CURRICULUM VITAE --- **Kurt G. Beam**

Current Position
Professor
Dept. of Physiology & Biophysics
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Education

1967	A.B. (Physics)	Pomona College, Claremont, California
1974	Ph.D. (Physiology)	Univ. of Washington (Advisor: Dr. C.F. Stevens)
1974-1977	Postdoctoral	Yale University (Advisor: Dr. Paul Greengard)

Academic appointments

1977-1983	Assistant Professor, Dept. of Physiology & Biophysics, Univ. of Iowa
1983-1986	Associate Professor, Dept. of Physiology & Biophysics, Univ. of Iowa
1986-1989	Associate Professor, Dept. of Physiology, Colorado State University
1989-1995	Professor, Dept. of Physiology, Colorado State Univ.
1995-2002	Professor, Dept. of Anatomy & Neurobiology, Colorado State University
2002-2005	Professor, Dept. of Biomedical Sciences, Colorado State Univ.
2005-present	Professor, Dept. of Physiology & Biophysics, Univ. Colorado Medical School

Honors, special recognitions and awards
National Merit Scholar (1963-1967)
Cum laude graduate, Pomona College (1967)
Individual NIH Postdoctoral Fellowship (1974-1977)
NIH Research Career Development Award (1984-1989)
NIH Jacob Javits Neuroscience Investigator Award (1988-1995)
Bashour Distinguish Physiologist Lectureship, Univ. of Texas Southwestern (1994)
Thomas W. Smith Memorial Lecture, American Heart Association (1999)
K.S. Cole Award for Membrane Biophysics (2002)
Paul Horowicz Memorial Lecture, Rochester University (2005)
Andrew Somlyo Memorial Lecture, University of Pennsylvania (2008)
Chair, Gordon Conference "Muscle: Excitation/Contraction Coupling" (2009)
Elected to National Academy of Sciences (2012)
Totman Lecture, University of Vermont (2012)
University Distinguished Professor, University of Colorado (2014-present)

Membership in professional organizations
Biophysical Society 1978-present
Chair, Membrane Biophysics Subgroup, 1991
Councilor, 1991-1994
Awards Committee 2003-2006
American Physiological Society (past)
Society of General Physiologists
(Councilor 1990-1991)
Society for Neuroscience (past)

Review and service activities

Extramural

Prior:

Ad-hoc Member, Physiology Study Section, NIH, October, 1986; October, 1987
Member, Physiology Study Section, NIH, 1988-1991
Site Visitor, NIH Biomedical Center, Scripps Medical Institute, March, 1987
Editorial Board, Biophysical Journal, 1996-1999
Director of Molecular, Cellular and Integrative Neurosciences Program, Colorado State University, 1996-1999
Site Visitor, NIH PPG Study Section, April, 1997, April 2002

2015 to present:

Scientific Advisory Committee, Muscular Dystrophy Association 1994-2016
Manuscript Editor, Proc. Natl. Acad. Sci. 2012-present
Board of Reviewing Editors, eLife, 2020-present
NIH Study Section Ad Hoc (2015, 2017, 2020)

University/Department (2015-present)

Search committee for director of interdepartmental Pre-Award core (2015)
Departmental Space committee (2015-present)
Emily Sharpe Thesis committee (2014-2017)
Joint Physiology/Cardiology Cardiovascular search committee (2015)
Promotion and Tenure Committee, Cathy Proenza (Chair) (2015-2016)
Promotion and Tenure Committee, Gidon Felsen (2015-2016)
Promotion Committee, Dan Tollin (Chair) (2015-2016)
Progress towards tenure committee, Abby Person (2015-2016)
Advanced Light Microscopy Core Steering Committee (2015-present)
Departmental mid-term review committee for Anthony Peng (2019)
Departmental mid-term review committee for John Bankston (2019)
Comprehensive Exam Committee for Jonathan Tullis, Dept. of Pharmacology (2019)
School of Medicine Basic Sciences Post-tenure Review Committee
Member, All-campus Selection Committee for designation as a University of Colorado Distinguished Professor (2018, 2020)
Mentoring Committee for Ming-Feng Tsai (2020-present)
Postdoctoral Supervisor of Record for Chen Wei Tsai (2020-present)
Mentor of record, Robert Klipp's Cardiovascular Training Grant Appointment (2019-present)
Mentoring Committee for Philip Dittmer, Dept. of Pharmacology (2020-present)
Co-mentor for Melissa Wright, Dept. of Neurology (2018-present)

Teaching (2015-present)

Invited extramural lectures and presentations

"Does protein phosphorylation mediate the effects of cyclic AMP on membrane permeability? November 1977. Department of Physiology, Yale University School of Medicine.

