Brian P. Delisle
Assistant Professor, Department of Physiology
University of Kentucky, Lexington, KY

I. GENERAL INFORMATION

Address: Department of Physiology
University of Kentucky
Albert B. Chandler Medical Center
800 Rose Street MS-508
Lexington, KY 40536-0298
(859) 323-2797 (office)
(859) 323-5101 (lab)
(859) 323-1070 (fax)

II. EDUCATION

1992-1996	Biology B.S. with honors, University of Kentucky Lexington, Kentucky
1997-2001	Physiology and Biophysics Ph.D. University of Kentucky Lexington, Kentucky

III. ACADEMIC APPOINTMENTS & PROFESSIONAL EXPERIENCE

2008-Present	Assistant Professor Department of Physiology University of Kentucky Lexington, KY
2005-2007	Assistant Scientist Medicine and Physiology University of Wisconsin Madison, WI
2001-2005	Post-doctoral Fellow Medicine and Physiology University of Wisconsin Madison, WI
1997-2001	Graduate Research Physiology and Biophysics University of Kentucky Lexington, KY
1997	Senior lab technician Physiology University of Kentucky

Lexington, KY

1995-1997 Undergraduate Research
Physiology
University of Kentucky
Lexington, KY

IV. AWARDS & HONORS

1995-1996	University of Kentucky, Research and Creativity Grant
1996	Howard Hughes Medical Institute, Undergraduate Research Grant
1996	Oswald Research and Creativity Award, University of Kentucky
1999-2000	University of Kentucky, Academic Fellowship Award
2001-2002	Cardiovascular Research Training Grant-Postdoctoral Fellowship Award
2002-2004	American Heart Association, National Postdoctoral Fellowship Award (declined in order to accept the National Research Service Award)
2002-2005	National Heart, Lung and Blood Institute, Ruth L. Kirschstein National Research Service Award for Individual Postdoctoral Fellows
2005-2008	American Heart Association, Greater Midwest Scientist Development Grant (declined in order to accept the National Scientist Development Grant)
2005-2009	American Heart Association, National Scientist Development Grant
2006	Dave MaClain Research Award, American Heart Association, University of Wisconsin
2008-2013	National Heart Lung and Blood Institute, Research Project Grant (R01)
2010	Flexner Master Educator Award-Outstanding Teaching contribution/ Mentorship
2011	Department of Physiology, University of Kentucky Holsinger Award for Teaching

V. PROFESSIONAL ACTIVITY & PUBLIC SERVICE

REVIEWER (GRANTING AGENCIES)
Veteran Affairs Merit Review Cardiology Study Section, Spring 2007
Veteran Affairs Merit Review Cardiology Study Section, Fall 2007
American Heart Association 2008 Spring Cell Transport Physiology and Metabolism
Veteran Affairs Merit Review Cardiology Study Section, Spring 2008
American Heart Association 2010 Spring Cell Transport Physiology and Metabolism
American Heart Association 2011 Spring Cell Transport Physiology and Metabolism
American Heart Association 2012 Spring Cell Transport Physiology and Metabolism
American Heart Association 2012 Fall Cell Transport Physiology and Metabolism
American Heart Association 2012 Fall Electrophysiology-Basic/Translational
American Heart Association 2013 Spring Electrophysiology-Basic/Translational

REVIEWER (ACADEMIC JOURNALS)
American Journal of Physiology: Heart and Circulatory Physiology
Circulation, Circulation Research, Circulation: Arrhythmia and Electrophysiology, FASEB, Journal of General Physiology, Journal of Molecular and Cellular Cardiology, Journal of Physiology, Molecular Pharmacology, Antioxidants and Redox Signaling, Journal of Biological

Chemistry, Heart Rhythm, Clinical and Experimental Pharmacology and Physiology, Experimental Biology and Medicine, Biochemical Journal

PROFESSIONAL SOCIETY MEMBERSHIPS
American Heart Association
Biophysical Society
American Physiological Society

VI. SPEAKING ENGAGEMENTS

INVITED SEMINAR SPEAKER
Tokyo Medical and Dental University, Tokyo Japan, 2005
The 28th International Society for Heart Research, Toronto Canada, 2006
Loyola University (Maywood), Department of Physiology, 2007
University of Kentucky Department of Physiology, 2007
University of Wisconsin Cardiovascular Medicine Grand Rounds (this talk is available for viewing on the internet at http://videos.med.wisc.edu/videoInfo.php?videoid=267), 2007
University of Wisconsin Cardiovascular Research Center, 2007
University of Kentucky Cardiovascular Research Center, 2008
University of Kentucky Center for Biomedical Engineering, 2010
Shiga University of Medical Sciences, Otsu, Japan, 2011
University of Rochester Medical Center, Department of Cardiology, 2011
University of Kentucky, Cardiovascular Grand Rounds, 2011
Shiga University of Medical Sciences, Otsu, Japan 2012
Kentucky Physiological Society, Lexington, KY 2013
University of Wisconsin, Ion Channel Seminar Series, Madison, WI 2013

