Ca^{2+} by nitric oxide in cultured bovine vascular endothelial cells. *Am. J. Physiol.* 289: C836-C845.
- Kockskämper J., Zima A.V. & Blatter L.A. (2005). Modulation of sarcoplasmic reticulum Ca^{2+} release by glycolysis in cat atrial myocytes. *J. Physiol.* 564: 697-714. PMID: PMC1464475.
- Li X., Zima A.V., Sheikh F., Blatter L.A. & Chen J. (2005). Endothelin-1-induced arrhythmogenic Ca^{2+} signaling is abolished in atrial myocytes of inositol-1,4,5-trisphosphate(IP_3)-receptor type 2-deficient mice. *Circ. Res.* 96: 1274-1281.
- Shannon T. R., Bers D. M., Blatter L. A. & Niggli E. (2005). Confocal imaging of CICR events from isolated and immobilized SR vesicles. *Cell Calcium* 38, 497-505.
- Wang Y.G., Dedkova E.N., Ji X., Blatter L.A. & Lipsius S.L. (2005). Phenylephrine acts via IP_3 -dependent intracellular NO release to stimulate L-type Ca^{2+} current in cat atrial myocytes. *J. Physiol.* 567.1, 143-157.
(Evaluated by Faculty of 1000, F1000)
- Picht E., DeSantiago J., Blatter L.A. & Bers D.M. (2006). Cardiac alternans do not rely on diastolic sarcoplasmic reticulum calcium content fluctuations. *Circ. Res.* 99: 740 - 748.
- 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. *J. Biol. Chem.* 281: 608-616.
- Sedova M., Dedkova E. N. & Blatter L. A. (2006). Integration of rapid cytosolic Ca^{2+} signals by

mitochondria in cat ventricular myocytes. *Am. J. Physiol.* 291, C840-C850.

Sheehan K. A., Zima A. V. & Blatter L. A. (2006). Regional differences in spontaneous Ca^{2+} spark activity and regulation in cat atrial myocytes. *J. Physiol.* 572; 799-809. PMID: PMC1780000.

Zima A. V. & Blatter L. A. (2006). Redox regulation of cardiac calcium channels and transporters. *Cardiovasc. Res.* 71, 310-321 (invited review).

Zima A. V., Kockskämper J. & Blatter L.A. (2006). Cytosolic energy reserves determine the effect of glycolytic sugar phosphates on sarcoplasmic reticulum Ca^{2+} release in cat ventricular myocytes. *J. Physiol.* 577: 281-293. PMID: PMC2000679.

Aromolaran A. S., Zima A. V. & Blatter L. A. (2007). Role of glycolytically generated ATP for CaMKII-mediated regulation of intracellular Ca^{2+} signaling in bovine vascular endothelial cells. *Am. J. Physiol.* 293: C106-C118.

(Evaluated by Faculty of 1000, F1000).

Copello J. A., Zima A. V., Diaz-Sylvester P. L., Fill M. & Blatter L.A. (2007). Ca^{2+} entry-independent effects of L-type Ca^{2+} channel modulators on Ca^{2+} sparks in permeabilized myocytes. *Am. J. Physiol.* 292: C2129-C2140. PMID: PMC2094215.

Dedkova E.N., Wang Y.G., Ji X, Blatter L.A., Samarel A.M. & Lipsius S.L. (2007). Signalling mechanisms in contraction-mediated stimulation of intracellular NO production in cat ventricular myocytes. *J. Physiol.* 580.1, 327-345. PMID: PMC2075434.

Jung C., Zima A.V., Szentesi P., Jona I., Blatter L.A. & Niggli E. (2007). Ca^{2+} release from the sarcoplasmic reticulum activated by the low affinity Ca^{2+} chelator TPEN in ventricular myocytes. *Cell Calcium* 41(2), 187-194.

Picht E., Zima A. V., Blatter L. A. & Bers D. M. (2007). SparkMaster - Automated calcium spark analysis with ImageJ. *Am. J. Physiol.* 293(3): C1073-C1081.

Snopko R.M., Aromolaran A.S., Karko K.L., Ramos-Franco J., Blatter L.A. & Mejía-Alvarez R. (2007). Cell culture modifies Ca^{2+} signaling during excitation-contraction coupling in neonate cardiac myocytes. *Cell Calcium* 41(1), 13-25.

Zima A.V., Bare D.J., Mignery G.A. & Blatter L.A. (2007). IP_3 -dependent nuclear Ca signaling in the mammalian heart. *J. Physiol.* 584: 601-611. PMID: PMC2277156.

Dedkova E.N. & Blatter L.A. (2008). Mitochondrial Ca^{2+} and the heart. (Invited review). *Cell Calcium* 44: 77-91.

Domeier T.L., Zima A.V., Maxwell J.T., Huke S., Mignery G.A. & Blatter L.A. (2008). IP_3 receptor-dependent Ca^{2+} release modulates excitation-contraction coupling in rabbit ventricular myocytes. *Am. J. Physiol.* 294(2): H596-H604.

(Editorial comment in *Am. J. Physiol.* 294(2): H579-581, 2008; highlighted in *Physiology* 23: 61-63, 2008).

Florea S.M. & Blatter L.A. (2008). The effect of oxidative stress on Ca^{2+} release and capacitative Ca^{2+} entry in vascular endothelial cell. *Cell Calcium* 43, 405-415.