"Anomalous behavior of K channel gating at low temperatures in rat skeletal muscle." November 1981. Division of Pharmacology, School of Medicine, University of California at San Diego.

"Quantitative analysis of K currents in mammalian muscle: what can a cold frog learn from a warm rat?" February 1982, Department of Physiology, Yale University School of Medicine.

"Excitation-contraction coupling in rat skeletal muscle: The role of charge movement." September 1983, Department of Physiology, University of Colorado Medical Center.

"Excitation-contraction coupling in skeletal muscle: The role of charge movement." February 1984, Department of Physiology and Biophysics, University of Washington School of Medicine.

"Longitudinal distribution of Na channels in skeletal muscle measured with a patch clamp method." December 1984, Department of Physiology, Rush Medical College.

"Patch clamp localization of Na channels in skeletal muscle." December 1984, Department of Pharmacological and Physiological Sciences, University of Chicago Medical School.

"Developmental and genetic regulation of Ca channels." May 1985, Department of Cellular and Molecular Biology, National Jewish Center for Immunology and Respiratory Medicine.

"Developmental and genetic regulation of Ca channels." June 1985, Department of Physiology and Biophysics, College of Veterinary Medicine, Colorado State University.

"E-C coupling in developing mammalian skeletal muscle." July 1985, Gordon Research Conference.

"Developmental and genetic regulation of Ca channels." November 1985, Department of Physiology and Biophysics, University of Illinois.

"Developmental and genetic regulation of Ca channels." February 1986, Department of Physiology, University of Minnesota School of Medicine.

"Developmental and genetic regulation of Ca channels." April 1986, Department of Neurobiology, Harvard Medical School.

"Developmental and genetic regulation of Ca channels." April 1986, Department of Physiology, University of Pennsylvania School of Medicine.

"Localization of sodium channels in skeletal muscle fibers." April 1986, FASEB symposium on "Biosynthesis and Localization of Ionic Channels", St. Louis, MO.

"Measuring ion channel distribution and density with the loose-patch clamp." June 1986, Lecture in course titled "Single Channel Methods: Expression and Recording", Cold Spring Harbor Laboratories.

"Developmental and genetic regulation of Ca channels." November 1986, Department of Physiology, University of Colorado Medical Center.

"Excitation-Contraction Coupling: insights from developing mammalian muscle." March 1987, APS symposium "Skeletal Muscle Physiology: An Update and New Directions", Washington, D.C.

Instructor in course titled "Molecular approaches to ion channel function and expression". June, 1987. Cold Spring Harbor Laboratories.

Instructor in course titled "Molecular approaches to ion channel function and expression". June, 1988. Cold Spring Harbor Laboratories.

"Expression of Ca channels in normal and genetically defective muscle". July, 1988, New York Academy of Sciences International Conference "Calcium channels: structure and function". London.

"The muscular dysgenesis mutation: molecular insights into skeletal muscle calcium channels and their role in excitation-contraction coupling." August, 1988, University of Toronto symposium "Cellular variations in Ca^{2+} signaling". Toronto.

"Mutation of a calcium channel gene: its effect on muscle function." September, 1988, Department of Physiology, University of Virginia.

"Mutation of a calcium channel gene: its effect on muscle function." November, 1988, Department of Cellular and Structural Biology, University of Colorado Medical Center.

"Functional expression of cloned DNA for the skeletal muscle calcium channel: one protein with two functions." Department of Physiology, Yale University, November, 1988.

"Mutation of a calcium channel gene: its effect on muscle function." November, 1988, Department of Physiology, University of Rochester School of Medicine.

"Mutation of a calcium channel gene: its effect on muscle function." November, 1988, Department of Physiology and Molecular Biophysics, Baylor College of Medicine.

"Rescue of dysgenic muscle by nuclear injection of cDNA encoding a single subunit of the L-type calcium channel." December, 1988, Department of Pharmacology, University of California, San Diego.

"Mutation of a calcium channel gene: its effect on muscle function." December, 1988, Department of Pharmacy, University of Colorado.

"Molecular genetic insights into excitation-contraction coupling." Biophysical Society symposium on "Ion Transport Across Biomembranes" February, 1989, Cincinnati, Ohio.