INVITED CHAIRMAN/PANELIST
The 27th annual Heart Rhythm Society Meeting, Boston, MA, 2006
American Heart Association Scientific Sessions, Orlando, FL, 2007
Biophysical Society Early Careers Committee, Long Beach, CA, 2008
Biophysical Society, Boston, MA, 2009
American Heart Association Scientific Sessions, Orlando, FL 2009

INVITED BOOK CHAPTERS
Kaneez FS (Ed). Patch Clamp Technique InTech (ISBN 979-953-307-386-5) (Delisle BP. Cardiac Channelopathies: Disease at the Tip of a Patch Electrode).

VII. RESEARCH AND CREATIVE PRODUCTIVITY

PEER REVIEWED PUBLICATIONS
1. Delisle BP, Satin J. pH modification of human T-type calcium channel gating. *Biophys J,* 2000; 78(4):1895-1905.

2. Cribbs LL, Martin BL, Schroder EA, Keller BB, Delisle BP, Satin J. Identification of the T-type calcium channel (Ca(v)3.1d) in developing mouse heart. *Circ Res* 2001; 88(4):403-407.

3. Burgess DE, Crawford O, Delisle BP, Satin J. Mechanism of inactivation gating of human T-type (low-voltage activated) calcium channels. *Biophys J* 2002; 82(4):1894-1906.

4. Mbai M, Rajamani S, Delisle BP, Anson BD, Anderson C, Makielski JC, January CT. Genetic basis for the origin of cardiac arrhythmias: implications for therapy. *Curr Cardiol Rep.* 2002; 4(5):411-417.

5. Delisle BP, Satin J. Monovalent cations contribute to T-type calcium channel (Cav3.1 and Cav3.2) selectivity. *J Memb Biol* 2003; 193(3):185-194.

6. Delisle BP, Anderson CL, Balijepalli RC, Anson BD, Kamp TJ, January CT. Thapsigargin selectively rescues the trafficking defective LQT2 channels G601S and F805C. *J Biol Chem* 2003; 278(37):35749-35754.

7. Delisle BP, Anson BD, Rajamani S, January CT. Biology of cardiac arrhythmias: ion channel protein trafficking. *Circ Res* 2004 11;94(11):1418-28.

8. Foell JD, Balijepalli RC, Delisle BP, Yunker AM, Robia SL, Walker JW, McEnery MW, January CT, Kamp TJ. Molecular heterogeneity of calcium channel {beta} subunits in canine and human heart: evidence for differential subcellular localization. *Physiol Genom.* 2004 17(2):183-200.

9. Anson BD, Ackerman MJ, Tester DJ, Will ML, Delisle BP, Anderson CL, January CT. Molecular and functional characterization of common polymorphisms in HERG (KCNH2) potassium channels. *Am J Physiol*. 2004 286(6):H2434-41.

10. Delisle BP, Slind JK, Kilby JA, Anderson CL, Anson BD, Balijepalli RC, Tester DJ, Ackerman MJ, Kamp TJ, January CT. Intragenic Suppression of trafficking-defective KCNH2 channels associated with long QT syndrome. *Mol Pharm.* 2005 68(1):233-240.

11. Kawakami K, Nagatomo T, Abe H, Kikuchi K, Takemasa H, Anson BD, Delisle BP, January CT, Nakashima Y. Comparison of HERG channel blocking effects of various β-blockers. *Br J Pharm*. 2005 147(6):642-52.

12. Anderson CL*, Delisle BP*, Anson BD, Kilby JA, Will ML, Tester DJ, Gong Q, Zhou Z, Ackerman MJ, January CT. Most LQT2 Mutations Reduce Kv11.1 (hERG) Current by a Class 2 (Trafficking Deficient) Mechanism. *Circulation.* 2006 113(3):365-373. *Both authors contributed equally to this study.

13. Rajamani S, Eckhardt LL, Valdivia CR, CA Klemens, Gillman BM, Anderson CL, Holzem KM, Delisle BP, Anson BD, Makielski JC, January CT. Drug-induced long QT syndrome: hERG K+ channel block and disruption of protein trafficking by fluoxetine and norfluoxetine. Br J Pharm. 2006 149(5):481-489.

