BIOGRAPHICAL SKETCH

Provide the following information for the key personnel in the order listed for Form Page 2.
Follow the sample format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME	POSITION TITLE
Baldwin, Ann L.	Professor

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	YEAR(s)	FIELD OF STUDY
University of Bristol, U.K	B.S.	1975	Physics, Honors
University of London, U.K., Middlesex Hosp.Med Sch.	M.S.	1976	Radiation Physics
University of London, Imperial College, U.K.	Ph.D.	1979	Physiology

A. Professional Experience

1979-1981	Postdoctoral Research Assistant, Imperial College, London
1981-1983	Research Associate in Physiology, Columbia University, New York
1983-1985	Research Associate in Physiology, University of Arizona
1986-1991	Research Assistant Professor, University of Arizona
1991-1994	Assistant Professor, University of Arizona
1994-2000	Associate Professor, University of Arizona
2000-2008	Professor, University of Arizona
2008-2015	Research Professor, University of Arizona
2015-present	Professor Scholar, University of Arizona

Honors and Awards:

1975	Graduation with honors in Physics
1975-76	Medical Research Council Scholarship
1976-79	Science Research Council Scholarship
1984	Young Investigator Travel Award to attend Third World Congress for Microcirculation
1986	Lamport Award of the Cardiovascular Section of the American Physiological Society
1986	Travel Award from European Society for Microcirculation to attend 14th Int'l Conf. Sweden
1987	Robert S. Flinn Merit Award for Junior Investigators, AHA, Arizona Affiliate
1989	Travel Award from American Physiological to attend IUPS Conf. in Helsinki
1989	Whitaker Foundation Research Award
1992	Foreign Travel Grant Prog. to attend meeting of European Soc. For Microcirculation, London
1993	Fellow of Cardiovascular Section of America Physiological Society
1996-2000	Member of NIH Study Section, Cardiovascular and Renal
2000-2004	Treasurer of the Microcirculation Society
2001:	Frontiers in Physiology Summer Research Teacher Host Investigator Awardee
2005:	Benjamin Meaker Visiting Fellowship for University of Bristol, UK
2018:	Humanitarian Heart Award. Institute of HeartMath

2019: Invited to University of Arizona Esteemed Faculty Party on March 12th by President Robert Robbins

2021: 2020 Outstanding Reviewer Award for Behavioral Sciences

B. BOOKS

"Reiki in Clinical Practice. A Science-Based Guide" by Ann Baldwin, published by Handspring Publishing, UK, February 2020. ISBN13: 978-1-912085-36-1. Extent: 196 pages. Illustrations: about 90 drawings and photographs.

"The Vagus Nerve in Therapeutic Practice. Working with Clients to Manage Stress and Enhance Mind-Body Function" by Ann Baldwin, published by Handspring Publishing, UK, November 2023. ISBN13: 978-1-913426-55-2.

C. Selected peer-reviewed publications: (selected from 124)

Baldwin AL, CP Winlove and CG Caro. Effects of perfusate composition on binding of Ruthenium red and gold colloid to glycocalyx of rabbit aortic endothelium. J. Histochem. Cytochem. 32(3):259-266, 1984.

Baldwin AL and S Chien. Effect of plasma proteins on endothelial binding and vesicle loading of anionic ferritin in the rabbit aorta. Arteriosclerosis 5(5):451-458, 1985.

Baldwin AL and S Chien. Effect of dextran 40 on endothelial binding and vesicle loading of ferritin in the rabbit aorta. Arteriosclerosis 8(2):140-146, 1988.

Baldwin AL and RW Gore. Simultaneous measurement of capillary compliance and hydraulic conductance. Microvasc. Res. 38(1):1-22, 1989.

Simon BR, AL Baldwin, Y Yuan and LM Wilson. Poroelastic material property determination for rabbit aortas. Advances in Bioengineering, BED-Vol. 17:37-38, ASME-WAM, 1990.