"What does a calcium channel mutant tell us about excitation-contraction coupling in skeletal muscle?" Biophysical Society Symposium on "Excitation-Contraction Coupling. February, 1989, Cincinnati, Ohio.

"Mutation of a calcium channel gene: insights into muscle development and function." March, 1989, Department of Physiology, University of Washington.

"What does a calcium channel mutant tell us about excitation-contraction coupling in skeletal muscle?" After dinner talk to the Cell Biology subgroup of the American Physiological Society, March, 1989, New Orleans.

"Molecular genetic insights into excitation-contraction coupling." April, 1989, Department of Biology, University of Illinois, Chicago.

"Mutation of a calcium channel gene: insights into muscle development and function." April, 1989, Department of Physiology, University of California, San Francisco.

"The Skeletal Muscle Dihydropyridine Receptor: Signaling Between External and Internal Membranes." May, 1989, Eighth Annual Stony Brook Symposium "Recent Advances in Molecular Neurobiology". S.U.N.Y., Stony Brook, New York.

Instructor in course titled "Molecular approaches to ion channel function and expression". June, 1989. Cold Spring Harbor Laboratories.

"Curing a muscle defect with DHP receptor expression." July, 1989, Gordon Research Conference on "Mechanisms of Membrane Transport".

Instructor in course titled "Molecular approaches to ion channels". August 1989. Hopkins Marine Station of Stanford University.

"Expression of Calcium Channel Genes in Skeletal Muscle." September, 1989, Albany Conference "Ion Channels: Molecular Structure and Genetics" sponsored by the Nucleic Acid Technologies Foundation, Rensselaerville, NY.

"Expression of calcium channels in nerve and muscle." October, 1989, FIDIA Research Foundation Neuroscience Satellite Symposium entitled "Neurotoxicity of Excitatory Amino Acids." Scottsdale, AZ.

"Mutation of a calcium channel gene: its effect on muscle function." November, 1989, Department of Physiology, University of Michigan.

"Molecular biological analysis of skeletal muscle excitation-contraction coupling". December, 1989, Department of Physiology and Biophysics, University of Texas Medical Branch, Galveston.

"Does ion channel expression regulate important aspects of motoneuron development?" February, 1990, Mahoney Neuroscience Institute, University of Pennsylvania.

"Expression of the cardiac dihydropyridine receptor produces cardiac-like E-C coupling in skeletal muscle." February, 1990, Department of Physiology, University of Pennsylvania.

"Expression of cloned DNA for the dihydropyridine receptor restores contractility to skeletal muscle of mice with the muscular dysgenesis mutation." February, 1990, Rockefeller University.

"Structure and Function of Skeletal Muscle Calcium Channels." April, 1990, UCLA Symposium "Receptor-Modulated Transport Systems." Keystone, Colorado.

"Restoration of E-C coupling in dysgenic muscle by expression of dihydropyridine receptor cDNAs." April, 1990, Department of Physiology and Biophysics, University of Cincinnati.

"Does ion channel expression govern critical events of motoneuronal maturation?" April, 1990, University of Illinois.

"Developmental regulation of ion channel expression in motoneurons." May, 1990, University of North Carolina.

"Expression of cloned calcium channels in dysgenic muscle." May, 1990, Department of Physiology, Emory University.

"Expression of cloned calcium channels restores excitation-contraction coupling in dysgenic muscle." May, 1990, Department of Cell Biology, Duke University.

"Expression of cloned skeletal and cardiac calcium channels." May, 1990, Symposium "Structure and Function of Ion Channels in the Heart and Vascular System" sponsored by the American Heart Association and the International Society for Heart Research. Chicago, Illinois.

Instructor in course titled "Molecular approaches to ion channels". August 1990. Hopkins Marine Station of Stanford University.

"Molecular genetic and physiological analysis of excitation-contraction coupling". November, 1990, Vollum Institute for Advanced Biomedical Research, Portland, OR.

"Molecular dissection of calcium channel function in excitation-contraction coupling". November, 1990, University of British Columbia.

"Molecular biology of cardiac cell activation". November, 1990, Postgraduate Seminar of the American Heart Association, Annual Meeting in Dallas, TX.

"Molecular genetic analysis of calcium channel function". March, 1991, Dept. of Physiology and Biophysics, University of Iowa.

"Molecular dissection of calcium channel function in excitation-contraction coupling". March 1991, Neural Science Program of the Division of Biology and Biomedical Sciences, Washington University, St. Louis.

"Molecular and genetic analysis of calcium channel proteins". April 1991. NATO Advanced Research Workshop “Intracelluar Regulation of Ion Channels, Il Ciocco, Italy.