- Kockskämper J., Zima A.V., Roderick L., Pieske B., Blatter L.A. & Bootman M.D. (2008). Emerging roles of inositol 1,4,5-trisphosphate signaling in cardiac myocytes. *J. Mol. Cell. Cardiol.* 45: 128–147. PMID: PMC2654363.
- Wang Y.G., Zima A.V., Ji X., Pabbidi R., Blatter L.A. & Lipsius S.L. (2008). Ginsenoside Re suppresses electromechanical alternans in cat and human cardiomyocytes. *Am. J. Physiol.* 295: H851-H859. PMID: PMC2519214.
- Zima A.V., Picht E., Bers D.M. & Blatter L.A. (2008). Termination of cardiac Ca²⁺ sparks: role of intra-SR [Ca²⁺], release flux, and intra-SR Ca²⁺ diffusion. *Circ. Res.* 103: e105-e115. PMID: PMC2678058
- Zima A.V., Picht E., Bers D.M. & Blatter L.A. (2008). Partial inhibition of sarcoplasmic reticulum Ca release evokes long-lasting Ca release events in ventricular myocytes: role of luminal Ca in termination of Ca release. *Biophys. J.* 94(5): 1867-1879. PMID: PMC2242770.
- Zima A.V., Qin J., Fill M. & Blatter L.A. (2008). Tricyclic antidepressant amitriptyline alters sarcoplasmic reticulum calcium handling in ventricular myocytes. *Am. J. Physiol.* 295: H2008-H2016.
- Dedkova E.N. & Blatter L.A. (2009). Characteristics and function of cardiac mitochondrial nitric oxide synthase. *J. Physiol.* 587.4, 851-872.
(Highlighted in a Journal Club discussion in *J. Physiol.* 2009 587:2719-2720).
- Domeier T.L., Blatter L.A. & Zima A.V. (2009). Alteration of sarcoplasmic reticulum Ca²⁺ release termination by ryanodine receptor sensitization and in heart failure. *J. Physiol.* 587 (Pt 21), 5197-5209.
(Editorial comment in *J. Physiol.* 587(Pt 21): 5003-5004, 2009).
- O'Rourke B. & Blatter L.A. (2009). Mitochondrial Ca²⁺ uptake: Tortoise or hare? *J. Mol. Cell. Cardiol.* 46, 767-774.
- Qin J., Zima A.V., Porta M., Blatter L.A. & Fill M. (2009). Trifluoperazine: A ryanodine receptor agonist. *Pflügers Arch./European J. Physiol.* 458(4):643-651.
- Rinne A., Banach K. & Blatter L.A. (2009). Regulation of Nuclear Factor of Activated T Cells (NFAT) in Vascular Endothelial Cells. *J. Mol. Cell. Cardiol.* 47, 400-410.
- Domeier T.L., Blatter L.A. & Zima A.V. (2010). Changes in intra-luminal calcium during spontaneous calcium waves following sensitization of ryanodine receptor channels. *Channels* 4, 87-92.
- Florea S.M. & Blatter L.A. (2010). The role of mitochondria for the regulation of cardiac alternans. *Front. Physiol.* 1:141. doi: 10.3389/fphys.2010.00141.
(Editorial comment in *Front. Physio.* 1:163. doi: 10.3389/fphys.2010.00163).
- Nakayama H., Bodi I., Maillet M., DeSantiago J., Domeier T.L., Mikoshiba K., Lorenz J.N., Blatter L.A., Bers D.M. & Molkenstein J.D. (2010). The IP₃ Receptor Regulates Cardiac Hypertrophy in Response to Select Stimuli. *Circ. Res.* 107, 659-666.
- Rinne A. & Blatter L.A. (2010). A fluorescence-based assay to monitor transcriptional activity of NFAT in living cells. *J. Physiol.* 588, 3211-3216.
- Rinne A. & Blatter L.A. (2010). Activation of NFATc1 is directly mediated by IP₃ in adult cardiac

myocytes. *Am. J. Physiol.* 299, H1701-H1707.

Rinne A., Kapur N., Molkentin J.D., Pogwizd S.M., Bers D.M., Banach K. & Blatter L.A. (2010). Isoform- and tissue-specific regulation of the Ca²⁺-sensitive transcription factor NFAT in cardiac myocytes and in heart failure. *Am. J. Physiol.* 298, H2001–H2009.

Zima A.V, Bovo E., Bers D.M. & Blatter L.A. (2010). Ca²⁺ spark-dependent and -independent sarcoplasmic reticulum Ca²⁺ leak in normal and failing rabbit ventricular myocytes. *J. Physiol.* 588, 4743-4757.

(Editorial comment in *J. Physiol.* 588: 4849, 2010; Evaluated by Faculty of 1000, F1000).
(Reprinted in "The Journal of Physiology: Biophysics and Beyond"; January 20, 2012).

Bovo E., Mazurek S.R., Blatter L.A. & Zima A.V. (2011). Regulation of Sarcoplasmic Reticulum Ca²⁺ leak by Cytosolic Ca²⁺ in Rabbit Ventricular Myocytes. *J. Physiol.* 589, 6039-6050.
(Editorial comment in *J. Physiol.*, 589, 5899-5900, 2011).

Picht E., Zima A.V., Shannon T.R., Duncan A.M., Blatter L.A., Bers D.M. (2011). Dynamic calcium movement in cardiac sarcoplasmic reticulum during release. *Circ. Res.* 108, 847-856.

Porta M., Zima A.V., Nani A., Diaz-Sylvester P.L., Copello J.A., Ramos-Franco J., Blatter L.A. & Fill M. (2011). Single ryanodine receptor channel basis of caffeine's action on Ca²⁺ sparks. *Biophys. J.* 100, 931-938.

Blatter L. A. (2012). SOCE: Implications for Ca²⁺ handling in endothelial cells. In: Store-operated Ca²⁺ entry (SOCE) pathways; K. Groschner, W. F. Graier & C. Romanin (Eds.), pp. 249-263; Berlin: Springer-Verlag.

Dedkova E.N. & Blatter L.A. (2012). Measuring mitochondrial function in intact cardiac myocytes. *J. Mol. Cell. Cardiol.* 52, 48–61 (Review).

Domeier T.L., Maxwell J.T. & Blatter L.A. (2012). β -adrenergic stimulation increases the intra-sarcoplasmic reticulum Ca²⁺ threshold for Ca²⁺ wave generation. *J. Physiol.* 590.23, 6093-6108.

Figueroa L., Shkryl V.M., Zhou J., Manno C., Momotake A., Brum G., Blatter L.A., Ellis-Davies G.C.R. & Ríos E. (2012). Synthetic localized calcium transients directly probe signaling mechanisms in skeletal muscle. *J. Physiol.* 590, 1389-1411.

(Perspective in *J. Physiol.* 590.8, 1783, 2012).

(Reprinted in "The Journal of Physiology: Discovery in Physiology"; April 4, 2013).

Florea S.M. & Blatter L.A. (2012). Regulation of cardiac alternans by β -adrenergic signaling pathways. *Am. J. Physiol.* 303: H1047–H1056.

Maxwell J.T. & Blatter L.A. (2012). Facilitation of cytosolic calcium wave propagation by local calcium uptake into the sarcoplasmic reticulum in cardiac myocytes. *J. Physiol.* 590.23, 6037-6045.
(Highlighted in *Physiology* 27: 328, 2012).

Maxwell J.T., Domeier T.L. & Blatter L.A. (2012). Dantrolene prevents arrhythmogenic Ca release in heart failure. *Am. J. Physiol.* 302, H953-H963.

Seidlmayer L.K., Blatter L.A., Pavlov E. & Dedkova E.N. (2012). Inorganic polyphosphate – an unusual

suspect of the mitochondrial permeability transition mystery. *Channels* 6(6):463-7.

Seidlmayer L.K., Gomez-Garcia M.R., Blatter L.A., Pavlov E. & Dedkova E.N. (2012). Inorganic polyphosphate is a potent activator of the mitochondrial permeability transition pore in cardiac myocytes. *J. Gen. Physiol.* 139(5), 321-331.

Shkryl S.M., Blatter L.A. & Rios E. (2012). Properties of Ca^{2+} sparks revealed by four-dimensional confocal imaging of cardiac muscle. *J. Gen. Physiol.* 139(3), 189-207.

Shkryl S.M., Maxwell J.T. & Blatter L.A. (2012). A novel method for spatially complex diffraction-limited photoactivation and photobleaching in living cells. *J. Physiol.* 590.5, 1093–1100.

Shkryl S.M., Maxwell J.T., Domeier T.L. & Blatter L.A. (2012). Refractoriness of sarcoplasmic reticulum Ca release determines Ca alternans in atrial myocytes. *Am. J. Physiol.* 302(11): H2310-H2320.

Dedkova E.N. & Blatter L.A. (2013). Calcium signaling in cardiac mitochondria. *J. Mol. Cell. Cardiol.* 58: 125-133 (Invited Review).