14. Balijepalli RC*, Delisle BP*, Balijepalli SY, Foell JD, Slind JK, Kamp TJ, January CT. Kv11.1 (ERG1) K+ Channels Localize in Cholesterol and Sphingolipid Enriched Membranes and are Modulated by Membrane Cholesterol. *Channels.* 2007 1(4): 263-272. *Both authors contributed equally to this study.

15. Nagatomo T, Takemasa H, Abe H, Kawakami K, Igarashi T, Tsurugi T, Kabashima N, Tamura M, Okazaki M, Delisle BP, January CT, Otsuji Y. Coexistence of hERG current block and disruption of protein trafficking in ketoconazole-induced long QT syndrome. *Br J Pharm.* 2008 153(3):439-447.

16. Amin AS, Herfst LJ, Delisle BP, Klemens CA, Rook MB, Bezzina CR, Underkofler HA, Holzem KM, Ruijter JM, Tan HL, January CT, Wilde AA. Fever-induced QTc prolongation and ventricular arrhythmias in individuals with type 2 congenital long QT syndrome. *J Clin Invest.* 2008 118(7):2552-61.

17. Delisle BP, Underkofler HA, Moungey BM, Slind JK, Kilby JA, Best JM, Foell JD, Balijepalli RC, Kamp TJ, January CT. Small GTPase determinants for the golgi processing and plasmalemmal expression of human ether-a-go-go related (hERG) K+ channels. *J Biol Chem*. 2009 284(5):2844-53.

18. Lin EC, Holzem KM, Anson BD, Moungey BM, Balijepalli SY, Tester DJ, Ackerman MJ, Delisle BP, Balijepalli RC, January CT.Properties of WT and mutant hERG K(+) channels expressed in neonatal mouse cardiomyocytes. *Am J Physiol Heart Circ Physiol*. 2010 298(6):H1842-9.

19. Bartos DC, Duchatelet S, Burgess DE, Klug D, Denjoy I, Peat R, Lupoglazoff JM, Fressart V, Berthet M, Ackerman MJ, January CT, Guicheney P, Delisle BP. R231C mutation in KCNQ1 causes long QT syndrome type 1 and familial atrial fibrillation. *Heart Rhythm*. 2011 8(1):48-55.

20. Best JM, Foell JD, Buss CR, Delisle BP, Balijepalli RC, January CT, Kamp TJ. Small GTPase Rab11b regulates degradation of surface membrane L-type Cav1.2 channels. *Am J Physiol Cell Physiol.* 2011 300(5):C1023-33.

21. Smith JL, McBride CM, Nataraj PS, Bartos DC, January CT, Delisle BP. Trafficking-deficient hERG K^+ channels linked to long QT syndrome are regulated by a microtubule-dependent quality control compartment in the ER. *Am J Physiol Cell Physiol.* 2011; 301(1):C75-85.

22. Burgess DE, Bartos DC, Reloj AR, Campbell KS, Johnson JN, Tester DJ, Ackerman MJ, Fressart V, Denjoy I, Guicheney P, Moss AJ, Ohno S, Horie M, Delisle BP. Malignant Long QT Syndrome Mutations in the Kv7.1 (KCNQ1) Pore Disrupt the Molecular Basis for Rapid K+ Permeation. *Biochemistry.* 2012; 51, 9076−85.

23. Balijepalli SY, Lim E, Concannon SP, Chew CL, Holzem KE, Tester DJ, Ackerman MJ, Delisle BP, Balijepalli RC, January CT Mechanism of Loss of Kv11.1 K+ Current in Mutant T421M-Kv11.1 Expressing Rat Ventricular Myocytes: Interaction of Trafficking and Gating. *Circulation.* 2012;126:2809-18.

24. Bartos DC, Anderson JB, Bastiaenen R, Johnson JN, Gollob MH, Tester DJ, Burgess DE, Homfray T, Behr ER, Ackerman MJ, Guicheney P, Delisle BP. Identification of a Single KCNQ1 Variant that Confers a High Risk for Autosomal Dominant Early-onset

Atrial Fibrillation in Multiple Unrelated Families. *Journal of Cardiovasc Electrophysiol.* 2012; in press.

25. Schroder EA, Lefta M, Zhang X, Bartos DC, Feng HZ, Zhao Y, Patwardhan A, Jin JP, Esser KA, Delisle BP. The Cardiomyocyte Molecular Clock, Regulation of Scn5a and Arrhythmia Susceptibility. *Am J Physiol Cell Physiol.* 2013; in press.