Baldwin AL, N Wu and D Stein. Endothelial surface charge of intestinal mucosal capillaries and its modulation by dextran. Microvasc. Res. 42(2):160-178, 1991.

Baldwin AL, LM Wilson and BR Simon. Effect of pressure on aortic hydraulic conductance. Arteriosclerosis and Thrombosis 12:163-171, 1992.

Wu NZ and AL Baldwin. Possible mechanisms for permeability escape of venules during histamine application. Amer. J. Physiol. (Heart and Circ. Physiol.) 262(4):H1238-H1247, 1992.

Baldwin AL and LM Wilson. Endothelium increases medial hydraulic conductance of aorta, possibly by release of EDRF. Amer. J. Physiol. (Heart and Circ. Physiol.), 264:H26-H32, 1993.

Baldwin AL and LM Wilson. Stationary red cells induce a negative charge on mucosal capillary endothelium. Amer. J. Physiol. 266 (Gastrointest. Liver Physiol. 29):G685-G694, 1994.

Thurston G and AL Baldwin. The endothelial actin cytoskeleton in the microvasculature of the rat mesentery. Amer. J. Physiol. 266 (Heart and Circ. Physiol. 35):H1896-H1909, 1994.

Baldwin AL and G Thurston. Changes in endothelial actin cytoskeleton with time after histamine treatment. Amer. J. Physiol. 269(Heart and Circ. Physiol. 38):H1528-H1537, 1995

Baldwin AL, LM Wilson, Gradus-Pizlo I, Wilensky R. and March K. Effect of atherosclerosis on transmural convection and arterial ultrastructure: implications for local intravascular drug delivery. Arteriosclerosis, Thrombosis and Vascular Biology 17:3365-3375, 1997.

Baldwin AL, G Thurston and H A1 Naemi. Inhibition of nitric oxide increases venular permeability and alters endothelial actin cytoskeleton. Amer. J. Physiol. 274: H1776-H1784, 1998.

Baldwin AL, LM Wilson and JE Valeski. Ultrastructural effects of intravascularly-injected polyethylene glycol-hemoglobinin intestinal mucosa. Amer. J. Physiol. 275:H615-H625, 1998.

Wilson LM and AL Baldwin. Environmental stress causes mast cell degranulation, endothelial and epithelial changes, and edema in the rat intestinal mucosa. Microcirculation 6(3):189-198, 1999.

Baldwin AL , Modified hemoglobins produce venular endothelial gaps and albumin leakage in the rat mesentery. Amer. J. Physiol. 277: H650-H659, 1999.

Al Naemi H and AL Baldwin. Nitric Oxide: role in venular permeability recovery after histamine challenge. Amer. J. Physiol. 277:H2010-H2016, 1999.

Alaya-Fierro, AL Baldwin, LM Wilson, JE Valeski and DE Carter. Structural alterations in the rat kidney after acute arsine exposure. Lab. Invest. 80(1):1-10, 2000.

Baldwin AL. A brief history of capillaries and their apparently strange behavior. Clinical and Experimental Pharmacology and Physiology 27:821-824, 2000.

Baldwin AL and G Thurston. Mechanics of endothelial cell architecture and vascular permeability. Critical Reviews in Biomedical Engineering. 29(2):247-278, 2001.

Baldwin AL and Wiley, E. Selenium reduces hemoglobin-induced epithelial damage to intestinal mucosa. Artificial Cells, Blood Substitutes & Immobilization Technology 30(1):1-22, 2002.

Baldwin AL, EB Wiley, AG Summers and AI Alayash. Sodium selenite reduces hemoglobin-induced venular leakage in the rat mesentery. Amer. J. Physiol. 284:H81-H91, 2003.

Jain M and AL Baldwin. Are laboratory animals stressed by their housing environment and are investigators aware that stress can affect physiological data? Med. Hypoth.. 60(2):284-289, 2003.