Dedkova E.N., Seidlmayer L.K. & Blatter L.A. (2013). Mitochondria-mediated cardioprotection by trimetazidine in rabbit heart failure. *J. Mol. Cell. Cardiol.* 59: 41-54. (Evaluated by Faculty of 1000, F1000)

Edwards J.N. & Blatter L.A. (2013). Dysfunctional intracellular calcium cycling in cardiac alternans. *Proceedings of the Australian Physiological Society* 44: 39-48.

Figuroa L., Shkryl V. Blatter L.A. & Ríos E. (2013). Using two dyes with the same fluorophore to monitor cellular $[\text{Ca}^{2+}]$ in an extended range. *PLoS One* 8(2): e55778. doi:10.1371/journal.pone.0055778.

Maxwell J.T., Domeier T.L. & Blatter L.A. (2013). Beta-adrenergic stimulation increases the intra-SR Ca termination threshold for spontaneous Ca waves in cardiac myocytes. *Channels* 7(3): 1-5.

Shkryl V.M & Blatter L.A. (2013). Ca^{2+} release events in cardiac myocytes up close: insights from fast confocal imaging. *PLoS One* 8(4): e61525. doi:10.1371/journal.pone.0061525.

Zima A.V., Pabbidi R.M., Lipsius S.L. & Blatter L.A. (2013). Effects of mitochondrial uncoupling on Ca^{2+} signaling during excitation-contraction coupling in atrial myocytes. *Am. J. Physiol.* 304(7): H983-993.

Dedkova E.N. & Blatter L.A. (2014). Role of β -hydroxybutyrate, its polymer poly- β -hydroxybutyrate and inorganic polyphosphate in cardiovascular health and disease. *Front. Physiol.* 5: 260 (invited review; doi: 10.3389/fphys.2014.00260).

Edwards J.N. & Blatter L.A. (2014). Cardiac alternans and intracellular calcium cycling. *Clinical and Experimental Pharmacology and Physiology* 41: 524–532.

Hohendanner F., McCulloch A.D., Blatter L.A. & Michailova A.P. (2014). Calcium and IP_3 dynamics in cardiac myocytes - Experimental and computational perspectives and approaches. *Front. Pharmacol.* 5: 35. doi:10.3389/fphar.2014.00035 (invited review).

Kapoor N., Maxwell J.T., Mignery G.A., Will D., Blatter L.A. & Banach K. (2014). Spatially defined

InsP₃ mediated signaling in embryonic stem cell-derived cardiomyocytes. PLoS ONE 9(1): e83715. doi:10.1371/journal.pone.0083715.

Walther S., Awad S., Lonchyna V.A. & Blatter L.A. (2014). NFAT transcription factor regulation by urocortin II in cardiac myocytes and heart failure. *Am. J. Physiol.* 306: H856-H866.

Walther S., Pluteanu F., Renz S., Nikonova Y., Maxwell J.T., Yang L.-Z., Schmidt K, Edwards J.N., Wakula P., Groschner K., Maier L.S., Spiess J., Blatter L.A., Pieske B., Kockskämper J. (2014). Urocortin 2 stimulates nitric oxide production in ventricular myocytes via Akt- and PKA-mediated phosphorylation of eNOS at serine 1177. *Am. J. Physiol.* 307: H698-H700.

Hammer K.P., Hohendanner F., Blatter L.A., Pieske B.M. & and Heinzl F.R. (2015). Variations in Local Calcium Signaling in Adjacent Cardiac Myocytes of the Intact Mouse Heart Detected with Two-Dimensional Confocal Microscopy. *Front. Physiol.* 5: 517 (doi: 10.3389/fphys.2014.00517).

Hohendanner F., Walther S., Maxwell J.T., Kettlewell S., Awad S., Smith G.L., Lonchyna V.A. & Blatter L.A. Inositol-1,4,5-trisphosphate induced Ca²⁺ release and excitation-contraction coupling in atrial myocytes from normal and failing hearts. *J. Physiol.* (Published online before print November 21, 2014, doi:10.1113/jphysiol.2014.283226). (Perspective in *J. Physiol.*; in press).

Kanaporis G. & Blatter L.A. The mechanisms of calcium cycling and action potential dynamics in cardiac alternans. *Circ. Res.* (published online on December 22, 2014 as: DOI: 10.1161/CIRCRESAHA.116.305404). (Perspective in *Circ. Res.*; in press).

Seidlmayer L.K., Juettner V.V., Kettlewell S., Pavlov E., Blatter L.A. & Dedkova E.N. Role of inorganic polyphosphate in mitochondrial permeability transition and cell death in cardiac ischemia-reperfusion. *Cardiovasc. Res.* (in press).

Ping P., Gustafsson A., Bers D., Blatter L., Cai H.A., Jahangir A., Kelly D., Muoio D., O'Rourke B., Rabinovitch P., Trayanova N., Van Eyk J., Weiss J.N., Wong R. & Schwartz Longacre L. Harnessing the Power of Integrated Mitochondrial Biology and Physiology: A Special Report on the NHLBI Mitochondria in Heart Diseases Initiative. *J. Clin. Invest.* (submitted).

Abstracts

Blatter L.A. & McGuigan J.A.S. (1987). Estimation of the upper limit of intracellular free magnesium [Mg]_i in ferret ventricular muscle. *J. Physiol.* 387, 85P.

Blatter L.A. & McGuigan J.A.S. (1988). Effects of metabolic substrates on intracellular pH in ferret ventricle. *Biophys. J.* 53, 165a.

Blatter L.A. & McGuigan J.A.S. (1988). Intracellular pH changes during low sodium superfusion in isolated ferret ventricular muscle. *J. Physiol.* 399, 16P.

Blatter L.A. & McGuigan J.A.S. (1988). Sodium/hydrogen exchange mechanism in isolated ferret

ventricular muscle. *J. Physiol.* 399, 17P.

Blatter L.A., Fry C. H., Hall S.K. & McGuigan J.A.S. (1988). Concerning the presentation of data obtained with ion-selective electrodes. *J. Physiol.* 407, 120P.

Blatter L.A. & Lee N.K.M. (1989). Comparison of measurements of intracellular Ca^{++} concentration with ion-selective microelectrodes and aequorin in the same intact isolated frog skeletal muscle fibers. *Biophys. J.* 55, 490a.

Blatter L.A., Buri A. & McGuigan J.A.S. (1989). Free intracellular magnesium concentration in isolated ferret ventricular muscle and in frog skeletal muscle measured with ion-selective microelectrodes containing the new magnesium sensor ETH 5214. *J. Physiol.* 418, 154P.

Blatter L. A. (1990). The role of a Na/Mg exchange mechanism in the regulation of intracellular free magnesium in frog skeletal muscle. *Biophys. J.* 57, 533a.

Hannon J. D. & Blatter L. A. (1990). Elevation of $[\text{Ca}^{++}]_i$ unmasks stretch-induced increase in resting $[\text{Ca}^{++}]_i$ in aequorin-injected frog skeletal muscle fibers. *Biophys. J.* 57, 175a.

Blatter L. A. & Wier W. G. (1991). Focal application of vasopressin to vascular smooth muscle cells triggers calcium-waves as revealed by digital imaging microscopy. *Biophys. J.* 259, 235a.