Co-organizer of session entitled "DHP Receptors, Structure and Expression: Role in E-C Coupling". July, 1991, Gordon Research Conference on "Muscle: Excitation and Contraction Coupling".

"Molecular biology of DHP receptor and Charge Movement". July, 1991, American Physiological Society Conference "From Channels to Cross Bridges". Bar Harbor, Maine.

"Curing muscular dysgenesis with DHP receptor cDNAs". August, 1991, Gordon Research Conference on "Mechanisms of Membrane Transport".

Calcium channel function in skeletal muscle. September, 1991, Seventeenth EMBO Annual Symposium entitled "Molecular Mechanisms of Signal Transduction". Heidelberg, Germany.

"Excitation-contraction coupling: molecular biology and electrophysiology". October, 1991, at the International School of Biophysics, Erice, Italy.

"Genetic dissection of calcium channel function". November, 1991, Dept. of Neurobiology, Harvard University.

"Genetic dissection of calcium channel function". November, 1991, Dept. of Physiology, Cornell University.

"Genetic dissection of calcium channel function". November, 1991, Dept. of Physiology, Univ. of Pittsburg

"Dissection of muscle calcium channel function". December, 1991, Dept. of Biophysics, Univ. of Maryland.

"Genetic dissection of calcium channel function". December, 1991, Dept. of Neuroscience, Johns Hopkins University.

"Genetic dissection of calcium channels' function", December, 1991, "11th NIH Calcium Day: Calcium in stimulus-response coupling", NIH, Bethesda, MD.

"Structural determinants of calcium channel function". June, 1992, Gordon Research Conference on "Ion Channels", Tilton, NH.

"Expression of dihydropyridine receptor cDNAs in dysgenic muscle: a model system for studying calcium signaling and its pathophysiology". August, 1992, Eighth International Symposium on Calcium-Binding Proteins and Calcium Function in Health and Disease, Davos Switzerland.

"Structural basis of calcium channel function in skeletal muscle". September, 1992, A.A.A.S. meeting "Ion Channels in the Cardiovascular System", Manassas, VA.

"Molecular analysis of calcium channel function in skeletal muscle". November, 1992. American Physiological Society Conference "The Cellular and Molecular Biology of Membrane Transport". Orlando, FL.

"Dissection of calcium channel function in muscle". Department of Physiology and Biophysics, University of Miami, November, 1992.

"Expression of calcium channels in dysgenic muscle. January, 1993. New York Academy of Sciences conference "Molecular Basis of Ion Channels and Receptors Involved in Nerve Excitation, Synaptic Transmission and Muscle Contraction". Tokyo, Japan.

"Analysis of Ca^{++} channel structure and function in dysgenic muscle". March 1993, Gordon Conference on Molecular Pharmacology, Oxnard, CA.

"Expression of endogenous and cloned calcium channels in muscle." March, 1993, Keystone Symposium joint session "Developmental Biology of the Cardiovascular System" and "Molecular Biology of Neuronal Signal Transduction". Taos, NM.

"Structural analysis of dihydropyridine receptor function". April, 1993, Kyoto Symposia on Bioscience VII, "Molecular biology of neural and cellular signaling". Kyoto, Japan.

"Molecular dissection of calcium channel function in muscle". May, 1993, Dept. of Physiology, S.U.N.Y. Buffalo.

"Putting the hyphen back into excitation-contraction coupling". May, 1993, Dept. of Physiology. S.U.N.Y. Stony Brook.

"Structure-function studies of muscle and neuronal calcium channels." May, 1993, Division of Biology, California Institute of Technology.

"Structural basis for calcium channel function." December, 1993, Workshop on "Molecular Bases of Ion Channel Function", Madrid, Spain.

"Developmental expression and function of calcium channels in motoneurons. March, 1994, Department of Neuroscience, University of Tennessee, Memphis, Tennessee.

"Molecular genetic analysis of calcium channels in muscle". March 1994, Interdepartmental Graduate Program Lectureship, Vanderbilt University, Nashville, Tennessee.

"Structural determinants of calcium channel function". March 1994, Department of Physiology, University of Alabama, Birmingham, Alabama.

"Structural determinants of calcium channel function". April 1994, Department of Physiology and Biophysics, Baylor University.

Co-organizer of session entitled "DHP Receptors, Structure and Expression: Role in E-C Coupling". July, 1994, Gordon Research Conference on "Muscle: Excitation and Contraction Coupling".