26. Crotti L, Tester DJ, White WM, Bartos DC, Insolia R, Besana A, Kunic JD, Will ML, Velasco EJ, Bair JJ, Ghidoni A, Cetin I, Van Dyke DL, Wick MJ, Brost B, Delisle BP, Facchinetti F, George AL, Schwartz PJ, Ackerman MJ. Long QT Syndrome Associated Mutations in Intrauterine Fetal Death. *JAMA.* 2013; in press.

27. McBride CM, Smith AM, Smith JL, Reloj AR, Velasco EJ, Powell JM, Elayi CS, Bartos DC, Burgess DE, Delisle BP. Mechanistic Basis for Type 2 Long QT Syndrome Caused by KCNH2 Mutations that Disrupt Conserved Arginine Residues in the Voltage-sensor. *J Membr Bio*. 2013; in press.

PEER REVIEWED ABSTRACTS

1. Delisle BP, Anderson CL, January CT. Novel intracellular targets in the pharmacological rescue of long QT2 trafficking defects. *Circulation (Suppl)* 2002; 106(19):II-21.

2. Delisle BP, Anderson CL, Balijapalli RC, Anson BD, Kamp TJ, January CT. Selective and novel pathways in the pharmacological rescue of LQT2 trafficking-defective mutations. *Circulation (Suppl)* 2003; 108:IV-120.

3. Delisle BP, Slind J, Kilby J, January CT. The trafficking defective phenotype of the Long QT2 channel G601S varies with different Y652 mutations. *Circulation* 2004; 110 (17, Suppl): 16-16 68.

4. Delisle BP, Anderson CL, Anson BD, Kilby JA, Will ML, Tester DJ, Gong Q, Zhou Z, Ackerman MJ, January CT. Most LQT-linked KCNH2 Mutations are Trafficking-Defective. *Heart Rhythm. (Suppl)* 2005; 2, S175-S176.

5. Delisle BP, Underkofler, HAS, Anderson CL, January CT. Drugs that Block Kv11.1 (hERG) Current with Rapid Kinetics Inhibit the Pharmacological Rescue of Trafficking Deficient Kv11.1 Mutations Linked to Long QT Syndrome. *Heart Rhythm*. (*Suppl*) 2006; 3, S2

6. Holzem KM, Kilby JA, Anderson CL, January CT, Delisle BP. Dissociation of hERG channel block from pharmacological correction in a trafficking-deficient LQT2 mutation. *Circulation. (Suppl)*, 2006 114 (18): 203-203 1099.

7. Underkofler HAS, Balijepalli SY, Moungey BM, Slind JK, Best JM, Kamp TJ, January CT, Delisle BP. An Unconventional Vesicular Transport Pathway Regulates the Cell Surface Expression of hERG K^+ Channels. *Circulation. (Suppl)* 2007;116:II_214.

8. Moungey BM, Lin EC, Balijepalli RC, January CT, Delisle BP. hERG and MiRP1 Do Not Associate Prior to Export Out of the Endoplasmic Reticulum. *Circulation*. *(Suppl)* 2008;118:S343.

9. Bartos DC, Duchatelet S, Klug D, Lupoglazoff JM, Denjoy I, January CT, Fressart V, Guicheney P, Delisle BP. The R231C KCNQ1 Mutation Causes Familial Atrial Fibrillation and Long QT Syndrome. *Circulation*. *(Suppl)* 2009; 120: S624.

10. Smith JL, Reloj AR, Nataraj P, Anderson CL, January CT, Delisle BP. Trafficking-Deficient hERG K+ Channels Linked to Long QT Syndrome are Regulated by a Quality Control Compartment in the ER. *Circulation. (Suppl)* 2011; 124:A18298.

11. Schoder EA, Esser KA, Makielski JC, Delisle BP. Circadian Variation in SCN5A Driven by the Molecular Clock. *Circulation. (Suppl)* 2011; 124:A15270.

12. Delisle BP, Lefta M, Makielski J, Esser K, Schroder E. Cardiac Excitability is Regulated by the Molecular Clock. *Heart Rhythm Society (Suppl)* 2012.