Murphy T.H., Blatter L.A., Wier W.G. & Baraban J.M. (1992). Synchronous intracellular calcium transients produced by synaptic activity in cultured cortical neurons. *Biophys. J.* 61, A508.

Baraban J. M., Blatter L. A., Wier W. G. & Murphy T. H. (1992). Rapid communication between neurons and astrocyte syncytia in primary cortical cultures. *Soc. Neurosci. Abstr.* 18, 1346.

Blatter L. A. & Wier W. G. (1993). Nitric oxide decreases $[\text{Ca}^{2+}]_i$ in vascular smooth muscle by a cGMP dependent inhibition of the calcium current. *Biophys. J.* 64, A365.

Murphy T.H., Baraban J. M., Wier W. G. & Blatter L.A. (1993). Local dendritic calcium transients induced by quantal synaptic transmission. *Soc. Neurosci. Abstr.* 19, 432.

Blatter L. A. (1994). Imaging depletion and filling of intracellular calcium stores in vascular myocytes. *Biophys. J.* 66, A150.

Holda J. R., Oberti C., Perez-Reyes E., & Blatter L. A. (1995). Mechanisms of oxytocin induced calcium transients in single human myometrium smooth muscle cells. *Biophys. J.* 68, A176.

Tsugorka A., Rios E. & Blatter L.A. (1995). Imaging elementary events of Ca^{2+} release in skeletal muscle cells. *Annual Meeting of the Society of General Physiologists, J. Gen. Physiol.* 105, 17a.

Blatter L. A., Tsugorka A., Shirokova N & Rios E (1996). Eager triads in skeletal muscle: Heterogeneous distribution of voltage-elicited Ca^{2+} release revealed by confocal microscopy. *Biophys. J.* 70, A235.

Holda J. R., & Blatter L. A. (1996). Control of calcium in single vascular smooth muscle cells by arginine-vasopressin. *Biophys. J.* 70, A283.

Hüser J., Lipsius S. L. & Blatter L. A. (1996). Calcium gradients underlying excitation-contraction coupling in atrial myocytes. *Biophys. J.* 70, A273.

- Pizarro G., Shirokova N., Tsugorka A., Blatter L. A., & Rios E (1996). Quantal release of calcium in skeletal muscle. *Biophys. J.* 70, A234.
- Satoh H., Bers D. M. & Blatter L. A. (1996). Modulation of spatial and temporal characteristics of calcium sparks: Effects of BayK 8644, caffeine and ryanodine. *Biophys. J.* 70, A274.
- Satoh H., Blatter L. A. & Bers D. M. (1996). Calcium spark frequency is affected by $[Ca]_i$, SR Ca load and rest in ventricular myocytes. *Biophys. J.* 70, A273.
- Holda J. R., Hüser J. & Blatter L. A. (1996). Agonist dependent changes of $[Ca^{2+}]_i$ and membrane current in vascular endothelial cells. *J. Mol. Cell. Cardiol.* 28, A148.
- Satoh H., Li L., McCall E., Blatter L. A. & Bers D. M. (1996). FK 506 increases both SR Ca release during E-C coupling and resting Ca spark frequency. *J. Mol. Cell. Cardiol.* 28, A131.
- Blatter L. A., Hüser J. & Ríos E. (1997). SR release flux underlying Ca^{2+} sparks in cardiac muscle. *Biophys. J.* 72, A342.
- Blatter L. A. & Niggli E. (1997). Near membrane detection of Ca^{2+} in cardiac myocytes. *Biophys. J.* 72, A342.
- Blatter L. A. & Niggli E. (1997). Rapid solution changes in cardiac myocyte T-tubules. *Biophys. J.* 72, A45.
- Holda J. R. & Blatter L. A. (1997). Disruption of the cytoskeletal actin microfilament network inhibits capacitative calcium entry in single vascular endothelial cells. *Biophys. J.* 72, A297.
- Hüser J., Holda J. R. & Blatter L. A. (1997). Spatial heterogeneity of ATP-induced Ca signals in single cultured vascular endothelial cells. *Biophys. J.* 72, A297.
- Hüser J., Satoh H., Bers D. M., Kranias E. G. & Blatter L. A. (1997). Subcellular properties of $[Ca]_i$ transients in phospholamban deficient mouse ventricular myocytes. *Biophys. J.* 72, A45.
- Hüser, J., Shannon T. R., Rechenmacher C. E., Bers D. M. & Blatter L. A. (1997). Confocal microscopic recording of membrane potential in single isolated cardiac mitochondria. *Biophys. J.* 72, A160.
- Klishin A., Sedova M. & Blatter L. A. (1997). Capacitative Ca^{2+} entry enhances plasmalemmal Ca^{2+} -ATPase activity in vascular endothelial cells. *Biophys. J.* 72, A297.
- Niggli E. & Blatter L. A. (1997). Sodium and calcium signals recorded with two-photon excitation confocal microscopy. *Biophys. J.* 72, A164.
- Niggli E. & Blatter L. A. (1997). Detection of near membrane Ca^{2+} in cardiac myocytes. 29th Annual Meeting of the Swiss Societies for Experimental Biology (USGEB).
- Wang Y. G., Hüser J., Blatter L. A. & Lipsius S. L. (1997). Withdrawal of acetylcholine elicits Ca^{2+} -induced delayed afterdepolarizations in cat atrial myocytes. *Biophys. J.* 72, A225.
- Sedova M., Klishin A. & Blatter L.A. (1998). Intracellular mechanisms shaping capacitative Ca^{2+} entry signals in single calf pulmonary artery endothelial cells. *J. Physiol.* 506, 20P.