"Structural determinants of calcium channel function in muscle". October, 1994, International Symposium: Frontiers in the Molecular and Cell Biology of Ion Channels, Cancun, Mexico.

"Structural basis for Ca^{2+} channel function". October, 1994. Bashour Distinguish Physiologist Lectureship Symposium, University of Texas Southwestern, Dallas.

"Molecular dissection of calcium channel function". October, 1994. Department of Physiology, Johns Hopkins University.

"Structure-function analysis of muscle calcium channels". March, 1995. Department of Physiology, University of Minnesota.

"Activation mechanism of muscle calcium channels". April, 1995, Department of Physiology, Stanford University.

"Calcium channels in motoneurons". July, 1995, Meeting of the International Brain Research Organization, Kyoto, Japan.

"Localization of regions critical for the function of the DHP receptor as voltage sensor and calcium channel". October, 1995, Max Planck Institute, Goettingen, Germany.

"Localization of regions critical for the function of the DHP receptor as voltage sensor and calcium channel". October, 1995, Symposium: Calcium Signaling in Muscle, Ulm, Germany.

"Localization of regions critical for the function of the DHP receptor as voltage sensor and calcium channel". October, 1995, Institute for Biochemical Pharmacology, Innsbruck, Austria.

"Excitation-contraction coupling in skeletal muscle: cross-talk between calcium channels." October, 1995, Vollum Institute and Department of Biochemistry, Oregon Health Sciences University.

"Excitation-contraction coupling in skeletal muscle: cross-talk between calcium channels." December, 1995, Cardiovascular Research Center, Medical College of Wisconsin.

"Function of mutant (mdg and HypoPP) L-type calcium channels". December, 1995. 37th ENMC International Workshop: Paramyotonia, Potassium-Aggravated Myotonias and Periodic Paralyses. Naarden, The Netherlands.

"DHP receptor function in normal and genetically diseased muscle". March, 1996. Eccles Institute of Human Genetics, University of Utah.

"Muscular Dysgenesis". April, 1996. Physiology InFocus Session: Genetic Diseases Affecting Ion Channels, FASEB annual meeting, Washington, DC.

"Excitation-contraction coupling in skeletal muscle: cross-talk between calcium channels", April, 1996. Boston Biomedical Research Institute.

"Ca^{2+} entry through T-type channels of nerve and muscle", October, 1996. Roche Pharmaceutical meeting on low voltage activated T-type calcium channels, Montpellier, France.

"Communication between calcium channels." Feb., 1997. Twenty-second SEIRIKEN conference, National Institute for Physiological Sciences, Okazaki, Japan.

Organized 1997 Biophysical Society Symposium "Structural determinants of calcium channel signaling". Presented talk entitled "Cross-talk between voltage-gated and intracellular-release calcium channels.

"Signaling between surface and intracellular calcium channels," March, 1997. Neuroscience Program, Michigan State University.

"Functional interaction between calcium channels". April, 1997. R.S. Dow Neuroscience Institute, Portland, OR.

"Functional coupling between plasmalemmal and intracellular calcium channels," May, 1997. University of Texas Southwestern Medical Center.

Organizer of session entitled "Calcium channel gating". June, 1997, Gordon Research Conference on "Muscle: Excitation and Contraction Coupling".

"Molecular dissection of EC coupling". July, 1997. Symposium on muscle, IUPS meeting, St. Petersburg, Russia.

"Molecular machinery of excitation-contraction coupling in striated muscle". September, 1997, Physiological Society Meeting, Bristol, England.

"Bi-directional signaling between L-type calcium channels and ryanodine receptors". September, 1997. Colloque Canaux Ioniques. Toulon, France.

"Nerve and muscle from mutant mice: insights into calcium channel function." November, 1997. Departments of Pharmacology and of Human Genetics, University of Michigan.

Genetic Dissection of Excitation-contraction coupling." November, 1997. Pennsylvania Muscle Institute. University of Pennsylvania.

"Signaling between calcium channels." November, 1997. George Raiziss Biochemical Rounds, Dept. of Biochemistry and Biophysics, University of Pennsylvania.

"Genetic dissection of signaling between calcium channels." March, 1998. Department of Physiology and Biophysics, University of Miami.

"Molecular physiology of excitation-contraction coupling." April, 1998 Department of Physiology and Biophysics, University of Indiana Medical School.

"Cross-talk between surface and intracellular calcium channels. April, 1998. Dept. of Anatomy and Cell Biology, University of Illinois, Chicago.