13. Bartos DC, Anderson JB, Burgess DE, Johnson JN, Tester DJ, Bastiaenen R, Behr ER, MD, Ackerman MJ, Guicheney P, Delisle BP. The KCNQ1 Variant R231H Confers a High Risk for Early Onset Atrial Fibrillation. *Heart Rhythm Society (Suppl)* 2012

14. Tester D, Crotti L, White WM, Bartos DC, Will ML, Velasco EJ, Bair JJ, Insolia R, Ghidoni A, Facchinetti F, Cetin I, Pfeufer A, Van Dyke DL, Wick MJ, Brost BC, Delisle BP, Schwartz PJ, Ackerman MJ. Identification of Putative Sudden Death Predisposing Mutations in Antepartum Intrauterine Fetal Demise: a Cardiac Channel Molecular Autopsy of 98 Stillbirths. *Hearth Rhythm Society (Suppl).* 2012.

15. Bartos DC, Anderson JB, Bastiaenen R, Johnson JN, Gollob MH, Tester DJ, Burgess DE, Homfray T, Behr ER, Ackerman MJ, Guicheney P, Delisle B. Direct Evidence that a KCNQ1 Mutation is Linked to Familial Early-onset Atrial Fibrillation. *Circulation. (Suppl)* 2012; in press.

16. Bartos DC, Giudicessi J, Tester DJ, Ackerman MJ, Delisle BP. Protracted QTc Prolongation following Treadmill Testing Identifies a Type 1 Long QT Mutation that is Resistant to PKA Activation. 2012 *Heart Rhythm (Suppl)* 2012.

ABSTRACTS

1. Delisle BP, Satin J. Electrophysiological studies of spinal motor neuron voltage-gated sodium channels. *Biophys J (Suppl)* 1997; 72(1):A149.

2. Delisle BP, Hong JL, Satin J. Channel state influences PK-C modulation of the sodium current. *Biophys J (Suppl)* 1998; 74(1):A149.

3. Delisle BP, Satin J. External acidification modifies alpha1H by affecting voltage dependent rate transitions of the activation pathway. *Biophys J (Suppl)* 2000; 78(1):457A.

4. Satin J, Delisle BP. Protein modification of low voltage activated calcium channels is isoform specific. *Biophys J (Suppl)* 2000; 78(1):461A.

5. Delisle BP, Cribbs LL, Burgess DE, Satin J. External lock-in of low-voltage-activated (LVA) Ca channels is mediated by the intracellular cation species. *Biophys J (Suppl)* 2001; 80(1):174a.

6. Delisle BP, Cribbs LL, Burgess DE, Satin J. Reducing external pH decreases external lock-in and slows activation gating for low-voltage-activated Ca channels. *Biophys J (Suppl)* 2001; 80(1):449a.

7. Burgess D, Crawford O, Delisle BP, Satin J. Ionic and gating current recovery from inactivation for the □1G and □1H T-type Ca channel isoforms. *Biophys J (Suppl)* 2001; 80(1):621a.

8. Delisle BP, Robertson GA, January CT. Unique permeation properties of HERG are revealed by Cs. *Biophys J (Suppl)* 2002 82(1):

9. Burgess D, Booth J, Delisle BP, Satin J. Gating of LVA Ca channels: gating currents, modeling, and pH modification. *Biophys J (Suppl)* 2002; 82(1):

10. Delisle BP, Cribbs LL, Burgess D, Satin J. Reducing external pH decreases lock-in and slows activation gating for low-voltage-activated Ca channels *Biophys J (Suppl)* 2001; 80(1):

11. Delisle BP, Cribbs LL, Burgess D, Satin J. External lock-in of LVA Ca channels is mediated by the intracellular cation species. *Biophys J (Suppl)* 2001; 80(1)

12. Delisle, B, Anderson, C, January, CT. E4031 rescue of HERG does not require the restoration of N-linked glycosylation. *J Mol Cell Cardiology* 2002; 34 (7): A18-A18.

13. Delisle BP, Anderson CL, Rajamani S, January CT. The pharmacological induced appearance and disappearance of a WT-like trafficking defective LQT2 mutant K^+ channel. *Biophys J (Suppl)* 2003; 84(2):411a.

14. Foell, JD, Balljepalli, RC, Delisle, BP, January, CT, Kamp, TJ. Cardiac splice variants of L-type Ca2+ channel beta(2) subunit exhibit distinct functional properties. *Circulation (Suppl)* 2003;108:121-121, Suppl. S.

15. Delisle BP, Kilby J, Anderson CL, Slind J, Tester DJ, Ackerman MJ, Balijapalli RC, Kamp TJ, January CT. The trafficking-defective LQT2 mutation F640V HERG is modified by mutations in the inner pore. *Biophys J (Suppl on CD)* 2004; Abstract #1459-Pos.

16. Anson BD, Delisle BP, Badley, AD, Ackerman MJ, January CT. Rapid block of HERG K channels by HIV protease inhibitors. *Biophys J (Suppl on CD)* 2004; 2706-Plat.