- Holda J.R., Mignery G.A., & Blatter L.A. (1998). Characterization of calcium release pathways and their relevance for capacitative calcium entry in vascular endothelial cells. *Biophys. J.* 74, A375.
- Hüser J. & Blatter L.A. (1998). Reactive oxygen species-induced openings of the permeability transition pore in single isolated mitochondria. *Biophys. J.* 74, A383.
- Hüser J., Cifuentes F. & Blatter L.A. (1998). Confocal imaging of cardiac alternans in atrial and ventricular myocytes from cat heart. *Biophys. J.* 74, A271.
- Hüser J., Holda J.R., Kockskämper J. & L.A. Blatter. (1998). Focal agonist application results in spatially restricted Ca release and capacitative Ca entry in cultured vascular endothelial cells. *Biophys. J.* 74, A375.
- Hüser J., Rechenmacher C.E. & Blatter L.A. (1998). Imaging the permeability transition in single isolated mitochondria. *Biophys. J.* 74, A18.
- Klishin A., Sedova M. & Blatter L.A. (1998). Anion-dependence of capacitative Ca²⁺ entry in vascular endothelial cells. *Biophys. J.* 74, A376.
- Sedova M., Klishin A. & Blatter L. A. (1998). The role of Na⁺/Ca²⁺ exchange, plasma membrane Ca²⁺-ATPase and calmodulin for [Ca²⁺]_i regulation during capacitative Ca²⁺ entry in vascular endothelial cells. *Biophys. J.* 74, A376.
- Hüser J., Holda J.R., Kockskämper J. & Blatter L.A. (1998). Ca release and capacitative Ca entry in cultured vascular endothelial cells caused by focal agonist stimulation. Annual Meeting of the Deutsche Physiologen Gesellschaft 1998. *Pflügers Arch.* 435, R125.
- Hüser J., Rechenmacher C.E. & Blatter L.A. Rapid depolarizations caused by openings of the permeability transition pore in single mitochondria. Annual Meeting USGEB Switzerland 1998.
- Hüser J., Rechenmacher C.E. & Blatter L.A. (1998). Rapid depolarizations caused by repetitive openings of the permeability transition pore in single mitochondria. Annual Meeting of the Deutsche Physiologen Gesellschaft 1998. *Pflügers Arch.* 435, R142.
- Kockskämper J., Hüser J., Glitsch H.G. & Blatter L.A. (1998). Palytoxin-induced alterations in e-c coupling in isolated cat atrial myocytes. Annual Meeting of the Deutsche Physiologen Gesellschaft 1998. *Pflügers Arch.* 435, R169.
- Hüser J., & Blatter L.A. (1998). Repetitive gating of the permeability transition pore in single mitochondria in vitro and in the living cell. 2nd Albany Conference on Frontiers of Mitochondria Research.
- Benedict W.J., Wang Y.G., Hüser J., Blatter L.A. & Lipsius S.L. (1998). A form of myocardial “stunning” induced by short-term rapid pacing in feline ventricular myocytes. American Heart Association 71st Scientific Sessions. *Circulation.*
- Blatter L. A., Hüser J. & Lipsius S.L. (1999). Cardiac pacemaker activity is “sparked” by intracellular Ca²⁺ release. 53rd Annual Meeting and Symposium of the Society of General Physiologists. *J. Gen. Physiol.* 114, 13a.

- Blatter L.A., Hüser J. & Lipsius S.L. (1999). Cardiac pacemaker activity is sparked by intracellular calcium release. 31st Annual Meeting of the Swiss Societies for Experimental Biology (USGEB).
- Holda J. R., Hüser J., Klishin A., Sedova M. & L. A. Blatter L. A. (1999). Local and global calcium signals in vascular endothelial cells. ISSMETCS Meeting, Nagoya, Japan.
- Hüser J., & Blatter L.A. (1999). Regional differences in agonist sensitivity of intracellular Ca²⁺ signals in single vascular endothelial cells. *Biophys. J.* 76, A225.
- Hüser J., Blatter L. A. & Lipsius S. L. (1999). Ca²⁺ Sparks contribute to late diastolic depolarization of latent atrial pacemaker cells isolated from cat heart. *Biophys. J.* 76, A385.
- Hüser J., Sedova M. & Blatter L.A. (1999). Subcellular coordination of mitochondrial metabolism in heart cells. *Biophys. J.* 76, A144.
- Klishin A., Sedova M., Hüser J. and Blatter L. A. (1999). Capacitative Ca²⁺ entry is graded with depletion of intracellular Ca²⁺ stores in vascular endothelial cells. *Biophys. J.* 76, A225.
- Dedkova E.N., Zinchenko V.P. & Blatter L.A. (2000). Arachidonic acid inhibits the receptor-dependent and store-dependent capacitative Ca²⁺ influx. In Ehrlich ascites tumor cells. *Biophys. J.* 78, 192A.
- Sedova M., Hüser J. & Blatter L.A. (2000). Modulation of mitochondrial Ca²⁺ signaling by intracellular Na⁺ in vascular endothelial cells. *Biophys. J.* 78, 70A.
- Sheehan K.A. & Blatter L.A. (2000). Local control of e-c coupling in atrial myocytes. *Biophys. J.* 78, 375A.
- Sheehan K.A., Kockskämper J. & Blatter L.A. (2000). Local Ca²⁺ gradients during excitation-contraction coupling in atrial myocytes. Oral presentation at the 24th Meeting of the European Working Group on Cardiac Cellular Electrophysiology, Bern, Switzerland.
- Banach K. & Blatter L.A. (2001). Calcium signalling and excitation spread in multicellular preparations of neonatal rat heart. Oral presentation at the 25th Meeting of the European Working Group on Cardiac Cellular Electrophysiology, Dresden, Germany.
- Banach K. , Egert U., Hescheler J. & Blatter L.A. (2001). Calcium signaling and excitation spread in multi-cellular preparations of neonatal rat heart. *Pflügers. Arch.* 441 Suppl. 6, P14-3.
- Dedkova E.N. & Blatter L.A. (2001). Nitric oxide inhibits capacitative Ca²⁺ entry in vascular endothelial cells. *Biophys. J.* 80, 617a.
- Kockskämper J. & Blatter L.A. (2001). Subcellular calcium alternans in cardiomyocytes from the cat heart. Poster presentation at the 25th Meeting of the European Working Group on Cardiac Cellular Electrophysiology, Dresden, Germany.
- Kockskämper J. & Blatter L. A. (2001). Subcellular properties of Ca²⁺ alternans in cat atrial myocytes. *Biophys. J.* 80, 599a.
- Sedova M. & Blatter L. A. (2001). Slow integration of cytosolic Ca²⁺ signals by mitochondria in ventricular myocytes. *Biophys. J.* 80, 614a.

- Shannon T.R., Blatter L.A., Bers D.M. & Niggli E. (2001). Ca release signals from SR vesicles imaged with confocal microscopy. *Biophys. J.* 80, 589a.
- Sheehan K.A., Bare D.J., Mignery G.A. & Blatter L.A. (2001). Inhomogeneity of spontaneous Ca²⁺ sparks in cat atrial myocytes. *Biophys. J.* 80, 63a.
- Sheehan K.A., Kockskämper J. & Blatter L.A. (2001). Local Ca²⁺ signals during e-c coupling in cat atrial myocytes. *Biophys. J.* 80, 598a.
- Banach K., Halbach M.D. & Blatter L.A. (2002). Spatio-temporal organization of calcium signaling and electrical activity in multicellular preparations of neonatal rat heart. *Biophys. J.* 82, 653a.
- Blatter L.A., Sheehan K.A. & Kockskämper J., (2002). Local calcium gradients during excitation-contraction coupling and alternans in atrial myocytes. Joint Meeting of The Physiological Society, the Scandinavian Society and the Deutsche Physiologische Gesellschaft, Tübingen, Germany. *Pflügers Arch./European J. of Physiol.* 443, S 376.
- Blatter L.A., Sheehan K.A. & Kockskämper J., (2002). Subcellular calcium signalling in cardiac cells revealed with fast two-dimensional confocal imaging. *Proceedings of SPIE.*
- Dedkova E.N. & Blatter L.A. (2002). Modulation of mitochondrial calcium by nitric oxide in vascular endothelial cells. *Biophys. J.* 82, 114a.
- Dedkova E.N., Wang Y.G., Steinberg S.F., Blatter L.A. & Lipsius S.L. (2002). β_2 -adrenergic receptors act via PI-3K signaling to mediate nitric oxide (NO) release in atrial myocytes. *Biophys. J.* 82, 272a.
- Kockskämper J., Zima A. & Blatter L.A. (2002). Modulation of cardiac excitation-contraction coupling by glycolysis. *Biophys. J.* 82, 68a.
- Lipsius S.L., Hüser J. & Blatter L.A. (2002). Intracellular Ca²⁺ release sparks atrial pacemaker activity. *J. Physiol.* 544.P, 1S.
- Sheehan K.A. & Blatter L.A. (2002). Initiation mechanism and frequency of spontaneous Ca²⁺ sparks in atrial myocytes. *Biophys. J.* 82, 281a.
- Snopko R.M., Li Y., Pérez C.G., Fan J., Halbach M.D., Bers D.M., Blatter L.A. & Mejía-Alvarez R. (2002). Cell culture modifies the functional role of ryanodine receptors (RyRs) in neonate cardiac myocytes. *Biophys. J.* 82, 69a.
- Zima A., Kockskämper & Blatter L.A. (2002). Pyruvate-mediated effects on cardiac Ca²⁺ signaling. *Biophys. J.* 82, 71a.
- Aromolaran A.A.S & Blatter L.A. (2003). Effects of Ca²⁺/calmodulin-dependent protein kinase II inhibitors on Ca²⁺ signaling in bovine vascular endothelial cells. *Biophys. J.* 84, 392a.
- Dedkova E.N., Blatter L.A. & Lipsius S.L. (2003). ACh acts via Gi-protein-PI-(3)K and IP₃ signaling to stimulate nitric oxide (NO) production in cat atrial myocytes. *Biophys. J.* 84, 394a.
- Dedkova E.N., Wang Y.G., Blatter L.A. & Lipsius S.L. (2003). Contractile Activity Acts via Cytoskeletal Signaling to Stimulate Nitric Oxide Production in Cat Ventricular Myocytes. *Circulation.* 108, IV-292.