Baldwin AL, EB Wiley and AI Alayash. Differential effects of sodium selenite in reducing tissue damage caused by three hemoglobin-based oxygen carriers. Journal of Applied Physiology 96:893-903, 2004.

Ginsburg MI and AL Baldwin. Disodium cromoglycate stabilizes mast cell degranulation while reducing the number of hemoglobin-induced microvascular leaks in rat mesentery. Amer. J. Physiol. 286:H1750-H1756, 2004.

Alberding JP, AL Baldwin, JK Barton and EB Wiley. Onset of pulsatile pressure causes transiently increased filtration through artery wall. Amer. J. Physiol. 286:H1827-H1835, 2004.

Baldwin AL. Blood substitutes and redox responses in the microcirculation. Antioxidants and Redox Signaling 6(6):1019-1030, 2005.

Baldwin AL, L DeMaria and EB Wiley. Effects of phosphorothioate oligodeoxynucleotide on hemoglobin-induced damage to intestinal mucosa. Art. Cells, Blood Substitutes and Biotechnology 33:1-25, 2005.

Alberding JP, AL Baldwin, JK Barton and E Wiley. Effects of pulsation frequency and endothelial integrity on enhanced arterial transmural filtration produced by pulsatile pressure. Amer. J. Physiol. 289:H931-H937, 2005.

Baldwin AL, RL Primeau and WE Johnson. Effect of noise on the morphology of the intestinal mucosa in laboratory rats. J. Amer. Assoc. for Laboratory Animal Science 45(1):74-82, 2006.

Baldwin AL and GE Schwartz. Personal interaction with a Reiki practitioner decreases noise-induced microvascular damage in an animal model. The Journal of Alternative and Complementary Medicine, 12(1): 15-22, 2006.

Burke TK, Teng X, Patel RP and Baldwin AL. Effects of S-nitrosation on hemoglobin-induced microvascular damage. Antioxidants and Redox Signaling 8(7-8):1093-1101, 2006.

Burwell AK and Baldwin AL. Do audible and ultrasonic sounds of intensities common in animal facilities affect the autonomic nervous system of rodents? Journal of Applied Animal Welfare Science, 9(3): 179-200, 2006.

Baldwin AL, Schwartz GE and Hopp DH. Are investigators aware of environmental noise in animal facilities and that such noise may affect experimental data? J. Amer. Assoc. for Laboratory Animal Science, 46(1):45-51, 2007

Baldwin AL and Bell IR. Effect of noise on microvascular integrity in laboratory rats. J. Amer. Assoc. for Laboratory Animal Science, 46(1):58-65, 2007.

Goriely AR, Baldwin AL and Secomb TW. Transient diffusion of albumin in aortic walls: Effects of binding to medial elastin layers. American Journal of Physiology: Heart and Circulatory Physiology, 292: H2195-H2201, 2007.

Cudilo E, Al Naemi H, Marmorstein L and Baldwin AL. Knockout mice: is it just genetics? Effects of enrichment on fibulin-$4^{+/-}$ mice. PLos ONE, 2(2): e229, 2007.

Baldwin AL. Effects of noise on rodent physiology. Journal of Comparative Psychology, 20(2-3): 134-144, 2007.

Wright AJ, Soto NA, Baldwin AL, Bateson, M, Beale CM, Clark C, Deak T, Edwards EF, Fernandez, A, Godinho A, Martineau D, Romero LM, Weilgart, LS, Wintle BA, Notarbartolo-di-Sciara, Martin V. Anthropogenic noise as a stressor in animals: a multidisciplinary perspective. Journal of Comparative Psychology, 20(2-3): 250-273, 2007.

Wright AJ, Soto NA, Baldwin AL, Bateson, M, Beale CM, Clark C, Deak T, Edwards EF, Fernandez, A, Godinho A, Martineau D, Romero LM, Weilgart, LS, Wintle BA, Notarbartolo-di-Sciara, Martin V. Do marine mammals experience stress related to anthropogenic noise? Journal of Comparative Psychology, 20(2-3): 274-316, 2007.