17. Delisle BP, Slind J, Kilby J, Anderson CL, Tester DJ, Ackerman MJ, Balijepalli RC, Kamp TJ, January CT. Then inner pore mutation Y652C Reverses the Trafficking-defective Long QT2 Channels G601S and F640V Phenotype. *J Gen Physiol* 2004;124:23.

18. Balijepalli RC, Delisle BP, Foell JD, Slind JK, Kamp TJ, January CT. Delayed rectifier voltage-gated K^+ channels localize into distinct sphingolipid/cholesterol enriched membrane microdomains. *Circulation* 2004; 110 (17, Suppl): 61-61 280.

19. Delisle, BP, Balijepalli, RC, Foell, JD, Slind, JK, Kamp, TJ, January, CT. KCNH2 is expressed in noncavoelar lipid rafts. *Mol Bio Cell* 2004;15:70A-70A, Suppl. S.

20. Delisle BP, Kilby JA, Moungey BM, Underkofler HAS, Foell JD, Balijepalli RC, Kamp TJ, and January CT. Sar1 Regulates the Intracellular Transport of Kv11.1 Early in the Secretory Pathway. *Mol Bio Cell* 2005 (Suppl on line).

21. Delisle BP, Kilby JA, Underkofler HAS, Moungey BM, Foell JD, Balijepalli RC, Kamp TJ, January CT. Small GTPases Regulate the Intracellular Transport of Kv11.1 Early in the Secretory Pathway. *Biophys J* 2006 (Suppl on line).

22. Underkofler HAS, Delisle BP, January CT. Drug Disruption of Intracellular Transport of hERG1 (Kv11.1) K^+ Channels in Long and Short QT Syndrome Mutations. *Biophys J* 2007; (Suppl on line).

23. Lin EC, Delisle BP, Anson BD, January CT. Long QT-linked hERG (KV11.1) Mutations Identify a Functional Role for the S2-S3 Linker. *Heart Rhythm* 2007; (Suppl on line).

24. Delisle BP, Moungey BM, Underkofler HAS, Slind JK, Kilby JA, Foell JD, Balijepalli RC, Kamp TJ, January CT. Distinct Vesicular Transport Properties of Human Kv11.1 (Herg1a) K^+ Channels. *J Gen Phys* 2007; 130: 20A.

25. Underkofler HAS, Balijepalli SY, Best JM, Kamp TJ, January CT, Delisle BP. The Trafficking of hERG Channels is Inhibited by Dominant Negative Rab11B Mutations. *Biophys. J* 2008; 94: 1338.

26. Lin E, Moungey B, Delisle BP, January CT. LQT2 Linked Mutations E444D and P451l in the S1-S2 Linker lead to Biophysical Abnormalities of Herg Channels. *Biophys J* 2009; 96:189a.

27. Smith JL, Bartos DC, January CT, Delisle BP. Trafficking-deficient LQT2 Mutations Disrupt Different Steps of hERG Channel Transport. *Biophys J* 2009; 96:190a.

28. Bartos DC, Smith JL, Kilby JA, January CT, Delisle BP. Wild-Type KCNQ1 Modulates the Gating of the LQT1 Mutation R231C. *Biophys J* 2009; 96: 380a.

29. Bartos DC, Smith JL, Kilby JA, January CT, Delisle BP. WT-Kv7.1 Causes the Loss of Function Phenotype for the Type 1 Long QT-linked R231C Mutation. *J Mol Cell Cardiology* 2009; 46:S2.

30. Smith JL, Bartos DC, January CT, Delisle BP. The Plasmalemmal Expression of human Ether-a-go-go Related K+ Channels is not dependent on Microtubule Assembly. *J Mol Cell Cardiology* 2009; 46:S7.

31. Smith, JL, McBride, CM, Bartos DC, January CT, Delisle BP. Microtubule Dependant Mechanisms Regulate the Trafficking Deficient Phenotype of hERG Mutations Linked to Long QT Syndrome. *Biophys J* 2010; 98:118a - 119a.

32. McBride, Smith JL, Delisle BP. Pharmacological-Induced Increase in the Functional Expression Of hERG Current; *Biophys J* 2010; 98:118a.

33. Delisle BP, January CT. McBride, CM, Bartos DC, Smith, JL. Trafficking-deficient hERG K+ channel mutations are differentially regulated by microtubules. *J Mol Cell Cardiology* 2010; 48:S158.