- Despa S., Kockskämper J., Blatter L.A. & Bers D. M. (2003). $[Na]_i$ imaging in rat ventricular myocytes using two-photon microscopy of SBF1. *Biophys. J.* 84, 334a.
- Florea S.M. & Lothar A Blatter L.A. (2003). The effect of oxidative stress on capacitative calcium entry in vascular endothelial cells. *Biophys. J.* 84, 393a.
- Kockskämper J., Despa S., Bers D.M. & Blatter L.A. (2003). Na gradients in ventricular myocytes revealed by two photon imaging of SBF1. *Pflügers Arch./European J. of Physiol.* 445, S68.
- Kockskämper J., Zima A.V. & Blatter L.A. (2003). Complex modulation of cardiac e-c coupling by glycolysis. *Pflügers Arch./European J. of Physiol.* 445, S68.
- Lipsius S.L., Wang Y.G., Ji X., Blatter L.A., Dedkova E.N. (2003). Alpha - 1 Adrenoceptor Stimulation by Phenylephrine Stimulates L-Type Calcium Current via Nitric Oxide Production in Cat Atrial Myocytes. *Circulation* 108, IV-86.
- Sheehan K.A., Pyle W.G., Urboniene D., Wang L., Blatter L.A. & Solaro R.J. (2003). Myofilament Ca^{2+} sensitivity and intracellular Ca^{2+} release in cardiac myocytes deficient in cardiac actin capping protein. *Biophys. J.* 84, 433a.
- Zima A.V. & Blatter L.A. (2003). Effects of cytosolic NADH/NAD⁺ levels on Ca^{2+} release from the sarcoplasmic reticulum in rat ventricular myocytes. *Neurophysiology* 35, 380.
- Zima A.V. & Blatter L.A. (2003). IP₃-dependent Ca^{2+} signalling in atrial myocytes. *Biophys. J.* 84, 201a.
- Zima A.V, Copello J. & Blatter L.A. (2003). Cytosolic NADH inhibits sarcoplasmic reticulum Ca^{2+} release in cardiac myocytes. *Biophys. J.* 84, 201a.
- Aromolaran A.A. & Blatter L.A. (2004). Effects of metabolic inhibition on the regulation of intracellular Ca^{2+} signaling in cultured bovine vascular endothelial cells. *Biophys. J.* 86, 105a.
- Cherednichenko G., Zima A.V., Schaefer S., Blatter L.A., Casida J.E. & Pessah I.N. (2004). NADH Oxidase Activity of Rat Cardiac Sarcoplasmic Reticulum Regulates Calcium-Induced Calcium Release. *Biophys. J.* 86, 241a.
- Dedkova E.N., Ji X., Lipsius S.L. & Blatter L.A. (2004). Mitochondrial Calcium Uptake Stimulates Nitric Oxide Production by Mitochondria-Specific Nitric Oxide Synthase in Bovine Vascular Endothelial Cells. *Biophys. J.* 86, 105a.
- Dedkova E.N., Wang Y.G., Blatter L.A. & Lipsius S.L. (2004). Contractile Activity Stimulates Nitric Oxide Production in Cat Ventricular Myocytes via PI-(3)K-Cytoskeletal Signaling. *Biophys. J.* 86, 399a.
- Florea S.M., Despa S., Bers D.M. & Blatter L.A. (2004). Fluorescence measurements of mitochondrial Na and Ca in rat ventricular myocytes. *Biophys. J.* 86, 464a.
- Zima A.V., Copello J.A. & Blatter L.A. (2004) Direct and indirect effects of cytosolic NADH on sarcoplasmic reticulum Ca^{2+} release in rat ventricular myocytes. *Biophys. J.* 86, 111a.
- Aromolaran A.A.S, Russel M.J., Olson K.R. & Blatter L.A. (2005). Hypoxia-induced changes in intracellular $[Ca^{2+}]_i$ in freshly isolated sea lamprey smooth muscle cells. *Biophys. J.* 88, 438a.

- Bare D.J., Kettlun C.S., Liang M., Blatter L.A., Bers D.M. & Mignery G.A. (2005). InsP₃ receptors in ventricular myocytes are targeted to the nuclear envelope and are associated with and modulated by CaMKII. *Biophys. J.* 88, 88a.
- Copello J.A., Zima A.V., Diaz-Sylvester P.L., Fill M. & Blatter L.A. (2005). Nifedipine inhibits calcium sparks in permeabilized myocytes. *Biophys. J.* 88, 189a.
- Dedkova E.N., Blatter L.A. & Lipsius S.L. (2005). Acetylcholine (ACh) withdrawal induces rebound stimulation of intracellular Ca²⁺ release mediated by NO and IP₃-dependent Ca²⁺ signaling. *Biophys. J.* 88, 438a.
- Florea S.M. & Blatter L.A. (2005). The role of β -adrenergic signaling and mitochondria for Ca²⁺ alternans modulation in atrial myocytes. *Biophys. J.* 88, 135a.
- Lipsius S.L., Zima A.V., Ji X., Blatter L.A. & Wang Y.G. (2005). Ginsenoside Re acts via subcellular mechanisms to suppress electro-mechanical alternans in cat cardiomyocytes. *Circulation* 112, II-152.
- Remus T. P., Zima A. V., Bossuyt J., Bare D. J., Martin J. L., Blatter L. A., Bers D. M. & Mignery G. A. (2005). Novel FRET-based InsP₃ sensors and spatiotemporal measurement of agonist-induced [InsP₃] in ventricular myocytes. *Circulation* 112, II-123.
- Zima A.V., Bare D.J., Mignery G.A. & Blatter L.A. (2005). InsP₃-dependent nuclear Ca signaling in the heart. *Biophys. J.* 88, 87a.
- Zima A.V. & Blatter L.A. (2005). Local control of sarcoplasmic reticulum Ca²⁺ 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.
- Copello J.A., Zima A.V., Diaz-Sylvester P.L., Porta M., Nani A., Blatter L.A. & Fill M. (2006). Cardiac ryanodine receptor (RyR) channels communicate among themselves and with dihydropyridine receptor L-type calcium channels (DHPR). *Circulation* 114, II-57
- Dedkova E.N. & Blatter L.A. (2006). Mitochondrial Calcium Uptake Stimulates Nitric Oxide and ROS Production by Mitochondria-Specific Nitric Oxide Synthase (mtNOS) in Cat Ventricular Myocytes. *Biophys. J.* 90, 521a.
- Florea S.M. & Blatter L.A. (2006). Modulation of Ca²⁺ alternans by specific beta₁- and beta₂-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 InsP₃ 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, 523-524.