Baldwin AL. The stressful life of laboratory animals. Project Syndicate, 2007. (http://www.project-syndicate.org/commentary/baldwin/) Translated into Spanish,, Russian, French, German, Czech, Chinese and Arabic.

Alberding JP, Heimark RL and Baldwin AL. Effects of transient pressure gradient on endothelial F-actin and beta-catenin. Journal of Medical and Biological Sciences, 2(1):1-11, 2008 (http://www.scientificjournals.org/journals2008/articles/1286.pdf)

Baldwin AL, Wagers C and Schwartz GE. Reiki improves heart rate homeostasis in laboratory rats. The Journal of Alternative and Complementary Medicine, 14(4): 417-422, 2008

Baldwin AL. Reiki – what animals can tell us. International Therapist 82(May/June): 14-16, 2008.

Baldwin, AL. Stress in Laboratory Animals, in: "Encyclopedia of Animal Rights and Animal Welfare", second edition, ed. Marc Bekoff, ABC-CLIO, 2009.

Brauner AE, Kurjiaka DT, Ibragimov A and Baldwin AL. Impact of cage size and enrichment (tube and shelf) on heart rate variability in rats. Scandinavian journal of laboratory animal science 37(3): 141-146, 2010.

Baldwin AL, Vitale A, Brownell E, Kearns M, Rand W. The Touchstone Process: an ongoing critical evaluation of Reiki in the scientific literature. Holistic Nursing Practice, 24 (5): 260-276, 2010.

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Baldwin AL. Scientific evidence for beneficial effects of Reiki. Reiki News Magazine, Fall: 29-31, 2011.

Gehrke EK, Baldwin AL and Schiltz PM. Heart rate variability in horses engaged in equine-assisted activities. Journal of Equine Veterinary Science, 31: 78-84. 2011.

Dolgoff-Kaspar R, Baldwin A, Johnson MS, Edling N and Sethi GK. Effect of laughter therapy on mood and heart rate variability in patients awaiting organ transplantation: a pilot study. Alternative Therapies in Health and Medicine, 18(5): 61-66. 2012.

Baldwin AL and Schwartz GE. Physiological changes in energy healers during self-practice. Complementary Therapies in Medicine, 20:299-305, 2012.

Baldwin AL. Does Lack of Enrichment Invalidate Scientific Data Obtained from Rodents by Compromising their Welfare? Between the Species, 15(1); 2-23, 2012.

Baldwin AL. How Do Plants in Hospital Waiting Rooms Reduce Patient Stress? Journal of Alternative and Complementary Medicine, 18(4): 309-310, 2012.

Hammerschlag R, Jain S, Baldwin AL, Gronowicz GA, Lutgendorf SK, Oschman JL, Yount, GL. Biofield Research: A Roundtable Discussion of Scientific and Methodological Issues. Journal of Alternative and Complementary Medicine, 18(12): 1081-1086, 2012.

Baldwin AL, Rand W and Schwartz GE. Practicing Reiki does not routinely appear to produce high intensity electromagnetic fields from the heart and hands of Reiki practitioners. Journal of Alternative and Complementary Medicine, 19(6): 518 – 526, 2013.

Baldwin AL, Fullmer K and Schwartz GE. Comparison of Physical Therapy with Energy Healing for Improving Range of Motion in Subjects with Restricted Shoulder Mobility. Evidence Based Complementary and Alternative Medicine, 2013: Article ID 329731, 9 pages, 2013.

Chiasson AM, Baldwin AL. Mclaughlin C, Cook P and Sethi G. The effect of live, spontaneous harp music on patients in the intensive care unit. Evidence Based Complementary and Alternative Medicine, 2013: Article ID 428731, 6 pages, 2013.

Baldwin AL and Hammerschlag R. Biofield Therapies: a Systematic Review of Physiological Effects on Practitioners During Healing. Explore: The Journal of Science and Healing, 10(3): 150-161, 2014.