"Nerve and muscle diseases resulting from ion channel defects." May, 1998. Neuroscience Resarch Group, University of Calgary.

"Cross-talk between plasmalemmal and intracellular calcium channels." May, 1998. Plenary lecture, Joint Conference on Ion Channels of the Universities of Calgary and Edmonton.

"Excitation-contraction coupling in muscle: a tale of two calcium channels." September, 1998. Yosemite Lecture, University of Nevada, Reno.

“Functional interactions between calcium channels.” October, 1998. Dept. of Physiology, Oregon Health Sciences University, Portland OR.

"Disorders of excitation-contraction coupling: calcium channelopathies." October, 1998. American Society of Nephrology Basic Science/Forefronts Conference, titled Ion channelopathies: hereditary dysfunction of ion channels. Skytop, Pennsylvania.

"Excitation-contraction coupling in skeletal muscle." December, 1998. Department of Physiology, University of Arizona.

Organizer of session “Channel structure and function” and speaker (“Structures involved in activation of calcium channels”) at Gordon Conference on “Mechanisms of Membrane Transport.” June, 1999. Holderness, NH.

“Molecular dissection of the calcium channels controlling muscle contraction” and “Genetic diseases of ion channels”. Tenth annual Colorado Clinical Scholars Program, Aspen, Colorado, September, 1999.

"Excitation-contraction coupling: what have we really learned from recombinant calcium channels?" October, 1999. Department of Physiology and Biophysics. University of Washington.

Cardiac excitation-contraction coupling: a hair-trigger for calcium release? November, 1999. Thomas W. Smith Memorial Lecture, American Heart Association, Atlanta.

"Structural basis for excitation-contraction coupling." Neuroscience Program, Vanderbilt University, November, 1999.

"Excitation-contraction coupling in skeletal muscle: a mysterious molecular machine." Biophysics Program, Cornell University, April, 2000.

"Excitation-contraction coupling: what have we really learned from recombinant calcium channels?" April, 2000. NATO Conference on "Ca^{2+} Signaling and Cross-Talk", Il Ciocco, Italy.

"Bi-directional signaling between DHPRs and RyRs". June, 2000. Gordon Research Conference on "Muscle: Excitation and Contraction Coupling". New London, NH.

"Coupling between the Ryanodine Receptor and the Dihydropyridine Receptor". November, 2000. Invited Speaker in Cardiovascular Seminar entitled "Ca^{2+}-Dependent Mechanisms of Cardiac Pathophysiology", American Heart Association 73rd Scientific Sessions, New Orleans, USA

"Excitation-contraction coupling: what have we really learned from recombinant calcium channels?" November, 2000. Dept. of Cellular and Structural Biology, Univ. of Colorado Health Sciences Center, Denver

"Function and dysfunction of calcium channels in muscle and nerve". March 2001. 83rd International Boehringer Ingelheim Fonds Titisee Conference: "Ion Channels in Health and Disease". Titisee, Germany.

"Structure and function of calcium channels in skeletal muscle: the more we learn, the less we know". April 2001, Dept. of Biology, Utah State University.

"Can we identify the protein-protein interactions that are necessary and sufficient for excitation-contraction coupling in skeletal muscle?" August, 2001. Heron Island, Australia. I.U.P.S. Satellite Symposium on Excitation-Contraction Coupling.

"DHPR.com and RyR1.com: is the loop the link?" February, 2002. Symposium on "Coupling between surface and intracellular channels in muscle," Biophysical Society Meeting, San Francisco.

"Molecular interactions underlying excitation-contraction coupling." May, 2002. WWAMI Cell Physiology Conference. Jackson Hole, Wyoming.

"Searching for protein-protein interactions underlying excitation-contraction coupling in muscle". December 2002. Department of Biochemistry, Colorado State University.

"Shedding light on excitation-contraction coupling with fluorescent protein tags." May, 2003. Neuroscience Program, University of Colorado Health Sciences Center.

"DHPR + RyR: what couples this couple in excitation-contraction coupling?" February, 2003. Membrane Biophysics Subgroup Symposium. San Antonio. Texas.

Talk entitled "Use of FRET to investigate excitation-contraction coupling" and co-chair of session "DHPR and DHPR-RyR interactions." June, 2003. Gordon Conference on Muscle: Excitation/Contraction Coupling. New London, NH.

"FRETting about interactions between calcium channels in muscle." August, 2003. Department of Neuroscience, University of Calgary.