Domeier T.L. & Blatter L.A. (2008). Intra-SR [Ca] measurements in rabbit cardiomyocytes during Ca transients and waves. *Biophys. J.* 94, 172.

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, 975-976.

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, 977.

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, 170-171.

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, 171.

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, 171.

Dedkova E.N. & Blatter L.A. (2009). L-arginine and Tetrahydrobiopterin Inhibit Mitochondrial Permeability Transition Pore by Preventing ROS Formation by Mitochondrial Nitric Oxide Synthase.

Biophys. J. 96, 534a.

Dedkova E.N. & Blatter L.A. (2009). Trimetazidine Effects On The Mitochondrial Metabolism During Rabbit Heart Failure. *Biophys. J.* 96, 243a.

DeSantiago J., Zima A.V., Domeier T.L., Ginsburg K., Molkenin J.D., Blatter L.A. & Bers D.M. (2009). IP₃ Receptor-mediated Ca Release Facilitates RyR-Ca Release To Cause Inotropy And Arrhythmogenicity In Mouse Ventricular Myocytes. *Biophys. J.* 96, 540a.

Domeier T.L., Zima A.V. & Blatter L.A. (2009). Ryanodine Receptor Sensitization Alters Local And Global Sarcoplasmic Reticulum Calcium Release Termination Threshold In Rabbit Ventricular Myocytes. *Biophys. J.* 96, 276a.

Rinne A., Banach K., Bers D.M. & Blatter L.A. (2009). Isoform-specific Regulation Of The Ca-sensitive Transcription Factor NFAT In The Cardiovascular System. *Biophys. J.* 96, 559a.

Shkryl V.M. & Blatter L.A. (2009). New Insight Into Cardiomyocyte Ca Signaling Obtained By Fast Confocal Imaging. *Biophys. J.* 96, 277a-278a.

Zima A.V. & Blatter L.A. (2009). Properties Of Sarcoplasmic Reticulum Ca Leak In Rabbit Ventricular And Atrial Myocytes. *Biophys. J.* 96, 276a-277a.

Zima A.V., Huke S., Bovo E. & Blatter L.A. (2009). Phosphorylation of Ryanodine Receptor At Serine-2809 Modulates Sarcoplasmic Reticulum Ca Release in Rabbit Ventricular Myocytes. *Biophys. J.* 96, 276a.

Bovo E., Blatter L.A. & Zima A.V. (2010). Regulation of sarcoplasmic reticulum calcium leak by cytosolic calcium in rabbit ventricular myocytes. *Biophys. J.* 98, 102a.

Domeier T.L. & Blatter L.A. (2010). Mechanisms of spontaneous calcium wave generation during beta-adrenergic stimulation in rabbit ventricular myocytes. *Biophys. J.* 98, 105a.

Figuerola L., Shkryl V., Zhou J., Momotake A., Ellis-Davies G., Blatter L.A., Ríos E. Brum G. (2010). CICR and calcium-dependent inactivation, quantified through the response to artificial Ca sparks in single muscle cells. *Biophys. J.* 98, 294a.

Figuerola L., Zhou J., Shkryl V., Li Y., Blatter L.A., Momotake A., Ellis-Davies G., Rios E. & Brum G. (2010). Flux in artificial Ca sparks generated by 2-photon release from a novel cage confocally imaged at microsecond resolution. *Biophys. J.* 98, 294a.

Seidlmayer L, Winkfein B., Blatter L.A., Pavlov E. & Dedkova E.N. (2010). Modulation of the mitochondrial permeability transition pore of cardiac myocytes by polyphosphate. *Biophys. J.* 98, 379a.

Shkryl V.M., Littwitz C., Domeier T.L. & Blatter L.A. (2010). Refractoriness of ryanodine receptors during calcium alternans in rabbit atrial myocytes. *Biophys. J.* 98, 103a.

Zima A.V., Domeier T.L. & Blatter L.A. (2010). Alteration of ryanodine receptor-mediated calcium release in heart failure. *Biophys. J.* 98, 106a.

Domeier T.L., Maxwell J.T. & Blatter L.A. (2011). Beta-adrenergic stimulation increases the intrasarcoplasmic reticulum Ca threshold for spontaneous Ca waves. *Biophys. J.* 100(3), 559a.