Connor MH, Baldwin AL and Eickhoff J. Effects of energy enhancer patches on cortisol production, peripheral circulation and psychological measures: a pilot study. Advances in Mind Body Medicine, 29(1): 1-17, 2015.

Tay K and Baldwin AL. Effects of breathing practice in vinyasa yoga on heart rate variability in university students: a pilot study. Yoga & Physical Therapy, 5(4): 214. doi:10.4172/2157-˘7595.1000214. 2015.

Hammerschlag R and Baldwin AL. Human subject effects on torsion pendulum oscillations: further evidence of mediation by convection currents. Explore: The Journal of Science & Healing, 12(6): 436-439, 2016.

Hammerschlag R, Baldwin AL and Schwartz GE. Response to letter to the editor, Hansen N. Human subject effects on torsion pendulum oscillations: importance of establishing the contribution of thermal convection air currents. Explore: The Journal of Science & Healing, DOI 10.1016/j.explore.2016.11.002. 2016.

Baldwin AL, Vitale A, Brownell E and Rand W. Effects of Reiki on Pain, Anxiety and Blood Pressure in Knee Replacement Patients. Holistic Nursing Practice, 31(2): 80-89, 2017.

Baldwin AL and Trent NL. An integrative review of scientific evidence for Reconnective Healing. Journal of Alternative and Complementary Medicine, 23(8): 590-598, 2017.

Baldwin AL, Rector BK and Alden AC. Effects of a Form of Equine-Facilitated Learning on Heart Rate Variability, Immune Function, and Self-Esteem in Older Adults. People and Animals: The International Journal of Research and Practice, 1(1): Article 5, 2018.

Baldwin AL and Chea I. Effects of aromatherapy on equine heart rate variability and salivary cortisol concentration. Journal of Equine Veterinary Science, 68: 46-50, 2018.

Baldwin AL. Case Report. Control of heart rate variability to cope with stress and pain after colectomy. Psychophysiology and Biofeedback, 46(3): 60-64, 2018.

Dyer NL, Baldwin A and Rand W. A Large-Scale Effectiveness Trial of Reiki for Physical and Psychological Health. Journal of Alternative and Complementary Medicine, 25 (12), December 2019. http://doi.org/10.1089/acm.2019.0022

Irwin JB, Baldwin AL and Stenberg VI. General theory of inflammation: patient self-administration of hydrocortisone safely achieves superior control for hydrocortisone-responding disorders by matching dosage with symptom intensity. Journal of Inflammation Research, 12:161-166, 2019.

Baldwin AL, Rector R and Alden AC. Physiological and behavioral benefits for people and horses during guided interactions at an assisted living residence. Behavioral Sciences, 11:129, 2021. https://doi.org/10.3390/bs11100129

Dyer NL, Akleema A, Baldwin AL, Kowalski S and Rand WL. An evaluation of the subjective experience of receiving Reiki: qualitative results from a pragmatic effectiveness study. Journal of Integrative and Complementary Medicine, 28 (9): 739-748, 2022. http://doi.org/10.1089/jicm.2022.0477

Baldwin AL, Walters L, Rector BK, and Alden AC. Effects of equine interaction on mutual autonomic nervous system responses and interoception in a learning program for older adults. People and Animals: The International Journal of Research and Practice, Vol. 6 : Iss. 1, Article 3, 2023. Available at: https://docs.lib.purdue.edu/paij/vol6/iss1/3

Dyer NL, Baldwin AL, Pharo R, and Gray F. Evaluation of a distance Reiki program for frontline healthcare workers' health-related quality of life during the COVID-19 pandemic. Global Advances in Integrative Medicine and Health, 2023,12. doi:10.1177/27536130231187368

Hammerschlag R, Sprengel M and Baldwin AL. Biofield Therapies: Guidelines for Reporting Clinical Trials. Global Advances in Integrative Medicine and Health, (in press).