Donald M. Bers, Ph.D.

Research/Academic Interests

Dr. Bers has been productive in studies of cardiac Ca signaling, with extensive publications (>470 papers, h-index = 115), an influential single author book Excitation-Contraction Coupling and Cardiac Contractile Force, and continuous NIH grant funding for >35 years. He has mentored >100 Ph.D. students, postdocs and junior faculty, many of whom have gone on to highly successful independent careers. He has an extensive network of productive collaborations with labs throughout the U.S. and internationally, and has been an effective leader of a large research groups. His scientific work has focused on Ca and Na transport, signaling and electrophysiology in the heart, including fundamental characterization of ion transporters and channels, electrophysiology, E-C coupling, myofilament activation, mitochondrial Ca/energetics, GPCR signaling, systolic dysfunction and arrhythmogenesis (e.g. in hypertrophy and heart failure), always with an eye toward both integrative aspects of cardiac function/clinical relevance and drilling down to more fundamental quantitative mechanistic understanding and the development of computational models.

Title

Distinguished Professor, Department of Pharmacology
Chair, Department of Pharmacology
Joseph Silva Endowed Chair for Cardiovascular Research, School of Medicine

Specialty

Physiology, Pharmacology

Department

Pharmacology

Division

Pharmacology

Address/Phone

Genome and Biomedical Sciences Building, Genome & Biomedical Sciences Facility, 451 Health Sciences Dr Davis, CA 95616
Phone: 530-752-2884

Additional Phone

Clinic Phone: 530-754-7390
Clinic Phone: 530-752-6517
Clinic Fax: 530-752-7710

Email

dmbers@ucdavis.edu

Education

Ph.D., Physiology, UCLA, Los Angeles CA 1978
B.A., Biology, University of Colorado, Boulder CO 1974

Fellowships

Physiology/Cardiac Postdoc, UCLA, Los Angeles CA 1978-1979
Physiology/Cardiac Postdoc, University of Edinburgh, Edinburgh, Scotland 1979-1980

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Professional Memberships

American Association for the Advancement of Science
American Heart Association Council on Basic Science
American Physiological Society
American Society for Biochemistry and Molecular Biology
Biophysical Society
Cardiac Muscle Society
Heart Rhythm Society
International Society for Heart Research, Fellow

Honors and Awards

NIH-NHLBI Board of Scientific Councilors (NHLBI Intramural Council) (2017-22, Chair 20-22)
Newton-Abraham Professor, Oxford University, Department of Physiology, Anat. & Genet., Oxford UK, 2019
Peter Harris Distinguished Scientist Award, International Society Heart Research, Buenos Aires, Argentina, 2016
ER Smith Lectureship in Cardiovascular Research Award, Libin CV Institute, Calgary, Canada, 2015
Sir John Eccles prestigious speaker, Department of Physiology, University of Otago, NZ, 2014

Select Recent Publications

To view the PubMed list for Dr. Bers, click here

Voglhuber J, Holzer M, Radulovic S, Thai PN, Djalinac N, Matzer I, Wallner M, Bugger H, Zirlik A, Leitinger G, Dedkova EN, Bers DM, Ljubojevic-Holzer S. Functional remodeling of perinuclear mitochondria alters nucleoplasmic Ca2+ signaling in heart failure. Philos Trans R Soc B Biol Sci. 2022 Jun 10;118(Suppl_1):cvac066.027. doi:10.1093/cvr/cvac066.027.

Hegyi B, Mira Hernandez J, Shen EY, Habibi NR, Bossuyt J, Bers DM. Empagliflozin Reverses Late Na+ Current Enhancement and Cardiomyocyte Proarrhythmia in a Translational Murine Model of Heart Failure With Preserved Ejection Fraction. Circulation. 2022 Mar 29;145(13):1029-1031. doi:10.1161/CIRCULATIONAHA.121.057237. Epub 2022 Mar 28. PMID:35344407.

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Carlson CR, Aronsen JM, Bergan-Dahl A, Moutty MC, Lunde M, Lunde PK, Jarstadmarken H, Wanichawan P, Pereira L, Kolstad TRS, Dalhus B, Subramanian H, Hille S, Christensen G, Müller OJ, Nikolaev V, Bers DM, Sjaastad I, Shen X, Louch WE, Klussmann E, Sejersted OM. AKAP18 Anchors and Regulates CaMKII Activity at Phospholamban-SERCA2 and RYR. Circ Res. 2022 Jan 7;130(1):27-44. doi:10.1161/CIRCRESAHA.120.317976. Epub 2021 Nov 24. PMID:34814703.

Zhang J, Singh DP, Ko CY, Nikolaienko R, Wong King Yuen SM, Schwarz JA, Treinen LM, Tung CC, Rožman K, Svensson B, Aldrich CC, Zima AV, Thomas DD, Bers DM, Launikonis BS, Van Petegem F, Cornea RL. Cardiac ryanodine receptor N-terminal region biosensors identify novel inhibitors via FRET-based high-throughput screening. J Biol Chem. 2022 Jan;298(1):101412. doi: 10.1016/j.jbc.2021.101412. Epub 2021 Nov 16. PMID:34793835.

Lyu Y, Thai PN, Ren L, Timofeyev V, Jian Z, Park S, Ginsburg KS, Overton J, Bossuyt J, Bers DM, Yamoah EN, Chen-Izu Y, Chiamvimonvat N, Zhang XD. Beat-to-beat dynamic regulation of intracellular pH in cardiomyocytes. iScience. 2021 Dec 13;25(1):103624. doi:10.1016/j.isci. 2021.103624. PMID:35005560.

Morotti S, Liu C, Hegyi B, Ni H, Fogli Iseppe A, Wang L, Pritoni M, Ripplinger CM, Bers DM, Edwards AG, Grandi E. Quantitative cross-species translators of cardiac myocyte electrophysiology: Model training, experimental validation, and applications. Sci Adv. 2021 Nov 19;7(47):eabg0927. doi:10.1126/sciadv.abg0927. Epub 2021 Nov 17. PMID:34788089.

Hegyi B, Pölönen RP, Hellgren KT, Ko CY, Ginsburg KS, Bossuyt J, Mercola M, Bers DM. Cardiomyocyte Na+ and Ca2+ mishandling drives vicious cycle involving CaMKII, ROS, and ryanodine receptors. Basic Res Cardiol. 2021 Oct 14;116(1):58. doi:10.1007/s00395-021-00900-9. PMID:34648073.

Wang Y, Zhao M, Shi Q, Xu B, Zhu C, Li M, Mir V, Bers DM, Xiang YK. Monoamine Oxidases

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Desensitize Intracellular 1AR Signaling in Heart Failure. Circ Res. 2021 Oct 29;129(10):965-967. doi:10.1161/CIRCRESAHA.121.319546. Epub 2021 Sep 17. PMID:34530626.

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