34. Burgess DE, Bartos DC, Schmidt ES, Delisle BP. A Computational Model for the effects that a KCNQ1 Mutation Linked to Jervell and Lange-Nielson Syndrome has on Cardiac Action Potential Duration. *Biophys J* 2011; 100; 436a-437a.

35. McBride CM, Powell J, Smith, AM, Delisle BP. Long QT-Linked HERG Mutations at R531 of the S4 Alter the Gating Properties of WT-HERG. *Biophys J* 2011; 100; 427a-427a

36. Smith JL, Nataraj PS, January CT, Delisle BP. The Trafficking of Mutant HERG K+ Channels Linked to Long QT Syndrome are Regulated by a Subdomain in the Endoplasmic Reticulum. *Biophys J* 2011; 100; 427a-427a.

37. Bartos DC, Schmidt ES, Burgess DE, Delisle BP. A Spectrum of Functional Phenotypes Associated with LQT1 Mutations Identified in Patients with Early-Onset Atrial Fibrillation. *Biophys J* 2011; 100; 427a-427a.

38. Smith JL, Reloj AR, Nataraj P, Anderson CL, January CT, Delisle BP. Trafficking-Deficient hERG K+ Channels Linked to Long QT Syndrome are Regulated by a Quality Control Compartment in the ER. *Circulation. (Suppl)* 2011; 124:A18298.

39. Smith JL, Reloj AR, Nataraj PS, Bartos DC, January CT, Delisle BP. Mechanism for the Pharmacological Correction of hERG Mutations Linked to the Long QT Syndrome. *Biophys J*. 2013; 104(2), S1266a.

40. Bartos DC, Burgess DE, Reloj AR, Giudicessi J, Tester DJ, Ackerman MJ, Delisle BP. A Mutation in the Voltage-Sensor of Kv7.1 Prevents PKA Activation of IKs to Elicit Concealed Type 1 Long QT Syndrome during Stress *Biophys J.* 2013; 104(2), S1267a.

41. Burgess DE, Bartos DC, Reloj AR, Campbell KS, Johnson JN, Tester DJ, Ackerman MJ, Fressart V, Denjoy I, Guicheney P, Moss AJ, Ohno S, Horie M, Delisle BP. Malignant Long QT Syndrome KCNQ1 Mutations in the Pore Disrupt the Molecular Basis for Rapid K+ Permeation. *Biophys J.* 2013; 104(2), S1268a.

GRANT ACTIVITY-ONGOING RESEARCH SUPPORT

1. National Heart Lung and Blood Institute, 1R01HL087039, 4/15/2008-3/31/2014
Title: Delayed Rectifier K Channel Biogenesis is Unveiled in Models of Long QT Syndrome
Primary Investigator: Brian P. Delisle
Direct Costs $200,000 per year.

This project helps to identify the differences in the Endoplasmic Reticulum retention of Kv7.1 and Kv11.1 mutations linked to Long QT syndrome. Specifically it tests the hypotheses that Kv7.1 and Kv11.1 are regulated by different components of cellular quality control, and Kv7.1 and Kv11.1 traffic in distinct vesicular transport pathways.

GRANT ACTIVITY-COMPLETED RESEARCH SUPPORT

1. National Heart Lung and Blood Institute, NOT-OD-09-056: Recovery Act Funds for Administrative Supplement 7/15/2009-6/30/2011

Title: Delayed Rectifier K Channel Biogenesis is Unveiled in Models of Long QT Syndrome

Primary Investigator: Brian P. Delisle
Direct Costs $49,647 per year.
This project was awarded under the American Recovery and Reinvestment Act of 2009 and is an administrative supplement to 1R01HL087039.

2. National Heart Lung and Blood Institute. Ruth L. Kirschstein National Research Award for Individual
Postdoctoral Fellows, F32 HL71476-01, 8/01/02-7/31/05

Title: Regulation of hERG proteins by chemical chaperones

Sponsor: Craig T. January
This project helped to develop a classification scheme for LQT-linked hERG mutations. During this period we identified over 20 novel trafficking deficient LQT-hERG mutations. We also determined that the trafficking deficient phenotype could be pharmacologically corrected for many of these LQT-hERG mutations.

3. American Heart Association, National Scientist Development Grant 0530568N, 07/01/05-06/30/09

Title: Abnormal protein folding caused by hERG mutations associated with Long QT syndrome modifies channel protein trafficking

Primary Investigator: Brian P. Delisle
Direct Costs: $65,000 per year
This project tested the hypotheses that hERG channels are transported to the cell surface through a non-conventional secretory pathway, lipids mediate the targeting of hERG channels to the cell surface membrane, and most LQT-linked hERG mutations disrupt protein folding and trafficking through the non-conventional pathway.