"Arrangement of proteins involved in excitation-contraction coupling as analyzed by FRET." September, 2003 International symnposium entitled "Calcium Release and Cellular Calcium Signaling Domains" Marbella, Chile.

"Interaction sites of the molecules participating in skeletal muscle excitation-contraction coupling." October 2003. Annual meeting of the Chilean Physiological Society, Villa Alemana, Chile.

"New approaches for analyzing the molecular topology underlying the coupling of plasma membrane and intracellular calcium channels in muscle." November, 2003. Department of Neurosciences. Case Western Reserve University.

"Analyzing the topological arrangement of proteins controlling calcium release in skeletal muscle." June, 2004. FASEB Summer Research Conference on "Calcium and Cell Function. Snowmass, Colorado

"Exploring the DHPR-RyR interface." September, 2004. European Muscle Conference. Elba, Italy.

"Multiple approaches for dissecting the arrangement of triad proteins critical for excitation-contraction coupling." September, 2004. Universita Gabriele d'Annunzio, Chieti Italy.

"New approaches for probing protein-protein interactions between calcium channels in muscle." November, 2004. Department of Molecular Physiology and Biophysics. Baylor University.

"Conformational coupling of DHPRs and RyRs: probing the topological interrelationship of these two proteins in skeletal muscle." February, 2005. Symposium entitled "Control and regulation of calcium signaling in E-C coupling." Annual meeting of the Biophysical Society, Long Beach, CA.

"Understanding the mechanism of excitation-contraction coupling in skeletal muscle: Where do we go from here?" April, 2005. Paul Horowicz Memorial Lecture, Department of Physiology and Pharmacology, University of Rochester, NY.

"From DHPR to RyR and back again: What lies along the way?" October, 2005. Joint meeting of the Australian Physiological Society and Australian Society for Biophysics. Canberra, Australia.

"Identifying sites of protein-protein interaction necessary for excitation-contraction coupling. May, 2006. Basel Symposium on Muscle, Basel, Switzerland.

Chair, "Muscle Disease" session, Gordon Conference on Muscle Excitation-Contraction Coupling. June 2006, Colby-Sawyer College, New Hampshire.

"EC coupling: lessons from skeletal muscle." Gordon Conference on Cardiac Regulatory Mechanisms. July, 2006, Colby-Sawyer College, New Hampshire.

"New strategies for dissecting the molecular mechanisms underlying excitation-contraction coupling." December, 2006, Department of Physiology & Neurobiology, University of Connecticut, Storrs.

"The molecular machine for excitation-contraction coupling: Probing the spatial interrelationships of its protein components." Membrane Biophysics Subgroup, Feb., 2007.

"Calcium entry into skeletal muscle." First International Calcium Channel Meeting, April, 2007, Moorea, French Polynesia.

"Small steps towards elucidating the functional achitecture of the ~4 megadalton ion channel complex that links excitation to muscle contraction." December, 2007, Gladstone Institute, University of California, San Francisco.

"Small steps towards elucidating the functional achitecture of the ~4 megadalton ion channel complex that links excitation to muscle contraction." January, 2008. Department of Biology, University of Denver.

"Molecular determinants of inactivation and facilitation of L-type calcium channels." September, 2008. Mexican Physiological Society Meeting, Mérida, Mexico.

"Slow L-Type Calcium Current in Skeletal Muscle: Is it Physiologically Irrelevant?" Andrew Somlyo Honorary Lecture. November, 2008. Pennsylvania Muscle Institute. University of Pennsylvania.

"The L-type calcium current: does it have a role in the normo- and patho-physiology of skeletal muscle?" January, 2009. Workshop on Physiology and Pathophysiology of Excitation-Contraction Coupling of Striated Muscles Dipartimento di Scienze Biomediche Sperimentali, Università degli Studi di Padova, Italy.

"Probing the functional architecture of the ~4 megadalton ion channel complex that links excitation to muscle contraction." February, 2009. Department of Cellular and Physiological Sciences. University of British Columbia.

"Diagnosing the mechanism of excitation-contraction coupling: molecular dissection appears to kill the patient." April, 2009. Neuroscience Program, Colorado State University.

"Bidirectional signaling between calcium channels of skeletal muscle requires multiple direct and indirect interactions." June, 2009. FASEB Summer Research Conferences: Ion Channel Regulation. Snowmass, Colorado.

"Bi-directional signaling between the DHPR and RyR1 in skeletal muscle and its alteration by disease-causing mutations." Joint meeting of the Society of General Physiology and the Physiological Society entitled "Muscle in Health and Disease." September, 2009.