- Figueroa L., Shkryl V., Zhou J., Momotake A., Ellis-Davies G., Blatter L.A., Brum G. & Rios E. (2011). Different capabilities for CICR of skeletal muscle of amphibians and mammals demonstrated through the response to artificial sparks. *Biophys. J.* 100(3), 353a.
- Maxwell J.T., Domeier T.L. & Blatter L.A. (2011). Dantrolene restores altered RyR2-mediated Ca signaling in heart failure. *Biophys. J.* 100(3), 556a.
- Seidlmayer L., Blatter L.A., & Dedkova E.N. (2011). Increased activity of mitochondrial complex II in rabbit heart failure is associated with reactive oxygen species generation and impaired excitation-contraction coupling. *Heart* 97(24), e8. doi:10.1136/heartjnl-2011-301156.20.
- Seidlmayer L., Blatter L.A., Pavlov E. & Dedkova E.N. (2011). Inorganic polyphosphate is a potent activator of the mitochondrial permeability transition pore in cardiac myocytes. *Heart* 97(24), e8. doi:10.1136/heartjnl-2011-301156.29.
- Seidlmayer L.K., Blatter L.A., Pavlov E. & Dedkova E.N. (2011). Role of inorganic polyphosphate for cardiac mitochondrial function in ischemia/reperfusion. *Biophys. J.* 100(3), 45a.
- Seidlmayer L., Blatter L.A., Pavlov E., Dedkova E.N. Role of inorganic polyphosphate for cardiac mitochondria function in ischemia-reperfusion. 65th Annual Meeting and Symposium, Society of General Physiologists, Marine Biological Laboratory, Woods Hole, Massachusetts, September 7-11, 2011.
- Shkryl V.M., Blatter L.A. & Rios E. (2011). 4-D scanning of calcium sparks in cardiomyocytes reveals their in-focus amplitude. *Biophys. J.* 100(3), 558a-559a.
- Shkryl V.M., Maxwell J.T. & Blatter L.A. (2011). Spatially complex diffraction-limited photolysis of caged calcium and IP₃ combined with high-speed confocal imaging. *Biophys. J.* 100(3), 45a.
- Figueroa L., Shkryl V.M., Zhou J., Manno C., Momotake A., Brum G., Blatter L.A., Ellis-Davies G.C.R. & Rios E. (2012). Quantification of the CICR response to artificial sparks in striated muscle. *Biophys. J.* 102(3), 311a.
- Maxwell J.T. & Blatter L.A. (2012). Cytosolic calcium wave propagation depends on local calcium movement inside cardiac sarcoplasmic reticulum. *Biophys. J.* 102(3), 104a.
- Seidlmayer L.K., Blatter L.A. & Dedkova E.N. (2012). Increased activity of mitochondrial complex II in rabbit heart failure is associated with reactive oxygen species generation and impaired excitation-contraction coupling. *Biophys. J.* 102(3), 165a.
- Seidlmayer L.K., Pavlov E., Blatter L.A. & Dedkova E.N. (2012). Changes in mitochondrial calcium and ROS during ischemia-reperfusion in polyphosphate-depleted cardiomyocytes. *Biophys. J.* 102(3), 165a.
- Walther S. & Blatter L.A. (2012). Urocortin II regulates NFAT transcription factor in adult rabbit cardiac myocytes. *Biophys. J.* 102(3), 525a.
- Edwards J.N. & Blatter L.A. (2013). Effects of redox environment on calcium alternans in isolated rabbit cardiomyocytes. *Biophys. J.* 104(2), 103a.
- Hohendanner F. & Blatter L.A. (2013). Spatio-temporal properties of IP₃ receptor-mediated Ca release in cardiac myocytes. *Biophys. J.* 104(2), 438a-439a.

Kanaporis G. & Blatter L.A. (2013). Interplay between calcium release and action potential alternans in rabbit heart. *Biophys. J.* 104(2), 435a.

Maxwell J.T., Domeier T.L. & Blatter L.A. (2013). Beta-adrenergic stimulation increases the intra-SR Ca termination threshold for spontaneous Ca release in cardiac myocytes. *Biophys. J.* 104(2), 437a.

Seidlmayer L.K., Juettner V.V., Blatter L.A. & Dedkova E.N. (2013). Calcium-induced ROS generation during ischemia triggers mPTP-dependent cell death during reperfusion. *Biophys. J.* 104(2), 216a.

Walther S., Edwards J.N. & Blatter L.A. (2013). Effects of reactive oxygen species on NFAT activation and translocation in adult rabbit ventricular myocytes. *Biophys. J.* 104(2), 302a.

Hohendanner F. & Blatter L.A. (2014). Atrial excitation-contraction coupling and Ca wave propagation in normal and failing hearts. *Biophys. J.* 106(2), 324a.

Hohendanner F. & Blatter L.A. (2014). IP₃ receptor-mediated Ca release in atrial cells from normal and failing hearts. *Biophys. J.* 106(2), 324a.

Kanaporis G. & Blatter L.A. (2014). Contribution of Ca-regulated ion currents to the action potential morphology during cardiac alternans. *Biophys. J.* 106(2), 116a.

Maxwell J.T., Hohendanner F. & Blatter L.A. (2014). Structural and functional arrangements of atrial myocytes that facilitate excitation-contraction coupling. *Biophys. J.* 106(2), 324a.

Philip I., Walther S., Blatter L.A. & Dedkova E.N. (2014). Beta-hydroxybutyrate improves cardiac excitation-contraction coupling (ECC) and mitochondrial function in type 2 diabetic hearts. *Biophys. J.* 106(2), 187a.

Walther S., Edwards J.N., Pluteanu F., Renz S., Schmidt K., Pieske B., Kockskaemper J. & Blatter L.A. (2014). Urocortin 2 protects against pacing-induced alternans via phosphorylation of phospholamban in cardiac myocytes from normal and failing hearts. *Biophys. J.* 106(2), 116a.

Hohendanner F., Maxwell J.T., Walther S. & Blatter L.A. (2014). Excitation-contraction coupling and IP₃-dependent Ca signaling in atrial myocytes from normal and failing hearts. AHA Scientific Sessions, Chicago, November 15-19, 2014. *Circulation* 130, A15847.

Kanaporis G. & Blatter L.A. (2015). Development of Ca alternans in atrial myocytes is modulated by action potential morphology. *Biophys. J.* 108(2), 263a.

Walther S., Edwards J.N., Maxwell J.T., Pluteanu F., Renz S., Pieske B. & Blatter L.A. (2015). Urocortin 2 regulates sarcoplasmic reticulum calcium via phosphorylation of phospholamban and SERCA activation and protects against pro-arrhythmic alternans in cardiac myocytes from normal and failing hearts. *Biophys. J.* 108(2), 264a.

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.

Dept. of Pharmacology and Physiology, UMDNJ, Newark, New Jersey. February 2, 2009.

Cardiovascular Research Center & Division of Cardiovascular Medicine, Univ. of Wisconsin. Cardiovascular Research Conference. Madison, Wisconsin. October 18, 2010.

Dept. of Medical Pharmacology and Physiology, Univ. of Missouri. Columbia, MO. November 30, 2010.

Northwestern University, Feinberg Cardiovascular Research Institute, 2011 - 2012 Seminar Series. Chicago, IL. October 13, 2011.

University of Illinois at Chicago, Division of Pulmonary, Critical Care, Sleep and Allergy. Pulmonary Hypertension Seminar Series. Chicago, IL. October 25, 2013.

Rush University Medical Center, Research Grand Rounds. Chicago, IL. April 1, 2014.

Department of Physiology, University of Tennessee Health Science Center, College of Medicine, Memphis, TN. April 9, 2015.

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.

Keystone Symposium on "Dissecting the Vasculature: Function, Molecular Mechanisms and Malfunction"; Vancouver, Canada; 2/24-3/1, 2009.

Heart Rhythm 2009, Heart Rhythm Society's 30th Annual Scientific Sessions. Core Curriculum on "Metaboelectrical Signaling in the Heart", Boston, MA, USA, May 15, 2009.

31th Meeting of the North American Section of the International Society for Heart Research (ISHR), Session "Mitochondria in cardiac disease". Baltimore, MD; 5/26-29, 2009.

Gordon Research Conference on "Cardiac Regulatory Mechanisms", New London, NH, USA, June 6-11, 2010. Invited speaker.

Frontiers in Cardiovascular Biology 2010. Session: The Ca²⁺ Universe. Berlin, Germany, July 16-19, 2010.

Frontiers in Cardiac Muscle Biology: Calcium Release in the Heart. Center for Molecular Cardiovascular Biology and the Fondation Leducq Transatlantic Network of Excellence. Johns Hopkins University, Baltimore, MD, USA, March 4, 2011.

American Heart Association, 1st Annual Metro Chicago Research Network Symposium on "Transgenic Approaches to Cardiovascular Disease: Past, Present and Future". Loyola University Chicago Medical Center, Maywood, IL, USA, September 20, 2013.

February 20, 2015