VIII. TEACHING EXPERIENCE

UNIVERSITY OF KENTUCKY

Teaching Assistant	Fall 1996	BIO 153-Prin Biol Lab (Fall semester)
Lecturer	Spring 2009	PGY 206- Elem Physiol (6 lectures) PGY 604- Adv Cardiovasc (2 lectures) IBS 604- Cell Signaling (6 lectures)

Fall 2009	PGY 206- Elem Physiol (6 lectures)
Spring 2010	PGY 206- Elem Physiol (6 lectures)
	IBS 606- Integ Biomed Sys (4 lectures)
Fall 2010	PGY 206- Elem Physiol (6 lectures)
Spring 2011	PGY 206- Elem Physiol (6 lectures)
	PGY 604- Adv Cardiovasc (4 lectures)
	IBS 606- Integ Biomed Sys (5 lectures)
Fall 2011	PGY 206- Elem Physiol (6 lectures)
Spring 2012	PGY 206- Elem Physiol (6 lectures)
	IBS 606- Integ Biomed Sys (5 lectures)
Fall 2012	PGY 206- Elem Physiol (6 lectures)
Spring 2013	PGY 206- Elem Physiol (6 lectures)
	PGY 604- Adv Cardiovasc (2 lectures)
	IBS 606- Integ Biomed Sys (5 lectures)

Current PhD Trainees

Daniel Bartos Department of Physiology University of Kentucky Fall 2010-present
Funded: Awarded the American Heart Association Pre-doctoral Grant

Current MS Trainees

Allison Reloj Health Sciences, University of Kentucky Fall 2012-present

Former MS Trainees

Ellyn Velasco Health Sciences, University of Kentucky Fall 2010-Summer 2012

Former Undergraduate Trainees

Jonathan Powell	BIO 395- Indep Study	Spring 2009
	BIO 395- Indep Study	Fall 2009
	Research technician	2009-2010

Currently attending medical school at the University of Kentucky (Fall 2010)

Parvathi Nataraj	BIO 395- Indep Study	Spring 2009
	BIO 395- Indep Study	Spring 2010
	UREKA Summer Research Grant	2010

Currently attending medical school at the University of Kentucky (Fall 2011)

Katelyn Nichols	Asbury Summer Research Program	2010

Eric Schmidt	ERUKA Summer Research Grant	2009
	BAE 450- Indep Study	Fall 2010
	Research Assistant	2009-2011
	Summer Scholar (Muscle Biology)	2011

Currently attending medical school at the University of Kentucky (Fall 2011)

Ashley Smith	ABT 395- Indep Study	Fall 2010
	PGY 504- Indep Study	Spring 2011

Currently attending the University of Kentucky

Allison Reloj	Research Assistant	2010-2011

Currently attending the Medical Sciences MS program at the University of Kentucky (Fall 2012)

Ashley Spurlin	Research Assistant	2010
Mckenzie Johnson	Summer Scholar (CMB)	2011
	Summer Scholar (CV)	2012

Currently attending Kentucky State University

Nick Harris	University of Kentucky	Summer 2012-Spring

Former High School/Junior High School Trainees

Lawrence Butros	2012

DEPARTMENTAL COMMITTEES

Department of Physiology, University of Kentucky: Seven-Year Annual Review Committee, 2008; Rules and Regulations Committee, 2009; Graduate Affairs Committee, 2010-present

DEPARTMENTAL WORKSHOPS

Department of Physiology, University of Kentucky: Spring Semester Grant Writing Workshop, 2013

GRADUATE STUDENT RESEARCH DISERTATION COMMITTEE

Carmon Kiper	Department of Physiology University of Kentucky	2009-2011
Shawn Crump	Department of Physiology University of Kentucky	2008-2012
William Lester	Department of Physiology University of Kentucky	2008-2012
Premi Shekar	Department of Physiology University of Kentucky	2009-present
Eva Bach	Department of Physiology University of Kentucky	2009-present
Daniel Bartos	Department of Physiology University of Kentucky	2011-present
Ishita Parikh	Department of Physiology University of Kentucky	2011-present

GRADUATE STUDENT RESEARCH DISERTATION COMMITTEE- OUTSIDE EXAMINER

Marian Novak	Department of Pharmacology	University of Kentucky	2012
Siqi Wang	Department of Biomedical Engineering	University of Kentucky	2012

COLLEGE COMMITTEES

College of Medicine, University of Kentucky: Integrated Biomedical Sciences Recruitment Committee, 2008-present