"Bi-directional signaling between Ca^{2+} channels in skeletal muscle and its alteration by disease-causing mutations." October, 2009. Vollum Institute for Advanced Biomedical Research, Portland, OR.

"Voltage- and calcium-dependent inactivation of Cav1.2, but not of Cav2.1, is suppressed in skeletal muscle." Second International Calcium Channel Meeting, April, 2010, Placencia, Belize.

"The mechanism of excitation-contraction coupling in skeletal muscle: simple questions which have been difficult to answer." Molecular and Cellular Biophysics Symposium, April 2011, University of Denver.

"Skeletal muscle excitation-contraction coupling: what we know and what we don't know." November, 2011, IUPAB, Beijing, China.

"Skeletal muscle excitation-contraction coupling and its modification by mutations causing malignant hyperthermia" November, 2011, Tsinghua University, Beijing, China.

Keynote Speaker, Muscle Mini-Retreat, University of Maryland, April 2012. Lecture entitled "Excitation-contraction coupling and its modification by mutations causing malignant hyperthermia."

"Effects of MH Mutations on Function of the Dihydropyridine Receptor." May, 2012, European Malignant Hyperthermia Group, Annual Meeting, Leeds, England.

"Where is the voltage sensor for EC coupling: Cav1.1 mutations strongly altering L-type channel gating affect EC coupling modestly or not at all." Gordon Conference on Muscle Excitation-Contraction Coupling, June, 2012, Les Diablerets, Switzerland.

"Biophysical approaches for understanding the link between electrical excitation and muscle contraction." Society of Physics Students. Univ. of Colorado Denver. November, 2012.

"Skeletal muscle excitation-contraction coupling and its modification by mutations causing malignant hyperthermia." Division of Cardiology, Univ. of Colorado Denver School of Medicine. March, 2013.

"Glacial progress towards understanding the molecular mechanism of excitation-contraction coupling in skeletal muscle." Department of Molecular Physiology and Biophysics, University of Iowa, April, 2013.

"Reverse translational insights into calcium channel function in skeletal muscle." Department of Physiology, University of Pennsylvania, May, 2013.

"Excitation-contraction coupling in skeletal muscle: investigating a 4 megadalton ion channel complex." Totman Lecture, Department of Pharmacology Annual Retreat, University of Vermont, November, 2013.

"Effects of mutations causing human muscle disorders on excitation-contraction coupling. Department of Biology, Regis University, January, 2014.

"Can signaling interactions at muscle triad junctions be re-constituted in a non-muscle cell? Is there any good reason to try?" Department of Physiology, University of Illinois Chicago, April 2015.

"Attempting to construct skeletal muscle triad junctions in a non-muscle cell." Ramsey Lecture, Virginia Commonwealth University, Richmond, November 2015.

"Trying to identify the minimal set of proteins essential for excitation-contraction coupling in skeletal muscle. Wright State University, Ohio, April 2016.

"Calcium Channel Signaling Complexes in Muscle and Nerve." Molecular, Cellular and Integrative Neuroscience Program, Colorado State University, April 2017.

Invited speaker, Gordon Conference on Muscle Excitation-Contraction Coupling, June, 2017, Les Diablerets, Switzerland. Requested that I be replaced by Dr. Alex Polster.

Invited speaker, FASEB Conference on Ion Channel Regulation, Steamboat, Colorado, July, 2017. Requested that I be replaced by Dr. Stefano Perni.

"Calcium channel signaling complexes in muscle and nerve." Third European Calcium Channel Conference, Alpbach, Austria, May 2018.

"Molecular assemblies underlying calcium signaling in muscle and nerve." Department of Physiology and Cellular Biophysics, Columbia University, December 2018.

"Dissecting the Molecular Interactions Underlying EC-Coupling Calcium Release in Skeletal Muscle." Plenary Lecture, Gordon Conference on Muscle Excitation-Contraction Coupling, Il Ciocco, Italy, May 2019.

"Calcium Channel Signaling Complexes in Muscle and Nerve." Keynote Lecture, FASEB Conference on Ion Channel Regulation (Online), June 2021.

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Danielle Heebner, Intern

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Teaching Activities

Medical School: Molecules to Medicine: Calcium Signaling, Ion Channels	1 hours
Medical School: CVPR Block: Cardiac Action Potential, Cardiac EC Coupling/Regulation, Inherited Arrhythmias	3 hours
NRSC7600: Cellular and Medical Neuroscience:	10 hours